MASTER

**EVALUATION OF
URANIUM GEOCHEMICAL ANOMALIES
IN THE SPARTANBURG 1° x 2° NTMS AREA
NEAR PACOLET MILLS, SOUTH CAROLINA**

**NATIONAL URANIUM RESOURCE
EVALUATION PROGRAM**

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PREPARED FOR THE U. S. DEPARTMENT OF ENERGY UNDER CONTRACT DE-AC09-76SR00001

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ABSTRACT

The Savannah River Laboratory (SRL) was involved in the National Uranium Resource Evaluation (NURE) program from 1974 through 1981. The SRL role was to design, conduct, and report the data from a geochemical reconnaissance of almost half the continental United States. The purpose of this work was to provide a basis for evaluating the uranium potential of areas and to identify areas meriting conventional geologic followup. In this program over 275,000 samples of stream sediment, soil, vegetation, and ground or surface water were collected.

As a part of the development program to support interpretation of the geochemical data, SRL conducted a series of "anomaly verification" field studies. Each study area was chosen on the basis of a geochemical anomaly in reconnaissance data. Subcontractors were selected to conduct field scintillometer surveys, compile geologic maps, collect additional samples, or provide other services as deemed appropriate for a given study.

This report, which summarizes the results of a study in the Spartanburg 1° x 2° quadrangle, was compiled for SRL by Jerry Owen and is published as a facsimile of his report to SRL. Normal editing was not done so that the report could be placed in the public domain prior to the termination of the NURE program.

This study is one of a series designed to provide a basis for interpretation of SRL regional geochemical reconnaissance data. It contains a synthesis of published data and results of a four-channel gamma spectrometer survey of an area near Pacolet Mills, South Carolina. (This abstract was written by V. Price Jr. of SRL.)

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IN THE SPARTANBURG 1° x 2° NTMS AREA NEAR
PACOLET MILLS, S.C.

by

JERRY OWEN

SEPTEMBER 18, 1978

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IN THE SPARTANBURG 1° x 2° NTMS AREA NEAR
PACOLET MILLS, S.C.

INTRODUCTION

A ground-scintillometer survey has been conducted in the vicinity of Pacolet Mills, S.C., to investigate uranium geochemical anomalies found during a stream-sediment and ground-water sampling program (Heffner and Ferguson, 1977) for the National Uranium Resource Evaluation (NURE). Contour maps have been prepared using data gathered during the scintillometer survey, and conclusions regarding the potential of the area for possible uranium mineralization are presented herein.

The survey area, located in the northwestern corner of the Spartanburg 1° x 2° NTMS quadrangle, encompasses approximately 360 sq mi, and includes portions of Spartanburg, Union, and Cherokee Counties.

METHOD OF STUDY

Utilization of Maps

County road maps at the scale of 1" = 1 mile were used as bases for the various contour maps; available geologic information was also plotted on them. Geology as summarized by Butler (1977) was used as a guide for plotting the various lithologic units. A comparison of the contacts of the Pacolet Mills and Bald Rock plutons as compiled by Butler and as established by Wagener (1977) indicated general agreement.

Figure 1. The principal belts of metamorphic rock of the Piedmont and Blue Ridge in South Carolina, and the geographic-geologic subdivisions of the Piedmont.

Geophysical Data

Geophysical data (total count gamma) released by the U.S. Geological Survey was used to locate anomalously high areas of radioactivity. An airborne survey that covered approximately 75% (1,950 sq mi) of the study area defined the general shape of the Pacolet Mills and Bald Rock plutons (Pl. 5). The Pacolet Mills metagranite is more radioactive overall than is the Bald Rock pluton. The highest radioactivity anomaly in the survey area, located in a north-south trend near the southeastern edge of the Pacolet Mills pluton, exceeds 2,100 counts per second (cps).

Types of Instruments Used

An Exploranium GR-410 gamma-ray spectrometer, which measures total gamma counts, potassium-40, bismuth-214 (uranium daughter), and thallium-208 (thorium daughter), was the primary instrument used in the survey. A total of 511 measurements were made using a 2-min counting period. Individual concentrations of potassium (%), uranium (ppm), and thorium (ppm) were calculated from formulas given in the instruction manual. Uranium-to-thorium ratios for each survey site were also calculated. A smaller scintillometer, model GR-101A, was also used during the survey.

Field Evaluation Methods

Care was taken to insure that the 511 measurements with the GR-410 were consistently made approximately 3 ft above the ground surface. The purpose of this 3-ft height was to average the radiation emitted at a particular site, and thus avoid obtaining a measurement from a limited few inches of saprolite

or outcrop that may not be indicative of the particular lithology present. From past experience this writer has found it possible to measure a heavy mineral suite (monazite, zircon, etc.) that has been concentrated at a given site by water action. A measurement such as this, or one taken on a small pegmatite, may give high uranium and thorium values which are not present in the overall lithology.

While the 2-min counts were being made, the smaller scintillometer was used to survey the general area in a radius of 25 to 50 ft in order to determine if any local variation existed. If significant variation was found, a second 2-min count was made; these are listed in the appendix tables as a, b, c, etc. The usual method of selecting sites was to drive along roads and select those road cuts which exposed outcrop or saprolite. An effort was made to keep the spacing approximately equal from one site to another. The published geophysical and geochemical data were also used to define anomalous areas which were surveyed generally as road accessibility permitted. At each site a rock type and occurrence were noted. At some sites both outcrop and saprolite were present. In the tables in Appendix A, outcrop is listed as such; saprolite with small outcrops/boulders is listed as outcrop/saprolite.

ACCURACY OF INSTRUMENT

At the end of the survey the spectrometer was placed in a 3-in. lead-brick chamber to determine the background counts. Three 10-min counting periods yielded values within approximately 1.5% of each other. Several 2-min counting periods also proved to be virtually identical. All of the calculations in Appendices A and B are corrected for background.

In the field, almost invariably, the counts with the spectrometer in the same position will vary from one counting period to another by at least 5 to

10% and sometimes more. Because of this, the calculated concentrations of %K, U (ppm), Th (ppm), and U/Th are given with a positive or negative (+ or -) uncertainty at the 95% confidence level. The positive or negative values for the U/Th ratios reflect the cumulative uncertainty in the U and Th values. The data were contoured without respect to the positive or negative values.

It must also be noted that the range of values given is strictly a function of the number itself and that other factors can also influence the values. Such factors include moving the scintillometer to another part of the outcrop (compositional difference, pegmatite); putting the scintillometer in a ditch or a cut versus on a flat surface (geometry); and taking readings at the same site at different times (barometric pressure, temperature change), or on different days (same + moisture content of soil, etc.). All of these factors can add to the variation in values obtained when several readings are taken at a given site. However, an area which is anomalously high or low with respect to other areas should continue to be anomalous, even if the values of several different readings do not match.

SURVEY AREA

The area surveyed is located in the Central Piedmont Belt as presented by Wagener (1977). Figure 1 shows its position. Plate 1 shows the geology as compiled by Butler (1977). Eight lithologic units are found in the area. The Pacolet Mills pluton was of interest because of the airborne radiometric anomaly; the Bald Rock pluton, which makes up approximately 50% of the area, was of interest because of the published values (Heffner & Ferguson, 1977) for certain ratios in stream sediments that are among the highest values

found in the Spartanburg Quadrangle (U/log Th, Fig. 2; log U/log Th·HF, Fig. 3; log U/log Hf·Th·Ce, Fig. 4; and log U/log Ce, Fig. 5).

DESCRIPTION OF PLUTONS

The Pacolet Mills pluton, as described by Wagener (1977), is a fine- to medium-grained metamorphosed granite, which appears in places to be intermixed with biotite gneiss. The outcrop areas generally consist of small boulders surrounded by saprolite. Fracturing and shearing, possibly associated with metamorphism, have allowed deep weathering of the granite.

The younger Bald Rock pluton is coarse-grained, porphyritic biotite granite which, according to Wagener, is the largest body of apparently homogenous intrusive granite rock in South Carolina. Though deeply weathered in many places, it has not been metamorphosed.

Several flat-rock type outcrops of this granite occur, specifically at sites D-72 (approx. 0.5 acre), E-10 (approx. 1.0 acre), and E-33 (approx. 0.1 acre). At these locations, pegmatite veins from 0.5 in. to 12 in. were noted transecting each other in various directions. These veins were carefully surveyed with the scintillometer on the total-count position. Unlike veins in other granitic bodies surveyed by the author, these veins rarely showed a value which was higher than the surrounding rock.

The two abandoned quarries at sites H-25 and E-31 were not readily accessible and were not visited. No known mineral occurrences are in the survey area.

RESULTS OF SURVEY

The ratio of uranium to thorium at any given site is one of the more important results of this type of survey. Thorium is approximately 5 times as

SPARTANBURG 1'x2' Sheet
 LU/LTH+LHF In Sediments
 979 Values Above D.L.

LU/LTH+LHF				
• < 0.00	• 0.10-0.13	○ 0.21-0.25	⊙ 0.31-0.33	● 0.37-0.39
• 0.00-0.06	• 0.13-0.17	○ 0.25-0.28	⊙ 0.33-0.35	◆ 0.39-0.41
• 0.06-0.10	○ 0.17-0.21	○ 0.28-0.31	● 0.35-0.37	★ > 0.41

FIGURE 3 Areal Distribution of $\log U/\log Th \cdot Hf$ in Stream Sediment

FIGURE 4

Areal Distribution of $\log U/\log \text{Hf} \cdot \text{Th} \cdot \text{Ce}$ in
Stream Sediment

SPARTANBURG 1'x2' Sheet
 LU/LCE In Sediments
 961 Values Above D.L.

LU/LCE

FIGURE 5 Areal Distribution of $\log U/\log C_e$ in Stream Sediment

abundant as uranium, so a U/Th ratio of 0.20 is normally considered as crustal abundance. Plate 4 summarizes the U/Th ratios.

Ground versus 3-ft Readings

One aspect of this survey was to determine if the same ratio of U/Th could be obtained at a site by holding the scintillometer approximately 3 ft above the ground surface as could be obtained by placing the instrument on the ground. One hundred forty-eight readings were taken on the ground. A week to 10 days later, readings were taken at the same site 3 ft above the ground surface. There was no particular reason for the time delay between the ground and 3-ft readings. Due to previously mentioned factors, the agreement of the U/Th ratio might have been closer had the ground and 3-ft readings been taken at the same time.

The comparison of ground versus 3-ft readings is summarized in Appendix B. The first reading given for each site is the 3-ft reading, the second is the ground reading. The U/Th contour map was purposely contoured on a somewhat broad interval (0.25), so that many of the numbers with a positive or negative value not exceeding one-quarter of the number itself would fall within the same contour interval, even though the extreme values (+ or -) were used. Exceptions may occur, but in many cases this choice of contour has the effect of negating the uncertainty of the number.

Overall, 75% of the sites surveyed on the ground surface fall into the same contour intervals used on the map. Additionally, 97% of the sites surveyed on the ground have the same values as the 3-ft readings when the uncertainty is added to or subtracted from the appropriate number.

The 3% of the sites which do not agree even by adding or subtracting the positive or negative values can possibly be explained as due to the

scintillometer's having been placed on a pegmatite or a concentration of heavy minerals. Again, the previously mentioned factors (geometry, etc.) must be taken into account.

U/Th Ratios

Readings taken above the ground do not reflect the true percentage or concentration (ppm) of the elements in a rock or saprolite. Generally the values measured at 3 ft are lower than those measured on the ground. Occasionally the values of U or Th or the U/Th ratio will increase with 3-ft readings, possibly due to the larger area over which the count is taken and the influence of a pegmatite or a compositional difference that was not counted in the ground reading. Also, some U/Th ratios increase due to the decrease in Th counts at 3 ft, probably because heavy thorium-bearing minerals such as monazite and zircon were contributing to the Th counts on the ground.

The area with the highest U/Th ratios is on the northeastern boundary of the Wilkinson Quadrangle (Pl. 4). The higher ratios in this area, 0.80, 0.90, 0.83, and 0.91, are due not so much to high uranium values as to a low amount of thorium. Uranium in this area is only 1.5 to 2.5 ppm. The lithologies in this area are not readily apparent but appear to be a fine-grained foliated rock (gneiss?) interlayered with a more mafic rock (amphibolite?), possibly meta-volcanics(?). One lithology here definitely is an amphibole-bearing schist. The Pacolet Mills metagranite and the Bald Rock granite are conspicuous by their lower U/Th ratios.

U and Th Values

Uranium values are contoured on Plate 2. Again, it should be pointed out that the 3-ft readings do not give a true ppm value for the rock; the values

would generally be higher had the readings been taken on the ground. The relationship, however, should remain the same, an area having high value on the ground also should have a high value with a 3-ft reading. The Pacolet Mills metagranite has the highest uranium values, 5 to 7 ppm, found in the survey area. It is possible that this pluton once had an anomalously high uranium content but that metamorphism and subsequent fracturing and shearing of the rock have allowed deep weathering and attendant oxidation and leaching away of the highly mobile uranium ions.

Thorium values are contoured on Plate 3. It can be readily seen that again the Pacolet Mills pluton has the highest concentration. This high concentration of thorium is evidently responsible for the airborne radiometric anomaly, as the thorium contours match the highest airborne contours almost perfectly.

CONCLUSIONS

The following conclusions are based upon data derived from the survey area.

1. The method of taking readings 3 ft above the ground surface is preferable to taking readings directly on the ground. The 3-ft height allows a larger area to be counted and therefore is a more representative reading for a particular site.
2. The number of counts accumulated is an important factor in determining the accuracy of the data. A comparison is made below of two sites, one with high readings (A-24, from App. B, Table 10) and one with low readings (B-14, from App. B, Table 11).

Site # Cumulate Counts (2-min) Calculated Concentration

	Total x 10	K	U	Th	K%	U (ppm)	Th (ppm)	U/Th
#A-24	2415	2737	767	760	6.8 $\pm$ 0.3	6.9 $\pm$ 1.9	46.8 $\pm$ 3.4	0.15 $\pm$ 0.05
#B-14	209	210	65	31	0.5 $\pm$ 0.1	0.8 $\pm$ 0.5	1.3 $\pm$ 0.7	0.66 $\pm$ 0.74

It can be seen that the uncertainty related to the lower counts is very high, almost to the point of making the data useless, whereas the uncertainty related to the higher counts does not change the values very much.

A counting period that would allow accumulation of approximately 1,000 counts would be ideal, as this amount would have an error of only $\pm 3\%$. In many cases, however, such as site B-14 above, the counting period needed to accumulate this number of counts would be excessively long (30 to 60 min). In a reconnaissance survey, a balance must be made between time spent in the field and the degree of accuracy desired. Initially, 2-min counts should be sufficient to define an anomalous area, but, in followup work on such an area, especially if the area is defined by low counts and high uncertainties, a longer counting period should be used to bring the uncertainty within an acceptable range.

3. The sampling density of this survey was approximately one site per 0.70 sq mi. Had significant uranium mineralization existed over a 1 to 2 sq mi area, it should have been detected by this survey. However, any uranium mineralization in the geologic setting of the survey area would undoubtedly be a vein-type occurrence with a rather small surface expression. Such an area could have been missed at the sampling density used. Again, a balance must be made between the time allotted for a survey and the degree of accuracy desired in a particular area.

4. The existence of significant uranium mineralization in the survey area is not supported by the data gathered during the survey. The Pacolet Mills pluton has the highest concentrations of uranium in the area but has a low U/Th ratio. It stands out as a relatively high radiometrically anomalous area mainly because the values in the other parts of the survey areas are much lower.

REFERENCES

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MAP CODE EXPLANATION

LETTER	7.5 MINUTE QUADRANGLE
A	PACOLET MILLS
B	WILKINSVILLE
C	HICKORY GROVE
D	JONESVILLE
E	KELTON
F	LOCKHART
G	UNION WEST
H	UNION EAST
I	LEEDS

APPENDIX A

Cumulate Counts and Calculated Concentrations

Table 1		Pacolet Mills	(A)
Table 2		Wilkinson*	(B)
Table 3		Hickory Grove	(C)
Table 4		Jonesville	(D)
Table 5		Kelton	(E)
Table 6		Lockhart	(F)
Table 7		Union West	(G)
Table 8		Union East	(H)
Table 9		Leeds	(I)

*Wilkinsville

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
A-1	977	827	323	186	2.0±.1	5.0±1.1	11.0±1.7	.46±.17	granite	saprolite
A-2	1147	995	404	325	2.4±.2	4.8±1.3	19.6±2.2	.24±.09	granite	saprolite
A-3	1187	1090	390	296	2.7±.2	4.9±1.3	17.8±2.1	.27±.10	granite	saprolite
A-4	949	982	324	225	2.4±.2	4.4±1.1	13.4±1.8	.33±.13	geniss ?	saprolite
A-5	956	778	317	296	1.9±.1	3.0±1.2	17.8±2.1	.17±.09	schist	saprolite
A-6	994	955	292	196	2.3±.2	4.0±1.1	11.6±1.7	.35±.14	granite	outcrop
A-7	1765	1238	583	498	3.0±.2	6.5±1.6	30.5±2.7	.21±.07	granite	outcrop
A-8	678	640	235	165	1.6±.1	3.0±1.0	9.6±1.6	.31±.15	granite	outcrop
A-9	1936	1723	627	682	4.2±.2	4.5±1.7	42.0±3.2	.11±.05	granite	outcrop
A-10	1068	996	341	285	2.4±.2	3.8±1.2	17.1±2.1	.22±1.0	gneiss ?	soil
A-11	465	436	174	107	1.0±.1	2.4±0.8	6.0±1.3	.49±.22	granite	soil
A-12	232	240	93	50	0.6±.1	1.3±0.6	2.5±.9	.51±.42	amphibolite ?	saprolite
A-13	618	566	250	130	1.4±.1	4.0±1.0	7.5±1.4	.54±.23	gneiss ?	soil
A-14	264	248	91	51	0.6±.1	1.2±0.6	2.5±.9	.47±.40	gneiss ?	saprolite
A-14a	261	257	101	57	0.6±.1	1.3±0.6	2.9±.9	.46±.36	gneiss ?	saprolite
A-15	856	808	307	301	2.0±.1	2.6±1.2	18.1±2.1	.14±.08	schist	saprolite
A-16	663	710	180	179	1.7±.1	1.3±0.9	10.5±1.6	.13±.11	schist	saprolite
A-17	1131	1038	384	382	2.5±.2	3.2±1.3	23.2±2.4	.14±.07	schist	outcrop
A-18	680	594	224	205	1.4±.1	2.1±1.0	12.1±1.8	.17±.11	sediment ?	soil
A-18a	713	617	257	199	1.5±.1	3.0±1.0	11.8±1.7	.26±.12	sediment ?	saprolite
A-19	628	581	211	177	1.4±.1	2.2±0.9	10.4±1.6	.21±.12	gneiss	saprolite
A-20	814	996	233	179	2.4±.2	2.7±1.0	10.5±1.6	.26±.13	?	saprolite
A-21	484	429	174	125	1.0±.1	2.1±0.8	7.1±1.4	.29±.17	schist	saprolite
A-22	332	471	96	53	1.1±.1	1.3±0.6	2.6±.9	.48±.39	geniss ?	saprolite
A-23	1025	1131	333	270	2.8±.2	3.8±1.2	16.2±2.0	.24±.10	granite	saprolite
A-23a	1019	1124	338	285	2.8±.2	3.7±1.2	17.1±2.1	.22±.10	granite	saprolite
A-24	1610	1541	570	510	3.8±.2	6.0±1.6	31.2±2.8	.19±.07	granite	outcrop
A-25	1094	1015	402	357	2.5±.2	4.2±1.3	21.6±2.3	.19±.08	granite	saprolite
A-26	1009	1031	433	331	2.5±.2	5.4±1.3	20.0±2.2	.27±.10	granite	saprolite
A-27	468	495	160	112	1.2±.1	2.0±0.8	6.3±1.3	.31±.19	granite	saprolite
A-28	303	285	140	75	0.7±.1	2.1±0.7	4.0±1.1	.51±.32	granite	saprolite

Table 1

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
A-29	753	774	267	181	1.9±.1	3.6±1.0	10.6±1.7	.34±.15	?	saprolite
A-30	1519	1179	592	575	2.9±.2	5.4±1.6	35.3±3.0	.15±.06	granite	saprolite
A-30a	1720	1434	637	613	3.5±.2	6.0±1.7	37.6±3.0	.16±.06	granite	saprolite
A-31	1441	1429	487	335	3.5±.2	6.8±1.4	20.3±2.3	.33±.11	granite	saprolite
A-32	243	179	81	47	0.4±.1	1.0±0.6	2.3±0.9	.43±.41	?	saprolite
A-33	251	229	69	66	0.5±.1	0.3±0.6	3.5±1.0	.10±.19	?	saprolite
A-34	477	685	103	67	1.7±.1	1.2±0.6	3.5±1.0	.35±.28	gneiss	saprolite
A-35	364	363	150	80	0.9±.1	2.2±0.7	4.3±1.1	.52±.30	gneiss	saprolite
A-36	279	269	105	62	0.6±.1	1.4±0.6	3.2±1.0	.43±.33	schist	saprolite
A-37	278	364	66	47	0.9±.1	0.6±0.5	2.3±0.9	.26±.33	granite	outcrop
A-38	246	334	58	37	0.8±.1	0.5±0.5	1.6±0.8	.33±.44	schist	outcrop
A-39	292	238	123	80	0.6±.1	1.5±0.7	4.3±1.1	.35±.25	amphibolite ?	saprolite
A-40	506	501	162	125	1.2±.1	1.8±0.8	7.1±1.4	.25±.16	gneiss	saprolite
A-41	520	500	175	110	1.2±.1	2.4±0.8	6.2±1.3	.39±.21	schist	outcrop
A-42	1186	1110	421	328	2.7±.2	5.2±1.3	19.8±2.2	.26±.10	gneiss	saprolite
A-43	616	634	236	113	1.5±.1	4.0±0.9	6.4±1.3	.62±.27	schist	saprolite
A-44	1094	1010	443	251	2.5±.2	7.1±1.3	15.0±1.9	.47±.15	granite	saprolite
A-45	1472	670	288	246	1.6±.1	3.0±1.1	14.7±1.9	.21±.10	schist ?	saprolite
A-46	1740	1136	488	378	2.8±.2	6.1±1.4	23.0±2.4	.26±.09	granite	saprolite
A-47	808	804	233	226	2.0±.1	1.9±1.0	13.5±1.9	.14±.10	gneiss	outcrop
A-48	689	650	211	153	1.6±.1	2.6±0.9	8.9±1.5	.29±.15	schist	saprolite
A-49	616	549	268	144	1.3±.1	4.3±1.0	8.3±1.5	.51±.21	schist	saprolite
A-50	366	318	115	72	0.8±.1	1.5±0.7	3.8±1.1	.38±.28	gneiss	saprolite
A-51	719	522	254	205	1.3±.1	2.8±1.0	12.1±1.8	.23±.12	gneiss ?	saprolite
A-52	909	903	264	224	2.2±.2	2.8±1.1	13.3±1.8	.21±.11	granite	saprolite
A-53	1141	1116	375	304	2.7±.2	4.4±1.3	18.3±2.1	.24±.10	granite	saprolite
A-54	373	416	152	86	1.0±.1	2.2±0.8	4.7±1.1	.47±.27	pegmatite ?	saprolite
A-55	1097	964	353	304	2.2±.2	3.8±1.2	18.3±2.1	.21±.09	granite	outcrop/soil
A-55a	1091	972	337	287	2.4±.2	3.6±1.2	17.3±2.1	.21±.09	granite	outcrop/soil
A-56	950	883	320	234	2.2±.2	4.1±1.1	14.0±1.9	.29±.12	granite	saprolite
A-57	1373	1207	486	570	3.0±.2	2.7±1.5	35.0±2.9	.08±.05	granite	saprolite

Table 1 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
A-58	643	500	238	159	1.2±.1	3.2±1.0	9.3±1.6	.35±.16	schist ?	saprolite
A-59	879	775	329	187	1.9±.1	5.1±1.1	11.0±1.7	.47±.17	schist ?	saprolite
A-60	569	448	211	120	1.1±.1	3.2±0.9	6.8±1.4	.46±.22	schist	saprolite
A-61	740	467	222	139	1.1±.1	3.1±0.9	8.0±1.5	.39±.19	gneiss	saprolite
A-62	955	877	313	211	2.1±.2	4.3±1.1	12.5±1.8	.34±.14	granite	saprolite
A-63	776	502	213	141	1.2±.1	2.9±0.9	8.1±1.5	.35±.17	schist	saprolite
A-64	442	342	181	109	0.8±.1	2.6±0.8	6.1±1.3	.42±.22	schist	saprolite
A-65	976	898	394	289	2.2±.2	5.1±1.3	17.4±2.1	.29±.11	gneiss ?	soil
A-65a	940	749	354	231	1.8±.1	5.1±1.1	13.8±1.9	.37±.13	granite	saprolite
A-66	1118	1044	377	242	2.6±.2	5.5±1.2	14.5±1.9	.38±.13	gneiss	saprolite
A-67	777	716	267	231	1.7±.1	2.7±1.1	13.8±1.9	.20±.10	granite	saprolite
A-68	909	864	305	203	2.1±.1	4.2±1.1	12.0±1.8	.35±.14	granite	saprolite
A-69	382	311	132	70	0.7±.1	1.9±0.7	3.7±1.0	.52±.33	?	saprolite
A-70	925	875	310	184	2.1±.2	4.7±1.1	10.8±1.7	.43±.17	gneiss ?	saprolite
A-71	329	323	108	65	0.8±.1	1.4±0.6	3.4±1.0	.41±.31	gneiss	saprolite
A-72	522	636	150	92	1.5±.1	2.0±0.8	5.1±1.2	.40±.24	gneiss	saprolite
A-73	505	540	174	105	1.3±.1	2.5±0.8	5.9±1.3	.42±.23	gneiss	saprolite/soil
A-74	220	199	86	58	0.5±.1	0.9±0.6	3.0±0.9	.31±.30	amphibolite ?	saprolite
A-75	176	174	80	36	0.4±.1	1.1±0.5	1.6±0.8	.73±.68	amphibolite ?	saprolite
A-76	231	236	78	60	0.5±.1	0.7±0.6	3.1±1.0	.22±.25	granite	saprolite
A-77	212	202	96	54	0.5±.1	1.3±0.6	2.7±0.9	.47±.38	gneiss ?	saprolite
A-78	385	317	165	89	0.7±.1	2.5±0.8	4.9±1.1	.51±.28	gneiss ?	saprolite
A-79	496	448	192	115	1.1±.1	2.8±0.9	6.5±1.3	.42±.22	gneiss	saprolite
A-80	1098	1233	345	264	3.0±.2	4.2±1.2	15.8±2.0	.27±.11	granite	saprolite
A-81	1316	1114	454	353	2.7±.2	5.6±1.4	21.4±2.3	.26±.09	granite	saprolite
A-82	1293	1464	377	385	3.6±.2	3.0±1.3	23.4±2.4	.13±.07	granite	saprolite
A-83	1370	1322	475	421	3.2±.2	5.0±1.4	25.6±2.5	.19±.07	granite	saprolite
A-84	1893	1768	658	708	4.4±.2	4.9±1.7	43.6±3.3	.11±.05	granite	saprolite
A-84a	1432	1538	482	488	3.8±.2	4.0±1.5	29.8±2.7	.13±.06	granite	saprolite
A-85	745	781	285	203	1.9±.1	3.7±1.1	12.0±1.8	.31±.13	granite	saprolite
A-86	525	609	183	99	1.5±.1	2.8±0.8	5.5±1.2	.51±.26	gneiss	saprolite

Table 1 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
A-87	533	563	208	125	1.4±.1	3.0±0.9	7.1±1.4	.42±.21	granite	saprolite
A-88	378	375	123	85	0.9±.1	1.4±0.7	4.6±1.1	.31±.23	granite ?	saprolite
A-89	460	529	170	90	1.3±.1	2.6±0.8	5.0±1.2	.53±.28	granite	saprolite
A-90	928	973	364	243	2.4±.2	5.1±1.2	14.5±1.9	.35±.13	granite	soil
A-91	1267	1036	485	431	2.5±.2	5.1±1.4	26.3±2.6	.19±.07	granite	saprolite
A-92	1104	1073	393	342	2.6±.2	4.2±1.3	20.7±2.3	.20±.08	granite	saprolite
A-93	710	774	244	183	1.9±.1	3.0±1.0	10.8±1.7	.28±.13	granite	soil
A-94	1616	1274	622	665	3.1±.2	4.7±1.7	40.9±3.2	.11±.05	granite	soil
A-95	1807	1241	741	835	3.0±.8	4.9±1.9	51.5±3.5	.10±.04	granite	saprolite
A-95a	1805	1184	766	818	2.9±.2	5.9±1.9	50.5±3.5	.12±.05	granite	saprolite
A-96	686	634	255	208	1.5±.1	2.8±1.0	12.3±1.8	.23±.12	schist	saprolite
A-97	899	911	302	236	2.2±.2	3.6±1.1	14.1±1.9	.25±.11	sediment ?	saprolite
A-98	947	952	358	233	2.3±.2	5.1±1.2	13.9±1.9	.37±.13	granite	saprolite
A-99	270	339	98	50	0.8±.1	1.4±0.6	2.5±0.9	.56±.49	gneiss ?	saprolite
A-100	368	405	120	100	1.0±.1	1.1±0.7	5.6±1.2	.20±.17	sediment ?	saprolite
A-101	237	246	82	56	0.6±.1	0.9±0.6	2.8±0.9	.30±.30	gneiss	saprolite

Table 1 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
B-1	685	662	255	180	1.6±.1	3.3±1.0	10.6±1.7	.31±.14	schist	saprolite
B-2	919	898	277	227	2.2±.2	3.1±1.1	13.5±1.9	.23±.11	granite	saprolite
B-3	813	878	215	167	2.1±.2	2.5±0.9	9.8±1.6	.25±.14	granite	saprolite
B-4	882	917	246	226	2.2±.2	5.7±0.9	14.1±1.8	.27±.10	granite	saprolite
B-5	919	824	328	226	2.0±.1	4.4±1.1	13.5±1.9	.33±.13	granite	saprolite/outcrop
B-6	797	798	213	179	1.9±.1	2.2±1.0	10.5±1.6	.21±.12	granite	saprolite
B-7	987	1009	323	234	2.5±.2	4.2±1.1	14.0±1.9	.30±.12	granite	saprolite
B-8	342	367	137	58	0.9±.1	2.3±0.7	3.0±0.9	.77±.48	schist	saprolite
B-9	593	619	234	132	1.5±.1	3.6±0.9	7.6±1.4	.47±.21	schist	saprolite
B-10	799	874	283	194	2.1±.2	3.8±1.0	11.5±1.7	.33±.14	gneiss ?	soil
B-11	893	996	289	255	2.4±.2	2.9±1.1	15.3±1.9	.19±.10	granite	saprolite
B-12	984	873	333	342	2.1±.2	2.6±1.2	20.8±2.3	.12±.07	granite	saprolite
B-13	641	837	172	152	2.0±.1	1.6±0.9	8.8±1.5	.18±.13	granite	saprolite
B-14	209	210	65	31	0.5±.1	0.8±0.5	1.3±0.7	.66±.74	gneiss	saprolite
B-15	739	824	182	170	2.0±.1	1.5±0.9	10.0±1.6	.16±.11	granite	saprolite
B-16	741	725	230	146	1.8±.1	3.2±0.9	8.5±1.5	.38±.18	granite	saprolite
B-17	1008	997	315	182	2.4±.2	4.9±1.1	10.7±1.7	.45±.17	granite	saprolite
B-18	685	783	186	197	1.9±.1	1.2±0.9	11.6±1.7	.10±.09	gneiss	saprolite
B-19	797	857	246	218	2.1±.1	2.4±1.0	13.0±1.8	.19±.11	granite	saprolite
B-20	491	480	171	119	1.2±.1	2.1±0.8	6.8±1.3	.31±.18	schist	saprolite
B-21	997	1297	321	201	3.2±.2	4.7±1.1	11.9±1.7	.39±.15	granite	outcrop/saprolite
B-22	374	321	149	101	0.8±.1	1.9±0.8	5.6±1.2	.33±.21	amphibolite ?	saprolite
B-23	294	263	112	75	0.6±.1	1.3±0.7	4.0±1.1	.33±.25	amphibolite ?	saprolite
B-24	264	308	110	55	0.7±.1	1.6±0.6	2.8±0.9	.58±.42	amphibolite ?	outcrop
B-25	221	171	115	45	0.4±.1	1.9±0.6	2.1±0.8	.90±.64	?	saprolite
B-26	242	275	89	45	0.6±.1	1.2±0.6	2.1±0.8	.57±.49	amphibolite ?	saprolite
B-27	263	236	98	52	0.5±.1	1.4±0.6	2.6±0.9	.52±.41	amphibolite ?	saprolite
B-28	434	413	151	128	1.0±.1	1.4±0.8	7.3±1.4	.20±.15	gneiss ?	saprolite
B-29	188	137	94	57	0.3±.1	1.2±0.6	2.9±0.9	.40±.34	amphibolite ?	saprolite
B-30	293	308	72	59	0.7±.1	0.5±0.6	3.0±1.0	.13±.24	amphibolite ?	saprolite
B-31	407	364	176	115	0.9±.1	2.3±0.8	6.5±1.3	.36±.20	gneiss ?	saprolite
B-32	272	226	99	68	0.5±.1	1.1±0.6	3.6±1.0	.31±.26	schist	saprolite
B-33	302	298	52	46	0.7±.1	0.2±0.5	2.2±0.8	.11±.26	gneiss	saprolite

Table 2

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
B-34	176	199	57	46	0.5±.1	0.4±0.5	2.2±0.8	.17±.29	?	saprolite
B-35	486	431	195	132	1.0±.1	2.5±0.9	7.6±1.4	.34±.18	schist	soil
B-36	672	603	277	176	1.5±.1	4.0±1.0	10.3±1.6	.38±.16	granite	saprolite
B-36a	676	672	249	200	1.6±.1	2.8±1.0	11.8±1.7	.24±.12	granite	saprolite
B-36b	666	654	239	168	1.6±.1	3.1±1.0	9.8±1.6	.31±.15	granite	saprolite
B-37	675	654	217	175	1.6±.1	2.4±1.0	10.3±1.6	.23±.13	granite	saprolite
B-38	859	794	337	258	1.9±.1	4.1±1.2	15.5±2.0	.27±.11	granite	saprolite
B-39	820	718	277	196	1.7±.1	3.6±1.0	11.6±1.7	.31±.14	gneiss	saprolite
B-40	987	931	309	281	2.3±.2	3.3±1.1	17.2±2.1	.18±.09	granite	saprolite
B-41	953	892	341	272	2.2±.2	4.0±1.2	16.3±2.0	.24±.10	schist	saprolite
B-42	850	906	235	213	2.2±.2	2.2±1.0	12.6±1.8	.17±.10	granite	saprolite
B-43	893	951	266	185	2.3±.2	3.5±1.0	10.9±1.7	.32±.14	schist	saprolite
B-44	653	609	185	169	1.5±.1	1.6±0.9	9.9±1.6	.17±.12	granite	saprolite
B-45	890	866	276	231	2.1±.1	3.0±1.1	13.8±1.9	.22±.11	granite	saprolite
B-46	694	716	180	169	1.5±.1	2.2±1.1	9.9±1.6	.15±.11	granite	saprolite
B-47	840	820	254	244	2.0±.1	0.9±0.7	14.6±1.9	.15±.09	granite	saprolite
B-48	594	563	123	118	1.4±.1	0.9±0.7	6.7±1.3	.13±.14	granite	soil
B-49	824	794	216	204	1.9±.1	1.9±1.0	12.1±1.8	.15±.10	sediment ?	saprolite
B-50	302	310	94	57	0.7±.1	1.2±0.6	2.9±0.9	.40±.34	granite	saprolite
B-51	1040	1038	350	279	2.5±.2	4.1±1.2	16.8±2.1	.25±.10	granite	saprolite
B-52	866	910	301	188	2.2±.2	4.4±1.1	11.1±1.7	.40±.16	granite	saprolite
B-53	429	488	137	89	1.2±.1	1.7±0.7	4.9±1.2	.36±.23	schist	saprolite
B-54	804	855	301	187	2.1±.1	4.4±1.1	11.0±1.7	.40±.16	schist	saprolite
B-55	892	999	286	209	2.4±.1	3.6±1.1	12.4±1.8	.29±.13	granite	saprolite/outcrop
B-56	795	877	242	227	2.1±.2	2.2±1.0	13.5±1.9	.16±.10	granite	saprolite
B-57	777	838	259	218	2.0±.1	2.8±1.0	12.8±1.8	.22±.11	granite	saprolite
B-58	794	797	249	274	1.9±.1	1.5±1.1	16.5±2.0	.09±.08	schist	saprolite
B-59	373	348	175	72	0.8±.1	3.0±0.8	3.8±1.1	.80±.42	amphibolite ?	saprolite
B-60	284	248	127	52	0.6±.1	2.1±0.7	2.6±0.9	.83±.55	gneiss	saprolite
B-61	247	210	119	46	0.5±.1	2.0±0.6	2.2±0.8	.91±.64	amphibolite ?	saprolite
B-62	263	241	101	61	0.6±.1	1.3±0.6	3.1±1.0	.41±.32	schist ?	saprolite/outcrop
B-62a	264	223	120	67	0.5±.1	1.7±0.7	3.5±1.0	.48±.33	on ground, same site	
B-63	216	171	86	46	0.4±.1	1.1±0.6	2.2±0.8	.51±.45	gneiss ?	saprolite

Table 2 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
B-64	168	95	78	41	0.2±.1	1.0±0.5	1.9±0.8	.53±.51	sandstone ?	saprolite
B-65	138	92	73	40	0.2±.1	0.9±0.5	1.8±0.8	.49±.50	amphibolite	saprolite
B-66	313	234	144	89	0.5±.1	1.9±0.7	4.9±1.2	.39±.25	?	saprolite
B-66a	272	365	79	44	0.9±.1	1.0±0.6	2.1±0.8	.47±.45	on ground,	same site
B-67	480	467	196	97	1.1±.1	3.2±0.8	5.4±1.2	.59±.29	gneiss ?	saprolite
B-68	277	307	94	54	0.7±.1	1.2±0.6	2.7±0.9	.45±.37	gneiss ?	saprolite
B-69	279	336	83	40	0.8±.1	1.2±0.6	1.8±0.8	.63±.57	amphibolite ?	saprolite
B-70	245	203	114	61	0.5±.1	1.6±0.7	3.1±1.0	.52±.36	gneiss ?	saprolite
B-71	278	295	94	67	0.7±.1	1.0±0.6	3.5±1.0	.28±.26	gneiss ?	saprolite
B-72	218	183	83	60	0.4±.1	0.8±0.6	3.1±1.0	.25±.27	gneiss ?	saprolite
B-72a	334	307	135	89	0.7±.1	1.7±0.7	4.9±1.2	.35±.23	gneiss ?	soil
B-73	559	642	170	125	1.6±.1	2.0±0.8	7.1±1.4	.28±.17	?	saprolite
B-74	190	241	53	33	0.6±.1	0.5±0.8	1.4±0.7	.35±.31	granite	saprolite
B-75	210	221	87	49	0.5±.1	1.1±0.6	2.4±0.9	.46±.41	gneiss ?	saprolite
B-76	193	190	92	59	0.4±.1	1.1±0.6	3.0±1.0	.35±.31	sediment ?	saprolite
B-77	293	366	88	36	0.9±.1	1.4±0.6	1.6±0.8	.86±.76	gneiss	saprolite
B-78	125	116	61	30	0.3±.1	0.7±0.5	1.2±0.7	.62±.74	granite	saprolite
B-79	195	252	62	39	0.6±.1	0.6±0.5	1.8±0.8	.35±.43	gneiss	saprolite
B-80	210	271	86	48	0.6±.1	1.1±0.6	2.3±0.9	.47±.42	gneiss ?	soil
B-81	259	327	100	43	0.8±.1	1.6±0.6	2.0±0.8	.77±.61	granite	saprolite
B-82	159	157	52	31	0.4±.1	0.5±0.5	1.3±0.7	.39±.57	gneiss	saprolite
B-83	226	273	62	44	0.6±.1	0.5±0.5	2.1±0.8	.26±.34	gneiss	saprolite
B-84	534	478	189	158	1.1±.1	1.9±0.9	9.2±1.6	.21±.13	gneiss	soil
B-85	583	575	209	156	1.4±.1	2.5±0.9	9.1±1.5	.28±.15	gneiss	soil
B-86	620	643	220	162	1.6±.1	2.7±0.9	9.5±1.6	.28±.15	granite	saprolite
B-87	965	975	311	297	2.4±.2	3.6±0.8	17.9±2.1	.16±.08	granite	saprolite
B-88	708	775	182	191	1.9±.1	1.2±0.9	11.3±1.7	.10±.10	granite	soil
B-89	242	301	68	41	0.7±.1	0.7±0.5	1.9±0.8	.39±.44	gneiss	saprolite
B-90	907	997	264	221	2.4±.2	2.8±1.1	13.1±1.8	.22±.11	granite	saprolite
B-91	701	558	271	238	1.3±.1	2.7±1.1	14.2±1.9	.19±.10	granite	saprolite
B-92	794	872	263	229	2.1±.1	2.7±1.1	13.6±1.9	.20±.10	granite	saprolite
B-93	884	792	281	241	1.9±.1	2.9±1.1	14.4±1.9	.20±.10	granite	saprolite

Table 2 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
C-1	302	310	94	57	0.7±.1	1.2±0.6	2.9±0.9	.40±.34	?	saprolite
C-2	268	337	91	51	0.8±.1	1.2±0.6	2.5±0.9	.47±.40	granite ?	saprolite
C-3	315	380	89	67	0.9±.1	0.9±0.6	3.5±1.0	.24±.24	?	soil
C-4	498	613	131	118	1.5±.1	1.1±0.8	6.7±1.3	.16±.14	granite	saprolite
C-5	631	857	173	104	2.1±.1	2.4±0.8	5.8±1.3	.42±.23	granite	saprolite
C-6	867	809	285	315	2.0±.1	1.8±1.1	19.0±2.2	.09±.07	amphibolite ?	saprolite
C-7	584	824	118	105	2.0±.1	1.0±0.7	5.9±1.3	.16±.16	amphibolite ?	saprolite
C-8	235	306	52	34	0.7±.1	0.4±0.5	1.5±0.7	.30±.46	gneiss ?	saprolite
C-9	301	309	120	72	0.7±.1	1.6±0.7	3.8±1.1	.41±.29	gneiss	saprolite
C-10	249	239	104	62	0.6±.1	1.3±0.6	3.2±1.0	.42±.32	gneiss	saprolite
C-10a	260	250	104	57	0.6±.1	1.4±0.6	2.9±0.9	.49±.37	?	saprolite
C-11	305	271	116	65	0.6±.1	1.6±0.7	3.4±1.0	.47±.33	?	saprolite
C-12	460	595	154	87	1.4±.1	2.2±0.8	4.8±1.2	.47±.27	schist	saprolite

Table 3

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
D-1	909	1150	243	247	2.8±.2	1.8±1.1	14.8±1.9	.12±.09	granite	saprolite
D-2	793	965	243	245	2.4±.2	1.9±1.1	14.6±1.9	.13±.09	granite	saprolite
D-3	871	1092	231	282	2.7±.2	0.9±1.1	17.0±2.1	.05±.07	granite	saprolite
D-4	898	853	333	275	2.1±.1	3.7±1.2	16.5±2.0	.23±.10	granite	saprolite
D-5	991	925	385	293	2.3±.2	4.8±1.3	17.6±2.1	.27±.10	granite	saprolite
D-6	1198	1121	427	465	2.7±.2	3.0±1.4	28.4±2.6	.10±.06	granite	saprolite/outcrop
D-7	597	724	191	142	1.8±.1	2.3±.9	8.2±1.5	.28±.16	granite	saprolite
D-8	770	864	241	214	2.1±.1	2.3±1.0	12.7±1.8	.18±.11	granite	saprolite
D-9	957	1166	353	315	2.9±.2	3.6±1.2	19.0±2.2	.19±.09	granite	saprolite
D-10	1041	1149	305	324	2.8±.2	2.2±1.1	19.6±2.2	.11±.07	granite	saprolite
D-11	836	1099	223	219	2.7±.2	1.8±1.0	13.0±1.8	.14±.10	granite	saprolite
D-12	1003	1388	255	275	3.4±.2	1.7±1.1	16.5±2.0	.10±.08	granite	outcrop
D-13	876	1077	270	257	2.6±.2	2.4±1.1	15.4±2.0	.15±.09	granite	saprolite
D-14	999	1264	269	285	3.1±.2	2.2±1.1	17.1±2.1	.11±.08	granite	saprolite
D-15	833	861	280	280	2.1±.1	2.6±1.0	16.8±2.1	.13±.08	granite	saprolite
D-16	724	763	241	199	1.9±.1	2.0±1.1	11.8±1.7	.22±.12	granite	saprolite
D-17	873	975	249	245	2.4±.2	1.7±1.0	14.6±1.9	.14±.09	granite	saprolite
D-18	812	845	238	246	2.1±.1	1.5±1.2	14.7±1.9	.12±.09	granite	saprolite
D-19	916	906	282	324	2.2±.1	3.4±1.2	19.6±2.2	.08±.07	granite	saprolite
D-20	924	893	331	292	2.2±.2	3.4±1.3	17.6±2.1	.19±.09	granite	saprolite
D-21	1084	1015	367	345	2.5±.2	3.4±1.3	20.9±2.3	.16±.08	?	saprolite
D-21a	1116	909	450	409	2.2±.2	4.5±1.4	20.4±2.5	.18±.07	pegmatite	saprolite
D-22	295	267	125	73	0.6±.1	1.7±.7	3.9±1.1	.44±.30	?	saprolite
D-23	287	390	160	137	0.9±.1	1.5±.8	7.9±1.4	.19±.14	?	saprolite
D-24	336	348	129	60	0.8±.1	2.0±.7	3.1±1.0	.66±.43	gneiss ?	saprolite
D-25	304	340	98	65	0.8±.1	1.1±.6	3.4±1.0	.33±.28	gneiss ?	saprolite
D-26	346	303	130	106	0.7±.1	1.3±.7	6.0±1.3	.21±.17	?	saprolite
D-27	292	270	111	71	0.6±.1	1.4±.7	3.8±1.0	.36±.27	?	saprolite
D-28	338	377	99	71	0.9±.1	1.0±.6	3.8±1.0	.28±.24	gneiss	saprolite
D-29	276	318	81	56	0.8±.1	0.8±.6	2.8±.9	.29±.30	?	saprolite
D-30	359	435	122	66	1.0±.1	1.7±.7	3.5±1.0	.50±.34	gneiss	saprolite
D-31	901	1046	291	248	2.6±.2	3.1±1.1	14.8±1.9	.21±.10	granite	saprolite

Table 4

Site #	Cumulate Counts (2 minutes)				Calculated Concentration			Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)		
D-31a	1225	1495	371	325	3.7±.2	3.9±1.3	19.6±2.2	granite	outcrop/saprolite
D-32	519	628	167	117	0.1±.0	2.1±.8	6.6±1.3	granite	saprolite
D-33	376	427	108	87	1.0±.1	1.0±.7	4.8±1.2	?	saprolite
D-34	353	337	129	83	0.8±.1	1.6±.7	4.5±1.1	?	saprolite
D-35	341	419	115	79	1.0±.1	1.3±.7	4.3±1.1	schist ?	saprolite
D-36	211	177	87	65	0.4±.1	0.8±.6	3.4±1.0	?	soil
D-37	449	528	129	90	1.3±.1	1.5±.7	5.0±1.2	gneiss	saprolite
D-38	299	309	105	69	0.7±.1	1.2±.6	3.6±1.0	gneiss	saprolite
D-39	494	360	144	107	0.9±.1	1.6±.8	6.0±1.3	?	saprolite
D-40	267	216	132	65	0.5±.1	2.0±.7	3.4±1.0	?	soil
D-41	691	654	255	194	1.6±.1	3.1±1.0	11.5±1.7	?	saprolite
D-42	826	856	309	256	2.1±.1	3.4±1.1	15.3±2.0	granite	saprolite
D-43	1218	1204	407	314	3.0±.2	5.0±1.3	19.0±2.2	granite	saprolite
D-44	358	321	139	81	0.8±.1	1.9±.7	4.4±1.1	gneiss	soil
D-45	505	554	185	97	1.3±.1	2.9±.8	5.4±1.2	gneiss	soil
D-46	481	437	207	142	1.0±.1	2.7±.9	8.2±1.5	gneiss	saprolite
D-47	334	325	134	77	0.8±.1	1.9±.7	4.1±1.1	gneiss	soil
D-48	333	368	110	81	0.9±.1	1.2±.7	4.4±1.1	gneiss	saprolite
D-49	1124	1226	324	376	3.0±.2	1.8±1.2	22.8±2.4	?	saprolite
D-50	582	581	172	122	1.4±.1	2.1±.9	7.0±1.4	?	soil
D-51	551	578	199	153	1.4±.1	2.3±.9	8.9±1.5	?	saprolite
D-52	328	504	72	46	1.2±.1	0.8±.5	2.2±.8	gneiss ?	saprolite
D-53	331	498	92	62	1.2±.1	1.0±.6	3.2±1.0	gneiss ?	saprolite
D-54	696	778	203	209	1.9±.1	1.4±1.0	12.4±1.8	?	soil
D-55	293	233	137	87	0.5±.1	1.8±.7	4.8±1.2	?	saprolite
D-56	271	419	76	36	1.0±.1	1.0±.5	1.6±.8	?	saprolite
D-57	487	444	161	157	1.1±.1	1.2±.9	9.1±1.5	?	saprolite
D-58	528	557	164	139	1.3±.1	1.6±.8	8.0±1.4	granite ?	soil
D-59	720	761	264	211	1.9±.1	3.0±1.0	12.5±1.8	granite	saprolite
D-60	741	795	254	225	1.9±.1	2.5±1.0	13.4±1.8	granite	saprolite
D-61	861	1033	253	240	2.5±.2	2.2±1.1	14.3±1.9	granite	saprolite
D-62	744	756	228	231	1.8±.1	1.7±1.0	13.8±1.9	granite	saprolite

Table 4 (cont.)

Site #	Cumulate Counts (2 minutes(				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
D-63	910	1014	282	262	2.5±.2	2.6±1.1	15.7±2.0	.17±.09	granite	soil
D-64	832	786	287	305	1.9±.1	2.0±1.1	18.4±2.1	.11±.08	granite	saprolite
D-65	753	814	220	189	2.0±.1	2.2±1.0	11.1±1.7	.20±.12	granite	saprolite
D-66	738	800	234	198	2.0±.1	2.4±1.0	11.7±1.7	.21±.12	granite	saprolite
D-67	871	1016	276	266	2.5±.2	2.4±1.1	16.0±2.0	.15±.09	granite	soil
D-68	1253	1516	339	391	3.7±.2	1.9±1.3	23.8±2.4	.08±.06	granite	saprolite/outcrop
D-69	912	1044	267	255	2.6±.2	2.3±1.1	15.3±2.0	.15±.09	granite	saprolite
D-70	956	1121	316	290	2.8±.2	3.0±1.2	17.5±2.1	.17±.09	granite	saprolite
D-71	1300	1289	475	329	3.2±.2	6.6±1.4	19.9±2.2	.33±.11	granite	soil
D-72	1084	1273	282	347	0.4±.1	1.1±1.2	21.0±2.3	.05±.06	granite	saprolite
D-72a	1301	1711	309	351	4.2±.2	1.8±1.2	21.3±2.3	.08±.07	granite	outcrop
D-73	1083	1219	336	285	3.0±.2	3.6±1.2	17.1±2.1	.21±.10	granite	saprolite
D-74	1012	1187	275	240	2.9±.2	2.8±1.1	14.3±1.9	.20±.10	?	saprolite
D-75	423	451	149	97	1.1±.1	1.9±.8	5.4±1.2	.36±.22	granite	saprolite
D-76	975	1081	284	319	2.7±.2	1.7±1.2	19.3±2.2	.09±.07	granite	saprolite
D-77	1121	1154	348	318	2.8±.2	3.4±1.2	19.2±2.2	.18±.08	granite	saprolite
D-78	1032	1140	308	282	2.8±.2	3.0±1.2	17.0±2.1	.17±.09	granite	saprolite
D-79	887	1058	244	209	2.6±.2	2.5±1.0	12.4±1.8	.20±.11	granite	saprolite
D-80	895	824	309	308	2.0±.1	2.5±1.2	18.6±2.2	.14±.08	granite	saprolite
D-81	1029	1192	300	253	2.9±.2	3.2±1.1	15.1±2.0	.21±.10	granite	saprolite/outcrop
D-82	854	1090	233	201	2.7±.2	2.4±1.0	11.9±1.7	.20±.11	granite	soil
D-83	968	1182	249	258	2.9±.2	1.8±1.1	15.5±2.0	.12±.08	granite	saprolite
D-84	1014	1069	293	326	2.0±.2	1.8±1.2	19.7±2.2	.09±.07	granite	saprolite
D-85	1348	1603	374	413	4.0±.2	2.4±1.3	25.1±2.5	.10±.06	granite	saprolite
D-86	904	921	314	287	2.3±.2	3.0±1.2	17.3±2.1	.18±.09	granite	saprolite
D-87	815	1090	216	208	2.7±.2	1.8±1.0	12.3±1.8	.15±.10	granite	saprolite
D-88	763	953	240	201	2.3±.2	2.5±1.0	11.9±1.7	.21±.12	granite	saprolite
D-89	867	870	255	290	2.1±.2	1.4±1.1	17.5±2.1	.08±.07	granite	saprolite
D-90	957	1067	291	300	2.6±.2	2.2±1.2	18.1±2.1	.12±.08	granite	saprolite
D-90a	907	933	301	266	2.3±.2	3.0±1.1	16.0±2.0	.19±.09	granite	saprolite
D-91	892	990	292	274	2.4±.2	2.7±1.1	16.5±2.0	.16±.09	granite	saprolite
D-92	826	934	271	255	2.3±.2	2.4±1.1	15.3±2.0	.16±.09	granite	saprolite

Table 4 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	T/Th		
E-1	876	1032	230	215	2.5±.2	2.0±1.0	12.8±1.8	.16±.10	granite	saprolite
E-2	1043	1219	298	238	3.0±.2	3.4±1.1	14.2±1.9	.24±.11	granite	saprolite
E-3	658	741	188	129	1.8±.1	2.4±0.9	7.4±1.4	.33±.18	granite	soil
E-4	866	1028	258	209	2.5±.2	2.9±1.0	12.4±1.8	.23±.12	granite	saprolite
E-5	868	1066	247	261	2.6±.2	1.7±1.1	15.6±2.0	.11±.08	granite	saprolite
E-6	878	964	211	246	2.4±.2	1.0±1.0	14.7±1.9	.07±.08	granite	saprolite
E-7	803	1075	191	214	2.6±.2	1.0±1.0	12.7±1.8	.08±.09	granite	saprolite/outcrop
E-8	847	946	233	264	2.3±.2	1.3±1.1	15.8±2.0	.08±.08	granite	saprolite
E-9	1011	1179	262	297	2.9±.2	1.5±1.1	17.9±2.1	.08±.07	granite	saprolite
E-9a	1126	1473	279	340	3.6±.2	1.2±1.2	20.6±2.3	.06±.06	granite	saprolite
E-10	1123	1376	285	327	3.4±.2	1.6±1.2	19.8±2.2	.08±.07	granite	outcrop
E-11	912	1180	259	230	2.9±.2	2.6±1.1	13.7±1.9	.19±.10	granite	saprolite
E-12	935	1119	284	183	2.7±.2	4.0±1.1	10.8±1.7	.37±.15	granite	saprolite
E-13	989	1156	287	345	2.8±.2	1.3±2.2	20.9±2.3	.06±.06	granite	saprolite
E-14	1096	1277	291	305	3.1±.2	2.1±1.2	18.4±2.1	.11±.08	granite	saprolite
E-15	803	933	232	282	2.3±.2	0.9±1.1	17.0±2.1	.06±.07	granite	soil
E-16	1019	1248	275	276	3.1±.2	2.2±1.1	16.6±2.0	.13±.08	granite	saprolite
E-17	890	992	256	206	2.4±.2	2.9±1.0	12.2±1.8	.24±.12	granite	saprolite
E-18	686	876	213	165	2.1±.2	2.5±0.9	9.6±1.6	.25±.14	granite	soil
E-19	1092	1166	318	331	2.9±.2	2.4±1.2	20.0±2.2	.12±.07	granite	saprolite
E-20	823	1056	239	176	2.6±.2	3.0±1.0	10.3±1.6	.29±.14	granite	saprolite
E-21	861	993	266	223	2.4±.2	2.9±1.1	13.3±1.8	.22±.11	granite	saprolite
E-22	647	1059	115	112	2.6±.2	0.8±0.7	6.3±1.3	.12±.14	granite	saprolite
E-23	973	1007	310	329	2.5±.2	2.2±1.2	19.9±2.2	.11±.07	granite	saprolite
E-24	899	1153	241	172	2.8±.2	3.1±1.0	10.1±1.6	.30±.15	granite	outcrop/saprolite
E-25	1061	1313	310	252	3.2±.2	3.5±1.1	15.1±2.0	.23±.11	granite	saprolite
E-26	1125	1463	269	343	3.6±.2	0.9±1.2	20.8±2.3	.04±.06	granite	saprolite/outcrop
E-27	969	1190	266	317	2.9±.2	1.2±1.1	19.1±2.2	.06±.07	granite	saprolite
E-28	911	1074	262	241	2.6±.2	2.4±1.1	14.4±1.9	.17±.10	granite	saprolite
E-29	1144	1336	351	372	3.3±.2	2.5±1.3	22.6±2.4	.11±.07	granite	saprolite
E-30	796	993	253	286	2.4±.2	1.4±1.1	17.2±2.1	.08±.07	granite	saprolite
E-31	1023	1196	300	363	2.9±.2	1.3±1.2	22.0±2.3	.06±.06	granite	saprolite

Table 5

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
E-32	968	1056	285	306	2.6±.2	1.9±1.2	18.5±2.2	.10±.07	granite	saprolite
E-33	1053	1459	267	296	3.6±.2	1.6±1.1	17.8±2.1	.09±.07	granite	outcrop
E-34	614	590	202	210	1.4±.1	1.4±1.0	12.5±1.8	.11±.09	granite	soil
E-35	747	900	215	206	2.2±.2	2.1±1.2	12.1±1.7	.15±.10	granite	saprolite
E-36	898	1128	225	252	2.8±.2	1.3±1.0	15.1±2.0	.08±.08	granite	saprolite
E-37	948	1406	218	222	3.5±.2	1.6±1.0	13.2±1.8	.12±.09	granite	saprolite
E-38	816	1069	178	194	2.6±.2	1.0±0.9	11.5±1.7	.09±.09	granite	soil
E-39	871	1055	255	265	2.6±.2	1.8±1.1	15.9±2.0	.12±.08	granite	saprolite
E-40	836	912	186	214	2.2±.2	0.9±0.9	12.7±1.8	.07±.08	granite	saprolite
E-41	890	993	210	241	2.4±.2	1.1±1.0	14.4±1.9	.07±.08	granite	saprolite
E-42	858	933	234	256	2.3±.2	1.4±1.0	15.3±2.0	.09±.08	granite	saprolite
E-43	872	814	302	301	2.0±.1	2.5±1.1	18.1±2.1	.14±.08	granite	saprolite
E-44	926	1002	263	305	2.5±.2	1.4±1.1	18.4±2.1	.07±.07	granite	saprolite
E-45	920	1118	254	243	2.8±.2	2.3±1.2	14.8±1.9	.15±.09	granite	saprolite
E-46	796	978	217	184	2.4±.2	2.2±1.0	10.8±1.7	.21±.12	granite	saprolite
E-47	853	1005	271	254	2.5±.2	2.5±1.1	15.2±2.0	.16±.09	granite	saprolite
E-48	1156	1303	328	381	3.2±.2	1.8±1.3	23.1±2.4	.08±.06	granite	saprolite
E-49	814	993	220	202	2.4±.2	2.0±1.0	12.0±1.8	.17±.11	granite	saprolite
E-50	706	812	202	139	2.0±.1	2.6±0.9	8.0±1.5	.33±.17	granite	saprolite
E-51	1120	1446	257	279	3.6±.2	1.7±1.1	16.8±2.1	.10±.08	granite	saprolite
E-52	1005	1336	270	274	3.3±.2	2.1±1.1	16.5±2.1	.13±.08	granite	saprolite
E-53	1125	1308	355	366	3.2±.2	2.8±1.3	22.2±2.4	.12±.07	granite	saprolite
E-54	796	1076	209	209	2.6±.2	1.6±1.0	12.4±1.8	.13±.10	granite	saprolite
E-55	923	1091	264	251	2.7±.2	2.3±1.1	15.0±1.9	.15±.09	granite	saprolite
E-56	791	1030	219	204	2.5±.2	1.9±1.0	12.1±1.8	.16±.10	granite	saprolite
E-57	754	905	209	179	2.2±.2	2.1±0.9	10.5±1.6	.20±.12	granite	soil
E-58	801	986	222	184	2.4±.2	2.4±1.0	10.8±1.7	.22±.12	granite	saprolite
E-59	749	1055	188	169	2.6±.2	1.7±0.9	9.9±1.6	.17±.12	granite	soil
E-60	833	1014	250	230	2.5±.2	2.3±1.0	13.7±1.9	.17±.10	granite	soil
E-61	750	943	212	196	2.3±.2	1.9±1.0	11.6±1.7	.16±.11	granite	saprolite
E-62	780	977	213	192	2.4±.2	2.0±1.0	11.3±1.7	.18±.11	granite	saprolite
E-63	828	876	250	226	2.1±.2	2.4±1.1	13.9±1.9	.18±.10	granite	saprolite/soil

Table 5 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
E-64	889	1021	274	259	2.5±.2	2.4±1.1	15.5±2.0	.16±.09	granite	saprolite
E-65	868	1004	256	266	2.5±.2	1.9±1.1	16.0±2.0	.12±.08	granite	soil
E-66	821	865	252	272	2.1±.1	1.6±1.1	16.3±2.0	.10±.08	granite	saprolite
E-67	986	991	328	322	2.4±.2	2.8±1.2	19.5±2.2	.14±.08	granite	saprolite
E-67a	947	1060	307	344	2.6±.2	1.9±1.2	20.8±2.3	.09±.07	granite	saprolite
E-68	855	989	243	290	2.4±.2	1.1±1.1	17.5±2.1	.06±.07	granite	saprolite
E-69	1069	1335	274	293	3.3±.2	1.9±1.1	17.6±2.1	.11±.08	granite	saprolite
E-70	1088	1219	286	356	3.0±.2	1.1±1.2	21.6±2.3	.05±.06	granite	saprolite
E-71	888	1145	228	246	2.8±.2	1.5±1.0	14.7±1.9	.10±.08	granite	soil
E-72	No site									
E-73	826	1059	206	215	2.6±.2	1.4±1.0	12.8±1.8	.11±.09	granite	saprolite
E-74	923	1214	255	254	3.0±.2	2.0±1.1	15.2±2.0	.13±.09	granite	saprolite
E-75	897	1217	255	258	3.0±.2	2.0±1.1	15.5±2.0	.13±.09	granite	saprolite
E-76	1064	1308	331	296	3.2±.2	3.3±1.2	17.8±2.1	.19±.09	granite	saprolite
E-77	1140	1483	303	330	3.7±.2	2.0±1.2	20.0±2.2	.10±.07	granite	saprolite
E-78	847	1074	210	250	2.6±.2	0.9±1.1	15.0±0.9	.06±.08	granite	saprolite
E-79	693	816	186	198	2.0±.1	1.2±0.9	11.7±1.7	.10±.09	granite	saprolite
E-80	855	891	276	272	2.2±.2	2.3±1.1	16.3±2.0	.14±.09	granite	saprolite
E-81	924	1013	194	198	2.5±.2	1.4±0.9	11.7±1.7	.12±.10	granite	soil/outcrop
E-82	735	1039	191	112	2.6±.2	2.8±0.9	6.3±1.3	.44±.22	granite	soil
E-83	755	958	197	195	2.3±.2	1.5±0.9	11.5±1.7	.13±.10	granite	soil
E-84	890	902	245	310	2.2±.2	0.8±1.1	18.7±2.2	.04±.06	granite	saprolite
E-85	785	1036	192	237	2.5±.2	0.7±1.0	14.1±1.9	.05±.07	granite	soil
E-86	769	993	193	174	2.4±.2	1.8±0.9	10.2±1.6	.17±.12	granite	saprolite
E-87	871	1081	246	230	2.7±.2	2.2±1.0	13.7±1.9	.16±.10	granite	saprolite
E-88	939	1142	278	304	2.8±.2	1.8±1.1	18.3±2.1	.10±.07	granite	saprolite
E-89	808	898	190	209	2.2±.2	1.1±0.9	12.4±1.8	.09±.09	granite	saprolite
E-90	1031	1224	294	293	3.0±.2	2.4±1.2	17.6±2.1	.14±.08	granite	saprolite
E-91	689	828	211	189	2.0±.1	2.0±1.0	11.1±1.7	.18±.11	granite	saprolite
E-92	1048	1193	285	308	2.9±.2	1.9±1.2	18.6±2.2	.10±.07	granite	saprolite
E-93	997	1226	244	295	3.0±.2	1.0±1.1	17.8±2.1	.06±.07	granite	saprolite

Table 5 (cont.)

APPENDIX A

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
F-1	203	176	61	48	0.4±.1	0.4± .5	2.3± .9	.19±.29	diorite ?	saprolite
F-2	188	139	71	35	0.3±.1	0.9± .5	1.5± .7	.61±.63	amphibolite	saprolite
F-3	1115	1210	331	358	3.0±.2	2.3±1.2	21.7±2.3	.10±.07	granite	saprolite
F-4	669	801	192	155	2.0±.1	2.1± .9	9.0±1.5	.23±.14	granite	saprolite
F-5	988	1101	310	263	2.7±.2	3.3±1.1	15.8±2.0	.21±.10	granite	saprolite
F-6	532	593	211	121	1.4±.1	3.2± .9	6.9±1.4	.46±.22	?	soil
F-7	931	1034	274	283	2.5±.2	2.0±1.1	17.0±2.1	.12±.08	granite	saprolite
F-8	531	640	132	129	1.6±.1	0.9± .8	7.4±1.4	.13±.13	granite	soil
F-9	447	529	164	112	1.3±.1	2.1± .8	6.3±1.3	.33±.19	schist ?	saprolite
F-10	406	577	122	78	1.4±.1	1.5± .7	4.2±1.1	.37±.26	schist ?	soil
F-11	446	582	133	107	1.4±.1	1.3± .7	6.0±1.3	.22±.17	schist ?	saprolite
F-12	449	529	138	107	1.3±.1	1.5± .8	6.0±1.3	.24±.18	granite	saprolite
F-13	693	881	193	178	2.2±.2	1.7± .9	10.5±1.6	.16±.11	?	saprolite
F-14	518	510	195	112	1.2±.1	2.9± .9	6.3±1.3	.46±.23	?	saprolite
F-15	512	486	177	158	1.2±.1	1.6± .9	9.2±1.6	.18±.12	granite	saprolite
F-16	913	1081	168	150	2.7±.2	1.5± .9	8.7±1.5	.17±.13	granite	saprolite
F-17	518	682	161	114	1.7±.1	2.0± .8	6.5±1.3	.30±.19	granite	saprolite
F-18	898	972	236	221	2.4±.2	2.1± .9	12.5±1.7	.16±.10	granite	saprolite

Table 6

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
G-1	827	904	263	256	2.2±.2	2.2±1.1	15.3±2.0	.14±.09	granite	saprolite
G-2	890	938	285	284	2.3±.2	2.3±1.1	17.1±2.1	.14±.08	granite	saprolite
G-3	1124	1299	350	339	3.2±.2	3.1±1.2	20.5±2.3	.15±.08	granite	saprolite
G-4	776	913	229	199	2.2±.2	2.3±1.0	11.8±1.7	.19±.11	granite	saprolite
G-5	787	858	255	232	2.1±.1	2.4±1.1	13.8±1.9	.17±.10	granite	saprolite
G-6	843	987	234	258	2.4±.2	1.4±1.0	15.5±2.0	.09±.08	granite	saprolite
G-7	776	1151	204	166	2.8±.2	2.2±1.0	9.7±1.6	.23±.13	granite	saprolite
G-8	775	953	231	173	2.3±.2	2.8±1.0	10.1±1.6	.28±.14	granite	soil
G-9	432	413	153	113	1.0±.1	1.8±.8	6.4±1.3	.27±.18	?	saprolite
G-10	923	1039	282	339	2.5±.2	1.3±1.2	20.5±2.3	.06±.06	granite	saprolite
G-11	502	621	141	124	1.5±.1	1.2±.8	7.1±1.4	.18±.14	?	soil
G-12	658	747	229	149	1.8±.1	3.2±.9	8.6±1.5	.36±.17	?	saprolite
G-13	511	657	130	137	1.6±.1	0.7±.8	7.9±1.4	.09±.11	?	soil
G-14	912	1253	219	219	3.1±.2	1.7±1.0	13.0±1.8	.13±.09	granite ?	soil
G-15	751	1021	183	191	2.5±.2	1.2±.9	11.3±1.7	.11±.10	?	saprolite
G-16	898	1176	251	225	2.9±.2	2.4±1.0	13.4±1.8	.18±.10	granite	saprolite
G-17	948	957	332	299	2.3±.2	3.3±1.2	18.0±2.1	.18±.09	granite	saprolite
G-18	1054	1164	289	367	2.9±.2	1.0±1.2	22.3±2.4	.04±.06	granite	saprolite
G-19	903	1085	297	250	2.7±.2	3.2±1.1	15.0±1.9	.21±.10	granite	saprolite
G-20	842	1052	256	212	2.6±.2	2.8±1.0	12.6±1.8	.22±.11	granite	saprolite
G-21	830	1024	207	211	2.5±.2	1.5±1.0	12.5±1.8	.12±.09	granite	saprolite
G-22	738	781	248	169	1.9±.1	3.3±1.0	9.9±1.6	.33±.15	granite	soil
G-23	512	606	183	131	1.5±.1	2.2±.9	7.5±1.4	.30±.17	?	saprolite
G-24	591	888	146	115	2.2±.2	1.5±.8	6.5±1.3	.24±.17	?	soil
G-25	443	420	172	140	1.0±.1	1.8±.9	8.1±1.4	.22±.14	?	soil
G-26	546	660	148	97	1.6±.1	1.9±.8	5.4±1.2	.35±.22	?	saprolite
G-27	606	632	179	142	1.5±.1	1.9±.9	8.2±1.5	.24±.15	granite	saprolite
G-28	503	632	131	94	1.5±.1	1.5±.7	5.2±1.1	.29±.21	?	saprolite
G-29	847	1029	270	197	2.5±.2	3.4±1.0	11.6±1.7	.67±.36	granite	saprolite
G-30	457	460	108	77	1.1±.1	2.8±.8	4.1±1.1	.35±.18	?	saprolite

Table 7

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
G-31	544	554	206	136	1.3±.1	2.8±.9	7.8±1.9	.35±.18	?	saprolite
G-32	340	413	110	67	1.0±.1	1.4±.7	3.5±1.0	.40±.30	?	saprolite
G-33	509	502	151	123	1.2±.1	1.5±.8	7.0±1.4	.22±.16	gneiss ?	saprolite
G-34	458	528	156	114	1.3±.1	1.8±.8	6.5±1.3	.28±.18	gneiss ?	saprolite
G-35	343	374	106	88	0.9±.1	0.9±.7	4.8±1.1	.20±.19	gneiss ?	saprolite
G-36	352	390	114	62	0.9±.1	1.6±.7	3.2±1.0	.50±.35	gneiss ?	saprolite

Table 7 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
H-1	1101	1243	298	297	3.1±.2	2.4±1.2	17.9±2.1	.14±.08	granite	saprolite
H-2	815	1021	228	208	2.5±.2	2.1±1.0	12.3±1.8	.17±.11	granite	saprolite
H-3	522	556	184	149	1.3±.1	2.0±.9	8.6±1.5	.23±.14	?	saprolite
H-4	718	942	191	189	2.3±.2	1.5±.9	11.1±1.7	.13±.10	granite	saprolite
H-5	830	992	253	268	2.4±.2	1.7±1.1	16.1±2.0	.11±.08	granite	saprolite
H-6	585	750	147	127	1.8±.1	1.4±.8	7.3±1.4	.19±.14	?	soil
H-7	800	951	253	212	2.3±.2	2.7±1.0	12.6±1.8	.21±.11	granite	saprolite
H-8	839	1125	251	165	2.8±.2	3.5±1.0	9.6±1.6	.36±.16	granite	saprolite
H-9	495	545	136	166	1.3±.1	0.4±.8	9.7±1.6	.04±.09	gneiss	saprolite/outcrop
H-10	789	1255	184	147	3.1±.2	2.0±.9	8.5±1.5	.23±.14	?	soil
H-11	908	1612	174	134	4.0±.2	2.0±.8	7.7±1.4	.25±.16	granite ?	saprolite
H-12	1042	1566	230	198	3.9±.2	2.3±1.0	11.7±1.7	.20±.11	granite ?	saprolite
H-13	714	1085	170	133	2.7±.2	1.9±.8	7.6±1.4	.24±.15	?	saprolite
H-14	826	900	235	260	2.2±.2	1.4±1.1	15.6±2.0	.09±.08	?	saprolite
H-15	771	1070	183	174	2.6±.2	1.5±.9	10.2±1.6	.15±.11	granite ?	saprolite
H-16	615	775	212	125	1.9±.1	3.1±.9	7.1±1.4	.04±.20	granite ?	saprolite
H-16a	615	817	193	147	2.0±.1	2.2±.9	8.5±1.5	.26±.15	?	saprolite
H-17	814	1133	183	177	2.8±.2	1.4±.9	10.4±1.6	.14±.11	granite ?	saprolite
H-18	832	1030	229	244	2.5±.2	1.5±1.0	14.6±1.9	.10±.08	granite	saprolite
H-19	609	841	168	152	2.1±.1	1.5±.9	8.8±1.5	.17±.13	?	saprolite
H-19a	610	790	156	154	1.9±.1	1.1±.8	9.0±1.5	.13±.11	?	saprolite
H-20	770	1052	216	180	2.6±.2	2.3±1.0	10.6±1.7	.21±.12	granite	saprolite
H-21	793	1060	212	170	2.6±.2	2.3±1.0	10.0±1.6	.23±.13	?	saprolite
H-22	1152	1633	298	295	4.0±.2	2.5±1.2	17.8±2.1	.14±.08	?	soil
H-23	895	1186	237	205	2.9±.2	2.4±1.0	12.1±1.8	.20±.11	granite	saprolite
H-24	833	1063	202	232	2.6±.2	1.0±1.0	13.8±1.9	.07±.08	granite	saprolite
H-25	849	949	277	249	2.3±.2	2.7±1.1	14.9±2.0	.18±.10	granite	saprolite
H-26	894	1073	291	206	2.6±.2	3.8±1.1	12.2±1.8	.31±.13	granite	soil
H-27	783	1025	227	191	2.5±.2	2.4±1.0	11.3±1.7	.21±.12	granite	saprolite
H-28	934	1232	231	233	3.0±.2	1.8±1.0	13.9±1.9	.13±.09	granite	soil
H-29	769	918	207	215	2.2±.2	1.4±1.0	12.8±1.8	.11±.09	granite	soil
H-30	972	1301	230	214	3.2±.2	2.1±1.0	12.7±1.8	.16±.10	granite	saprolite

Table 8

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
H-31	1106	1342	314	301	3.3±.2	2.8±1.1	18.1±2.1	.15±.08	granite	saprolite
H-32	948	1245	248	246	3.1±.2	2.0±1.1	14.7±1.9	.13±.09	granite	soil
H-33	834	863	288	285	2.1±.1	2.4±1.1	17.1±2.1	.14±.08	granite	saprolite
H-34	923	1100	247	237	2.7±.2	2.1±1.0	14.1±1.9	.15±.09	granite	saprolite
H-35	847	1122	218	217	2.8±.2	1.7±1.0	12.9±1.8	.13±.09	granite	saprolite
H-36	1160	1331	333	390	3.3±.2	1.9±1.3	23.7±2.4	.08±.06	granite	saprolite
H-37	1105	1190	262	271	2.9±.2	1.9±1.1	16.3±2.0	.12±.08	granite	saprolite
H-38	734	817	247	212	2.0±.1	2.5±1.0	12.6±1.8	.20±.11	granite	saprolite

Table 8 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
I-1	485	589	139	115	1.4±.1	1.4± .8	6.5±1.3	.21±.16	granite	saprolite
I-2	609	1095	96	77	2.7±.2	0.9± .6	4.1±1.1	.21±.21	?	saprolite
I-3	625	1226	65	41	3.0±.2	0.7± .5	1.9± .8	.35±.41	?	saprolite
I-4	693	1052	147	124	2.6±.2	1.4± .8	7.1±1.4	.20±.15	gneiss ?	saprolite
I-5	710	1108	152	118	2.7±.2	1.6± .8	6.7±1.3	.25±.17	gneiss ?	saprolite
I-6	915	1351	227	193	3.3±.2	3.7±1.1	11.4± .7	.32±.14	gneiss ?	saprolite
I-7	716	1105	180	125	2.7±.2	2.3± .8	7.1±1.4	.32±.18	?	saprolite

Table 9

APPENDIX B

Comparison of Readings Taken on Ground With Readings Taken Three Feet Above Ground

Table 10		Pacolet Mills	(A)
Table 11		Wilkinson	(B)
Table 12		Jonesville	(D)
Table 13		Kelton	(E)

APPENDIX B

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
A-1	977	827	323	186	2.0±.1	5.0±1.1	11.0±1.7	.46±.17	granite	saprolite
	1129	1011	474	283	2.5±.2	7.3±1.3	17.0±2.1	.43±.13		
A-2	1147	995	404	325	2.4±.2	4.8±1.3	19.6±2.2	.24±.09	granite	saprolite
	1823	1709	673	561	4.2±.2	7.8±1.7	34.4±2.9	.23±.07		
A-3	1187	1090	390	296	2.7±.2	4.9±1.3	17.8±2.1	.27±.10	granite	saprolite
	1771	1890	601	516	4.7±.2	6.7±1.6	31.6±2.8	.21±.07		
A-4	949	982	324	225	2.4±.2	4.4±1.1	13.4±1.8	.33±.13	gneiss ?	saprolite
	1715	1787	535	581	4.4±.2	3.8±1.6	35.6±3.0	.11±.05		
A-5	956	778	317	296	1.9±.1	3.0±1.2	17.8±2.1	.17±.09	schist	saprolite
	1352	1118	515	553	2.7±.2	3.8±1.5	33.9±2.9	.11±.05		
A-6	994	955	292	196	2.3±.2	4.0±1.1	11.6±1.7	.35±.14	granite	outcrop
	2066	2521	571	580	6.2±.3	4.8±1.6	35.6±3.0	.13±.06		
A-7	1765	1238	583	498	3.0±.2	6.5±1.6	30.5±2.7	.21±.07	granite	outcrop
	2149	2223	684	687	5.5±.2	5.9±1.8	42.3±3.2	.14±.05		
A-8	678	640	235	165	1.6±.1	3.0±1.0	9.6±1.6	.31±.15	granite	outcrop
	510	485	168	141	1.2±.1	1.7±0.8	8.1±1.5	.21±.14		
A-9	1936	1723	627	682	4.2±.2	4.5±1.7	42.0±3.2	.11±.05	granite	outcrop
	2853	3107	821	967	7.7±.3	4.7±2.0	59.8±3.8	.08±.04		
A-10	1068	996	341	285	2.4±.2	3.8±1.2	17.1±2.1	.22±.10	gneiss ?	soil
	980	1094	288	260	2.7±.2	2.8±1.1	15.6±2.0	.18±.09		
A-11	465	436	174	107	1.0±.1	2.4±0.8	6.0±1.3	.40±.22	granite	soil
	685	640	201	201	1.6±.1	1.5±1.0	11.9±1.7	.13±.10		

Table 10

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
A-12	232	240	93	50	0.6±.1	1.3±0.6	2.5±0.9	.51±.42	amphibolite ?	saprolite
	328	337	108	61	0.8±.1	1.5±0.6	3.1±1.0	.46±.35		
A-13	618	566	250	130	1.4±.1	4.0±1.0	7.5±1.4	.54±.23	gneiss ?	soil
	617	352	392	165				.75±.24		
A-14	264	248	91	51	0.6±.1	1.2±0.6	2.5±0.9	.47±.40	gneiss ?	saprolite
	706	560	413	172				.75±.24		
A-15	856	808	307	301	2.0±.1	2.6±1.2	18.1±2.1	.14±.08	schist	saprolite
	2008	2117	759	570	5.2±.2	9.9±1.8	35.0±2.9	.28±.07		
A-16	663	710	180	179	1.7±.1	1.3±0.9	10.5±1.6	.13±.11	schist	saprolite
	1648	1826	522	502	4.5±.2	4.8±1.5	30.7±2.8	.16±.06		
A-17	1131	1038	384	382	2.5±.2	3.2±1.3	23.2±2.4	.14±.07	schist	outcrop
	1485	1772	468	395	4.4±.2	5.2±1.4	24.0±2.4	.22±.08		
A-18	713	617	257	199	1.5±.1	3.0±1.0	11.8±1.7	.26±.12	sediment ?	saprolite
	1354	1104	673	260	2.7±.2	13.0±1.5	15.6±2.0	.83±.20		
A-19	628	581	211	177	1.4±.1	2.2±0.9	10.4±1.6	.21±.12	gneiss	saprolite
	835	582	373	328	1.4±.1	3.9±1.3	19.8±2.2	.20±.09		
A-20	814	996	233	179	2.4±.2	2.7±1.0	10.5±1.6	.26±.13	?	saprolite
	1345	1865	366	321	4.6±.2	3.8±1.3	19.4±2.2	.20±.09		
A-21	484	429	174	125	1.0±.1	2.1±0.8	7.1±1.4	.29±.17	schist	saprolite
	388	225	197	139	0.5±.1	2.5±0.9	8.0±1.5	.31±.17		
A-22	332	471	96	53	1.1±.1	1.3±0.6	2.6±0.9	.48±.39	gneiss ?	saprolite
	808	1289	234	116	3.2±.2	3.9±0.9	6.6±1.3	.59±.26		

Table 10 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
A-23	1025	1131	333	270	2.8±.2	3.8±1.2	16.2±2.0	.24±.10	granite	saprolite
	1811	1981	654	544	4.9±.2	7.6±1.7	33.3±2.9	.23±.07		
A-24	1610	1541	570	510	3.8±.2	6.0±1.6	31.2±2.8	.19±.07	granite	outcrop
	2415	2737	767	760	6.8±.3	6.9±1.9	46.8±3.4	.15±.05		
A-25	1094	1015	402	357	2.5±.2	4.2±1.3	21.6±2.3	.19±.08	granite	saprolite
	1998	1801	767	874	4.4±.2	4.9±1.9	54.0±3.6	0.9±.04		
A-26	1009	1031	433	331	2.5±.2	5.4±1.3	20.0±2.2	.27±.10	granite	saprolite
	1486	1046	702	455	2.5±.2	10.4±1.6	27.8±2.6	.38±.09		
A-27	468	495	160	112	1.2±.1	2.0±0.8	6.3±1.3	.31±.19	granite	saprolite
	438	523	156	87	1.3±.1	2.3±0.8	4.8±1.2	.48±.28		
A-28	303	285	140	75	0.7±.1	2.1±0.7	4.0±1.1	.51±.32	granite	saprolite
	304	302	114	89	0.7±.1	1.1±0.7	4.9±1.2	.23±.20		
A-29	753	774	267	181	1.9±.1	3.6±1.0	10.6±1.7	.34±.15	?	saprolite
	712	599	333	174	1.4±.1	5.5±1.1	10.2±1.6	.54±.19		
A-30	1519	1179	592	575	2.9±.2	5.4±1.6	35.3±3.0	.15±.06	granite	saprolite
	2059	2021	730	716	5.0±.2	6.7±1.8	44.1±3.2	.15±.05		
A-31	1441	1429	487	335	3.5±.2	6.8±1.4	20.3±2.3	.33±.11	granite	saprolite
	1585	1873	502	514	4.6±.2	4.1±1.5	31.5±2.8	.13±.06		
A-32	243	179	81	49	0.4±.1	1.0±0.6	2.3±0.9	.43±.41	?	saprolite
	302	210	115	104	0.5±.1	0.9±0.7	5.8±1.3	.16±.15		
A-33	251	229	69	66	0.5±.1	0.3±0.6	3.5±1.0	.10±.19	?	saprolite
	638	694	219	239	1.7±.1	1.3±1.0	14.3±1.9	.09±.08		

Table 10 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
A-34	477	685	103	67	1.7±.1	1.2±0.6	3.5±1.0	.35±.28	gneiss	saprolite
	718	1526	127	72	3.8±.2	1.8±0.7	3.8±1.1	.46±.31		
A-35	364	363	150	80	0.9±.1	2.2±0.7	4.3±1.1	.52±.30	gneiss	saprolite
	295	345	100	65	0.8±.1	1.2±0.6	3.4±1.0	.35±.29		
A-36	279	269	105	62	0.6±.1	1.4±0.6	3.2±1.0	.43±.33	schist	saprolite
	404	571	128	95				.27±.20		
A-37	278	364	66	47	0.9±.1	0.6±0.5	2.3±0.9	.26±.33	granite	outcrop
	361	522	124	75	1.3±.1	1.6±0.7	4.0±1.1	.41±.28		
A-38	246	334	58	37	0.8±.1	0.5±0.5	1.6±0.8	.33±.44	schist	outcrop
	312	363	124	87	0.9±.1	1.4±0.7	4.8±1.2	.30±.22		
A-39	292	238	123	80	0.6±.1	1.5±0.7	4.3±1.1	.35±.25	amphibolite ?	saprolite
	274	194	149	79	0.4±.1	2.2±0.7	4.3±1.1	.52±.31		
A-40	506	501	162	125	1.2±.1	2.4±0.8	6.2±1.3	.39±.21	gneiss	outcrop
	885	1165	245	248	2.9±.2	1.9±1.1	14.8±1.9	.13±.09		
A-41	520	500	175	110	1.2±.1	2.4±0.8	6.2±1.3	.39±.21	schist	outcrop
	1040	1618	248	194	4.0±.2	2.9±1.0	11.5±1.7	.25±.13		
A-42	1186	1110	421	328	2.7±.2	5.2±1.3	19.8±2.2	.26±.10	gneiss	saprolite
	2622	2577	949	888	6.4±.3	9.5±2.0	54.8±3.7	.17±.05		
A-43	616	634	236	113	1.5±.1	4.0±0.9	6.4±1.3	.62±.27	schist	saprolite
	678	765	238	227	1.9±.1	2.0±1.0	13.5±1.9	.15±.10		
A-44	1094	1010	443	251	2.5±.2	7.1±1.3	15.0±1.9	.47±.15	granite	saprolite
	1177	1202	434	314	2.9±.2	5.7±1.3	19.0±2.2	.30±.10		

Table 10 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
A-45	1472	670	288	246	1.6±.1	3.0±1.1	14.7±1.9	.21±.10	schist ?	saprolite
	1532	1317	608	544	3.2±.2	6.4±1.6	33.3±2.9	.19±.06		
A-46	1740	1136	488	378	2.8±.2	6.1±1.4	23.0±2.4	.26±.09	granite	saprolite
	1342	1560	518	340	3.8±.2	7.5±1.4	20.6±2.3	.37±.11		
A-47	808	804	233	226	2.0±.1	1.9±1.0	13.5±1.9	.14±.10	gneiss	outcrop
	1496	2010	380	476	5.0±.2	1.5±1.4	29.1±2.7	.05±.05		
A-48	689	650	211	153	1.6±.1	2.6±0.9	8.9±1.5	.29±.15	schist	saprolite
	781	751	289	248	1.8±.1	3.0±1.1	14.8±1.9	.20±.10		
A-49	616	549	268	144	1.3±.1	4.3±1.0	8.3±1.5	.51±.21	schist	saprolite
	655	586	243	191	1.4±.1	2.8±1.0	11.3±1.7	.25±.13		
A-50	366	318	115	72	0.8±.1	1.5±0.7	3.8±1.1	.38±.28	gneiss	saprolite
	520	619	159	123	1.5±.1	1.7±0.8	7.0±1.4	.25±.13		

Table 10 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
B-1	685	662	255	180	1.6±.1	3.3±1.0	10.6±1.7	.31±.14	schist	saprolite
	1125	1436	336	312	3.5±.2	3.2±1.2	18.8±2.2	.17±.08		
B-2	919	898	277	227	2.2±.2	3.1±1.1	13.5±1.9	.23±.11	granite	saprolite
	1592	2131	445	466	5.3±.2	3.4±1.4	28.5±2.7	.12±.06		
B-3	813	878	215	167	2.1±.2	2.5±0.9	9.8±1.6	.25±.14	granite	saprolite
	1603	2159	406	478	5.3±.2	2.2±1.4	29.2±2.7	.07±.05		
B-4	882	917	246	226	2.2±.2	5.7±0.9	14.1±1.8	.17±.10	granite	saprolite
	1523	1363	550	654	3.3±.2	3.0±1.6	40.2±3.1	.07±.05		
B-5	919	824	328	226	2.0±.1	4.4±1.1	13.5±1.9	.33±.13	granite	saprolite/outcrop
	1684	2206	426	460	5.5±.2	3.0±1.4	28.1±2.6	.11±.06		
B-6	797	798	213	179	1.9±.1	2.2±1.0	10.5±1.6	.21±.12	granite	saprolite
	1120	1235	292	370	3.0±.2	1.1±1.2	22.5±2.4	.05±.06		
B-7	987	1009	323	234	2.5±.2	4.2±1.1	14.0±1.9	.30±.12	granite	saprolite
	1117	1276	312	329	3.1±.2	2.2±1.2	19.9±2.2	.11±.07		
B-8	342	367	137	58	0.9±.1	2.3±0.7	3.0±0.9	.77±.48	schist	saprolite
	627	980	144	90	2.4±.2	1.9±0.7	5.0±1.2	.39±.24		
B-9	593	619	234	132	1.5±.1	3.6±0.9	7.6±1.4	.47±.21	schist	saprolite
	1970	2419	519	579	6.0±.2	3.4±1.6	35.5±3.0	.10±.05		
B-10	799	874	283	194	2.1±.2	3.8±1.0	11.5±1.7	.33±.14	gneiss ?	soil
	1659	1153	312	267	2.8±.2	3.3±1.2	16.0±2.0	.21±.10		
B-11	893	996	289	255	1.6±.1	3.3±1.0	10.6±1.7	.31±.14	granite	saprolite
	1315	1303	412	453	3.2±.2	2.8±1.4	27.6±2.6	.10±.06		

Table 11

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
B-12	984	873	333	342	2.1±.2	2.6±1.2	20.8±2.3	.12±.07	granite	saprolite
	1280	1115	486	449	2.7±.2	4.8±1.5	27.4±2.6	.18±.07		
B-13	641	837	172	152	2.0±.1	1.6±0.9	8.8±1.5	.18±.13	granite	saprolite
	1142	1687	275	231	4.2±.2	3.0±1.1	13.8±1.9	.21±.11		
B-14	209	210	65	31	0.5±.1	0.8±0.5	1.3±0.7	.66±.74	gneiss	saprolite
	977	1408	228	156	3.5±.2	3.0±1.0	9.1±1.5	.33±.20		
B-15	739	824	182	170	2.0±.1	1.5±0.9	10.0±1.6	.16±.11	granite	saprolite
	1042	1335	265	290	3.3±.2	1.7±1.1	17.5±2.1	.10±.08		
B-16	741	725	230	146	1.8±.1	3.2±0.9	8.5±1.5	.38±.18	granite	saprolite
	434	425	185	98	1.0±.1	2.9±0.8	5.5±1.2	.52±.27		
B-17	1008	997	315	182	2.4±.2	4.9±1.1	10.7±1.7	.45±.17	granite	saprolite
	1845	2178	580	358	5.4±.2	8.9±1.5	21.7±2.3	.41±.11		
B-18	685	783	186	197	1.9±.1	1.2±0.9	11.6±1.7	.10±.09	gneiss	saprolite
	835	1002	266	228	2.5±.2	2.8±1.1	13.6±1.9	.20±.11		
B-19	797	857	246	218	2.1±.1	2.4±1.0	13.0±1.8	.19±.11	granite	saprolite
	1026	1381	256	209	3.4±.2	2.9±1.0	12.2±1.8	.23±.12		
B-20	491	480	171	119	1.2±.1	2.1±0.8	6.8±1.3	.31±.18	?	saprolite
	580	543	222	196	1.3±.1	2.2±1.0	11.6±1.7	.19±.11		
B-21	997	1297	321	201	3.2±.2	4.7±1.1	11.9±1.7	.39±.15	granite	saprolite/outcrop
	1523	1979	408	446	4.9±.2	2.8±1.4	27.2±2.6	.10±.06		
B-22	374	321	149	101	0.8±.1	1.9±0.8	5.6±1.2	.33±.21	amphibolite ?	saprolite
	509	470	207	150	1.1±.1	2.6±0.9	8.7±1.5	.29±.16		

Table 11 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
B-23	294	263	112	75	0.6±.1	1.3±0.7	4.0±1.1	.33±.25	amphibolite ?	saprolite
	224	199	95	55	0.5±.1	1.2±0.6	2.8±0.9	.44±.36		
B-24	264	308	110	55	0.7±.1	1.6±0.6	2.8±0.9	.58±.42	amphibolite ?	saprolite
	206	314	57	34	0.7±.1	0.6±0.5	1.5±0.7	.39±.52		
B-25	221	171	115	45	0.4±.1	1.9±0.6	2.1±0.8	.90±.64	?	saprolite
	280	313	113	76	0.7±.1	1.3±0.7	4.1±1.1	.33±.25		
B-26	242	275	89	45	0.4±.1	1.9±0.6	2.1±0.8	.90±.64	amphibolite ?	saprolite
	311	362	97	52	0.9±.1	1.3±0.6	2.6±0.9	.51±.41		
B-27	263	236	98	52	0.5±.1	1.4±0.6	2.6±0.9	.52±.41	amphibolite ?	saprolite
	155	131	60	41	0.3±.1	0.5±0.5	1.9±0.8	.28±.38		
B-28	434	413	151	128	1.0±.1	1.4±0.8	7.3±1.4	.20±.15	gneiss ?	saprolite
	217	173	80	62	0.4±.1	0.7±0.6	3.2±1.0	.22±.25		
B-29	188	137	94	57	0.3±.1	1.2±0.6	2.9±0.9	.40±.34	amphibolite ?	saprolite
	442	154	54	37	0.3±.1	0.4±0.5	1.6±0.8	.27±.41		
B-30	293	308	72	59	0.7±.1	0.5±0.6	3.0±1.0	.18±.24	amphibolite	saprolite
	331	430	66	53	1.0±.1	0.5±0.5	2.6±0.9	.18±.26		
B-31	407	364	176	115	0.9±.1	2.3±0.8	6.5±1.3	.36±.20	gneiss ?	saprolite
	202	169	72	49	0.4±.1	0.7±0.5	2.4±0.9	.30±.33		
B-32	272	226	99	68	0.5±.1	1.1±0.6	3.6±1.0	.31±.26	schist	saprolite
	319	313	96	90	0.7±.1	0.6±0.7	5.0±1.2	.13±.16		
B-33	302	298	52	46	0.7±.1	0.2±0.5	2.2±0.8	.11±.26	gneiss	saprolite
	254	408	44	40	1.0±.1	0.1±0.4	1.8±0.8	.07±.27		
B-34	176	199	57	46	0.5±.1	0.4±0.5	2.2±0.8	.17±.29	?	saprolite
	582	545	188	162	1.3±.1	1.8±0.9	9.5±1.6	.19±.13		

Table 11 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
D-1	909	1150	243	247	2.8±.2	1.8±1.1	14.8±1.9	.12±.09	granite	saprolite
	1692	2205	495	520	0.4±.1	3.8±1.5	31.8±2.8	.12±.06		
D-2	793	965	243	245	2.4±.2	1.9±1.1	14.6±1.9	.13±.09	granite	saprolite
	1248	1111	431	557	2.7±.2	1.5±1.5	34.1±2.9	.04±.05		
D-3	871	1092	231	282	2.7±.2	0.9±1.1	17.0±2.1	.05±.07	granite	saprolite
	1080	1559	246	264	3.8±.2	1.6±1.1	15.8±2.0	.10±.08		
D-4	898	853	333	275	2.1±.1	3.7±1.2	16.5±2.0	.23±.10	granite	saprolite
	1080	1601	283	218	4.0±.2	3.4±1.1	13.0±1.8	.26±.12		
D-5	991	925	385	293	2.3±.2	4.8±1.3	17.6±2.1	.27±.10	granite	saprolite
	1454	1483	512	565	3.6±.2	3.5±1.5	34.6±2.9	.10±.05		
D-6	1198	1121	427	465	2.7±.2	3.0±1.4	28.4±2.6	.10±.06	granite	saprolite
	1210	1850	270	281	4.6±.2	2.0±1.1	16.9±2.1	.12±.08		
D-7	597	724	191	142	1.8±.1	2.3±0.9	8.2±1.5	.28±.16	granite	saprolite
	283	276	102	88	0.6±.1	0.8±0.6	4.8±1.2	.17±.18		
D-8	770	864	241	214	2.1±.1	2.3±1.0	12.7±1.8	.18±.11	granite	saprolite
	647	640	235	237	1.6±.1	1.8±1.0	14.1±1.9	.13±.09		
D-9	957	1166	353	315	2.9±.2	3.6±1.2	19.0±2.2	.19±.09	granite	saprolite
	1220	1174	436	440	2.9±.2	3.6±1.4	26.8±2.6	.14±.07		
D-10	1041	1149	305	324	2.8±.2	2.2±1.1	19.6±2.2	.11±.07	granite	saprolite
	1948	2556	474	672	6.3±.3	0.6±1.6	41.3±3.2	.02±.04		
D-11	836	1099	223	219	2.7±.2	1.8±1.0	13.0±1.8	.14±.10	granite	saprolite
	1263	1302	422	494	3.2±.2	2.3±1.4	30.2±2.7	.08±.05		

Table 12

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
D-12	1003	1388	255	275	3.4±.2	1.7±1.1	16.5±2.0	.16±.08	granite	saprolite
	1600	2199	413	456	5.4±.2	2.7±1.4	27.8±2.6	.10±.06		
D-13	876	1077	270	257	2.6±.2	2.4±1.1	15.4±2.0	.15±.09	granite	saprolite
	1028	1616	230	193	4.0±.2	2.4±1.0	11.4±1.7	.21±.12		
D-14	999	1264	269	285	3.1±.2	2.2±1.1	17.1±2.1	.11±.08	granite	saprolite
	1496	1950	443	401	4.8±.2	4.5±1.4	24.4±2.5	.18±.08		
D-15	833	861	280	280	2.1±.1	2.6±1.0	16.8±2.1	.13±.08	granite	saprolite
	1179	1234	383	490	3.0±.2	1.5±1.4	30.0±2.7	.05±.05		
D-16	724	763	241	199	1.9±.1	2.0±1.1	11.8±1.7	.22±.12	granite	saprolite
	720	996	197	214	2.4±.2	1.2±1.0	12.7±1.8	.09±.09		
D-17	873	975	249	245	2.4±.2	1.7±1.0	14.6±1.9	.14±.09	granite	saprolite
	1109	1540	290	251	3.8±.2	3.0±1.1	15.0±1.9	.20±.10		
D-20	924	893	331	292	2.2±.2	3.4±1.3	17.6±2.1	.19±.09	granite	saprolite
	1137	938	407	451	2.3±.2	2.7±1.4	27.5±2.6	.10±.06		
D-21	1084	1015	367	345	2.5±.2	3.4±1.3	20.9±2.3	.16±.08	?	saprolite
	1943	1418	673	882	3.5±.2	2.3±1.8	54.5±3.6	.04±.04		
D-22	295	267	125	73	0.6±.1	1.7±0.7	3.9±1.1	.44±.30	?	saprolite
	361	373	136	90	0.9±.1	1.7±0.7	5.0±1.2	.34±.23		

Table 12 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
E-1	876	1032	230	215	2.5±.2	2.0±1.0	12.8±1.8	.16±.10	granite	saprolite
	1262	1792	308	248	4.4±.2	1.8±1.2	21.1±2.3	.09±.07		
E-2	1043	1219	298	238	3.0±.2	3.4±1.1	14.2±1.9	.24±.11	granite	saprolite
	1909	2854	435	425	7.1±.3	3.9±1.4	25.9±2.5	.15±.07		
E-3	658	741	188	129	1.8±.1	2.4±0.9	7.4±1.4	.33±.18	granite	soil
	1001	1150	300	257	2.8±.2	3.2±1.1	15.4±1.9	.21±.10		
E-4	866	1028	258	209	2.5±.2	2.9±1.0	12.4±1.8	.23±.12	granite	saprolite
	886	747	277	325	1.8±.1	1.4±1.2	19.6±2.2	.07±.07		
E-5	868	1066	247	261	2.6±.2	1.7±1.1	15.6±2.0	.11±.08	granite	saprolite
	1679	2259	436	486	5.6±.2	2.8±1.4	29.7±2.7	.10±.06		
E-6	878	964	211	246	2.4±.2	1.0±1.0	14.7±1.9	.07±.08	granite	saprolite
	1356	1843	324	348	4.6±.2	2.2±1.2	21.0±2.3	.11±.07		
E-7	803	1075	191	214	2.6±.2	1.0±1.0	12.7±1.8	.08±.09	granite	saprolite
	1170	1352	346	428	3.3±.2	1.4±1.3	26.1±2.5	.06±.06		
E-8	847	946	233	264	2.3±.2	1.3±1.1	15.8±2.0	.08±.08	granite	saprolite
	1588	2195	388	446	5.4±.2	2.2±1.4	27.2±2.6	.08±.06		
E-9	1126	1473	279	340	3.6±.2	1.2±1.2	20.6±2.3	.06±.06	granite	saprolite
	1234	1973	250	264	4.9±.2	1.7±1.1	15.8±2.0	.11±.08		
E-10	1123	1376	285	327	3.4±.2	1.6±1.2	19.8±2.2	.08±.07	granite	outcrop
	1578	2077	400	490	5.1±.2	1.8±1.4	30.0±2.7	.06±.05		
E-11	912	1180	259	230	2.9±.2	2.6±1.1	13.7±1.9	.19±.10	granite	saprolite
	1238	1948	268	272	4.8±.2	2.1±1.1	16.3±2.0	.13±.08		

Table 13

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th	Type	
E-12	935	1119	284	183	2.7±.2	4.0±1.1	10.8±1.7	.37±.15	granite	saprolite
	892	782	330	342	1.9±.1	2.5±1.2	20.7±2.3	.12±.07		
E-13	989	1156	287	345	2.8±.2	1.3±2.2	20.9±2.3	.06±.06	granite	saprolite
	1961	2283	516	664	5.6±.2	1.9±1.6	40.8±3.2	.05±.04		
E-14	1096	1277	291	305	3.1±.2	2.1±1.2	18.4±2.1	.11±.08	granite	saprolite
	1154	1633	286	256	4.0±.2	2.8±1.1	15.3±1.9	.13±.10		
E-15	803	933	232	282	2.3±.2	0.9±1.1	17.0±2.1	.06±.07	granite	saprolite
	1122	1476	304	315	3.6±.2	2.3±1.2	19.0±2.2	.12±.08		
E-16	1019	1248	275	276	3.1±.2	2.2±1.1	16.6±2.0	.13±.08	granite	saprolite
	1306	1842	366	352	4.6±.2	3.3±1.3	21.3±2.3	.15±.08		
E-17	890	992	256	206	2.4±.2	2.9±1.0	12.2±1.8	.24±.12	granite	saprolite
	1593	1949	497	544	4.8±.2	3.4±1.5	33.3±2.9	.10±.05		
E-18	686	876	213	165	2.1±.2	2.5±0.9	9.6±1.6	.25±.14	granite	saprolite
	975	1564	229	189	3.9±.2	2.5±1.0	10.8±1.7	.24±.13		
E-19	1092	1166	318	331	2.9±.2	2.4±1.2	20.0±2.2	.12±.07	granite	saprolite
	1736	1366	597	823	3.3±.2	1.3±1.8	50.8±3.5	.03±.04		
E-20	823	1056	239	176	2.6±.2	3.0±1.0	10.3±1.6	.29±.14	granite	saprolite
	1118	1653	299	296	4.1±.2	2.5±1.2	17.8±2.1	.14±.08		
E-21	861	993	265	223	2.4±.2	2.9±1.1	13.3±1.8	.22±.11	granite	saprolite
	1208	1157	431	490	2.8±.2	2.6±1.4	30.0±2.7	.09±.06		
E-22	647	1059	115	112	2.6±.2	0.8±0.7	6.3±1.3	.12±.14	granite	saprolite
	1100	1801	247	243	4.5±.2	2.0±1.1	14.5±1.9	.14±.09		

Table 13 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
E-23	973	1007	310	329	2.5±.2	2.2±1.2	19.9±2.2	.11±.07	granite	saprolite
	1130	1270	357	405	3.1±.2	2.1±1.3	24.6±2.5	.09±.06		
E-24	899	1153	241	172	2.8±.2	3.1±1.0	10.1±1.6	.30±.15	granite	outcrop/saprolite
	1213	1650	308	330	4.1±.2	2.1±1.2	20.0±2.2	.11±.07		
E-25	1001	1313	310	252	3.2±.2	3.5±1.1	15.1±2.0	.23±.11	granite	saprolite
	1752	2398	435	573	5.9±.2	1.3±1.5	35.1±2.9	.04±.05		
E-26	1125	1463	269	343	3.6±.2	0.9±1.2	20.8±2.3	.04±.06	granite	saprolite/outcrop
	1695	2460	385	474	6.1±.2	1.7±1.4	29.0±2.7	.06±.05		
E-27	969	1190	266	317	2.9±.2	1.2±1.1	19.1±2.2	.06±.07	granite	saprolite
	1392	2177	353	334	5.4±.2	3.3±1.2	20.2±2.2	.16±.08		
E-28	911	1074	262	241	2.6±.2	2.4±1.1	14.4±1.9	.17±.10	granite	saprolite
	1444	2330	318	311	5.8±.2	2.7±1.2	18.8±2.2	.14±.08		
E-29	1144	1336	351	372	3.3±.2	2.5±1.3	22.6±2.4	.11±.07	granite	saprolite
	1571	2081	419	515				.06±.05		
E-30	796	993	253	286	2.4±.2	1.4±1.1	17.2±2.1	.08±.07	granite	saprolite
	1001	1076	341	365	2.6±.2	2.4±1.2	22.1±2.3	.11±.07		
E-31	1023	1196	300	363	2.9±.2	1.3±1.2	22.0±2.3	.06±.06	granite	saprolite
	1333	1444	401	465	3.6±.2	2.3±1.4	28.4±2.6	.08±.06		
E-32	968	1056	285	306	2.6±.2	1.9±1.2	18.5±2.2	.10±.07	granite	saprolite
	1161	1317	338	435	3.2±.2	1.1±1.3	26.5±2.6	.04±.05		
E-33	1053	1459	267	296	3.6±.2	1.6±1.1	17.8±2.1	.09±.07	granite	outcrop
	1444	2063	369	386	5.1±.2	2.8±1.3	23.5±2.4	.12±.07		

Table 13 (cont.)

Site #	Cumulate Counts (2 minutes)				Calculated Concentration				Rock Type	Occurrence
	Total x 10	Potassium	Uranium	Thorium	K%	U(ppm)	Th(ppm)	U/Th		
E-34	614	590	202	210	1.4±.1	1.4±1.0	12.5±1.8	.11±.09	granite	soil
	1216	1383	307	319	3.4±.2	2.3±1.2	19.3±2.2	.12±.07		
E-35	747	900	215	206	2.2±.2	2.1±1.2	12.1±1.7	.15±.10	granite	saprolite
	1052	1481	278	236	3.7±.2	3.0±1.1	14.1±1.9	.21±.10		
E-36	898	1128	225	252	2.8±.2	1.3±1.0	15.1±2.0	.08±.08	granite	saprolite
	1282	1869	335	372	4.6±.2	1.3±1.2	22.6±2.4	.06±.06		
E-37	948	1406	218	222	3.5±.2	1.6±1.0	13.2±1.8	.12±.09	granite	saprolite
	1245	2036	233	259	5.0±.2	1.4±1.0	15.5±2.0	.09±.08		
E-38	816	1069	178	194	2.6±.2	1.0±0.9	11.5±1.7	.09±.09	granite	soil
	1047	1424	235	285	3.5±.2	1.5±1.1	17.1±2.1	.09±.07		
E-39	871	1055	255	265	2.6±.2	1.8±1.1	15.9±2.0	.12±.08	granite	saprolite
	1544	2197	378	427	5.4±.2	2.3±1.3	26.0±2.5	.09±.06		
E-40	836	912	136	214	2.2±.2	1.8±1.1	15.9±2.0	.12±.08	granite	saprolite
	1147	1584	327	332	3.9±.2	2.6±1.2	20.1±2.2	.13±.07		
E-41	890	993	210	241	2.4±.2	1.1±1.0	14.4±1.9	.07±.08	granite	saprolite
	1349	1563	411	477	3.8±.2	2.3±1.4	29.1±2.7	.08±.06		
E-42	858	933	234	256	2.3±.2	1.4±1.0	15.3±2.0	.09±.08	granite	saprolite
	1113	1411	332	320	3.5±.2	2.9±1.2	19.3±2.2	.15±.08		
E-43	872	814	302	301	2.0±.1	2.5±1.1	18.1±2.1	.14±.08	granite	saprolite
	1284	1346	390	512	3.3±.2	1.2±1.4	31.3±2.8	.04±.05		
E-44	926	1002	263	305	2.5±.2	1.4±1.1	18.4±2.1	.07±.07	granite	saprolite
	1596	2122	480	523	5.2±.2	3.4±1.5	32.0±2.8	.10±.06		

Table 13 (cont.)

MAP INDEX

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Plate 2	Uranium Contour Map
Plate 3	Thorium Contour Map
Plate 4	U/Th Contour Map
Plate 5	Airborne Geophysics, Gamma Count

PACOLET MILLS & BALD ROCK PLUTONS

Geologic Units

PML	Pacolet Mills Metagranite
BR	Bald Rock Granite
AG	Amphibolite - Hornblende Gneiss
GS	Gneiss - Schist
Q	Schist - Gneiss - Quartzite - Conglomerate
M	Metagabbro - Amphibolite
D	Diorite - Tonalite - Gneiss
U	Undivided

○ Survey Site

PLATE I

PACOLET MILLS & BALD ROCK PLUTONS

URANIUM CONTOUR MAP, PPM

○ Survey Site

PLATE 2

PACOLET MILLS & BALD ROCK PLUTONS

THORIUM CONTOUR MAP, PPM

○ Survey Site

PLATE 3

PACOLET MILLS & BALD ROCK PLUTONS

URANIUM/THORIUM CONTOUR MAP

○ Survey Site

PLATE 4

PLATE 5