

U.S. DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY

SPECTROGRAPHIC AND CHEMICAL ANALYSES OF  
BULK HEAVY-MINERAL CONCENTRATE SAMPLES  
FROM THE TALKEETNA QUADRANGLE, ALASKA

by

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Open-file Report

78-146

This report is preliminary and has not been edited or reviewed for conformity with U.S. Geological Survey standards and nomenclature.

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## INTRODUCTION

A reconnaissance geochemical study was made in the Talkeetna, Alaska 1:250,000-scale quadrangle during the summers of 1975 and 1976, to aid in assessing the mineral resource potential of the quadrangle. As part of the study, 387 samples of bulk heavy-mineral concentrate of stream sediment from the south flank of the Alaska Range were collected, prepared and analyzed (fig. 1). The analytical results for these samples are given in this report. Analytical results for stream sediment, glacial debris, and nonmagnetic heavy-mineral concentrate samples collected in the Talkeetna quadrangle are available in U.S. Geological Survey Open-File Report 78-143 (O'Leary and others, 1978).

## DESCRIPTION OF SAMPLE MEDIA

At most sites, stream sediments and heavy-mineral concentrates were collected in the active channels of swift mountain streams draining areas ranging from approximately 5 to 10 km<sup>2</sup>. The sediment in most of these streams ranges in size from fine sand to cobbles. The heavy-mineral concentrates are composed mainly of detrital material that has been mechanically introduced into a stream from the bedrock and colluvium within a particular drainage basin. The concentrates can reflect the presence of mineralized rock in the drainage basin upstream.

## PREPARATION AND ANALYSIS OF SAMPLES

The heavy-mineral concentrates were panned in the field to remove the bulk of the light minerals. The panned samples were sieved through a 20-mesh (0.8-mm) screen in the laboratory and the minus-20-mesh fraction was further separated with bromoform (specific gravity, 2.86) to remove the remaining light-mineral grains. Magnetite and other strongly magnetic heavy minerals were removed from the heavy-mineral fraction by use of a hand magnet. For those samples from the south flank of the Alaska Range that contained enough material (387 samples), this fraction was split after the removal of magnetite and one split (denoted as bulk concentrate) was pulverized prior to analysis.

This split of the samples was analyzed for thirty elements by a 6-step, DC-arc semiquantative emission-spectrographic method described by Grimes and Marranzino (1968), with the following exceptions: To eliminate the spectral interferences caused by high concentrations of iron, 5 mg of prepared sample was used instead of the 10 mg normally used; the lower limit of determination was thus raised. All lower limits are doubled and doubled limits occurring between midpoints were rounded to the higher midpoint (for example,  $20 \text{ mm} \times 2 = 40 \text{ ppm}$ , but reported as 50 ppm).

The approximate visual lower limits of determination for the 30 elements included in this report area, for those given in percentage: iron, 0.1; magnesium, 0.05; calcium, 0.1; and titanium, 0.005. For those reported in ppm, they are: manganese, 20; silver, 1; arsenic, 500; gold, 20; boron, 20; barium, 50; beryllium, 2; bismuth, 20; cadmium, 50; cobalt, 10; chromium, 20; copper, 10; lanthanum, 50; molybdenum, 10; niobium, 50; nickel, 10; lead, 20; antimony, 200; scandium, 10; tin, 20; strontium, 200; tungsten, 100; vanadium, 20; yttrium, 20; zinc, 500; and zirconium, 20.

The analytical results are reported as the approximate midpoints of geometric brackets whose boundaries are 1.2, 0.83, 0.56, 0.38, 0.26, 0.18, 0.12, and so on; the midpoints are 1, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, and so on.

The repeatability of the method, in general, is shown to be within one adjoining reporting interval on each side of the mean, 83 percent of the time, and within two adjoining reporting intervals on each side of the mean 90 percent of the time (Motooka and Grimes, 1976).

The lower limits of determination for gold ranged from 0.03 to 2.0 ppm because varied amounts of sample (6.6-0.1g) were available for analysis.

## EXPLANATION OF DATA

The data listed in Table 1 include the analytical results for the bulk heavy-mineral concentrate samples. The columns have heading titles of sample, latitude, longitude and the elements. Columns in which the element heading is preceded by an S contain the emission-spectrographic data. The prefix AA in the second gold column heading indicates the results were determined by atomic absorption.

Data qualifier codes used in Table 1 are integer values which are coded with a B, N or G, where: B = no data available, or sample not analyzed for this element; N = not detected at the level of detection or at the value shown; and G = greater than the value shown. The sample numbers in column 1, Table 1, that begin with TK0 and end with C4 are denoted on the sample site map (fig. 1) with the TK0 and the C4 deleted (for example, TK0617C4 becomes 617). All other sample numbers are the same on both figure 1 and Table 1.

Table 1.--Spectrographic and atomic absorption analyses for bulk heavy-mineral concentrates from the Talkeetna quadrangle, Alaska

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIZ	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-8E	S-BI	S-CD	S-CO
5EK18HC4	62.4183	151.6600	20	0.5	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	500	1000	2 L	20 N	50 N	20
5EK92HC4	62.4094	151.6767	20	3.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	150	700	2 L	20 N	50 N	50
5EK93HC4	62.4094	151.6767	15	5.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	150	500	2	20 N	50 N	30
76ANS36B	62.0236	152.0153	20 G	3.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	300	500	3	20 N	50 N	50
76ANS43	62.0108	152.8611	20	5.0	5.0	1.0	5000	1.0 N	500	20 N	200	500	2	20 N	50 N	50
76ANS44A	62.6458	151.0681	20 G	2.0	1.0	0.5	5000 G	1.0 N	500 N	20 N	50	1500	3	20 N	50 N	100
76ANS44B	62.6736	151.0722	20 G	2.0	2.0	0.7	5000 G	1.0 N	500	20 N	300	500	3	20 N	50 N	20
76ANS44C	62.6250	151.0903	20 G	3.0	1.0	1.0	5000 G	1.0 N	500 N	20 N	300	2000	2	20 N	50 N	100
76ANS44Z	62.6833	150.6639	20 G	2.0	1.0	1.0 G	5000 G	1.0 N	700	20 N	100	700	5	200	50 N	50
76ANS50A	62.7181	150.8250	20 G	2.0	1.5	1.0 G	5000 G	50.0	2000	1000 G	150	1500	3	50	50 N	50
76ANS50D	62.7153	150.8153	20	3.0	1.0	1.0 G	5000 G	20.0	7000	20 N	150	700	3	500	50 N	20
76AR118	62.0111	152.8903	20	7.0	3.0	1.0 G	5000	1.0 N	500	20 N	300	1000	3	20 N	50 N	50
76AR155	62.9722	150.2931	20 G	1.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	20
76AR183A	62.8381	150.2975	20	1.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	100	2 L	20 N	50 N	20
76AR183B	62.9836	150.0631	20	7.0	3.0	1.0	2000	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	100
76AR184	62.7964	150.3100	20	2.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	300	700	2 L	20 N	50 N	20
76AR185	62.7639	150.3783	20	1.5	1.5	1.0 G	5000 G	1.0 N	500 N	20 N	50	200	2	20 N	50 N	20
76AR187	62.8661	150.2428	20	5.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	200	200	3	20 N	50 N	20
76AR188	62.8958	150.1986	20	3.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	200	300	2 L	20 N	50 N	20
76AR189	62.9306	150.1333	20 G	3.0	2.0	1.0	5000 G	1.0 N	1000	20 N	70	1500	3	20 N	50 N	200
76AR190	62.9486	150.1194	20 G	3.0	0.7	0.3	5000	1.0 L	500 N	20 N	70	1500	3	20 N	50 N	150
76AR191	62.9739	150.0753	20 G	5.0	5.0	0.5	5000 G	1.0 N	500 N	20 N	70	500	2	20 N	50 N	150
76AR192	62.9694	150.0736	20	3.0	1.0	1.0	1000	1.0 N	500 N	20 N	50	500	2 L	20 N	50 N	100
76AR202	62.9472	150.4264	20	2.0	1.5	1.0 G	5000 G	10.0	500	20 N	300	200	7	20 L	50 N	20
76AR203	62.9292	150.4653	20	2.0	1.0	1.0 G	5000 G	2.0	500 N	20 N	500	200	7	20 N	50 N	20
76AR204	62.9319	150.4167	20 G	2.0	1.0	1.0 G	5000 G	1.0 N	500 L	20 N	300	300	10	20 L	50 N	20
76AR205	62.9361	150.3528	20 G	2.0	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	300	300	7	20 N	50 N	20
76AR206	62.9403	150.3208	20 G	2.0	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	200	20	20 L	50 N	15
76AR207	62.9181	150.2778	20	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	200	20	20 L	50 N	15
76AR208	62.9347	150.2611	20	3.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	15
76AR209	62.9556	150.2694	20 G	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	30	300	2 L	20 N	50 N	20
76AR210	62.9625	150.2875	20	1.5	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	200	5	20 N	50 N	20
76AR211	62.9750	150.3194	20	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	500	5	20 N	50 N	20
76AR212	62.9611	150.2500	20	1.5	1.5	1.0 G	5000 G	1.0 N	500 N	20 N	50	300	5	20 N	50 N	20
76AR213	62.9306	150.2306	20	1.5	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	230	2 L	20 N	50 N	20
76AR227A	62.6653	151.1431	20 G	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	2000	1500	5	20 L	50 N	20
76AR227G	62.6653	151.1431	20 G	3.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	2000	1500	5	20 N	50 N	20
76AR234	62.6417	151.2708	20	2.0	2.0	1.0 G	5000 G	1.0 N	10000	20 N	2000	700	2 L	20	50 N	1000
TK0460C4	62.3606	152.7481	20 G	0.7	1.0	1.0 G	20 N	2.0	10000 G	20 N	2000 G	70	70	100	50 N	200
TK0461C4	62.3578	152.7136	20	1.0	1.5	1.0 G	20 N	5.0	10000 G	30	2000 G	100	100	200	50 N	200
TK0480C4	62.0881	152.7703	15	3.0	2.0	0.7	5000	2.0	500 N	20 N	100	2000	2	20 N	50 N	50
TK0480C4	62.0881	152.7703	20	3.0	2.0	1.0 G	20 N	1.0 N	500 N	20 N	100	5000	2	20 N	50 N	150
TK0482C4	62.0736	152.8364	15	5.0	5.0	1.0 G	5000	1.0 N	500 N	20 N	200	100	2 L	20 N	50 N	20
TK0482C4	62.0736	152.8364	20 G	7.0	7.0	1.0 G	20 N	1.0 N	500 N	20 N	1000	200	2	20 N	50 N	50



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BULK HEAVY-MINERAL CONCENTRATES

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
SEK18HC4	3000	150	500	10 N	50 L	10 L	50	200 N 100	20 N	200 L 300	100 N 200	500 N 1000 G	30.00				
SEK92HC4	2000	150	1000	10 N	50 L	100	50	200 N 100	20 N	200 L 300	100 N 200	500 N 1000 G	0.10 N				
SEK93HC4	5000	100	1000 G	10 N	50 L	70	20 L	200 N 100	20 N	200 L 300	100 N 300	500 N 1000 G	15.00				
76ANS36B	2000	150	100	10 N	50 L	100	20	200 N 100	20 N	200 L 300	100 N 100	700	90.00				
76ANS43	500	150	300	10 N	50 L	50	20	200 N 70	20 N	200 L 300	100 N 100	500	0.20 N				
76ANS44A	200	200	1000	10 N	50 L	500	50	200 N 20	20 N	200 L 300	100 N 100	700	0.40 N				
76ANS44B	700	500	200	10 N	50 L	200	20 N	200 N 50	30	200 L 300	200 N 300	500	0.40 N				
76ANS44C	500	500	1000 G	10 N	50 L	300	100	200 N 10	20 N	200 L 300	100 N 300	1000	14.00				
76ANS44Z	200	200	1000 G	10 N	50 L	100	50	200 N 100 G	50	200 L 300	100 N 1000	2000	0.25 N				
76ANS50A	2000	1000	1000	10 N	50 L	200	70	200 N 100	1000 G	200 L 300	200	1000	34.00				
76ANS50D	2000	1000	1000	10 N	50 L	150	100	200 N 30	1000 G	200 L 300	100 N 200	700	138.00				
76AR118	500	200	1000	10 N	50 L	200	50	200 N 70	20	200 L 300	100 N 100	500	0.20 N				
76AR155	200	200	1000 G	10 N	50 L	20	50	200 N 100	50	200 L 300	100 N 1000	500	0.40				
76AR183A	300	200	1000 G	10 N	50 L	10 L	30	200 N 100	100	200 L 300	100 N 1000	500	0.20 N				
76AR183B	3000	200	50	10 N	50 L	700	50	200 N 30	20 N	200 L 300	100	50	0.20 N				
76AR184	700	100	1000 G	10 N	50 L	50	20 L	200 N 100 G	20 N	200 L 300	100 N 1000	500	0.20 N				
76AR185	150	200	1000 G	10 N	50 L	30	20 L	200 N 100	700	200 L 300	100 N 1000	500	6.50				
76AR187	700	150	1000 G	10 N	50 L	100	20	200 N 100 G	700	200 L 300	100 N 500	500	0.20 N				
76AR188	1500	100	1000 G	10 N	50 L	50	20	200 N 100 G	1000	200 L 300	100 N 1000	500	0.20 N				
76AR189	700	500	100	10 N	50 L	500	50	200 N 30	20 N	200 L 300	100 N 200	1000	0.20 N				
76AR190	500	500	50	10 N	50 L	500	100	200 N 20	20 L	200 L 300	100 N 50	700	0.25 N				
76AR191	1500	500	50	10 N	50 L	500	70	200 N 70	20 L	200 L 300	100 N 50	1000	0.20 N				
76AR192	3000	500	50	10 N	50 L	300	30	200 N 50	20 N	200 L 300	100 N 50	500	0.20 N				
76AR202	100	500	500	10 N	50 L	10	100	200 N 100	1000	200 L 300	200	200	0.20 N				
76AR203	100	500	1000	10 N	50 L	10	70	200 N 100 G	500	200 L 300	100 L 500	700	0.20 N				
76AR204	100	200	1000 G	10 N	50 L	10	100	200 N 100 G	1000	200 L 300	200	1500	0.25 N				
76AR205	70	150	1000 G	10 N	50 L	10	70	200 N 100 G	200	200 L 300	100 N 1000	500	0.20 N				
76AR206	150	150	1000 G	10 N	50 L	10	200	200 N 100 G	700	200 L 300	100 N 2000 G	500	0.20 N				
76AR207	150	300	1000 G	10 N	50 L	10	70	200 N 100 G	150	200 L 300	100 N 1500	500	0.20 N				
76AR208	150	150	1000 G	10 N	50 L	10	30	200 N 100 G	50	200 L 300	100 N 700	500	0.20 N				
76AR209	100	150	1000 G	10 N	50 L	10	50	200 N 100 G	50	200 L 300	100 N 700	500	0.20 N				
76AR210	200	150	1000 G	10 N	50 L	10	50	200 N 100 G	300	200 L 300	100 N 1500	500	0.20 N				
76AR211	150	150	1000 G	10 N	50 L	10	70	200 N 100 G	1000	200 L 300	100 N 1500	500	0.20 N				
76AR212	100	100	1000 G	10 N	50 L	30	50	200 N 100 G	50	200 L 300	100 N 1000	1000	0.20 N				
76AR213	150	100	1000 G	10 N	50 L	10 L	50	200 N 100 G	20	200 L 300	100 N 1000	1000	0.20 N				
76AR227A	150	30	700	10 N	50 L	50	20	200 N 70	50	200 L 300	100 N 1500	700	0.20 N				
76AR227G	150	20	200	10 N	50 L	70	20 L	200 N 50	50	200 L 300	100 N 700	700	0.20 N				
76AR234	150	200	1000 G	10 N	50 L	1000	70	200 N 100	700	200 L 300	200	2000 G	0.20 N				
TK0460C4	500	500	1000 G	10 N	50 L	1500	100	200 N 50	50	200 L 300	500	2000 G	5.00				
TK0461C4	700	200	1000 G	10 N	50 L	2000	500	200 N 50	1000 G	200 L 300	2000	2000 G	33.00				
TK0480C4	700	200	100	10 N	50 L	100	700	200 N 50	20 N	200 L 300	100 N 50	500	1.00 N				
TK0480C4	700	300	200	10 N	50 L	200	70	200 N 100	20 N	200 L 300	100 N 100	500	0.40 N				
TK0482C4	200	30	100	10 N	50 L	20	20 L	200 N 50	20 N	200 L 300	100 N 50	500	0.40 N				
TK0482C4	700	100	200	10 N	50 L	100	50	200 N 100 G	20 L	200 L 300	100 N 100	500	0.10 N				

sample	LATITUDE	LONGITUDE	S-FEX	S-MGZ	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
TK0484C4	62.0908	152.8858	20	10.0	7.0	1.0	5000	1.0 N	500 N	20 N	200	100	2 L	20 N	50 N	50
TK0486C4	62.1172	152.8714	20	7.0	5.0	1.0	5000	1.0 N	500 L	20 N	200	500	2	20 N	50 N	50
TK0488C4	62.1258	152.8497	20	7.0	7.0	1.0	5000	1.0 N	500 N	20 N	20	700	2 L	20 N	50 N	100
TK0490C4	62.1519	152.1211	15	5.0	7.0	1.0	5000 G	1.0 N	5000	20 N	50	300	2 L	20 N	50 N	150
TK0490C4	62.1519	152.1211	20 G	5.0	7.0	1.0 G	20 N	1.0 N	5000	20 N	70	500	2 N	20 N	50 N	150
TK0492C4	62.4425	152.0558	15	3.0	5.0	1.0	5000 G	1.0 N	5000	20 N	200	300	2 L	20 N	50 N	100
TK0494C4	62.4333	152.2106	15	5.0	3.0	0.5	3000	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	20
TK0498C4	62.1364	152.6994	20	2.0	1.0	0.5	5000 G	1.0 N	500 N	20 N	20	700	2 L	20 N	50 N	50
TK0500C4	62.1572	152.7211	15	5.0	7.0	0.7	5000	1.0 N	500 N	20 N	20	500	2 L	20 N	50 N	50
TK0504C4	62.2044	152.7217	20	7.0	5.0	0.5	5000 G	2.0	500 L	20 N	100	2000	3	20 N	50 N	100
TK0510C4	62.2464	152.6819	20	7.0	7.0	1.0 G	5000	1.0 N	500 N	20 N	300	500	2	20 N	50 N	50
TK0511C4	62.1911	152.7833	20	7.0	7.0	0.7	5000	1.0 N	500 N	20 N	150	5000 G	2	20 N	50 N	50
TK0528C4	62.2944	152.7831	15	7.0	10.0	1.0 G	5000	1.0 N	500 N	20 N	20	1000	2	20 N	50 N	50
TK0529C4	62.3000	152.7564	20	7.0	5.0	1.0 G	5000 G	2.0	500 N	20 N	20	5000	2	20 N	50 N	100
TK0530C4	62.2936	152.6778	15	7.0	7.0	1.0	5000	1.0 N	500 N	20 N	150	500	3	20 N	50 N	70
TK0540C4	62.3658	152.9825	20 G	5.0	7.0	1.0 G	5000	1.0 N	500 N	20 N	20	1000	2 L	20 N	50 N	50
TK0541C4	62.3992	152.9853	20 G	3.0	7.0	1.0 G	2000	1.0 N	2000	20 N	70	1500	2 L	20 N	50 N	200
TK0542C4	62.4200	152.9383	20 G	3.0	7.0	1.0 G	5000	1.0 N	500 N	20 N	20	500	2	20 N	50 N	100
TK0543C4	62.1356	152.6156	20 G	5.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	100	1000	2	20 N	50 N	50
TK0544C4	62.1383	152.6303	20 G	3.0	1.5	1.0	5000 G	1.0 N	500 N	20 N	100	2000	2	20 N	50 N	100
TK0545C4	62.1064	152.6386	10	5.0	3.0	0.7	3000	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	20
TK0546C4	62.0564	152.5736	20 G	3.0	2.0	0.7	5000 G	5.0	1500	20 N	100	3000	2	20 N	50 N	150
TK0547C4	62.0533	152.4972	10	7.0	7.0	0.5	5000 G	1.0 N	500 N	20 N	20 L	700	2 L	20 N	50 N	20
TK0548C4	62.0306	152.4444	15	7.0	7.0	0.7	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	20
TK0549C4	62.0433	152.2483	20 G	3.0	2.0	0.5	5000 G	1.0 N	2000	20 N	50	300	2	20 N	50 N	70
TK0550C4	62.0492	152.2558	20 G	7.0	7.0	0.7	5000 G	1.0 N	500 L	20 N	20	300	2	20 N	50 N	50
TK0551C4	62.0686	152.2164	20	7.0	7.0	1.0	5000	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	50
TK0552C4	62.0708	152.2419	20	10.0	7.0	1.0	5000	1.0 N	500 N	20 N	20 L	200	2 L	20 N	50 N	50
TK0553C4	62.0839	152.2761	20 G	3.0	1.5	0.7	5000	1.0 N	500 N	20 N	100	1500	5	20 N	50 N	50
TK0554C4	62.0947	152.2897	15	10.0	7.0	0.7	5000 G	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	20
TK0555C4	62.0917	152.3236	20	5.0	3.0	1.0	5000 G	1.0 L	500 N	20 N	150	1000	2	20 N	50 N	50
TK0556C4	62.0875	152.3831	20	5.0	5.0	1.0	5000 G	1.0 L	500 N	20 N	50	1000	2	20 N	50 N	50
TK0557C4	62.0778	152.4228	15	7.0	10.0	1.0	5000	1.0 N	500 N	20 N	20	200	2	20 N	50 N	50
TK0558C4	62.0967	152.4719	20 G	5.0	3.0	1.0	5000 G	1.0 N	500 N	20 N	50	1000	2	20 N	50 N	50
TK0560C4	62.1161	152.4106	20 G	7.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	50
TK0561C4	62.1478	152.4675	10	7.0	5.0	0.7	5000	1.0 N	500 N	20 N	20	500	2	20 N	50 N	30
TK0562C4	62.4247	152.9081	15	1.0	1.0	1.0	5000 G	1.0 N	500 N	20 N	1000	100	30	20 N	50 N	10 L
TK0563C4	62.4344	152.9256	20 G	3.0	7.0	0.5	1000	1.0 N	500 N	20 N	100	100	2	20 N	50 N	150
TK0564C4	62.4567	152.9094	20 G	5.0	10.0	1.0	1500	1.0 N	500	20 N	100	1500	2	20 N	50 N	100
TK0565C4	62.4928	152.9864	2	3.0	20.0	0.2	700	1.0 N	500 N	20 N	20	700	2 L	20 N	50 N	10 L
TK0566C4	62.4619	152.8728	20	3.0	2.0	1.0	5000 G	1.0 N	500	20 N	500	1500	10	20 N	50 N	20

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-SV	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0484C4	1500	30	50	10 N	50 L	200	20 L	200 N	100	20 N	200 L	300	100 N	70	500 L	500	0.20 N
TK0486C4	700	100	50	10 N	50 L	150	20	200 N	70	20 N	200 L	300	100 N	70	500	200	1.00 N
TK0488C4	1000	150	50	10 N	50 L	150	20	200 N	70	20 N	200	300	100 N	50	500	200	1.00 N
TK0490C4	1000	200	1000 G	10 N	50 L	50	20	200 N	50	20 N	200 N	300	1000	500	500 N	1000 G	1.00 N
TK0490C4	700	200	1000 G	10 N	50 L	200	20	200 N	70	20 L	200 N	500	1000	500	500 N	1000 G	0.50
TK0492C4	3000	500	1000 G	10 N	50 L	100	100	200 N	50	20 N	200 N	300	1000	300	500	1000 G	2.00 N
TK0494C4	700	200	200	10 N	50 L	200	20 L	200 N	30	20 N	200 L	200	1000	50	500 N	1000 G	0.50 N
TK0498C4	150	200	50	10 N	50 L	200	70	200 N	30	20 N	200	200	1000	50	500	700	0.30 N
TK0500C4	300	200	50	10 N	50 L	100	50	200 N	50	20 N	200	200	100 N	50	500	1000 G	0.40 N
TK0504C4	3000	200	100	10 N	50 L	500	50	200 N	50	20 N	200	300	100 N	50	700	1000	0.40 N
TK0510C4	3000	150	500	10 N	50 L	500	50	200 N	50	20 N	200 L	300	100 N	50	500	1000 G	0.50 N
TK0511C4	1500	150	50	10 N	50 L	300	50	200 N	50	20 N	200	300	100 N	30	500	1000	1.00 N
TK0528C4	1500	100	50	10 N	50 L	300	20 L	200 N	100	20 N	200	300	100 N	50	500 L	1000	0.50 N
TK0529C4	3000	200	50	10 N	50 L	1000	70	200 N	50	20 N	200	300	100 N	50	500	1000 G	65.00
TK0530C4	3000	100	100	10 N	50 L	1000	20 L	200 N	70	20 N	200 L	300	100 N	50	500 L	1000 G	1.00 N
TK0540C4	500	200	50	10 N	50 L	50	30	200 N	100	20 N	200	500	100 N	20	500 L	300	0.40 N
TK0541C4	500	700	300	10 N	50 L	500	200	200 N	20	20 N	300	300	100 N	200	500	300	0.40 N
TK0542C4	700	300	300	10 N	50 L	200	30	200 N	50	20 N	200	500	100 N	50	500	200	0.40 N
TK0543C4	700	200	300	10 N	50 L	200	20	200 N	100	20 N	200	500	100 N	100	500	200	0.20 N
TK0544C4	700	500	300	10 N	50 L	300	100	200 N	50	20 N	300	500	100 N	70	700	500	0.25 N
TK0545C4	150	50	50	10 N	50 L	20	20 N	200 N	50	20 N	200	300	100 N	50	500 L	500	0.00 B
TK0546C4	500	700	50	20	50 L	300	500	200 N	30	20 N	300	300	100 N	50	1000	700	0.20 N
TK0547C4	200	150	50	10 N	50 L	50	70	200 N	30	20 N	200	200	100 N	20	500 L	200	0.10 N
TK0548C4	200	100	50	10 N	50 L	50	20	200 N	50	20 N	200	200	100 N	200	500 L	500	0.20 N
TK0549C4	200	200	50	10 N	50 L	200	20 L	200 N	30	20 N	200 L	300	200	50	700	200	0.10
TK0550C4	200	200	100	10 N	50 L	200	20 L	200 N	70	20 N	200	300	100 N	70	500	1000 G	0.50
TK0551C4	150	10	50	10 N	50 L	20	20 L	200 N	100	20 N	200	300	100 N	70	500 L	1000 G	0.10 N
TK0552C4	500	10	100	10 N	50 L	20	20 L	200 N	100	20 N	200	500	100 N	70	500 L	1000 G	0.15
TK0553C4	200	500	70	10 N	50 L	300	50	200 N	30	20 N	200	300	100 N	70	1000	700	0.10 N
TK0554C4	200	20	50	10 N	50 L	20	20 L	200 N	100	20 N	200	300	100 N	70	500 L	700	0.10 N
TK0555C4	1000	500	70	10 N	50 L	150	20	200 N	50	20 N	200	300	1000	70	500 L	1000	2.00
TK0556C4	500	500	100	10 N	50 L	200	20	200 N	30	20 N	200	500	100 N	70	500	700	2.00
TK0557C4	200	50	50	10 N	50 L	100	20 N	200 N	30	20 N	300	500	100 N	70	500 L	200	0.20 N
TK0558C4	700	200	50	10 N	50 L	200	50	200 N	30	20 N	200 L	500	100 N	70	500 L	500	0.20 N
TK0560C4	700	200	700	10 N	50 L	100	20 L	200 N	100 G	20 N	200 L	500	100 N	200	500	1000 G	0.10 N
TK0561C4	700	150	100	10 N	50 L	70	20 L	200 N	70	20 N	200 L	200	100 N	50	500	1000 G	12.00
TK0562C4	50	100	1000 G	10 N	50 L	100	50	200 N	20	70	200 L	50	100 L	2000 G	500 N	1000 G	0.30 N
TK0563C4	150	500	200	10	50 L	200	50	200 N	20	20 N	500	200	100 N	100	500	150	0.13 N
TK0564C4	150	500	200	10 N	50 L	150	50	200 N	20	20 N	700	300	100 N	20	500	150	0.20 N
TK0565C4	70	50	50	10 N	50 L	10	20 L	200 N	10 N	20 N	1500	50	100 N	20 L	500 L	20	0.10 N
TK0566C4	500	100	1000	10 N	50 L	200	20	200 N	70	20 N	200	500	100 L	1000	500	1000 G	0.10 N

## BULK HEAVY-MINERAL CONCENTRATES --continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
TK0567C4	62.4819	152.8653	10	3.0	7.0	0.5	2000	1.0 N	500 N	20 N	100	1500	2 L	20 N	50 N	20
TK0568C4	62.4844	152.8419	20	7.0	7.0	0.7	2000	1.0 N	500 N	20 N	150	200	2 L	20 N	50 N	50
TK0569C4	62.4633	152.8200	15	2.0	2.0	1.0 G	20 N	1.0 L	10000	20 N	2000 G	100	70	20	50 N	10
TK0570C4	62.4503	152.7972	20	1.5	0.7	1.0 G	5000	5.0	700	20 N	2000 G	300	10	20	50 N	10
TK0571C4	62.4506	152.8933	10	2.0	0.5	0.5	5000 G	1.0 N	500 N	20 N	100	1000	2	20 N	50 N	20
TK0572C4	62.3953	152.8661	10	2.0	0.5	0.7	1000	1.0 N	500 N	20 N	700	1500	3	20 N	50 N	15
TK0573C4	62.3908	152.8708	10	2.0	0.5	1.0	2000	1.0 N	500 N	20 N	150	1500	3	20 N	50 N	15
TK0574C4	62.370C	152.9250	10	2.0	0.3	0.7	3000	1.0 N	500 N	20 N	50	1500	2	20 N	50 N	15
TK0575C4	62.3089	152.5733	10	7.0	7.0	0.3	1500	1.0 N	500 N	20 N	20	200	2	20 N	50 N	100
TK0576C4	62.3133	152.6039	15	5.0	5.0	0.5	5000 G	1.0 N	500 N	20 N	50	1500	2	20 N	50 N	30
TK0577C4	62.3242	152.5897	10	3.0	2.0	0.7	1500	1.0 N	500 N	20 N	100	2000	2	20 N	50 N	20
TK0578C4	62.3833	152.5883	20 G	1.0	0.5	0.7	5000 G	1.0 N	500 N	20 N	50	2000	3	20 N	50 N	100
TK0579C4	62.2661	152.5339	15	2.0	0.7	0.7	5000	1.0 N	500 N	20 N	100	2000	2 L	20 N	50 N	15
TK0580C4	62.2975	152.4811	20 G	2.0	0.5	0.7	5000 G	1.0	500 N	20 N	50	2000	3	20 N	50 N	150
TK0581C4	62.2511	152.4258	20 G	2.0	1.0	1.0	5000 G	1.0 N	500 N	20 N	50	3000	2	20 N	50 N	150
TK0583C4	62.4369	152.0569	10	3.0	0.7	0.5	3000	1.0 N	500 N	20 N	300	1000	2	20 N	50 N	15
TK0584C4	62.4567	152.0744	20	3.0	3.0	0.7	5000 G	2.0	500 N	20 N	50	1000	2 L	20 N	50 N	50
TK0585C4	62.4772	152.1586	15	3.0	0.7	1.0	5000	1.5	1000	20 N	100	1000	2	20 N	50 N	100
TK0586C4	62.4250	152.0875	15	7.0	7.0	0.5	5000	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	70
TK0587C4	62.4689	152.2408	20	3.0	2.0	0.7	5000	2.0	2000	20 N	50	700	2	20 N	50 N	70
TK0588C4	62.4836	152.2436	20	7.0	10.0	0.5	5000	3.0	500 N	20 N	50	300	2	20 N	50 N	100
TK0589C4	62.5108	152.1964	15	7.0	15.0	0.3	2000	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	70
TK0590C4	62.4903	152.2622	15	10.0	10.0	0.5	5000	1.0 N	500 N	20 N	50	200	2	20 N	50 N	100
TK0591C4	62.5167	152.2469	15	10.0	10.0	0.3	5000	1.0 N	7000	20 N	70	200	2	20 N	50 N	100
TK0592C4	62.3547	152.0419	15	10.0	7.0	1.0	5000	1.0 N	500 N	20 N	70	500	2 L	20 N	50 N	100
TK0593C4	62.3892	152.1161	10	10.0	5.0	0.5	5000	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	15
TK0594C4	62.3856	152.2853	20	3.0	0.5	0.5	5000 G	1.0 N	500 N	20 N	100	1500	2	20 N	50 N	20
TK0595C4	62.3936	152.3333	20	3.0	0.2	1.0 G	5000 G	1.0	500 N	20 N	100	1500	2	20 N	50 N	20
TK0596C4	62.4019	152.3900	20	1.0	1.0	1.0 G	5000 G	1.0 N	500 L	20 N	50	1500	2 L	20 N	50 N	20
TK0597C4	62.4053	152.3989	20	3.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	50	1000	2 L	20 N	50 N	20
TK0601C4	62.4781	152.4872	20	2.0	1.0	1.0 G	20 N	1.0 L	700	20 N	2000 G	200	15	30	50 N	10 L
TK0602C4	62.2853	152.9806	20	3.0	1.5	0.3	5000 G	1.0 N	500 N	20 N	20 L	5000 G	2 L	20 N	50 N	50
TK0604C4	62.5283	152.7972	20	3.0	7.0	1.0	3000	1.0 N	500 N	20 N	200	5000 G	2	20 N	50 N	100
TK0607C4	62.4864	152.3533	10	10.0	7.0	0.5	3000	1.0 N	500 N	20 N	100	200	2	20 N	50 N	50
TK0608C4	62.4425	152.1344	20	3.0	3.0	0.3	5000 G	1.0 N	500 N	20 N	20	1500	2 L	20 N	50 N	20
TK0612C4	62.2231	152.4067	20	10.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	50	700	2 L	20 N	50 N	100
TK0613C4	62.2089	152.3806	20	10.0	7.0	1.0	5000	1.0 N	500 N	20 N	20	500	2 L	20 N	50 N	100
TK0614C4	62.1936	152.3522	15	5.0	3.0	0.7	5000	1.0 N	500 N	20 N	20 L	100	2	20 N	50 N	20
TK0615C4	62.1544	152.3242	20	10.0	7.0	0.7	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	50
TK0616C4	62.1583	152.3644	20	3.0	1.0	0.3	5000 G	1.0 N	500 N	20 N	20 L	200	2 L	20 N	50 N	15
TK0617C4	62.1800	152.3833	20	7.0	7.0	0.7	5000 G	1.0 N	500 N	20 N	50	150	2 L	20 N	50 N	20

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0567C4	500	150	200	10 N	50 L	150	20	200 N 20	20 N	20 N	500	150	100 N	50	700	500	0.20 N
TK0568C4	2000	100	50	10 N	50 L	500	20 L	200 N 100	20 N	20 N	200	300	100 N	20	500 L	150	0.10 N
TK0569C4	50	500	1000 G	10 N	50 L	10	50	200 N 50	700	200 N	200 N 50	50	5000	2000 G	500	1000 G	0.00 B
TK0570C4	20	50	1000 G	10 N	50 L	10	50	200 N 100	200	200 N	200 N 30	30	2000	2000 G	1000	1000 G	0.00 B
TK0571C4	200	150	50	10 N	50 L	150	20	200 N 20	20 N	20 N	200 L 300	300	100 N	20	500	150	0.10
TK0572C4	300	50	100	10 N	50 L	100	20	200 N 30	50	200 L	200 L 300	300	100 N	200	500 L	200	0.10 N
TK0573C4	500	100	50	10 N	50 L	150	50	200 N 30	20 N	200 L	200 L 300	300	100 N	20	500	200	0.10 N
TK0574C4	200	70	70	10 N	50 L	100	30	200 N 30	20 N	200 L	200 L 300	300	100 N	50	500	500	0.10 N
TK0575C4	3000	200	50	10 N	50 L	1500	30	200 N 30	20 N	200 L	200 L 300	300	100 N	20	500 L	1000	0.10 N
TK0576C4	1500	150	50	10 N	50 L	500	30	200 N 50	20 N	200 L	200 L 300	300	100 N	70	500	200	0.10 N
TK0577C4	500	50	100	10 N	50 L	150	20	200 N 20	20 N	200 L	200 L 300	300	100 N	50	500 L	200	0.10 N
TK0578C4	200	500	50	10 N	50 L	300	100	200 N 20	20 N	200 L	200 L 300	300	100 N	100	1000	300	0.10 N
TK0579C4	150	200	100	10 N	50 L	100	20 L	200 N 20	20 N	200 L	200 L 300	300	100 N	70	500 L	1000 G	0.20 N
TK0580C4	700	500	50	10 N	50 L	300	100	200 N 30	20 N	200 L	200 L 300	300	100 N	70	1000	500	0.10 N
TK0581C4	2000	1000	700	10 N	50 L	700	100	200 N 50	20 N	200 L	200 L 300	300	100 N	150	1000	1000 G	0.65
TK0583C4	200	50	200	10 N	50 L	100	20	200 N 30	20 N	200 L	200 L 300	300	100 N	50	500 L	200	0.10
TK0584C4	500	500	100	20	50 L	200	100	200 N 50	20 N	200 L	200 L 300	300	100 N	100	700	500	0.50
TK0585C4	700	700	100	10 N	50 L	150	100	200 N 30	20 N	200 L	200 L 300	300	100 N	100	700	500	22.00
TK0586C4	3000	15	300	10 N	50 L	300	20 L	200 N 70	20 N	200 L	200 L 300	300	100 N	100	500 L	700	0.10 N
TK0587C4	2000	700	300	10 N	50 L	200	100	200 N 30	20 N	200 L	200 L 300	300	100 N	150	500	1000 G	0.25 N
TK0588C4	3000	500	300	10 N	50 L	500	100	200 N 50	20 N	200 L	200 L 300	300	100 N	150	500 L	1000 G	15.00
TK0589C4	2000	30	50	10 N	50 L	300	20 N	200 N 50	0 B	200 L	200 L 300	300	100 N	50	500 L	700	0.10 N
TK0590C4	3000	100	50	10 N	50 L	1000	20 L	200 N 70	20 N	200 L	200 L 300	300	100 N	50	500 L	1000 G	0.20 N
TK0591C4	5000 G	150	50	10 N	50 L	1500	20 L	200 N 70	20 N	200 L	200 L 300	300	100 N	50	500	1000 G	48.00
TK0592C4	700	50	200	10 N	50 L	100	20 L	200 N 100	100	200	200	300	100 N	100	500	1000	0.25 N
TK0593C4	300	50	50	10 N	50 L	30	20 L	200 N 30	20 N	200	200	200	100 N	20	500 L	200	0.20 N
TK0594C4	200	150	150	10 N	50 L	20	50	200 N 30	20 N	200	200	300	100 N	50	500	300	0.20 N
TK0595C4	700	200	70	10 N	50 L	50	70	200 N 30	20 N	200	200	200	100 N	70	500	1000	0.20 N
TK0596C4	500	500	70	10 N	50 L	20	200	200 N 50	20 N	200	200	200	100 N	700	500	500	0.20 N
TK0597C4	1000	150	70	10 N	50 L	20	20 L	200 N 100 G	20 N	200 L	200 L 500	500	100 N	300	500	300	10.00
TK0601C4	100	150	1000	10 N	50 L	10 L	50	200 N 70	1000 G	200 N	200 N 50	50	10000	1500	700	1000 G	0.40 N
TK0602C4	500	200	100	10 N	50 L	200	50	200 N 30	20 N	200	200	200	100 N	70	500	1000 G	2.00 N
TK0604C4	150	500	50	10 N	50 L	20	50	200 N 30	20 N	200	200	500	100 N	50	500 L	200	0.25 N
TK0607C4	3000	100	50	10 N	50 L	1000	20 L	200 N 70	20 N	200	200	300	100 N	50	500 L	500	0.20 N
TK0608C4	700	200	300	10 N	50 L	150	50	200 N 30	20 N	200 L	200 L 200	200	100 N	70	500	500	2.00 N
TK0612C4	1500	200	150	10 L	50 L	200	50	200 N 100	20 N	200	200	300	100 N	70	500	1000 G	0.20 N
TK0613C4	700	150	70	10 N	50 L	150	20 L	200 N 100	20 N	200	200	300	100 N	70	500	1000	0.20 N
TK0614C4	100	20	50	10 N	50 L	20	20 N	200 N 50	20 N	200 L	200 L 500	500	100 N	50	500 L	100	0.20 N
TK0615C4	1000	150	150	10 N	50 L	150	20 L	200 N 100	20 N	200	200	500	100 N	100	500 L	200	0.20 N
TK0616C4	200	100	100	10 N	50 L	30	20 L	200 N 30	20 N	200 N	200 N 300	300	100 L	100	500 L	300	0.20 N
TK0617C4	700	50	150	10 N	50 L	100	20 L	200 N 100 G	20 N	200 L	200 L 500	500	100 N	100	500	700	0.20 N

sample	LATITUDE	LONGITUDE	S-FEX	S-MGZ	S-CAZ	S-TIZ	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
TK0618C4	62.1742	152.3917	20	7.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	50	500	2 L	20 N	50 N	20
TK0619C4	62.1731	152.4269	20	5.0	3.0	1.0	20 N	1.0 N	500 N	20 N	100	300	2 L	20 N	50 N	50
TK0620C4	62.2347	152.2839	20	3.0	1.0	0.7	5000	1.0 N	500 N	20 N	70	1500	2	20 N	50 N	50
TK0621C4	62.2847	152.2789	20	5.0	3.0	1.0	5000	1.0 N	500 N	20 N	100	1500	2	20 N	50 N	100
TK0623C4	62.2767	152.3681	15	3.0	2.0	0.7	5000	1.0 N	500 N	20 N	20	1000	2 L	20 N	50 N	20
TK0624C4	62.2842	152.3608	20	5.0	3.0	1.0	5000	1.0 N	500 N	20 N	100	1500	2	20 N	50 N	50
TK0625C4	62.2994	152.4128	20	3.0	0.7	0.7	5000 G	1.0 N	500 N	20 N	100	2000	2	20 N	50 N	50
TK0626C4	62.3069	152.4081	20 G	2.0	0.5	0.5	5000 G	1.0 N	500 N	20 N	100	1500	2	20 N	50 N	100
TK0627C4	62.2694	152.2378	20	7.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	50	500	2 L	20 N	50 N	50
TK0628C4	62.2086	152.2161	20 G	5.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	1000	2	20 N	50 N	150
TK0629C4	62.1836	152.1728	20 G	3.0	3.0	1.0	5000 G	1.0 N	500 N	20 N	50	1000	2	20 N	50 N	100
TK0630C4	62.1919	152.1961	20 G	7.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	500	2 L	20 N	50 N	100
TK0631C4	62.1419	152.2569	20 G	5.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	20	700	2 L	20 N	50 N	150
TK0632C4	62.1431	152.2958	15	5.0	7.0	0.7	5000 G	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	20
TK0633C4	62.2228	152.2433	20	5.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	700	2	20 N	50 N	150
TK0635C4	62.1169	152.2928	20	10.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	30	200	2 L	20 N	50 N	150
TK0636C4	62.125C	152.1944	20	5.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	700	2	20 N	50 N	150
TK0637C4	62.1381	152.1281	20	5.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	300	2 L	20 N	50 N	100
TK0638C4	62.1169	152.1325	20 G	3.0	3.0	1.0	5000 G	1.0 N	500 N	20 N	50	700	2	20 N	50 N	100
TK0639C4	62.1392	152.0356	20	7.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	70	300	2 L	20 N	50 N	100
TK0640C4	62.0811	152.0150	20	3.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	100	1500	2 L	20 N	50 N	100
TK0641C4	62.0606	152.0403	20	7.0	5.0	1.0	5000 G	1.0 N	500	20 N	100	300	2 L	20 N	50 N	50
TK0642C4	62.0519	152.0558	15	2.0	2.0	0.5	3000	1.0 N	500 N	20 N	20	1500	2 L	20 N	50 N	20
TK0643C4	62.0486	152.0969	15	7.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	70	200	2	20 N	50 N	50
TK0644C4	62.0497	152.1175	20 G	3.0	5.0	1.0	5000 G	1.0 N	500	20 N	100	700	2 L	20 N	50 N	100
TK0645C4	62.0628	152.1156	15	7.0	10.0	1.0	5000 G	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	50
TK0646C4	62.0764	152.1606	20 G	10.0	10.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	150
TK0647C4	62.1194	152.7875	20	7.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	100
TK0648C4	62.1464	152.8592	20	7.0	5.0	1.0	5000	1.0 N	500 N	20 N	100	300	2 L	20 N	50 N	100
TK0649C4	62.1492	152.8739	15	10.0	10.0	1.0	5000	1.0 N	500 N	20 N	100	100	2 L	20 N	50 N	50
TK0651C4	62.1047	152.9678	20 G	10.0	7.0	0.7	5000 G	1.0 N	500 L	20 N	300	1500	2	20 N	50 N	100
TK0652C4	62.095C	152.9747	20	10.0	7.0	0.5	5000	1.0 N	500 N	20 N	100	5000	2	20 N	50 N	50
TK0653C4	62.0856	152.9353	20	7.0	5.0	1.0	5000 G	1.0 N	500	20 N	500	2000	2	20 N	50 N	50
TK0654C4	62.0519	152.9433	20	10.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	700	500	2	20 N	50 N	100
TK0655C4	62.0489	152.9567	20	10.0	10.0	1.0	5000	1.0	500 N	20 N	2000	200	2	20 N	50 N	100
TK0656C4	62.0350	152.9911	20	5.0	2.0	0.5	3000	1.0 N	1000	20 N	200	150	2 L	20 N	50 N	20
TK0657C4	62.0197	152.4078	1	7.0	5.0	0.5	5000 G	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	20
TK0658C4	62.0022	152.3358	20 G	3.0	3.0	1.0	20 N	3.0	1000	20 N	30	700	2	20 N	50 N	70
TK0659C4	62.0106	152.2644	10	5.0	5.0	0.5	5000	1.0 N	500 N	20 N	20 L	100	2 L	20 N	50 N	20
TK0660C4	62.0008	152.1819	20	10.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	50
TK0661C4	62.0008	152.0889	10	3.0	5.0	0.7	3000	1.0 N	500 N	20 N	50	500	2 L	20 N	50 N	20

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0618C4	700	200	150	10 N	50 L	100	20 L	200 N	100	20 N	200 L	500	100 N	100	500 L	1000	0.20 N
TK0619C4	2000	200	300	10 N	50 L	100	20 L	200 N	70	50	200 N	300	100	100	500	1000	0.70 N
TK0620C4	700	200	1000	10 N	50 L	500	50	200 N	30	20 N	200 L	300	100 N	100	700	1000	0.20 N
TK0621C4	700	200	500	10 N	50 L	300	50	200 N	70	20 N	200 L	500	100 N	100	700	1000	0.20 N
TK0623C4	300	300	150	10 N	50 L	200	20 L	200 N	30	20 N	200 L	300	100 N	50	500	500	0.30 N
TK0624C4	700	200	1000	10 N	50 L	300	50	200 N	70	20 N	200	300	100 N	200	700	1000 G	0.20 N
TK0625C4	1000	200	500	10 N	50 L	300	70	200 N	50	20 N	200 L	300	100 N	70	700	1000	0.20 N
TK0626C4	500	200	100	10 N	50 L	300	70	200 N	30	20 N	200 L	300	100 N	50	700	1000	0.40 N
TK0627C4	700	150	1000	10 N	50 L	100	20	200 N	100	20 N	200	500	100 N	150	500 L	300	0.20 N
TK0628C4	700	300	50	20	50 L	300	50	200 N	100	20 N	200	500	100 N	70	700	1000 G	0.40 N
TK0629C4	200	300	300	10 N	50 L	300	70	200 N	100	20 N	200	300	100 N	100	700	1000	0.20 N
TK0630C4	500	200	200	10 N	50 L	200	20	200 N	70	20 N	200	500	100 N	100	500 L	1000 G	0.20 N
TK0631C4	300	300	50	10 N	50 L	300	150	200 N	100	20 N	200	500	100 N	70	500 L	1000 G	225.00
TK0632C4	700	50	50	10 N	50 L	150	20 N	200 N	100	20 N	200 L	300	100 N	70	500 L	200	0.20 N
TK0633C4	700	300	70	10 N	50 L	200	70	200 N	100	20 N	200	300	100 N	70	700	1000 G	0.40 N
TK0635C4	700	100	100	10 N	50 L	200	20 L	200 N	100 G	20 N	200 L	500	100 N	100	500 L	1000 G	0.20 N
TK0636C4	1500	200	200	10 N	50 L	500	70	200 N	100	20 N	200	500	100 N	70	500	1000 G	0.20 N
TK0637C4	200	150	50	10 N	50 L	100	20 L	200 N	100	20 N	200 L	500	100 N	70	500	1000 G	0.40 N
TK0638C4	500	200	100	10 N	50 L	300	70	200 N	70	20 N	200	500	100 N	70	700	1000 G	0.40 N
TK0639C4	2000	50	100	10 N	50 L	50	20	200 N	100	20 N	200	500	100 N	100	500	1000 G	0.40 N
TK0640C4	500	200	50	10 N	50 L	150	30	200 N	70	20 N	200	500	100 N	70	500	1000 G	0.40 N
TK0641C4	150	300	200	10 N	50 L	100	150	200 N	50	20 N	200	300	100 N	70	500	200	0.25 N
TK0642C4	150	300	50	10 N	50 L	200	20 L	200 N	30	20 N	200	200	100 N	50	500	1000	0.70 N
TK0643C4	150	100	50	10 N	50 L	100	20	200 N	100	20 N	200	300	100 N	70	500	1000 G	0.40 N
TK0644C4	3000	300	200	10 N	50 L	200	20	200 N	100	20 N	200	500	100 N	100	500	1000	1.00 N
TK0645C4	1000	20	150	10 N	50 L	10	20 L	200 N	100	20 N	200	300	100 N	100	500 L	1000 G	0.40 N
TK0646C4	200	50	50	10 N	50 L	50	20 L	200 N	100 G	20 N	200	500	100 N	150	500 L	1000	0.20 N
TK0647C4	150	100	150	10 N	50 L	100	20	200 N	100	20 N	200	300	100 N	100	500 L	100	0.20 N
TK0648C4	3000	50	50	10 N	50 L	500	20	200 N	100	20 N	200 L	500	100 N	50	500 L	1000 G	0.20 N
TK0649C4	3000	10	50	10 N	50 L	300	20 L	200 N	100	20 N	200 L	500	100 N	50	500 L	500	0.00 B
TK0651C4	1500	200	50	10 N	50 L	300	200	200 N	70	20 N	200 L	500	100 N	50	500	500	0.40 N
TK0652C4	3000	150	50	10 N	50 L	300	20 L	200 N	50	20 N	200 L	300	100 N	50	500	500	0.40 N
TK0653C4	200	150	50	10 N	50 L	150	50	200 N	50	20 N	200 L	300	100 N	70	500	1000 G	1.40
TK0654C4	500	100	1000 G	10 N	50 L	100	20	200 N	100	20 N	200 L	700	100 N	200	500	1000	0.40
TK0655C4	1500	200	50	10 N	50 L	500	20	200 N	100	20 N	200 L	500	100 N	200	500	1000 G	0.40 N
TK0656C4	300	200	70	10 N	50 L	150	50	200 N	30	20 N	200 L	200	100 N	50	500 L	1000 G	0.30 N
TK0657C4	100	150	50	10 N	50 L	30	50	200 N	30	20 N	200 L	200	100 N	30	500 L	200	0.20 N
TK0658C4	300	500	50	10 N	50 L	150	200	200 N	50	20 N	200	200	100 N	70	700	500	0.50 N
TK0659C4	50	20	50	10 N	50 L	20	20 N	200 N	50	20 N	200 L	200	100 N	50	500 L	200	0.20 N
TK0660C4	500	30	200	10 N	50 L	100	20 L	200 N	100	20 N	200 L	700	100 N	100	500 L	200	0.20 N
TK0661C4	200	50	50	10 N	50 L	50	20 N	200 N	50	20 N	200 L	200	100 N	50	500 L	1000 G	2.00 N



## BULK HEAVY-MINERAL CONCENTRATES--continued

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
TK0662C4	62.0811	152.0150	20 G	5.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	50	1500	2	20 N	50 N	70
TK0663C4	62.1506	152.0053	20 G	5.0	5.0	1.0	5000 G	2.0	2000	20 N	100	700	2 L	20 N	50 N	50
TK0664C4	62.1833	151.9622	20	5.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	70	300	2 L	20 N	50 N	50
TK0665C4	62.1931	151.9403	20 G	3.0	3.0	1.0	5000 G	1.0 N	500 N	20 N	150	1000	2	20 N	50 N	70
TK0666C4	62.2158	152.0125	20 G	7.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	100	1000	2 L	20 N	50 N	70
TK0667C4	62.2039	152.0381	20 G	5.0	1.5	0.7	5000	1.0 N	500 N	20 N	100	1000	2	20 N	50 N	100
TK0668C4	62.2158	152.0722	20 G	7.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	100	1000	2 L	20 N	50 N	100
TK0669C4	62.2119	152.1150	20 G	3.0	1.5	1.0	5000	1.0 N	500 N	20 N	50	1000	2	20 N	50 N	100
TK0670C4	62.2228	152.1433	20 G	5.0	5.0	1.0	5000	1.0 N	500 N	20 N	20	500	2 L	20 N	50 N	100
TK0671C4	62.2400	152.1303	20	2.0	1.0	0.7	3000	1.0 N	500 N	20 N	20	500	2 L	20 N	50 N	20
TK0672C4	62.2400	152.1692	20 G	7.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	70	1000	2 L	20 N	50 N	100
TK0673C4	62.2336	152.1892	20 G	5.0	5.0	1.0	5000	1.0 N	500 N	20 N	70	700	2 L	20 N	50 N	100
TK0675C4	62.2733	152.2067	20	5.0	3.0	1.0	5000	2.0	500 N	20 N	30	700	2	20 N	50 N	70
TK0676C4	62.0453	152.7903	5	3.0	3.0	0.7	3000	1.0 N	500	20 N	20	100	2 L	20 N	50 N	20
TK0677C4	62.0500	152.7797	15	5.0	2.0	0.7	5000 G	1.0 N	500 N	20 N	20 L	300	2 L	20 N	50 N	20
TK0678C4	62.0564	152.7242	20	10.0	7.0	1.0	5000	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	20
TK0679C4	62.0242	152.6864	20	10.0	7.0	1.0	5000	1.0 N	500 N	20 N	50	150	2 L	20 N	50 N	20
TK0680C4	62.0022	152.7558	20	10.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	50
TK0681C4	62.0114	152.8131	20 G	10.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	50	700	2 L	20 N	50 N	70
TK0682C4	62.0083	152.8578	20 G	7.0	7.0	1.0	5000 G	1.0 N	5000	20 N	300	200	2 L	20 L	50 N	200
TK0683C4	62.0136	152.8519	15	5.0	5.0	1.0	5000	1.0 N	500 N	20 N	300	50	2 L	20 N	50 N	20
TK0684C4	62.0300	152.8661	20 G	10.0	10.0	1.0	5000 G	1.0 N	500 N	20 N	1000	100	2	20 N	50 N	70
TK0685C4	62.0083	152.8989	20	10.0	7.0	1.0	5000	1.0 N	500 L	20 N	200	200	2	20 N	50 N	50
TK0686C4	62.0081	152.5575	20 G	10.0	10.0	1.0	5000 G	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	70
TK0687C4	62.2031	152.7875	15	10.0	5.0	1.0	5000	1.0 N	500 N	20 N	500	500	2	20 N	50 N	50
TK0688C4	62.2417	152.8222	20 G	7.0	10.0	1.0	5000	20.0	10000 G	20 N	2000	200	2	20 N	50 N	700
TK0689C4	62.2208	152.7675	10	7.0	7.0	1.0	3000	1.0 N	500 N	20 N	200	200	2	20 N	50 N	50
TK0690C4	62.2358	152.7256	5	10.0	7.0	0.3	3000	1.0 N	500 L	20 N	500	150	2	20 N	50 N	20
TK0691C4	62.2250	152.5383	20	5.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	50	500	2	20 N	50 N	30
TK0692C4	62.1544	152.5419	20	3.0	2.0	0.5	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	30
TK0693C4	62.0981	152.5836	20	2.0	2.0	1.0	5000 G	1.0 N	1000	20 N	20	500	2 L	20 N	50 N	20
TK0694C4	62.1325	152.4792	20 G	10.0	7.0	1.0	5000 G	2.0	10000 G	20 N	50	500	2	20 N	50 N	150
TK0696C4	62.0556	152.4536	20	10.0	7.0	1.0	5000	1.0 N	500 N	20 N	20	150	2 L	20 N	50 N	100
TK0697C4	62.0569	152.4028	20	7.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	20	150	2 L	20 N	50 N	100
TK0698C4	62.3511	152.4389	10	2.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	10
TK0699C4	62.3342	152.3697	20 G	2.0	2.0	1.0	5000	5.0	5000	20 N	100	5000 G	2	20 N	50 N	500
TK0700C4	62.3503	152.3494	20	3.0	1.5	1.0	5000 G	2.0	500 N	20 N	50	1000	2 L	20 N	50 N	50
TK0701C4	62.3239	152.3161	20	2.0	0.3	1.0	5000 G	1.0 N	500 N	20 N	50	1500	2	20 N	50 N	50
TK0702C4	62.3456	152.2850	20	3.0	1.5	0.7	5000 G	1.0 N	500 N	20 N	30	1500	2	20 N	50 N	100
TK0703C4	62.3297	152.2467	20	2.0	0.3	1.0	3000	1.0	500 N	20 N	50	1000	2	20 N	50 N	50
TK0704C4	62.3017	152.1261	20	3.0	2.0	1.0	3000	1.0 L	500 N	20 N	50	700	2 L	20 N	50 N	50

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0662C4	700	500	50	10 N	50 L	200	50	200 N 70	20 N	200	200	300	100 N	50	500	500	0.25 N
TK0663C4	700	300	1000 G	10 N	50 L	200	100	200 N 100	1000	200	200	300	100 N	100	1000	1000 G	0.00 B
TK0664C4	150	100	1000 G	10 N	50 L	150	20	200 N 100	20 N	200	200	300	100 N	150	500	500	0.00 B
TK0665C4	1000	150	300	10 N	50 L	200	100	200 N 100	20 N	200	200	300	100 N	70	700	1000	0.80
TK0666C4	1500	200	1000 G	10 N	50 L	100	50	200 N 100	20 N	200	200	300	100 N	500	500	1000 G	0.40 N
TK0667C4	200	500	500	10 N	50 L	500	50	200 N 50	20 N	200	200	300	100 N	100	500	1000	0.40 N
TK0668C4	1500	200	1000 G	10 N	50 L	500	70	200 N 70	20 N	200	200	300	100 N	200	500	1000 G	0.00 B
TK0669C4	150	200	500	10 N	50 L	500	50	200 N 50	20 N	200	200	300	100 N	100	700	700	0.00 B
TK0670C4	1000	500	100	10 N	50 L	200	20	200 N 100	20 N	200	200	500	100 N	50	500	700	1.00
TK0671C4	500	200	200	10 N	50 L	200	20	200 N 50	20 N	200	200	200	100 N	70	500	500	0.30 N
TK0672C4	1500	200	150	10 N	50 L	200	50	200 N 100	20 N	200	200	500	100 N	100	500	1000 G	0.25 N
TK0673C4	200	200	300	10 N	50 L	200	50	200 N 50	20 N	200	200	300	100 N	50	500	500	0.20 N
TK0675C4	300	500	300	10 L	50 L	150	50	200 N 50	20 N	200	200	300	100 N	100	500	700	0.10 N
TK0676C4	100	10	100	10 N	50 L	15	20	200 N 30	20 N	200	200	200	100 N	20	500	100	0.20 N
TK0677C4	150	100	50	10 N	50 L	100	20	200 N 50	20 N	200	200	300	100 N	50	500	150	0.30 N
TK0678C4	500	50	50	10 N	50 L	15	20	200 N 100	20 N	200	200	500	100 N	50	500	1000 G	0.07 N
TK0679C4	150	20	50	10 N	50 L	20	20	200 N 100	20 N	200	200	300	100 N	30	500	1000	0.08 N
TK0680C4	200	50	50	10 N	50 L	100	20	200 N 100	20 N	200	200	700	100 N	70	500	1000 G	0.07 N
TK0681C4	200	150	50	10 N	50 L	200	150	200 N 100	20 N	200	200	700	100 N	70	500	1000 G	0.10 N
TK0682C4	700	200	1000 G	10 N	50 L	700	30	200 N 100	50	200	200	500	200	200	500	1000 G	10.00
TK0683C4	150	20	200	10 N	50 L	20	20	200 N 100	20 N	200	200	300	100 N	70	500	1000	0.30 N
TK0684C4	500	150	200	10 N	50 L	100	50	200 N 100	20 L	200	200	700	100 N	100	500	500	0.13 N
TK0685C4	500	100	200	10 N	50 L	150	20	200 N 100	20 N	200	200	500	100 N	100	500	1000 G	0.13 N
TK0686C4	300	30	50	10 N	50 L	100	20	200 N 100	20 N	200	200	700	100 N	100	500	1000	0.07 N
TK0687C4	1500	30	150	10 N	50 L	500	20	200 N 70	20 N	200	200	500	100 N	70	500	1000 G	3.50
TK0688C4	2000	2000	300	20	50 L	2000	200	200 N 100 G	20 N	200	200	300	100	300	500	1000 G	0.80
TK0689C4	2000	30	100	20	50 L	200	20	200 N 100	20 N	200	200	300	100	100	500	1000 G	0.80
TK0690C4	1000	50	100	10 N	50 L	150	50	200 N 30	20 N	200	200	150	100 N	50	500	1000	0.10 N
TK0691C4	2000	150	50	10 N	50 L	200	70	200 N 70	20 N	200	200	300	100 N	100	500	1000 G	0.70 N
TK0692C4	700	200	50	10 N	50 L	200	50	200 N 30	20 N	200	200	200	100 N	30	700	1000 G	0.20 N
TK0693C4	500	200	150	10 N	50 L	100	20	200 N 30	20 N	200	200	200	100 L	50	500	1000 G	0.80
TK0694C4	1500	1000	500	10 N	50 L	300	30	200 N 100	20 N	200	200	300	5000	200	500	1000 G	47.00
TK0696C4	300	100	50	10 N	50 L	100	20	200 N 100	20 N	300	300	500	100 N	70	500	200	3.05 N
TK0697C4	200	100	100	10 N	50 L	100	20	200 N 100	20 N	200	200	500	100	1000	500	500	1.00
TK0698C4	300	100	100	10 N	50 L	50	20	200 N 70	20 N	200	200	200	100 N	200	500	1000 G	0.10 N
TK0699C4	200	2000	300	10 N	50 L	1000	500	200 N 70	20 N	200	200	300	100 N	100	500	1000 G	0.10 N
TK0700C4	500	200	100	10 N	50 L	200	70	200 N 50	20 N	200	200	300	100 N	70	700	1000 G	3.10 N
TK0701C4	200	200	1000	10 N	50 L	200	70	200 N 20	20 N	200	200	200	100 N	70	700	700	0.50 N
TK0702C4	200	200	200	10 N	50 L	300	50	200 N 50	20 N	200	200	200	100 N	50	700	500	0.10 N
TK0703C4	150	200	1000	10 N	50 L	300	150	200 N 20	20 N	200	200	200	100 N	100	700	500	0.20 N
TK0704C4	300	150	1000 G	10 N	50 L	200	50	200 N 50	70	200	200	300	100 N	100	500	1000 G	0.20 N

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CC
TK0705C4	62.2956	152.1175	20	3.0	2.0	1.0	3000	1.0 N	500 N	20 N	50	700	2 L	20 N	50 N	100
TK0706C4	62.3569	152.1897	10	5.0	5.0	1.0	5000	1.0 N	500 N	20 N	20 L	100	2 L	20 N	50 N	20
TK0707C4	62.3494	152.1331	20	3.0	3.0	1.0	5000 G	1.0 N	500 N	20 N	50	700	2 L	20 N	50 N	50
TK0708C4	62.2908	152.0611	15	5.0	2.0	0.7	5000 G	1.0 N	500 N	20 N	20 L	1000	2 L	20 N	50 N	20
TK0709C4	62.2731	152.0058	10	5.0	5.0	1.0	3000	1.0 N	500 N	20 N	20 L	100	2 L	20 N	50 N	20
TK0710C4	62.2672	151.8689	15	3.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	300	300	2 L	20 N	50 N	50
TK0711C4	62.2464	151.9675	20	7.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	50
TK0712C4	62.2422	151.8772	20 G	3.0	3.0	1.0	5000 G	1.0 L	500 N	20 N	300	2000	2 L	20 N	50 N	70
TK0713C4	62.1956	151.8425	15	7.0	7.0	1.0	5000	1.0 N	500 N	20 N	30	200	2 L	20 N	50 N	30
TK0714C4	62.1542	151.7522	20	7.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	50	150	2 L	20 N	50 N	50
TK0716C4	62.5333	151.6478	20 G	3.0	1.0	1.0	5000 G	1.0 L	500 N	20 N	50	1000	2 L	20 N	50 N	150
TK0717C4	62.5692	151.6614	15	2.0	0.2	1.0	5000 G	1.0 N	500 N	20 N	50	500	2 L	20 N	50 N	15
TK0718C4	62.5794	151.6714	20	1.5	0.5	1.0	5000 G	10.0	500 N	20 N	50	2000	2 L	20 N	50 N	70
TK0719C4	62.5842	151.6567	20	0.7	0.2	1.0	5000 G	1.0 N	500 N	20 N	20	300	2 L	20 N	50 N	20
TK0720C4	62.5633	151.7453	20 G	3.0	1.0	1.0	5000 G	5.0	500 L	20 N	50	1500	2	20 N	50 N	200
TK0721C4	62.5589	151.7736	20 G	5.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	50	1500	2 L	20 N	50 N	150
TK0722C4	62.5511	151.8414	15	3.0	2.0	1.0	3000	1.0 N	500 N	20 N	50	500	2 L	20 N	50 N	50
TK0723C4	62.5322	151.8275	20	2.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	50	1000	2 L	20 N	50 N	100
TK0724C4	62.5278	151.6922	15	1.0	1.5	1.0	5000	1.0 N	500 N	20 N	50	500	2 L	20 N	50 N	30
TK0725C4	62.5336	151.7008	15	1.0	1.0	1.0	5000	1.0 N	500 N	20 N	200	1000	2 L	20 N	50 N	50
TK0726C4	62.5172	151.5900	15	2.0	1.0	1.0	5000	1.0 N	500 N	20 N	50	500	2 L	20 N	50 N	20
TK0727C4	62.5217	151.5972	15	1.0	0.5	1.0	5000 G	1.0 N	500 N	20 N	50	700	2 L	20 N	50 N	20
TK0728C4	62.8831	150.3786	20	1.0	1.5	1.0	5000	1.0 N	500	20 N	20 L	200	2 L	20 N	50 N	20
TK0729C4	62.7958	150.5036	20	2.0	1.5	1.0	5000 G	1.0 N	5000	20 N	100	700	2 L	20 N	50 N	50
TK0731C4	62.6722	151.0792	20 G	5.0	10.0	1.0	5000 G	1.0 N	500 L	20 N	2000 G	300	10	20 N	50 N	100
TK0732C4	62.5436	151.3892	15	2.0	0.3	1.0	5000 G	1.0 N	500 N	20 N	2000 G	500	2 L	20 N	50 N	15
TK0735C4	62.6225	152.0706	10	7.0	7.0	0.3	2000	1.0 N	500	20 N	20	3000	2 L	20 N	50 N	50
TK0741C4	62.6675	152.0456	10	5.0	7.0	1.0	3000	1.0 N	500 N	20 N	20	5000	2 L	20 N	50 N	20
TK0745C4	62.4081	151.7736	15	3.0	2.0	0.7	5000	1.0 N	500 N	20 N	50	1000	2 L	20 N	50 N	30
TK0746C4	62.4747	151.8061	20	5.0	3.0	0.7	5000	1.0 N	500 N	20 N	200	700	2 L	20 N	50 N	50
TK0747C4	62.5269	151.9742	20	5.0	5.0	1.0	5000 G	1.0 N	5000	20 N	700	500	2 L	20 N	50 N	50
TK0748C4	62.5617	151.9931	15	5.0	7.0	1.0	5000 G	1.0 N	5000	20 N	100	500	2 L	20 N	50 N	50
TK0749C4	62.5444	152.0336	15	3.0	5.0	1.0	5000 G	1.0 N	7000	20 N	100	700	2 L	20 N	50 N	50
TK0750C4	62.5797	152.0256	20	1.5	1.0	0.7	5000 G	1.0 L	5000	20 N	100	3000	2	20 N	50 N	200
TK0751C4	62.5786	152.0575	20	5.0	7.0	1.0	5000 G	1.0 N	10000	20 N	100	200	2 L	20 N	50 N	50
TK0752C4	62.5800	152.1019	20	7.0	7.0	1.0	5000 G	1.0 N	500	20 N	100	500	2 L	20 N	50 N	50
TK0753C4	62.6186	152.0694	10	2.0	7.0	0.3	1500	1.0 N	500 N	20 N	30	5000 G	2 L	20 N	50 N	20
TK0754C4	62.6219	152.0706	10	10.0	10.0	0.2	2000	1.0 N	1000	20 N	20 L	3000	2 L	20 N	50 N	50
TK0755C4	62.6139	151.9197	20	2.0	2.0	1.0	3000	2.0	500	20 N	50	2000	2 L	20 N	50 N	50
TK0756C4	62.6433	151.9067	20 G	5.0	5.0	1.0	2000	2.0	1500	20 N	50	5000	2 L	20 N	50 N	200
TK0757C4	62.6508	151.8819	20 G	5.0	5.0	1.0	1500	2.0	1000	20 N	50	3000	2 L	20 N	50 N	200

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0705C4	300	200	1000 G	10 N	50 L	200	50	200 N 30	20 N	200 L 200	200 L 200	100 N 300	100 N 300	500 L 1000 G	500 L 1000 G	16.00	16.00
TK0706C4	100	10	100	10 N	50 L	15	20 N 200 N 70	20 N 200 N 70	20 N 200 L 300	20 N 200 L 300	100 N 30	500 L 1000 G	100 N 30	500 L 1000 G	500 L 1000 G	0.70 N	0.70 N
TK0707C4	200	150	100	10 N	50 L	150	50	200 N 50	20 N 200 L 200	20 N 200 L 200	100 N 100	500 200	100 N 100	500 200	500 200	2.00	2.00
TK0708C4	300	100	500	10 N	50 L	50	20 L 200 N 50	20 N 200 N 50	20 N 200 L 200	20 N 200 L 200	100 N 100	500 500	100 N 100	500 500	500 500	0.30 N	0.30 N
TK0709C4	50	10	200	10 N	50 L	10 L	20 L 200 N 50	20 N 200 N 50	20 N 200 L 300	20 N 200 L 300	100 N 70	500 N 1000 G	100 N 70	500 N 1000 G	500 N 1000 G	0.70 N	0.70 N
TK0710C4	1500	100	1000	10 N	50 L	200	20	200 N 70	20 N 200 L 300	20 N 200 L 300	100 N 200	500 L 1000 G	100 N 200	500 L 1000 G	500 L 1000 G	0.40 N	0.40 N
TK0711C4	700	10	500	10 N	50 L	50	20 L 200 N 100	20 N 200 L 300	20 N 200 L 300	20 N 200 L 300	100 N 100	500 N 1000 G	100 N 100	500 N 1000 G	500 N 1000 G	0.70 N	0.70 N
TK0712C4	2000	300	300	10 N	50 L	300	70	200 N 100	200 L 700	200 L 700	100 N 150	500 1000 G	100 N 150	500 1000 G	500 1000 G	15.00	15.00
TK0713C4	300	20	300	10 N	50 L	20	20 N 200 N 70	20 N 200 L 300	20 N 200 L 300	20 N 200 L 300	100 N 100	500 L 1000 G	100 N 100	500 L 1000 G	500 L 1000 G	0.60	0.60
TK0714C4	1500	50	300	10 N	50 L	50	20 N 200 N 50	200 L 200 N 300	200 L 300	200 N 300	100 N 70	500 1000 G	100 N 70	500 1000 G	500 1000 G	75.00	75.00
TK0716C4	300	700	1000 G	10 N	50 L	500	200	200 N 100	20 N 200 L 300	20 N 200 L 300	5000 300	500 N 1000 G	5000 300	500 N 1000 G	500 N 1000 G	1.50	1.50
TK0717C4	100	200	50 N	10 N	50 L	30	50	200 N 50	20 N 200 N 70	20 N 200 N 70	100 N 50	700 500	100 N 50	700 500	700 500	25.00	25.00
TK0718C4	1500	500	500	10 N	50 L	500	100	200 N 30	20 N 200 N 200	20 N 200 N 200	100 N 200	1000 1000	100 N 200	1000 1000	1000 1000	28.00	28.00
TK0719C4	100	200	50	10 N	50 L	50	20 L 200 N 50	20 N 200 L 100	20 N 200 L 100	20 N 200 L 100	150 150	500 N 500	150 150	500 N 500	500 N 500	1.00	1.00
TK0720C4	700	300	700	10 N	50 L	1000	200	200 N 30	20 N 200 L 300	20 N 200 L 300	100 N 300	1000 1000 G	100 N 300	1000 1000 G	1000 1000 G	6.00	6.00
TK0721C4	3000	200	1000 G	10 N	50 L	1000	50	200 N 100	20 N 200 L 700	20 N 200 L 700	100 N 500	500 L 1000 G	100 N 500	500 L 1000 G	500 L 1000 G	208.00	208.00
TK0722C4	3000	100	1000 G	10 N	50 L	100	20 L 200 N 30	20 N 200 L 200	20 N 200 L 200	20 N 200 L 200	700 700	500 L 1000 G	700 700	500 L 1000 G	500 L 1000 G	20.00	20.00
TK0723C4	1000	200	1000 G	10 N	50 L	300	50	200 N 20	20 N 200	20 N 200	100 N 700	500 L 1000 G	100 N 700	500 L 1000 G	500 L 1000 G	0.00 B	0.00 B
TK0724C4	500	200	1000 G	10 N	50 L	200	20 L 200 N 20	20 N 200 L 200	20 N 200 L 200	20 N 200 L 200	100 L 1000	500 N 1000 G	100 L 1000	500 N 1000 G	500 N 1000 G	13.00	13.00
TK0725C4	700	200	1000 G	10 N	50 L	200	30	200 N 20	20 N 200 L 200	20 N 200 L 200	100 L 500	500 L 1000 G	100 L 500	500 L 1000 G	500 L 1000 G	0.40 N	0.40 N
TK0726C4	100	150	1000	10 N	50 L	150	30	200 N 30	20 N 200 L 200	20 N 200 L 200	100 N 200	500 L 500	100 N 200	500 L 500	500 L 500	2.00 N	2.00 N
TK0727C4	100	200	500	10 N	50 L	50	30	200 N 50	20 N 200	20 N 200	100 L 100	500 L 300	100 L 100	500 L 300	500 L 300	0.70 N	0.70 N
TK0728C4	200	300	1000 G	10 N	50 L	50	50	200 N 100	0 B 200 L 300	0 B 200 L 300	100 N 700	500 1000 G	100 N 700	500 1000 G	500 1000 G	0.10 N	0.10 N
TK0729C4	5000 G	300	1000 G	10 N	50 L	100	100	200 N 50	0 B 200 L 150	0 B 200 L 150	200 700	500 1000 G	200 700	500 1000 G	500 1000 G	22.00	22.00
TK0731C4	100	200	1000	10 N	50 L	150	50	200 N 100	100 200 N 150	100 200 N 150	100 N 200	1000 1000 G	100 N 200	1000 1000 G	1000 1000 G	0.40 N	0.40 N
TK0732C4	150	70	1000 G	10 N	50 L	20	20 L 200 N 50	20 N 200 L 300	0 B 200 L 300	0 B 200 L 300	100 N 1500	500 L 1000 G	100 N 1500	500 L 1000 G	500 L 1000 G	0.10 N	0.10 N
TK0735C4	1500	50	50	10 N	50 L	500	20 L 200 N 30	20 N 200 L 100	20 N 200 L 100	20 N 200 L 100	100 N 20 L	500 N 50	100 N 20	500 N 50	500 N 50	0.05	0.05
TK0741C4	700	100	50	10 L	50 L	150	20 L 200 N 50	20 N 200	20 N 200	20 N 200	100 N 20	500 L 100	100 N 20	500 L 100	500 L 100	2.00 N	2.00 N
TK0745C4	200	100	1000 G	10 N	50 L	200	20	200 N 30	20 N 200	20 N 200	100 N 700	500 500	100 N 700	500 500	500 500	0.00 B	0.00 B
TK0746C4	700	100	100	10 N	50 L	100	50	200 N 50	0 B 200 L 300	0 B 200 L 300	100 N 70	500 1000 G	100 N 70	500 1000 G	500 1000 G	0.50 N	0.50 N
TK0747C4	700	150	1000	10 N	50 L	100	20 L 200 N 100 G	20 N 200 L 300	0 B 200 L 300	0 B 200 L 300	500 200	500 L 1000 G	500 200	500 L 1000 G	500 L 1000 G	5.50	5.50
TK0748C4	700	150	1000 G	10 N	50 L	100	20	200 N 100	0 B 200 L 300	0 B 200 L 300	200 200	500 L 700	200 200	500 L 700	500 L 700	7.50	7.50
TK0749C4	3000	200	1000 G	10 N	50 L	100	20	200 N 100	0 B 200 L 200	0 B 200 L 200	200 200	500 1000 G	200 200	500 1000 G	500 1000 G	6.00	6.00
TK0750C4	200	200	100	10 N	50 L	300	70	200 N 20	0 B 200 L 300	0 B 200 L 300	100 N 50	1000 300	100 N 50	1000 300	1000 300	0.10	0.10
TK0751C4	700	150	1000	10 N	50 L	200	20 L 200 N 100	20 N 200 N 300	0 B 200 N 300	0 B 200 N 300	300 300	500 L 1000 G	200 300	500 L 1000 G	500 L 1000 G	165.00	165.00
TK0752C4	700	100	1000	10 N	50 L	100	20 L 200 N 100	20 N 200 N 300	0 B 200 N 300	0 B 200 N 300	200 200	500 L 1000 G	200 200	500 L 1000 G	500 L 1000 G	7.00	7.00
TK0753C4	100	100	100	20	50 L	70	20 L 200 N 20	20 N 700	20 N 700	150 150	100 N 100	500 L 300	100 N 100	500 L 300	500 L 300	0.50 N	0.50 N
TK0754C4	3000	100	50 L	10 N	50 L	700	20 N 200 N 30	0 B 200 L 200	0 B 200 L 200	0 B 200 L 200	100 N 20	500 N 700	100 N 20	500 N 700	500 N 700	0.55	0.55
TK0755C4	150	200	500	20	50 L	200	50	200 N 20	20 N 200	20 N 200	100 N 200	1000 200	100 N 200	1000 200	1000 200	0.00 B	0.00 B
TK0756C4	300	700	100	10 L	50 L	500	200	200 N 30	0 B 200 L 200	0 B 200 L 200	100 N 70	500 300	100 N 70	500 300	500 300	0.20 N	0.20 N
TK0757C4	5000 G	200	150	10 N	50 L	700	200	200 N 20	0 B 200 L 200	0 B 200 L 200	100 N 100	1000 500	100 N 100	1000 500	1000 500	0.40	0.40

sample	LATITUDE	LONGITUDE	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
TK0760C4	62.6761	151.8267	20	1.5	1.0	0.5	1500	2.0	500 N	20 N	200	3000	2	20 N	50 N	100
TK0762C4	62.6831	151.8069	15	10.0	1.0	0.5	1500	1.0 N	500 N	20 N	50	300	2 L	20 N	50 N	100
TK0763C4	62.7056	151.7525	5	5.0	7.0	0.7	3000	1.0 N	500 N	20 N	30	200	2 L	20 N	50 N	20
TK0770C4	62.7494	151.6375	20	3.0	7.0	0.7	2000	1.0 N	2000	20 N	200	1500	2	20 N	50 N	30
TK0771C4	62.7078	151.6150	10	2.0	1.0	1.0 G	5000	1.0 N	500 N	20 N	150	1000	2 L	20 N	50 N	20
TK0772C4	62.7533	151.5706	15	5.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	100	2 L	20 N	50 N	30
TK0774C4	62.7831	151.5072	20 G	7.0	10.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	100
TK0776C4	62.8022	151.4811	10	7.0	10.0	1.0 G	3000	1.0 N	500 N	20 N	70	700	2 L	20 N	50 N	30
TK0781C4	62.8336	151.3753	20	3.0	3.0	0.5	3000	2.0	2000	20 N	70	1000	2 L	20 N	50 N	50
TK0782C4	62.8517	151.3392	20 G	3.0	0.7	1.0 G	5000	10.0	2000	20 N	100	1500	2	20 N	50 N	200
TK0783C4	62.7972	151.4042	20	3.0	1.5	1.0 G	5000 G	1.0 N	500 N	20 N	200	1500	2	20 N	50 N	30
TK0785C4	62.7633	151.4439	20 G	2.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	300	1000	2 L	20 N	50 N	30
TK0786C4	62.7292	151.5097	20	2.0	1.0	0.2	5000 G	1.0 N	500 N	20 N	70	500	2 L	20 N	50 N	20
TK0787C4	62.7125	151.5272	15	1.0	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	150	300	2	20 N	50 N	10
TK0788C4	62.6911	151.5444	15	1.5	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	70	500	2 L	20 N	50 N	15
TK0789C4	62.6672	151.5742	15	1.5	0.7	1.0 G	5000 G	1.0 N	500 N	20 N	1000	700	2 L	20 N	50 N	20
TK0790C4	62.6672	151.5294	10	1.0	0.3	1.0 G	5000 G	1.0 N	500 N	20 N	20	500	2 L	20 N	50 N	20
TK0791C4	62.6533	151.6372	10	1.0	1.5	1.0 G	5000 G	1.0 N	500 N	20 N	150	300	2 L	20 N	50 N	15
TK0792C4	62.6572	151.7422	20	2.0	1.5	1.0 G	5000 G	1.0 N	500 N	20 N	100	1000	2 L	20 N	50 N	20
TK0793C4	62.6275	151.7247	20	3.0	0.5	1.0 G	5000 G	1.0 N	500 N	20 N	50	1500	2 L	20 N	50 N	50
TK0794C4	62.6350	151.7136	20	1.5	0.5	1.0 G	5000 G	1.0 N	500 N	20 N	50	1000	2 L	20 N	50 N	20
TK0795C4	62.6208	151.7424	15	1.5	0.7	1.0 G	5000 G	1.0 N	500 N	20 N	50	1000	2 L	20 N	50 N	50
TK0796C4	62.6306	151.7978	20 G	2.0	1.5	1.0 G	5000 G	2.0	500 N	20 N	150	3000	2	20 N	50 N	150
TK0797C4	62.6006	151.8086	20 G	7.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	100	700	2 L	20 N	50 N	70
TK0798C4	62.5817	151.8392	20 G	7.0	5.0	1.0 G	5000	1.0 N	500 N	20 N	100	500	2 L	20 N	50 N	50
TK0799C4	62.6186	151.3703	20 G	3.0	7.0	1.0 G	5000 G	1.0 N	1000	20 N	2000 G	200	2	30	50 N	50
TK0800C4	62.6467	151.3997	20	1.5	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	2000	500	2 L	20 N	50 N	15
TK0801C4	62.6517	151.4233	20	1.0	1.5	1.0	5000 G	1.0 N	500 N	20 N	2000	200	2 L	20 N	50 N	15
TK0803C4	62.7081	151.3922	20	3.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	700	2000	2 L	20 N	50 N	20
TK0804C4	62.7250	151.3733	20	2.0	1.5	1.0	5000 G	1.0 N	500 N	20 N	2000	200	5	20 N	50 N	15
TK0805C4	62.7453	151.3497	15	3.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	2000 G	300	100	20 N	50 N	15
TK0806C4	62.6450	150.8981	15	3.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	20	1500	2 L	20 N	50 N	50
TK0807C4	62.6189	150.9689	10	3.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	200	2000	2 L	20 N	50 N	50
TK0808C4	62.6278	150.9822	20 G	3.0	2.0	1.0 G	5000 G	1.0 N	500 L	20 N	200	1000	2	20 N	50 N	50
TK0809C4	62.6350	150.9092	20 G	5.0	5.0	1.0	5000 G	2.0	500	20 N	70	1500	2	20 N	50 N	50
TK0811C4	62.6586	150.8828	20 G	5.0	2.0	1.0 G	5000	1.0 N	500 N	20 N	70	700	2 L	20 N	50 N	70
TK0813C4	62.7189	151.0167	10	0.7	5.0	1.0 G	5000 G	1.0 N	1000	20 N	2000	200	2	20 N	50 N	50
TK0814C4	62.7136	150.9944	20	1.0	5.0	0.5	5000 G	1.0 N	5000	20 N	150	700	2	20 N	50 N	50
TK0816C4	62.6967	150.8611	20	3.0	5.0	1.0 G	5000 G	50.0	10000 G	20 N	100	700	2 L	200	50 N	50
TK0818C4	62.7378	150.8253	20 G	3.0	1.0	1.0 G	5000 G	20.0	10000	20 N	150	1500	2	30	50 N	100
TK0819C4	62.7708	150.8383	15	2.0	3.0	0.5	5000 G	1.0 N	500 N	20 N	20	500	2	20 N	50 N	15

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0760C4	200	300	70	20	50 L	300	100	200 N 20	20	20 N	200 L 300	100 N	100 N	50	1000	200	0.10
TK0762C4	3000	20	100	10 N	50 L	1500	20 L	200 N 10	20 N	20 N	200 L 100	100 N	100 N	50	500	150	0.10 N
TK0763C4	700	50	50	10 N	50 L	150	20 L	200 N 50	20 N	20 N	200 L 200	100 N	100 N	30	500 L	150	0.10 N
TK0770C4	200	150	200	20	50 L	150	50	200 N 30	20 N	20 N	200 L 300	100 N	100 N	100	1000	500	0.10 L
TK0771C4	150	150	70	10 N	50 L	200	20	200 N 30	20 N	20 N	200 L 200	100 N	100 N	100	500	200	0.30 N
TK0772C4	150	100	1000 G	10 N	50 L	10	20 L	200 N 100	20 N	20 N	200 L 200	100 N	100 N	500	500 L	1000 G	0.10 N
TK0774C4	2000	150	1000 G	10 N	50 L	1000	50	200 N 100	20 N	20 N	200 L 500	100 N	100 N	300	500 L	1000 G	0.30 N
TK0776C4	700	50	50	10 N	50 L	100	20	200 N 50	150	20 N	200 L 300	100 N	100 N	30	500 L	200	0.10 N
TK0781C4	150	200	300	10 N	50 L	150	100	200 N 20	20 N	20 N	200 L 200	100 N	100 N	300	500	200	0.50
TK0782C4	200	1000	200	10 L	50 L	1000	1000	200 N 20	20 N	20 N	200 L 500	100 N	100 N	200	1000	1000	2.00 N
TK0783C4	200	150	200	10 N	50 L	100	20	200 N 100	20 N	20 N	200 L 200	100 N	100 N	700	700	500	0.40 N
TK0785C4	500	100	1000 G	10 N	50 L	50	20 L	200 N 100	0 B	0 B	200 N 200	100 N	100 N	700	500 N	1000 G	0.10 N
TK0786C4	200	50	50	10 N	50 L	50	20 N	200 N 70	0 B	0 B	200 N 200	100 N	100 N	150	500	300	0.10 N
TK0787C4	150	50	50	10 N	50 L	20	20 N	200 N 100	0 B	0 B	200 N 200	100 N	100 N	200	500 L	1000	0.10 N
TK0788C4	200	100	50	10 N	50 L	30	20 N	200 N 100	0 B	0 B	200 N 200	100 N	100 N	200	500 L	1000	0.10 N
TK0789C4	200	150	100	10 N	50 L	100	20 N	200 N 50	0 B	0 B	200 N 200	100 N	100 N	200	700	1000	0.10 N
TK0790C4	150	150	50	10 N	50 L	50	20 N	200 N 50	0 B	0 B	200 L 200	100 N	100 N	100	500	700	0.10 N
TK0791C4	70	150	50	10 N	50 L	20	20	200 N 50	20 N	20 N	200 L 100	100 N	100 N	50	500 N	1000	0.20 N
TK0792C4	300	150	500	10 N	50 L	100	50	200 N 50	0 B	0 B	200 L 200	100 N	100 N	200	500	1000	3.50
TK0793C4	200	200	150	10 N	50 L	500	100	200 N 30	0 B	0 B	200 L 200	100 N	100 N	200	500	500	0.40 N
TK0794C4	200	150	100	10 N	50 L	100	20 L	200 N 50	20 N	20 N	200 L 50	100 N	100 N	100	500 L	1000 G	0.20 N
TK0795C4	150	200	300	10 L	50 L	500	50	200 N 20	20 N	20 N	200 100	100 N	100 N	200	500	1000 G	0.30 N
TK0796C4	1000	500	200	10 N	50 L	1000	100	200 N 50	20 N	20 N	200 200	100 N	100 N	200	700	1000	2.00 N
TK0797C4	3000	200	1000 G	10 N	50 L	500	50	200 N 100	20 N	20 N	200 L 500	100 N	100 N	300	500 L	1000 G	0.50 N
TK0798C4	5000 G	200	200	10 N	50 L	300	50	200 N 100	20 N	20 N	200 L 500	100 N	100 N	200	700	1000 G	0.00 B
TK0799C4	100	100	1000 G	10 N	50 L	50	100	200 N 100 G	20	20 N	200 N 50	100 N	100 N	1500	1000	1000 G	0.20 N
TK0800C4	100	50	700	10 N	50 L	20	20 N	200 N 100 G	20 N	20 N	200 100	150	150	700	500	1000	0.10
TK0801C4	100	30	1000 G	10 N	50 L	15	20 L	200 N 100 G	50	50	200 N 70	100	100	700	500 L	1000	0.40
TK0803C4	150	50	1000 G	10 N	50 L	50	20 L	200 N 100	70	70	200 N 200	100	100	300	500	1000 G	0.40 N
TK0804C4	150	30	150	10 N	50 L	50	20 L	200 N 70	300	300	200 N 200	100 N	100 N	200	500 L	1000	6.50
TK0805C4	200	50	100	10 N	50 L	50	30	200 N 50	20 N	20 N	200 N 200	100 N	100 N	200	700	1000 G	0.20 N
TK0806C4	2000	200	50	10 L	50 L	200	50	200 N 70	20 N	20 N	200 300	100 N	100 N	50	500 N	1000 G	0.00 B
TK0807C4	1000	150	100	10 N	50 L	200	50	200 N 70	20 N	20 N	200 300	100 N	100 N	150	500 N	1000 G	2.00 N
TK0808C4	3000	150	300	10 N	50 L	300	100	200 N 50	20 N	20 N	200 500	100 N	100 N	150	500	1000 G	0.00 B
TK0809C4	1500	700	50	10 N	50 L	200	150	200 N 50	20 N	20 N	200 300	100 N	100 N	70	700	1000	0.50 N
TK0811C4	3000	150	1000 G	10 N	50 L	50	30	200 N 10 L	20 N	20 N	200 N 300	100 L	100 L	1000	500 L	1000 G	0.70 N
TK0813C4	50	200	1000 G	10 N	50 L	100	20 L	200 N 20	20 N	20 N	200 N 50	100 N	100 N	1000	500 N	1000 G	1.00 N
TK0814C4	100	150	200	10 N	50 L	100	50	200 N 50	20 N	20 N	200 N 200	100 N	100 N	200	500 L	200	20.00
TK0816C4	700	7000	1000 G	10 N	50 L	100	2000	200 N 70	500	500	200 L 300	2000	2000	1000	700	1000 G	50.00
TK0818C4	1500	700	1000 G	10 N	50 L	200	100	200 N 10 L	500	500	200 L 200	100 N	100 N	1000	700	1000 G	18.00
TK0819C4	200	70	150	10 N	50 L	100	20	200 N 20	20 N	20 N	200 N 200	100 N	100 N	70	500 L	300	0.20 N

sample	LATITUDE	LONGITUDE	S-FEX	S-MG%	S-CA%	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
TK0820C4	62.7553	150.8658	20	2.0	7.0	0.5	5000 G	1.0 N	500 N	20 N	20	300	2	20 N	50 N	15
TK0822C4	62.7744	150.9264	20 G	3.0	2.0	0.7	5000 G	2.0	1000	20 N	50	1000	2 L	20 N	50 N	100
TK0825C4	62.4411	151.7581	20 G	5.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	100	500	2 L	20 N	50 N	50
TK0826C4	62.4600	151.8108	20 G	5.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	70	500	2 L	20 N	50 N	20
TK0827C4	62.4964	151.8125	15	3.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	100	1000	2 L	20 N	50 N	50
TK0828C4	62.5144	151.8053	20	3.0	2.0	1.0	5000 G	1.0 N	500 L	20 N	100	1000	2 L	20 N	50 N	100
TK0829C4	62.6161	151.5653	15	1.0	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	300	500	2 L	20 N	50 N	15
TK0831C4	62.5989	151.5494	20	3.0	5.0	1.0	5000 G	1.0 N	500 N	20 N	700	1500	2	20 N	50 N	20
TK0832C4	62.5553	151.5653	20	1.5	1.0	1.0 G	5000 G	2.0	500 N	20 N	700	1000	2	20 N	50 N	20
TK0833C4	62.6072	151.4939	20	2.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	2000	1500	2 L	20 N	50 N	20
TK0834C4	62.6025	151.4753	20	2.0	1.5	1.0 G	5000 G	1.0 N	500 N	20 N	2000 G	300	2	20 N	50 N	15
TK0835C4	62.5731	151.4678	10	2.0	0.3	1.0	3000	1.0 N	500 N	20 N	1000	1000	2 L	20 N	50 N	20
TK0836C4	62.5747	151.5036	20	3.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	1000	300	2 L	20 N	50 N	20
TK0837C4	62.5400	151.4728	20	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	2000 G	1000	2 L	20 N	50 N	15
TK0838C4	62.5561	151.4186	15	2.0	0.7	1.0	5000 G	1.0 N	500 N	20 N	2000 G	300	2	20 N	50 N	15
TK0839C4	62.5600	151.3767	10	1.0	1.0	1.0	5000 G	1.0 N	500 N	20 N	2000 G	300	2 L	20 N	50 N	15
TK0840C4	62.5775	151.3853	10	1.0	2.0	0.7	5000 G	1.0 N	500 N	20 N	2000 G	300	2 L	20 N	50 N	20
TK0841C4	62.5806	151.3175	15	2.0	0.7	1.0 G	5000 G	1.0 N	500 N	20 N	1000	700	2 L	20 N	50 N	15
TK0842C4	62.5978	151.3394	15	2.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	2000 G	1000	2 L	20 N	50 N	15
TK0843C4	62.6058	151.2369	15	2.0	0.7	1.0	5000 G	1.0 N	500 N	20 N	200	1000	7	20 N	50 N	15
TK0844C4	62.6497	151.1661	15	1.0	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	2000 G	100	5	20 N	50 N	10 L
TK0845C4	62.6544	151.1389	15	2.0	5.0	1.0 G	5000 G	1.0 N	3000	20 N	2000 G	150	5	50	50 N	150
TK0846C4	62.6428	151.2417	20	3.0	7.0	1.0 G	5000 G	1.0 N	700	20 N	2000 G	500	5	20 N	50 N	50
TK0847C4	62.6508	151.2700	20 G	0.5	20.0	1.0 G	5000 G	1.0 N	700	20 N	2000	100	2 L	20 N	50 N	50
TK0848C4	62.6417	151.2700	20 G	3.0	7.0	1.0 G	5000 G	1.0 N	10000	20 N	2000 G	500	3	20	50 N	700
TK0849C4	62.6644	151.3256	15	2.0	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	500	1000	3	20 N	50 N	15
TK0850C4	62.7042	151.3153	15	2.0	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	1000	1000	2	20 N	50 N	15
TK0852C4	62.7714	151.3408	20	2.0	3.0	1.0	5000 G	1.0 N	500 N	20 N	1500	1500	2 L	20 N	50 N	20
TK0853C4	62.8144	151.3133	20	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	1000	1500	2	20 N	50 N	20
TK0858C4	62.6756	151.0656	20 G	3.0	5.0	1.0 G	5000 G	20.0	1000	20 N	200	1000	2	30	50 N	20
TK0860C4	62.6850	151.0964	15	2.0	2.0	0.7	5000 G	1.0 N	500 N	20 N	2000	300	10	20 N	50 N	15
TK0861C4	62.6569	151.0894	15	1.0	1.5	0.5	5000 G	1.0 N	500 N	20 N	2000 G	100	7	20 N	50 N	10 L
TK0862C4	62.6033	151.0839	10	3.0	2.0	1.0 G	5000	1.0 N	500 N	20 N	300	500	2 L	20 N	50 N	20
TK0864C4	62.6469	151.0425	15	3.0	2.0	1.0 G	5000	1.0 N	500 N	20 N	70	500	2 L	20 N	50 N	20
TK0865C4	62.7553	151.0097	15	3.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	700	2 L	20 N	50 N	15
TK0869C4	62.7625	151.0319	20	1.5	2.0	1.0	5000 G	1.0 N	500 N	20 N	50	700	2 L	20 N	50 N	20
TK0870C4	62.7228	150.6931	20 G	3.0	0.7	1.0	5000 G	7.0	500	20 N	100	1000	2	20 N	50 N	500
TK0872C4	62.7636	150.5344	20	3.0	2.0	1.0 G	5000	1.0 N	500 N	20 N	200	1500	2	20 N	50 N	20
TK0873C4	62.7797	150.5861	7	3.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	1500	2 L	20 N	50 N	30
TK0874C4	62.8428	150.5767	20 G	3.0	2.0	1.0	5000 G	1.0 N	500 N	20 N	50	500	2	20 N	50 N	30
TK0875C4	62.8583	150.5586	20	3.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	30	300	3	20 N	50 N	20

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0820C4	200	100	200	10 N	50 L	100	20 L	200 N	70	20 N	200 N	200	100 N	200	500 L	300	0.20 N
TK0822C4	200	500	1000 G	10 N	50 L	300	150	200 N	30	20 N	200 L	200	100 N	500	500	1000	0.10 N
TK0825C4	1000	500	150	10 N	50 L	300	70	200 N	50	20 N	200 L	500	100 N	100	500	1000 G	2.00 N
TK0826C4	300	200	50	10 N	50 L	50	30	200 N	20	20 N	200 L	200	100 N	50	500 L	1000	0.40 N
TK0827C4	100	200	1000 G	10 N	50 L	200	20	200 N	30	20 N	200	200	100 N	100	500	1000	0.70 N
TK0828C4	700	200	1000 G	10 N	50 L	300	50	200 N	30	20 N	200	200	100 N	200	500	1000	4.00
TK0829C4	150	150	500	10 N	50 L	20	20 L	200 N	70	20 N	200 N	70	100 N	300	500	1000 G	0.20 N
TK0831C4	100	20	200	10 N	50 L	20	20	200 N	70	50	200 N	200	100 N	300	700	1000 G	0.20 N
TK0832C4	200	200	100	10 N	50 L	100	50	200 N	50	20 N	200 L	200	100 N	100	700	1000	0.20 N
TK0833C4	100	150	1000 G	10 N	50 L	20	30	200 N	50	20 N	200 N	200	100 N	1000	500 L	1000 G	0.40 N
TK0834C4	50	70	1000	10 N	50 L	20	20 L	200 N	50	20 N	200 N	100	100 L	500	500	1000	0.30 N
TK0835C4	300	50	150	10 N	50 L	100	20 L	200 N	15	20 N	200 N	300	100 N	50	500 L	200	0.20 N
TK0836C4	50	150	1000	10 N	50 L	100	20	200 N	50	20 N	200	200	100 N	150	500	1000	0.20 N
TK0837C4	50	50	1000 G	10 N	50 L	20	20 L	200 N	50	20 N	200 N	100	100 N	1000	500	1000 G	0.20 N
TK0838C4	50	30	300	10 N	50 L	50	20 L	200 N	50	20 N	200 N	100	100 N	1500	500	1000	0.30 N
TK0839C4	50	50	1000 G	10 N	50 L	20	20 L	200 N	30	20 N	200 N	100	100 N	1500	500 N	1000 G	0.20 N
TK0840C4	20	100	1000 G	10 N	50 L	20	20 L	200 N	30	20 N	200 N	100	100 N	1500	500 N	1000 G	0.30 N
TK0841C4	150	50	700	10 N	50 L	20	20 L	200 N	50	20 N	200 N	200	100 N	200	500	700	0.20 N
TK0842C4	100	100	1000 G	10 N	50 L	20	20 L	200 N	50	20 N	200 N	150	100 N	1000	500 L	1000 G	0.40 N
TK0843C4	50	50	200	10 N	50 L	50	30	200 N	30	20	200 N	200	100 N	150	500	1000	0.30 N
TK0844C4	20	50	1000 G	10 N	50 L	30	20 L	200 N	30	20 L	200 N	70	100 N	2000 G	500 N	1000 G	0.30 N
TK0845C4	50	200	1000 G	10 N	50 L	100	50	200 N	50	500	200 N	50	100 N	2000 G	500 L	1000 G	0.50
TK0846C4	50	200	1000 G	10 N	50 L	100	50	200 N	50	200	200 N	100	100 N	2000 G	500 L	1000 G	13.00
TK0847C4	30	300	1000 G	10 N	50 L	100	20	200 N	100	20 N	200 N	20	100 N	2000 G	500 L	1000 G	2.00 N
TK0848C4	100	300	1000 G	10 N	50 L	1500	70	200 N	100	300	200 N	50	100	2000 G	500 L	1000 G	0.40 N
TK0849C4	50	150	1000 G	10 N	50 L	100	20 L	200 N	30	20 L	200 N	100	100 N	2000 G	500 N	1000 G	0.20 N
TK0850C4	70	100	1000 G	10 N	50 L	50	20 L	200 N	50	20 N	200 N	150	100 N	500	500 L	1000 G	0.20 N
TK0852C4	150	100	1000 G	10 N	50 L	20	20	200 N	50	20	200 L	200	100 N	1000	500 L	1000 G	0.40 N
TK0853C4	150	150	200	10 N	50 L	100	20	200 N	50	20 N	500	200	100 N	200	500	1000	0.50 N
TK0858C4	2000	500	1000 G	10 N	50 L	200	70	200 N	100	20 N	200 L	300	200	1000	500	1000 G	0.40 N
TK0860C4	20 L	20	300	10 N	50 L	20	20 L	200 N	30	50	200 N	70	100 N	700	500	1000 G	0.20 N
TK0861C4	20 L	10	150	10 N	50 L	10	20 L	200 N	20	30	200 N	50	100 N	500	700	1000	0.20 N
TK0862C4	700	70	700	10 N	50 L	30	20 L	200 N	20	20 N	200	200	100 N	200	500 N	1000 G	1.00 L
TK0864C4	700	100	1000 G	10 N	50 L	50	20	200 N	20	20 N	200	300	100 N	700	500 N	1000 G	5.00
TK0865C4	100	50	1000 G	10 N	50 L	10	20	200 N	50	50	200 N	200	100 N	500	500 L	1000	0.20 N
TK0869C4	500	150	200	10 N	50 L	200	20 L	200 N	100	50	200 N	300	100 N	200	500	500	0.20 N
TK0870C4	700	1000	150	10 N	50 L	1000	300	200 N	30	20 N	200	300	100 N	100	1000	1000	0.40 N
TK0872C4	100	50	1000	10 N	50 L	20	20	200 N	100 G	20 L	200 L	200	100 N	300	500	1000 G	0.50 N
TK0873C4	300	200	1000 G	10 N	50 L	200	50	200 N	100	50	200 N	200	100 N	500	500	1000 G	0.40 N
TK0874C4	700	200	200	10 N	50 L	200	50	200 N	50	50	200 L	300	100 N	150	500	1000	0.70 N
TK0875C4	700	150	1000 G	10 N	50 L	100	70	200 N	100	50	200 N	300	100 N	500	500	1000 G	0.50 N



sample	LATITUDE	LONGITUD	S-FEZ	S-MGZ	S-CAZ	S-TIX	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BE	S-BI	S-CD	S-CO
TK0878C4	62.8906	150.5925	20	0.2	0.5	1.0 G	5000 G	1.0 N	500 N	20 N	100	70	50	20 N	50 N	10 L
TK0879C4	62.8653	150.6519	20 G	3.0	2.0	1.0 G	5000 G	2.0	500 N	20 N	100	200	30	20 N	50 N	30
TK0880C4	62.8575	150.7256	20 G	3.0	1.0	1.0	5000 G	1.0 N	500	20 N	100	1500	2 L	20 N	50 N	100
TK0881C4	62.8636	150.7653	20 G	3.0	1.5	1.0 G	5000 G	3.0	2000	20 N	100	1500	2	20 N	50 N	300
TK0883C4	62.8844	150.7522	20	5.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	300	3	20 N	50 N	15
TK0884C4	62.8350	150.6950	20	1.5	1.5	0.7	3000	1.0 N	500 N	20 N	50	1500	2	20 N	50 N	100
TK0885C4	62.8133	150.7044	20	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	150	1000	15	20 N	50 N	50
TK0886C4	62.8578	150.2825	20	1.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	100	2 L	20 N	50 N	15
TK0887C4	62.8844	150.3050	20	1.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	150	2 L	20 N	50 N	15
TK0888C4	62.8714	150.2794	20	3.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	50	200	2 L	20 N	50 N	20
TK0889C4	62.8581	150.2589	20	3.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	200	200	2 L	20 N	50 N	20
TK0890C4	62.7786	150.7575	20	1.5	0.7	0.5	5000 G	1.0 N	500 N	20 N	50	1000	2	20 N	50 N	50
TK0892C4	62.8247	150.8072	20	2.0	1.0	0.7	5000 G	1.0 N	500 N	20 N	50	3000	2 L	20 N	50 N	20
TK0893C4	62.8228	150.7972	20	1.5	0.7	0.3	5000 G	1.0 N	500 N	20 N	30	1000	2	20 N	50 N	50
TK0895C4	62.8803	150.8569	20 G	3.0	1.0	1.0 G	5000 G	1.0	500 L	20 N	150	1500	2	20 N	50 N	100
TK0896C4	62.8939	150.8442	20 G	3.0	3.0	1.0 G	3000	5.0	10000 G	20 N	100	1500	2	20 N	50 N	100
TK0897C4	62.9172	150.8325	15	2.0	0.7	1.0 G	5000 G	1.0 N	500 N	20 N	30	500	2 N	20 N	50 N	20
TK0904C4	62.9269	150.4692	20 G	2.0	1.5	1.0 G	5000 G	1.0 N	500 N	20 N	500	200	7	20 N	50 N	20
TK0905C4	62.9422	150.4264	20	2.0	7.0	1.0 G	5000 G	1.0 N	500 N	20 N	200	200	10	20 N	50 N	10
TK0906C4	62.9322	150.4353	20	2.0	2.0	1.0 G	5000 G	2.0	1000	20 N	300	300	20	20	50 N	20
TK0907C4	62.9356	150.3517	15	0.5	1.0	1.0 G	5000 G	1.0 N	500 N	20 N	150	100	3	20 N	50 N	10
TK0908C4	62.9281	150.3406	20 G	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	700	200	30	20 L	50 N	15
TK0909C4	62.9100	150.4050	20 G	5.0	7.0	1.0 G	5000 G	1.0 L	500 N	20 N	20	300	2	20 N	50 N	50
TK0910C4	62.9097	150.3700	20	1.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	20 L	200	2 L	20 N	50 N	15
TK0911C4	62.9614	150.2444	20	1.0	2.0	1.0 G	5000	1.0 N	500 N	20 N	20	150	3	20 N	50 N	10
TK0913C4	62.9314	150.2483	20 G	3.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	200	1000	2 L	20 N	50 N	20
TK0914C4	62.9097	150.2428	20	1.0	2.0	1.0 G	5000	1.0 N	500	20 N	20 L	100	3	20 N	50 N	20
TK0915C4	62.9022	150.1908	15	3.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	150	700	2	20 N	50 N	20
TK0916C4	62.9428	150.1281	20	3.0	2.0	1.0	5000 G	1.0 N	1000	20 N	50	2000	2	20 N	50 N	50
TK0917C4	62.9981	150.1278	20	3.0	3.0	1.0 G	5000 G	2.0	500 N	20 N	100	1500	2	20 N	50 N	50
TK0918C4	62.9839	150.0636	20	7.0	3.0	1.0	2000	1.0 N	500 N	20 N	30	700	2 L	20 N	50 N	50
TK0919C4	62.9628	150.0283	15	5.0	10.0	0.5	1500	1.0 N	500 N	20 N	150	300	2 L	20 N	50 N	20
TK0920C4	62.9389	150.0269	15	5.0	7.0	1.0	5000	2.0	500 N	20 N	1000	700	5	20 N	50 N	20
TK0921C4	62.8675	150.1139	20	2.0	2.0	1.0 G	5000 G	1.0 N	500 N	20 N	20 L	300	2 L	20 N	50 N	20
TK0922C4	62.8558	150.1381	20	3.0	1.5	1.0 G	5000	1.0 N	500 N	20 N	20 L	700	2	20 N	50 N	20
TK0923C4	62.8450	150.1872	20	3.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	30	300	2 L	20 N	50 N	20
TK0924C4	62.8314	150.1839	20	3.0	5.0	1.0 G	5000 G	1.0 N	500 N	20 N	70	500	2 L	20 N	50 N	20
TK0925C4	62.7972	150.2550	20	3.0	7.0	1.0	5000 G	1.0 N	500 N	20 N	500	700	2	20 N	50 N	20
TK0926C4	62.8833	150.4569	15	0.7	3.0	1.0 G	5000 G	1.0 N	500	20 N	50	100	50	20 N	50 N	15
TK0927C4	62.8947	150.4117	20	1.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	70	100	20	20 N	50 N	15
TK0928C4	62.8606	150.4031	20	1.0	3.0	1.0 G	5000 G	1.0 N	500 N	20 N	20	200	2 L	20 N	50 N	15

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0878C4	50	200	1000 G	10 N	50 L	10	50	200 N	70	1000	200 L	70	500	2000 G	500 N	1000 G	0.75
TK0879C4	200	500	1000 G	10 N	50 L	100	50	200 N	100 G	50	200 N	300	100 N	1000	500 L	1000 G	0.20 N
TK0830C4	500	500	1000 G	10 N	50 L	500	100	200 N	20	20 N	200	200	100 N	500	700	1000 G	0.40 N
TK0881C4	500	1000	150	10 N	50 L	1000	200	200 N	30	20 N	200 L	300	100 N	1000	1000	1000	19.00
TK0883C4	700	200	200	10 N	50 L	50	20 L	200 N	50	20 N	200 N	100	100	100	500	1000	0.25 N
TK0884C4	300	200	1000 G	10 N	50 L	500	50	200 N	20	20 N	300	200	100 N	200	500	1000	1.00 N
TK0885C4	1000	500	1000 G	10 N	50 L	200	150	200 N	100 G	50	200	200	100 N	700	500	1000 G	0.70 N
TK0386C4	300	150	1000 G	10 N	50 L	10	20	200 N	100	50	200 N	500	100 N	1000	500 N	1000 G	0.40 N
TK0887C4	150	100	1000 G	10 N	50 L	10	20	200 N	100	20	200 N	300	100 N	1000	500 N	1000 G	0.40 N
TK0888C4	500	100	1000	10 N	50 L	100	20 L	200 N	100	20 L	200 N	300	200	500	500	1000	0.40 N
TK0889C4	700	100	1000 G	10 N	50 L	50	20 L	200 N	100 G	500	200 L	300	100 N	700	500	1000	7.50
TK0890C4	200	500	50	10 N	50 L	200	50	200 N	20	20 N	200	200	100 N	70	500	1000	0.60
TK0892C4	700	200	700	10 N	50 L	200	30	200 N	20	20 N	200	200	100 N	200	500	1000 G	0.30 N
TK0893C4	100	200	150	10 N	50 L	200	50	200 N	20	20 N	300	200	100 N	50	500	500	1.00
TK0895C4	200	700	200	10 N	50 L	500	200	200 N	50	20 N	200 L	200	100 N	700	1000	1000	2.00
TK0896C4	200	500	150	10 N	50 L	500	200	200 N	20	20 N	200 L	200	100 N	300	500	1000	0.70 N
TK0897C4	100	150	50	10 N	50 L	20	20 L	200 N	30	20 N	200 N	200	100 N	500	500 L	1000 G	0.25
TK0904C4	100	300	1000 G	10 N	50 L	10	50	200 N	100 G	1000	200 N	100	100 N	1000	500 N	1000 G	0.20 N
TK0905C4	50	100	1000 G	10 N	50 L	10	150	200 N	100	150	200 N	50	100 N	1500	500	1000 G	0.22 N
TK0906C4	70	200	1000 G	10 N	50 L	10	100	200 N	100 G	1000	200 N	150	100 N	1500	500 N	1000 G	0.20 N
TK0907C4	50	150	1000 G	10 N	50 L	10	150	200 N	50	500	200 N	50	100 N	2000	500 N	1000 G	0.40 N
TK0908C4	150	200	1000 G	10 N	50 L	10	200	200 N	100 G	500	200 N	200	100 N	2000	500 N	1000 G	0.10 N
TK0909C4	500	200	1000 G	10 N	50 L	10	50	200 N	100 G	1000	200 N	500	100 N	700	500 N	1000 G	0.10 N
TK0910C4	50	70	1000 G	10 N	50 L	10	20	200 N	100 G	30	200 N	300	100 N	1000	500 N	1000 G	0.10 N
TK0911C4	100	150	1000 G	10 N	50 L	10	20	200 N	50	20	200 N	200	100 N	1000	500 N	1000 G	0.80 N
TK0913C4	100	100	1000 G	10 N	50 L	50	20 L	200 N	100 G	20 N	200 N	300	100 N	500	1000	1000 G	0.10 N
TK0914C4	150	150	1000 G	10 N	50 L	20	50	200 N	50	20	200 N	300	100 N	500	500 N	1000 G	0.20 N
TK0915C4	700	100	1000 G	10 N	50 L	20	20 L	200 N	50	150	200 L	200	100 N	500	500 N	1000 G	0.20 N
TK0916C4	500	500	50	10 N	50 L	200	50	200 N	30	20 N	200	300	100 N	150	700	500	0.40 N
TK0917C4	5000 G	700	100	10 N	50 L	200	100	200 N	30	20 N	200	300	100 N	200	700	50	0.40 N
TK0918C4	2000	200	50	10 N	50 L	300	50	200 N	30	20 N	200	300	100 N	30	500	150	0.40 N
TK0919C4	700	50	50	10 N	50 L	100	20 L	200 N	50	20 N	700	300	100 N	20	500 N	150	0.40 N
TK0920C4	500	300	50	10 N	50 L	50	20 L	200 N	50	1000	200	300	100 N	50	500	150	0.50 N
TK0921C4	100	200	1000 G	10 N	50 L	20	30	200 N	100	50	200 L	200	100 N	700	500 N	1000 G	1.00 N
TK0922C4	100	50	1000 G	10 N	50 L	20	50	200 N	100	30	200 L	200	100 N	500	500	1000 G	1.00 N
TK0923C4	200	70	1000 G	10 N	50 L	20	20 L	200 N	100	20 N	200 L	300	100 N	500	500	1000 G	1.00 N
TK0924C4	200	100	1000	10 N	50 L	20	20 N	200 N	100	20 N	200 L	300	100 N	500	500 L	1000 G	1.00 N
TK0925C4	300	70	1000 G	10 N	50 L	30	20 L	200 N	100	50	200 L	300	100 N	500	500 L	1000 G	1.00 N
TK0926C4	500	100	1000 G	10 N	50 L	20	50	200 N	100	50	200 N	300	100 N	2000	500 N	1000 G	1.00 N
TK0927C4	150	300	1000 G	10 N	50 L	20	70	200 N	100	50	200 N	300	100 N	1500	500 N	1000 G	0.50 N
TK0928C4	500	150	1000 G	10 N	50 L	20	50	200 N	100	20	200 N	500	100 N	1500	500 N	1000 G	0.50 N

BULK HEAVY-MINERAL CONCENTRATES --continued

sample	S-CR	S-CU	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	AA-AU-P
TK0929C4	200	70	1000 G	10 N	50 L	20	70	200 N	20	100	200 N	200	100 N	500	500 N	1000 G	1.00 N
TK0930C4	100	150	1000 G	10 N	50 L	20	20	200 N	70	150	200 N	200	100 N	1000	500 N	1000 G	0.50 N
TK0931C4	100	70	1000 G	10 N	50 L	20	50	200 N	70	50	200 N	200	100 N	700	500 N	700	0.20 N
TK0932C4	100	150	1000 G	10 N	50 L	30	50	200 N	70	100	200 N	200	100 N	1000	500 N	1000 G	0.40 N
TK0933C4	100	150	1000 G	10 N	50 L	20	30	200 N	70	50	200 N	200	100 N	1000	500 N	1000 G	0.40 N
TK0934C4	2000	200	300	10 N	50 L	100	20	200 N	50	50	200 L	300	100 N	300	500	1000	1.00 N
TK0935C4	700	150	1000	10 N	50 L	70	20	200 N	50	30	200	200	100 N	300	500	200	0.40 N
TK0936C4	70	100	1000 G	10 N	50 L	30	20	200 N	50	20 N	200 N	300	100 N	1000	500 L	1000 G	0.20 N
TK0937C4	700	300	1000 G	10 N	50 L	500	50	200 N	100	20	300	200	100 N	300	500	1000 G	43.00
TK0939C4	300	300	1000 G	10 N	50 L	100	50	200 N	100 G	30	200 N	300	100 N	1000	500 N	1000 G	13.00
TK0940C4	200	150	1000 G	10 N	50 L	20	50	200 N	50	30	200 L	200	100 N	700	500 N	200	0.00 B
TK0941C4	200	100	1000 G	10 N	50 L	20	30	200 N	50	30	200 L	200	100 N	700	500 N	200	0.40 N
TK0942C4	700	500	300	10 N	50 L	300	50	200 N	50	20 N	200 L	200	100 N	500	700	1000 G	7.00
TK0943C4	1000	300	200	10 N	50 L	200	50	200 N	50	20 N	200 L	300	100 N	700	500	1000	0.40 N
TK0944C4	1000	200	1000	10 N	50 L	200	30	200 N	50	20 N	200 L	200	100	500	500	1000 G	0.20 N