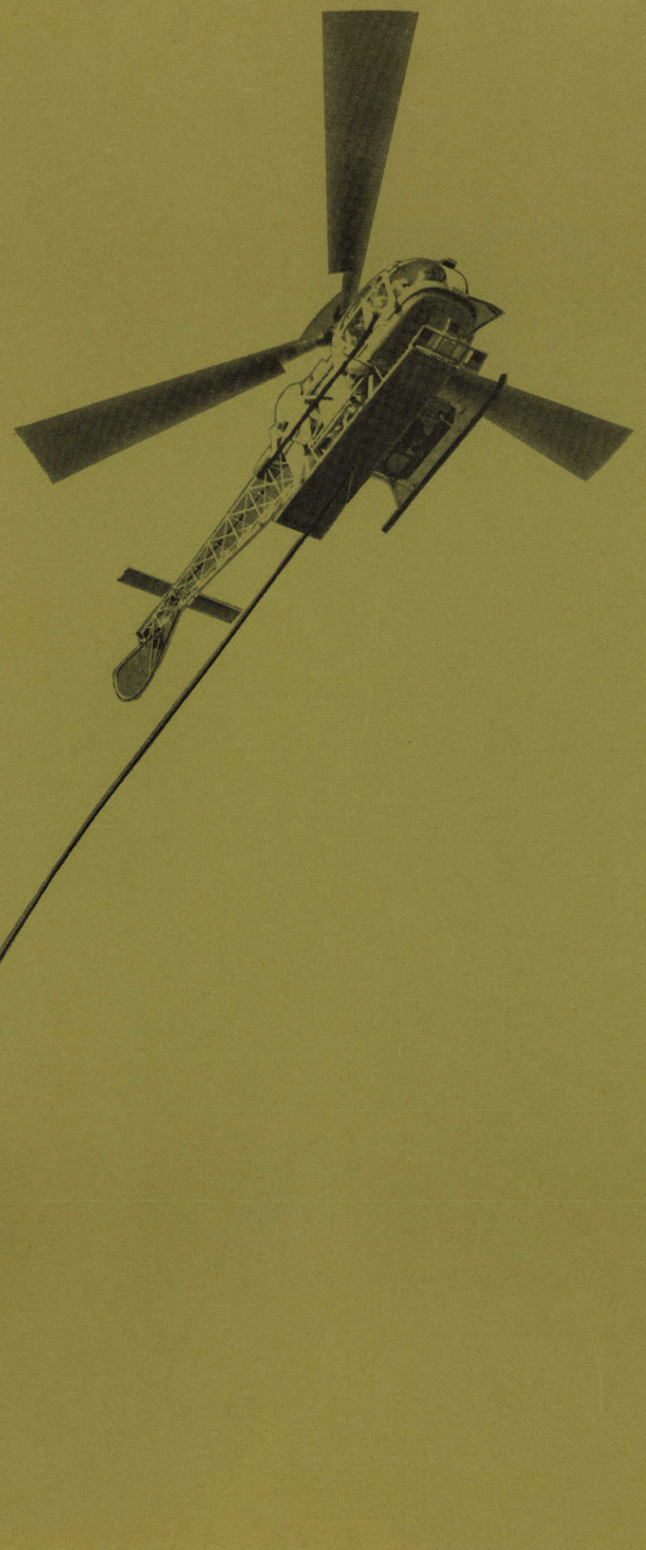

AERIAL GAMMA RAY AND MAGNETIC SURVEY
→ POWDER RIVER II PROJECT
CASPER QUADRANGLE, WYOMING

FINAL REPORT
VOLUME II

Prepared by:
geoMetrics
Sunnyvale, California
August, 1979

Work Performed Under
Bendix Field Engineering Corporation
Grand Junction Operations, Grand Junction, Colorado
Subcontract 78-181-L
and
Bendix Contract EY-76-C-13-1664

Prepared for the
Department of Energy
Grand Junction Office
Grand Junction, Colorado 81501

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ABSTRACT

The Casper quadrangle in central Wyoming lies within the Wyoming Basins Province and contains portions of several basins and uplifts of this province. Each of the basins contains a moderate to thick sequence of Phanerozoic strata. Precambrian rocks are exposed in the Sweetwater and Laramie Uplifts.

Magnetic data appear to illustrate the relative depth to Precambrian basement and define the boundaries of the major structures very well.

The Casper quadrangle has been extremely productive in terms of uranium mining, and contains three of the largest uranium mining districts in Wyoming. The uranium is found in Tertiary arkosic sandstones of the Wind River and Fort Union Formations. Other small districts are also present within the quadrangle in which uranium mineralization occurs in a variety of rocks.

This project contains radiometric and magnetic data gathered by Texas Instruments, Inc. and geoMetrics. Despite an attempt at normalization, some minor differences exist between the two data sets.

A total of 122 groups of sample responses in the uranium window constitute anomalies as defined in Volume I. These anomalies are largely scattered throughout the quadrangle, but tend to group within and around known uranium deposits. The anomalous samples are found most frequently associated with Cenozoic strata and Precambrian crystalline material.

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INTRODUCTION

General

The Casper quadrangle covers a 7,100 square mile area in south central Wyoming (see Figure 1).

The preliminary geologic map of the Casper quadrangle (Open File Report 79-961, Love and others, 1979) was used as a base map for interpretation and statistical analysis. Map unit descriptions used for this report (found in Appendix A) were taken directly from the accompanying map legend. Supplementary geologic information was taken primarily from Mallory (1972), but geologic descriptions from a previous radiometric survey of the area were also examined (GJBX-40, 1979, Texas Instruments, Inc.). The 1:250,000 scale Casper topographic map (1961 version) along with more recently revised larger scale topographic maps, and flight recovery film, were used to delineate topographic and cultural features used in the interpretation process.

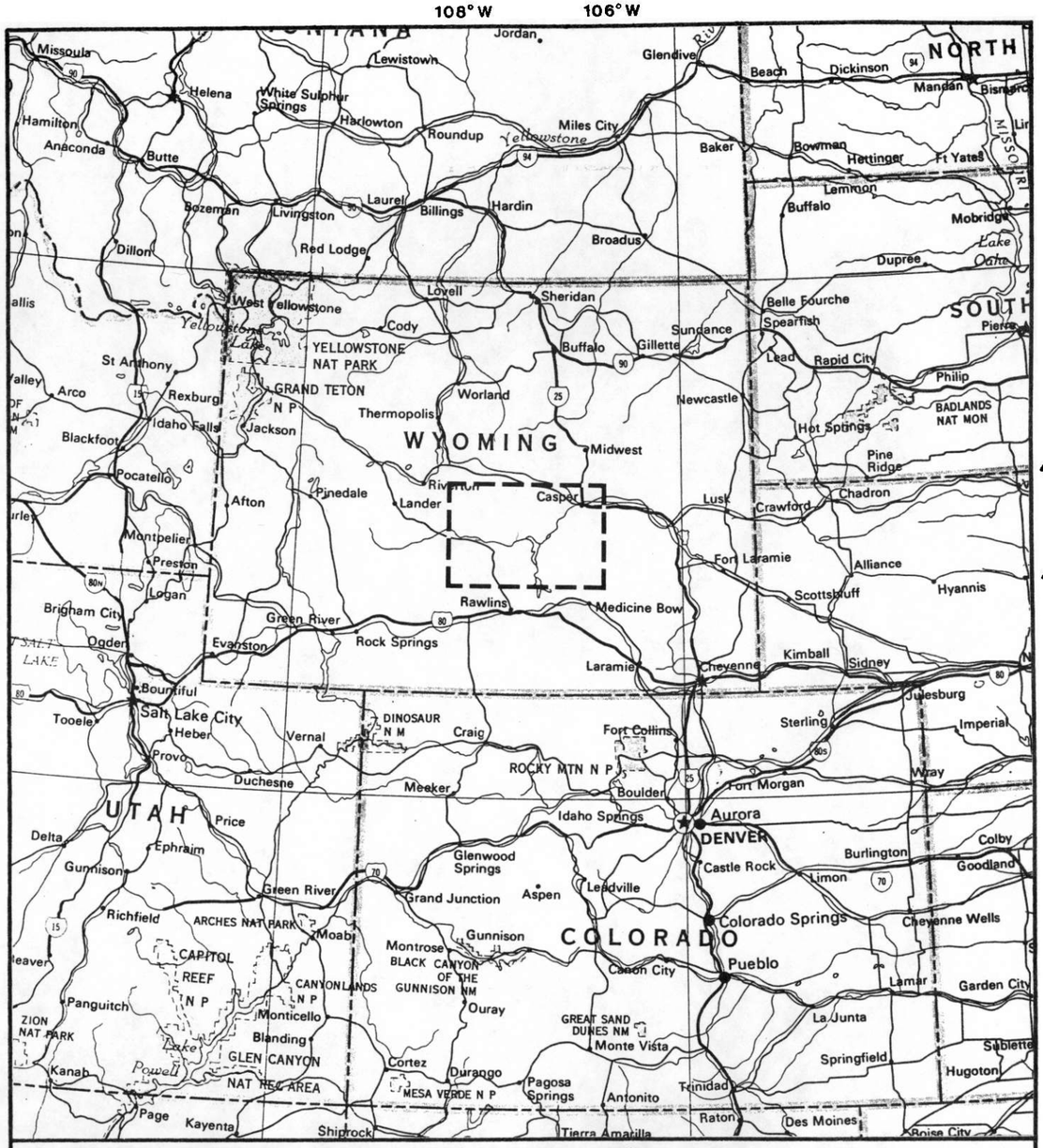
Physiography

The Casper quadrangle is dominated by the Wyoming Basins Province. A small portion of the Laramie Uplift is present in the eastern central area of the quadrangle, which is considered part of the Southern Rocky Mountains Province (5% of the quadrangle area). The entire area is a mixture of agricultural land, range land, and lightly forested uplands. Elevations in the quadrangle range from approximately 5,000 feet where the North Platte River flows eastward off the quadrangle to 9,675 feet at the top of the Ferris Mountains. Several isolated mountain areas have elevations in excess of 8,000 feet. The quadrangle contains portions of several major topographic basins of the Wyoming Basins Province. Basal elevations of these basins range from 5,400 feet to 6,800 feet.

GEOLOGY

Structure

Portions of eight major structural features occur within the Casper quadrangle (See Figure 2). The Sweetwater Uplift (Granite Mountains), striking northwest through the center, occupies approximately 35% of the quadrangle. On the uplift's northeast side, the Wind River and Shirley Basins (and Shirley Mountains) occupy 15% and 10% of the quadrangle respectively. The northeastern corner of the quadrangle is occupied by the Casper Arch and the Laramie Uplift; each occupying approximately 7% of the quadrangle area. To the southwest of the Sweetwater Uplift, portions of the Great Divide (Red Desert), and Hanna Basins are present, occupying 15% and 8% of the quadrangle respectively. The basins are separated by the Rawlins Uplift, which covers 3% of the quadrangle.



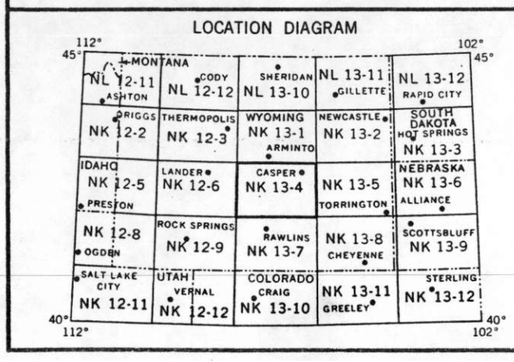
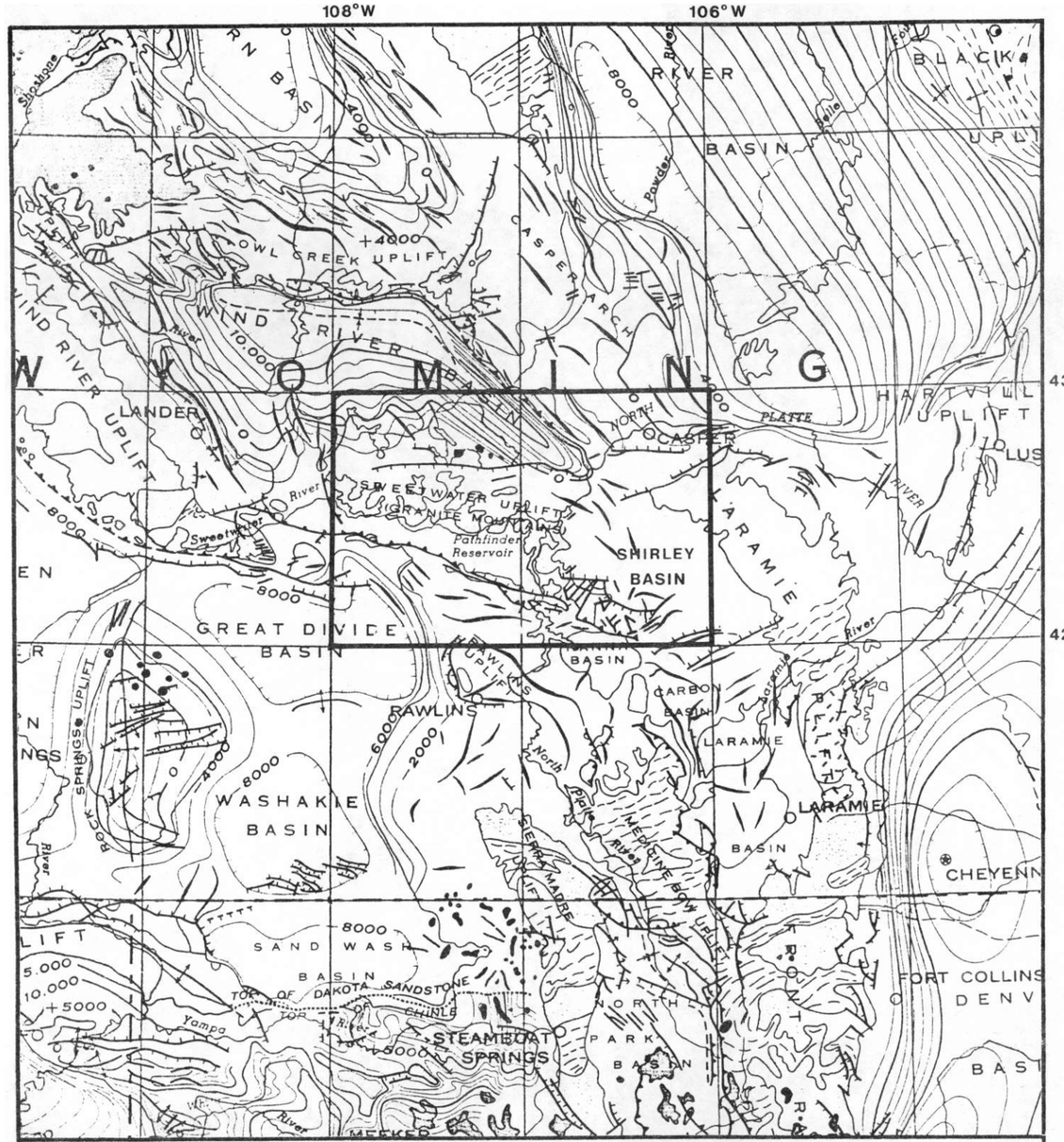


Figure 1
LOCATION MAP
POWDER RIVER II PROJECT
CASPER QUADRANGLE

Scale 1:2,500,000

25 0 25 50 75 MILES



After
USGS and AAPG
Tectonic Map of the United States
by
Cohee and others (1962)

Figure 2
TECTONIC STRUCTURE MAP
POWDER RIVER II PROJECT
CASPER QUADRANGLE

Scale 1:2,500,000
25 0 25 50 75 MILES

Precambrian rocks are exposed at the cores of the Laramie and Sweetwater Uplifts. The other uplifts have Phanerozoic cover ranging in thickness from 2,000 feet over the Shirley Mountains area to more than 10,000 feet over the Rawlins Uplift. The Wind River, Great Divide, and Hanna Basins are among the deepest in the province, and in the quadrangle contain more than 20,000 feet of Phanerozoic sediments.

Dip slip faults are present along the borders of the Sweetwater and Laramie Uplifts. These faults offset Tertiary units. At the southeastern end of the Sweetwater, the surficial expression of the boundary faulting is a series of short faults each displaying one of three preferred orientations (west, north, or northeasterly). A narrow, 65 mile long zone of westerly striking faults forms the northern border of the Sweetwater Uplift, cuts across the southern border of the Wind River Basin, and joins a more complex zone of faulting at the north end of the Laramie Uplift. All the faults discussed to this point are apparently the surficial expression of prominent reverse faulting along the borders of the involved structures. Such fault boundaries are known to exist along the northeastern and southwestern borders of the Sweetwater Uplift, and along the northern end of the Laramie Uplift. Other prominent reverse faulting has occurred in the Wind River and Great Divide Basins. As mapped by Love and others (1979), the Wind River reverse fault is expressed as a single surface rupture (a thrust sheet) oriented northwesterly. No such fault is mapped in the Great Divide Basin; though some local groups of small normal faults in this area may relate to some large scale motion beneath the surface. Most faults in the area offset Miocene or Oligocene rocks (as mapped). In the Casper quadrangle there are no extensive areas mapped as young surface cover. Thus the age of faulting in the area could actually be younger than indicated by the map.

Surface Geology

The surface of the Casper quadrangle is a complex mixture of rocks representing a wide range of ages. The dominant exposures are Mesozoic and Early to Middle Tertiary in age. Mesozoic and Cenozoic formations each occupy approximately 40% of the quadrangle. Paleozoic and Precambrian material are also significant contributors to the surface geology principally in the major uplifts. Approximately 5% of the quadrangle is mapped as Quaternary surficial deposits (primarily as windblown sand).

Due to the structural configuration of the area, the persistent nature of the Mesozoic stratigraphic section in the Casper quadrangle is not shared by Cenozoic strata. Where exposed, the Mesozoic section is essentially the same throughout the entire quadrangle. The Mesozoic sequence, representing a variety of marine and nonmarine environments is is exposed primarily along the borders of the major basins dipping inward toward the basins' centers. The Casper Arch and the Rawlins Uplift contain extensive exposures of Cretaceous material; lying flat to

gently dipping across their axes, and steepening on their limbs. The Cenozoic stratigraphic sequence is entirely nonmarine, and was deposited in basins in essentially the same configuration present today. The basins apparently began forming during Early Tertiary or Late Cretaceous times. Many Tertiary formations are unique to one or two adjacent basins. The Eocene Wasatch Formation, and the Paleocene Fort Union Formation are present in most basins within the quadrangle and are exposed in the Wind River and Great Divide Basins (as well as the northeastern limb of the Casper Arch where it grades into the Powder River Basin). The Eocene Wind River Formation is exposed only in the Wind River and Hanna Basins. Other formations of fluvial and/or lacustrine origin, such as the Eocene Crooks Gap Conglomerate and several Miocene units, are even more localized. Some volcanogenic units, such as the White River Group are fairly extensive and tend to help correlate the individual basins' histories.

The dominant Tertiary stratigraphic sequence for each basin is essentially a unique series of nonmarine formations with local sources. However, most sediments of Cenozoic age represent a similar range of depositional environments and thus have similar lithologies.

The lithology of the Wind River Formation is typical of most other Tertiary formations in the area; consisting of arkosic conglomerate and sandstone, and fine-grained gray sandstone and generally drab claystone. The Fort Union Formation contains numerous coal beds, as do the Wasatch, Hanna, and Ferris Formations. Other formations contain considerable amounts of volcanogenic material (some bentonite, tuffaceous claystone, pumicite, and volcanic breccias), and algal limestones.

The north side of the Sweetwater Uplift has some isolated centers of Tertiary instrusives. These intrusives are generally alkalic, but show a wide range of compositions (trachyte, quartz latite, phonolite, and rhyolite).

Uranium

The Casper quadrangle contains three of the largest uranium producing districts in Wyoming (see Figure 3). These are: the Gas Hills District in the southwest Wind River Basin, the Crooks Gap District in the Great Divide Basin, and the Shirley Basin District. Each of these districts has produced in excess of 1,000,000 tons of ore (0.1%), and all are still active producers (Mallory, 1972). These deposits are epigenetic "roll" deposits. In the Gas Hills and Shirley Basin areas, these deposits are within the Wind River Formation. The Puddle Springs Arkose Member is the primary host rock in the Gas Hills Area, and a similar-aged arkose contains most uranium in the Shirley Basin. The Crooks Gap uranium is found in the Fort Union Formation, (same as the Powder River Basin deposits). The source area for the host rock in

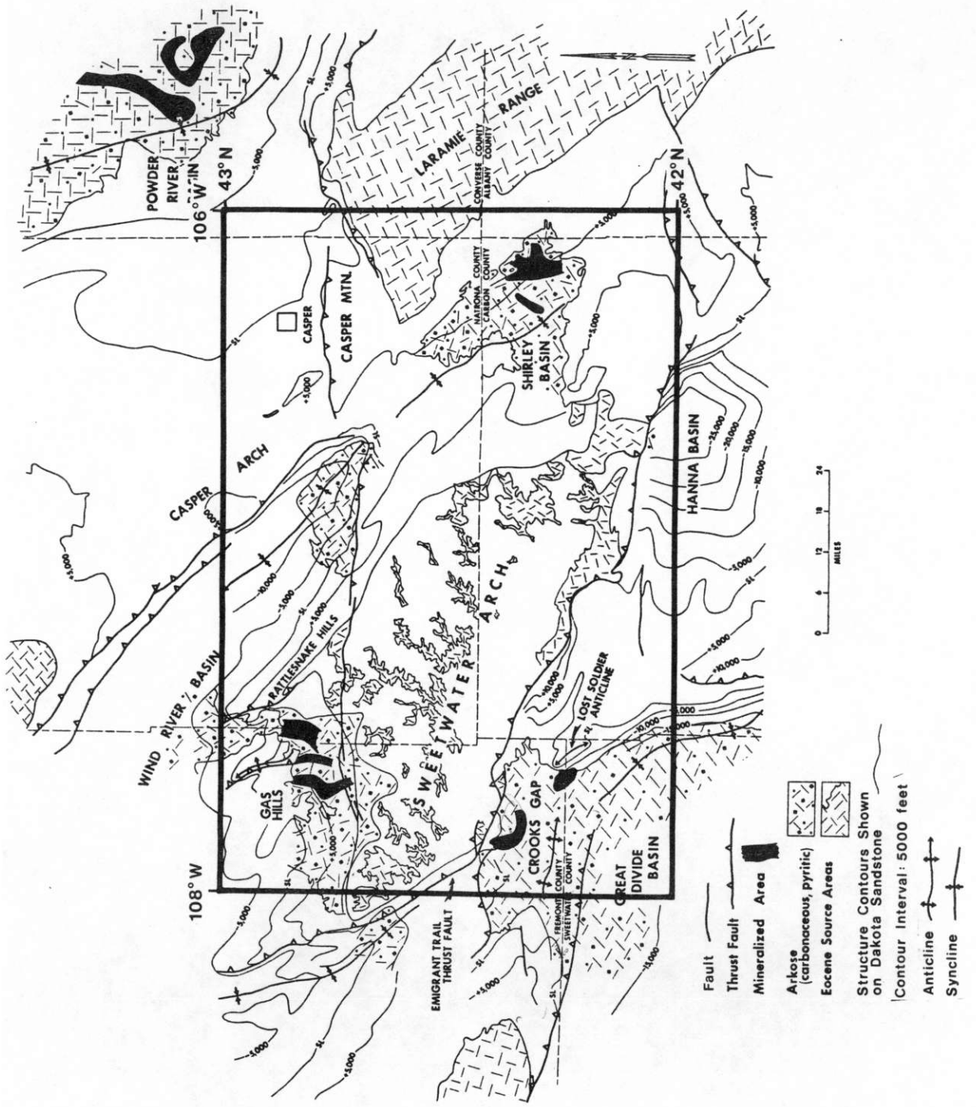


FIGURE 2
URANIUM DISTRICTS AND STRUCTURAL GEOLOGY
CASPER QUADRANGLE (adapted from Rackley, 1971, figure 1)

all these areas is thought to be the Sweetwater Uplift. Material was being removed from this uplift and deposited in adjacent low-lying areas by the start of the Tertiary. The Precambrian crystalline core of this uplift is primarily granitic with minor amounts of amphibolite facies metamorphism. Some minor deposits of uranium occur in these crystalline rocks, and the uranium content is as high as 20 to 30 ppm in places (Rackley, 1972).

Smaller uranium deposits in Tertiary rock occur intermediate between the large districts. No current production information was found for these areas at the time of this report. According to Butler (Mallory, 1972), these deposits have all produced less then 1,000 tons of 0.1% U_3O_8 ore.

INTERPRETATION OF GEOPHYSICAL DATA

Normalization Of Texas Instruments Inc. Data

Approximately two thirds of the line mileage for the Casper quadrangle was flown by Texas Instruments Inc. in 1974. (Refer to Volume I for a description of the instrumentation.) Data from the previous flights were normalized to the Lama and incorporated into the average record data. Prior to normalization the data tapes supplied by T.I. had to be decoded and put into geoMetrics data tape format. Location information had to be translated into UTM coordinates. Missing location and magnetic field data were interpolated. The same normalization procedure used for geoMetrics aircraft was used to normalize T.I. data to the Lama. The scaling parameters derived from normalization primarily reflect the changeover from counts/2 seconds to counts/second (as shown below) except in the uranium window.

K(GEO) = K(TI)/2.33
U(GEO) = U(TI)/4.48
T(GEO) = T(TI)/2.24
Total Count (GEO) = Total Count (TI)/2.01

The difference in the uranium parameter may result from a lack of accurate calibration or from differences in the corrections applied by T.I. at the time. The strategy for correction of the T.I. data is slightly different from that used in correcting data gathered by geoMetrics. Corrections normally made to geoMetrics data (such as STP corrections) were not done because the data used for such corrections was not recorded by T.I.. The magnetic field value was corrected for IGRF, but not for diurnal variations. Because the nature and format of the T.I. data was so different from that collected by geoMetrics, the internal statistical adequacy test for gamma ray data could not be applied. Therefore, the gamma ray data for each sample were given adequacy ratings based upon altitude specifications only.

In general, the data acquired by Texas Instruments are, with modifications, usable by geoMetrics. The data acquisition method used by Texas Instruments at the time (as described in Volume I) is less precise than now required by Bendix. However, the data are similar enough to be used with the geoMetrics data to generate interpretable statistical information. The statistical results within this volume are based upon the combined surveys. When examining the profiles, the T.I. data can be readily distinguished from the geoMetrics data by the BiAir correction. The geoMetrics BiAir correction is a smooth curve, whereas the T.I. correction is clearly stepped.

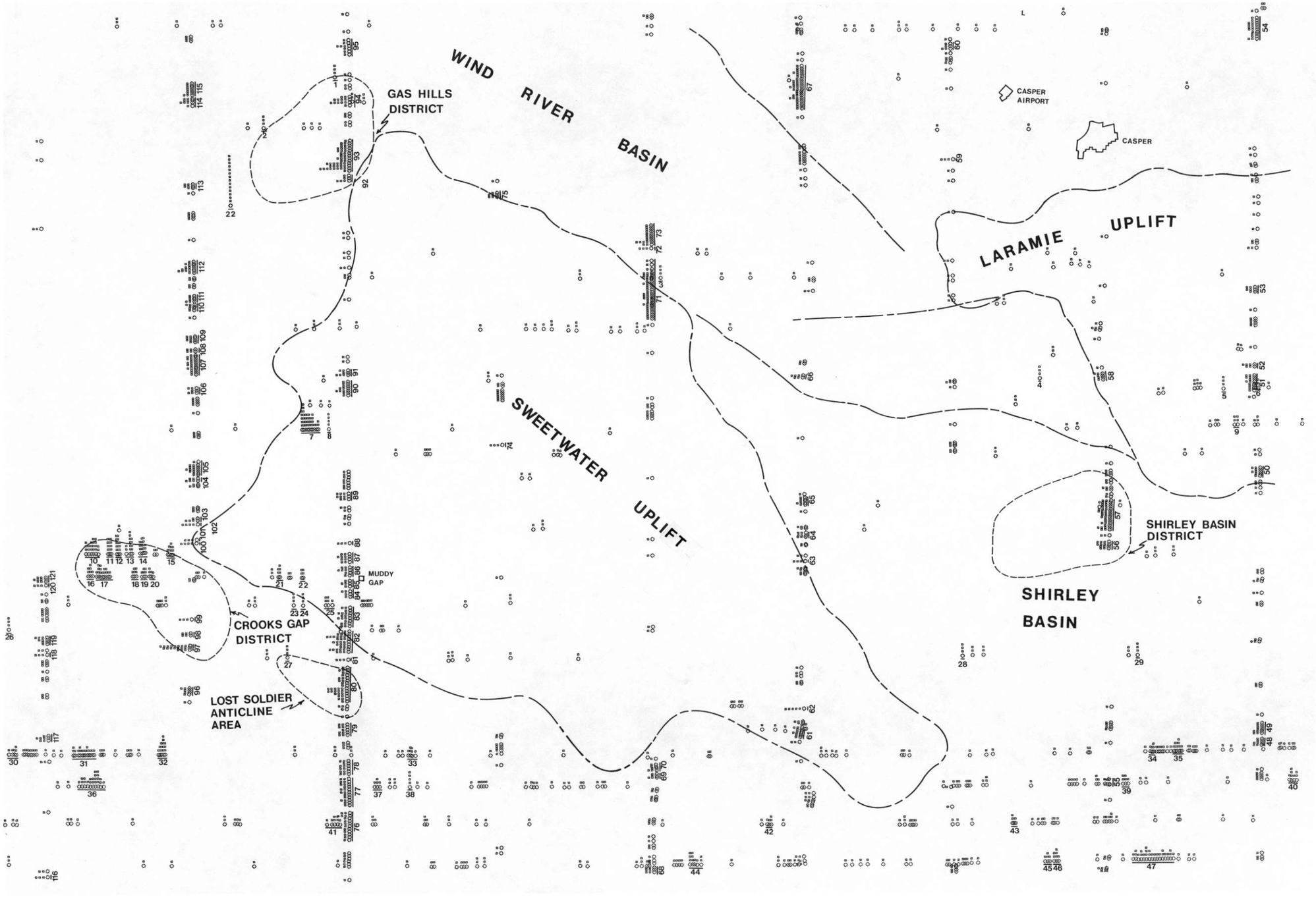
Radiometric Data

A total of 122 uranium anomalies meet the minimum statistical requirements as defined in the data interpretation section of Volume I. These are displayed, along with other anomalous sample points and pertinent data, on the uranium anomaly/interpretation maps (Figure 4). The anomalies are tabulated in Table 1. The potassium, uranium, and thorium pseudo-contour maps are displayed in Figure 5, 6, and 7 respectively.

Within the Casper quadrangle, the average uranium window count rate is 23.1 cps. By comparison, the adjacent Torrington quadrangle has an average uranium window count rate of 29.6 cps. Yet Casper quadrangle contains 3 of the largest uranium mining districts in the state of Wyoming. This casts some doubt on the usefulness of a quadrangle average in evaluating uranium resource potential. Areas with average count rates higher than 35 cps (approximately 1 standard deviation above the mean) are scattered throughtout the quadrangle. Several areas show apparent uranium count rates exceeding 65 cps (more than 3 standard deviation). These areas correlate well, for the most part, with the known uranium districts, or portions of lines out of altitude specifications in the Texas Instrument data. One small area in the northwestern Sweetwater Arch between the Crooks Gap and the Gas Hills Districts shows average uranium window count rates as high as 112 cps.

Little detail is discernable from examination of the potassium and thorium pseudo-contour maps. Most of the impressive high thorium window count rate areas appear to correspond to the line segments out of altitude specifications in T.I. data.

A large number of map units have average uranium window count rates higher than the quadrangle-wide average, including the majority of the mapped Quaternary and Tertiary units. The Wind River Formation has an average uranium count rate of 31.1 cps, which is well above the quadrangle average. The Fort Union Formation (TFU) is below that with a 21.5 cps average count rate. These two units are the two major uranium producing units in the Casper quadrangle. Map units TC, QTP, and QAC have the highest average uranium count rates in the quadrangle at 40.6, 44.5, and 44.8 cps respectively. TC corresponds to the Eocene Crooks Gap Conglomerate which, as digitized, is closely associated with the Crooks Gap Uranium District. The Quaternary units mentioned above are also within uranium mining districts.



URANIUM ANOMALY/ INTERPRETATION MAP

CASPER QUADRANGLE

U.S. DEPARTMENT OF ENERGY

APPROXIMATE SCALE 1 : 500,000

EXPLANATION

- ◌ – GROUP OF URANIUM MINES AND/OR PROSPECTS
- □ – CITY OR TOWN
- ⁘ – URANIUM SAMPLE MEETING FOLLOWING CRITERIA:
  - (1) $1.0 \leq U \leq \infty$
  - (2) $-1.0 \leq T \leq \infty$
  - (3) $1.0 \leq U/T \leq \infty$

  IN STANDARD DEVIATION UNITS.
  EACH SQUARE REPRESENTS 1 STANDARD DEVIATION.
- ⁘ – URANIUM ANOMALY:

  A SINGLE SAMPLE OF 3 OR MORE STANDARD DEVIATIONS OR GROUP OF ADJOINING SAMPLES WHICH TOGETHER TOTAL 4 OR MORE STANDARD DEVIATIONS, $4.0 \leq \text{sum} \leq \infty$, WITH AT LEAST ONE SAMPLE OF 2 OR MORE STANDARD DEVIATIONS.
- / – BOUNDARY IN BASEMENT AS INFERRED BY MAGNETICS.

N

SURVEY AND COMPILATION BY:

geoMetrics

Figure 4 - Uranium Anomaly/Interpretation Map - Casper Quadrangle

TABLE 1

URANIUM ANOMALY SUMMARY

ANOMALY NUMBER	FLIGHT LINE NUMBER	COMPUTER MAP UNIT AND NUMBER OF ANOMALOUS SAMPLES IN UNIT	PEAK CPS	NUMBER OF SAMPLES WITH A STANDARD DEVIATION OF 1	2	3	4	5	6	7	>7
1 (m?)	21	KMV/1	32.5	0	0	1	0	0	0	0	0
2 (m?)	23	QA/1	66.3	0	0	1	0	0	0	0	0
3	29	TMOC/1	39.9	0	0	1	0	0	0	0	0
4	33	KMT/1	43.5	0	0	1	0	0	0	0	0
5	34	PC/1	61.1	0	0	1	0	0	0	0	0
6	34	PC/3	45.5	2	1	0	0	0	0	0	0
7	35	PC/10	112.8	2	1	1	4	1	0	1	0
8	35	PC/1	76.1	0	0	0	1	0	0	0	0
9	35	TMOC/2	34.8	0	2	0	0	0	0	0	0
10 (m)	40	TWBS/5, QA/1	72.1	0	2	2	2	0	0	0	0
11 (m)	40	QA/1, TWBS/2	74.2	0	0	0	3	0	0	0	0
12 (m)	40	TC/4	106.0	0	1	1	0	2	0	0	0
13 (m)	40	TWBS/2	88.3	0	0	0	1	0	1	0	0
14 (m)	40	TWBS/3, TC/3	70.1	2	1	1	2	0	0	0	0
15 (m)	40	TC/1, TWBS/3	57.6	1	2	1	0	0	0	0	0
16 (m)	41	QAC/3	94.9	1	1	1	0	0	0	0	0
17 (m)	41	QAC/1, TWBS/7	64.5	4	2	2	0	0	0	0	0
18 (m)	41	TC/3	68.3	1	2	0	0	0	0	0	0
19 (m)	41	TC/3	71.9	1	2	0	0	0	0	0	0
20 (m)	41	TC/3	64.5	2	1	0	0	0	0	0	0
21	41	TFU/2	59.2	0	1	1	0	0	0	0	0
22	41	TFU/2	48.7	0	2	0	0	0	0	0	0
23	42	TWBS/1	65.5	0	0	1	0	0	0	0	0
24	42	TFU/1	62.8	0	0	1	0	0	0	0	0
25	42	QP/2	49.6	0	2	0	0	0	0	0	0
26	43	QF/1	49.3	0	0	1	0	0	0	0	0
27 (m?)	44	QP/1	60.3	0	0	1	0	0	0	0	0
28	44	KS/1	39.4	0	0	1	0	0	0	0	0
29	44	KS/1	37.3	0	0	1	0	0	0	0	0
30	48	TWBS/3	47.8	2	1	0	0	0	0	0	0
31	48	TWBS/10	49.8	8	2	0	0	0	0	0	0
32	48	TWBS/5	86.2	1	1	2	0	1	0	0	0
33	48	QS/3	29.0	1	2	0	0	0	0	0	0
34	48	KMT/3	34.6	2	1	0	0	0	0	0	0
35	48	KN/6	43.2	3	2	1	0	0	0	0	0
36	49	TWBS/10	73.1	3	5	0	2	0	0	0	0
37	49	QS/3	27.2	2	1	0	0	0	0	0	0
38	49	QS/1	40.3	0	0	0	1	0	0	0	0
39	49	KJ/3	27.8	1	2	0	0	0	0	0	0
40	49	KN/4	46.9	2	1	1	0	0	0	0	0
41	50	TWBS/1, TFU/3	44.3	2	2	0	0	0	0	0	0
42	50	KMB/2, QS/1	27.6	2	1	0	0	0	0	0	0
43	50	KJ/1, KMT/2	30.8	2	1	0	0	0	0	0	0
44	51	KMB/4	35.6	2	0	2	0	0	0	0	0
45	51	KN/1, KF/2	31.7	2	1	0	0	0	0	0	0
46	51	KMT/2, KJ/1	34.6	1	1	1	0	0	0	0	0
47	51	KN/11, QA/4, KS/1	43.5	10	5	1	0	0	0	0	0
48	TL10	KS/4	33.5	2	2	0	0	0	0	0	0
49	TL10	KN/6	40.9	4	2	0	0	0	0	0	0
50	TL10	TMOC/5	35.9	3	2	0	0	0	0	0	0

TABLE 1 (continued)

URANIUM ANOMALY SUMMARY

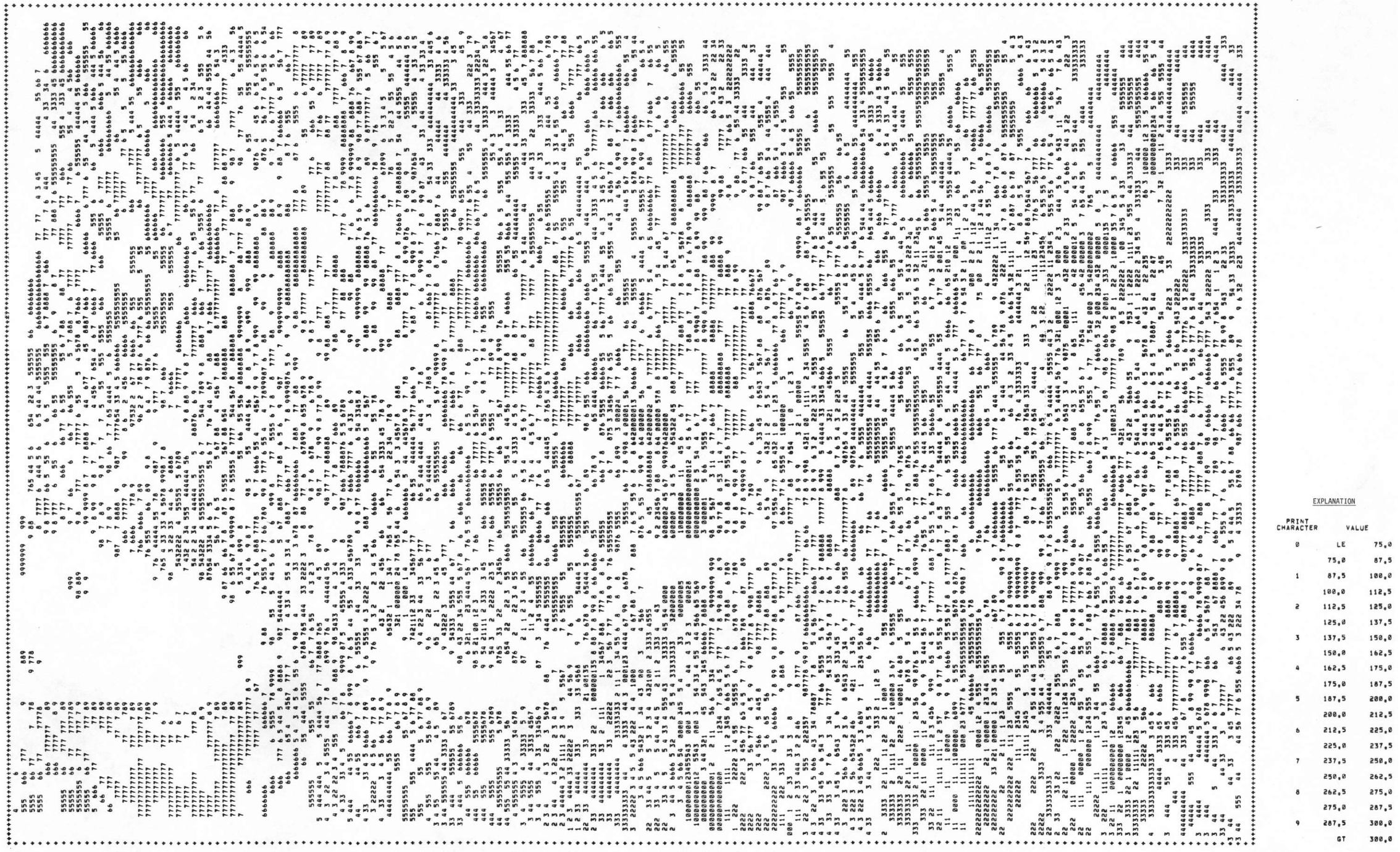
ANOMALY NUMBER	FLIGHT LINE NUMBER	COMPUTER MAP UNIT AND NUMBER OF ANOMALOUS SAMPLES IN UNIT	PEAK CPS	NUMBER OF SAMPLES WITH A STANDARD DEVIATION OF 1	2	3	4	5	6	7	>7
51	TL10	PC/8	47.1	5	3	0	0	0	0	0	0
52	TL10	PC/2	59.4	0	1	1	0	0	0	0	0
53	T110	PPC/3	23.4	1	2	0	0	0	0	0	0
54	T110	QS/10	29.9	5	5	0	0	0	0	0	0
55	TL11	KS/2, QP/1	33.4	1	2	0	0	0	0	0	0
56 (m)	T111	TWR/4	67.9	0	2	2	0	0	0	0	0
57 (m)	TL11	TWR/6, TMO9	65.1	3	9	3	0	0	0	0	0
58	TL11	TMOC/3, PZR/1	30.4	3	1	0	0	0	0	0	0
59	TL12	KMT/1	45.1	0	0	1	0	0	0	0	0
60	TL12	KC/3	31.7	2	1	0	0	0	0	0	0
61	TL13	TM/7	32.0	5	2	0	0	0	0	0	0
62	TL13	TRC/1	42.8	0	0	0	0	1	0	0	0
63	TL13	PC/1	56.1	0	0	1	0	0	0	0	0
64	TL13	TM/2	35.9	0	2	0	0	0	0	0	0
65	TL13	TMOC/5	36.2	4	1	0	0	0	0	0	0
66	TL13	TRC/2	30.2	0	1	1	0	0	0	0	0
67	TL13	KC21	36.9	13	6	2	0	0	0	0	0
68	TL14	KFH/3	30.5	0	3	0	0	0	0	0	0
69	TL14	KMV/1, QP/1, KS/1	35.3	2	1	0	0	0	0	0	0
70	TL14	KS/4	31.9	3	1	0	0	0	0	0	0
71	TL14	TM/18, TMOC/5	37.4	15	8	0	0	0	0	0	0
72	TL14	KLML/1	46.1	0	0	1	0	0	0	0	0
73	TL14	KLML/2, TWDR/8	55.5	8	1	0	1	0	0	0	0
74	TL15	PC/1	56.7	0	0	1	0	0	0	0	0
75	TL15	QLS/1, KJ/1, KMT/1	27.2	1	2	0	0	0	0	0	0
76	TL16	KL/8, KFH/1, KLE/2	33.6	9	1	1	0	0	0	0	0
77	TL16	QA/11	57.3	5	6	0	0	0	0	0	0
78	TL16	QA/2, QS/4	54.3	1	5	0	0	0	0	0	0
79	TL16	KC/4, KMV/1	31.0	1	4	0	0	0	0	0	0
80 (m)	TL16	QA/7, QS/2, KC/2, KMV/1, KLE/1, QP/1	58.9	6	5	1	0	2	0	0	0
81	TL16	KMV/1	35.8	0	0	1	0	0	0	0	0
82	TL16	KMV/5, KC/4	59.1	1	1	4	1	1	1	0	0
83	TL16	KC/8	36.1	2	4	2	0	0	0	0	0
84	TL16	KC/3	30.1	2	1	0	0	0	0	0	0
85	TL16	QA/1, KMT/1, KJS/1	39.5	2	1	0	0	0	0	0	0
86	TL16	JTRP/1, TM/3	39.0	2	1	1	0	0	0	0	0
87	TL16	TM/4	38.7	0	3	1	0	0	0	0	0
88	TL16	TM/1	40.7	0	0	1	0	0	0	0	0
89	TL16	TM/3	43.2	0	1	2	0	0	0	0	0
90	TL16	TMS/4, PC/3	70.7	5	1	1	0	0	0	0	0
91	TL16	PC/3	56.9	1	1	1	0	0	0	0	0
92 (m)	TL16	TWB/1, TWDR/2	62.8	2	0	1	0	0	0	0	0
93 (m)	TL16	TWDR/10, QTP/3	285.2	2	5	3	0	1	1	0	1
94 (m)	TL16	TWDR/1, KF/1, KC/2	54.1	1	1	0	1	1	0	0	0
95	TL16	KML/4, KWDR/2	59.5	5	0	1	0	0	0	0	0
96	TL17	TWBS/4	47.1	3	1	0	0	0	0	0	0
97 (m)	TL17	QS/3	68.2	0	0	1	0	0	0	1	1
98 (m)	TL17	TWBS/2	54.4	0	2	0	0	0	0	0	0
99 (m)	TL17	TWBS/1	63.2	0	0	1	0	0	0	0	0
100	TL17	TWR/1	75.2	0	0	0	1	0	0	0	0

TABLE 1 (continued)

URANIUM ANOMALY SUMMARY

ANOMALY NUMBER	FLIGHT LINE NUMBER	COMPUTER MAP UNIT AND NUMBER OF ANOMALOUS SAMPLES IN UNIT	PEAK CPS	NUMBER OF SAMPLES WITH A STANDARD DEVIATION OF 1	2	3	4	5	6	7	>7
101	TL17	TWR/1	69.0	0	0	1	0	0	0	0	0
102	TL17	TM/1	51.6	0	0	0	1	0	0	0	0
103	TL17	TM/2	39.0	0	1	1	0	0	0	0	0
104	TL17	TM/2	42.3	0	1	1	0	0	0	0	0
105	TL17	TM/6	40.8	2	3	1	0	0	0	0	0
106	TL17	TM/3	33.4	1	2	0	0	0	0	0	0
107	TL17	TM/11	37.1	6	5	0	0	0	0	0	0
108	TL17	TM/2	35.0	0	2	0	0	0	0	0	0
109	TL17	TM/4	35.4	1	3	0	0	0	0	0	0
110	TL17	TMOC/4	33.9	3	1	0	0	0	0	0	0
111	TL17	TMOC/4	32.2	3	1	0	0	0	0	0	0
112	TL17	TWR/1, TWR6	69.7	3	2	1	1	0	0	0	0
113	TL17	QA/3	54.7	1	2	0	0	0	0	0	0
114	TL17	KLE/3	33.3	0	2	1	0	0	0	0	0
115	TL17	KLE/2, QA/5	35.6	6	1	0	0	0	0	0	0
116	TL18	QS/1	38.9	0	0	1	0	0	0	0	0
117	TL18	TWBS/3	63.2	1	1	1	0	0	0	0	0
118	TL18	QS/1	33.2	0	0	1	0	0	0	0	0
119	TL18	TWBS/4	60.2	2	1	1	0	0	0	0	0
120	TL18	TWBS/1	63.6	0	0	1	0	0	0	0	0
121	TL18	TWBS/3	57.3	0	2	1	0	0	0	0	0
122 (m?)	26	TWDR/1	451.6	0	0	0	0	0	0	0	1

Note: (m) implies anomaly is within a uranium mining district such as the Gas Hills District.



EXPLANATION

PRINT CHARACTER	VALUE	
0	LE	75,0
	75,0	87,5
1	87,5	100,0
	100,0	112,5
2	112,5	125,0
	125,0	137,5
3	137,5	150,0
	150,0	162,5
4	162,5	175,0
	175,0	187,5
5	187,5	200,0
	200,0	212,5
6	212,5	225,0
	225,0	237,5
7	237,5	250,0
	250,0	262,5
8	262,5	275,0
	275,0	287,5
9	287,5	300,0
	GT	300,0

Figure 5 - Potassium Pseudo-Contour Map - Casper Quadrangle

EXPLANATION

PRINT CHARACTER	VALUE	
0	LE	10,0
	10,0	15,0
1	15,0	20,0
	20,0	25,0
2	25,0	30,0
	30,0	35,0
3	35,0	40,0
	40,0	45,0
4	45,0	50,0
	50,0	55,0
5	55,0	60,0
	60,0	65,0
6	65,0	70,0
	70,0	75,0
7	75,0	80,0
	80,0	85,0
8	85,0	90,0
	90,0	95,0
9	95,0	100,0
	GT	100,0

Figure 6 - Uranium Pseudo-Contour Map - Casper Quadrangle

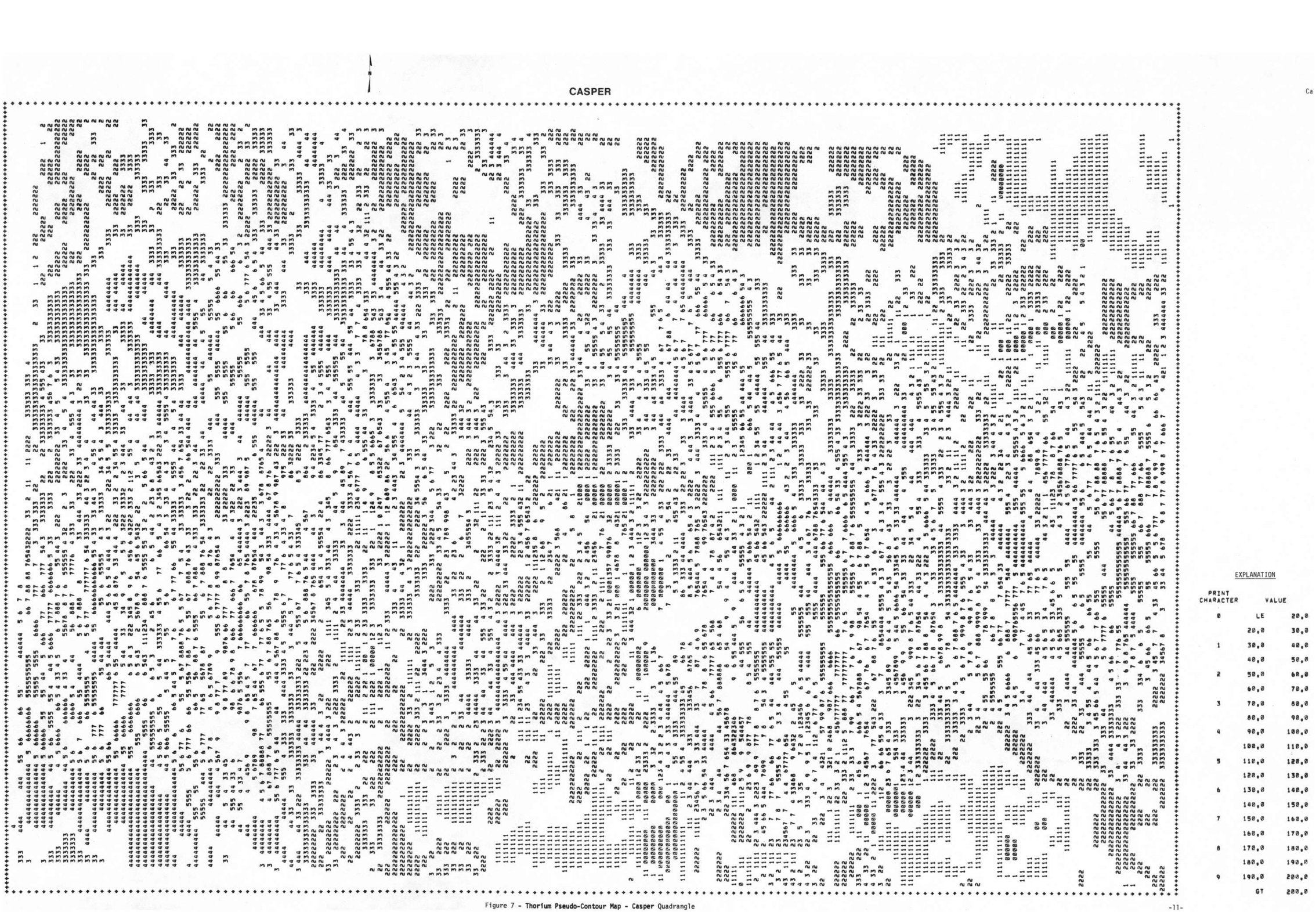


Figure 7 - Thorium Pseudo-Contour Map - Casper Quadrangle

EXPLANATION

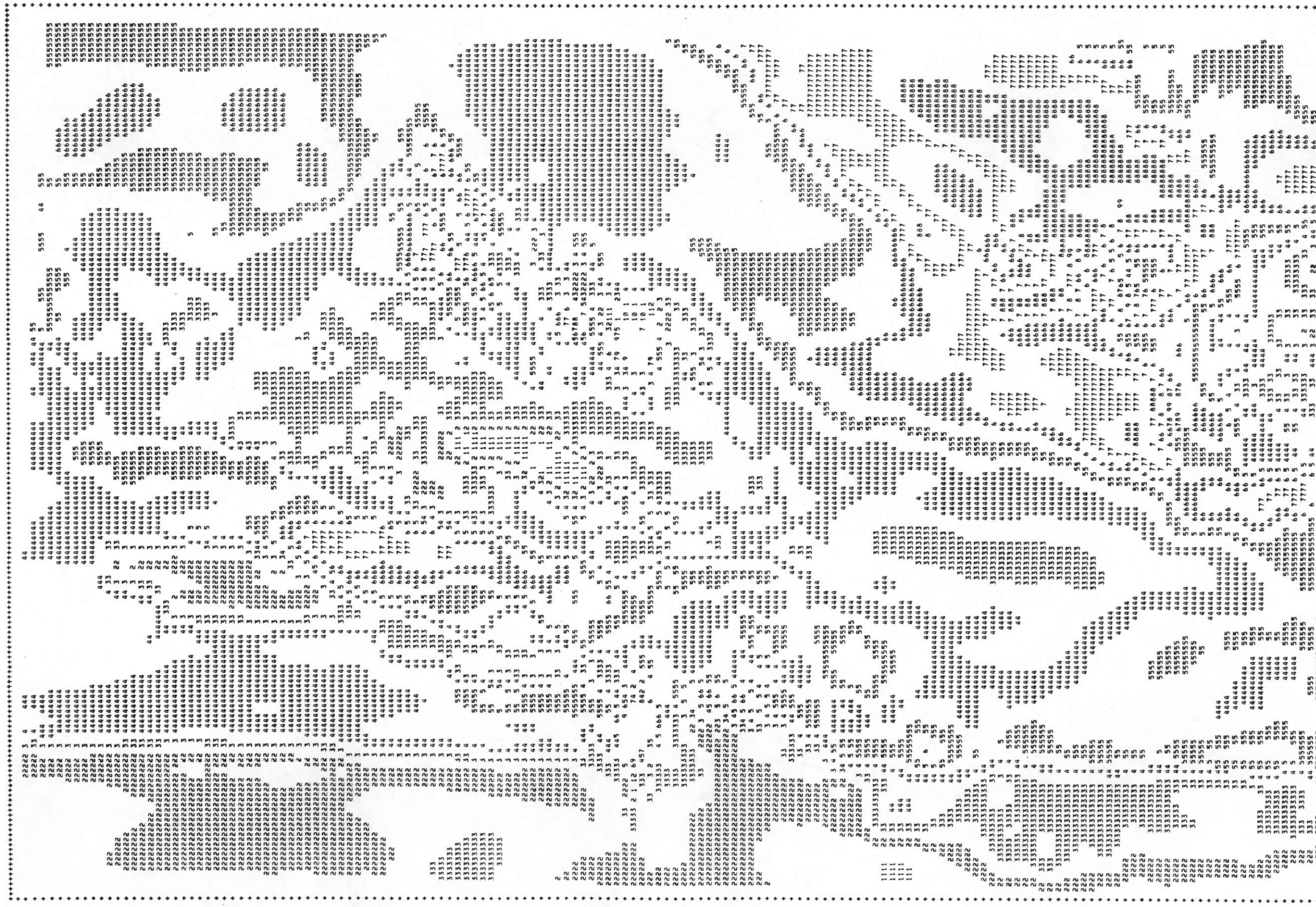
PRINT CHARACTER	VALUE	
0	LE	20.0
	20.0	30.0
1	30.0	40.0
	40.0	50.0
2	50.0	60.0
	60.0	70.0
3	70.0	80.0
	80.0	90.0
4	90.0	100.0
	100.0	110.0
5	110.0	120.0
	120.0	130.0
6	130.0	140.0
	140.0	150.0
7	150.0	160.0
	160.0	170.0
8	170.0	180.0
	180.0	190.0
9	190.0	200.0
	GT	200.0

The anomalies are largely scattered throughout the quadrangle. The most pronounced grouping of anomalies is in the western half of the quadrangle between the Gas Hills and Crooks Gap Districts. Another small group of anomalies lies within the Shirley Basin District. Anomalies 10 - 20 and 97 - 99 occur within the Crooks Gap District in a variety of Tertiary and Quaternary units (as digitized). Peak uranium window count rates in this group range as high as 106.0 cps. Anomalies 27, 80, and 81 occur in the nearby Lost Soldier Anticline area in Cretaceous and Quaternary units. Peak count rates here range from 35.8 to 60.3 cps in the uranium window. The Shirley Basin District is represented by anomalies 56 and 57. These anomalies lie in mid-Tertiary units (as digitized) and have peak uranium window count rates of 67.9 and 65.1 cps respectively. Anomalies 1, 2, 92 - 94, and 122 occur in the Gas Hills District. A wide variety of digitized map units, are included in the anomalies. Peak count rates are extremely variable, ranging as high as 285.2 cps in anomaly 93 (geoMetrics data), and 451.6 cps in anomaly 122 (T.I. data). Anomalies within the various uranium minging districts probably occur as a result of the mining activity in those districts. Many small groups of anomalies can be seen in the Sweetwater Arch area, between the major districts in the western half of the quadrangle. The most significant of these is the group formed by anomalies 7, 8, 90, and 91. These anomalies occur primarily in unit PC (Precambrian-undivided as mapped). Peak count rates in the uranium window are highest in anomaly 7 at 112.8 cps. This is the only area in the quadrangle besides those areas associated with known developed uranium occurrences, where the uranium window count rates exceed 100 cps (14 ppmeU). Peak thorium window count rates in this area are also significant at 311 cps. Though every anomalous standard deviation shown in Figure 4 is considered significant, this area stands out as being worthy of more detailed study.

Though more generalized, the anomaly map made by Texas Instruments for this area (GJO-1631-1, 1974) bears remarkable similarity to the anomaly map for this report (Figure 4). The generalized anomaly pattern used by T.I. to delineate broad areas of possible interest is not used because experience has shown that little or no correlation exists between flight lines 2-12 miles apart. The final word in what trends in uranium mineralization are actually present can only be made by the geologist on the ground.

Magnetic Data

The Casper quadrangle contains portions of several structural basins with varying depths of sedimentary cover. The Sweetwater Arch and Laramie Uplift, both of which serve to separate the basins in this area, contain substantial exposures of Precambrian crystalline rock. Thrust faulting borders several of the basins. In general, the major structures and their borders are clearly defined by the magnetic field data. The residual magnetic field pseudo-contour map (Figure 8) outlines the Sweetwater and Laramie Uplifts as regions of high frequency wavelengths. Thrust faulting at the borders of the Wind River Basin correlates well with a linear frequency change.



EXPLANATION

PRINT CHARACTER		VALUE	
0	LE	-500.0	
	-500.0	-450.0	
1	-450.0	-400.0	
	-400.0	-350.0	
2	-350.0	-300.0	
	-300.0	-250.0	
3	-250.0	-200.0	
	-200.0	-150.0	
4	-150.0	-100.0	
	-100.0	-50.0	
5	-50.0	.0	
	.0	50.0	
6	50.0	100.0	
	100.0	150.0	
7	150.0	200.0	
	200.0	250.0	
8	250.0	300.0	
	300.0	350.0	
9	350.0	400.0	
	GT	400.0	

Figure 8 - Residual Magnetic Pseudo-Contour Map - Casper Quadrangle

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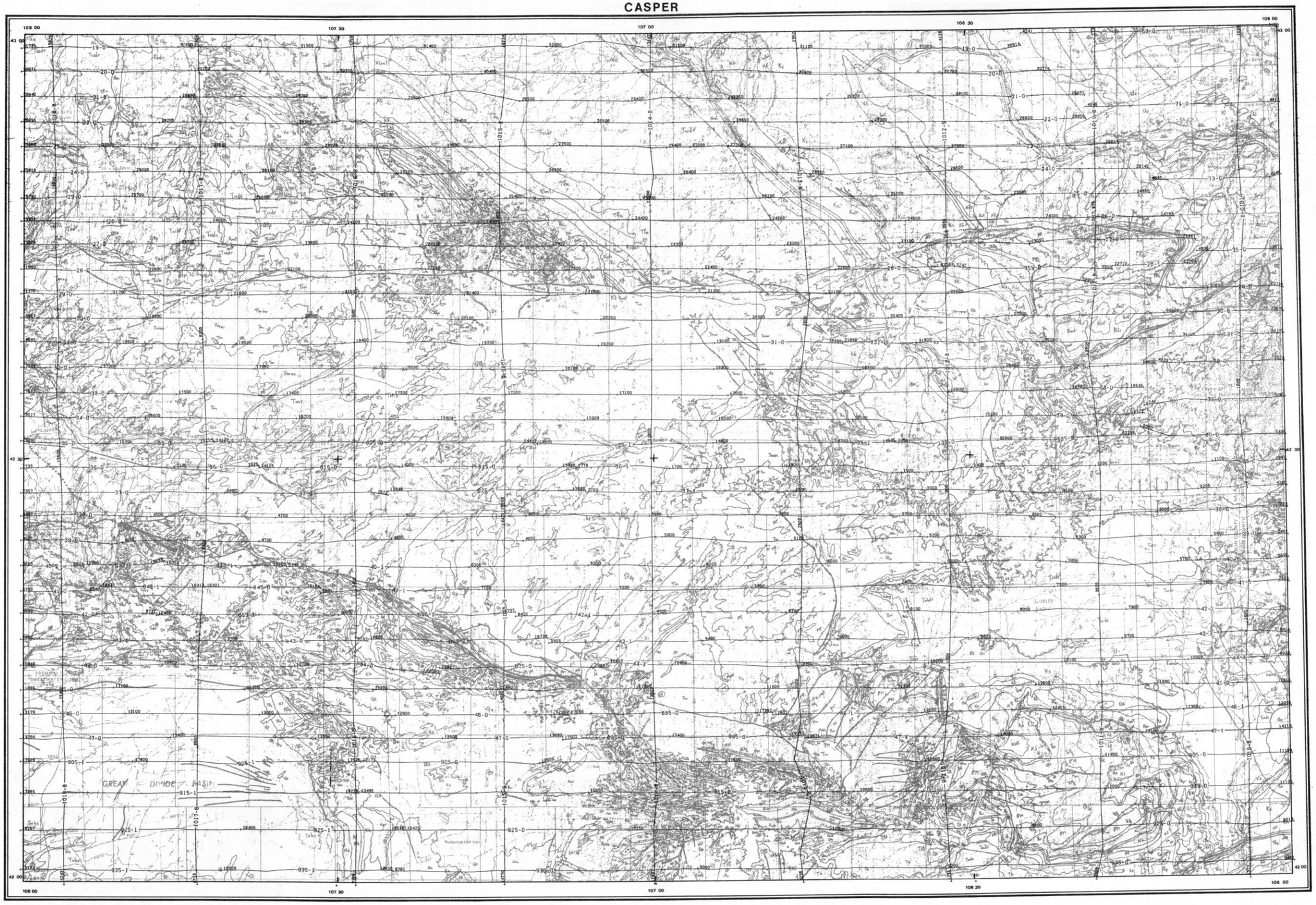
APPENDIX A - Flight Path And Geologic Map

CASPER



SCALE 1:500,000

MILES 5 0 5 10 15 MILES

KILOMETRES 5 0 5 10 15 20 25 30 KILOMETRES

FIDUCIAL NUMBER — 123400 — 053-0 — 123600 — LINE NUMBER

FLIGHT LINE SPACING ..... 3.0 & 6.0 MILE(S)
FLIGHT ALTITUDE ..... 400 FEET AMT
FLOWN AND COMPILED ..... 1978 – 1979

SURVEY AND COMPILATION BY
geoMetrics

N

LOCATION INDEX

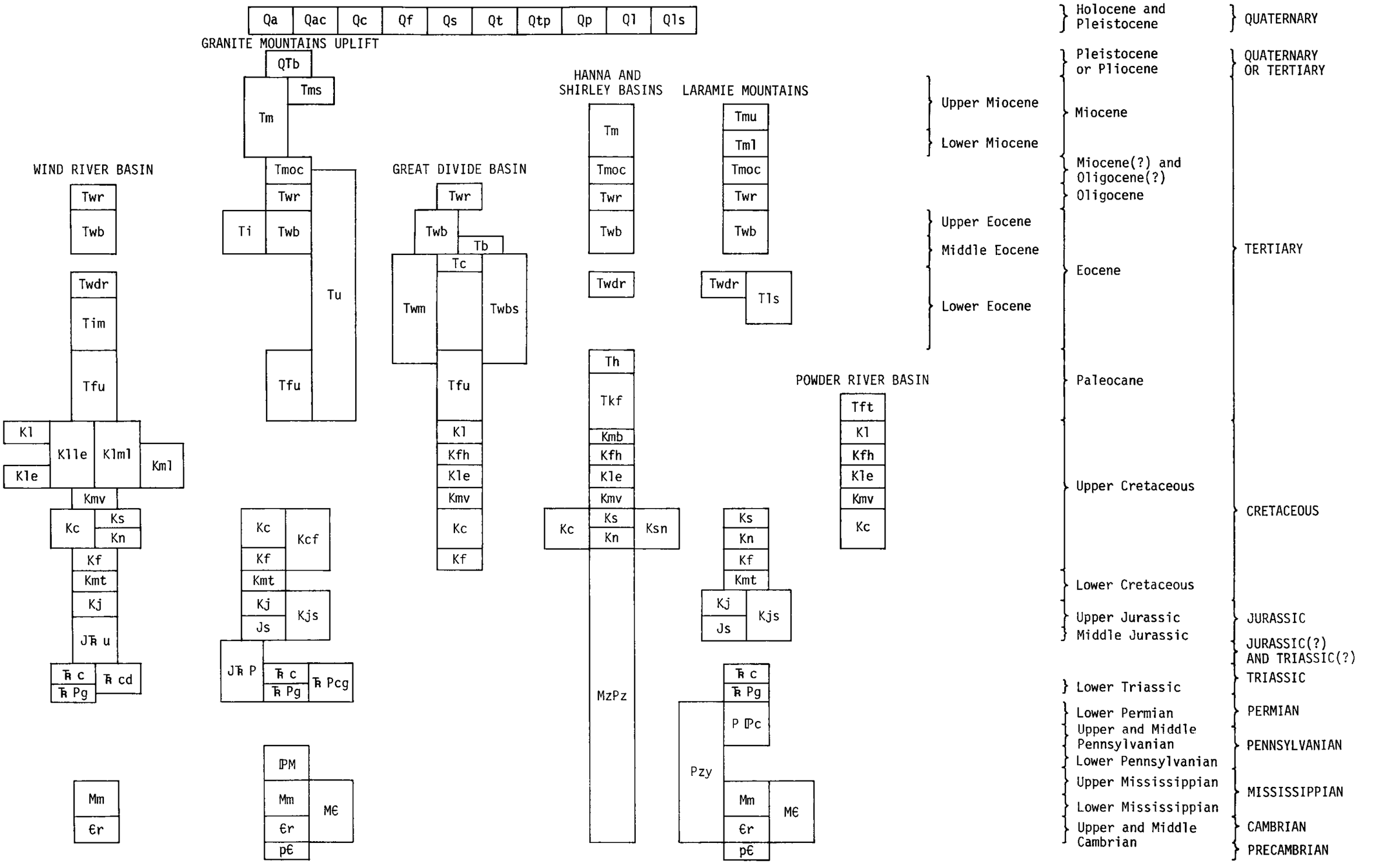
NL 12-11	NL 12-12	NL 13-10	NL 13-11	NL 13-12
NK 12-2	NK 12-3	NK 13-1	NK 13-2	NK 13-3
NK 12-5	NK 12-6	NK 13-4	NK 13-5	NK 13-6
NK 12-8	NK 12-9	NK 13-7	NK 13-8	NK 13-9
NK 12-11	NK 12-12	NK 13-10	NK 13-11	NK 13-12

FLIGHT PATH RECOVERY

POWDER RIVER II PROJECT

U. S. DEPARTMENT OF ENERGY

CASPER QUADRANGLE GEOLOGIC MAP
EXPLANATION
(from Love and others, 1979)



GEOLOGIC MAP EXPLANATION (continued)

DESCRIPTION OF MAP UNITS

[The Miocene-Pliocene boundary is used in the European sense, as applied to marine rocks (Berggren and Van Couvering, 1974), the separation being at about 5 m.y. (million years).]

Qa ALLUVIAL DEPOSITS (HOLOCENE AND PLEISTOCENE)--Unconsolidated and poorly consolidated clay, silt, sand, and gravel, mainly in flood plains and lowest terraces

Qac ALLUVIUM AND COLLUVIUM (HOLOCENE AND PLEISTOCENE)

Qc COLLUVIUM (HOLOCENE AND PLEISTOCENE)--Heterogeneous deposits of rock detritus, unsized and unsorted

Qf ALLUVIAL FAN DEPOSITS (HOLOCENE AND PLEISTOCENE)--Water-laid gravel, sand, silt, and clay spreading out from mouths of ravines and canyons

Qs WINDBLOWN SAND (HOLOCENE AND PLEISTOCENE)--Chiefly gray quartz sand; includes active and dormant sand dunes

Qt TERRACE GRAVEL (HOLOCENE AND PLEISTOCENE)--Unconsolidated to partly consolidated deposits of boulders, gravel, sand, and silt on surfaces at various elevations above modern streams

Qtp TERRACE AND PEDIMENT GRAVEL (HOLOCENE AND PLEISTOCENE)

Qp PEDIMENT GRAVEL (HOLOCENE AND PLEISTOCENE)--Angular to subrounded rock fragments in coarse sand matrix deposited on bedrock surfaces sloping away from upland source areas

Ql LACUSTRINE OR PLAYA DEPOSITS (HOLOCENE AND PLEISTOCENE)--Finely bedded deposits of sand, silt, and clay; in southwest corner of quadrangle

Qls LANDSLIDE DEPOSITS (HOLOCENE AND PLEISTOCENE)--Unsized and unsorted rock debris emplaced by mass movement

QTb BUG FORMATION (PLEISTOCENE OR PLIOCENE)--Pale-green, brown, and white claystone, tuff, radioactive limestone, and conglomerate which contains andesite and chalcedony pebbles. Thickness 0-38 m (0-125 ft)

Tms MOONSTONE FORMATION (UPPER MIOCENE)--Light-gray, pale-green, and brown tuff and tuffaceous sandstone, radioactive white shale and algal limestone, and, in lower part, thick beds of arkose; abundant chalcedony layers and pebbles and small silicified algal heads. Thickness 0-410 m (0-1,350 ft)

Tm MIOCENE ROCKS UNDIVIDED

Tmu Upper part (upper Miocene)--Heterogeneous sequence of white soft tuffaceous sandstone with frosted rounded quartz grains and abundant magnetite, and limestone, pumicite beds, and lesser amounts of claystone and conglomerate. Includes Moonstone Formation in south-central part of the quadrangle. Thickness 0-500+ m (0-1,650+ ft)

Tml Lower part (lower Miocene)--Chiefly white to light-gray tuffaceous sandstone, eolian in part, composed of frosted rounded quartz grains and abundant magnetite; sparse lenticular white limestones. Base intertongues with conglomerate (Tmoc) and may be partly Oligocene. Thickness 0-120+ m (0-400+ft)

Tmoc MIOCENE(?) AND OLIGOCENE(?) CONGLOMERATE--Gray, brown, and pink arkosic conglomerate interbedded with gray and pink blocky tuffaceous claystone in some areas and gray soft sandstone with frosted rounded quartz grains and abundant magnetite in others. Thickness 0-180 m (0-600 ft)

Tu PRE-MIOCENE TERTIARY ROCKS--Correlation uncertain

Twr WHITE RIVER FORMATION (OLIGOCENE)--White, pink, brown, and green tuffaceous claystone and siltstone; thin beds of pumicite and limestone; lenticular conglomerates near base. K-Ar ages of pumicite beds range from 35.2 m.y. in the lower part to 31.6 m.y. near the top (Evernden and others, 1964). Thickness 0-260 m (0-850 ft)

Ti INTRUSIVE ROCKS (UPPER AND MIDDLE EOCENE)--Several varieties of trachytes, quartz latite, phonolite, and rhyolite. The quartz latite has a K-Ar age of 44.0±2.6 m.y. and the phonolite 43.6±1.0 m.y. (Pekarek and others, 1974)

Twb WAGON BED FORMATION (UPPER AND MIDDLE EOCENE)
Western part--Variegated mudstone, tuffaceous siliceous hard sandstone, tuff, rhyodacite breccia flows, and, near base, arkosic conglomerates and granite boulders. Thickness 0-150 m (0-500 ft)
Eastern part--Pale-green to dully variegated tuffaceous siliceous claystone underlain by giant granite boulders in tuffaceous matrix. Thickness 0-50 m (0-160 ft)

Tb BRIDGER FORMATION (MIDDLE EOCENE)--Brown, gray, and pale-green hard siliceous claystone and arkosic sandstone, underlain by soft gray bentonitic claystone; lower part is hard siliceous claystone, snowy white pumicite, and arkose. Present only in southwestern corner of quadrangle. Thickness 0-70 m (0-220 ft)

Tc CROOKS GAP CONGLOMERATE (MIDDLE AND LOWER EOCENE)--Conglomerate of giant granite boulders in a coarse arkosic sandstone matrix. Overlaps unconformably across lower Eocene strata. Thickness 0-460 m (0-1,500 ft)

Twbs WASATCH AND BATTLE SPRING FORMATIONS (MIDDLE AND LOWER EOCENE AND PALEOCENE)--Granite conglomerate and coarse arkosic sandstone, grading southward into finer grained sandstone, siltstone, variegated to gray claystone, and coal beds in main body of Wasatch Formation. The Battle Spring Formation is a basin-margin facies of the Wasatch Formation and there is no consistent basis for separating them. Thickness 0-1,220 m (0-4,000 ft)

Twm MAIN BODY OF WASATCH FORMATION (MIDDLE AND LOWER EOCENE AND PALEOCENE)--Basinward fine-grained facies of Wasatch Formation; present in southwestern corner of quadrangle. Thickness 0-915+ m (0-3,000+ ft)

GEOLOGIC MAP EXPLANATION (continued)

Twdr WIND RIVER FORMATION (LOWER EOCENE)
Wind River Basin--Upper part is arkosic conglomerate and sandstone grading northward into siltstone and claystone; lower part is generally fine-grained gray sandstone and variegated to drab claystone. Thickness 0-460 m (0-1,500 ft).
Northern part of Hanna Basin--Arkosic conglomerate and sandstone grading southward into variegated claystone. Thickness 0-150 m (0-500 ft)

Tim INDIAN MEADOWS FORMATION (LOWER EOCENE)--Arkosic conglomerate, gray sandstone, and variegated to drab claystone; finer grained in Wind River Basin. Thickness 0-45 m (surface) to 915+ m (subsurface, in Wind River Basin) (0-150 ft to 3,000+ ft)

Tls PRE-MIDDLE EOCENE LANDSLIDE MASSES--Coherent masses and blocks of Howry and Cloverly Formations that have been let down or moved laterally onto older strata. Present only in Tps. 26-28 N., R. 77 W.

Tfu FORT UNION FORMATION (PALEOCENE)
Northern part--Chalky white to bluish-white to rusty-brown noncalcareous sandstone, thin conglomerates of granite clasts in upper part and siliceous sedimentary rock clasts in lower part; white to gray shale, claystone, and siltstone. Thickness 0-915 m (0-3,000 ft)
Southwestern part--Same general lithology as in northern part except that many coal beds are present in subsurface sections and many of the shale, siltstone, claystone, and mudstone beds are variegated. Thickness 0-760 m (0-2,500 ft)

Tft Tullock Member--Drab-colored sequence, chiefly massive sandstones. Thickness 0-400 m (0-1,300 ft)

Th HANNA FORMATION (PALEOCENE)--Basin-margin facies of brown granitic conglomerate, gray and brown sandstone, gray to black siltstone, claystone, and shale, and many coal beds. Thickness 0-3,950 m (0-13,000 ft)

TKf FERRIS FORMATION (PALEOCENE AND UPPER CRETACEOUS)
Upper part (Paleocene)--Gray, brown, and yellow sandstone and many thick coal beds. Thickness 1,650 m (5,400 ft)
Lower part (Cretaceous)--Dark-brown conglomerate in which clasts are not locally derived, brown sandstone, and shale. Thickness 355 m (1,100 ft)

Kl LANCE FORMATION (UPPER CRETACEOUS)
Powder River Basin--Somber shale and drab massive lenticular concretionary sandstone; thin coal beds in lower half. Thickness 600-700 m (1,970-2,300 ft)
Wind River Basin--Sandstone, white to light-gray, massive to crossbedded, and thin beds of carbonaceous shale and gray shale. Thickness 300-760 m (1,000-2,500 ft)
Great Divide Basin--White to gray sandstone at top, underlain by thick sequence of interbedded siltstone, sandstone, shale, and mudstone; abundant ironstone concretions; coal near base. Thickness 900-1,250 m (2,950-4,100 ft)

Kmb MEDICINE BOW FORMATION (UPPER CRETACEOUS)--Brown and gray sandstone, siltstone, and shale; beds of coal in lower part. Thickness 1,220-1,900 m (4,000-6,200 ft)

Kfh FOX HILLS SANDSTONE OR FORMATION (UPPER CRETACEOUS)
Northeast part--White to light-gray sandstone and gray sandy shale containing marine fossils. Thickness 45-60 m (150-200 ft)
Southwestern part--Gray sandstone interbedded with grayish-olive shale. Thickness 105-205 m (350-680 ft)

Kle LEWIS SHALE (UPPER CRETACEOUS)
Northeastern part--Dark-gray soft marine shale interbedded with lesser amounts of marine sandstone. Thickness 300 m (1,000 ft)
Southern part--Same lithology but thickness is 0-700 m (0-2,300 ft)

Klle LANCE AND LEWIS FORMATIONS (UPPER CRETACEOUS)

Klml LANCE, MEETEETSE, AND LEWIS FORMATIONS (UPPER CRETACEOUS)
Meeteetse Formation--Light-gray friable sandstone interbedded with dark-gray carbonaceous shale and yellowish-colored bentonitic claystone. Thickness 120-180 m (400-600 ft)

Kml MEETEETSE AND LEWIS FORMATIONS (UPPER CRETACEOUS)

Kmv MESAVERDE FORMATION OR GROUP (UPPER CRETACEOUS)
Northern part--Mesaverde Formation: white Teapot Sandstone Member at top, underlain by gray sandstone, shale, and coal member; nonmarine gray Parkman Sandstone Member at base. Thickness 180-365 m (600-1,200 ft)
Southern part--Interbedded sandstone, gray shale, and coal beds. In Tps. 24-25 N., Rs. 87-86 W., includes Almond Formation, Pine Ridge Sandstone, Allen Ridge Formation, and Haystack Mountains Formation. Thickness about 1,220 m (4,000 ft)
Southwestern part--Same lithology but thickness 0-790 m (0-2,600 ft)

Kc CODY SHALE (UPPER CRETACEOUS)--Gray to black soft limy marine shale and thin bentonite beds; lenticular sandstones especially common in upper part. Thickness in northern part of quadrangle 915-1,370 m (3,000-4,500 ft); in southwestern part, 1,650-1,740 m (5,400-5,700 ft)

GEOLOGIC MAP EXPLANATION (continued)

Ks STEELE SHALE (UPPER CRETACEOUS)--Dark-gray soft marine shale containing thin beds of gray limestone, white bentonite, and very fine grained hard sandstone. Thickness about 730 m (2,400 ft)

Kn NIOBRARA FORMATION (UPPER CRETACEOUS)--Dark-gray to yellowish-buff marine shale and chalky soft limestone; highly seleniferous. Thickness about 215 m (700 ft)

Ksn STEELE AND NIOBRARA FORMATIONS (UPPER CRETACEOUS)

Kf FRONTIER FORMATION (UPPER CRETACEOUS)--Gray fine- to coarse-grained quartz sandstone interbedded with gray to black siltstone and shale; glauconitic in part. White to yellow bentonite, white to gray porcellanite, and thin impure coal beds are present in lower part. Sequence is more shaly to east and northeast. Thickness 180 m (600 ft) in the east, thickening to about 305 m (1,000 ft) in the west

Kcf CODY SHALE AND FRONTIER FORMATION (UPPER CRETACEOUS)

Kmt MOWRY AND THERMOPOLIS SHALES (LOWER CRETACEOUS)--Thickness of both formations 90-150 m (300-500 ft)

Mowry Shale--Black to gray hard siliceous shale that weathers silvery gray and contains abundant fish scales. Numerous bentonite beds

Thermopolis Shale--Muddy Sandstone Member, at top, consists of 15-30 m (50-100 ft) of gray lenticular carbonaceous sandstone and is underlain by the lower black shale member, which consists of 30-60 m (100-200 ft) of black fissile soft shale

KJ CLOVERLY AND MORRISON FORMATIONS

Cloverly Formation (Lower Cretaceous)--"Rusty beds" sequence of brown-weathering fine-grained gray slabby sandstone at top, underlain by lenticular variegated plastic claystone; at base is hard brown chert pebble conglomerate and sparkly sandstone. Thickness 30-90 m (100-300 ft)

Morrison Formation (Upper Jurassic)--Dully variegated silty siliceous claystone and siltstone interbedded with gray to white silty sandstone. In some places there are lenticular dune-type sandstones as thick as 30 m (100 ft). Thickness 30-90 m (100-300 ft)

Js SUNDANCE FORMATION (UPPER AND MIDDLE JURASSIC)--Upper part is greenish-gray glauconitic shale and gray limy sandstone; middle part is red and gray nonglauconitic sandstone and shale and thin gypsum and limestone beds; lower part is thick-bedded gray to pink sandstone. Thickness 45 m (150 ft) in southwestern part and 170 m (550 ft) in northeastern part

KJs CLOVERLY, MORRISON, AND SUNDANCE FORMATIONS

JRu SUNDANCE FORMATION AND NUGGET SANDSTONE

Sundance Formation (Upper and Middle Jurassic)

Nugget Sandstone (Jurassic? and Triassic?)--Massive crossbedded and thin-bedded salmon-pink sandstone with large frosted rounded grains; lower part is silty and shaly and intertongues southeastward with Triassic rocks. Present only in northwest part of quadrangle. Thickness 0-60 m (0-200 ft)

JRP NUGGET SANDSTONE, CHUGWATER GROUP OR FORMATION, AND GOOSE EGG FORMATION--Classification used in Tps. 26-28 N., Rs. 87-89 W.

Nugget Sandstone (Jurassic? and Triassic?)

Chugwater Group or Formation (Triassic)

Goose Egg Formation (Lower Triassic and Permian)--Red to ocher shale and siltstone, thin limestone, dolomite, and gypsum beds. Thickness 60-90 m (200-300 ft)

TRc CHUGWATER GROUP OR FORMATION (TRIASSIC)--Where mappable, Group includes Popo Agie and Jelm Formations, Alcova Limestone, and, at base, Red Peak Formation. Where not mappable, these are considered to be members. Thickness 90-305 m (300-1,000 ft)

TRcd CHUGWATER GROUP OR FORMATION AND DINWOODY FORMATION

Chugwater Group or Formation (Triassic)

Dinwoody Formation (Lower Triassic)--Tan to olive-drab hard slabby fine-grained dolomitic siltstone and sandstone. Present only in western half of quadrangle; grades eastward into upper part of Goose Egg Formation. Thickness 15-24 m (50-80 ft)

TRPg GOOSE EGG FORMATION (LOWER TRIASSIC AND PERMIAN)--Red to ocher shale and siltstone, thin limestone, dolomite, and gypsum beds. Thickness 60-90 m (200-300 ft)

TRPcg CHUGWATER GROUP OR FORMATION AND GOOSE EGG FORMATION (TRIASSIC AND PERMIAN)

PPc CASPER FORMATION (LOWER PERMIAN AND UPPER AND MIDDLE PENNSYLVANIAN)--Red and white sandstone, gray hard persistent limestone, and red shale and siltstone. Thickness 180-335 m (600-1,100 ft)

PPM TENSLEEP SANDSTONE AND AMSDEN FORMATION

Tensleep Sandstone (Pennsylvanian)--Gray to buff crossbedded sandstone; several gray cherty limestones and dolomites in lower part. Thickness 67-100 m (220-330 ft)

Amsden Formation (Pennsylvanian and Upper Mississippian)--Gray dolomite, red and green shale, and thin gray sandstone. Persistent tan sandstone at base. Thickness 38-100 m (125-300 ft)

Mm MADISON LIMESTONE (UPPER AND LOWER MISSISSIPPIAN)--Blue-gray massive to thin-bedded cherty limestone, cavernous in part. Thickness 30-120 m (100-400 ft)

MG MADISON LIMESTONE AND CAMBRIAN ROCKS

GEOLOGIC MAP EXPLANATION (continued)

Cr	CAMBRIAN ROCKS--Includes Gallatin Formation (Upper Cambrian), Gros Ventre Formation (Upper and Middle Cambrian), and Flathead Sandstone (Middle Cambrian). Thickness 0-150 m (0-500 ft)
MzPz	MESOZOIC AND (OR) PALEOZOIC ROCKS--Present in T. 27 N., R. 81 W.
Pzr	PALEOZOIC ROCKS--Includes Casper, Tensleep, Amsden, and Madison Formations and Cambrian rocks; in Tps. 29-31 N., Rs. 77-79 W.
pC	PRECAMBRIAN ROCKS--Granite and metamorphic rocks of many types. K-Ar and Rb-Sr ages of these rocks range from 2,400 m.y. on Casper Mountain to 1,460 m.y. in the Granite Mountains (Peterman and Hildreth, 1978, fig. 8)
———	CONTACT--Dashed where approximately located
	FAULTS--Dotted where concealed
	Normal fault--Bar and ball on downthrown side
	Thrust fault--Sawteeth on upper plate
	Major basin-margin Laramide thrust and reverse faults buried by younger rocks--Sawteeth on overriding block. In some places the trace coincides with late Cenozoic normal faults with the basin block upthrown

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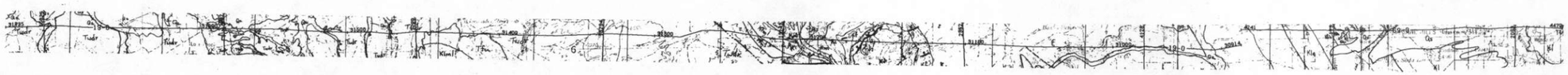
Pekarek, A. H., Marvin, R. F., and Mehnert, H. H., 1974, K-Ar ages of volcanics in the Rattlesnake Hills, central Wyoming: Geology, v. 2, p. 283-285.

Peterman, Z. E., and Hildreth, R. A., 1978, Reconnaissance geology and geochronology of the Precambrian of the Granite Mountains, Wyoming: U.S. Geological Survey Professional Paper 1055, 22 p.

APPENDIX B - Profiles



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BI/K
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MAX -.2371
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STD DEV .0320

BI/TL
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MAX -.8240
MEAN .3993
STD DEV .0886

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MEAN 2303
STD DEV 539.6

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MAX 331.2
MEAN 201.7
STD DEV 46.94

BISMUTH 214 CTS/SEC
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MAX 51.79
MEAN 22.92
STD DEV 8.132

THALLIUM 208 CTS/SEC
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MAX 120.3
MEAN 57.64
STD DEV 18.85

BI AIR CORR CTS/SEC
MIN 13.53
MAX 62.42
MEAN 34.95
STD DEV 11.91

RESID MAG GAMMAS
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MAX 249.9
MEAN 21.50
STD DEV 115.1

RADAR ALTMTR FEET
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MAX 612.9
MEAN 390.8
STD DEV 38.75

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STD DEV .0250

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STD DEV 5.794

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MAX 112.7
MEAN 61.38
STD DEV 14.69

BI AIR CORR CTS/SEC
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MAX 28.88
MEAN 19.96
STD DEV 4.890

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MEAN 23.08
STD DEV 129.5

RADAR ALTMTR FEET
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STD DEV .0265

BI/TL
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BISMUTH 214 CTS/SEC
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STD DEV 4.693

THALLIUM 208 CTS/SEC
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BI AIR CORR CTS/SEC
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RESID MAG GAMMAS
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RADAR ALTMTR FEET
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MAX 506.4
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STD DEV 34.09

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LINE 22
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RADAR ALTMTR FEET
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LINE 23
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BISMUTH 214 CTS/SEC
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POTASSIUM 40 CTS/SEC
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BISMUTH 214 CTS/SEC
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THALLIUM 208 CTS/SEC
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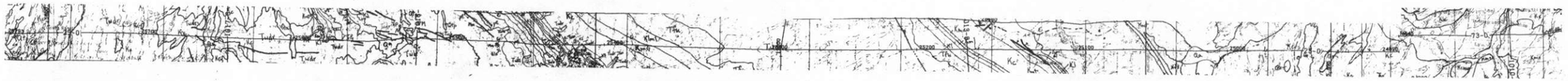

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POTASSIUM 40 CTS/SEC
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BISMUTH 214 CTS/SEC
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MAX 323.5
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RADAR ALTMTR FEET
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STD DEV 108.6

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LINE 27
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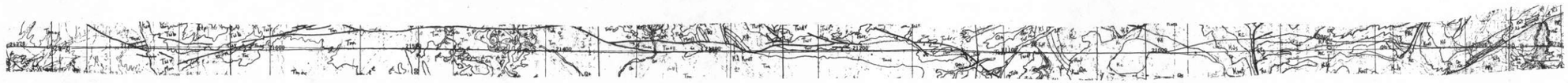

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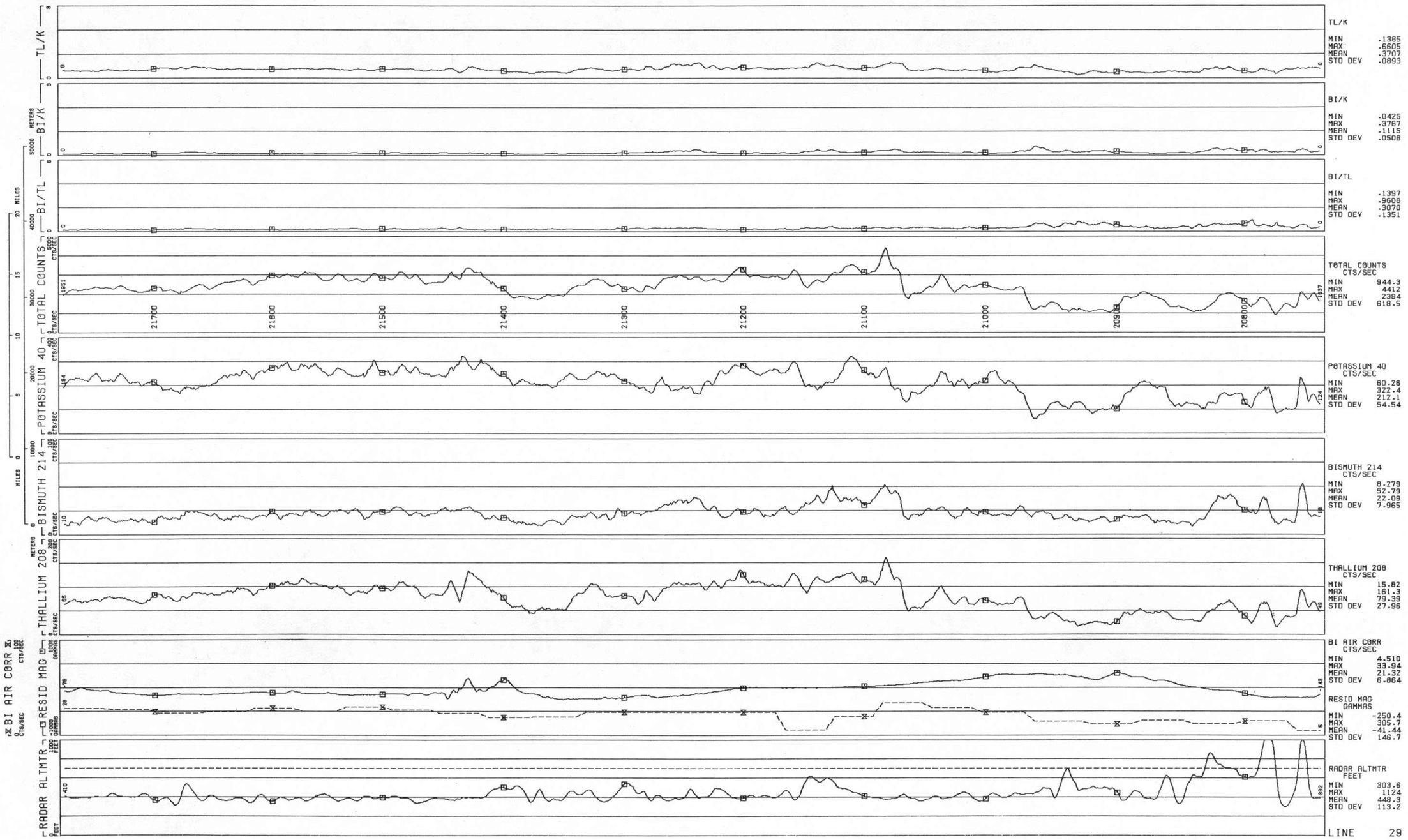

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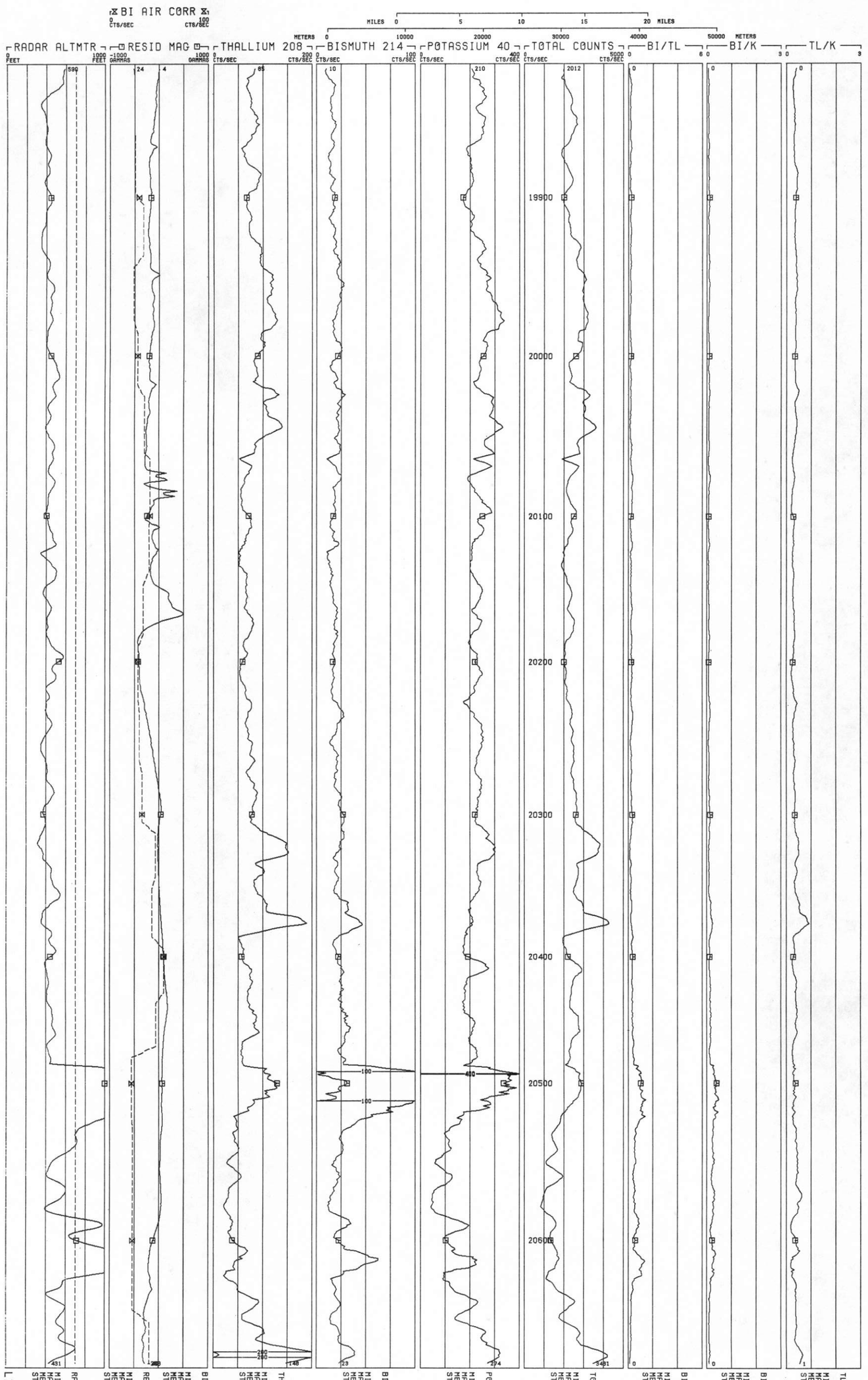

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RESID MAG GAMMAS
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BISMUTH 214 CTS/SEC
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STD DEV

POTASSIUM 40 CTS/SEC
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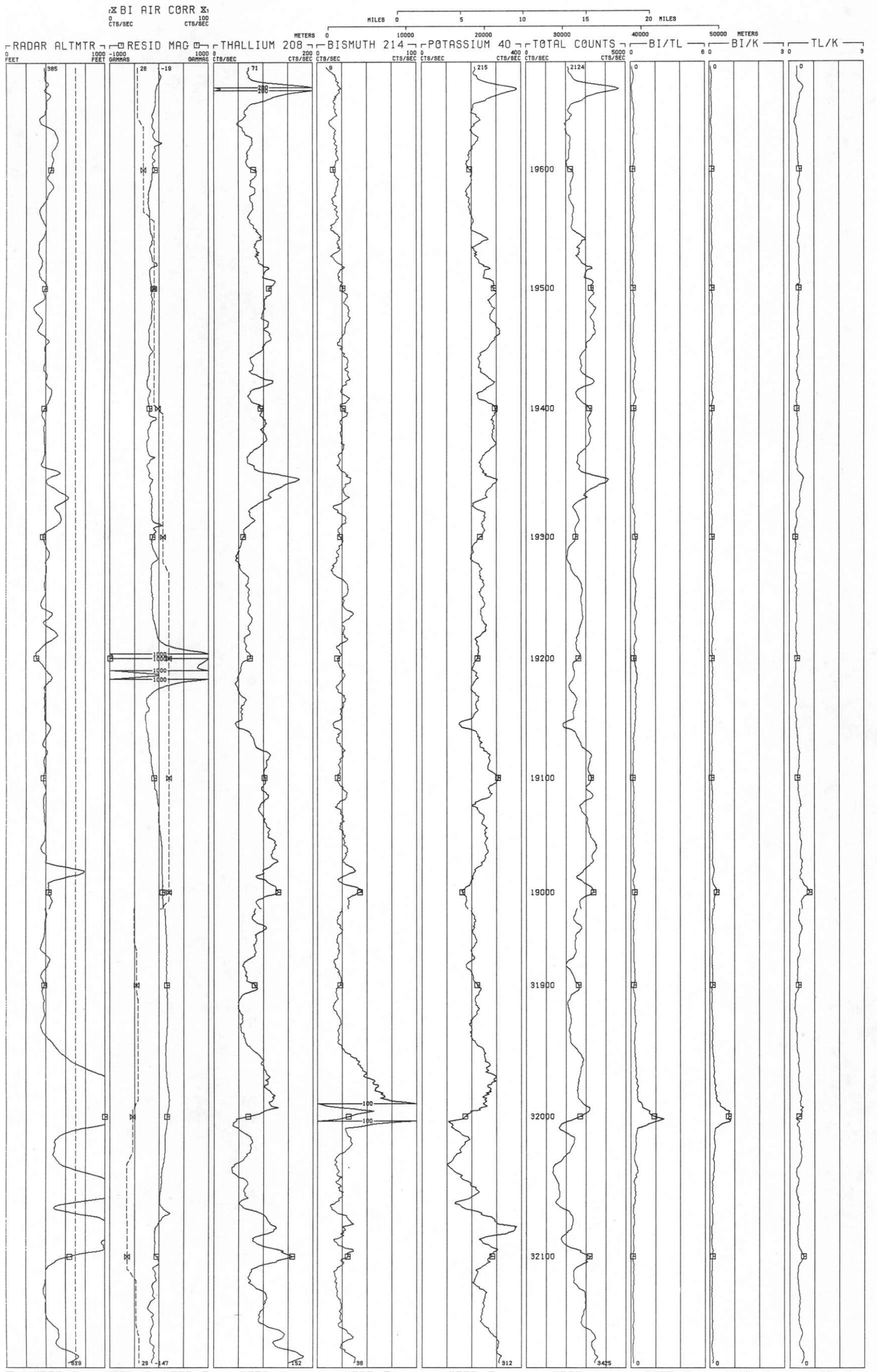

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Cal4

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RADAR ALTMTR FEET
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LINE 33
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BI/TL
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THALLIUM 208 CTS/SEC
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MEAN 79.85
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BI AIR CORR CTS/SEC
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LINE 33

LINE 34
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BI/K
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MEAN .1073
STD DEV .0470

BI/TL
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MAX .8053
MEAN .2885
STD DEV .1196

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MAX 60.52
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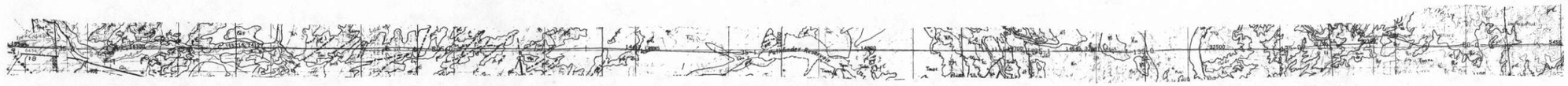

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BI/TL
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MIN 2.630
MAX 369.4
MEAN 197.9
STD DEV 64.40

BISMUTH 214 CTS/SEC
MIN 2.414
MAX 111.8
MEAN 24.50
STD DEV 12.61

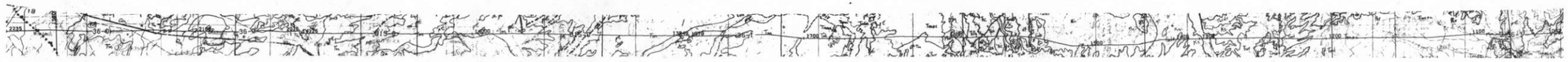
THALLIUM 208 CTS/SEC
MIN 1.887
MAX 311.2
MEAN 93.56
STD DEV 58.72

BI AIR CORR CTS/SEC
MIN 10.47
MAX 58.97
MEAN 33.25
STD DEV 13.61

RESID MAG GAMMAS
MIN -453.5
MAX 239.3
MEAN -145.3
STD DEV 134.8

RADAR ALTMTR FEET
MIN 205.7
MAX 668.4
MEAN 419.4
STD DEV 74.89

LINE 35



LINE 36
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74126

TI | GEO | TI

TL/K
MIN .1305
MAX .9833
MEAN .4297
STD DEV .1715

BI/K
MIN .0000
MAX .2248
MEAN .0984
STD DEV .0387

BI/TL
MIN .0000
MAX .8010
MEAN .2419
STD DEV .0876

TOTAL COUNTS CTS/SEC
MIN 197.9
MAX 6183
MEAN 2719
STD DEV 798.2

POTASSIUM 40 CTS/SEC
MIN 50.02
MAX 397.3
MEAN 223.5
STD DEV 53.33

BISMUTH 214 CTS/SEC
MIN 4.695
MAX 51.58
MEAN 21.31
STD DEV 7.789

THALLIUM 208 CTS/SEC
MIN 7.224
MAX 262.8
MEAN 95.82
STD DEV 45.49

BI AIR CORR CTS/SEC
MIN 8.598
MAX 76.87
MEAN 26.60
STD DEV 12.31

RESID MAG GAMMAS
MIN -508.5
MAX 185.3
MEAN -123.4
STD DEV 124.0

RADAR ALTMTR FEET
MIN 228.9
MAX 971.6
MEAN 428.0
STD DEV 95.22

LINE 36

LINE 37
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74126

T I | GEO | T I

TL/K
MIN .1480
MAX 1.076
MEAN .4230
STD DEV .1405

BI/K
MIN .0000
MAX .1899
MEAN .0817
STD DEV .0280

BI/TL
MIN .0000
MAX .6243
MEAN .2087
STD DEV .0917

TOTAL COUNTS CTS/SEC
MIN 110.7
MAX 5162
MEAN 2695
STD DEV 726.0

POTASSIUM 40 CTS/SEC
MIN 8.600
MAX 383.3
MEAN 231.3
STD DEV 56.16

BISMUTH 214 CTS/SEC
MIN 2.282
MAX 34.91
MEAN 18.68
STD DEV 5.438

THALLIUM 208 CTS/SEC
MIN 2.315
MAX 263.2
MEAN 99.63
STD DEV 45.53

BI AIR CORR CTS/SEC
MIN 8.751
MAX 59.00
MEAN 29.35
STD DEV 8.569

RESID MAG GAMMAS
MIN -343.4
MAX 165.9
MEAN -112.7
STD DEV 96.54

RADAR ALTMTR FEET
MIN 173.7
MAX 821.6
MEAN 433.0
STD DEV 110.2

LINE 37

LINE 38
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74126

TL/K
MIN .0000
MAX 1.251
MEAN .3990
STD DEV .1396

BI/K
MIN .0000
MAX .9300
MEAN .0999
STD DEV .0639

BI/TL
MIN .0000
MAX 1.572
MEAN .2511
STD DEV .0944

TOTAL COUNTS CTS/SEC
MIN 70.89
MAX 4989
MEAN 2548
STD DEV 643.6

POTASSIUM 40 CTS/SEC
MIN 2.765
MAX 362.8
MEAN 224.8
STD DEV 49.57

BISMUTH 214 CTS/SEC
MIN 2.019
MAX 56.04
MEAN 21.27
STD DEV 6.956

THALLIUM 208 CTS/SEC
MIN 1.683
MAX 253.7
MEAN 88.75
STD DEV 31.86

BI AIR CORR CTS/SEC
MIN 3.100
MAX 37.74
MEAN 23.72
STD DEV 7.598

RESID MAG GAMMAS
MIN -211.3
MAX 88.14
MEAN -105.2
STD DEV 68.74

RADAR ALTMTR FEET
MIN 266.4
MAX 704.4
MEAN 420.7
STD DEV 63.98

LINE 38

LINE 39
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74127

TL/K
MIN .0000
MAX 1.020
MEAN .4586
STD DEV .1741

BI/K
MIN .0000
MAX 1.076
MEAN .1174
STD DEV .0718

BI/TL
MIN .0000
MAX 1.750
MEAN .2662
STD DEV .1369

TOTAL COUNTS CTS/SEC
MIN 149.0
MAX 4658
MEAN 2792
STD DEV 831.4

POTASSIUM 40 CTS/SEC
MIN 2.909
MAX 375.3
MEAN 226.3
STD DEV 50.30

BISMUTH 214 CTS/SEC
MIN 2.620
MAX 59.16
MEAN 25.19
STD DEV 10.25

THALLIUM 208 CTS/SEC
MIN 1.926
MAX 212.6
MEAN 104.8
STD DEV 42.63

BI AIR CORR CTS/SEC
MIN 10.99
MAX 47.12
MEAN 30.22
STD DEV 9.126

RESID MAG GAMMAS
MIN -235.2
MAX 227.1
MEAN -97.65
STD DEV 126.1

RADAR ALTMTR FEET
MIN 283.1
MAX 980.7
MEAN 459.2
STD DEV 104.0

LINE 39

LINE 40
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74127

TI | GEO | TI

TL/K
MIN .0911
MAX 1.327
MEAN .4873
STD DEV .1913

BI/K
MIN .0298
MAX .7088
MEAN .1237
STD DEV .0820

BI/TL
MIN .0791
MAX 1.609
MEAN .2511
STD DEV .1186

TOTAL COUNTS CTS/SEC
MIN 844.7
MAX 6445
MEAN 3065
STD DEV 968.0

POTASSIUM 40 CTS/SEC
MIN 92.94
MAX 435.2
MEAN 246.3
STD DEV 57.04

BISMUTH 214 CTS/SEC
MIN 4.381
MAX 123.1
MEAN 29.54
STD DEV 17.30

THALLIUM 208 CTS/SEC
MIN 23.46
MAX 335.5
MEAN 120.3
STD DEV 54.95

BI AIR CORR CTS/SEC
MIN 9.566
MAX 58.51
MEAN 30.66
STD DEV 11.12

RESID MAG GAMMAS
MIN -300.1
MAX 198.6
MEAN -106.4
STD DEV 124.0

RADAR ALTMTR FEET
MIN 151.6
MAX 1310
MEAN 506.7
STD DEV 198.9

LINE 40

LINE 41
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74127

TI | GEO | TI

TL/K
MIN .0521
MAX 1.543
MEAN .5000
STD DEV .2306

BI/K
MIN .0038
MAX .5136
MEAN .1244
STD DEV .0844

BI/TL
MIN .0371
MAX 1.325
MEAN .2473
STD DEV .0970

TOTAL COUNTS CTS/SEC
MIN 1335
MAX 5855
MEAN 3140
STD DEV 844.7

POTASSIUM 40 CTS/SEC
MIN 76.77
MAX 1791
MEAN 287.7
STD DEV 193.1

BISMUTH 214 CTS/SEC
MIN 3.945
MAX 124.7
MEAN 30.49
STD DEV 16.42

THALLIUM 208 CTS/SEC
MIN 24.00
MAX 633.8
MEAN 130.5
STD DEV 75.34

BI AIR CORR CTS/SEC
MIN 8.077
MAX 50.23
MEAN 29.13
STD DEV 10.91

RESID MAG GAMMAS
MIN -308.0
MAX 67.38
MEAN -120.4
STD DEV 101.1

RADAR ALTMTR FEET
MIN 183.0
MAX 2668
MEAN 571.5
STD DEV 427.5

LINE 41

LINE 42
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74127

TI GEO TI

TL/K
MIN .0807
MAX 1.532
MEAN .4812
STD DEV .1968

BI/K
MIN .0101
MAX .6166
MEAN .1235
STD DEV .0672

BI/TL
MIN .1123
MAX 1.125
MEAN .2694
STD DEV .1212

TOTAL COUNTS CTS/SEC
MIN 885.9
MAX 5127
MEAN 2913
STD DEV 826.2

POTASSIUM 40 CTS/SEC
MIN 59.06
MAX 395.3
MEAN 230.7
STD DEV 62.52

BISMUTH 214 CTS/SEC
MIN 3.712
MAX 97.56
MEAN 26.69
STD DEV 12.25

THALLIUM 208 CTS/SEC
MIN 12.14
MAX 356.5
MEAN 109.0
STD DEV 49.43

BI AIR CORR CTS/SEC
MIN 7.827
MAX 50.00
MEAN 24.87
STD DEV 10.17

RESID MAG GAMMAS
MIN -301.6
MAX 144.0
MEAN -111.7
STD DEV 84.17

RADAR ALTMTR FEET
MIN 150.9
MAX 981.3
MEAN 438.6
STD DEV 127.9

LINE 42

LINE 43
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74131

TI | GEO | TI

TL/K
MIN .0882
MAX 1.068
MEAN .4527
STD DEV .1729

BI/K
MIN .0000
MAX .5976
MEAN .0970
STD DEV .0569

BI/TL
MIN .0000
MAX 1.257
MEAN .2241
STD DEV .1242

TOTAL COUNTS CTS/SEC
MIN 202.7
MAX 5803
MEAN 2754
STD DEV 845.9

POTASSIUM 40 CTS/SEC
MIN 12.40
MAX 436.7
MEAN 234.0
STD DEV 80.43

BISMUTH 214 CTS/SEC
MIN 2.932
MAX 53.69
MEAN 21.12
STD DEV 10.48

THALLIUM 208 CTS/SEC
MIN 5.445
MAX 316.9
MEAN 103.9
STD DEV 48.16

BI AIR CORR CTS/SEC
MIN 9.940
MAX 66.59
MEAN 35.64
STD DEV 17.99

RESID MAG GAMMAS
MIN -232.5
MAX 226.1
MEAN -105.2
STD DEV 59.18

RADAR ALTMTR FEET
MIN 201.7
MAX 1091
MEAN 457.1
STD DEV 136.7

LINE 43

LINE 44
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74131

TI | GEO | TI

TL/K
MIN .1160
MAX 1.711
MEAN .4287
STD DEV .2000

BI/K
MIN .0000
MAX .3785
MEAN .1128
STD DEV .0457

BI/TL
MIN .0000
MAX .7443
MEAN .2823
STD DEV .0934

TOTAL COUNTS CTS/SEC
MIN 772.4
MAX 6232
MEAN 2716
STD DEV 792.5

POTASSIUM 40 CTS/SEC
MIN 41.31
MAX 415.7
MEAN 231.2
STD DEV 82.06

BISMUTH 214 CTS/SEC
MIN 4.029
MAX 51.12
MEAN 24.14
STD DEV 7.469

THALLIUM 208 CTS/SEC
MIN 11.09
MAX 373.0
MEAN 94.43
STD DEV 47.49

BI AIR CORR CTS/SEC
MIN 9.809
MAX 50.00
MEAN 25.54
STD DEV 8.083

RESID MAG GAMMAS
MIN -322.9
MAX 513.5
MEAN -106.9
STD DEV 68.73

RADAR ALTMTR FEET
MIN 196.8
MAX 865.7
MEAN 412.6
STD DEV 80.57

LINE 44

LINE 45
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74132

TL/K
MIN .0864
MAX .8046
MEAN .3566
STD DEV .1257

BI/K
MIN .0000
MAX .1727
MEAN .0716
STD DEV .0278

BI/TL
MIN .0000
MAX .4346
MEAN .2106
STD DEV .0782

TOTAL COUNTS CTS/SEC
MIN 1210
MAX 5127
MEAN 2806
STD DEV 794.4

POTASSIUM 40 CTS/SEC
MIN 97.14
MAX 420.0
MEAN 259.4
STD DEV 75.05

BISMUTH 214 CTS/SEC
MIN 3.009
MAX 46.05
MEAN 18.35
STD DEV 7.959

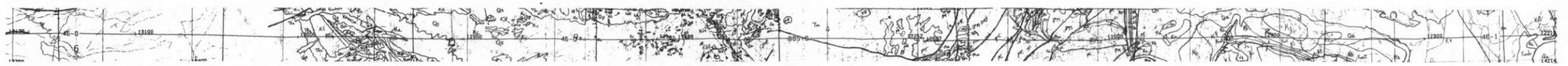
THALLIUM 208 CTS/SEC
MIN 32.89
MAX 276.8
MEAN 90.93
STD DEV 42.07

BI AIR CORR CTS/SEC
MIN 38.00
MAX 77.00
MEAN 62.89
STD DEV 12.60

RESID MAG GAMMAS
MIN -148.6
MAX 116.2
MEAN -75.59
STD DEV 48.82

RADAR ALTMTR FEET
MIN 316.4
MAX 870.7
MEAN 442.5
STD DEV 86.91

LINE 45



LINE 46
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74132

TI | GEO | TI

TL/K
MIN .1088
MAX .9249
MEAN .3507
STD DEV .1455

BI/K
MIN .0000
MAX .3300
MEAN .0706
STD DEV .0451

BI/TL
MIN .0000
MAX .8871
MEAN .1982
STD DEV .0961

TOTAL COUNTS CTS/SEC
MIN 776.4
MAX 4822
MEAN 2721
STD DEV 927.9

POTASSIUM 40 CTS/SEC
MIN 39.48
MAX 456.2
MEAN 256.6
STD DEV 97.57

BISMUTH 214 CTS/SEC
MIN 3.350
MAX 53.35
MEAN 16.50
STD DEV 8.926

THALLIUM 208 CTS/SEC
MIN 15.35
MAX 276.8
MEAN 86.94
STD DEV 48.46

BI AIR CORR CTS/SEC
MIN 12.08
MAX 98.00
MEAN 67.77
STD DEV 27.77

RESID MAG GAMMAS
MIN -354.1
MAX 3179
MEAN -75.20
STD DEV 224.1

RADAR ALTMTR FEET
MIN 233.4
MAX 1122
MEAN 460.0
STD DEV 142.4

LINE 46

LINE 47
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74132

TI | GEO | TI

TL/K
MIN .1574
MAX 1.528
MEAN .3900
STD DEV .1850

BI/K
MIN .0000
MAX .2801
MEAN .0857
STD DEV .0460

BI/TL
MIN .0000
MAX .7213
MEAN .2233
STD DEV .0833

TOTAL COUNTS CTS/SEC
MIN 644.6
MAX 5860
MEAN 2901
STD DEV 944.3

POTASSIUM 40 CTS/SEC
MIN 31.51
MAX 436.8
MEAN 260.3
STD DEV 94.89

BISMUTH 214 CTS/SEC
MIN 4.645
MAX 50.26
MEAN 19.61
STD DEV 7.940

THALLIUM 208 CTS/SEC
MIN 9.535
MAX 324.7
MEAN 97.44
STD DEV 53.33

BI AIR CORR CTS/SEC
MIN 9.884
MAX 98.00
MEAN 65.86
STD DEV 29.31

RESID MAG GAMMAS
MIN -923.5
MAX 4174
MEAN -93.71
STD DEV 255.6

RADAR ALTMTR FEET
MIN 193.0
MAX 1316
MEAN 468.4
STD DEV 166.3

LINE 47

LINE 48
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265

TL/K
MIN .1504
MAX 2.010
MEAN .3842
STD DEV .1916

BI/K
MIN .0245
MAX .5096
MEAN .1395
STD DEV .0677

BI/TL
MIN .1310
MAX 1.841
MEAN .3804
STD DEV .1587

TOTAL COUNTS CTS/SEC
MIN 479.6
MAX 5103
MEAN 2351
STD DEV 792.7

POTASSIUM 40 CTS/SEC
MIN 23.34
MAX 306.5
MEAN 177.3
STD DEV 66.28

BISMUTH 214 CTS/SEC
MIN 3.266
MAX 93.93
MEAN 22.49
STD DEV 10.26

THALLIUM 208 CTS/SEC
MIN 3.984
MAX 244.6
MEAN 66.35
STD DEV 35.95

BI AIR CORR CTS/SEC
MIN 6.915
MAX 22.19
MEAN 15.65
STD DEV 3.604

RESID MAG GAMMAS
MIN -337.2
MAX -106.2
MEAN -256.1
STD DEV 59.19

RADAR ALTMTR FEET
MIN 145.2
MAX 743.4
MEAN 351.6
STD DEV 72.33

LINE 48

LINE 49
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265

TL/K
MIN .0000
MAX .9627
MEAN .3447
STD DEV .1323

BI/K
MIN .0000
MAX .7936
MEAN .1376
STD DEV .0735

BI/TL
MIN .0000
MAX 2.153
MEAN .4151
STD DEV .2190

TOTAL COUNTS CTS/SEC
MIN 205.1
MAX 4715
MEAN 2241
STD DEV 781.7

POTASSIUM 40 CTS/SEC
MIN 3.806
MAX 272.9
MEAN 173.4
STD DEV 61.84

BISMUTH 214 CTS/SEC
MIN 2.584
MAX 80.43
MEAN 21.54
STD DEV 8.933

THALLIUM 208 CTS/SEC
MIN 2.394
MAX 201.4
MEAN 60.97
STD DEV 34.98

BI AIR CORR CTS/SEC
MIN 6.164
MAX 22.53
MEAN 16.08
STD DEV 3.914

RESID MAG GAMMAS
MIN -340.1
MAX -113.7
MEAN -277.4
STD DEV 47.44

RADAR ALTMTR FEET
MIN 151.7
MAX 631.3
MEAN 392.1
STD DEV 58.32

LINE 49

LINE 50
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265

TL/K
MIN .0000
MAX 1.223
MEAN .3262
STD DEV .1139

BI/K
MIN .0000
MAX .4773
MEAN .1253
STD DEV .0601

BI/TL
MIN .0000
MAX 1.061
MEAN .3751
STD DEV .1388

TOTAL COUNTS CTS/SEC
MIN 226.3
MAX 3871
MEAN 2169
STD DEV 658.5

POTASSIUM 40 CTS/SEC
MIN 9.300
MAX 269.9
MEAN 165.5
STD DEV 53.75

BISMUTH 214 CTS/SEC
MIN 3.031
MAX 49.48
MEAN 20.91
STD DEV 8.777

THALLIUM 208 CTS/SEC
MIN 2.134
MAX 137.2
MEAN 55.53
STD DEV 25.65

BI AIR CORR CTS/SEC
MIN 9.473
MAX 43.61
MEAN 24.64
STD DEV 7.917

RESID MAG GAMMAS
MIN -372.1
MAX -172.7
MEAN -297.3
STD DEV 39.96

RADAR ALTMTR FEET
MIN 209.3
MAX 682.3
MEAN 365.5
STD DEV 67.80

LINE 50

LINE 51
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265

TL/K
MIN .0000
MAX .8801
MEAN .3953
STD DEV .0826

BI/K
MIN .0000
MAX .9173
MEAN .1668
STD DEV .0733

BI/TL
MIN .0000
MAX 2.955
MEAN .4288
STD DEV .1943

TOTAL COUNTS CTS/SEC
MIN 475.9
MAX 3855
MEAN 2406
STD DEV 592.4

POTASSIUM 40 CTS/SEC
MIN 4.094
MAX 260.7
MEAN 156.9
STD DEV 46.88

BISMUTH 214 CTS/SEC
MIN 3.304
MAX 58.78
MEAN 24.81
STD DEV 8.187

THALLIUM 208 CTS/SEC
MIN 2.376
MAX 125.8
MEAN 61.37
STD DEV 21.30

BI AIR CORR CTS/SEC
MIN 21.97
MAX 54.98
MEAN 36.11
STD DEV 8.596

RESID MAG GAMMAS
MIN -413.1
MAX -222.9
MEAN -331.1
STD DEV 42.17

RADAR ALTMTR FEET
MIN 230.3
MAX 562.8
MEAN 361.0
STD DEV 50.90

LINE 51

LINE TL10
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78258

TL/K
MIN .1225
MAX .8986
MEAN .4023
STD DEV .1491

BI/K
MIN .0393
MAX .3381
MEAN .1476
STD DEV .0463

BI/TL
MIN .1387
MAX .9134
MEAN .3931
STD DEV .1280

TOTAL COUNTS CTS/SEC
MIN 863.4
MAX 5071
MEAN 2378
STD DEV 786.3

POTASSIUM 40 CTS/SEC
MIN 44.52
MAX 297.1
MEAN 169.2
STD DEV 40.79

BISMUTH 214 CTS/SEC
MIN 5.028
MAX 59.40
MEAN 24.59
STD DEV 8.921

THALLIUM 208 CTS/SEC
MIN 14.97
MAX 225.1
MEAN 70.89
STD DEV 39.97

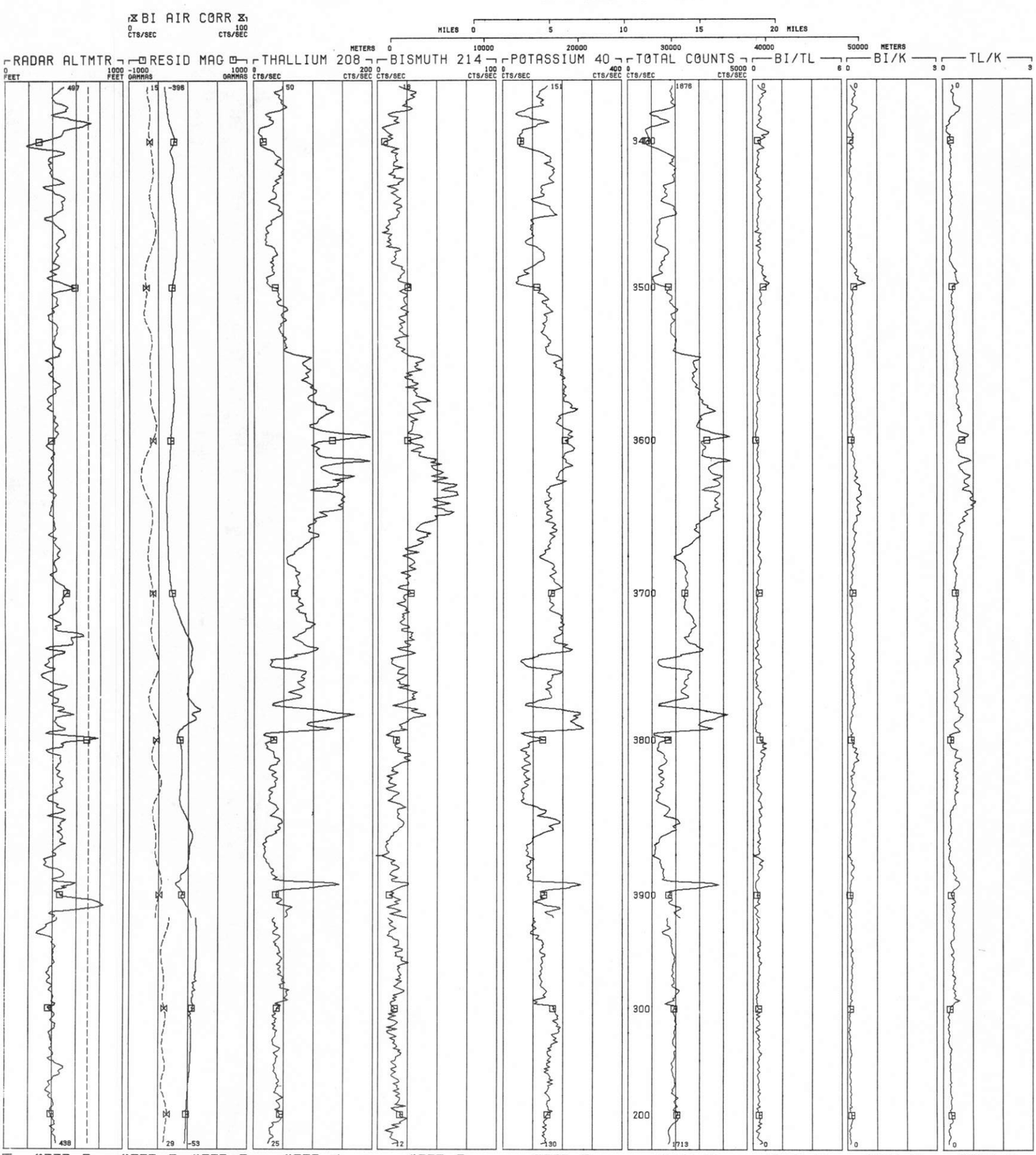
BI AIR CORR CTS/SEC
MIN 5.180
MAX 19.70
MEAN 12.54
STD DEV 3.176

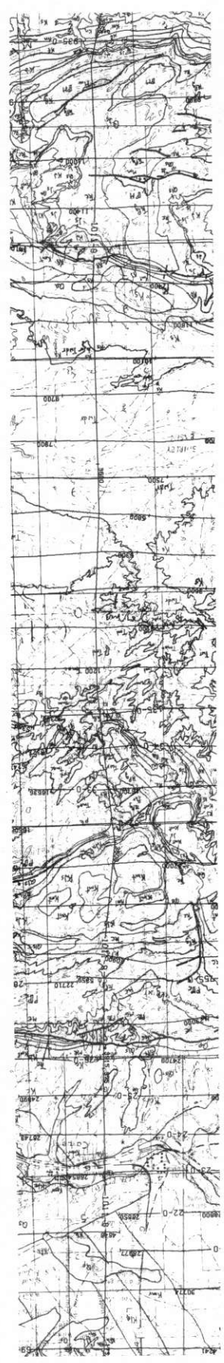
RESID MAG GAMMAS
MIN -459.7
MAX 149.5
MEAN -173.4
STD DEV 146.3

RADAR ALTMTR FEET
MIN 276.7
MAX 732.8
MEAN 419.1
STD DEV 59.87

LINE TL10

LINE TL11
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 78258





LINE TL11

RADAR ALTMTR FEET
MIN 182.0
MAX 497.0
MEAN 423.6
STD DEV 70.30

RESID MAG GAMMAS
MIN -996.0
MAX 199.4
MEAN -145.1
STD DEV 159.2

BI AIR C0RR CTS/SEC
MIN 3.358
MAX 33.94
MEAN 21.20
STD DEV 5.499

THALLIUM 208 CTS/SEC
MIN 8.201
MAX 196.2
MEAN 59.02
STD DEV 35.83

BISMUTH 214 CTS/SEC
MIN 6.711
MAX 83.11
MEAN 21.21
STD DEV 11.32

P0TASSIUM 40 CTS/SEC
MIN 45.63
MAX 270.7
MEAN 145.4
STD DEV 45.27

T0TAL C0UNTS CTS/SEC
MIN 768.7
MAX 2165
MEAN 1241
STD DEV 724.6

BI/TL
MIN .0000
MAX 1.000
MEAN .3960
STD DEV .1421

BI/K
MIN .0000
MAX .5898
MEAN .1496
STD DEV .0732

TL/K
MIN .1223
MAX 1.000
MEAN .3907
STD DEV .1589

Ca36

LINE TL12
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78258

TL/K
MIN .1987
MAX 1.130
MEAN .4684
STD DEV .1794

BI/K
MIN .0000
MAX .4401
MEAN .1450
STD DEV .0536

BI/TL
MIN .0000
MAX .8445
MEAN .3391
STD DEV .1407

TOTAL COUNTS CTS/SEC
MIN 983.9
MAX 5023
MEAN 2411
STD DEV 694.7

POTASSIUM 40 CTS/SEC
MIN 46.48
MAX 268.7
MEAN 150.0
STD DEV 31.97

BISMUTH 214 CTS/SEC
MIN 5.078
MAX 56.65
MEAN 21.23
STD DEV 7.173

THALLIUM 208 CTS/SEC
MIN 15.23
MAX 209.8
MEAN 72.65
STD DEV 39.50

BI AIR CORR CTS/SEC
MIN 15.57
MAX 43.26
MEAN 27.47
STD DEV 5.415

RESID MAG GAMMAS
MIN -406.1
MAX 117.8
MEAN -175.8
STD DEV 158.4

RADAR ALTMTR FEET
MIN 282.0
MAX 1171
MEAN 425.7
STD DEV 116.7

LINE TL12

LINE TL13
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78258

TL/K
MIN .0000
MAX 1.385
MEAN .4433
STD DEV .1623

BI/K
MIN .0000
MAX .7769
MEAN .1558
STD DEV .0560

BI/TL
MIN .0000
MAX 2.763
MEAN .3802
STD DEV .1799

TOTAL COUNTS CTS/SEC
MIN 222.8
MAX 599.4
MEAN 2462
STD DEV 821.8

POTASSIUM 40 CTS/SEC
MIN 4.302
MAX 298.3
MEAN 166.7
STD DEV 44.00

BISMUTH 214 CTS/SEC
MIN 2.934
MAX 56.15
MEAN 26.25
STD DEV 9.047

THALLIUM 208 CTS/SEC
MIN 1.914
MAX 309.8
MEAN 77.07
STD DEV 42.70

BI AIR CORR CTS/SEC
MIN 11.82
MAX 28.23
MEAN 19.80
STD DEV 3.688

RESID MAG GAMMAS
MIN -405.0
MAX 4.017
MEAN -214.5
STD DEV 115.0

RADAR ALTMTR FEET
MIN 248.5
MAX 874.8
MEAN 420.5
STD DEV 62.74

LINE TL13

LINE TL14
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265

TL/K
MIN .0872
MAX 1.089
MEAN .3413
STD DEV .1258

BI/K
MIN -.0324
MAX .4724
MEAN .1533
STD DEV .0636

BI/TL
MIN .1569
MAX 1.044
MEAN .4595
STD DEV .1302

TOTAL COUNTS CTS/SEC
MIN 957.0
MAX 3337
MEAN 2111
STD DEV 358.2

POTASSIUM 40 CTS/SEC
MIN 55.05
MAX 250.8
MEAN 150.2
STD DEV 31.12

BISMUTH 214 CTS/SEC
MIN 6.144
MAX 55.54
MEAN 22.29
STD DEV 8.510

THALLIUM 208 CTS/SEC
MIN 18.67
MAX 126.3
MEAN 49.38
STD DEV 15.65

BI AIR CORR CTS/SEC
MIN 14.72
MAX 38.00
MEAN 26.38
STD DEV 4.984

RESID MAG GAMMAS
MIN -449.5
MAX 244.6
MEAN -276.2
STD DEV 102.5

RADAR ALTMTR FEET
MIN 217.8
MAX 585.2
MEAN 385.2
STD DEV 63.58

LINE TL14

LINE TL15
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78266
TL/K
BI/K
BI/TL
TOTAL COUNTS
POTASSIUM 40
BISMUTH 214
THALLIUM 208
BI AIR CORR
RESID MAG
RADAR ALTMTR
MILES
METERS
FEET
CTS/SEC
14700
14600
14500
13500
13400
13300
TL/K
MIN .0797
MAX 1.355
MEAN .3646
STD DEV .1710
BI/K
MIN .0306
MAX .3547
MEAN .1170
STD DEV .0488
BI/TL
MIN .0932
MAX .8921
MEAN .3465
STD DEV .1242
TOTAL COUNTS CTS/SEC
MIN 1124
MAX 5301
MEAN 2296
STD DEV 533.3
POTASSIUM 40 CTS/SEC
MIN 63.00
MAX 319.9
MEAN 161.4
STD DEV 45.72
BISMUTH 214 CTS/SEC
MIN 4.890
MAX 57.77
MEAN 17.73
STD DEV 6.390
THALLIUM 208 CTS/SEC
MIN 16.29
MAX 205.9
MEAN 56.37
STD DEV 27.30
BI AIR CORR CTS/SEC
MIN 21.98
MAX 55.11
MEAN 36.94
STD DEV 7.293
RESID MAG GAMMAS
MIN -703.3
MAX 357.5
MEAN -264.0
STD DEV 100.9
RADAR ALTMTR FEET
MIN 206.9
MAX 647.7
MEAN 373.7
STD DEV 79.14
LINE TL15

LINE TL16
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78259

TL/K
MIN .1743
MAX 6.298
MEAN .4530
STD DEV .4992

BI/K
MIN .0584
MAX 1.401
MEAN .2179
STD DEV .1461

BI/TL
MIN .1712
MAX 4.436
MEAN .5529
STD DEV .3366

TOTAL COUNTS CTS/SEC
MIN 1706
MAX 8345
MEAN 2780
STD DEV 618.4

POTASSIUM 40 CTS/SEC
MIN 34.59
MAX 270.9
MEAN 170.9
STD DEV 34.91

BISMUTH 214 CTS/SEC
MIN 12.14
MAX 326.2
MEAN 35.48
STD DEV 23.95

THALLIUM 208 CTS/SEC
MIN 24.56
MAX 224.6
MEAN 69.00
STD DEV 29.31

BI AIR CORR CTS/SEC
MIN 23.41
MAX 45.23
MEAN 36.63
STD DEV 4.285

RESID MAG GAMMAS
MIN -440.7
MAX 68.79
MEAN -261.5
STD DEV 84.94

RADAR ALTMTR FEET
MIN 225.1
MAX 661.1
MEAN 397.4
STD DEV 58.29

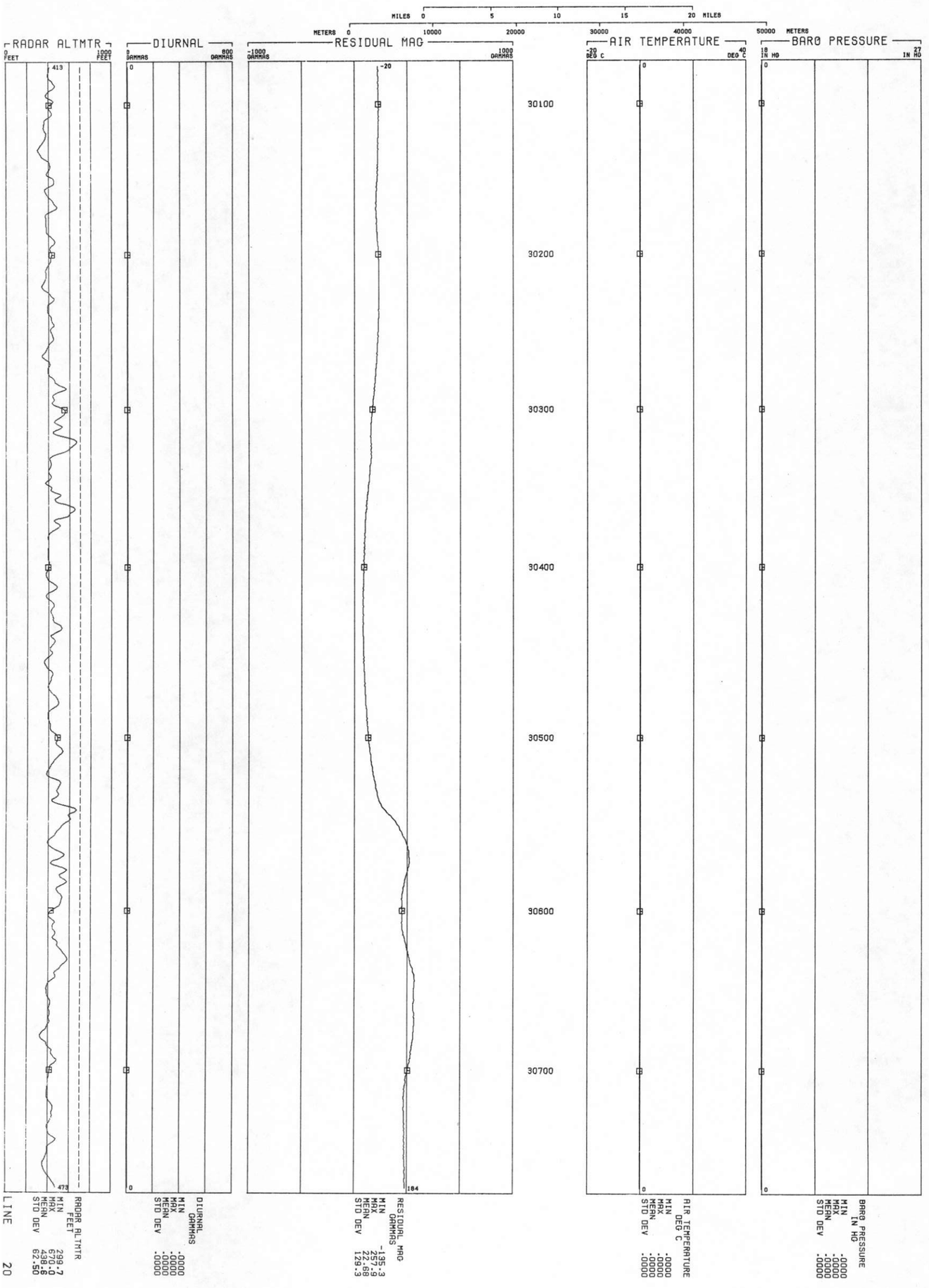
LINE TL16

LINE TL17
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265
TL/K
BI/K
BI/TL
TOTAL COUNTS
POTASSIUM 40
BISMUTH 214
THALLIUM 208
BI AIR CORR
RESID MAG
RADAR ALTMTR
MILES
METERS
FEET
CTS/SEC
GAMMAS
TL/K
MIN .1755
MAX 2.168
MEAN .4800
STD DEV .2952
BI/K
MIN .0546
MAX .6070
MEAN .1718
STD DEV .0971
BI/TL
MIN .1702
MAX 1.520
MEAN .3777
STD DEV .1364
TOTAL COUNTS CTS/SEC
MIN 987.6
MAX 5103
MEAN 3033
STD DEV 722.4
POTASSIUM 40 CTS/SEC
MIN 32.84
MAX 321.1
MEAN 187.2
STD DEV 56.62
BISMUTH 214 CTS/SEC
MIN 7.313
MAX 74.03
MEAN 29.33
STD DEV 11.26
THALLIUM 208 CTS/SEC
MIN 10.38
MAX 216.9
MEAN 84.36
STD DEV 36.88
BI AIR CORR CTS/SEC
MIN 35.14
MAX 58.04
MEAN 46.80
STD DEV 4.773
RESID MAG GAMMAS
MIN -359.3
MAX -107.9
MEAN -256.9
STD DEV 64.49
RADAR ALTMTR FEET
MIN 215.8
MAX 563.6
MEAN 358.4
STD DEV 63.79
LINE TL17

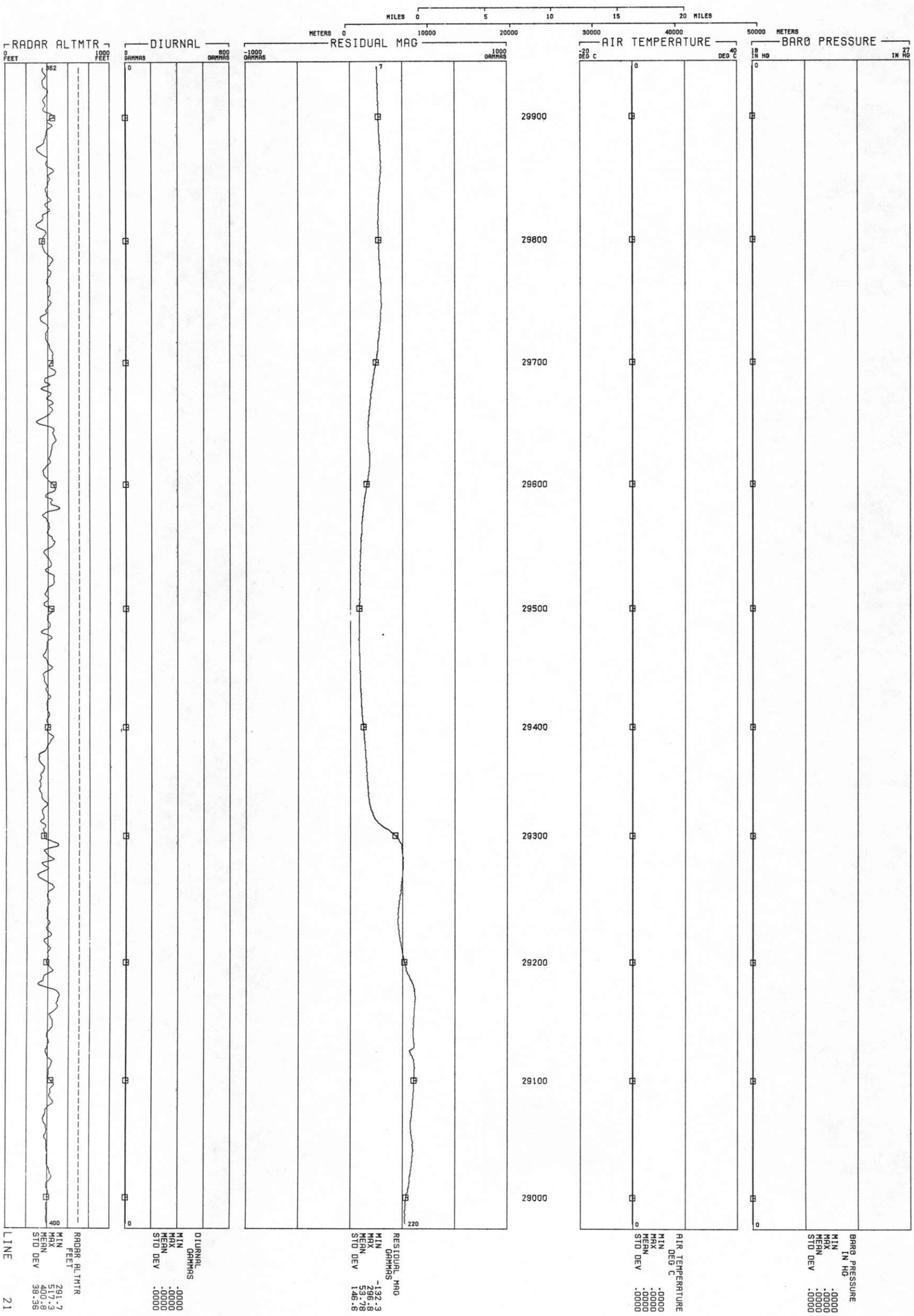
LINE TL18
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78266
TL/K
BI/K
BI/TL
TOTAL COUNTS CTS/SEC
POTASSIUM 40 CTS/SEC
BISMUTH 214 CTS/SEC
THALLIUM 208 CTS/SEC
BI AIR CORR CTS/SEC
RESID MAG GAMMAS
RADAR ALTMTR FEET
MILES
METERS
15300
15400
15500
15600
15700
15800
15900
TL/K MIN .2127 MAX .7087 MEAN .3714 STD DEV .0914
BI/K MIN .0000 MAX .3098 MEAN .1220 STD DEV .0393
BI/TL MIN .0000 MAX .7566 MEAN .3366 STD DEV .1062
TOTAL COUNTS CTS/SEC MIN 1339 MAX 4399 MEAN 2627 STD DEV 755.8
POTASSIUM 40 CTS/SEC MIN 87.98 MAX 298.4 MEAN 187.7 STD DEV 53.74
BISMUTH 214 CTS/SEC MIN 5.176 MAX 64.19 MEAN 23.32 STD DEV 10.84
THALLIUM 208 CTS/SEC MIN 24.66 MAX 150.3 MEAN 70.66 STD DEV 28.43
BI AIR CORR CTS/SEC MIN 21.68 MAX 40.26 MEAN 31.18 STD DEV 3.158
RESID MAG GAMMAS MIN -351.0 MAX -106.1 MEAN -255.1 STD DEV 53.32
RADAR ALTMTR FEET MIN 212.2 MAX 485.4 MEAN 313.5 STD DEV 46.82
LINE TL18

LINE 19
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74142

LINE 20
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74142

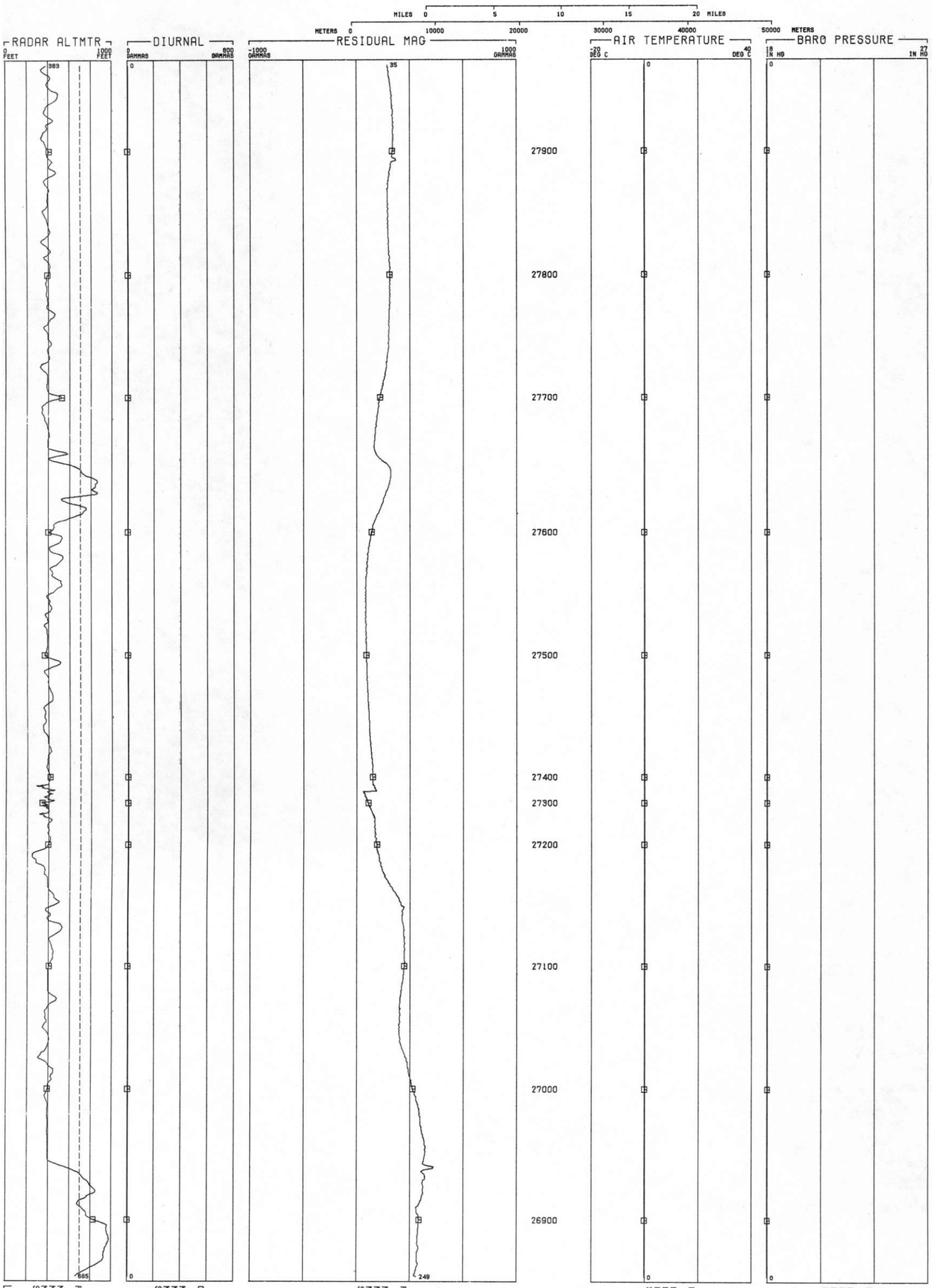


LINE 21
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74142



LINE 22
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74142
BARO PRESSURE
AIR TEMPERATURE
RESIDUAL MAG
DIURNAL
RADAR ALTMTR
TI
GEO
BARO PRESSURE IN HG
MIN .0000
MAX 24.34
MEAN 11.48
STD DEV 12.08
AIR TEMPERATURE DEG C
MIN .0000
MAX 19.35
MEAN 8.169
STD DEV 8.717
RESIDUAL MAG GAMMAS
MIN -145.9
MAX 325.2
MEAN 31.10
STD DEV 105.3
DIURNAL GAMMAS
MIN .0000
MAX 57259
MEAN 27150
STD DEV 28591
RADAR ALTMTR FEET
MIN 267.3
MAX 731.3
MEAN 418.8
STD DEV 51.34
LINE 22

LINE 23
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74138



RADAR ALTMTR FEET
MIN 245.3
MAX 479.2
MEAN 376.0
STD DEV 138.1

DIURNAL GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

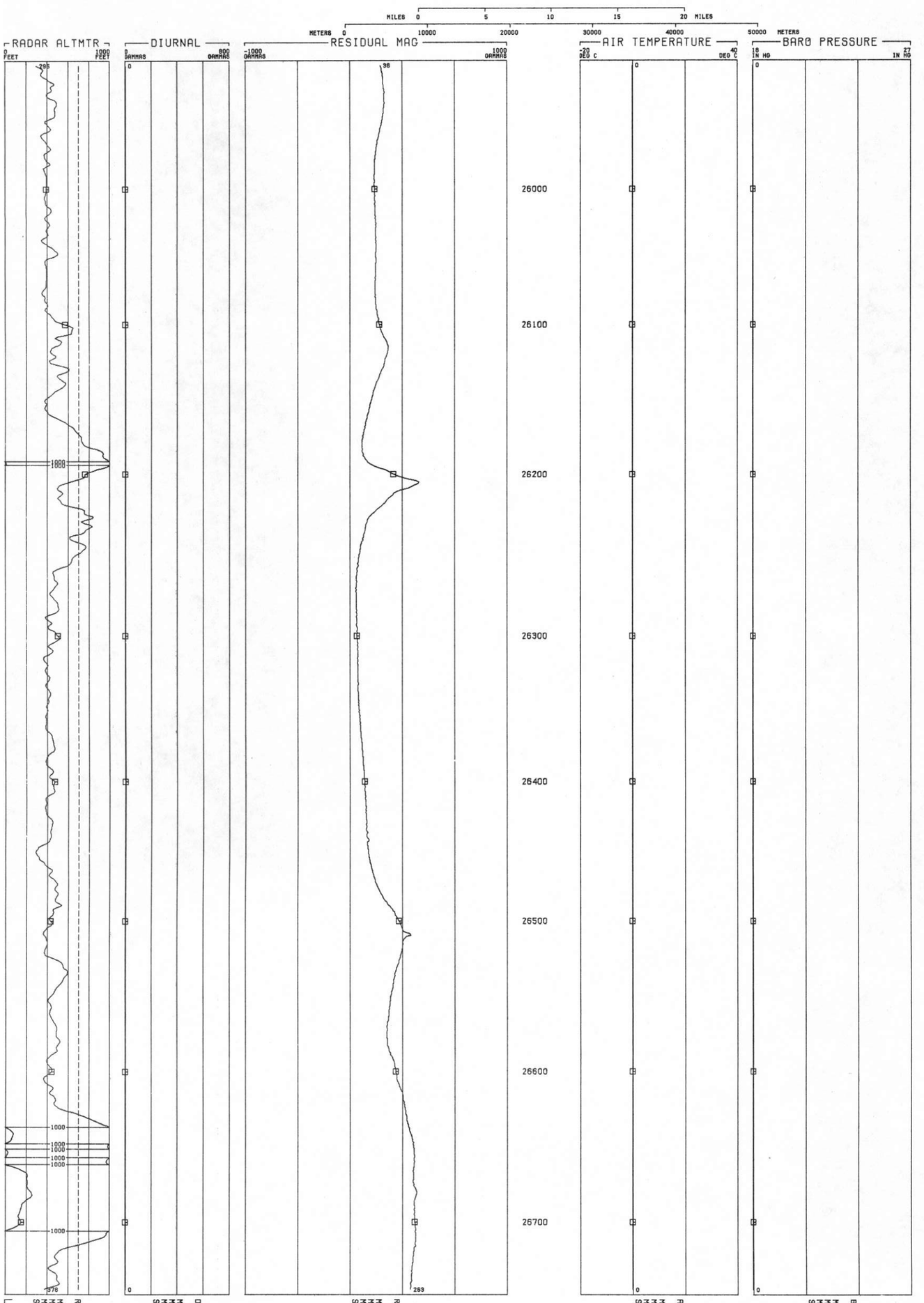
RESIDUAL MAG GAMMAS
MIN -148.8
MAX 247.8
MEAN 32.8
STD DEV 132.0

AIR TEMPERATURE DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

BARO PRESSURE IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

LINE 23

LINE 24
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74138



LINE 24

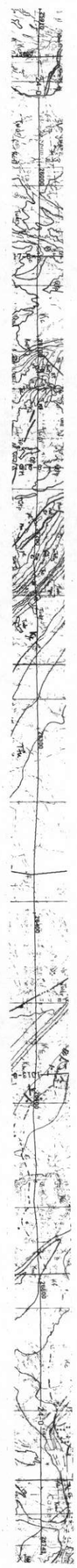
RADAR ALTMTR FEET
MIN 291.0
MAX 1256
MEAN 534.5
STD DEV 214.7

DIURNAL GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

RESIDUAL MAG GAMMAS
MIN -154.5
MAX 328.4
MEAN 39.78
STD DEV 136.2

AIR TEMPERATURE DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

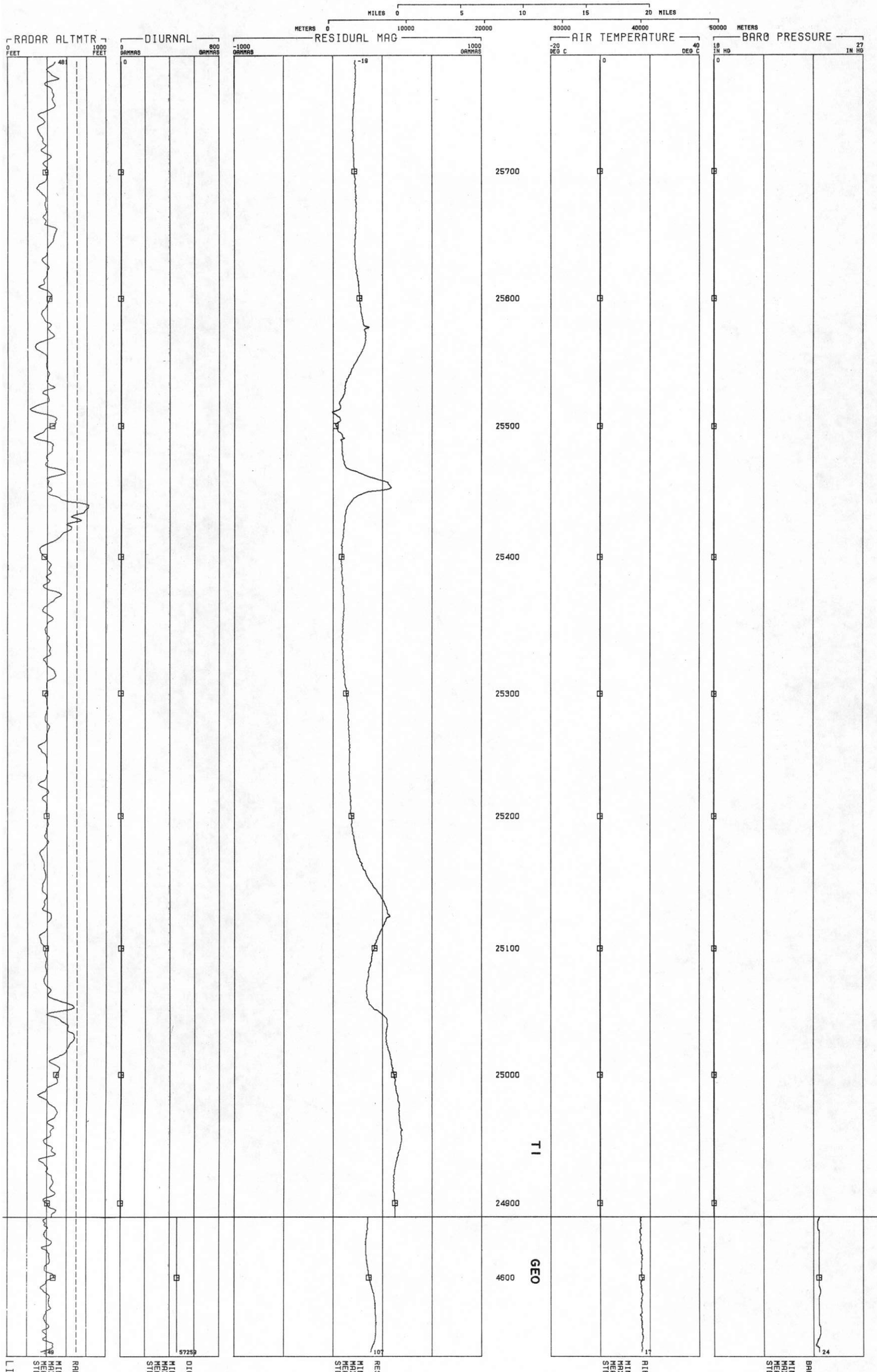
BARO PRESSURE IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000



LINE 25

POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS

DATA ACQUIRED 74136



LINE 26
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74136

BARO PRESSURE IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

AIR TEMPERATURE DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

RESIDUAL MAG GAMMAS
MIN -630.3
MAX 323.5
MEAN 14.48
STD DEV 145.2

DIURNAL GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

RADAR ALTMTR FEET
MIN 241.7
MAX 985.0
MEAN 458.9
STD DEV 114.7

LINE 26

LINE 27
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74136

BARO PRESSURE
IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

AIR TEMPERATURE
DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

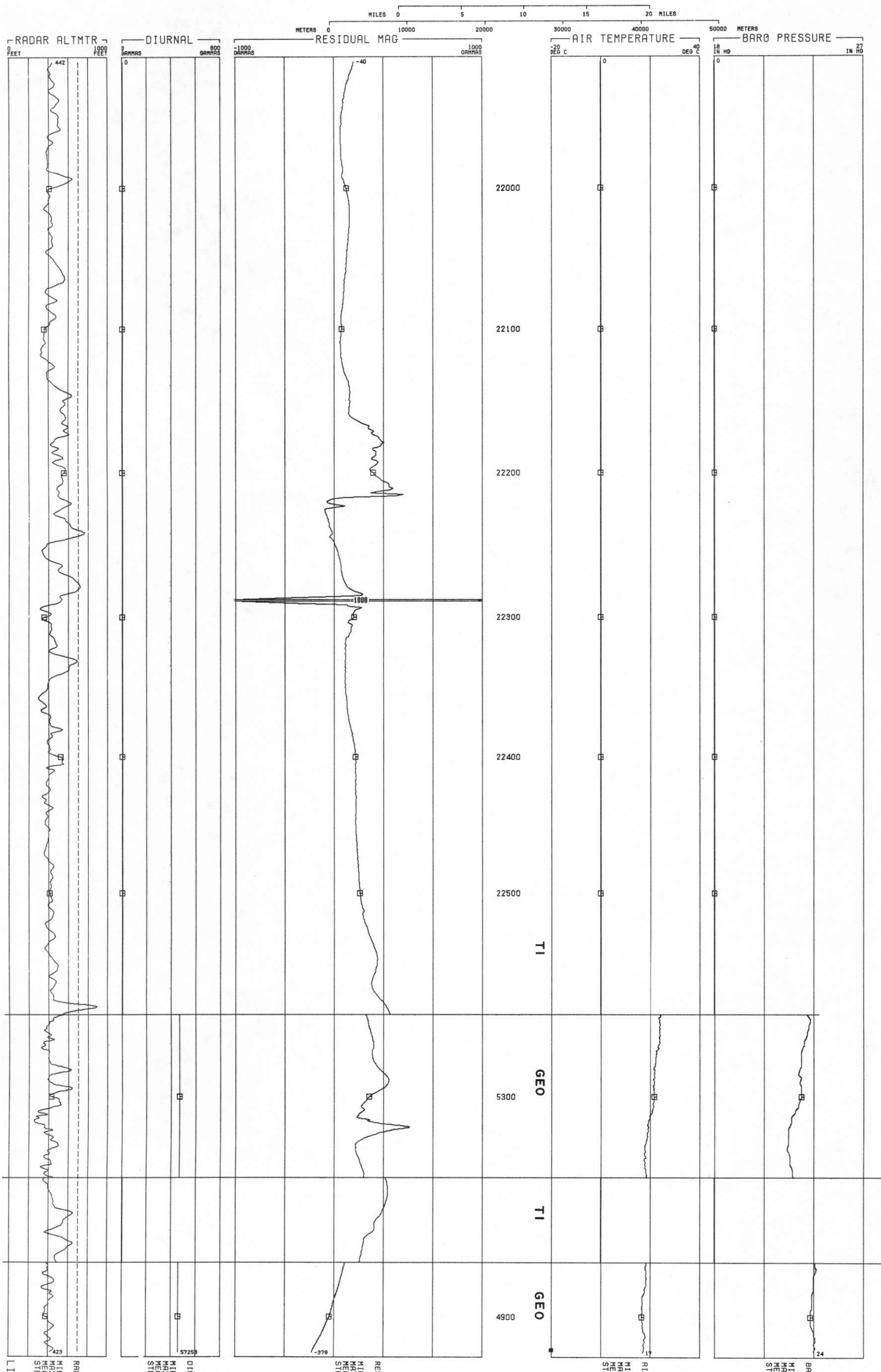
RESIDUAL MAG
GAMMAS
MIN -1121
MAX 460.0
MEAN -9.520
STD DEV 128.5

DIURNAL
GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

RADAR ALTMTR
FEET
MIN 260.3
MAX 2702
MEAN 490.8
STD DEV 241.6

LINE 27

LINE 28
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74136



LINE 28

RADAR ALTMTR FEET
MIN 255.7
MAX 890.3
MEAN 423.9
STD DEV 80.67

DIURNAL GAMMAS
MIN -0000
MAX 57259
MEAN 28789
STD DEV 28631

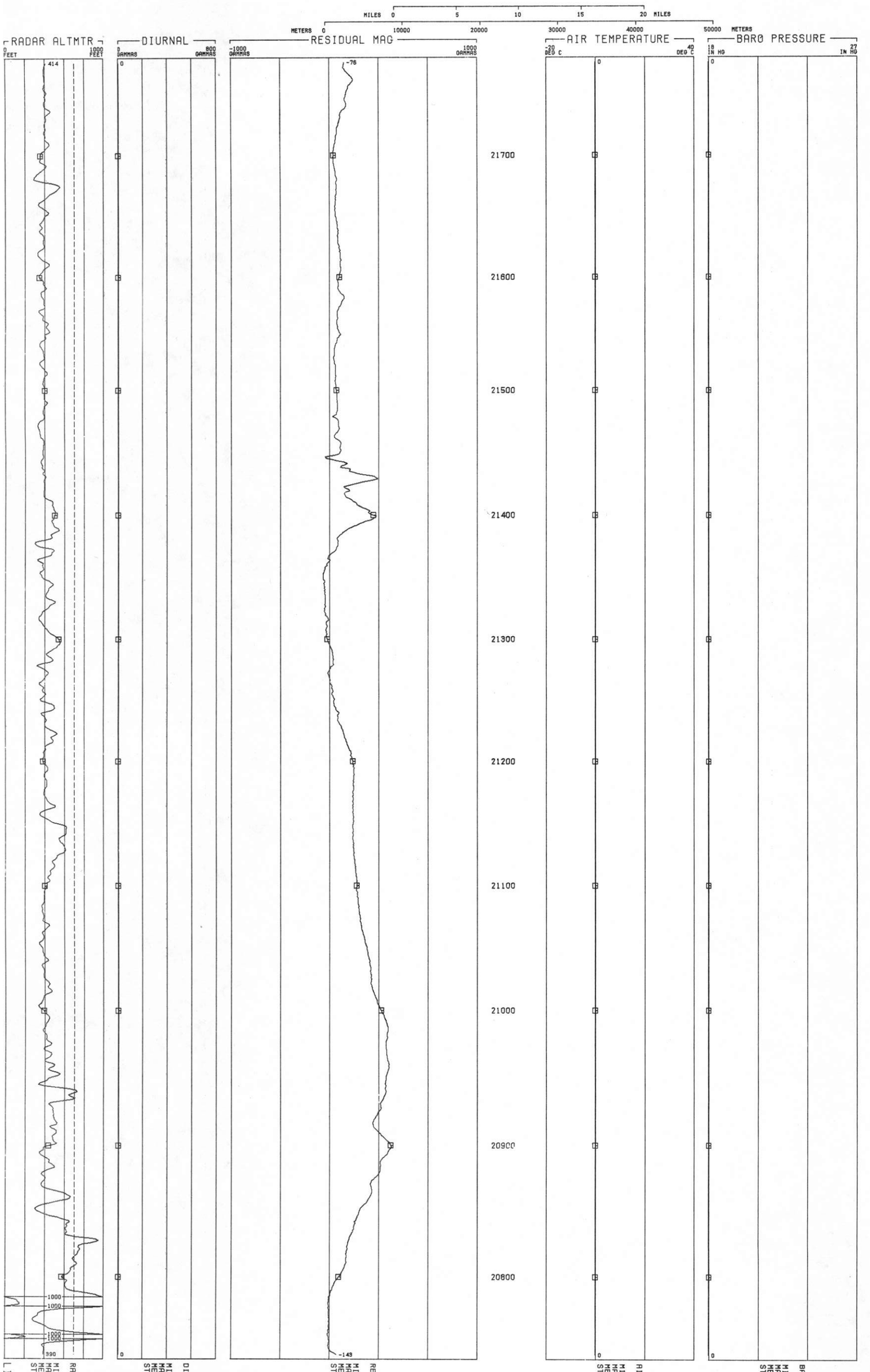
RESIDUAL MAG GAMMAS
MIN -1032
MAX 411.2
MEAN -218.8
STD DEV 157.1

AIR TEMPERATURE DEG C
MIN -0000
MAX 24.22
MEAN 9.843
STD DEV 10.00

BARO PRESSURE IN HG
MIN -0000
MAX 24.75
MEAN 14.76
STD DEV 11.69

C653

LINE 29
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 74135



LINE 29

RADAR ALTMTR FEET
MIN 283.0
MAX 1213
MEAN 448.2
STD DEV 120.9

DIURNAL GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

RESIDUAL MAG GAMMAS
MIN -250.4
MAX 305.7
MEAN -41.61
STD DEV 146.7

AIR TEMPERATURE DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

BARO PRESSURE IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

LINE 30
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74135

MILES 0 5 10 15 20
METERS 0 10000 20000 30000 40000

19900 20000 20100 20200 20300 20400 20500 20600

BARO PRESSURE
METERS 50000 0
IN HG 27 18 0

AIR TEMPERATURE
40 DEG C
0
-20 DEG C

RESIDUAL MAG
1000 GAMMAS
4
-1000 GAMMAS

DIURNAL
800 GAMMAS
0 GAMMAS

RADAR ALTMTR
1000 FEET
600
0 FEET

BARO PRESSURE
IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

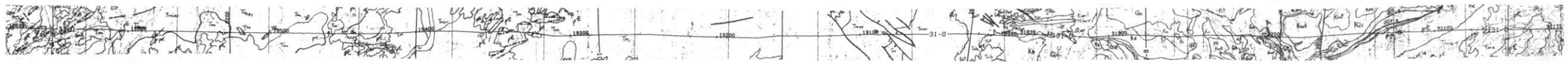
AIR TEMPERATURE
DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

RESIDUAL MAG
GAMMAS
MIN -440.8
MAX 494.4
MEAN -88.11
STD DEV 154.5

DIURNAL
GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .000

RADAR ALTMTR
FEET
MIN 309.3
MAX 1799
MEAN 523.9
STD DEV 272.4

LINE 30



LINE 31
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74134

BARO PRESSURE IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

AIR TEMPERATURE DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

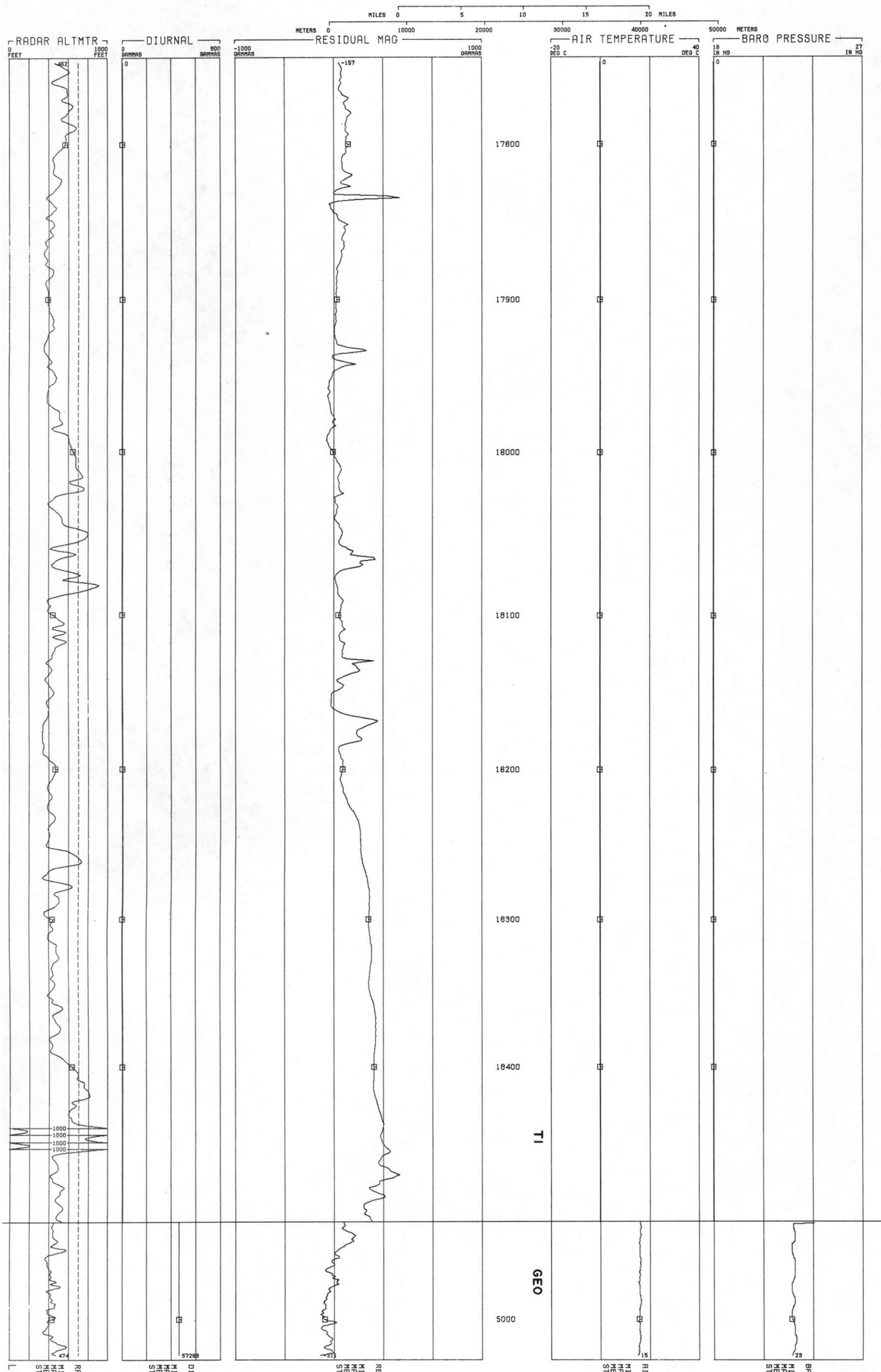
RESIDUAL MAG GAMMAS
MIN -283.3
MAX 1996
MEAN -32.79
STD DEV 229.8

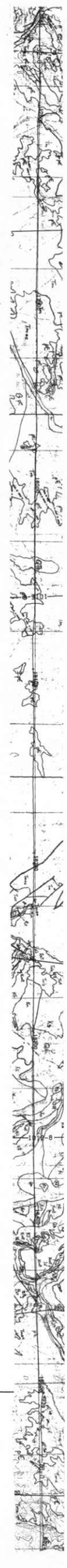
DIURNAL GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

RADAR ALTMTR FEET
MIN 272.7
MAX 1680
MEAN 489.1
STD DEV 232.8

LINE 31

LINE 32
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 74134





LINE 32

RADAR ALTMTR FEET
MIN 336.7
MAX 1202
MEAN 469.1
STD DEV 117.3

DIURNAL GAMMAS
MIN -.0000
MAX 57269
MEAN 18181
STD DEV 26656

RESIDUAL MAG GAMMAS
MIN -311.3
MAX 395.6
MEAN -59.50
STD DEV 142.8

AIR TEMPERATURE DEG C
MIN .0000
MAX 16.59
MEAN 5.068
STD DEV 7.432

BAR0 PRESSURE IN HG
MIN .0000
MAX 24.57
MEAN 7.287
STD DEV 10.84

C857

LINE 33
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74134

BARO PRESSURE
IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

AIR TEMPERATURE
DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

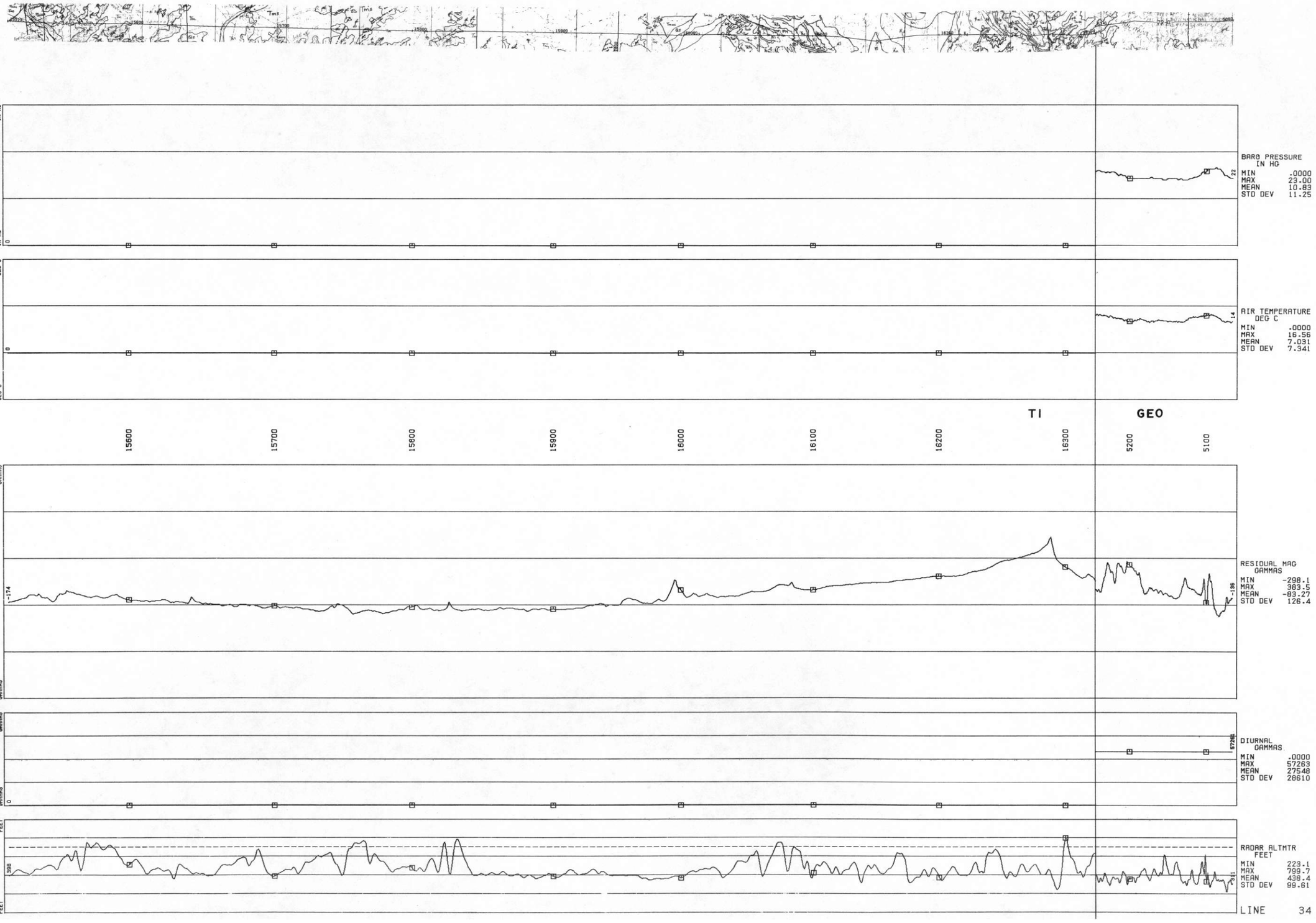
RESIDUAL MAG
GAMMAS
MIN -271.8
MAX 440.0
MEAN -79.81
STD DEV 162.1

DIURNAL
GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

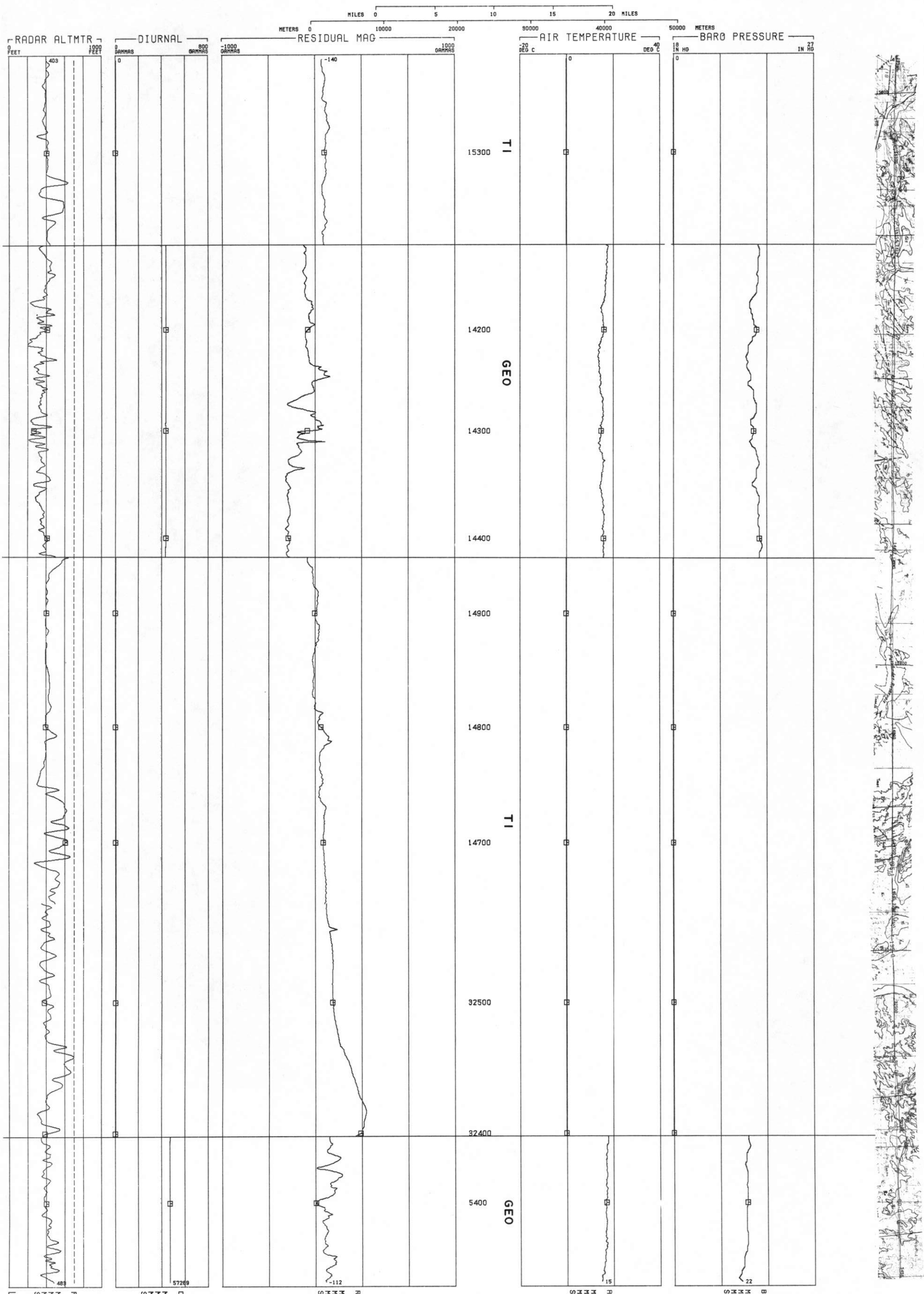
RADAR ALTMTR
FEET
MIN 225.7
MAX 1232
MEAN 468.5
STD DEV 147.3

LINE 33

LINE 34
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74134



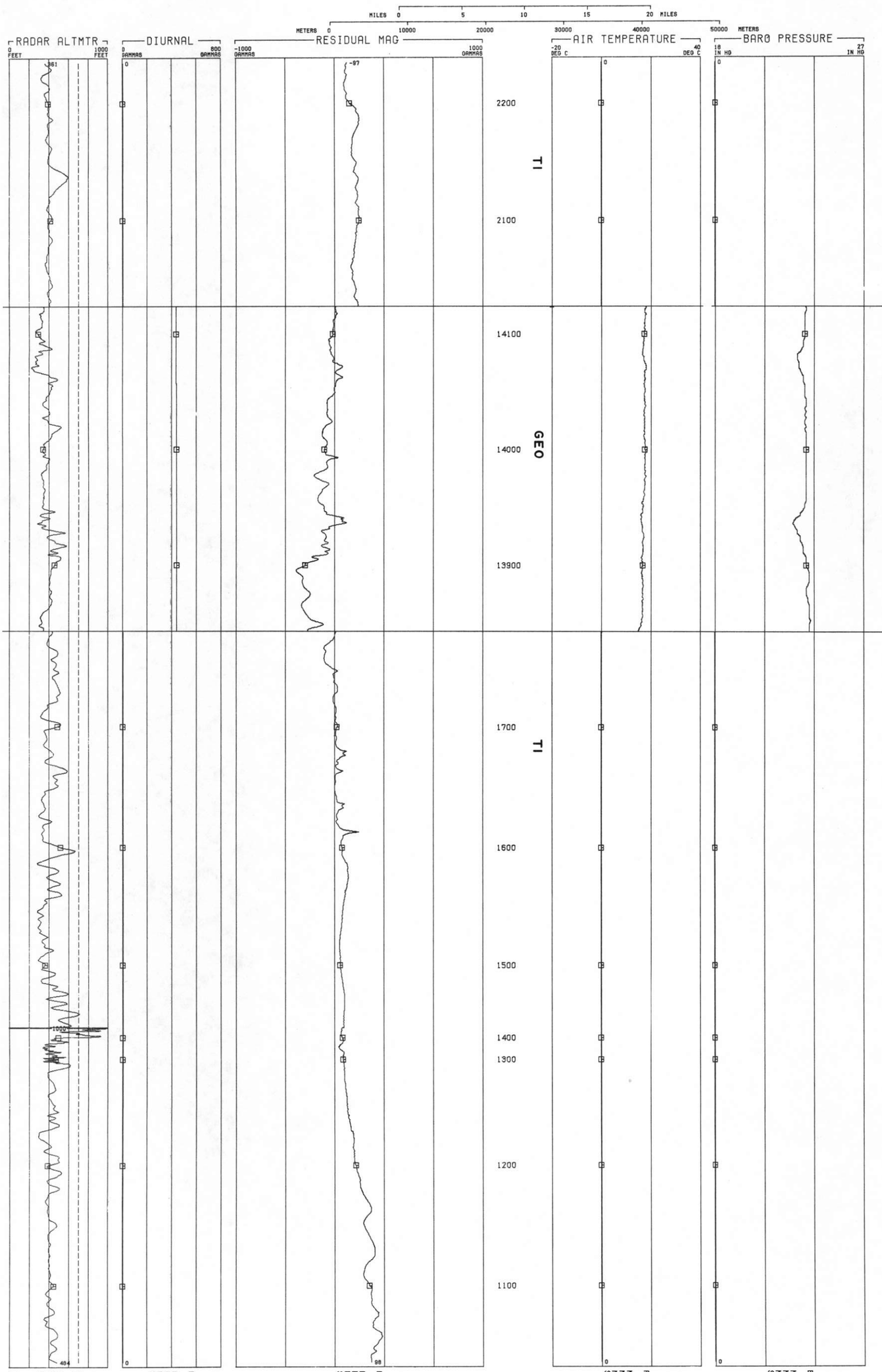
LINE 35
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74132



LINE 35

Ca60

LINE 36
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 74126



LINE 36

RADAR ALTMTR FEET
MIN 227.4
MAX 1063
MEAN 401.25
STD DEV 90.25

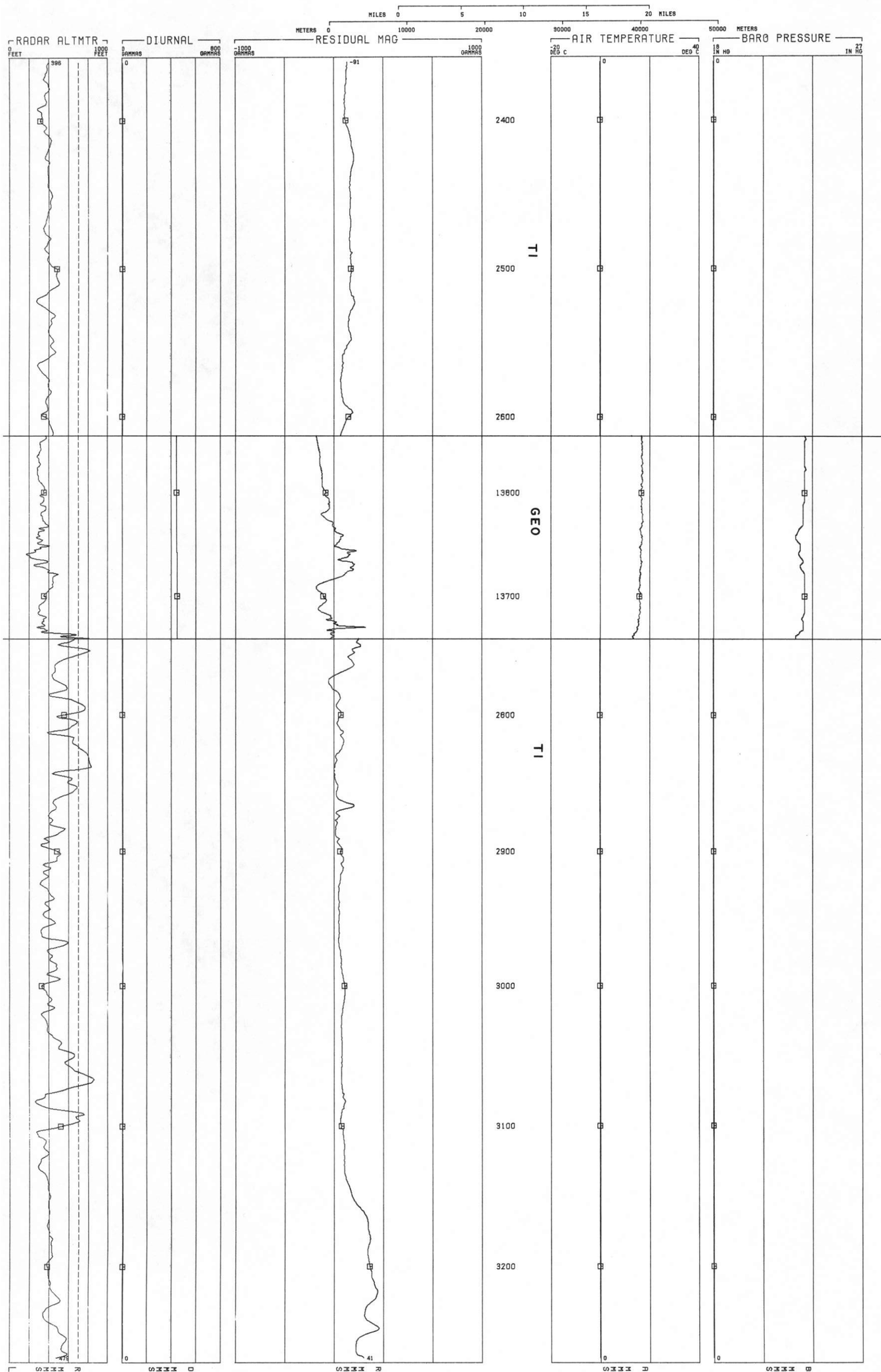
DIURNAL GAMMAS
MIN -0000
MAX 51298
MEAN 31361
STD DEV 28487

RESIDUAL MAG GAMMAS
MIN -509.9
MAX 131.2
MEAN -181.2
STD DEV 135.4

AIR TEMPERATURE DEG C
MIN .0000
MAX 18.15
MEAN 6.538
STD DEV 8.588

BAR0 PRESSURE IN HG
MIN .0000
MAX 12.84
MEAN 12.84
STD DEV 11.66

LINE 37
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 74126



LINE 37

RADAR ALTMTR FEET
MIN 173.7
MAX 863.7
MEAN 398.0
STD DEV 110.7

DIURNAL GAMMAS
MIN -0000
MAX 52227
MEAN 20784
STD DEV 28621

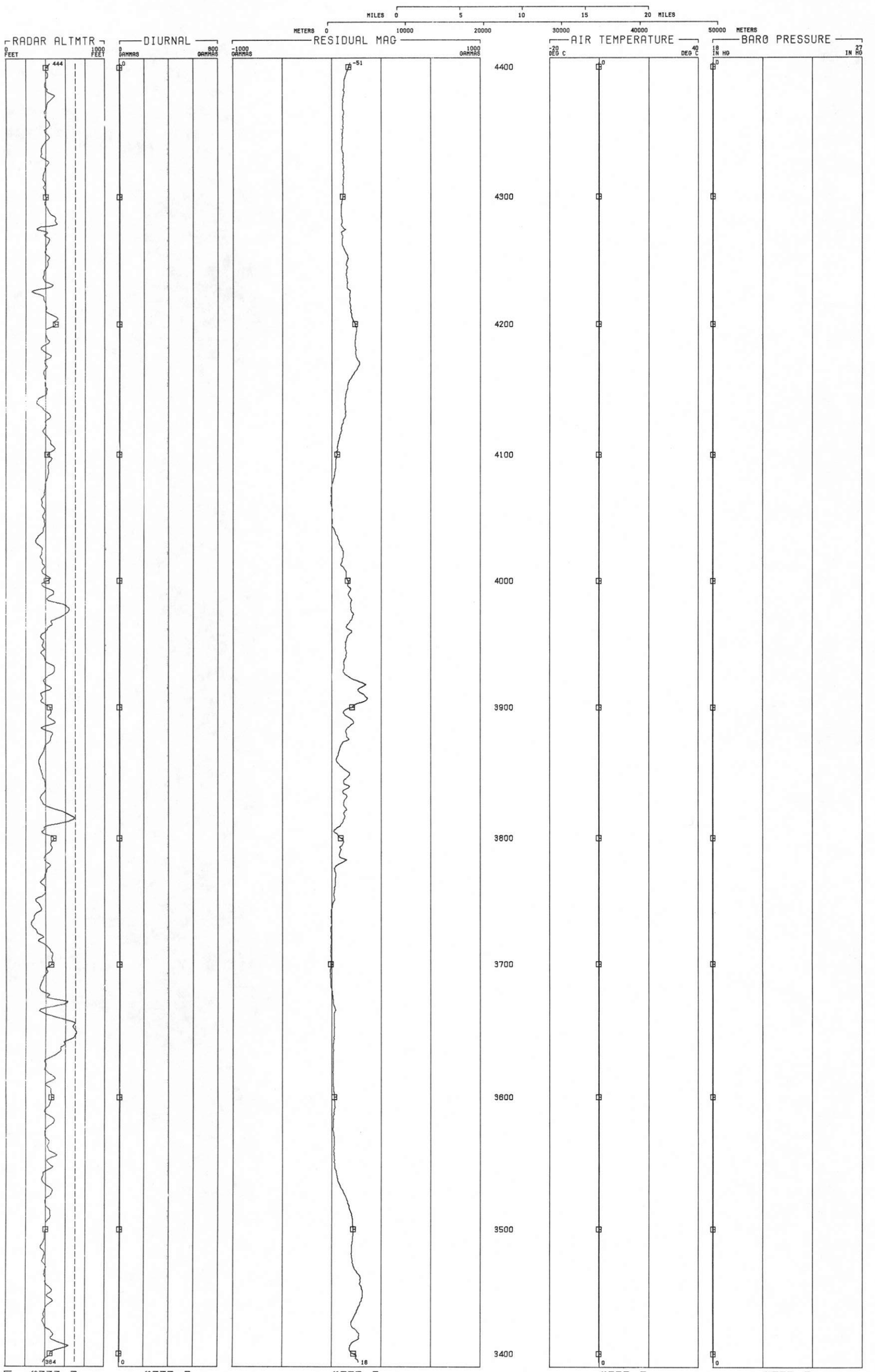
RESIDUAL MAG GAMMAS
MIN -343.7
MAX 185.9
MEAN -91.7
STD DEV 107.7

AIR TEMPERATURE DEG C
MIN -0000
MAX 17.51
MEAN 8.231
STD DEV 8.201

BAR0 PRESSURE IN HG
MIN -0000
MAX 23.58
MEAN 11.78
STD DEV 11.71

ca62

LINE 38
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74126



LINE 38

RADAR ALTMTR FEET
MIN 255.7
MAX 711.7
MEAN 420.5
STD DEV 68.68

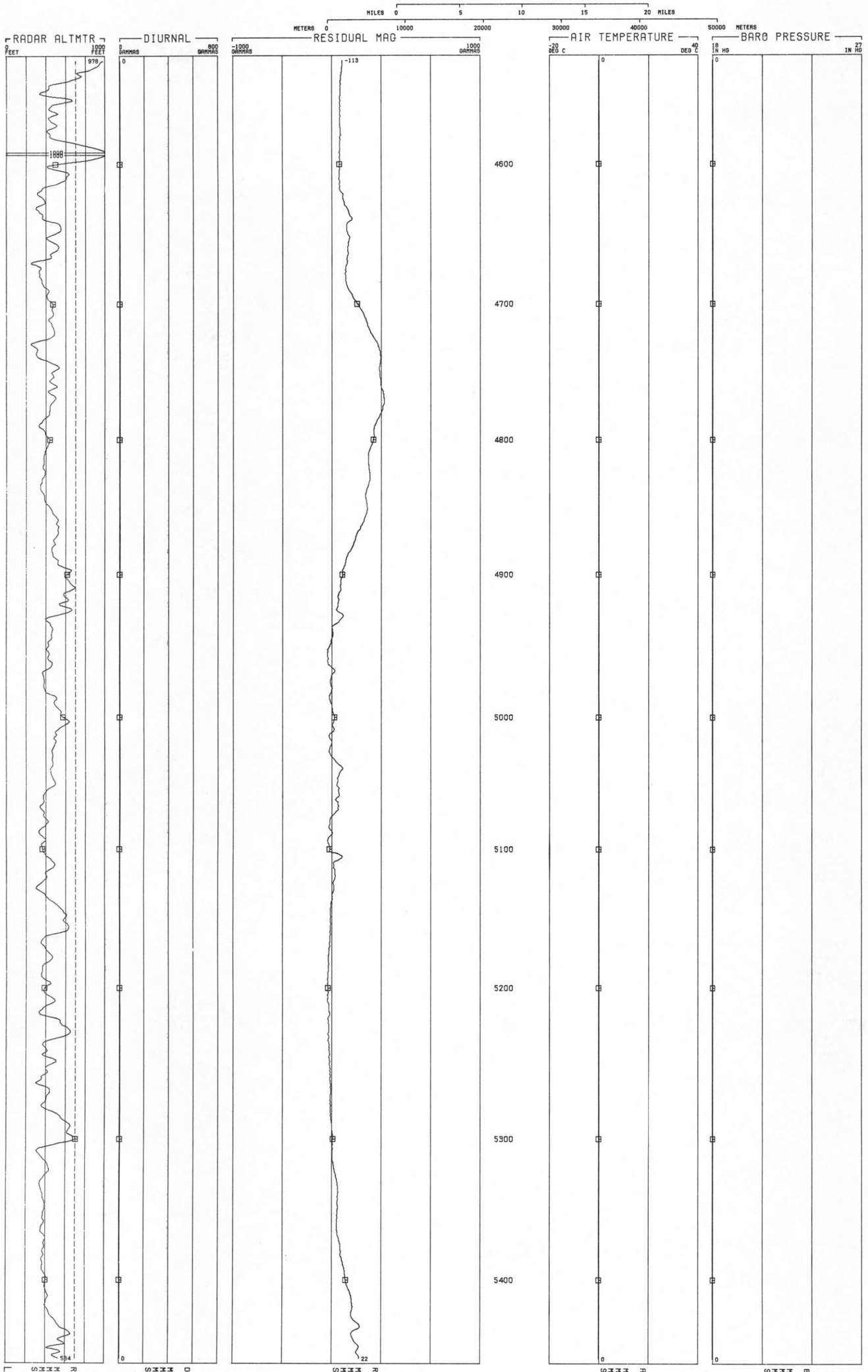
DIURNAL GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

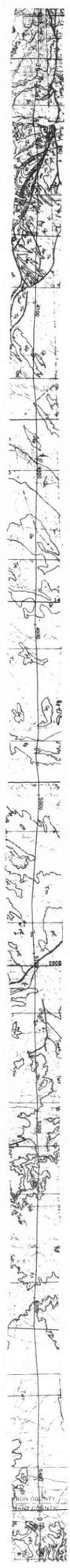
RESIDUAL MAG GAMMAS
MIN -211.3
MAX 88.14
MEAN -105.3
STD DEV 60.62

AIR TEMPERATURE DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

BARO PRESSURE IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

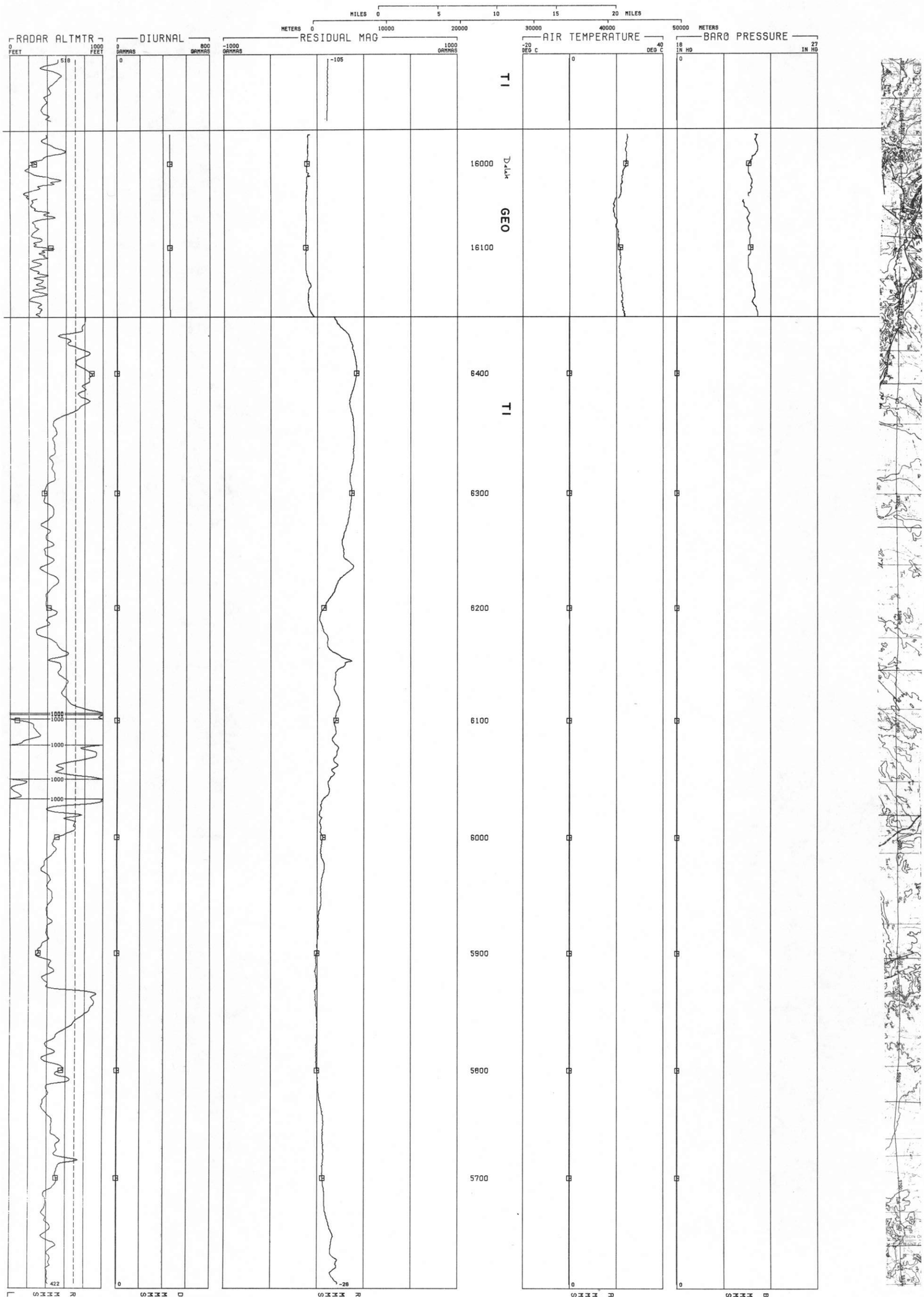
LINE 39
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74127





C464

LINE 40
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74127



LINE 40

RADAR ALTMTR FEET
MIN 146.0
MAX 1328
MEAN 422
STD DEV 135.3

DIURNAL GAMMAS
MIN -0000
MAX 5288
MEAN 25730
STD DEV 20481

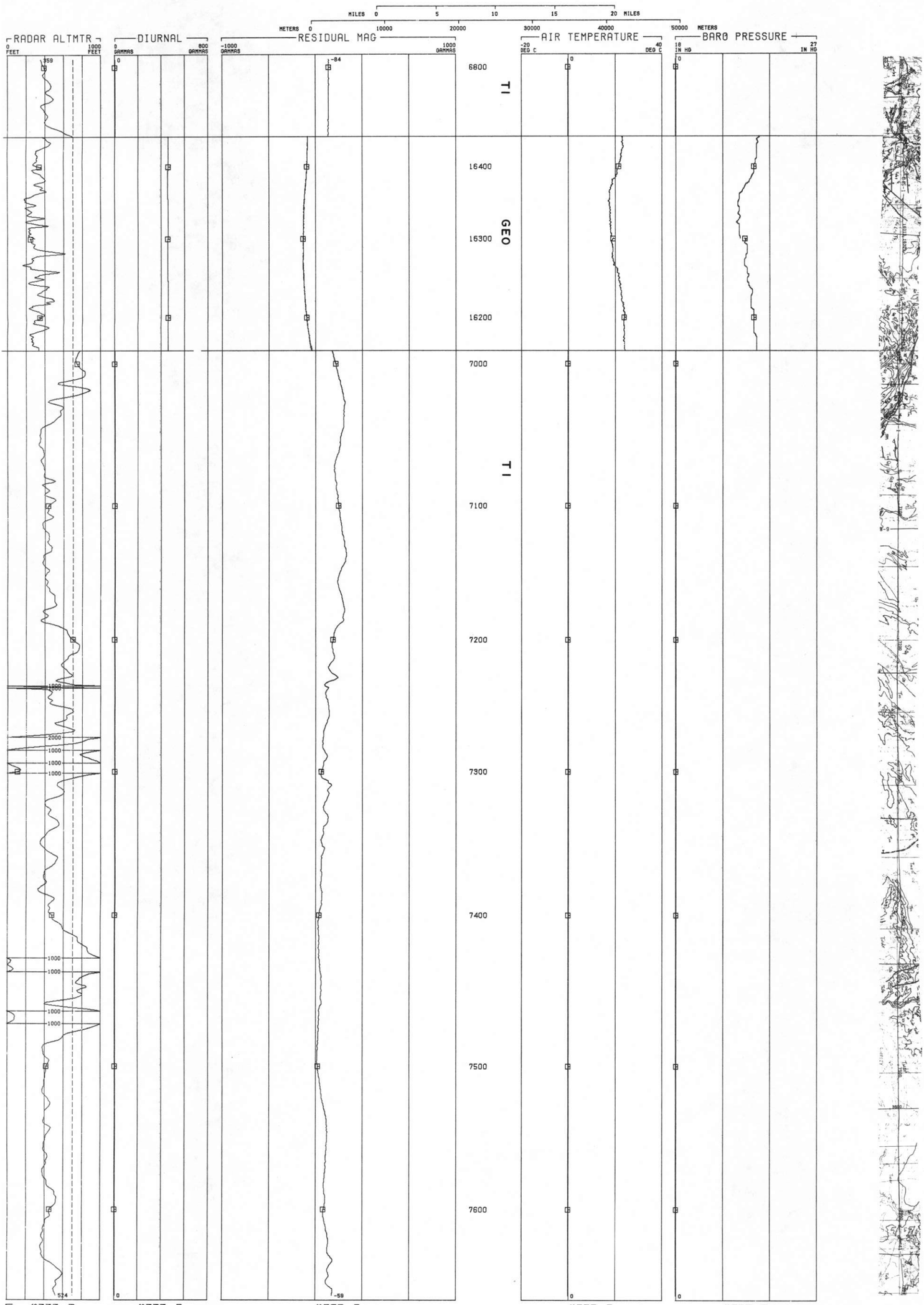
RESIDUAL MAG GAMMAS
MIN -300.1
MAX 138.5
MEAN -105.8
STD DEV 131.4

AIR TEMPERATURE DEG C
MIN -0000
MAX 25.01
MEAN 9.888
STD DEV 11.00

BARO PRESSURE IN HG
MIN -0000
MAX 28.28
MEAN 13.12
STD DEV 11.32

C865

LINE 41
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74127



C866

LINE 42
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74127

LINE 43
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74131

BARO PRESSURE
IN HG
MIN .0000
MAX 29.44
MEAN 11.53
STD DEV 11.30

AIR TEMPERATURE
DEG C
MIN .0000
MAX 24.40
MEAN 10.49
STD DEV 10.41

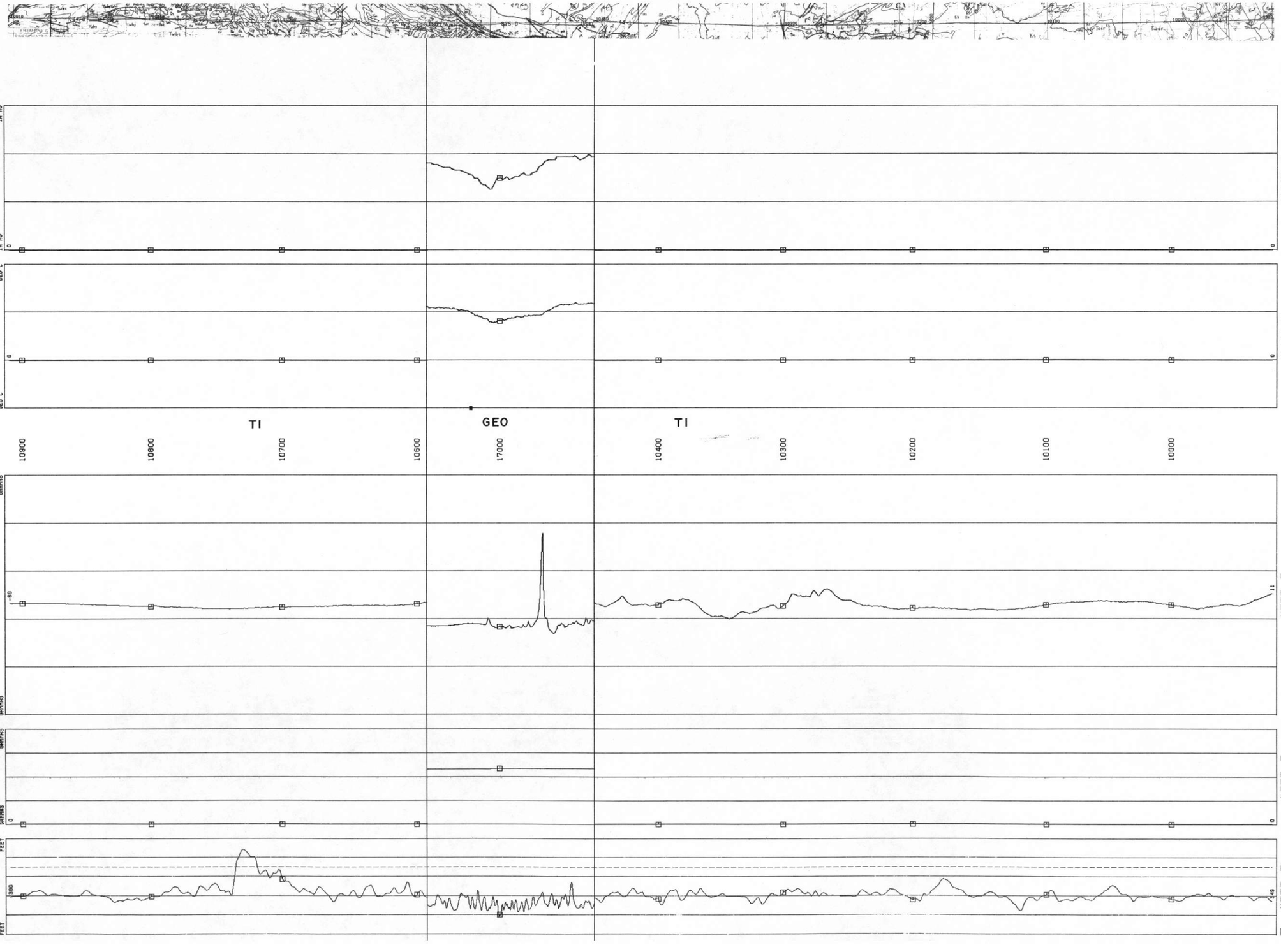
RESIDUAL MAG
GAMMAS
MIN -232.5
MAX 226.1
MEAN -142.8
STD DEV 66.01

DIURNAL
GAMMAS
MIN .0000
MAX 57259
MEAN 29211
STD DEV 28623

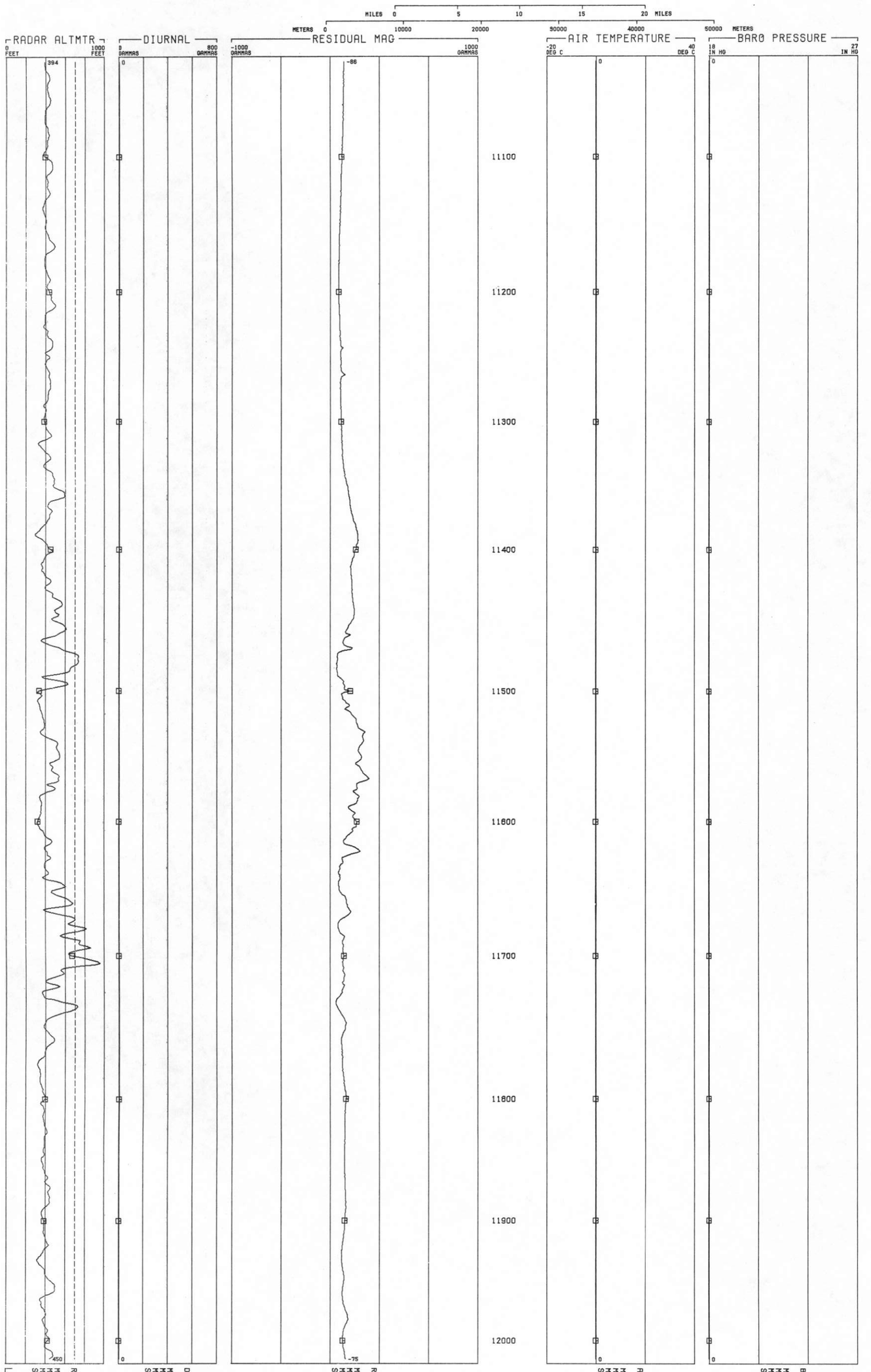
RADAR ALTMTR
FEET
MIN 192.9
MAX 1095
MEAN 398.0
STD DEV 134.4

LINE 43

LINE 44
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74131



LINE 45
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74132



LINE 45

RADAR ALTMTR FEET
MIN 209.0
MAX 956.3
MEAN 442.3
STD DEV 92.86

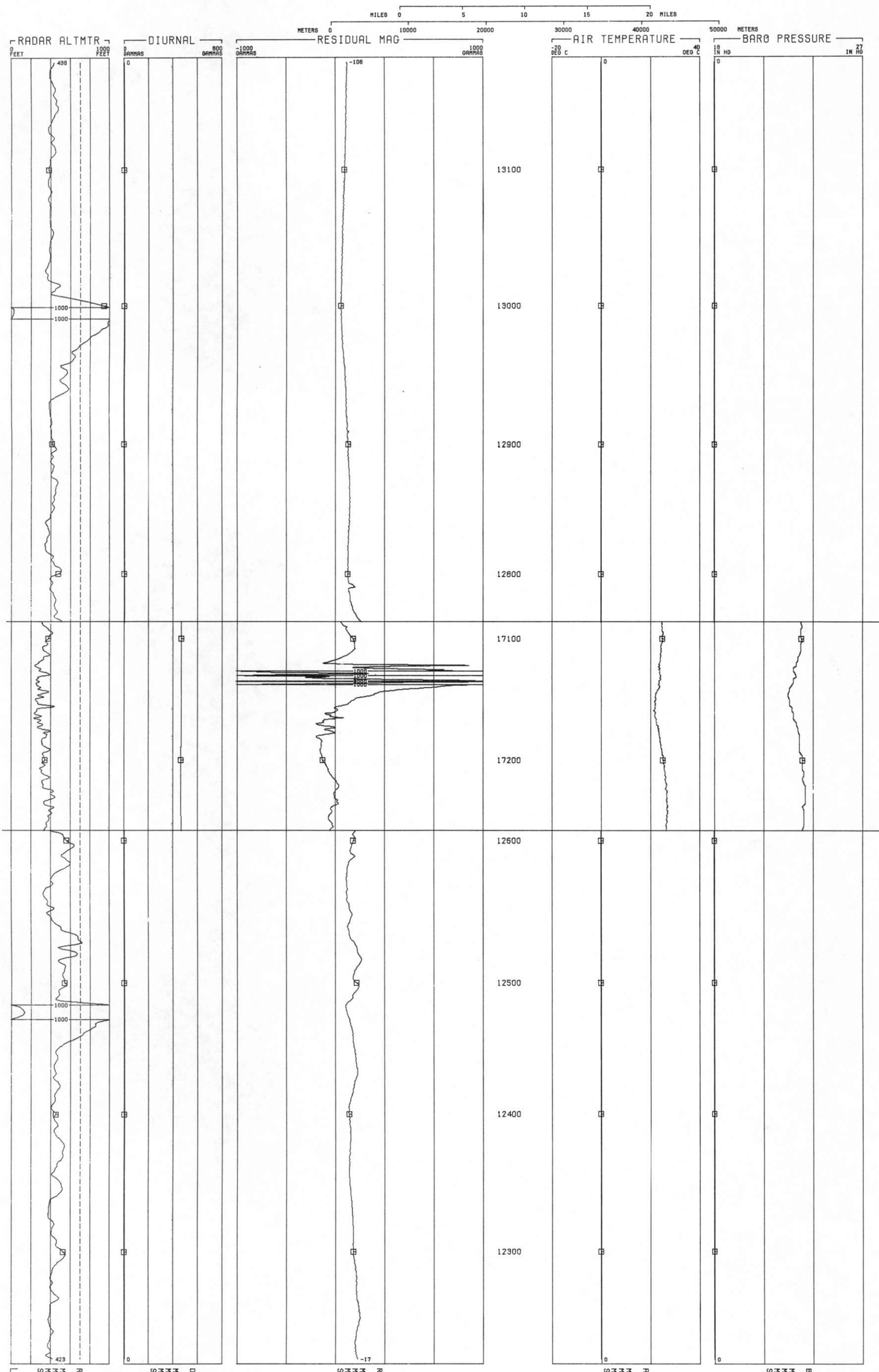
DIURNAL GAMMAS
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

RESIDUAL MAG GAMMAS
MIN -146.6
MAX -116.2
MEAN -75.70
STD DEV 48.73

AIR TEMPERATURE DEG C
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

BARO PRESSURE IN HG
MIN .0000
MAX .0000
MEAN .0000
STD DEV .0000

LINE 46
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 74132



LINE 46

RADAR ALTMTR FEET
MIN 232.0
MAX 1135
MEAN 414.8
STD DEV 134.5

DIURNAL GAMMAS
MIN -0000
MAX 51225
MEAN 26081
STD DEV 28519

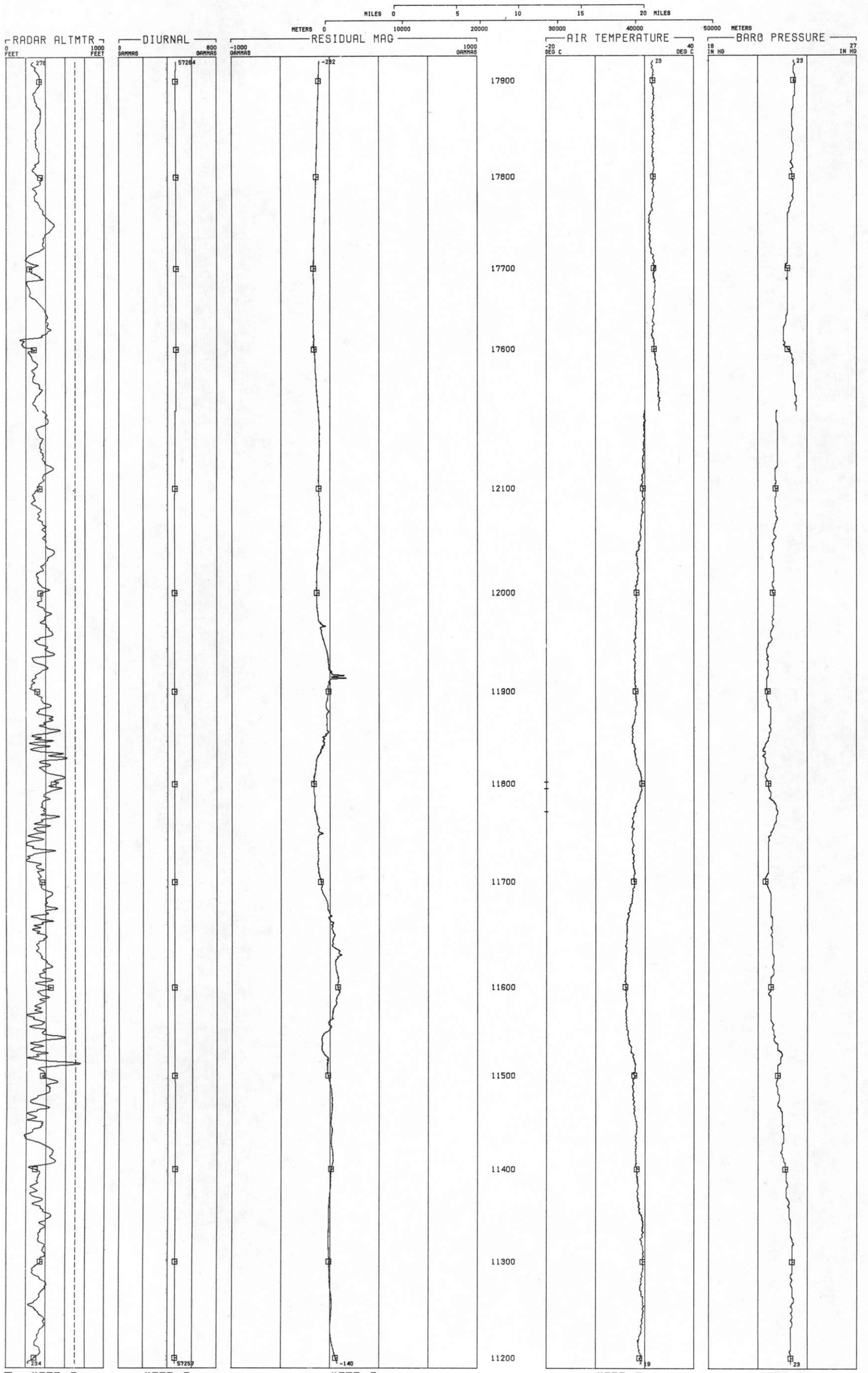
RESIDUAL MAG GAMMAS
MIN -354.1
MAX 3129
MEAN -44.54
STD DEV 397.4

AIR TEMPERATURE DEG C
MIN -0000
MAX 27.13
MEAN 11.17
STD DEV 12.25

BAR0 PRESSURE IN HG
MIN -0000
MAX 29.53
MEAN 23.54
STD DEV 11.52

LINE 47
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 74132

LINE 48
PØWDER RIVER II - CASPER NTMS NK 13-4 GEØMETRICS
DATA ACQUIRED 78265



LINE 48

RADAR ALTMTR FEET
MIN 142.9
MAX 750.2
MEAN 447.8
STD DEV 74.58

DIURNAL GAMMAS
MIN 57252
MAX 57257
MEAN 57257
STD DEV 4.609

RESIDUAL MAG GAMMAS
MIN -937.2
MAX -87.65
MEAN -557.3
STD DEV 59.30

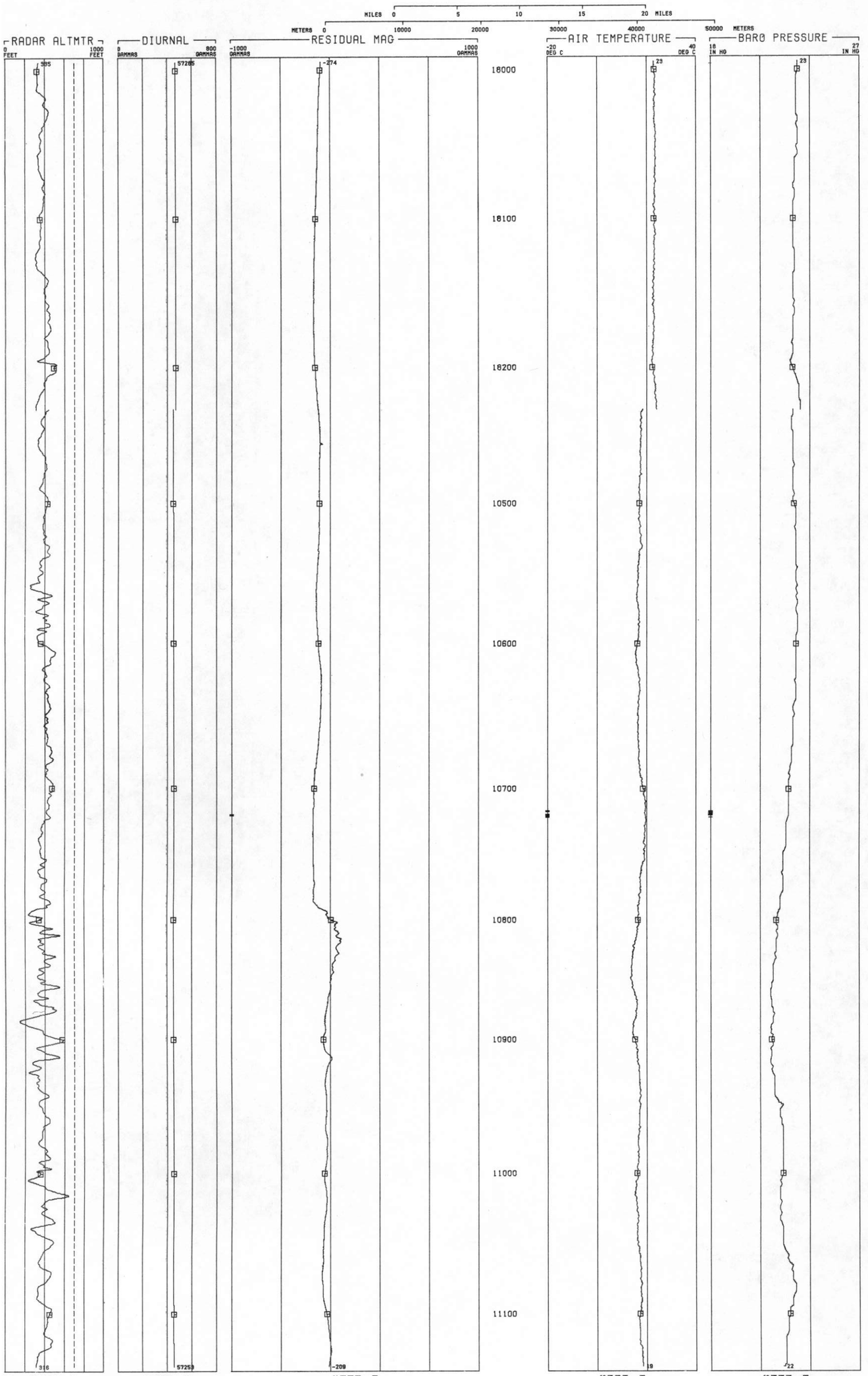
AIR TEMPERATURE DEG C
MIN 11.81
MAX 26.28
MEAN 18.555
STD DEV 3.749

BARØ PRESSURE IN HG
MIN 21.30
MAX 23.35
MEAN 22.469
STD DEV .5763

LINE 49

POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS

DATA ACQUIRED 78265



RADAR ALTMTR FEET
MIN 149.2
MAX 644.6
MEAN 392.61
STD DEV 97.69

DIURNAL GAMMAS
MIN 57247
MAX 57287
MEAN 57254
STD DEV 6.933

RESIDUAL MAG GAMMAS
-340.2
-110.9
-210.9
48.73

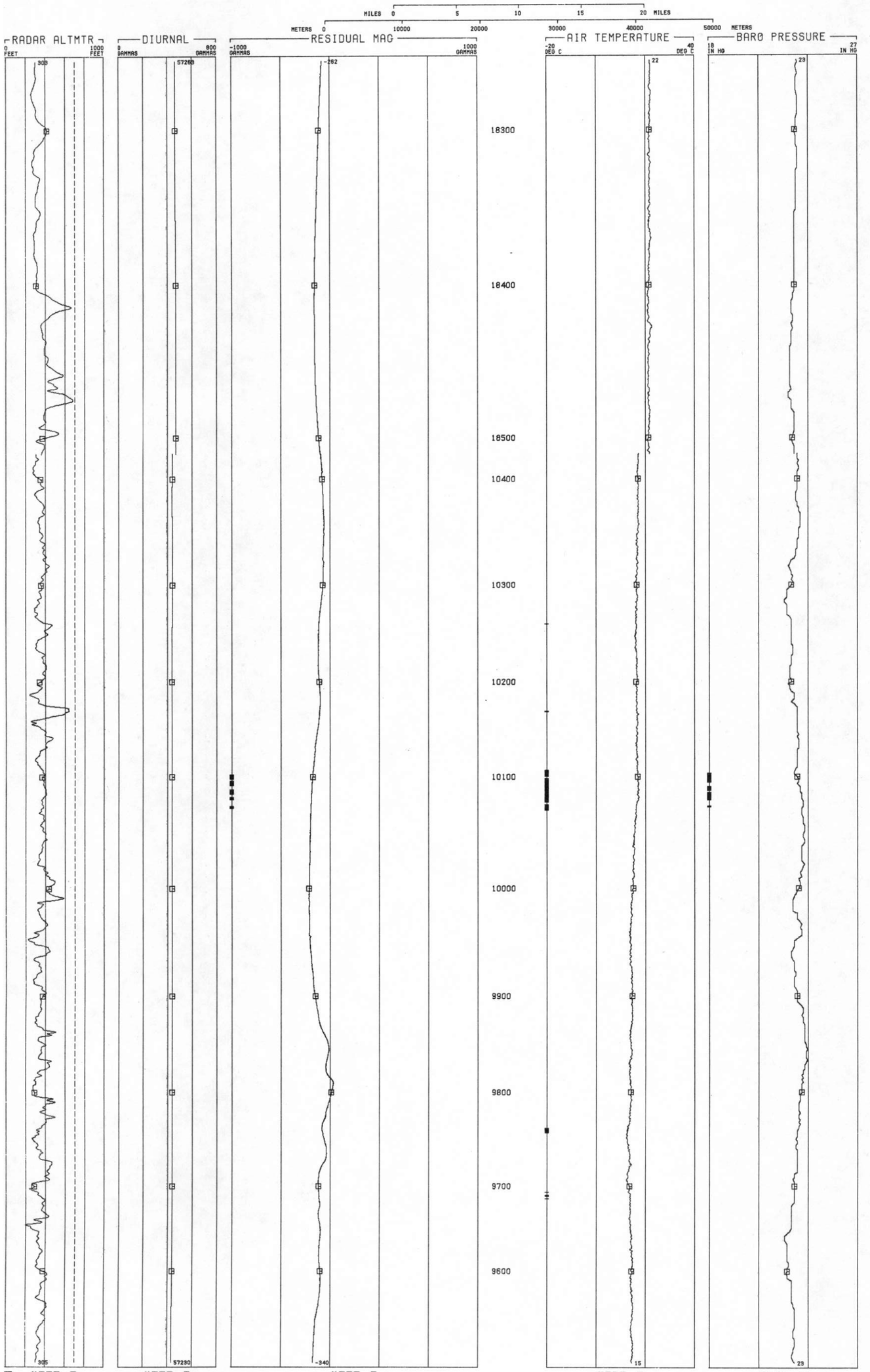
AIR TEMPERATURE DEG C
MIN 13.41
MAX 24.03
MEAN 18.42
STD DEV 2.874

BARO PRESSURE IN HG
MIN 21.63
MAX 23.44
MEAN 22.77
STD DEV .4898

LINE 49

Ca74

LINE 50
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265



LINE 50

RADAR ALTMTR FEET
MIN 187.7
MAX 684.2
MEAN 365.7
STD DEV 64.84

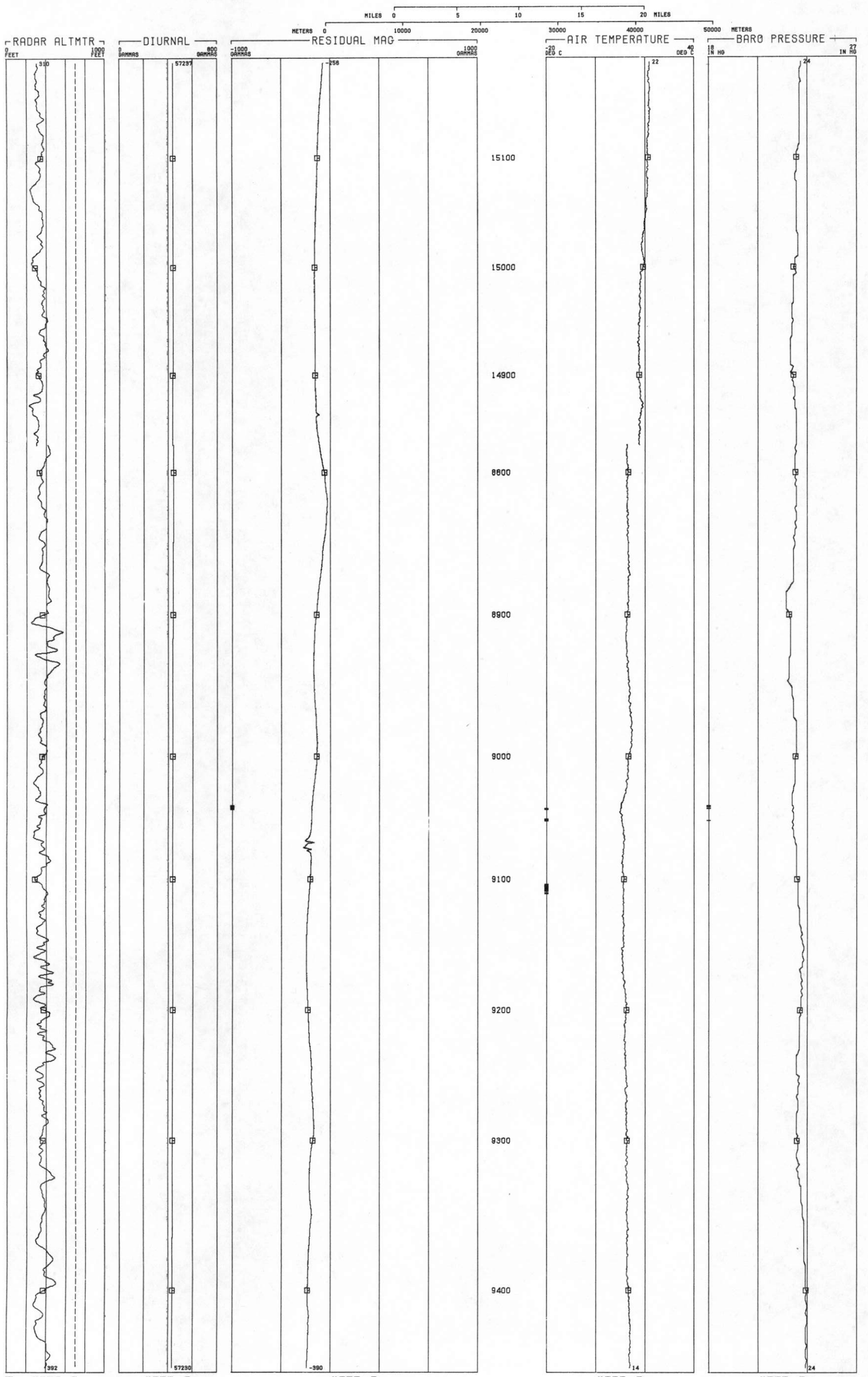
DIURNAL GAMMAS
MIN 57230
MAX 57266
MEAN 57248
STD DEV 12.48

RESIDUAL MAG GAMMAS
MIN -373.1
MAX -171.9
MEAN -294.3
STD DEV 40.62

AIR TEMPERATURE DEG C
MIN 13.29
MAX 22.68
MEAN 16.54
STD DEV 2.935

BARO PRESSURE IN HG
MIN 22.57
MAX 23.98
MEAN 23.24
STD DEV .2048

LINE 51
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265



RADAR ALTMTR FEET
MIN 230.0
MAX 571.8
MEAN 358.4
STD DEV 50.24

DIURNAL GAMMAS
MIN 57230
MAX 57297
MEAN 57285
STD DEV 2.683

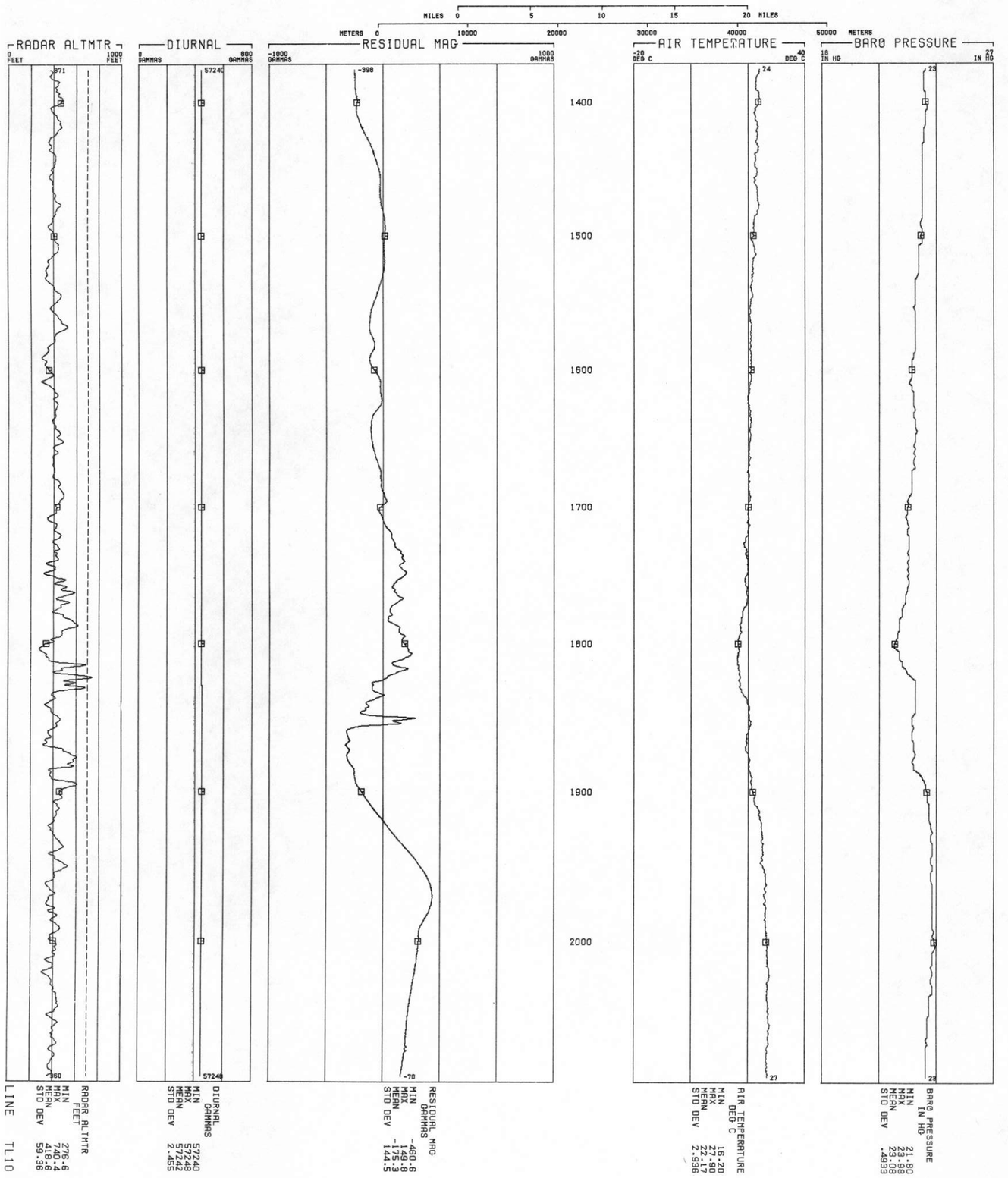
RESIDUAL MAG GAMMAS
MIN -416.9
MAX -222.1
MEAN -320.0
STD DEV 40.73

AIR TEMPERATURE DEG C
MIN 8.743
MAX 22.32
MEAN 14.95
STD DEV 3.484

BARO PRESSURE IN HG
MIN 22.74
MAX 23.98
MEAN 23.77
STD DEV .2577

LINE 51

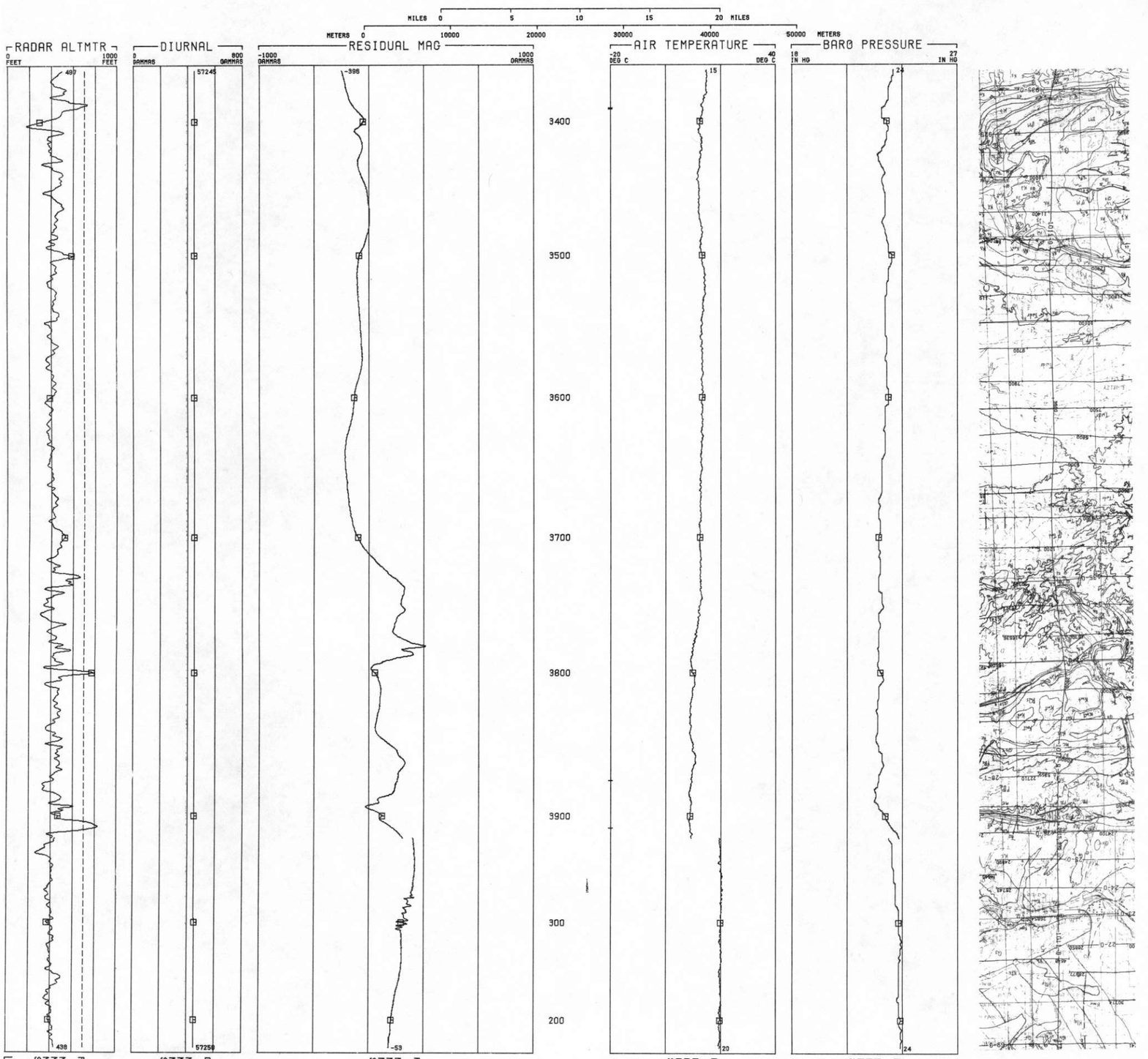
LINE TL10
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 78258



LINE TL11

POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS

DATA ACQUIRED 78258



LINE TL11

RADAR ALTMTR FEET
MIN 174.4
MAX 825.9
MEAN 427.7
STD DEV 69.11

DIURNAL GAMMAS
MIN 57244
MAX 57250
MEAN 57246
STD DEV 1.690

RESIDUAL MAG GAMMAS
MIN -396.0
MAX 214.6
MEAN -134.1
STD DEV 161.5

AIR TEMPERATURE DEG C
MIN 8.381
MAX 20.89
MEAN 14.17
STD DEV 3.729

BARO PRESSURE IN HG
MIN 22.48
MAX 23.98
MEAN 23.18
STD DEV .4018

Ca78

LINE TL12
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78258

BARO PRESSURE IN HG
MIN 21.38
MAX 24.34
MEAN 23.12
STD DEV .0394

AIR TEMPERATURE DEG C
MIN 10.74
MAX 21.33
MEAN 16.18
STD DEV 2.849

RESIDUAL MAG GAMMAS
MIN -410.1
MAX 118.4
MEAN -192.7
STD DEV 154.4

DIURNAL GAMMAS
MIN 57236
MAX 57249
MEAN 57240
STD DEV 3.824

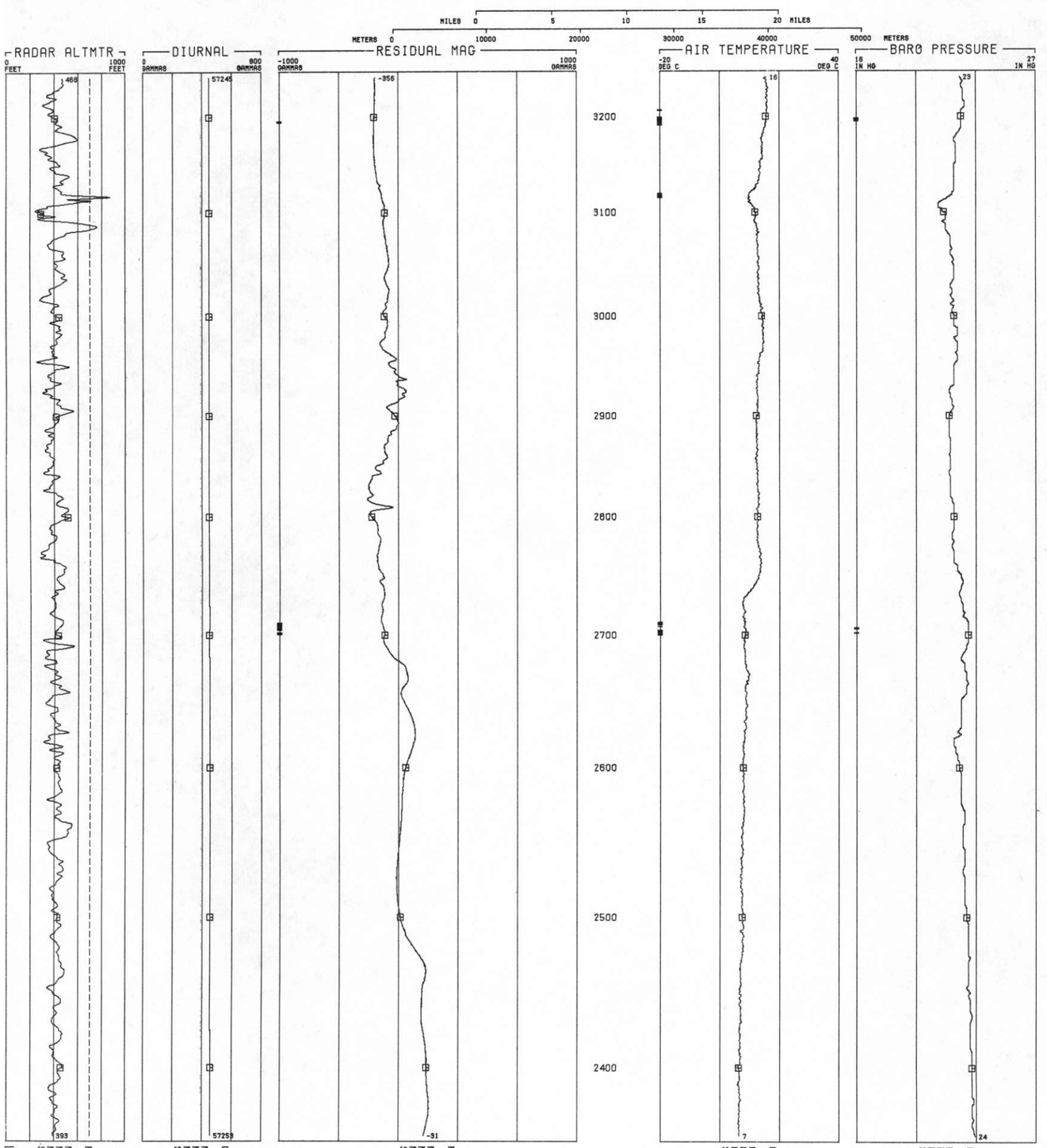
RADAR ALTMTR FEET
MIN 282.0
MAX 1174
MEAN 429.7
STD DEV 128.2

LINE TL12

LINE TL13

POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS

DATA ACQUIRED 78258



LINE TL13

RADAR ALTMTR FEET
MIN 248.5
MAX 874.8
MEAN 421.1
STD DEV 67.95

DIURNAL GAMMAS
MIN 57245
MAX 57253
MEAN 57248
STD DEV 1.598

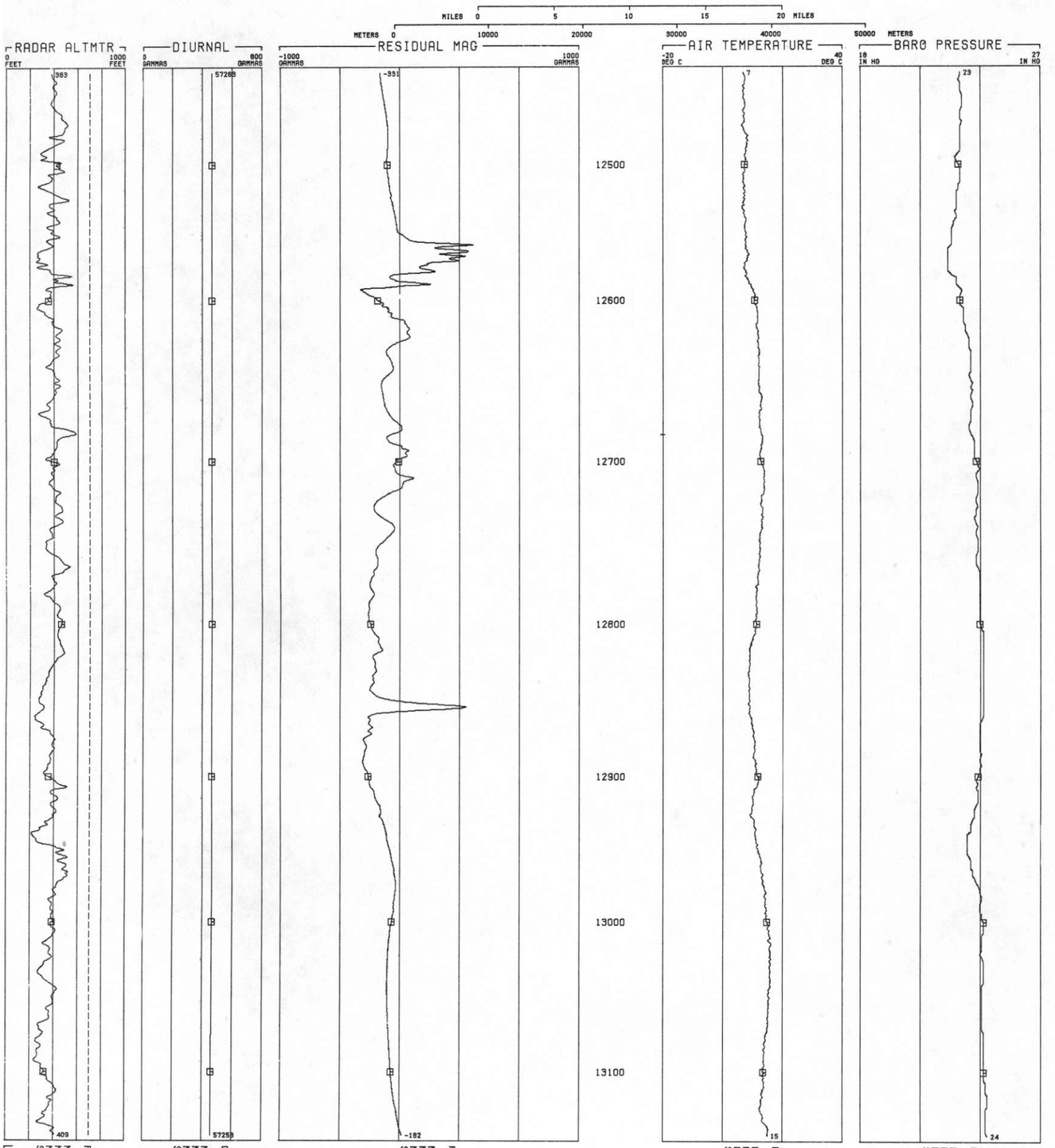
RESIDUAL MAG GAMMAS
MIN -407.4
MAX 5.763
MEAN -228.8
STD DEV 111.9

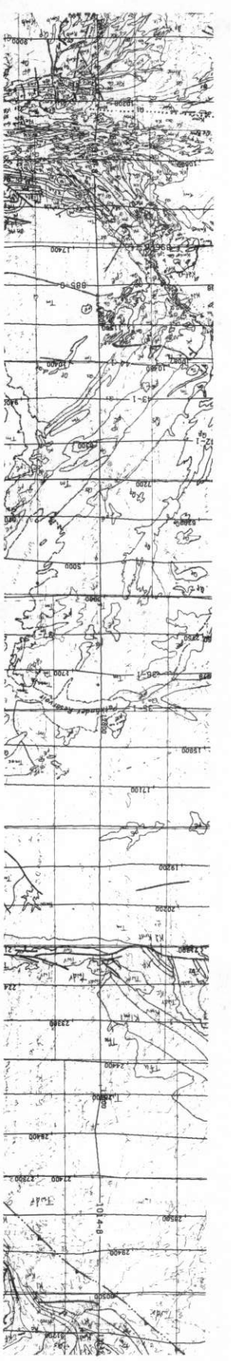
AIR TEMPERATURE DEG C
MIN 5.929
MAX 15.30
MEAN 10.77
STD DEV 2.944

BARO PRESSURE IN HG
MIN 22.14
MAX 23.95
MEAN 23.15
STD DEV .3695

C480

LINE TL14
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 78265





LINE TL14

RADAR ALTMTR FEET
MIN 215.9
MAX 585.2
MEAN 384.9
STD DEV 69.83

DIURNAL GAMMAS
MIN 57258
MAX 57263
MEAN 57260
STD DEV 1.386

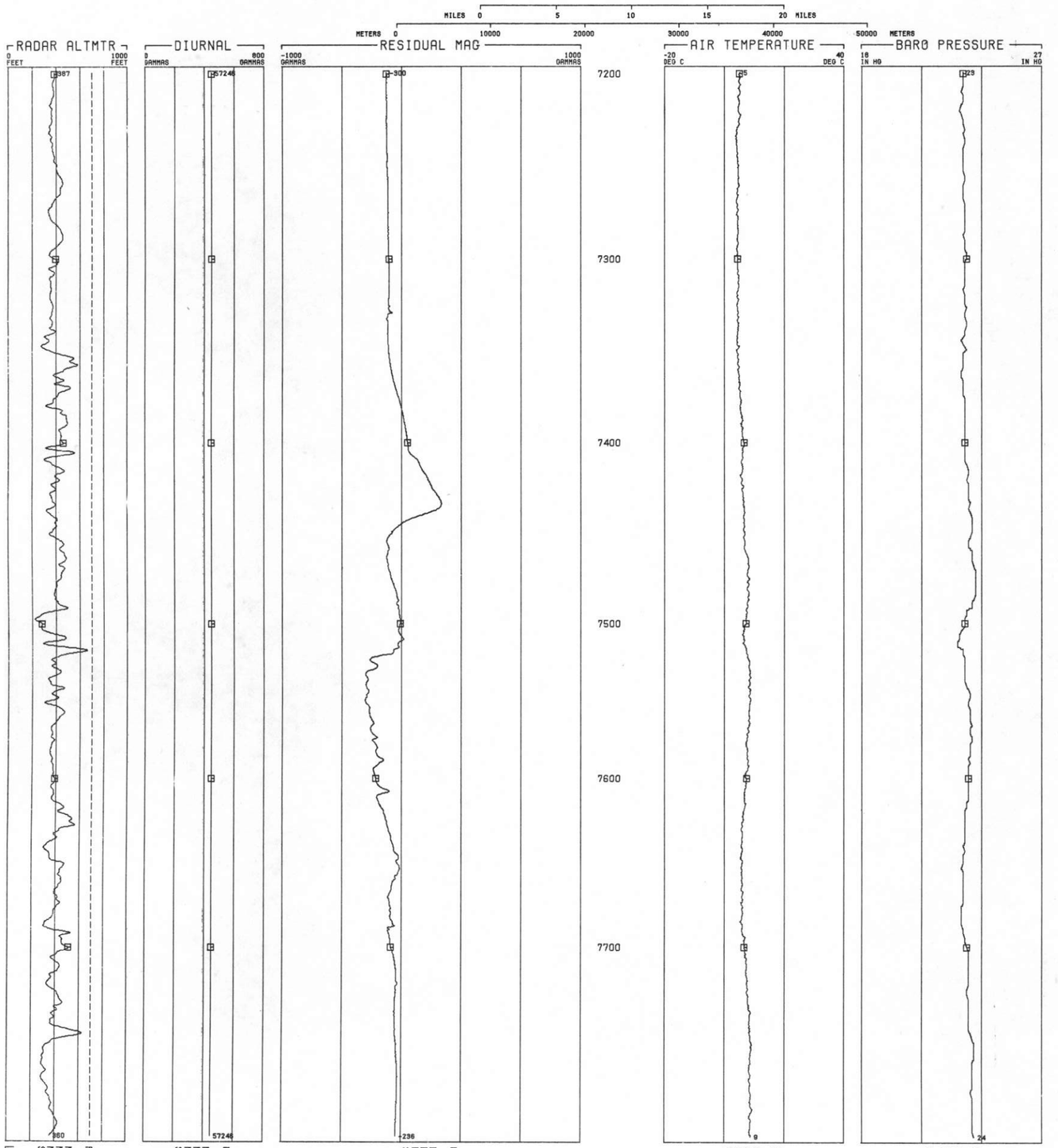
RESIDUAL MAG GAMMAS
MIN -461.8
MAX -295.3
MEAN -274.2
STD DEV 104.8

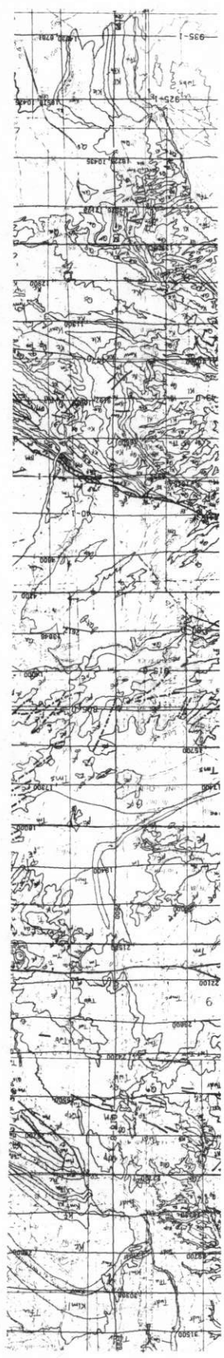
AIR TEMPERATURE DEG C
MIN 6.356
MAX 16.03
MEAN 11.30
STD DEV 2.646

BAR0 PRESSURE IN HG
MIN 22.39
MAX 24.34
MEAN 23.65
STD DEV .9246

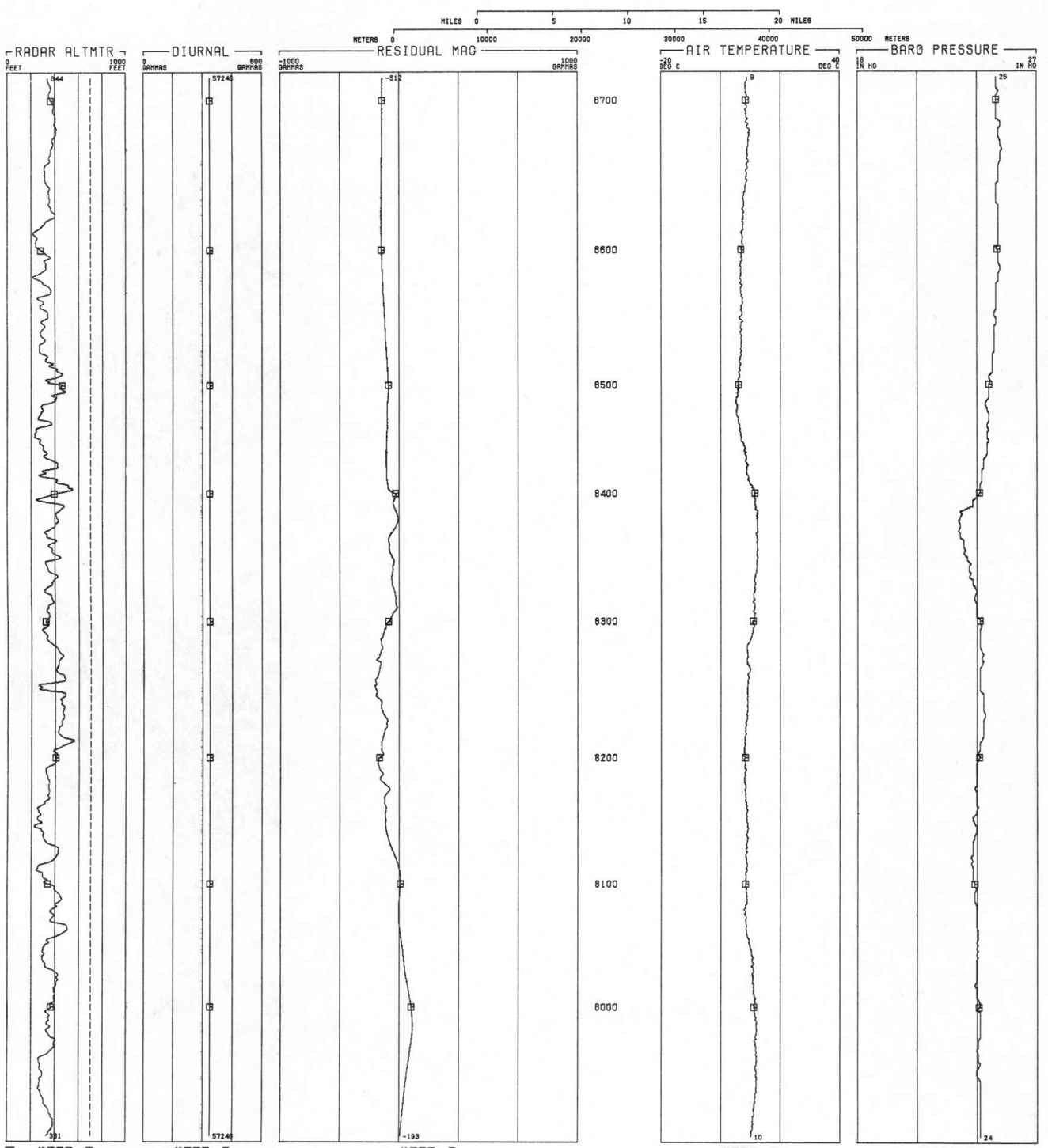
LINE TL15
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78266
MILES 0 5 10 15 20
METERS 0 10000 20000 30000 40000 50000
14700 14600 14500 13600 13500 13400 13300
BARO PRESSURE IN HG
AIR TEMPERATURE DEG C
RESIDUAL MAG
DIURNAL
RADAR ALTMTR
BARO PRESSURE IN HG
MIN 21.63
MAX 23.98
MEAN 23.30
STD DEV .4474
AIR TEMPERATURE DEG C
MIN 9.046
MAX 20.47
MEAN 14.73
STD DEV 2.528
RESIDUAL MAG GAMMAS
MIN -703.4
MAX 361.9
MEAN -263.9
STD DEV 100.1
DIURNAL GAMMAS
MIN 57231
MAX 57255
MEAN 57242
STD DEV 9.449
RADAR ALTMTR FEET
MIN 206.2
MAX 652.0
MEAN 379.6
STD DEV 79.73
LINE TL15

LINE TL16
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78259





LINE TL17
POWDER RIVER II - CASPER NTMS NK 13-4 GEOMETRICS
DATA ACQUIRED 78265



LINE TL17

RADAR ALTMTR FEET
MIN 215.8
MAX 583.8
MEAN 559.9
STD DEV 84.65

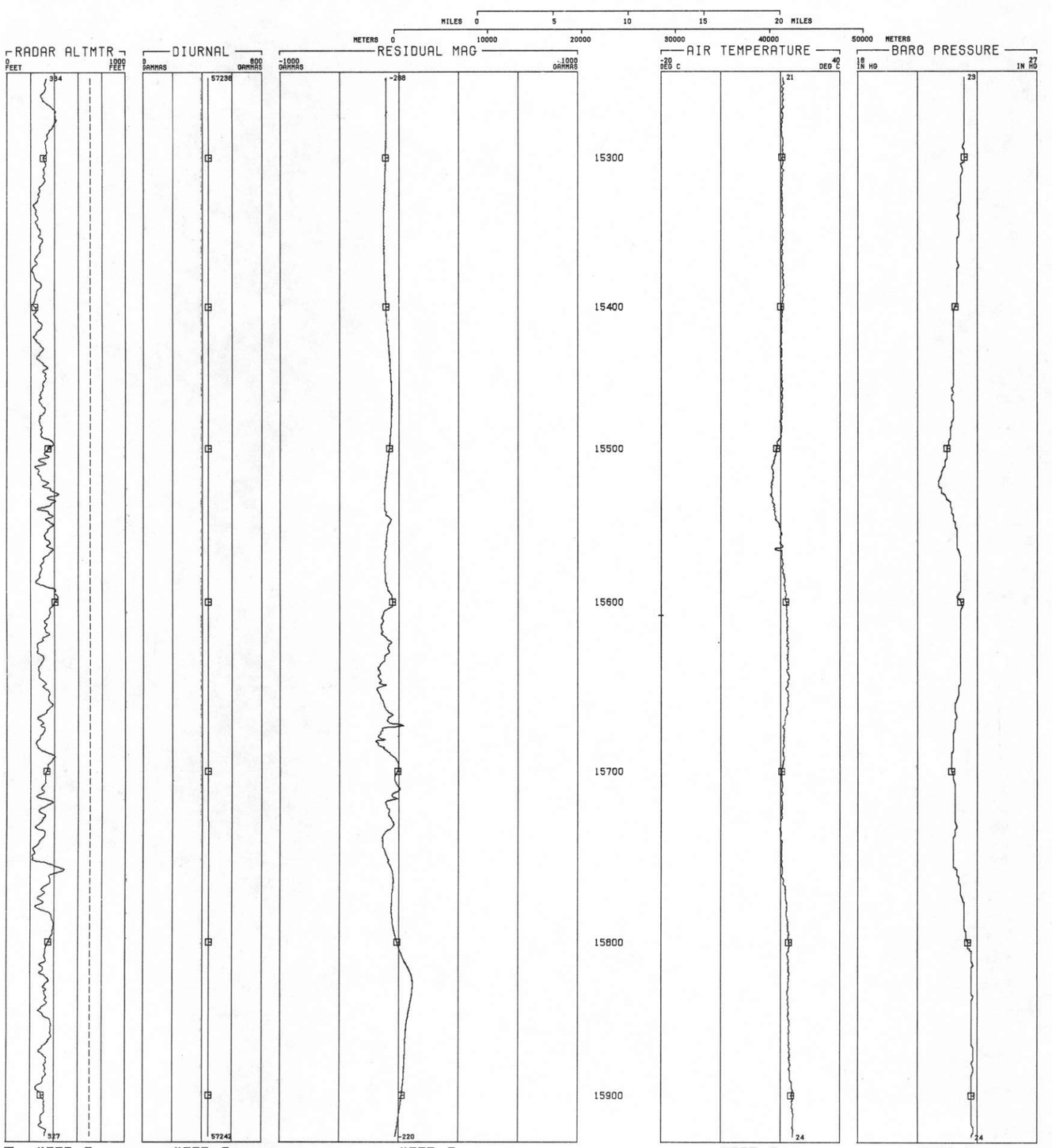
DIURNAL GAMMAS
MIN 57246
MAX 57246
MEAN 57246
STD DEV .3218

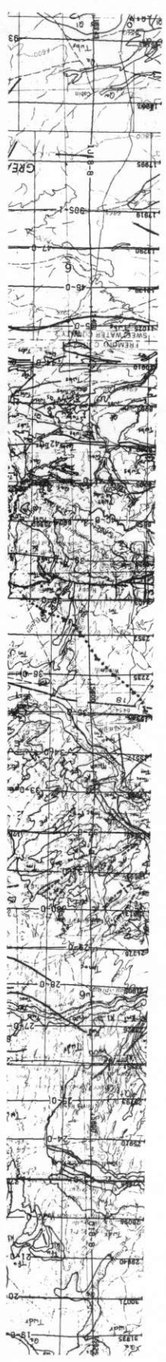
RESIDUAL MAG GAMMAS
MIN -380.4
MAX -107.4
MEAN -251.3
STD DEV 64.13

AIR TEMPERATURE DEG C
MIN 5.019
MAX 12.53
MEAN 9.157
STD DEV 1.878

BARO PRESSURE IN HG
MIN 23.09
MAX 25.30
MEAN 24.27
STD DEV .4969

LINE TL18
P0WDER RIVER II - CASPER NTMS NK 13-4 GE0METRICS
DATA ACQUIRED 78266





APPENDIX C – Standard Deviation Maps

CASPER

108 00 | 107 30 | 107 00 | 106 30 | 106 00

43 00

42 30

42 00

SCALE 1:500,000

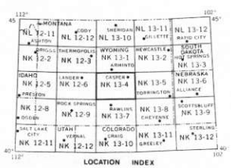
MILES 5 0 5 10 15 MILES

KILOMETRES 5 0 5 10 15 20 25 30 KILOMETRES

N

O - DATA STATISTICALLY ADEQUATE
BLANK - DATA STATISTICALLY INADEQUATE
● - 1 σ ABOUT MEASURE OF CENTRAL TENDENCY

NOTE: ON E-W LINES, +σ TO NORTH, -σ TO SOUTH.
ON N-S LINES, +σ TO WEST, -σ TO EAST.



LOCATION INDEX

SURVEY AND COMPILATION BY:

EG&G GEOME... ...S

POTASSIUM STANDARD DEVIATION MAP

POWDER RIVER II PROJECT

U. S. DEPARTMENT OF ENERGY

CASPER

108 00 | 107 30 | 107 00 | 106 30 | 106 00

43 00

42 30

42 00

SCALE 1:500,000

MILES 0 5 10 15

KILOMETRES 0 5 10 15 20 25 30 35

O - DATA STATISTICALLY ADEQUATE
BLANK - DATA STATISTICALLY INADEQUATE
σ - 1 σ ABOUT MEASURE OF CENTRAL TENDENCY

NOTE: ON E-W LINES, +σ TO NORTH, -σ TO SOUTH.
ON N-S LINES, +σ TO WEST, -σ TO EAST.

SURVEY AND COMPILATION BY:

EG&G GEOMETRICS

N

LOCATION INDEX

NL 12-11	MONTANA COOK CITY	NL 12-12	NL 13-10	NL 13-11 LILLETTE	NL 13-12
NK 12-2	MILES CITY	THERMOPOLIS NK 12-3	WYOMING NK 13-1 ARMINTO	NEWCASTLE NK 13-2	BELLE FOURCHE RAPID CITY NK 13-3
IDAHO NK 12-5 PRESTON	JASPER NK 12-6		CASPER NK 13-4	NK 13-5 TORRINGTON	NEBRASKA NK 13-6 ALLIANCE
NK 12-8 OGDEN	ROCK SPRINGS NK 12-9		RAWLINS NK 13-7	NK 13-8 CHEYENNE	SCOTTSBLUFF NK 13-9
SALT LAKE CITY NK 12-11	UTAH VERNAL NK 12-12		COLORADO CRAIG NK 13-10	NK 13-11 GREELEY	STERLING NK 13-12

URANIUM STANDARD DEVIATION MAP

POWDER RIVER II PROJECT

U. S. DEPARTMENT OF ENERGY

CASPER

108 00 | 107 30 | 107 00 | 106 30 | 106 00

43 00

42 30

42 00

SCALE 1:500,000

MILES 5 0 5 10 15 MILES

KILOMETRES 5 0 5 10 15 20 25 30 KILOMETRES

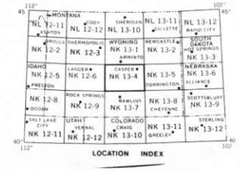
N

SURVEY AND COMPILATION BY:

EG&G GEOMETRICS

○ – DATA STATISTICALLY ADEQUATE
BLANK – DATA STATISTICALLY INADEQUATE
● – 1 σ ABOUT MEASURE OF CENTRAL TENDENCY

NOTE: ON E–W LINES, +σ TO NORTH, –σ TO SOUTH.
ON N–S LINES, +σ TO WEST, –σ TO EAST.



THORIUM STANDARD DEVIATION MAP

POWDER RIVER II PROJECT

U. S. DEPARTMENT OF ENERGY

CASPER

108 00 | 107 30 | 107 00 | 106 30 | 106 00

43 00

42 30

42 00

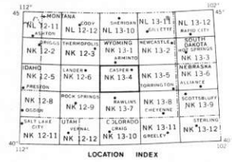
SCALE 1:500,000

MILES 5 0 5 10 15 MILES

KILOMETRES 5 0 5 10 15 20 25 30 KILOMETRES

O - DATA STATISTICALLY ADEQUATE
BLANK - DATA STATISTICALLY INADEQUATE
± 1 σ ABOUT MEASURE OF CENTRAL TENDENCY

NOTE: ON E-W LINES, +σ TO NORTH, -σ TO SOUTH.
ON N-S LINES, +σ TO WEST, -σ TO EAST.



SURVEY AND COMPILATION BY:

EG&G GEOMETRICS

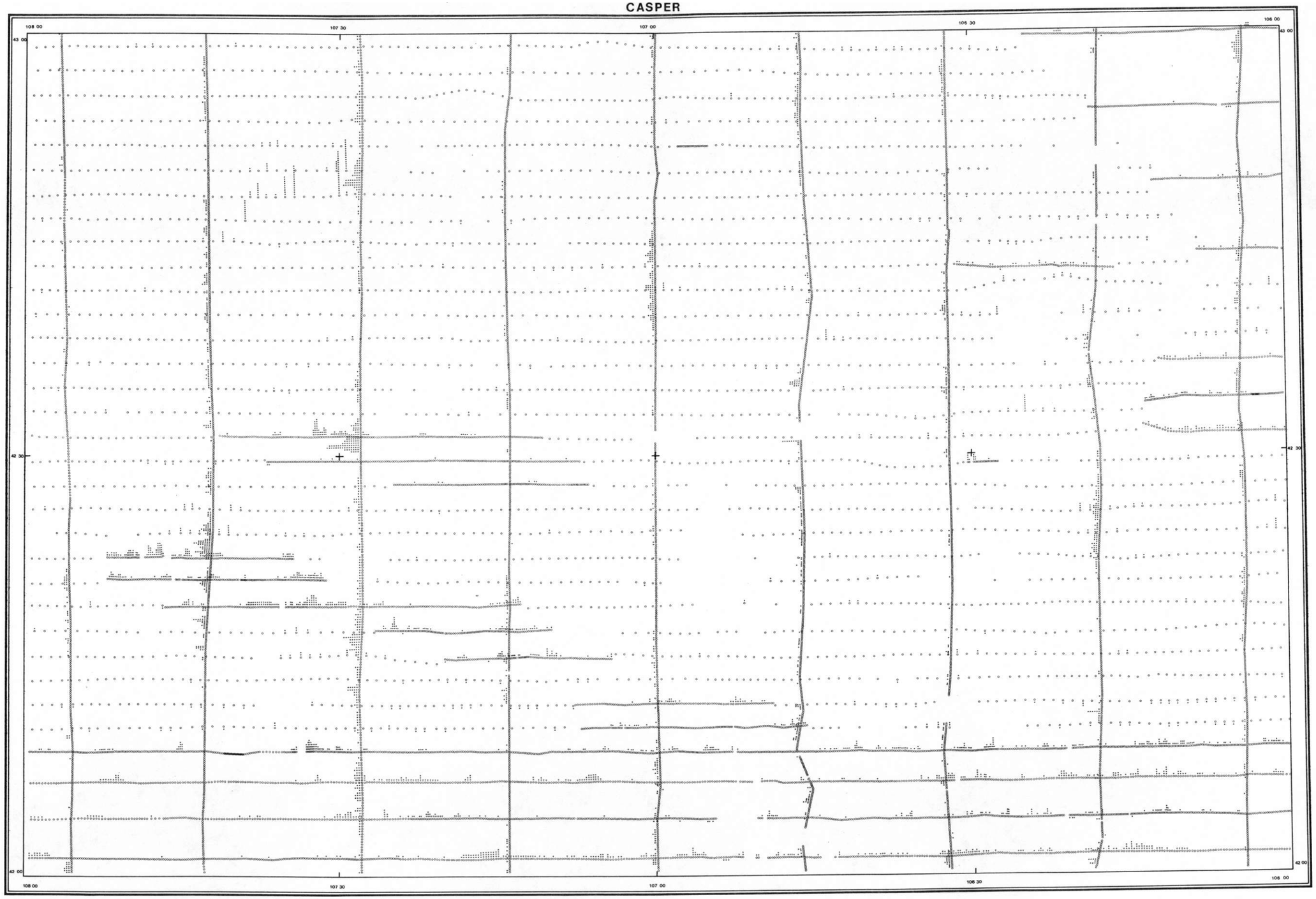
N

THORIUM/POTASSIUM STANDARD DEVIATION MAP

POWDER RIVER II PROJECT

U. S. DEPARTMENT OF ENERGY

CASPER



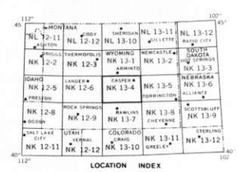
SCALE 1:500,000

MILES 5 0 5 10 15 MILES

KILOMETRES 5 0 5 10 15 20 25 30 KILOMETRES

O - DATA STATISTICALLY ADEQUATE
BLANK - DATA STATISTICALLY INADEQUATE
σ - 1 σ ABOUT MEASURE OF CENTRAL TENDENCY

NOTE: ON E-W LINES, +σ TO NORTH, -σ TO SOUTH.
ON N-S LINES, +σ TO WEST, -σ TO EAST.



URANIUM/POTASSIUM STANDARD DEVIATION MAP

POWDER RIVER II PROJECT

U. S. DEPARTMENT OF ENERGY

SURVEY AND COMPILATION BY:

EG&G GEOMETRICS

CASPER

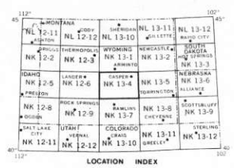
SCALE 1:500,000

MILES 5 0 5 10 15 MILES

KILOMETRES 5 0 5 10 15 20 25 30 KILOMETRES

O - DATA STATISTICALLY ADEQUATE
BLANK - DATA STATISTICALLY INADEQUATE
● - 1 σ ABOUT MEASURE OF CENTRAL TENDENCY

NOTE: ON E-W LINES, +σ TO NORTH, -σ TO SOUTH.
ON N-S LINES, +σ TO WEST, -σ TO EAST.



LOCATION INDEX

SURVEY AND COMPILATION BY:

EG&G GEOMETRICS

N

URANIUM/THORIUM STANDARD DEVIATION MAP

POWDER RIVER II PROJECT

U. S. DEPARTMENT OF ENERGY

APPENDIX D - Computer Map Units And Histograms

CASPER

COMPUTER MAP UNIT SYMBOL CONVERSION TABLE

Computer Map Unit Symbol	Geologic Map Unit Symbol	Computer Map Unit Symbol	Geologic Map Unit Symbol	Computer Map Unit Symbol	Geologic Map Unit Symbol	Computer Map Unit Symbol	Geologic Map Unit Symbol
QA	Qa	TU	Tu	KMB	Kmb	KJS	KJs
QAC	Qac	TWR	Twr	KFH	Kfh	JTRU	JTu
QC	Qc	TI	Ti	KLE	Kle	JTRP	JTp
QF	Qf	TWB	Twb	KLLE	Klle	TRC	Tc
QS	Qs	*TB	Tb	KLML	Klml	TRCD	Tcd
QT	Qt	TC	Tc	KML	Kml	TRPG	TPg
QTP	Qtp	TWBS	Twbs	KMV	Kmv	TRPCG	TPcg
QP	Qp	*TWM	Twm	KC	Kc	PPC	PPc
QL	Ql	TWDR	Twdr	KS	Ks	PM	PM
QLS	Qls	*TIM	Tim	KN	Kn	MM	Mm
*QTB	Qtb	*TLS	Tls	KSN	Ksn	MC	MC
TMS	Tms	TFU	Tfu	KF	Kf	CR	Cr
TM	Tm	*TFT	Tft	KCF	Kcf	MZPZ	MzPz
TMU	Tmu	TH	Th	KMT	Kmt	PZR	Pzr
*TML	Tml	TKF	Tkf	KJ	KJ	PC	pC
TMOC	Tmoc	KL	Kl	JS	Js	+TRPU	TPu

Notes: On the following pages, histograms for each computer map unit are included in the same order as they appear on the above list.

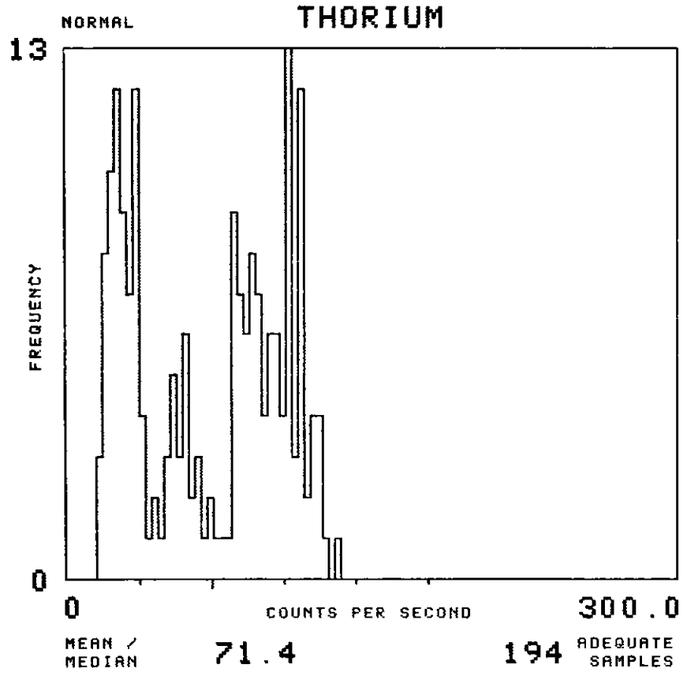
Geologic descriptions of the original geologic map units are in Appendix A.

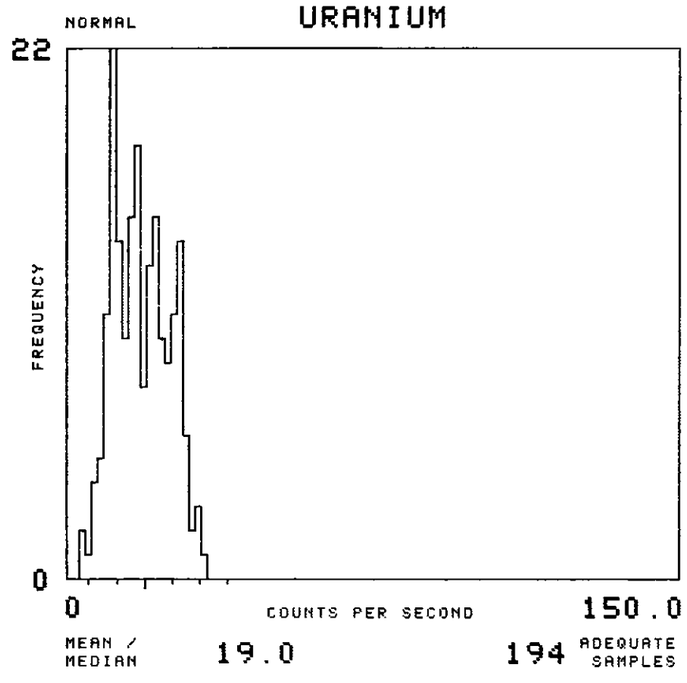
Areas over water or cultural features were assigned separate map unit symbols and were removed from the data block during processing.

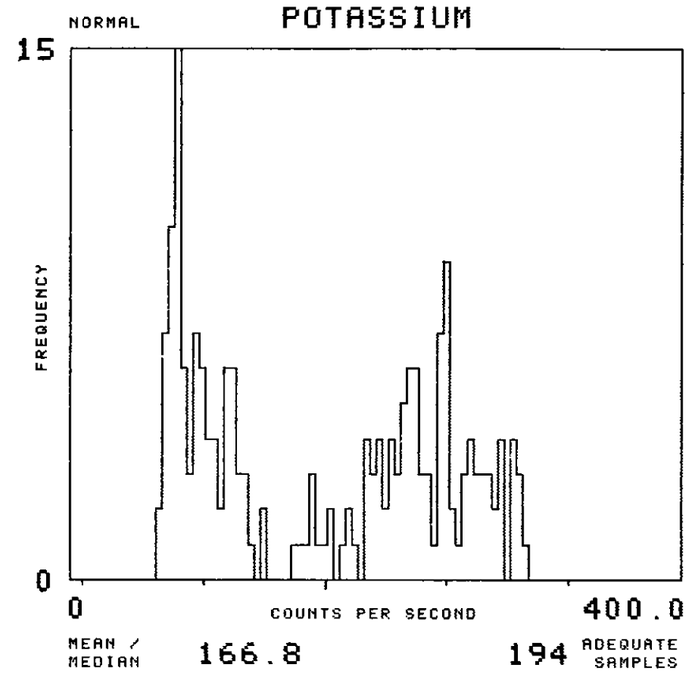
*A statistial analysis was not done due to an inadequate number of samples. Therefore, there are no histograms for units marked in this way.

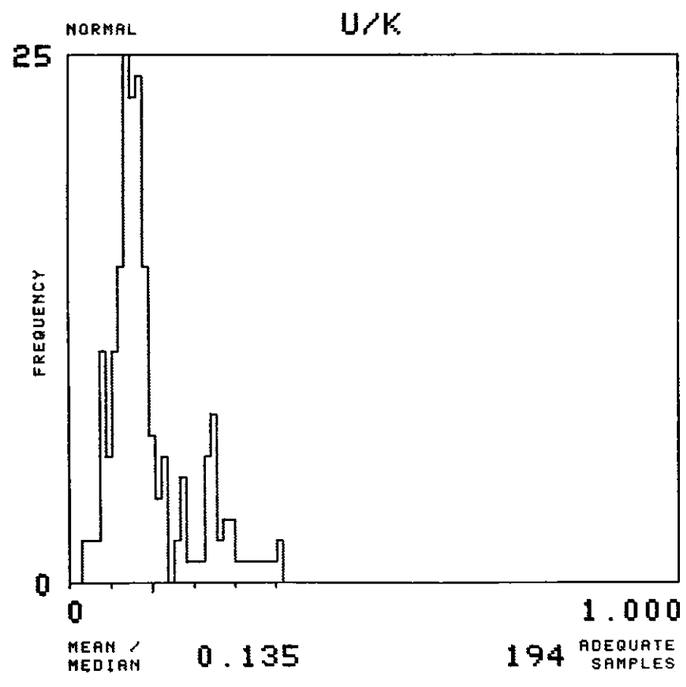
NTMS NK 13-4 CASPER

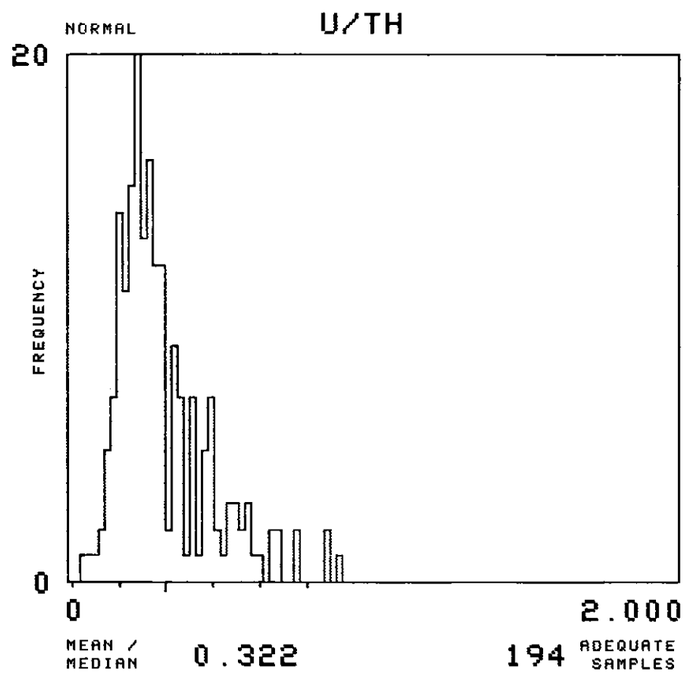
MAP UNIT : CR TOTAL NUMBER OF SAMPLES 202

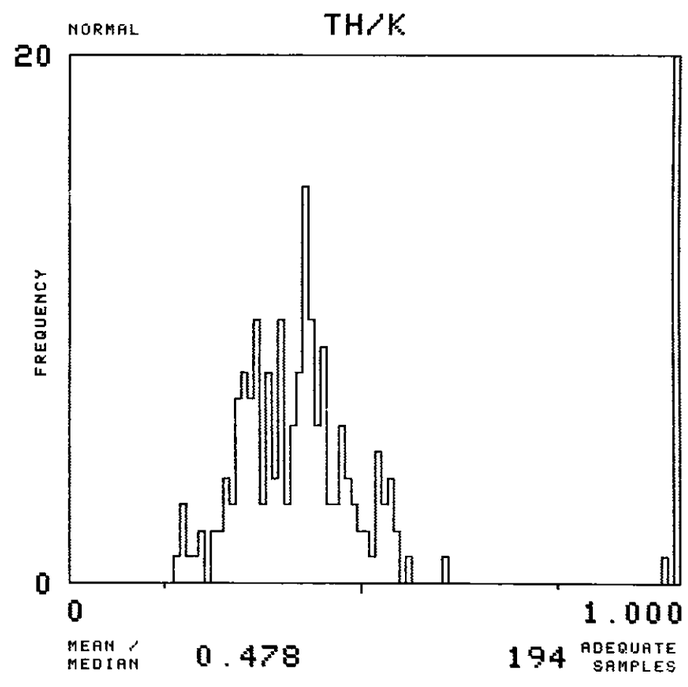






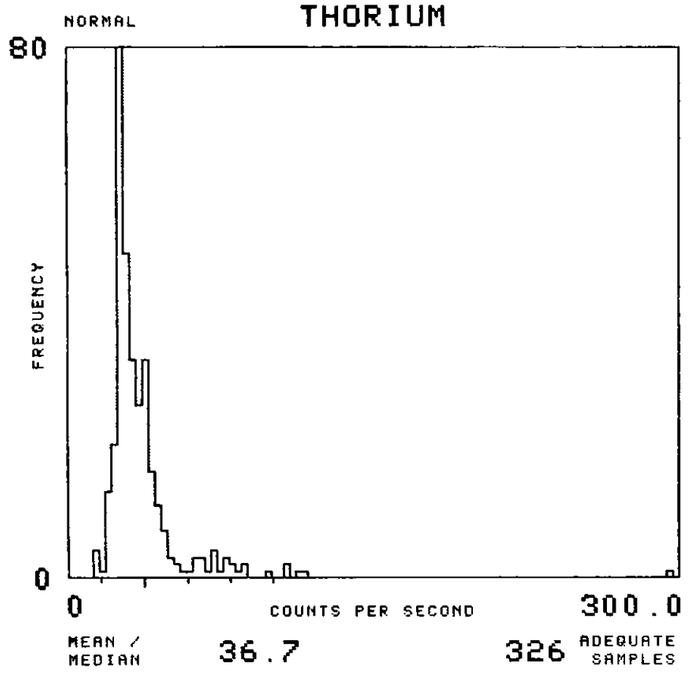


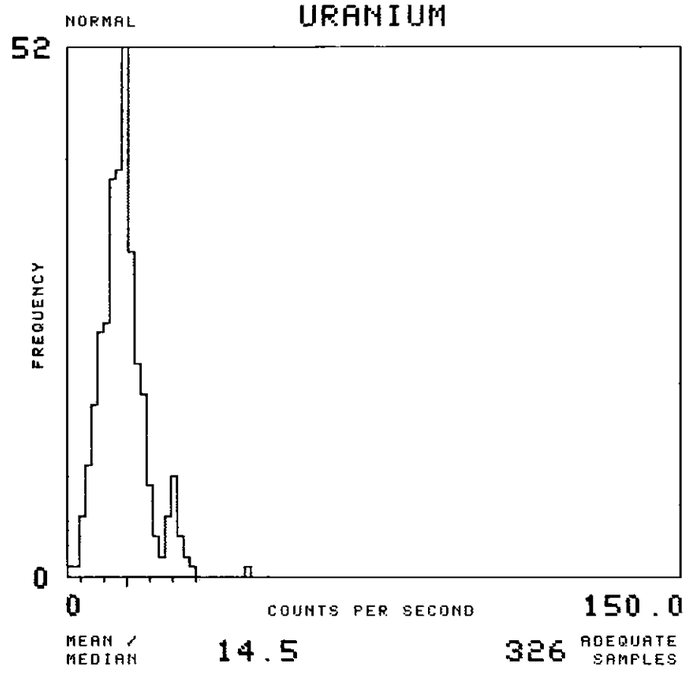


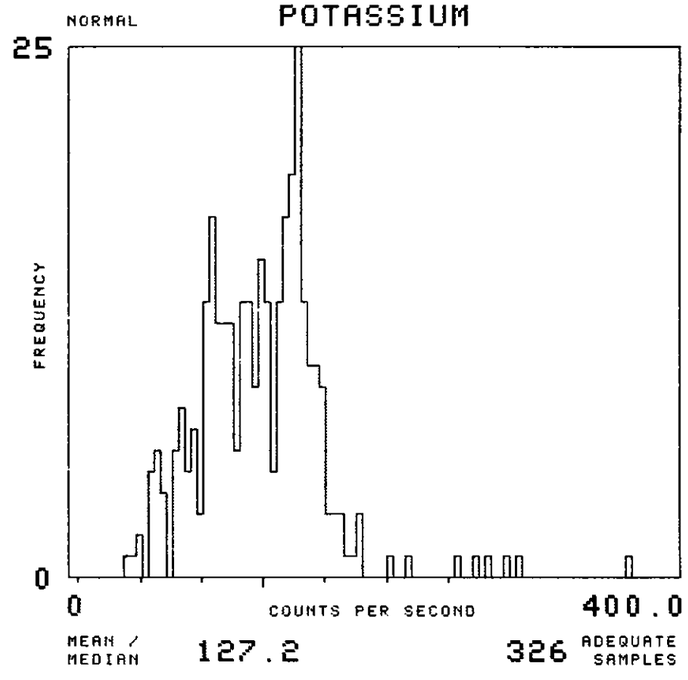


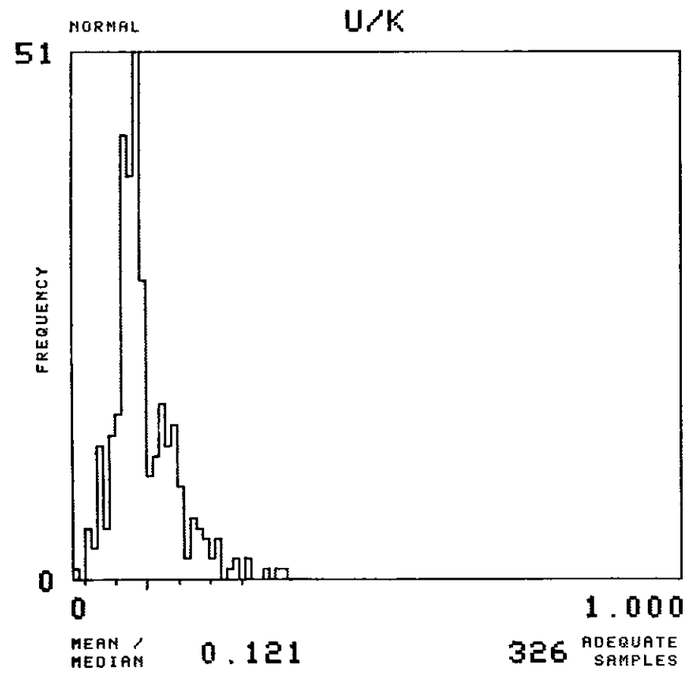
NTMS NK 13-4 CASPER

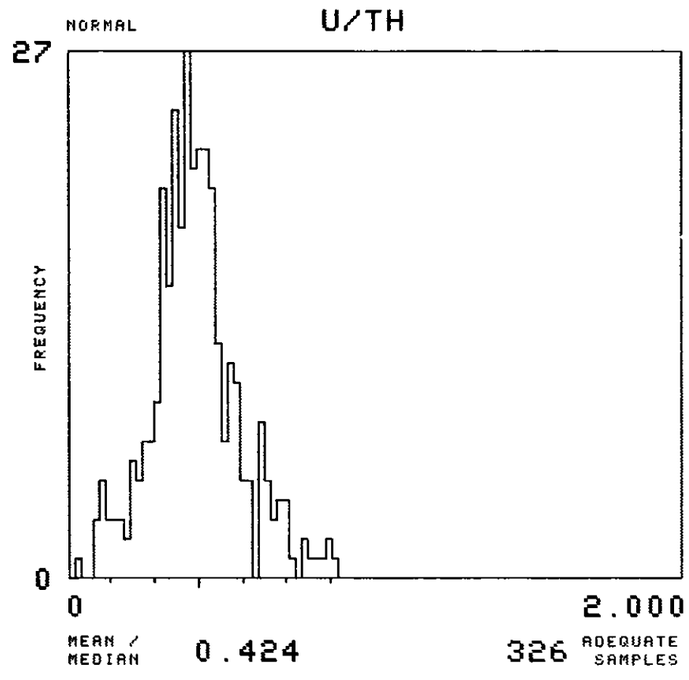
MAP UNIT : JS TOTAL NUMBER OF SAMPLES 333

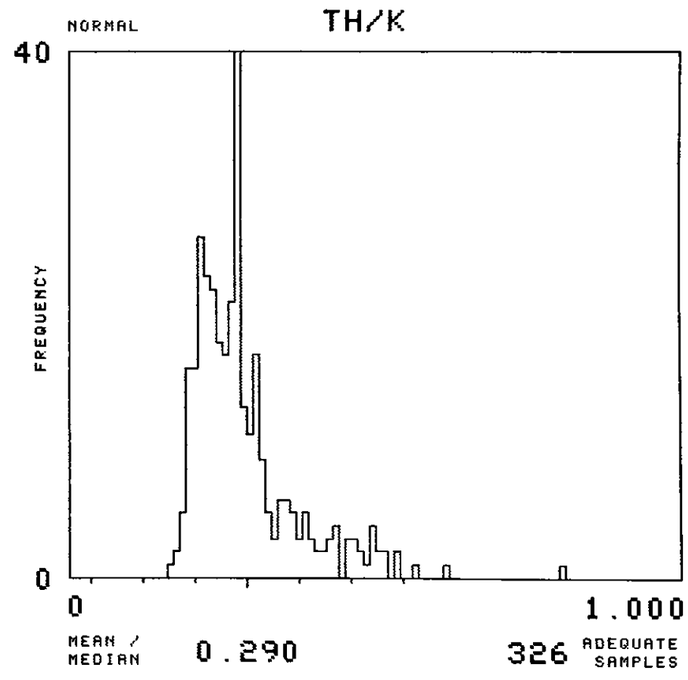












NTMS NK 13-4 CASPER

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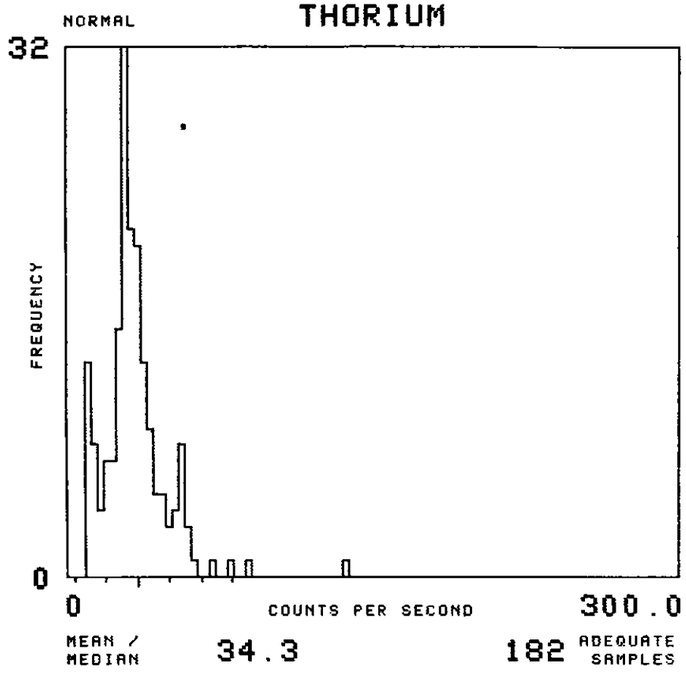

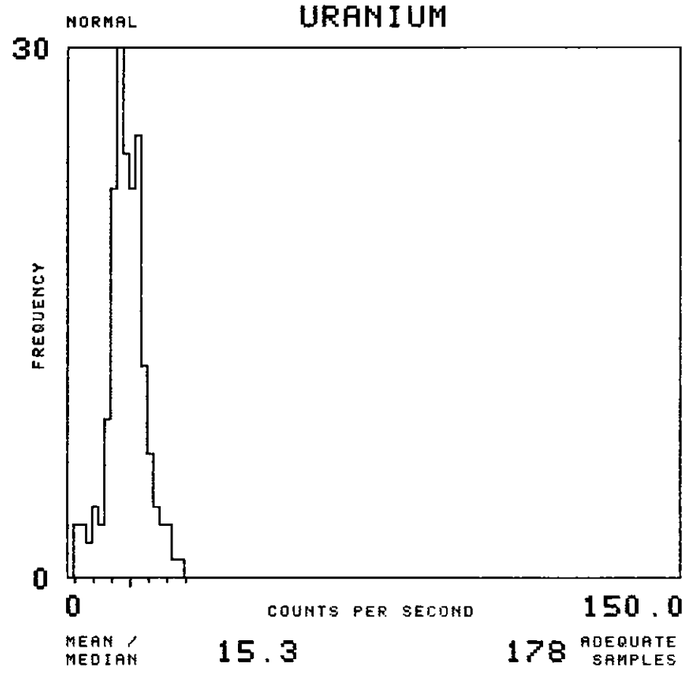

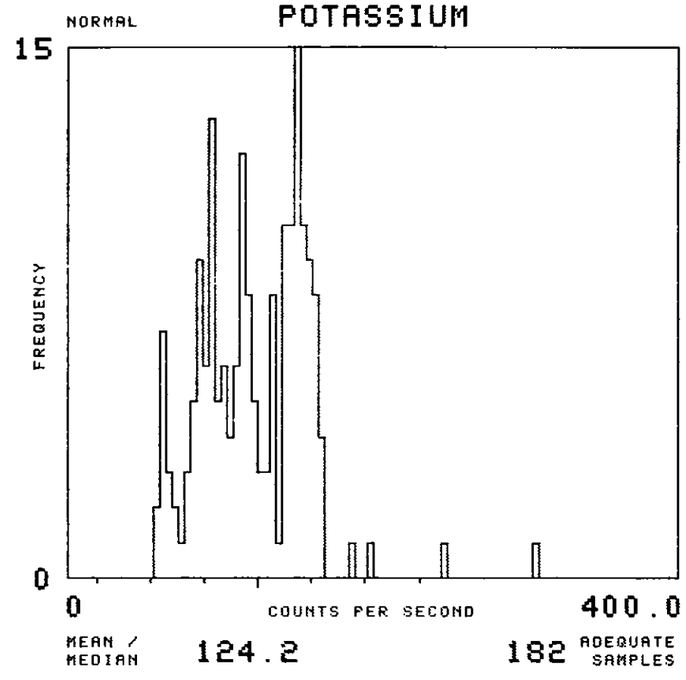

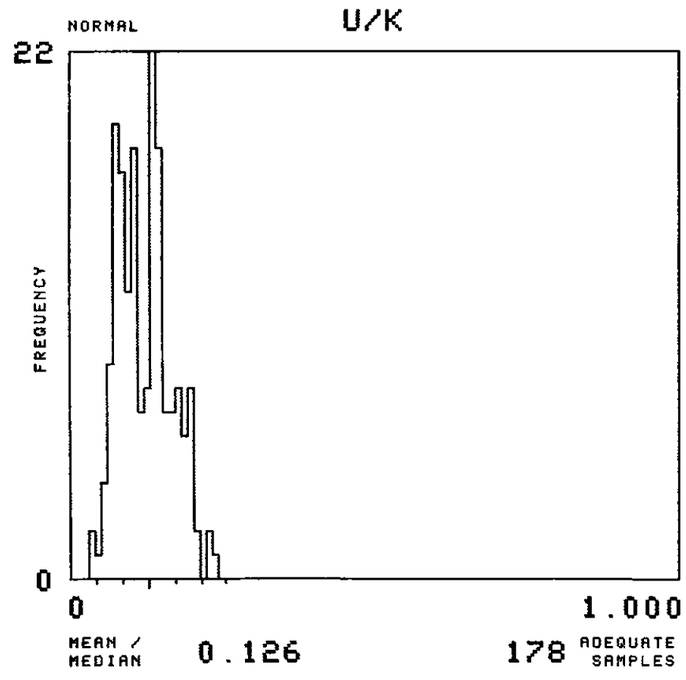

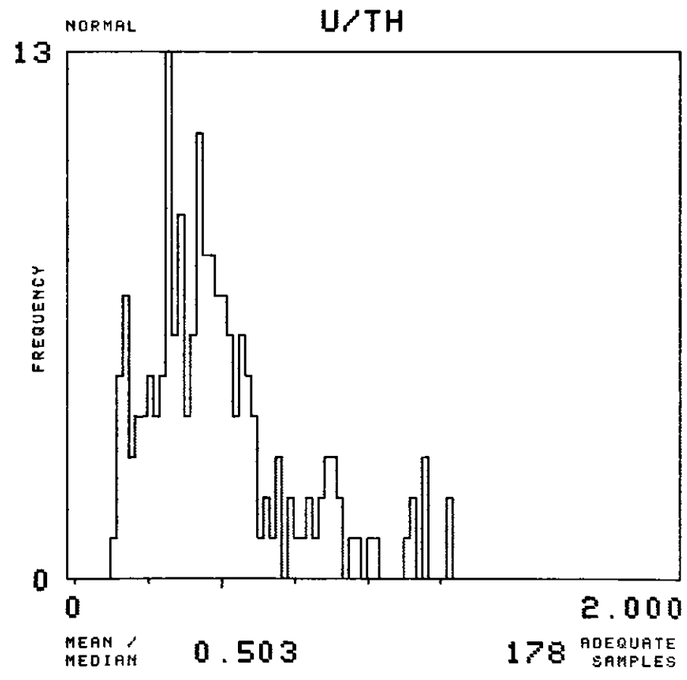

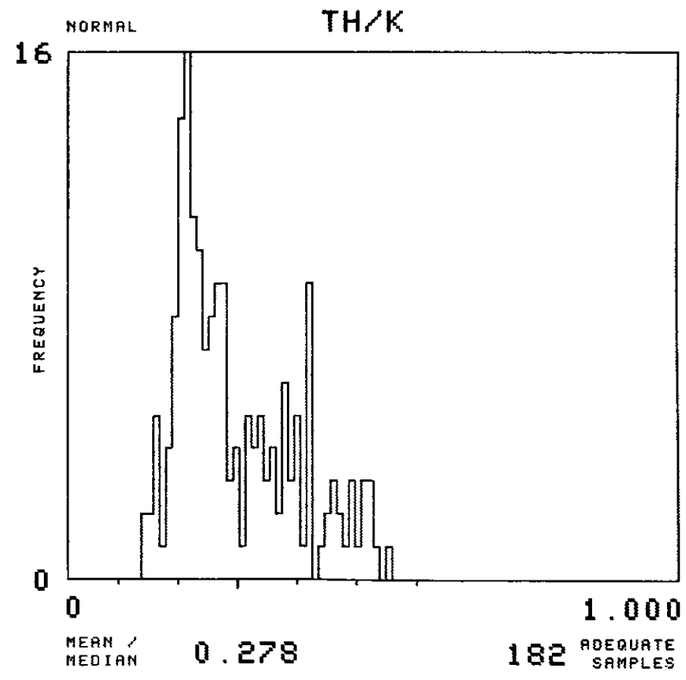

NTMS NK 13-4 CASPER

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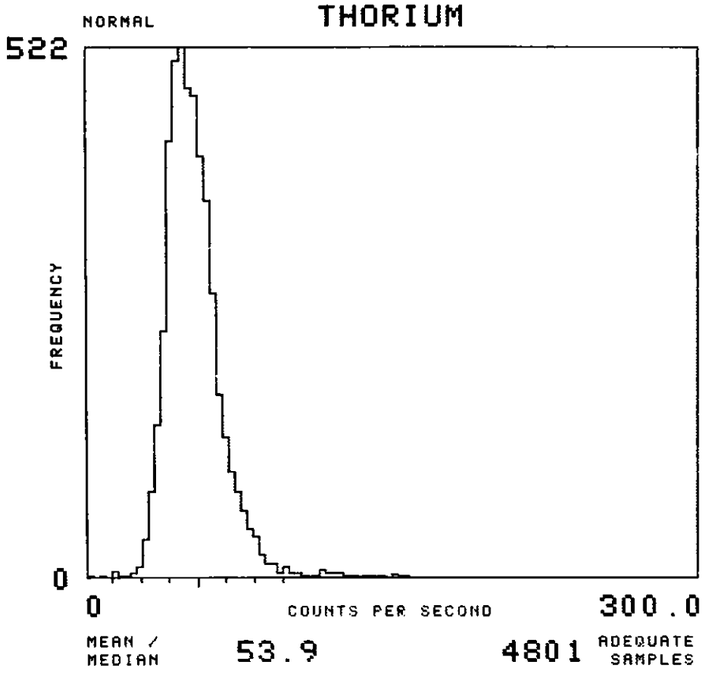

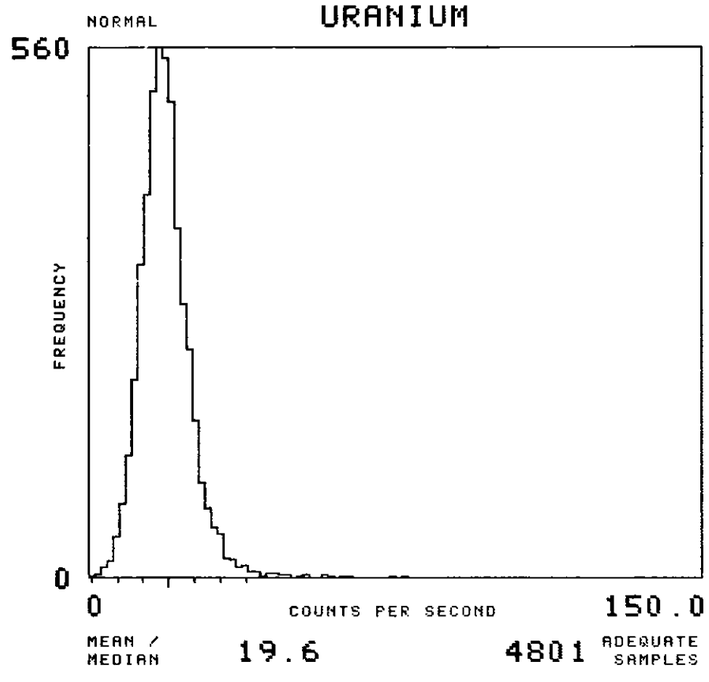

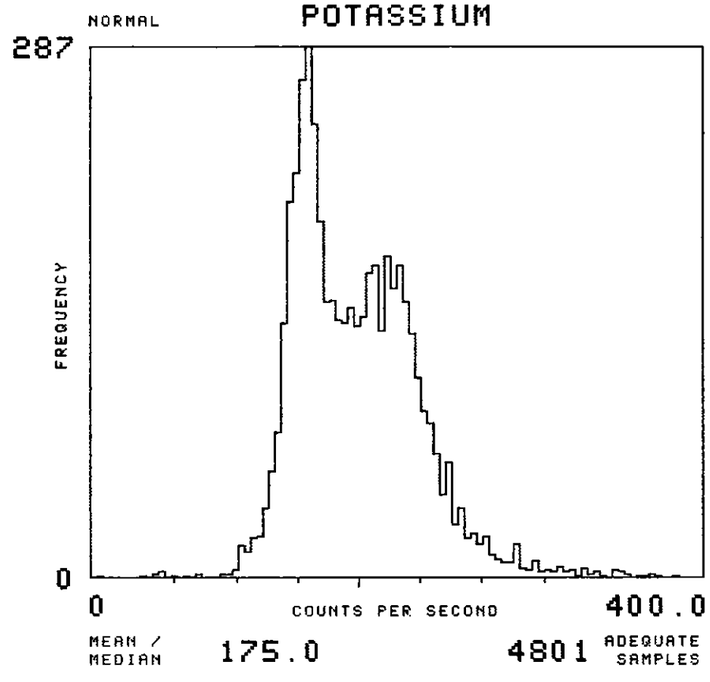

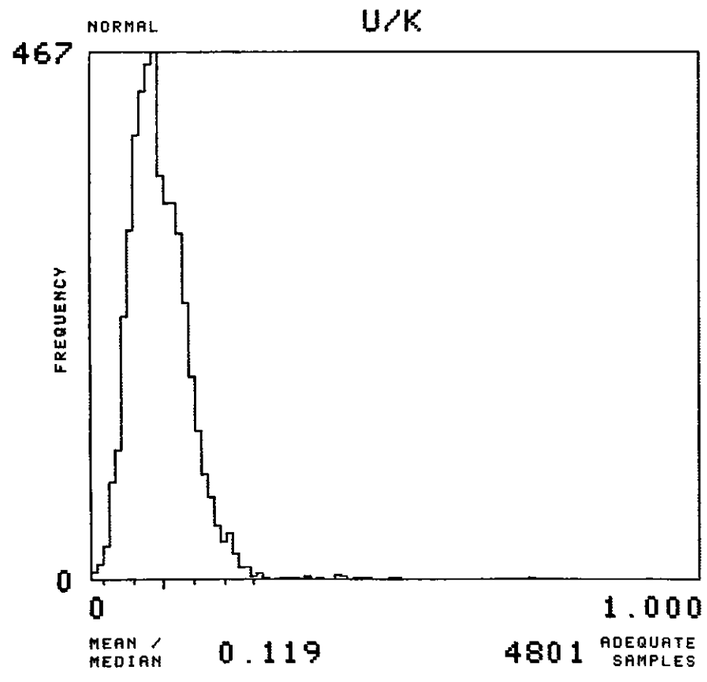

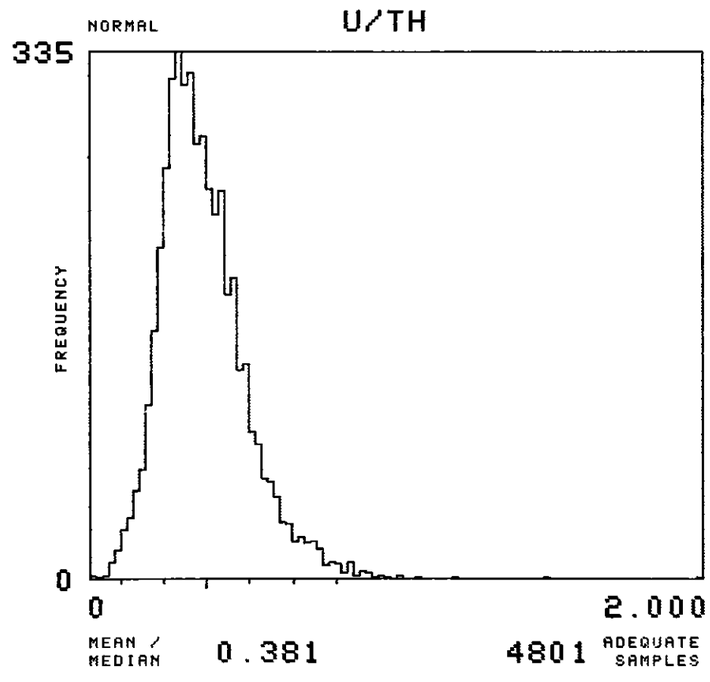

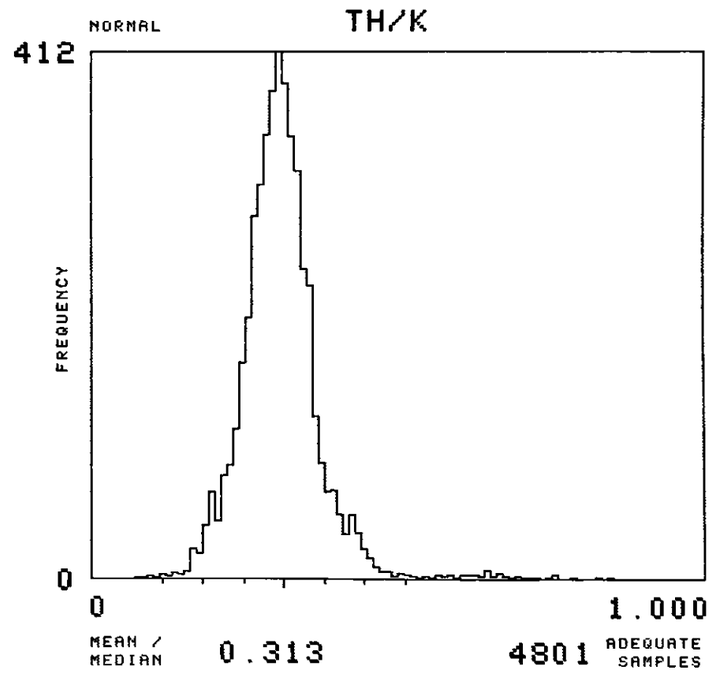

NTMS NK 13-4 CASPER

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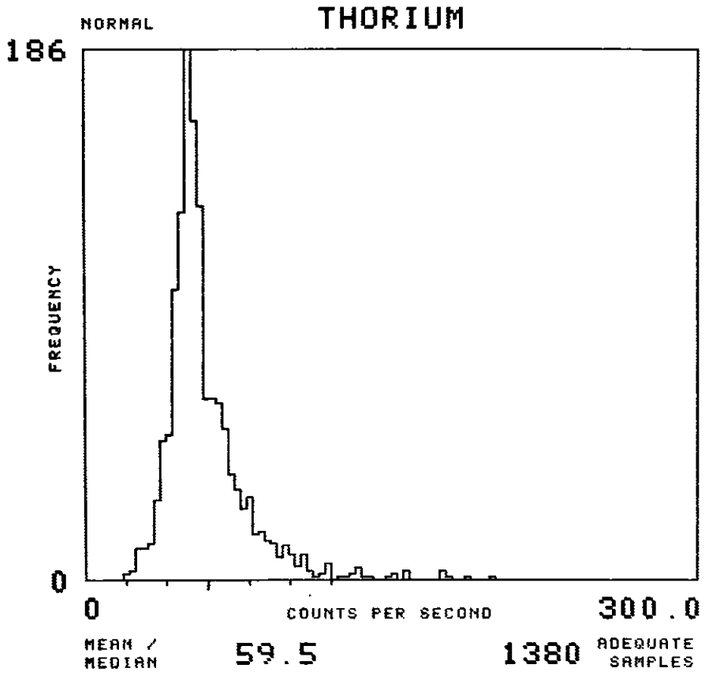

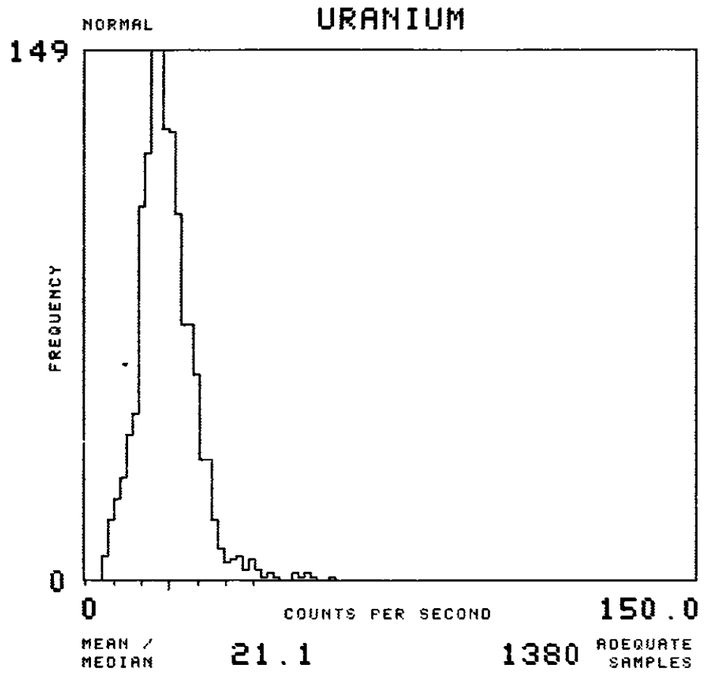

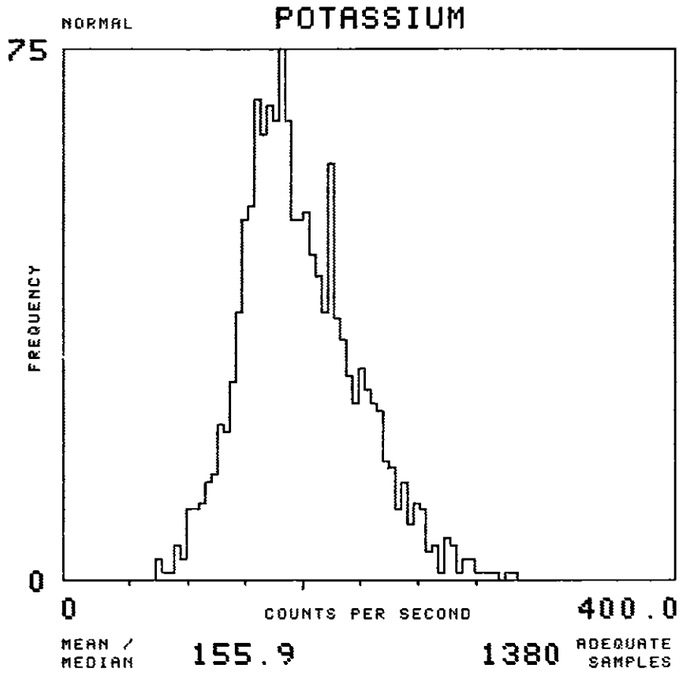

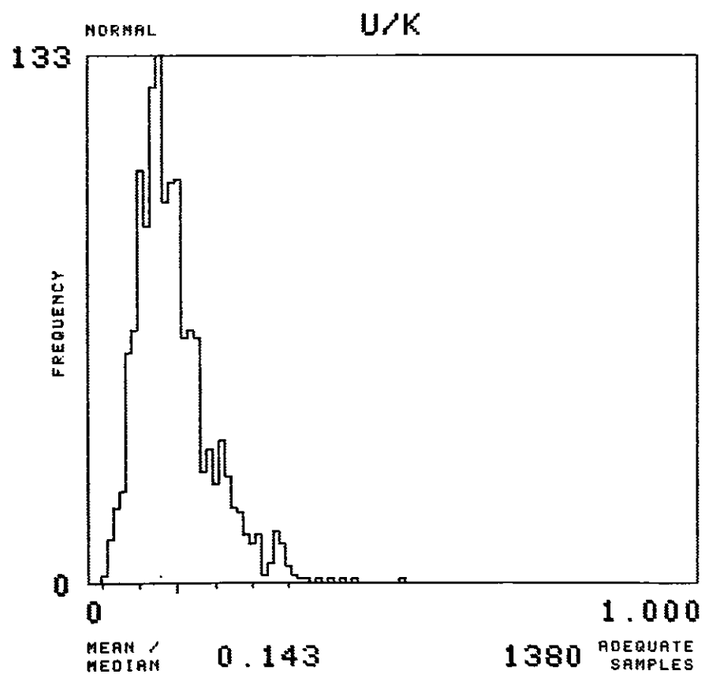

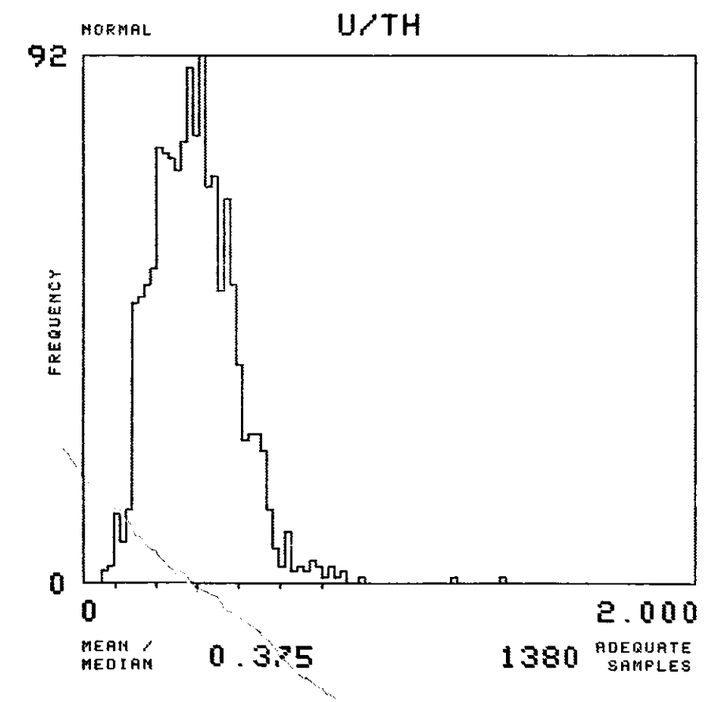

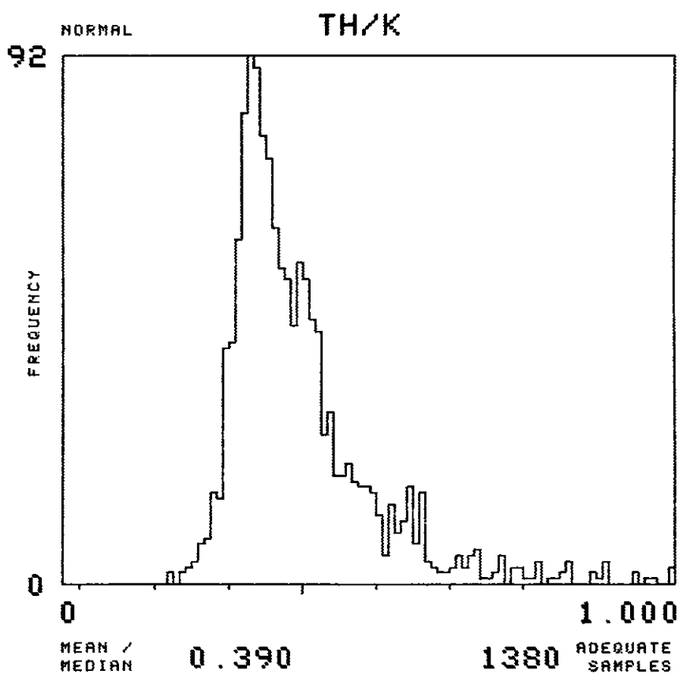

NTMS NK 13-4 CASPER

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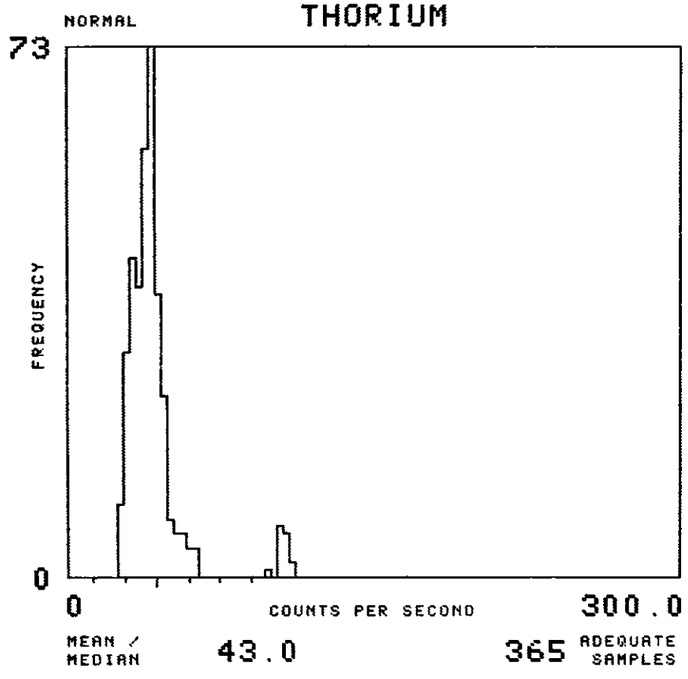
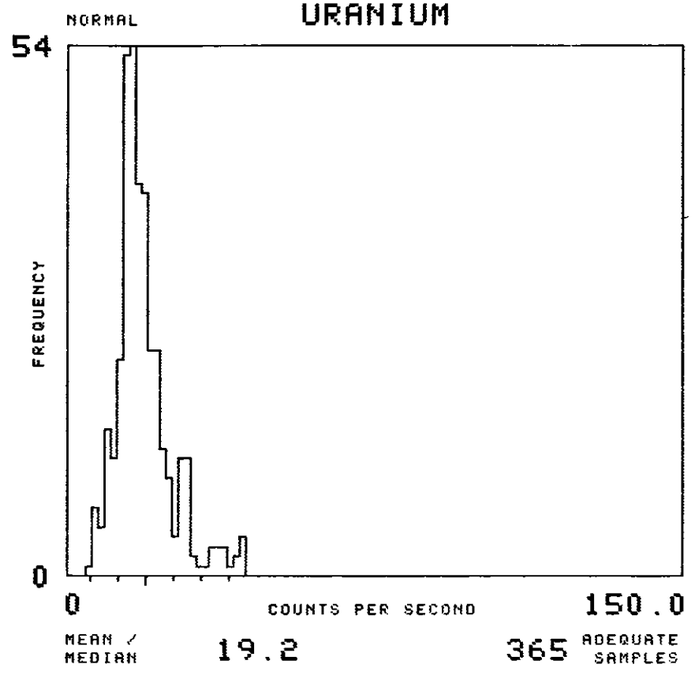
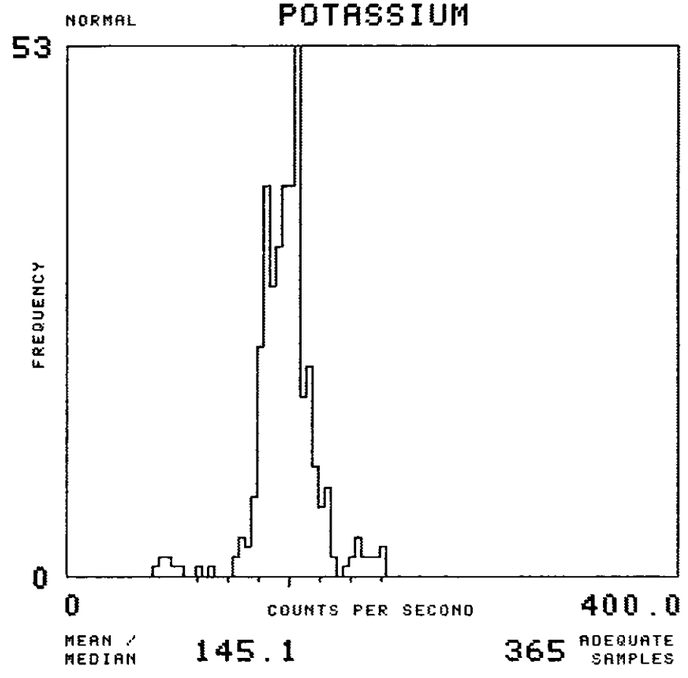
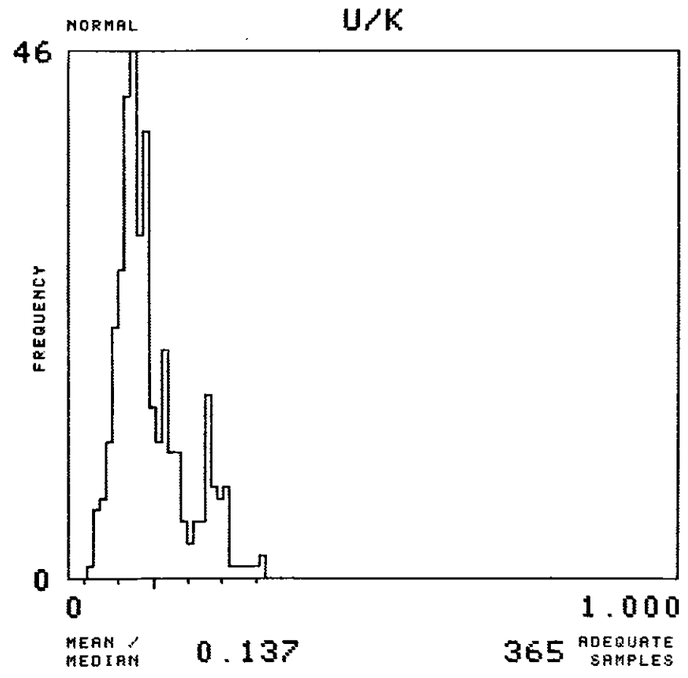
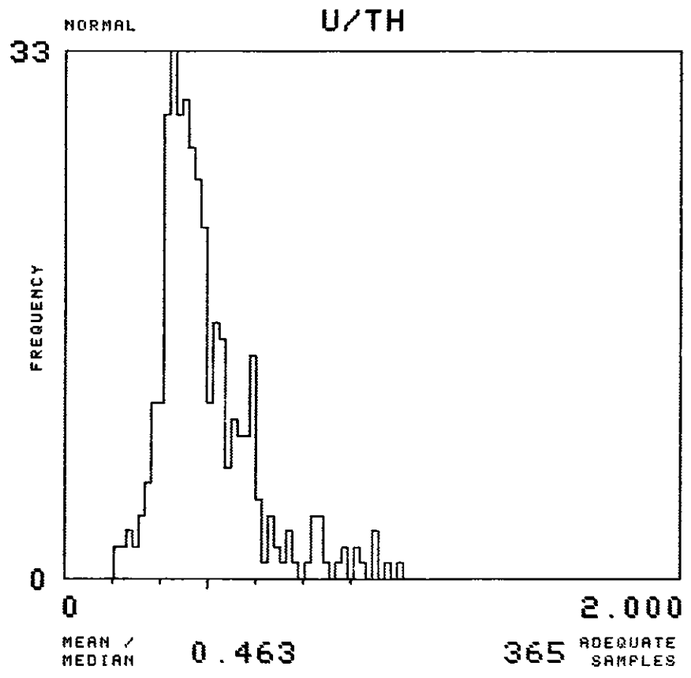
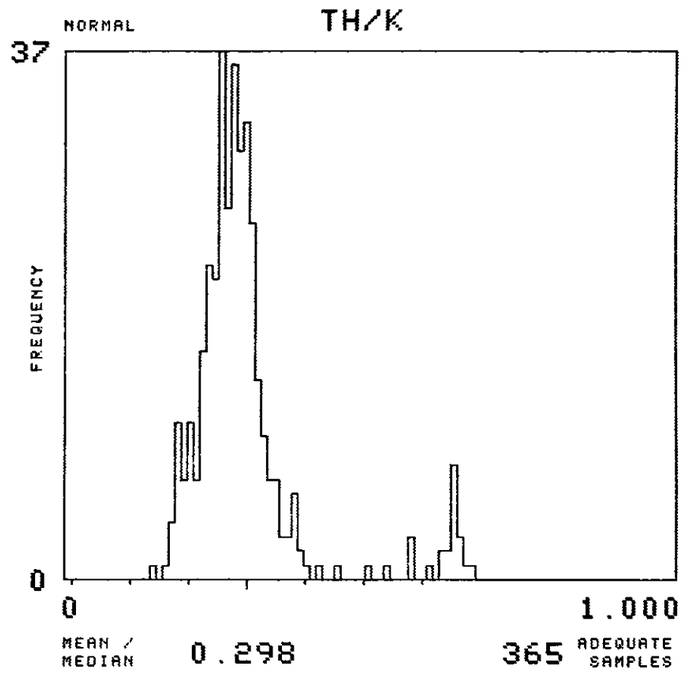






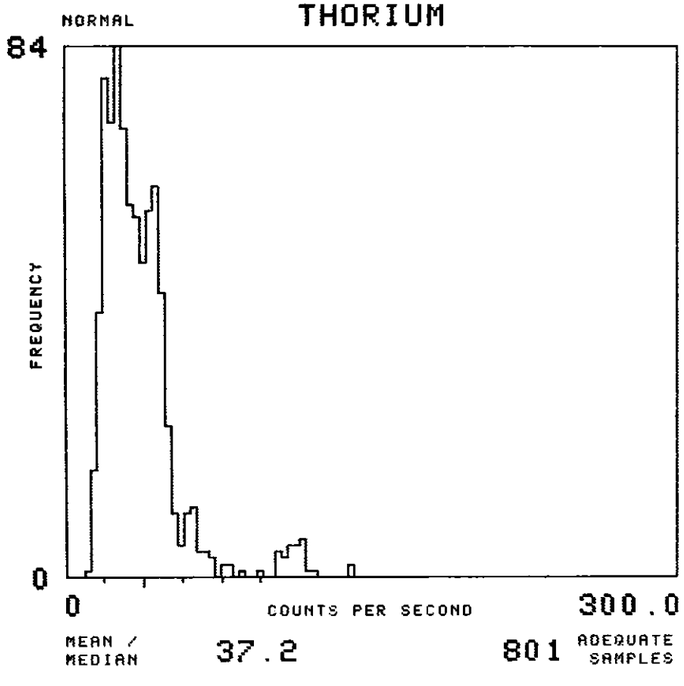


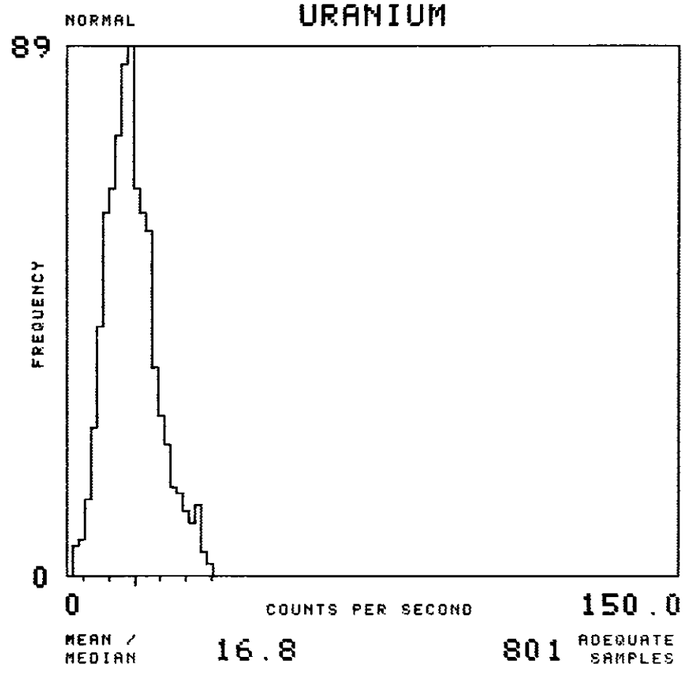


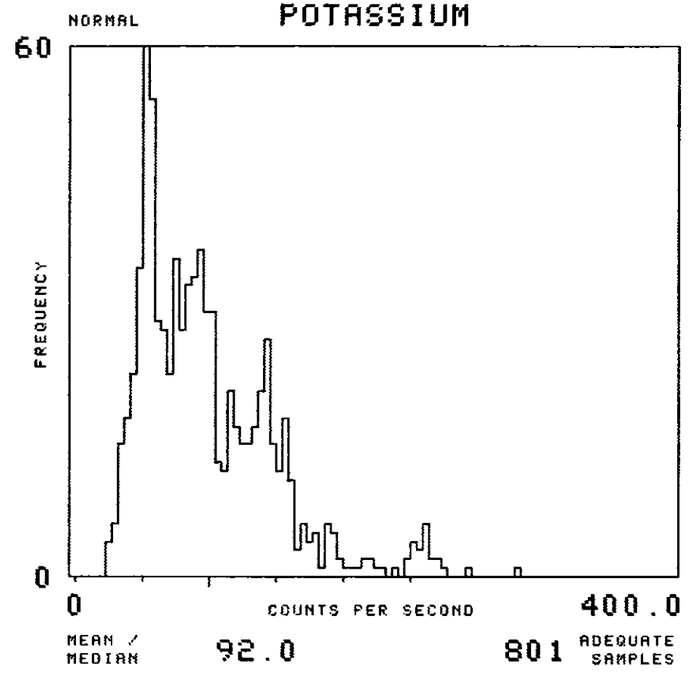


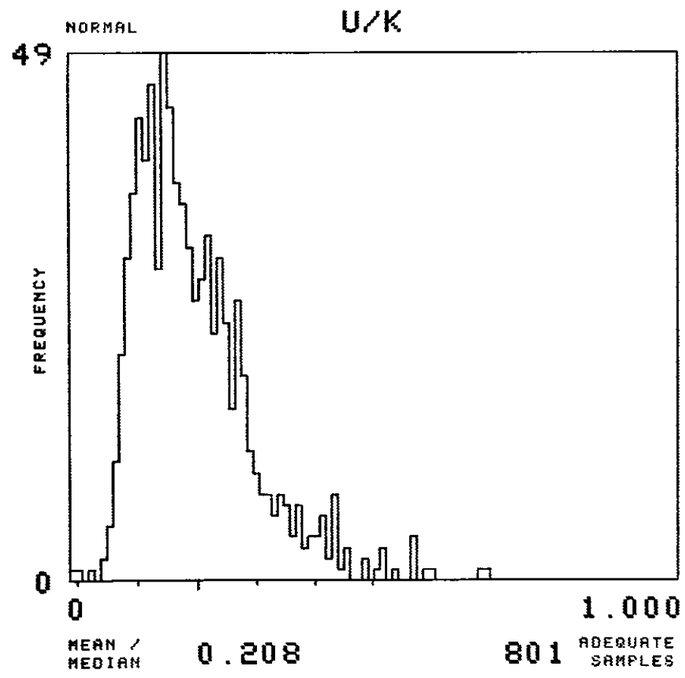
NTMS NK 13-4 CASPER

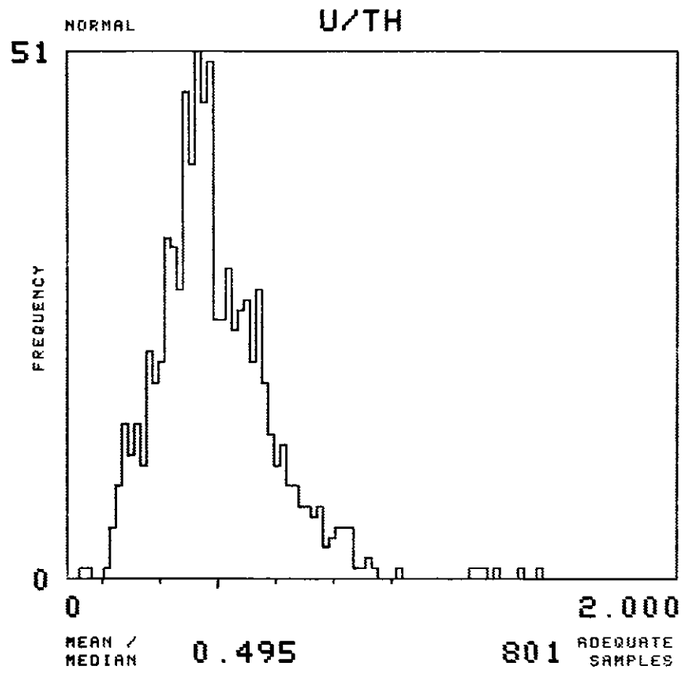
MAP UNIT : KJ TOTAL NUMBER OF SAMPLES 839

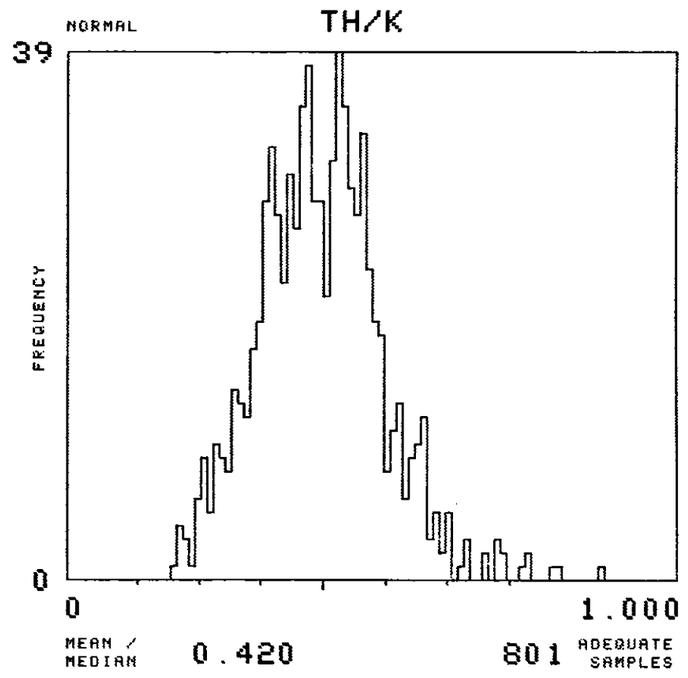






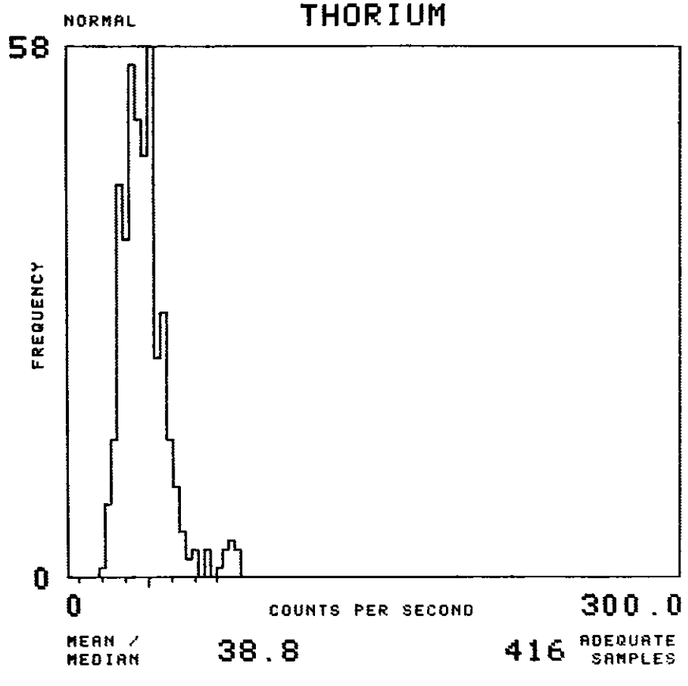


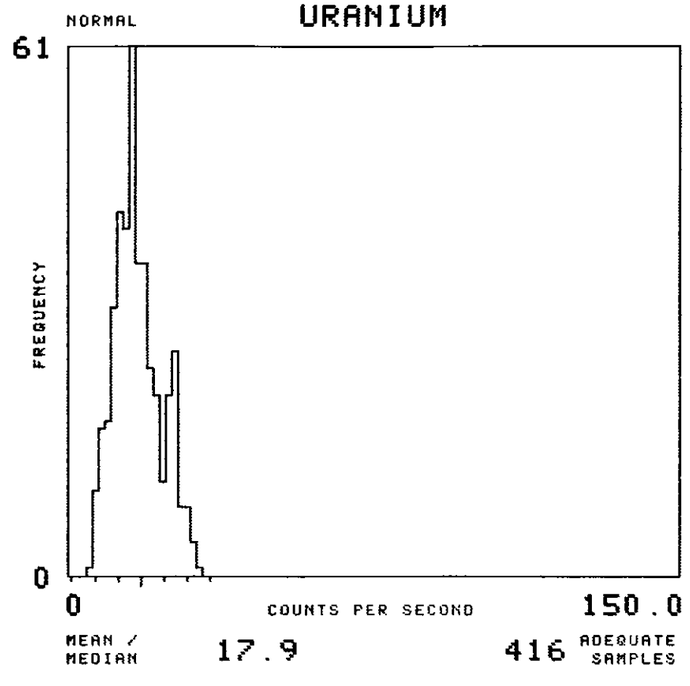


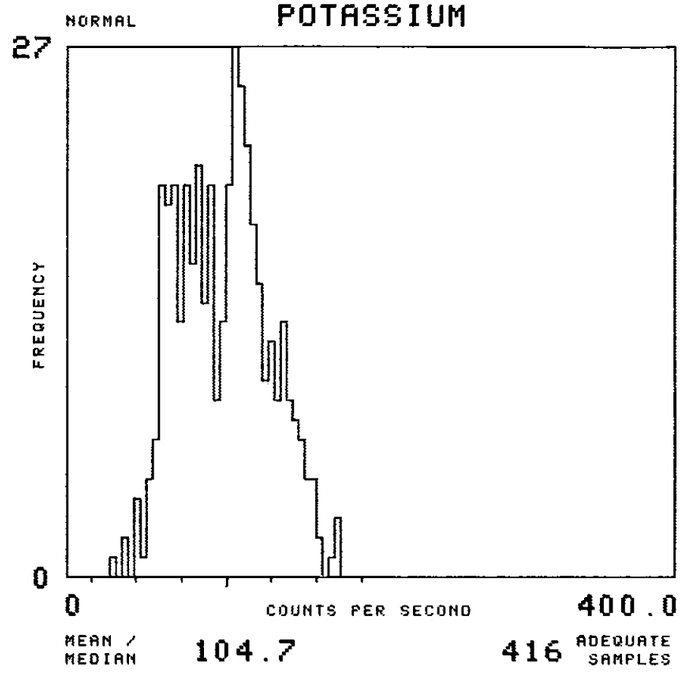


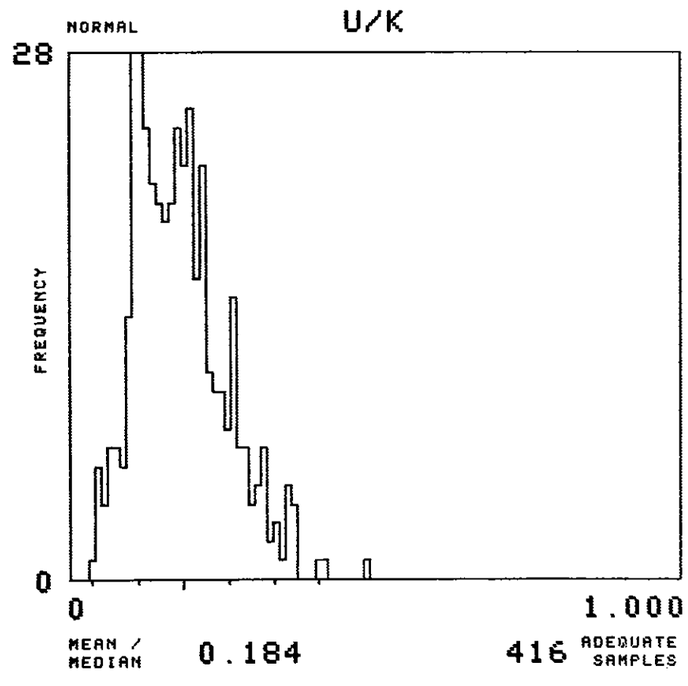
NTMS NK 13-4 CASPER

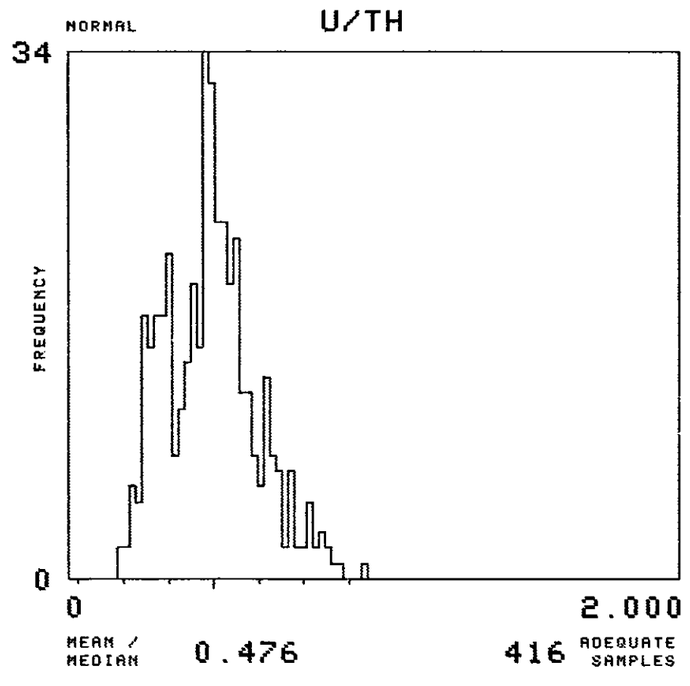
MAP UNIT : KJS TOTAL NUMBER OF SAMPLES 466

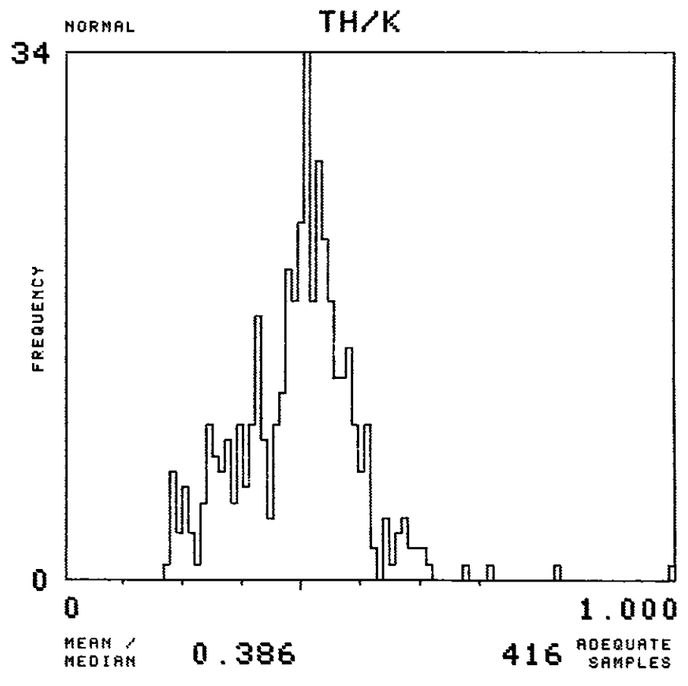






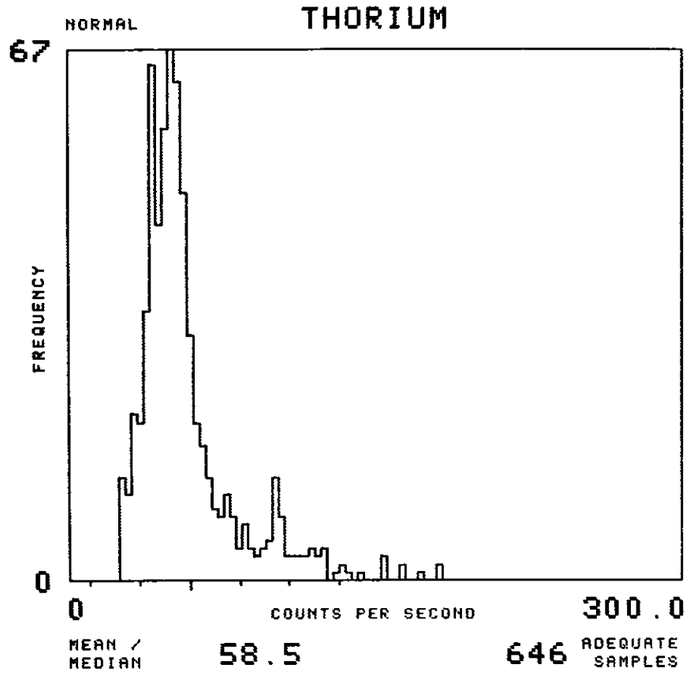


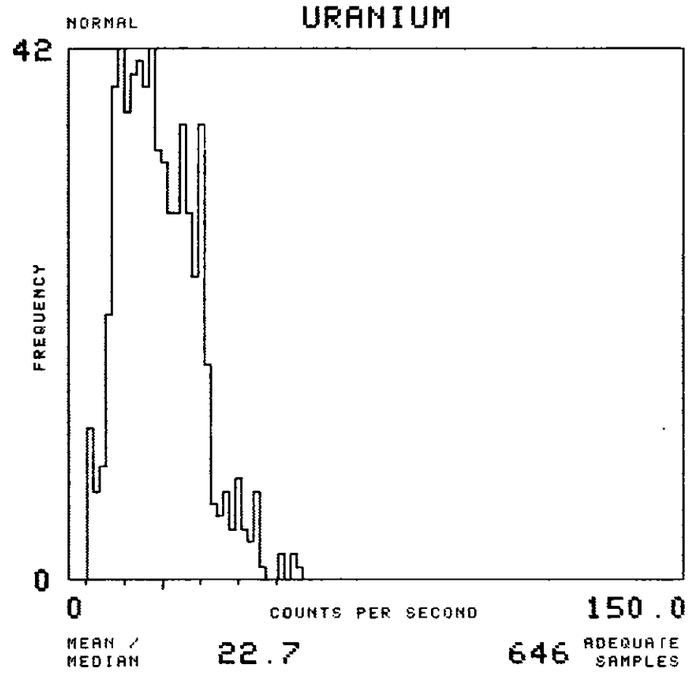


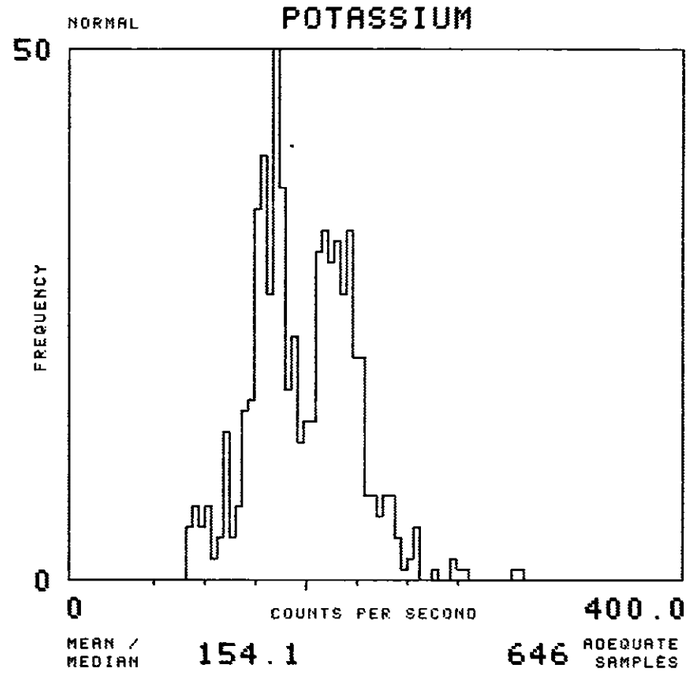


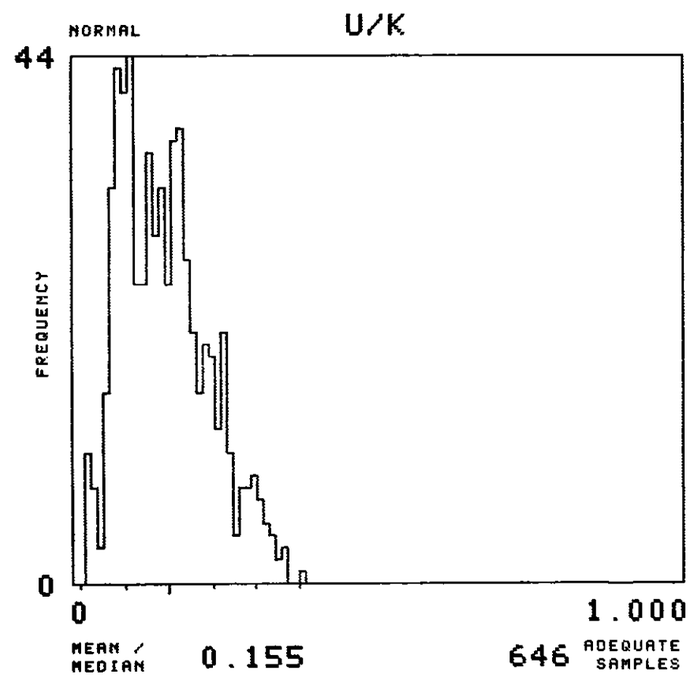
NTMS NK 13-4 CASPER

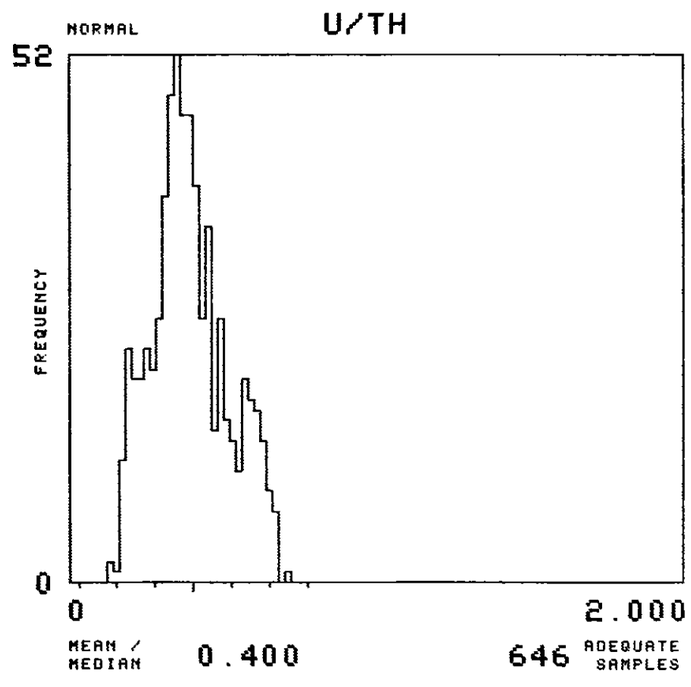
MAP UNIT : KL TOTAL NUMBER OF SAMPLES 663

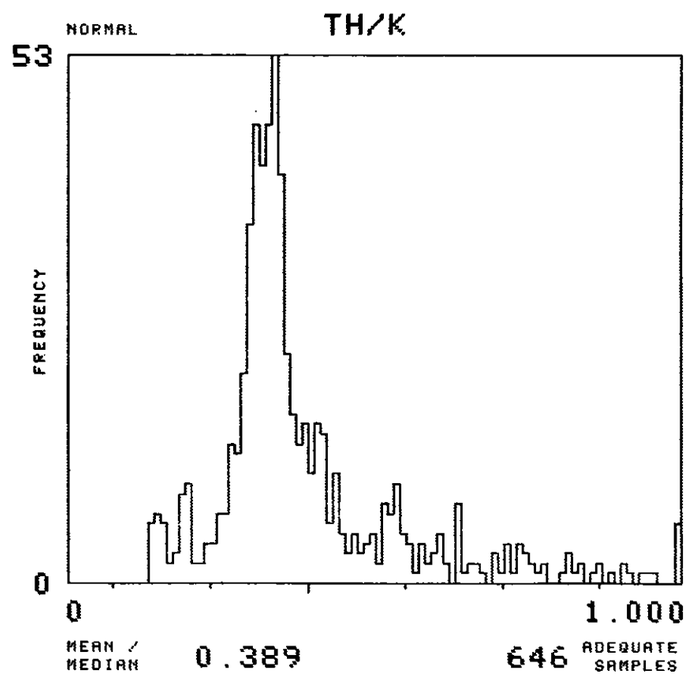






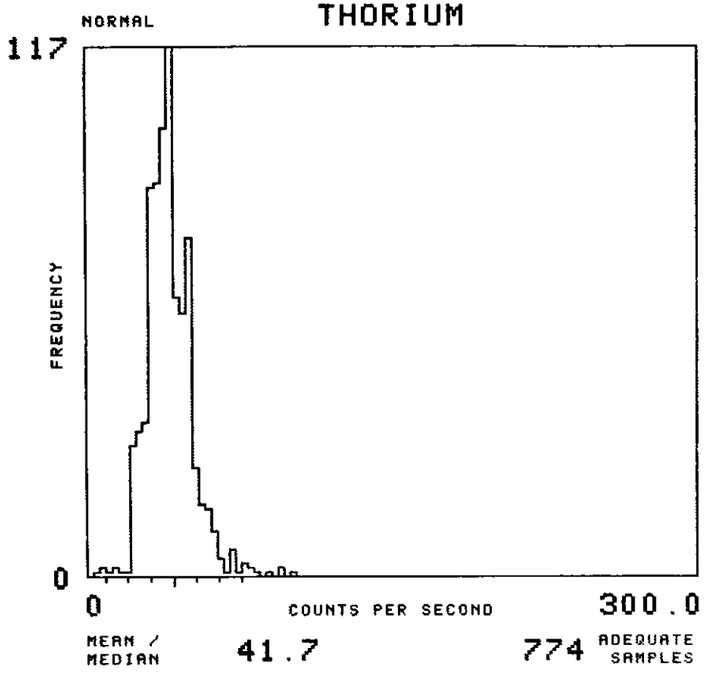


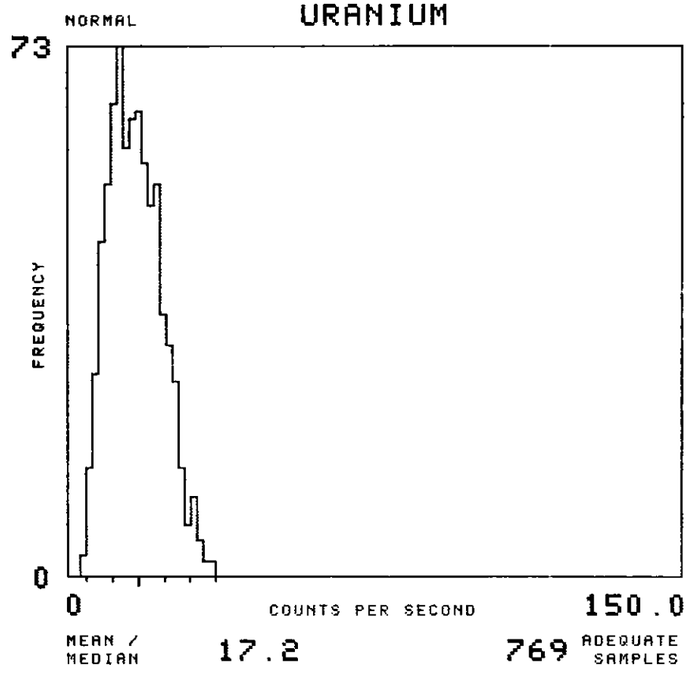


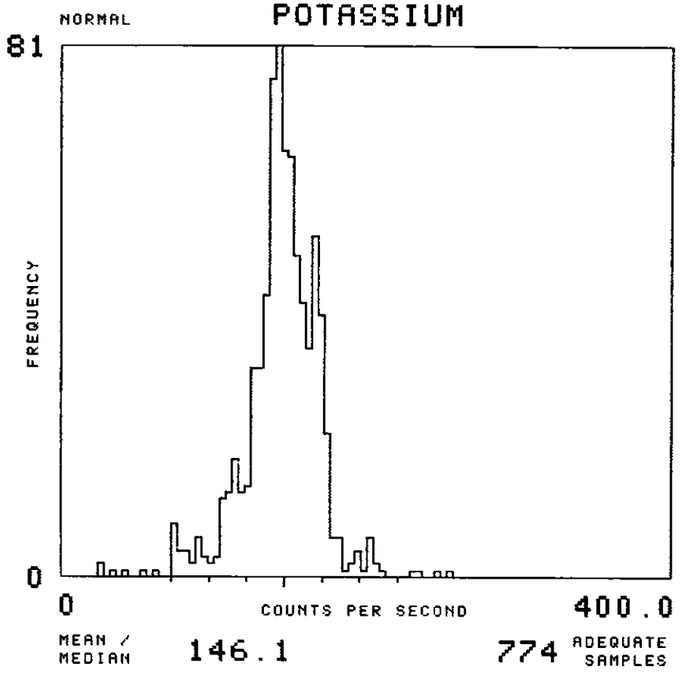


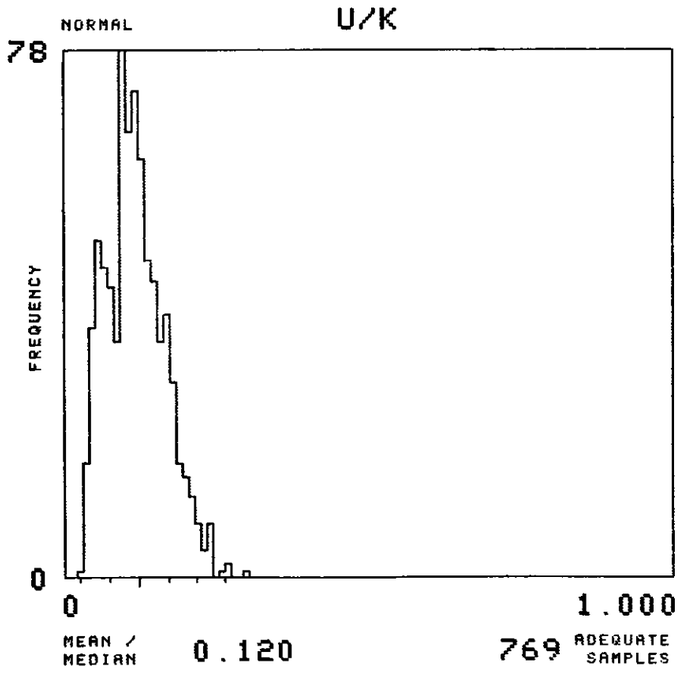
NTMS NK 13-4 CASPER

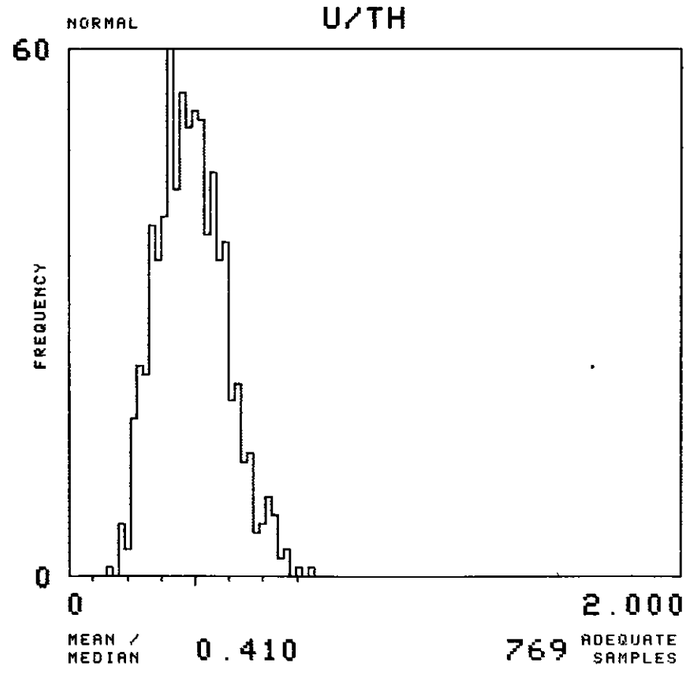
MAP UNIT : KLE TOTAL NUMBER OF SAMPLES 778

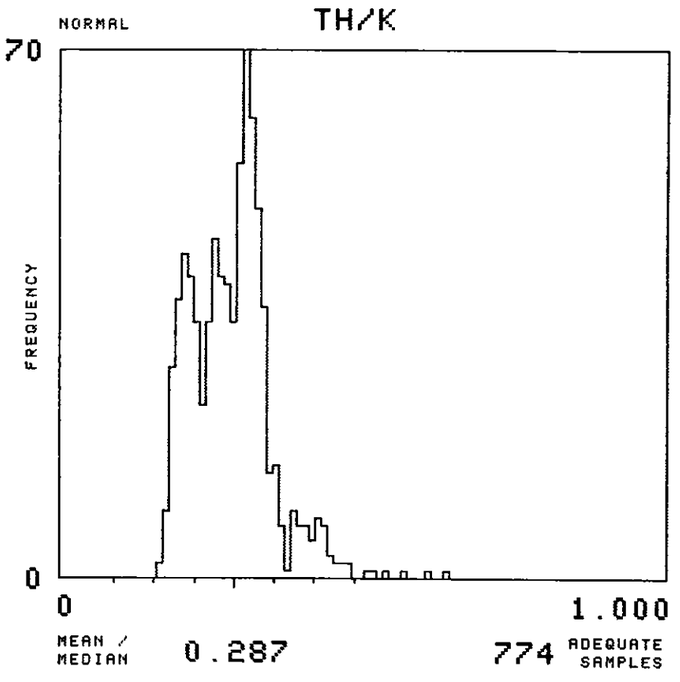












NTMS NK 13-4 CASPER

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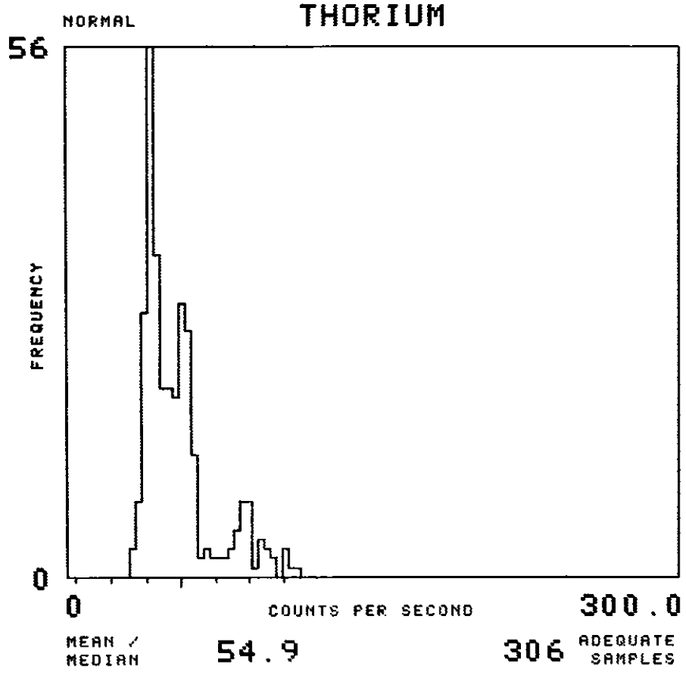

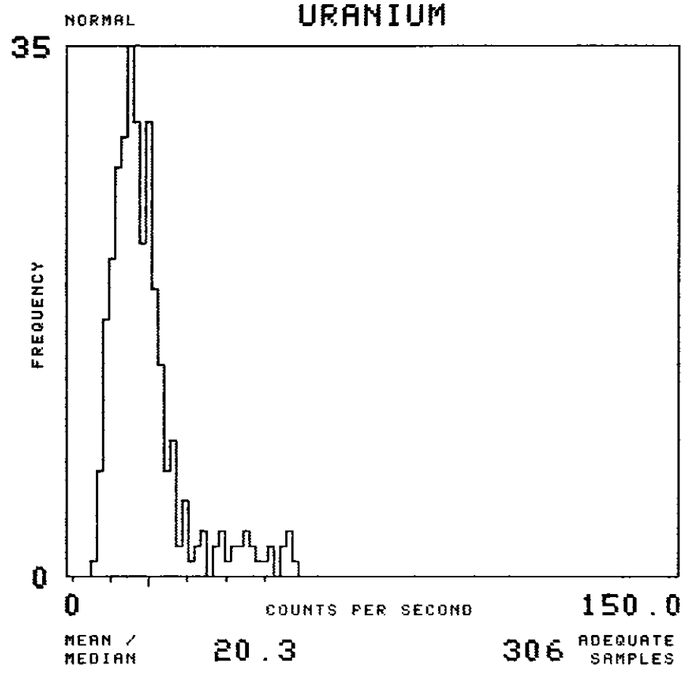

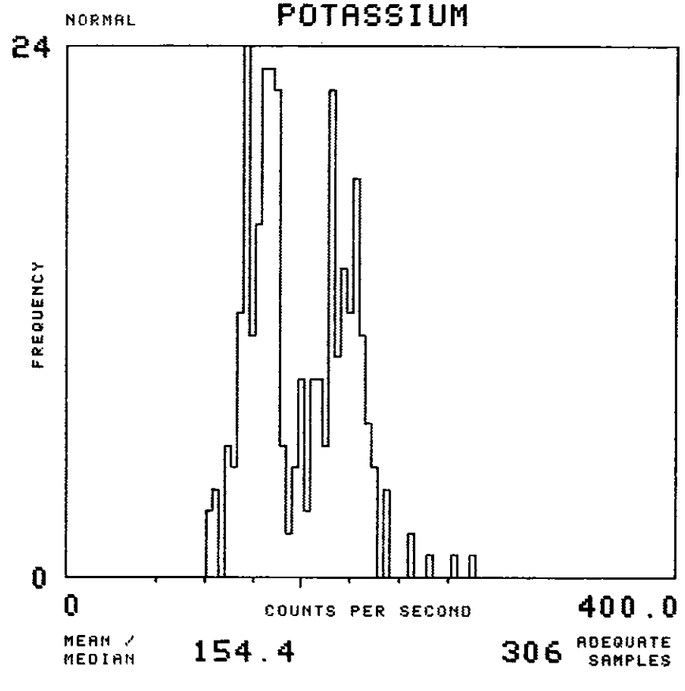

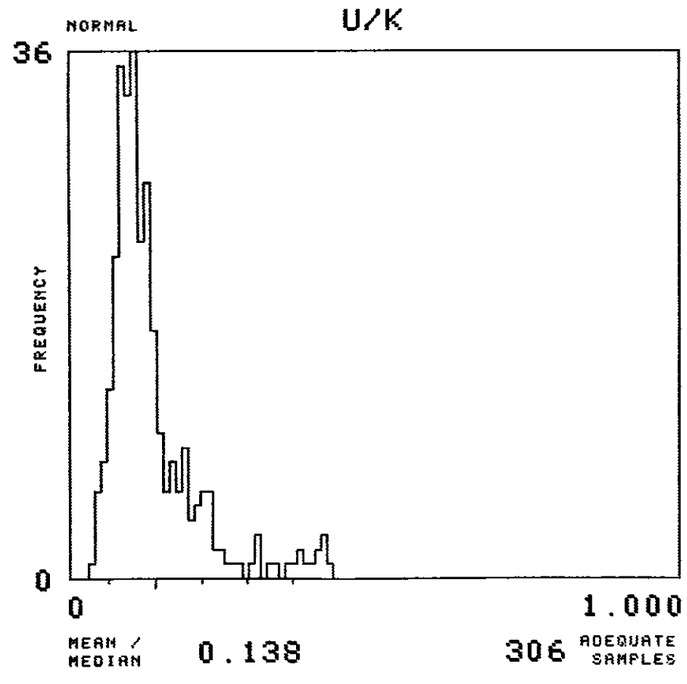

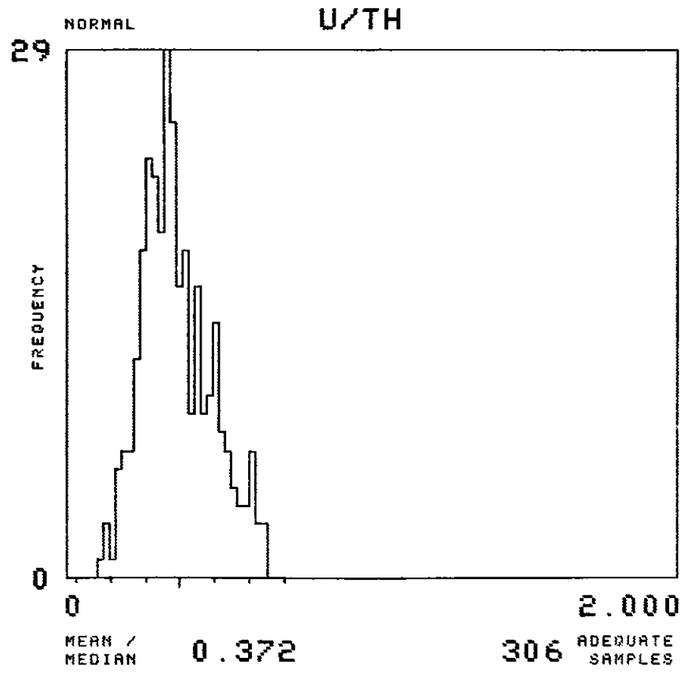

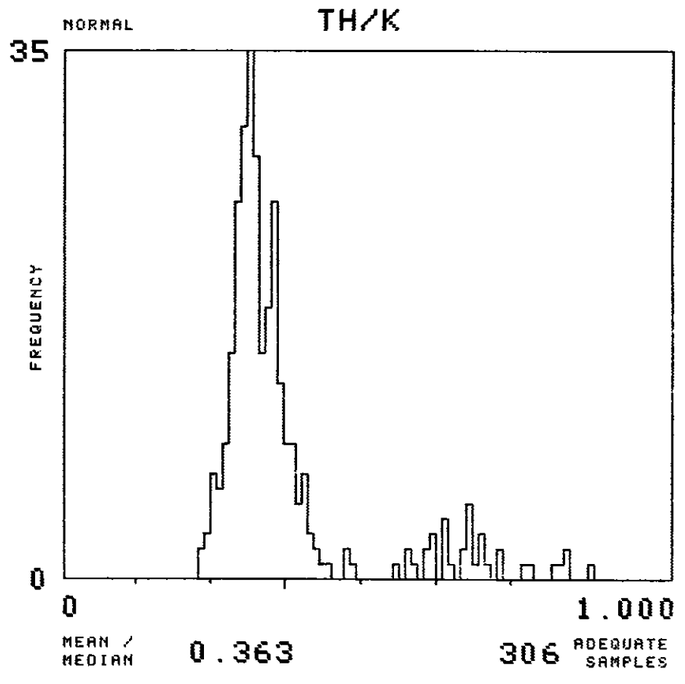

NTMS NK 13-4 CASPER

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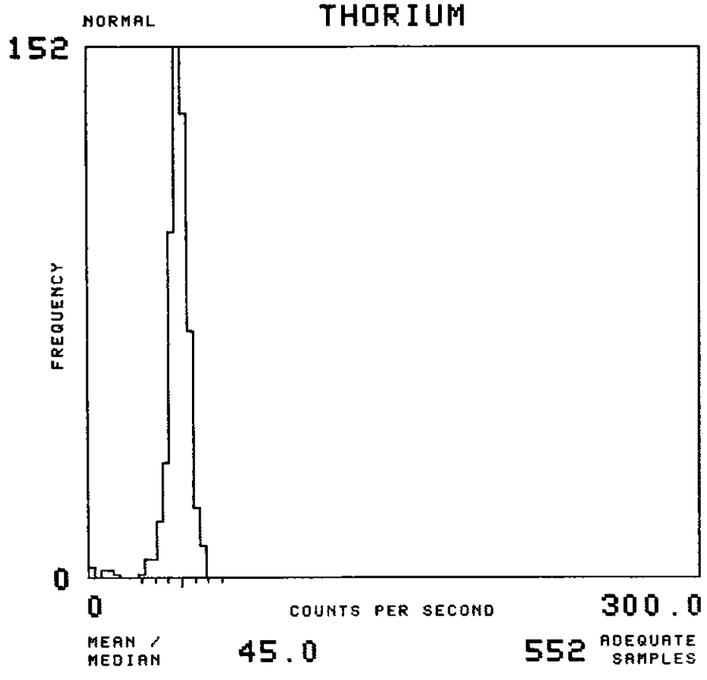

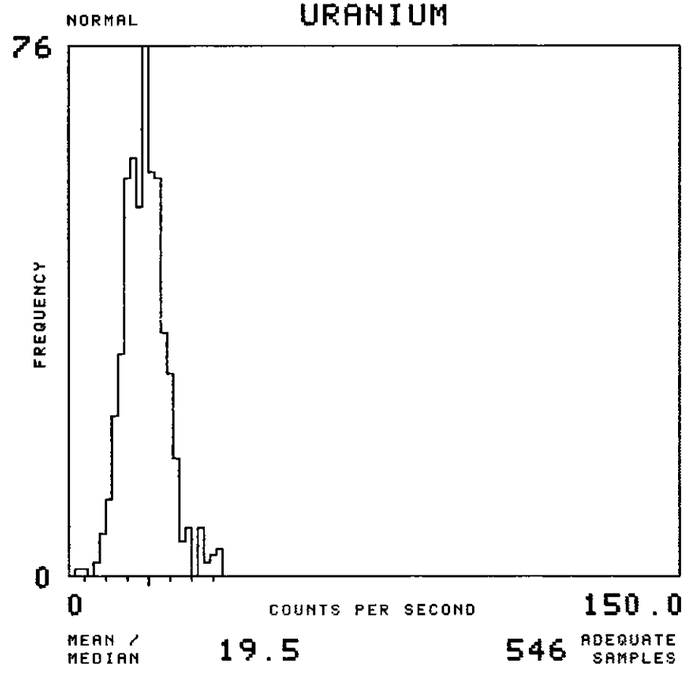

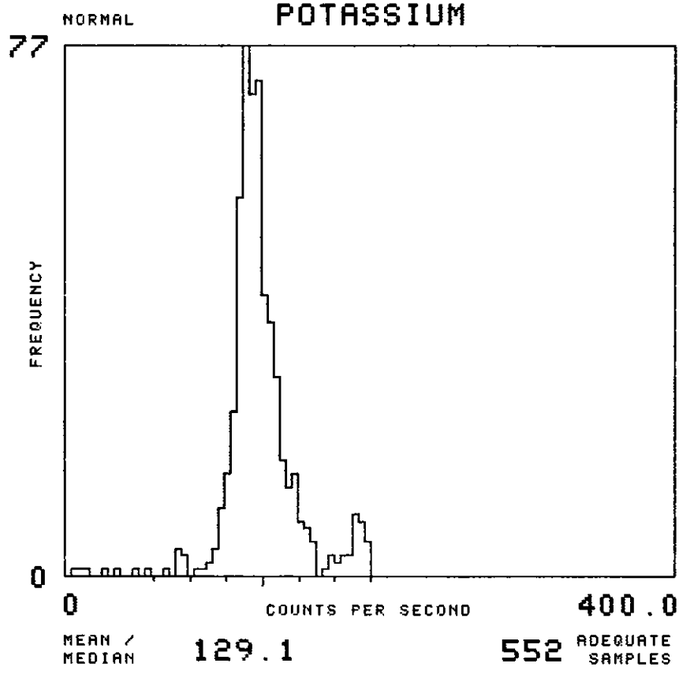

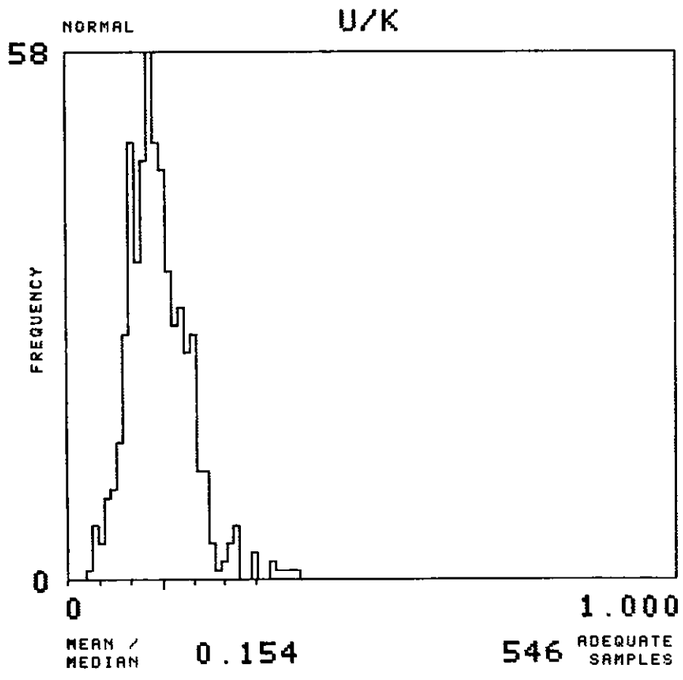

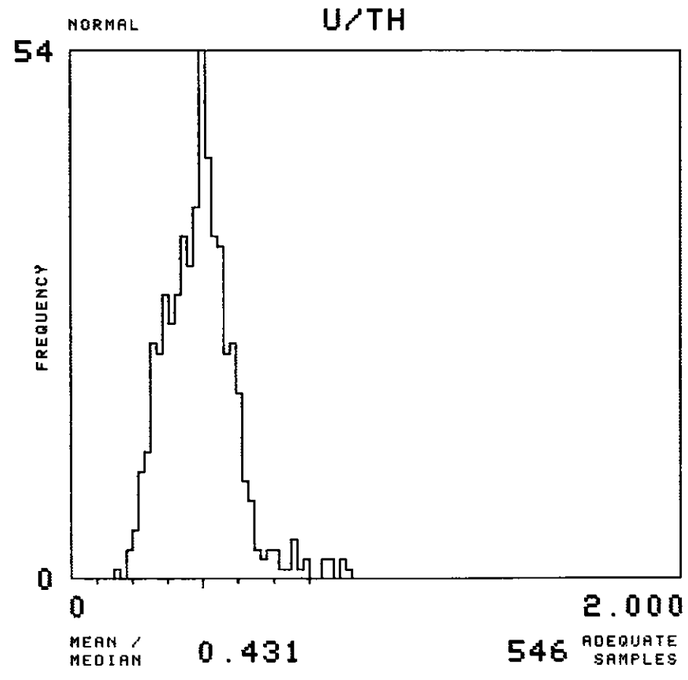

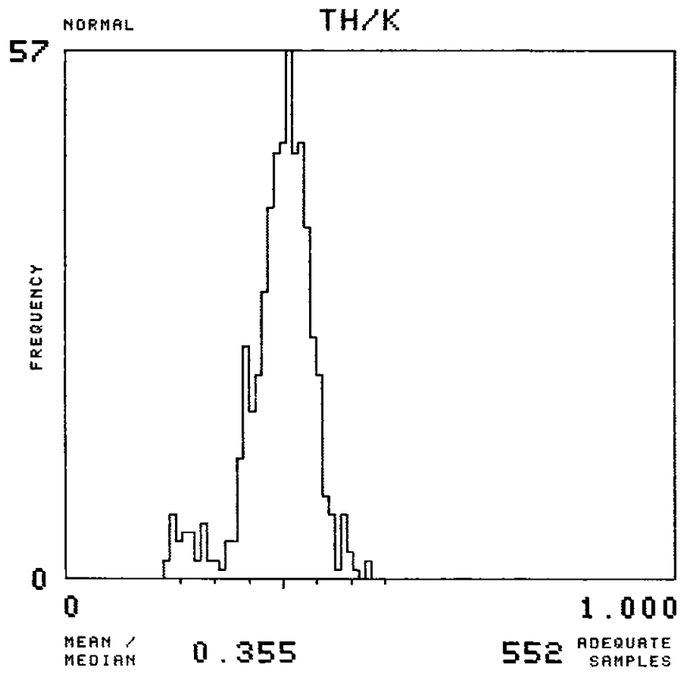

NTMS NK 13-4 CASPER

MAP UNIT : KML TOTAL NUMBER OF SAMPLES 99

NORMAL

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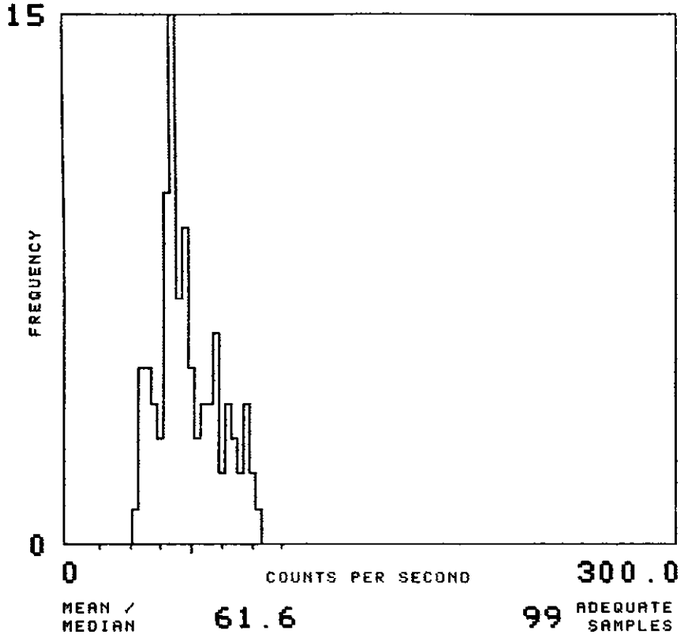

NORMAL

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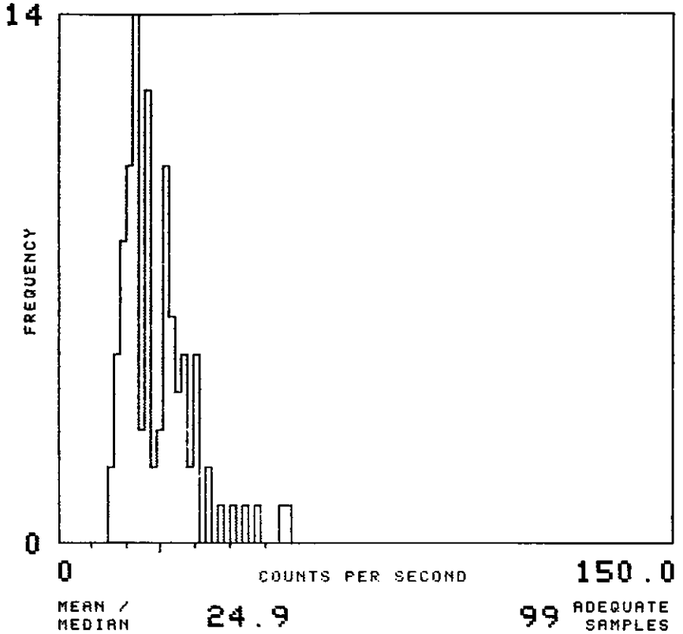

NORMAL

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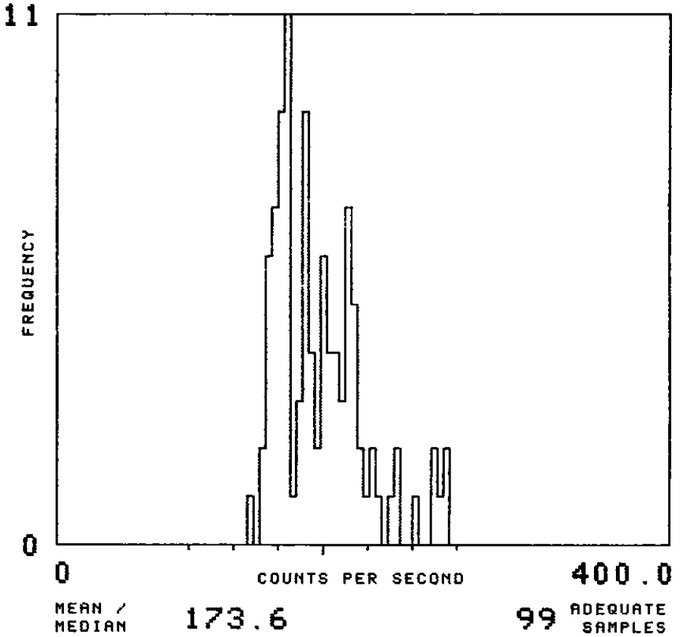

NORMAL

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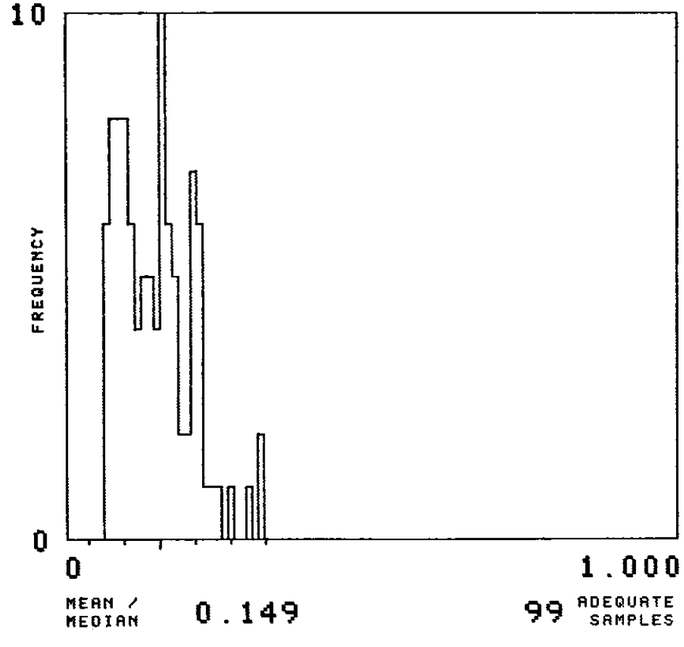

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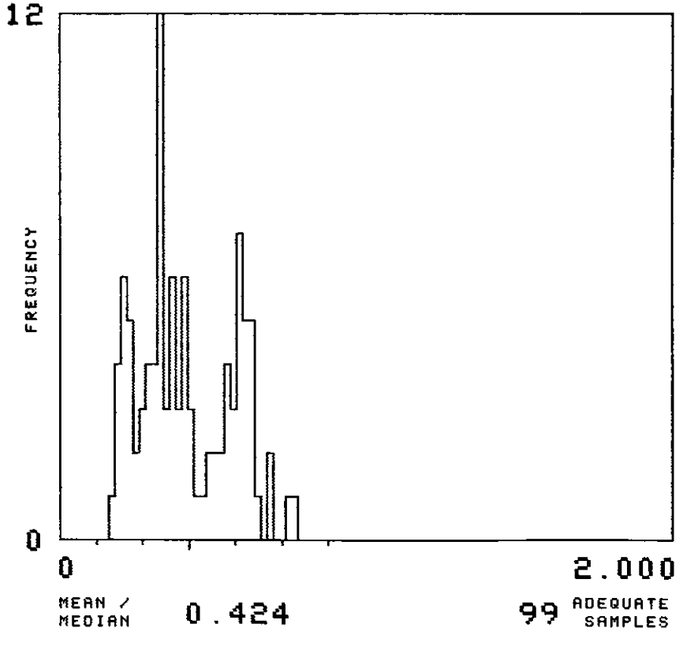
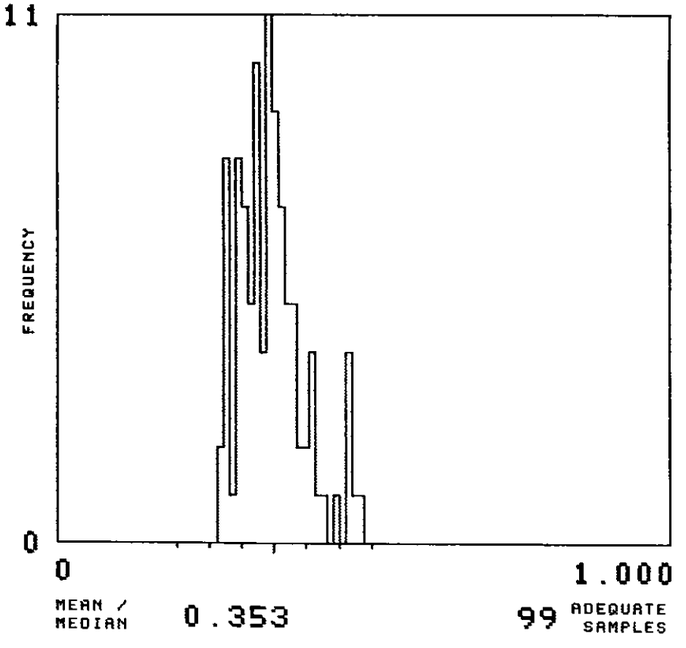


NORMAL

TH/K



NTMS NK 13-4 CASPER

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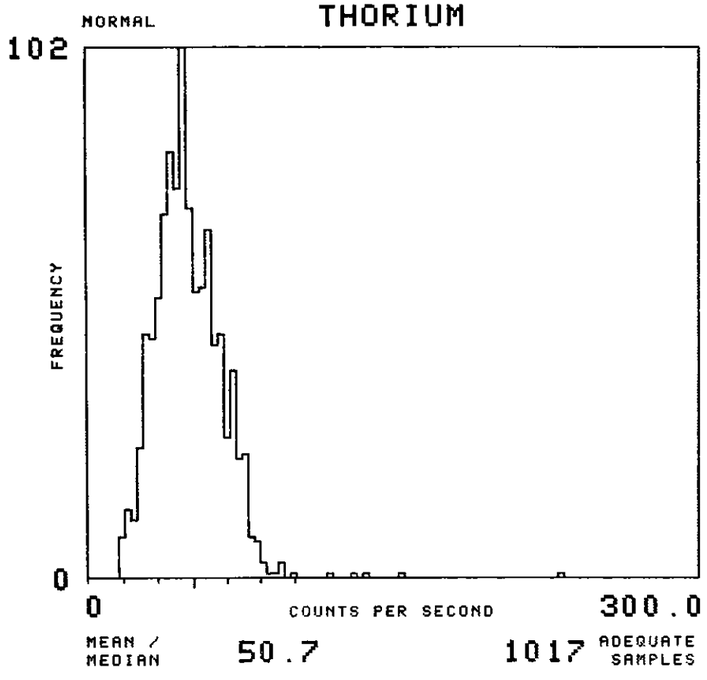

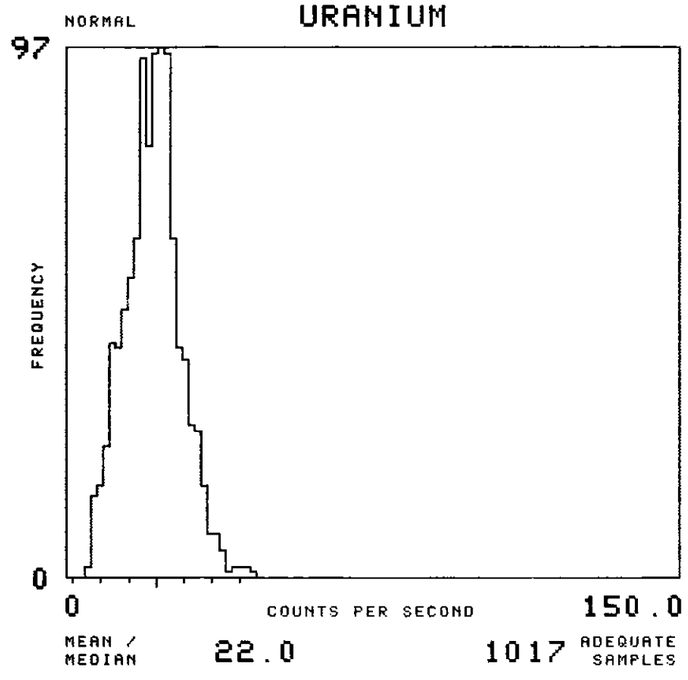

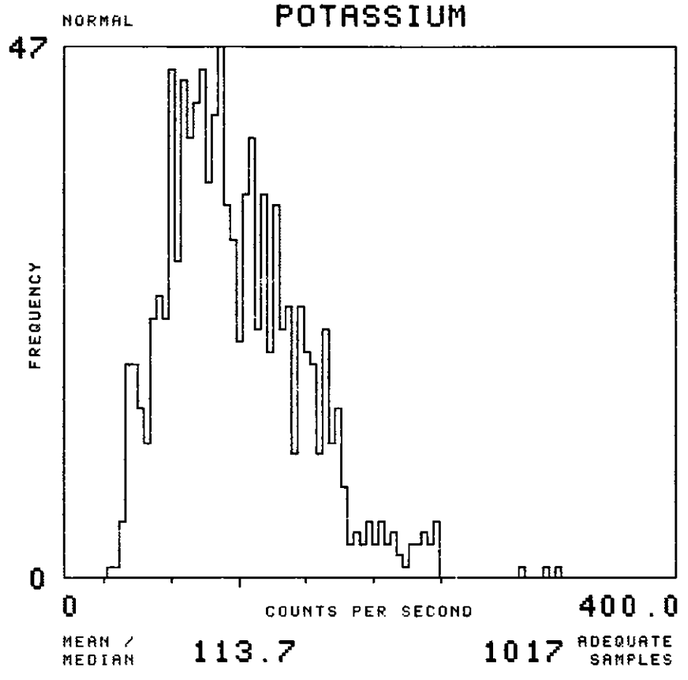

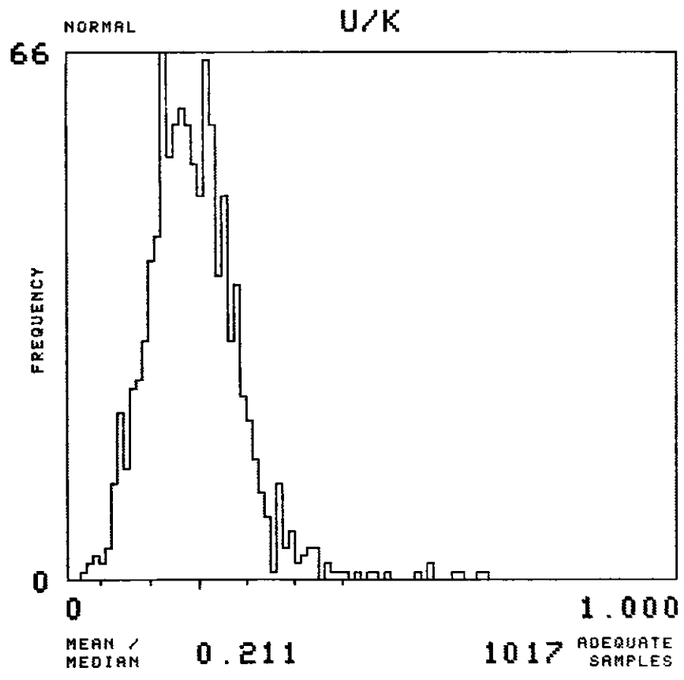

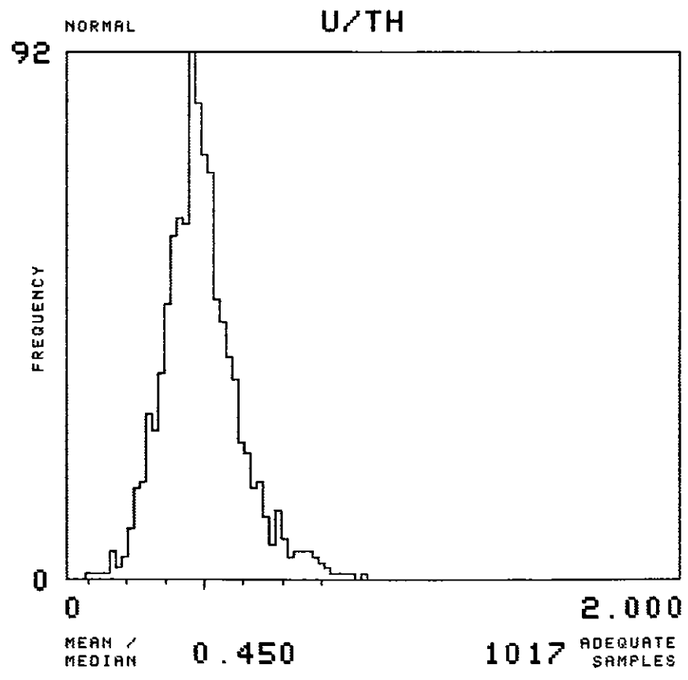

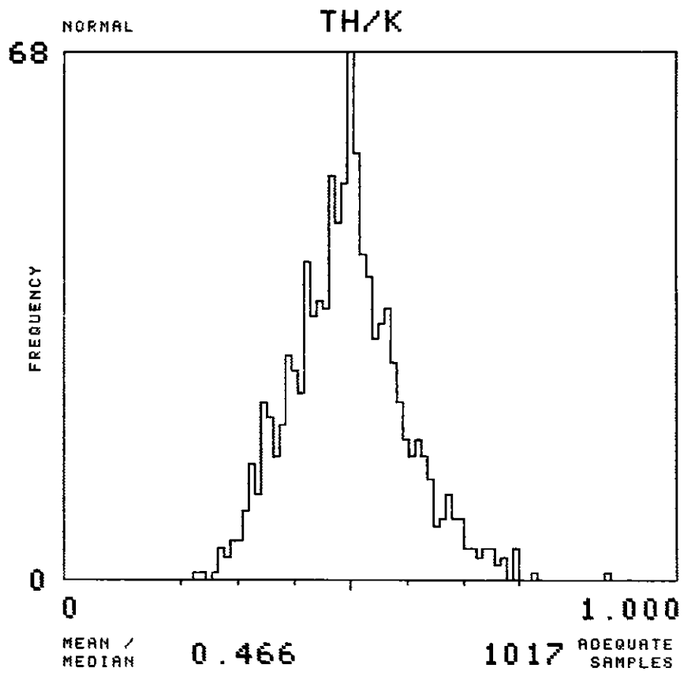

NTMS NK 13-4 CASPER

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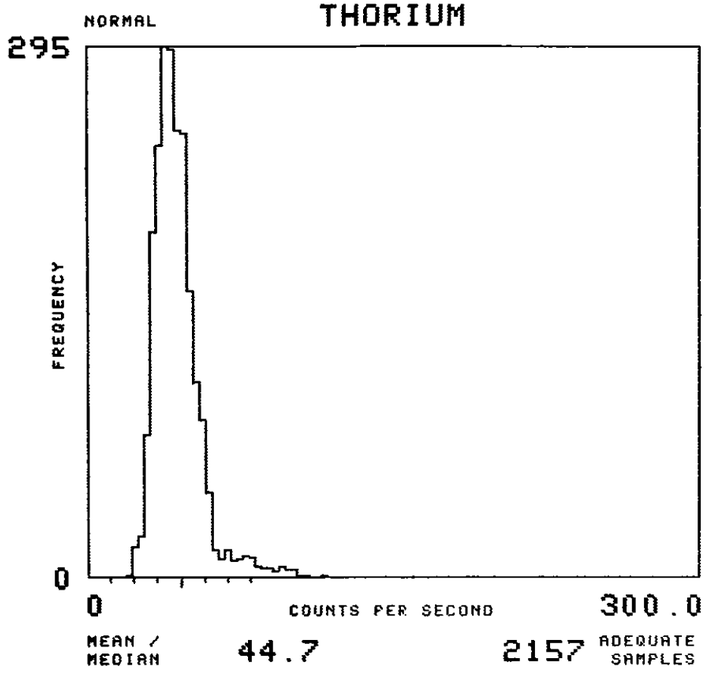

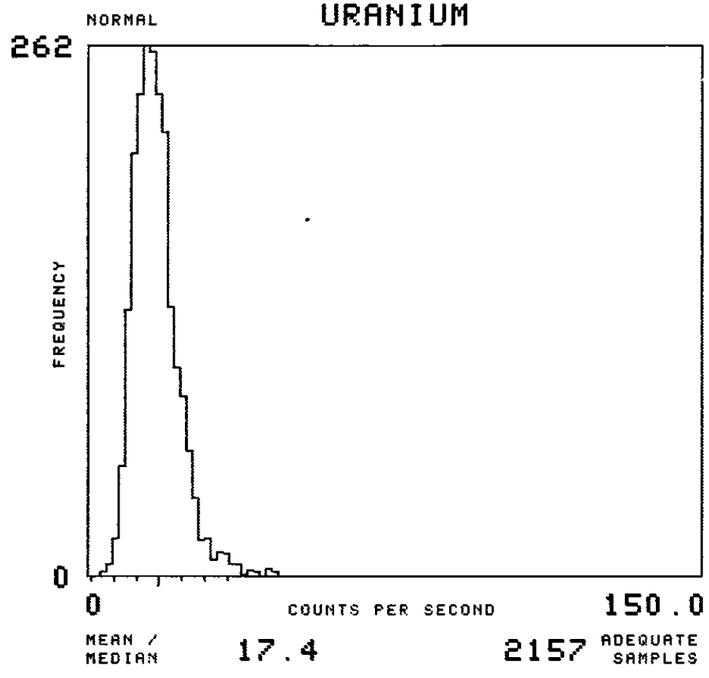

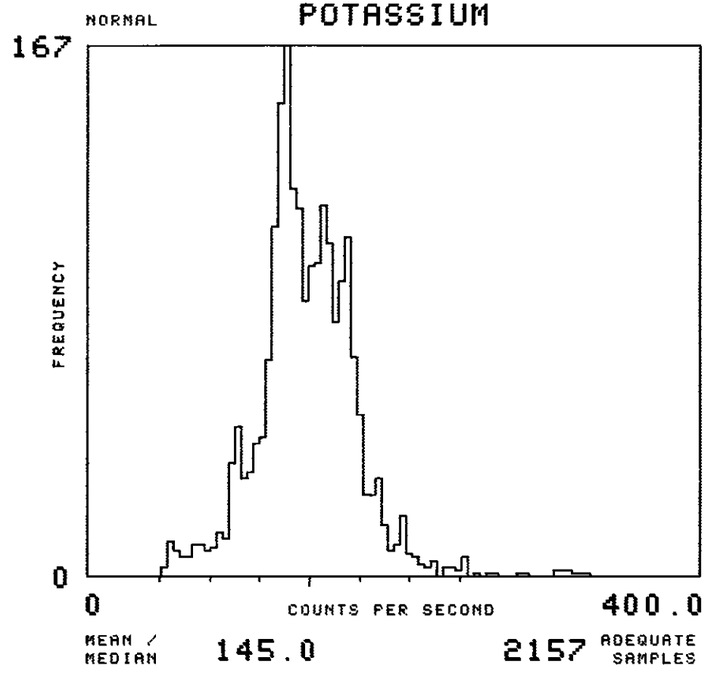

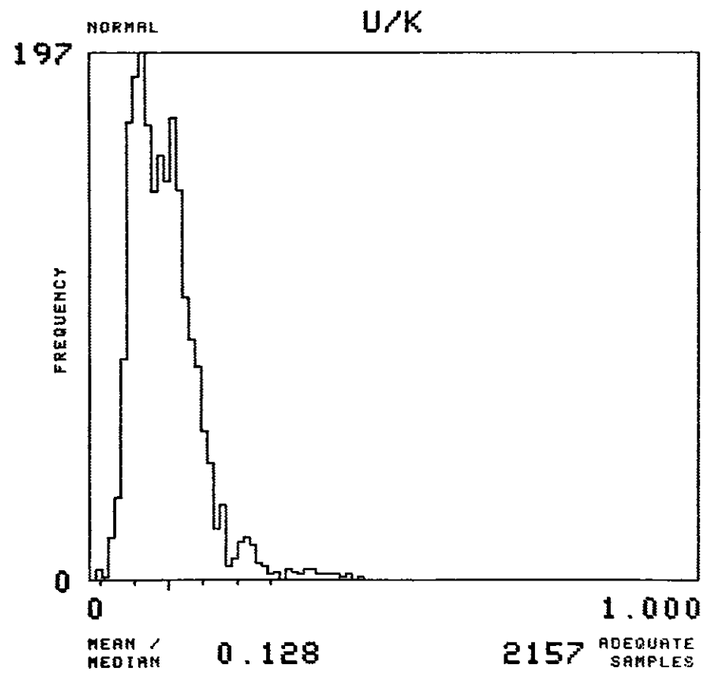

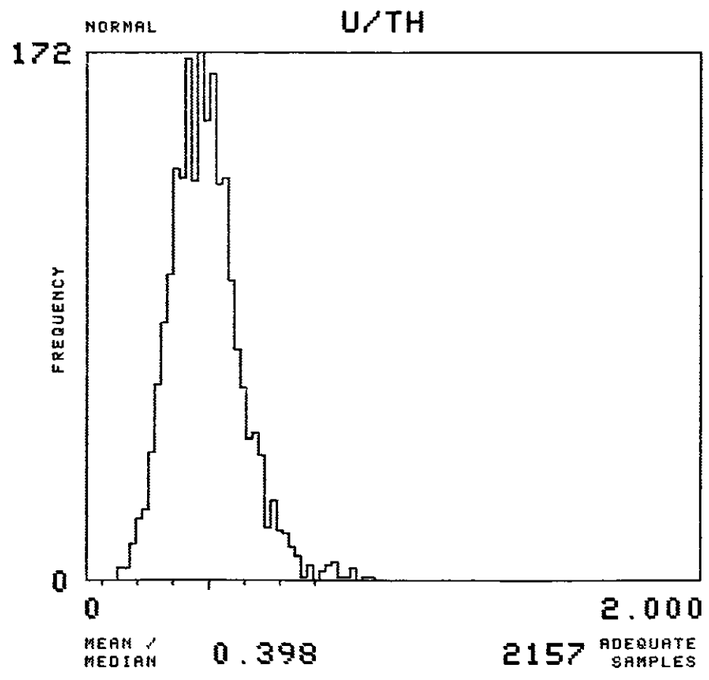

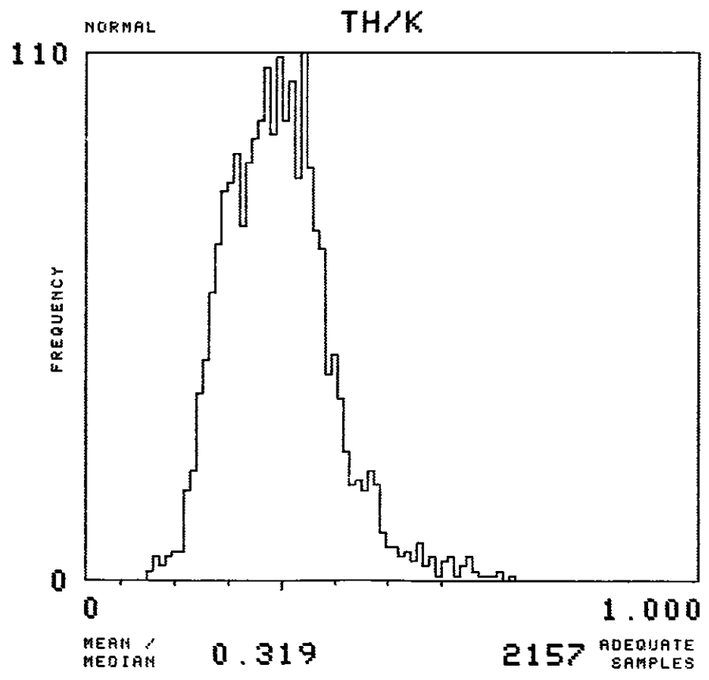

NTMS NK 13-4 CASPER

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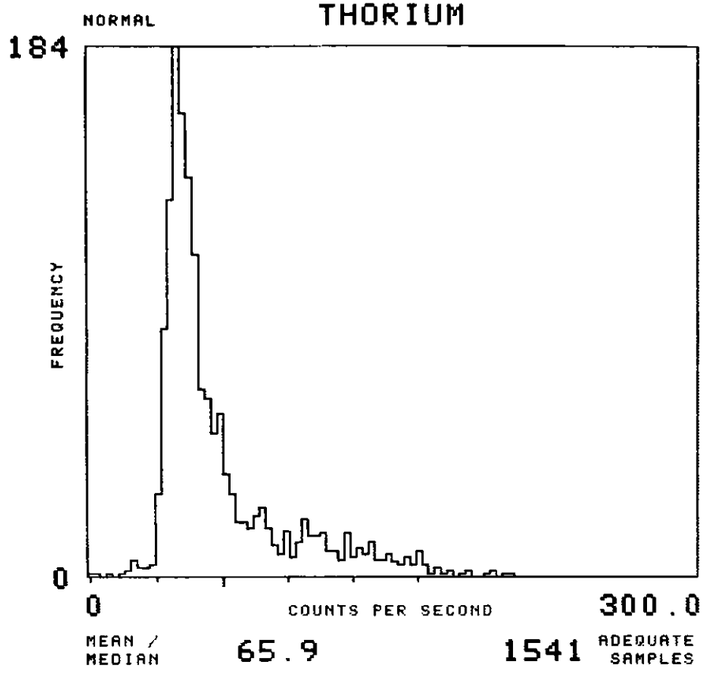

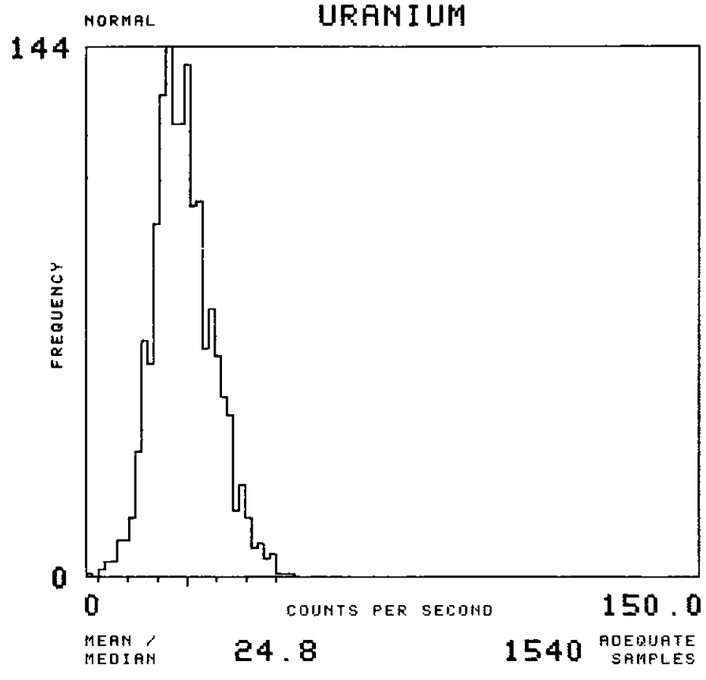

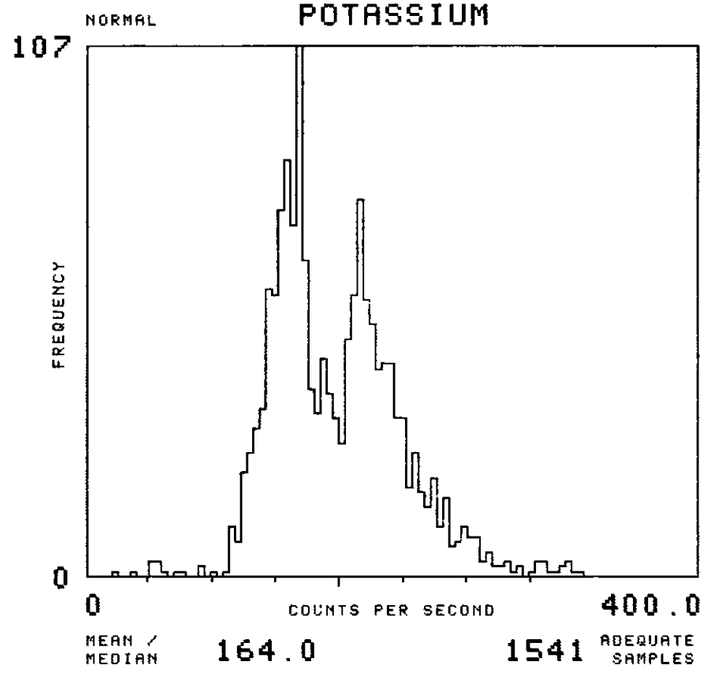

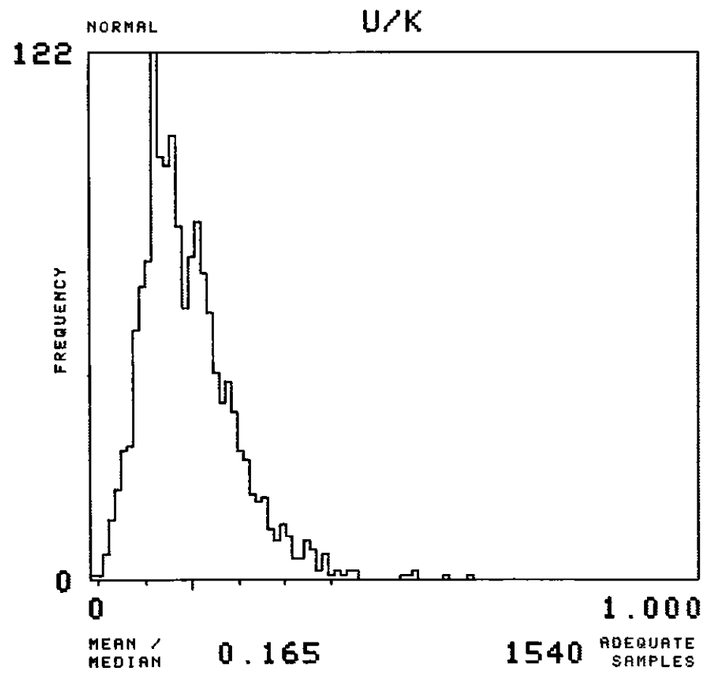

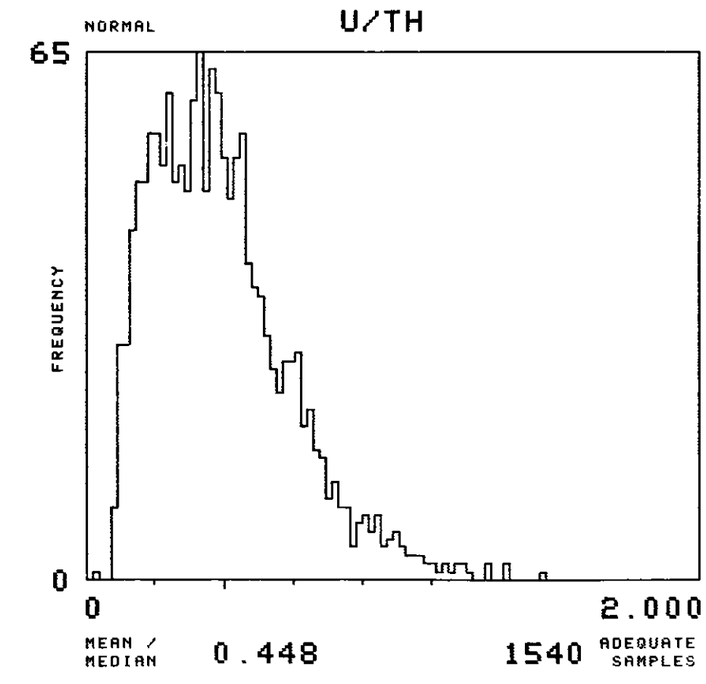

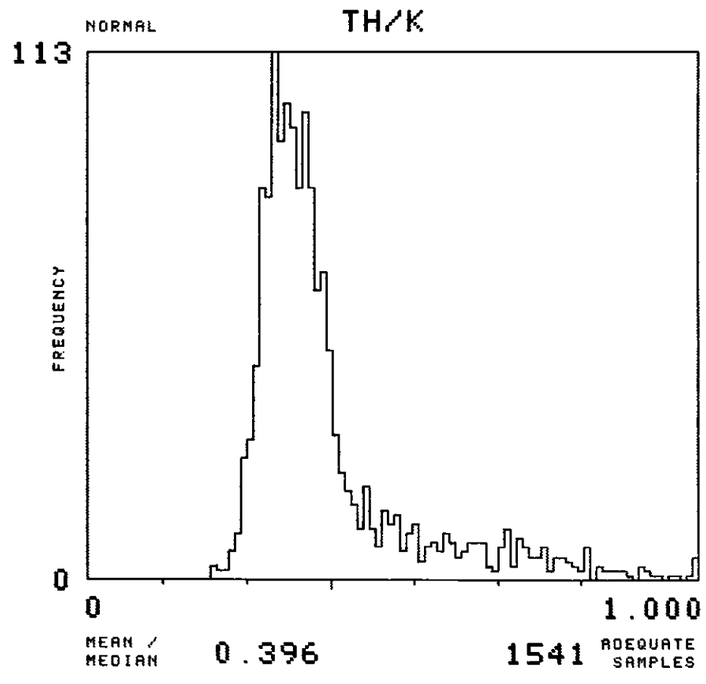

NTMS NK 13-4 CASPER

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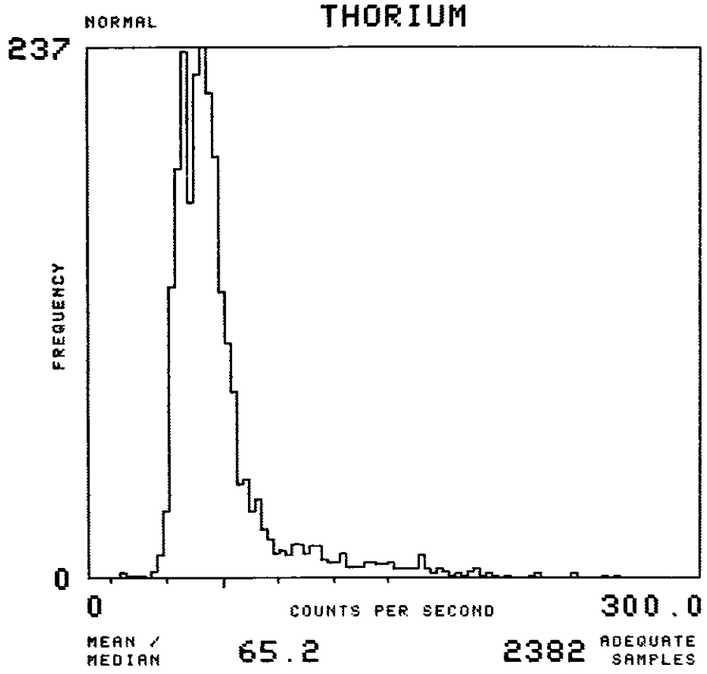

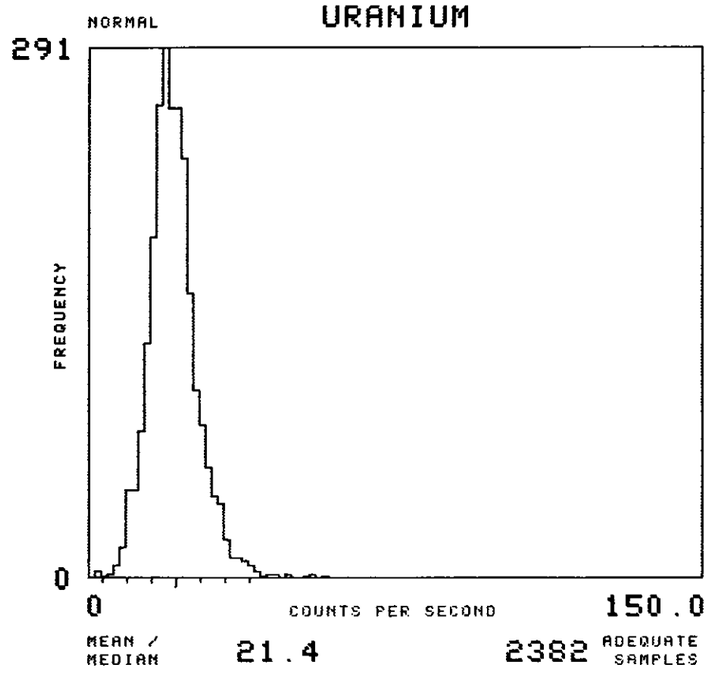

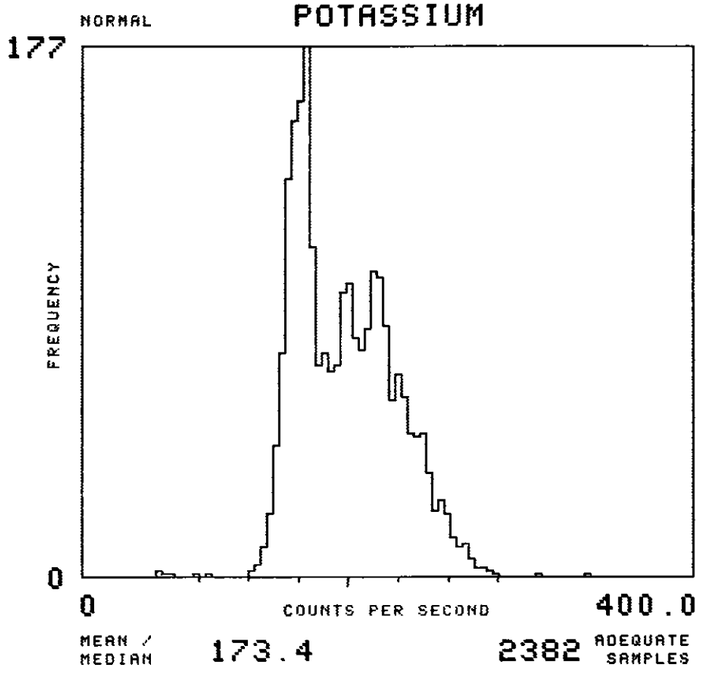

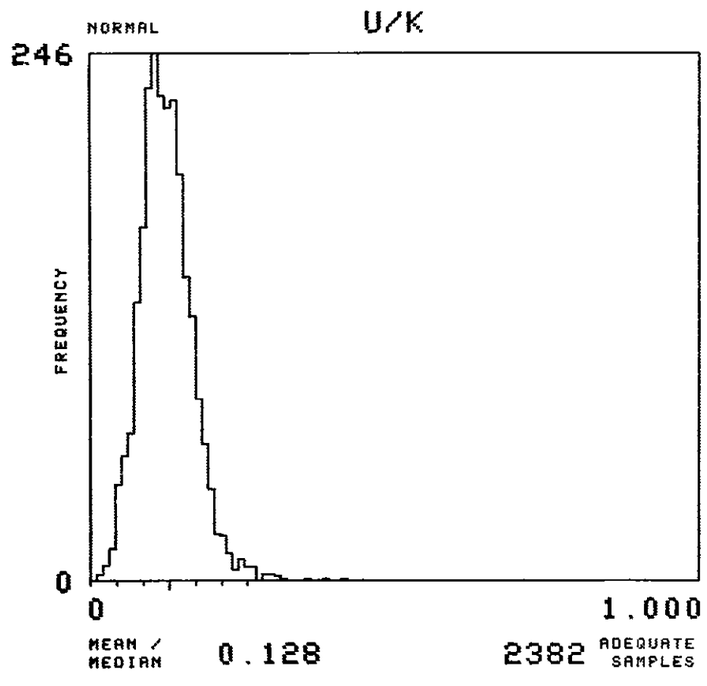

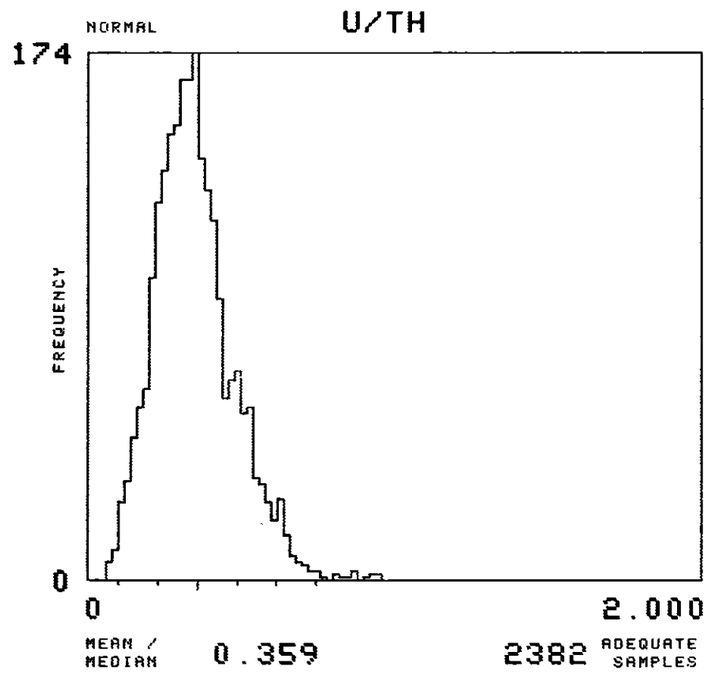

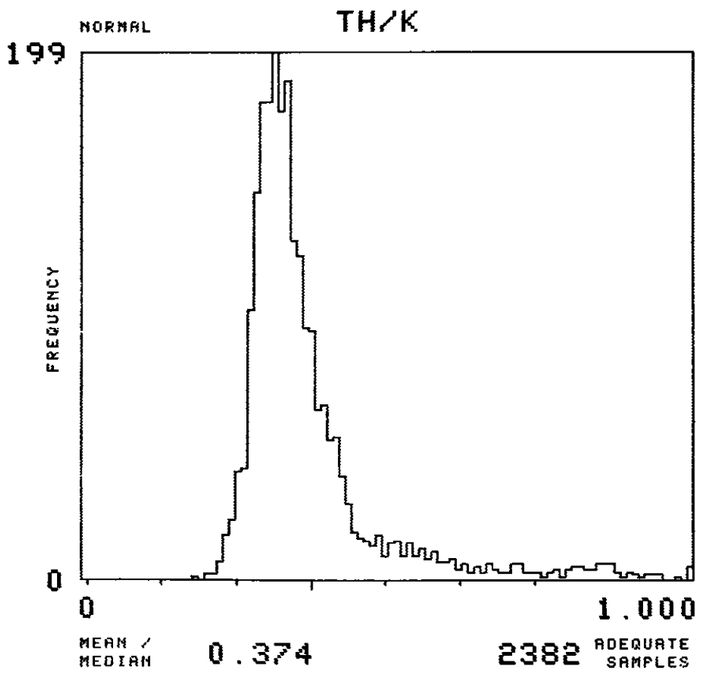

NTMS NK 13-4 CASPER

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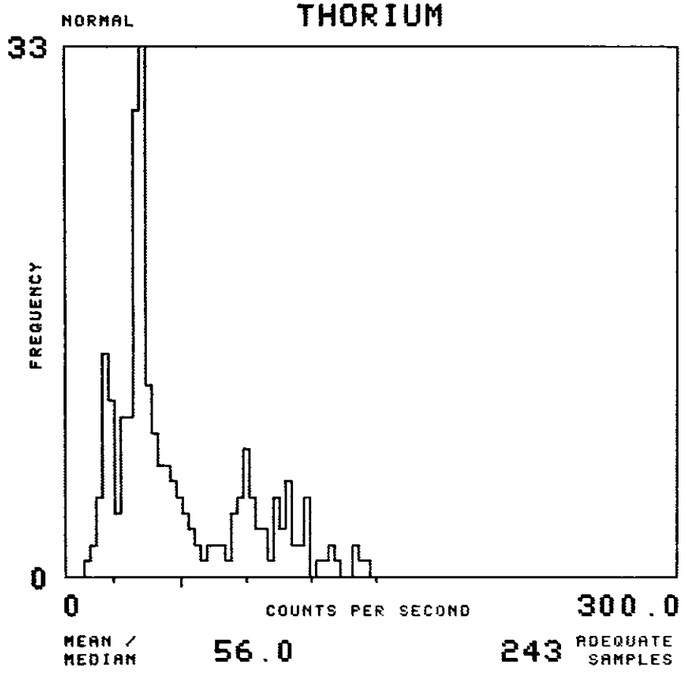

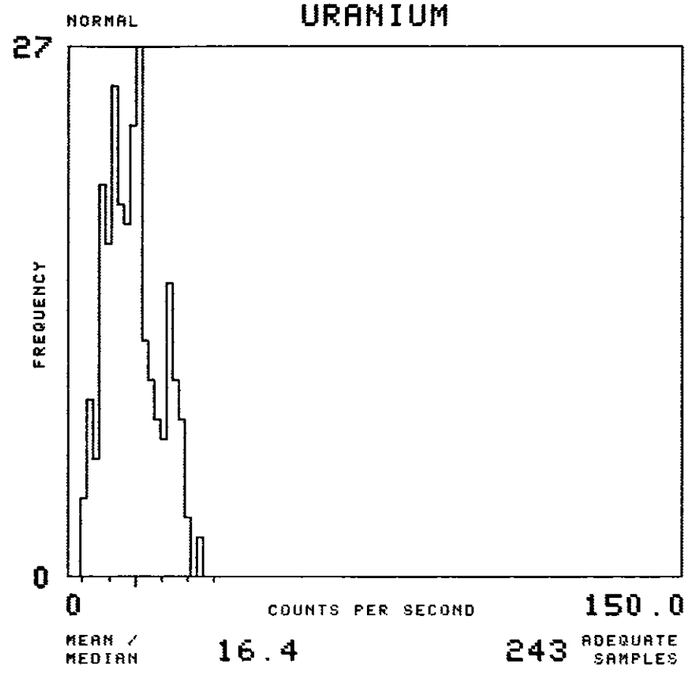

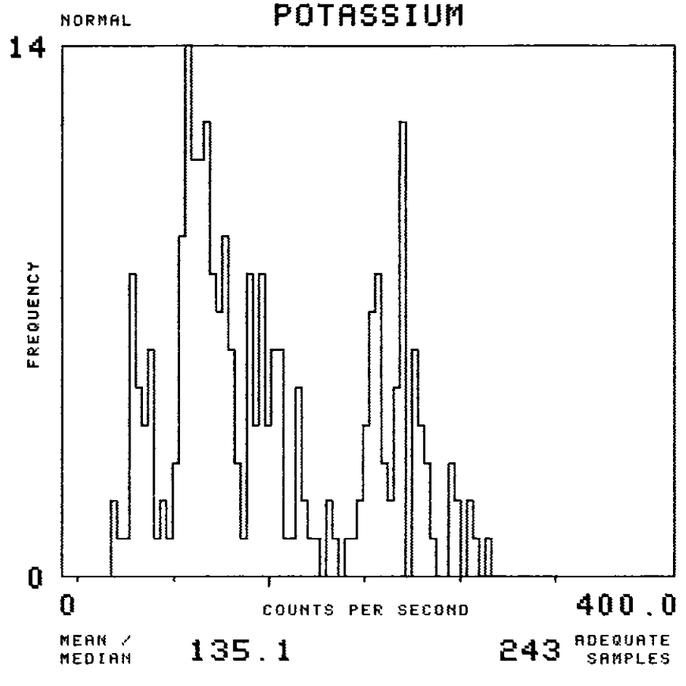

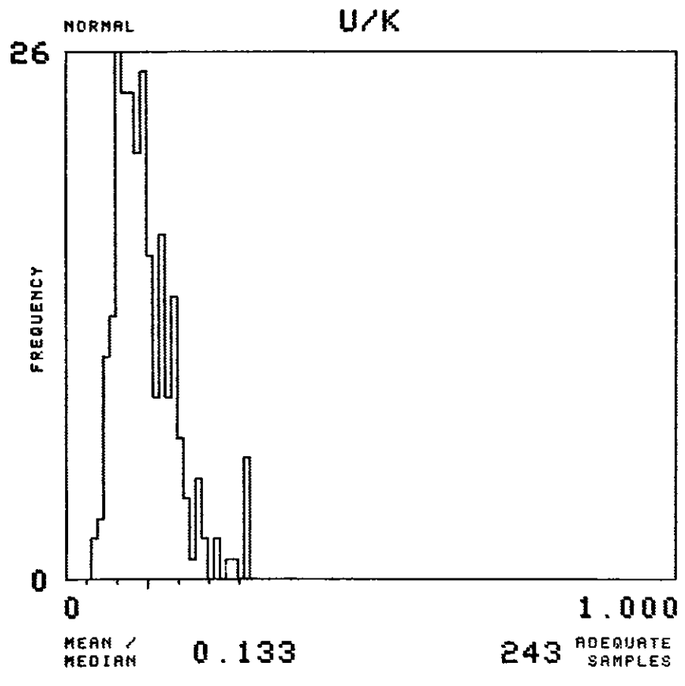

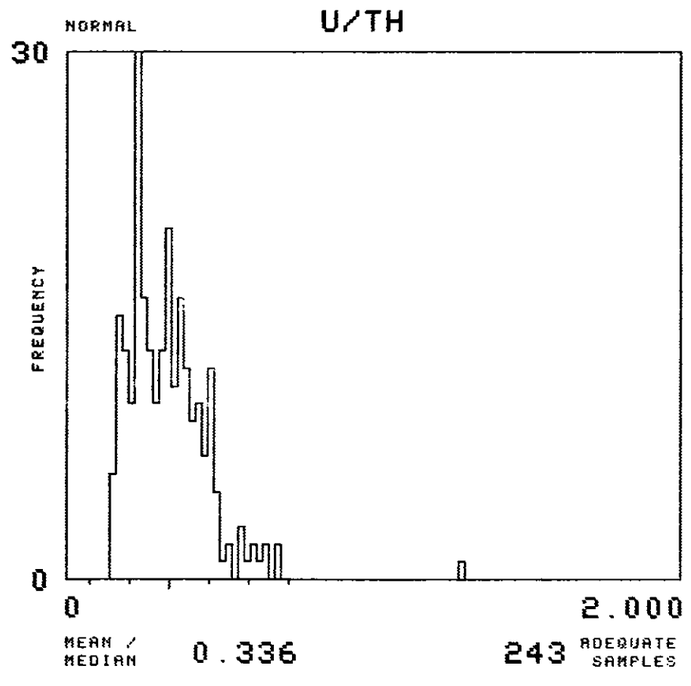

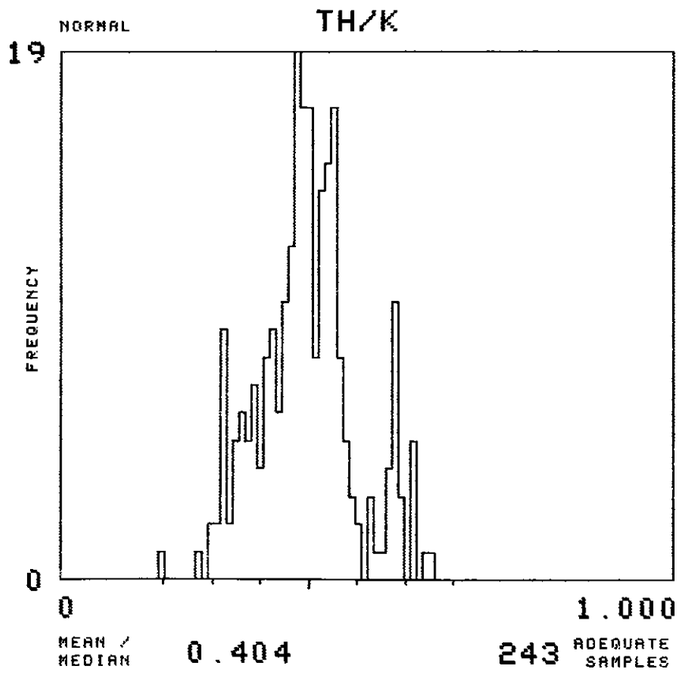

NTMS NK 13-4 CASPER

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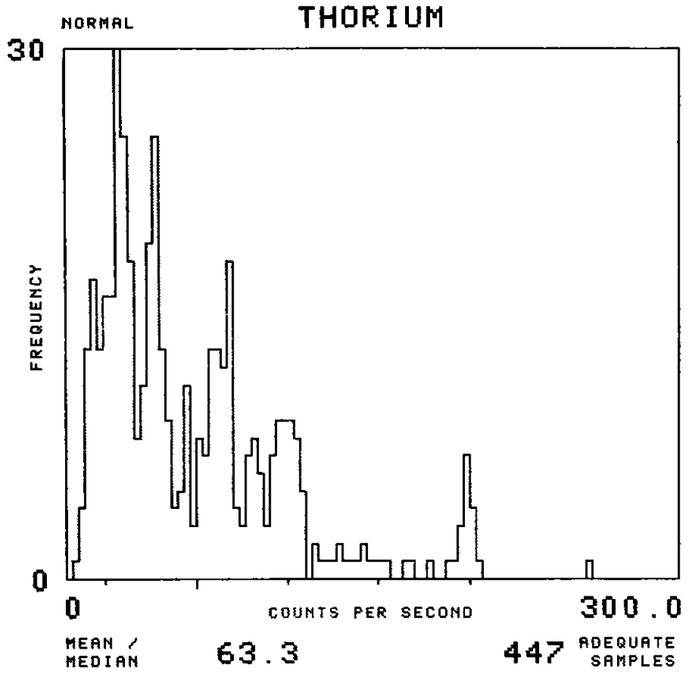
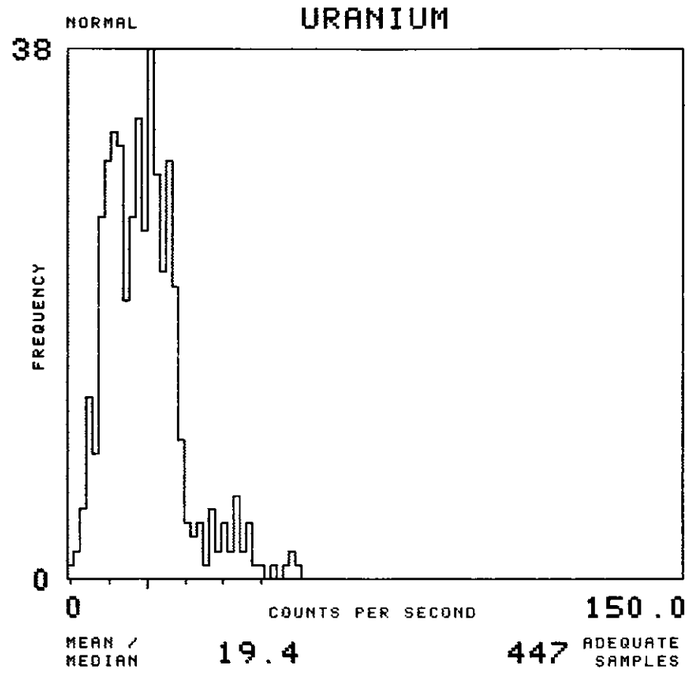
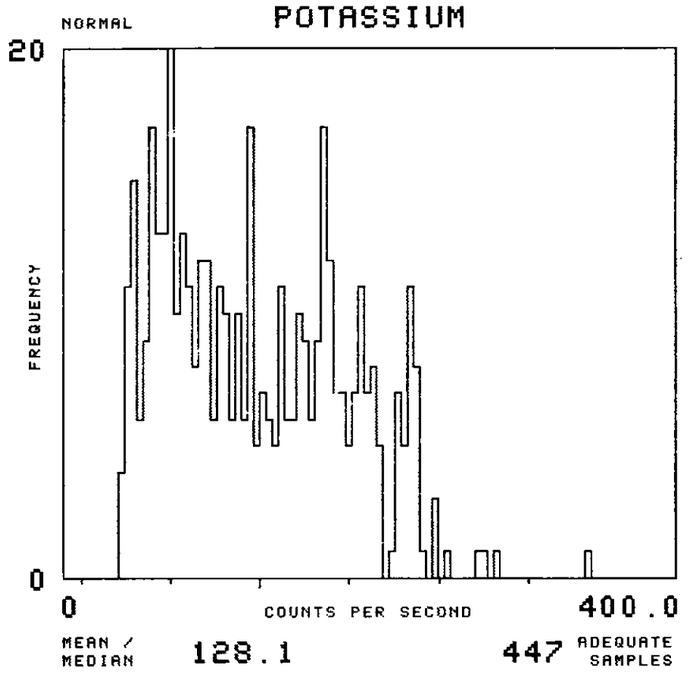
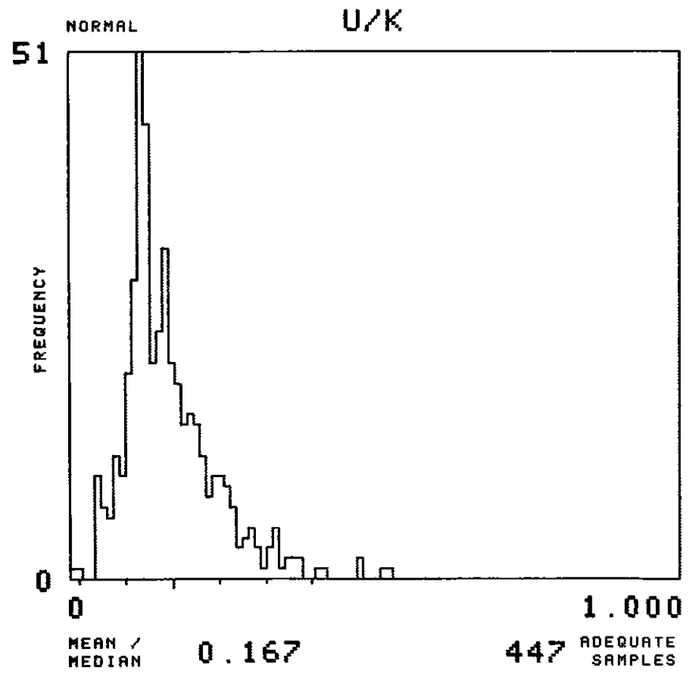
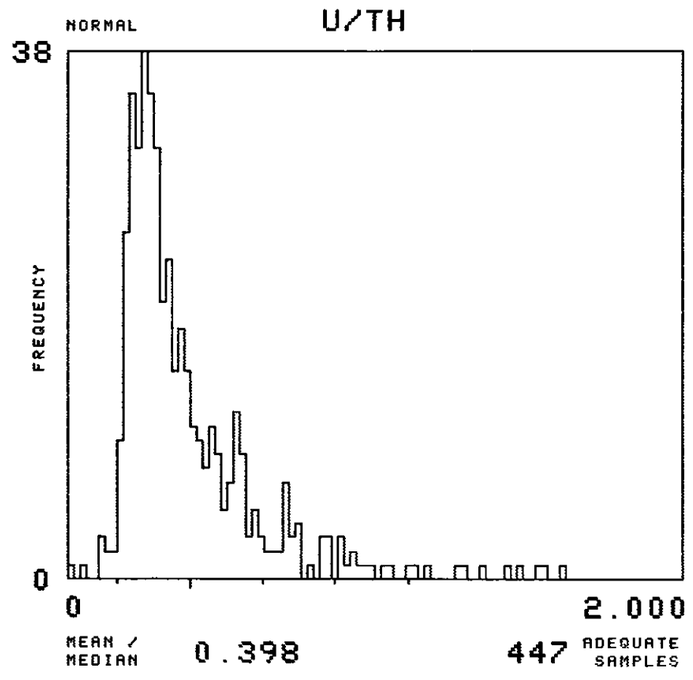
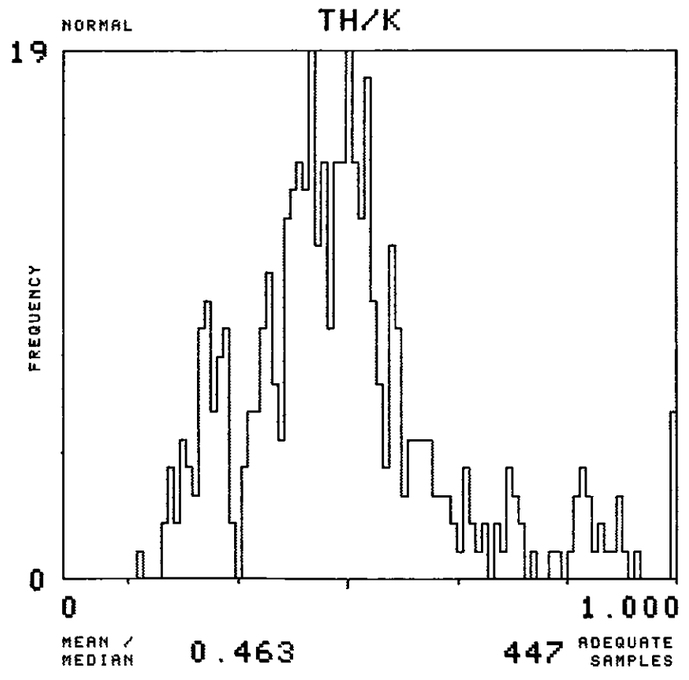






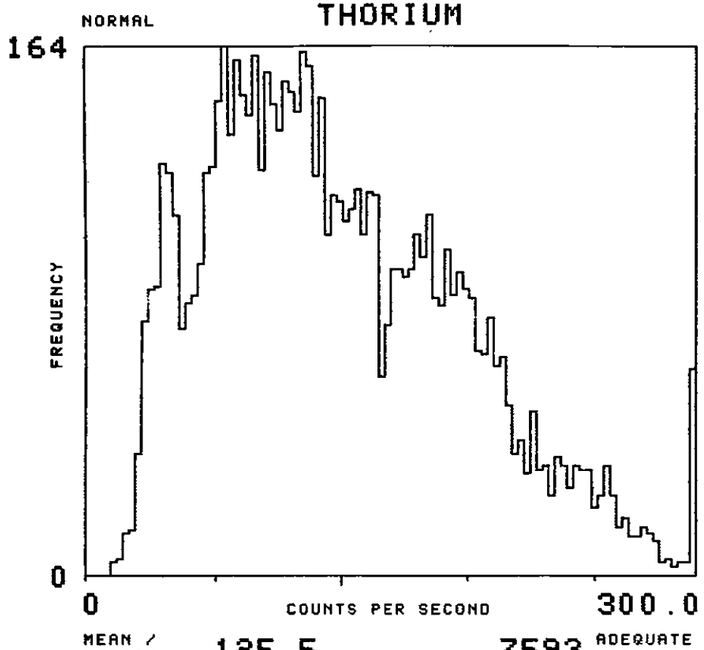


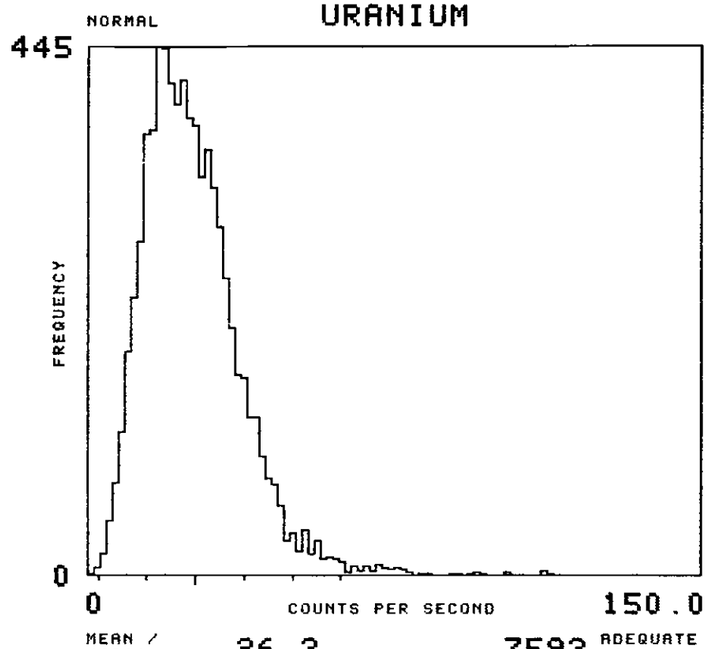


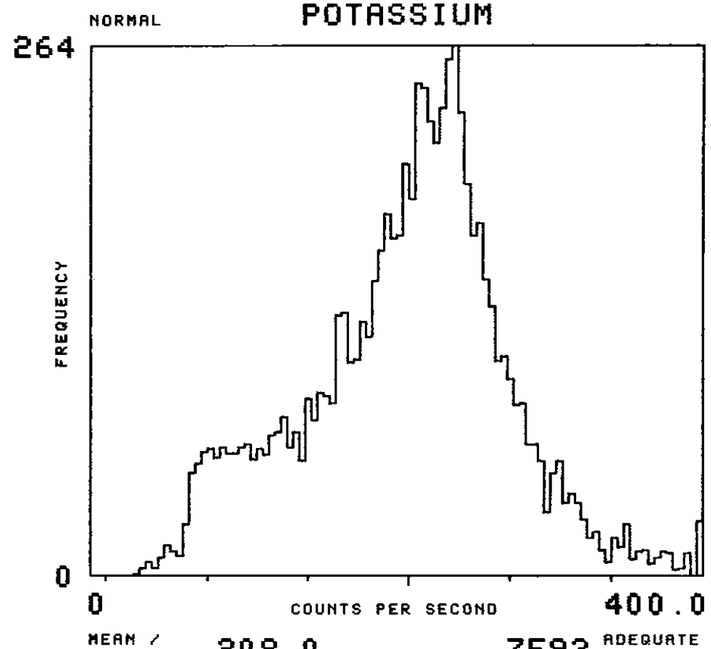


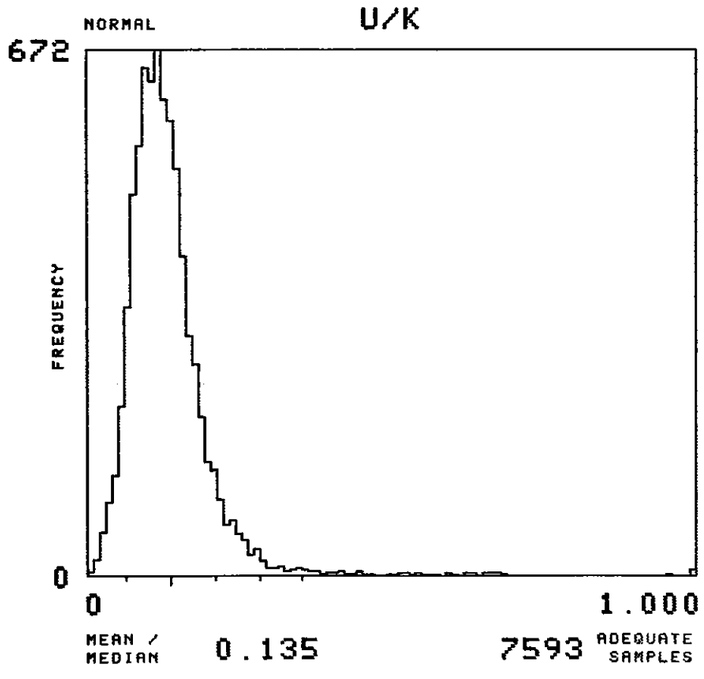
NTMS NK 13-4 CASPER

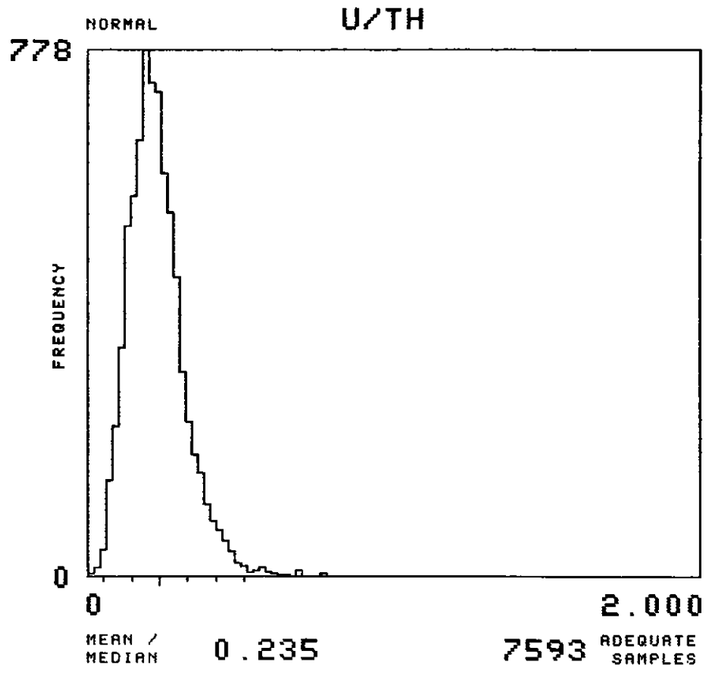
MAP UNIT : PC TOTAL NUMBER OF SAMPLES 7881

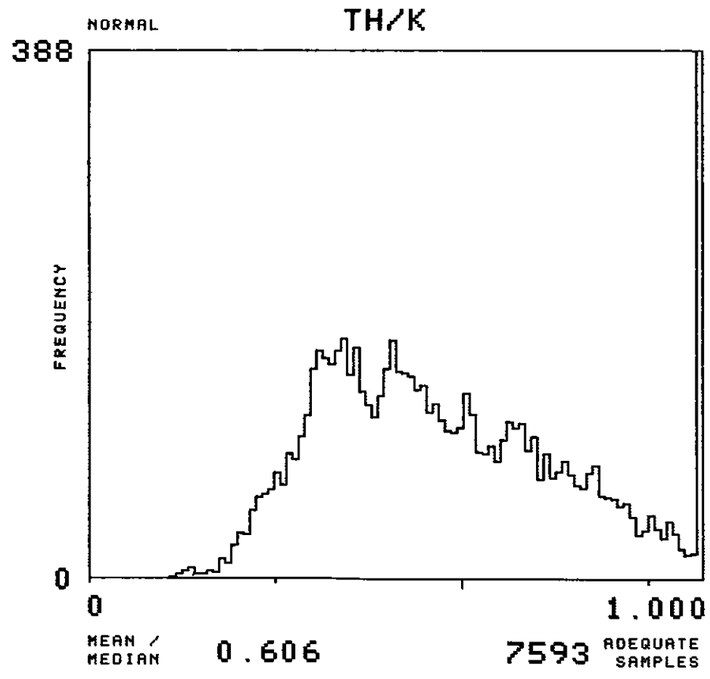












NTMS NK 13-4 CASPER

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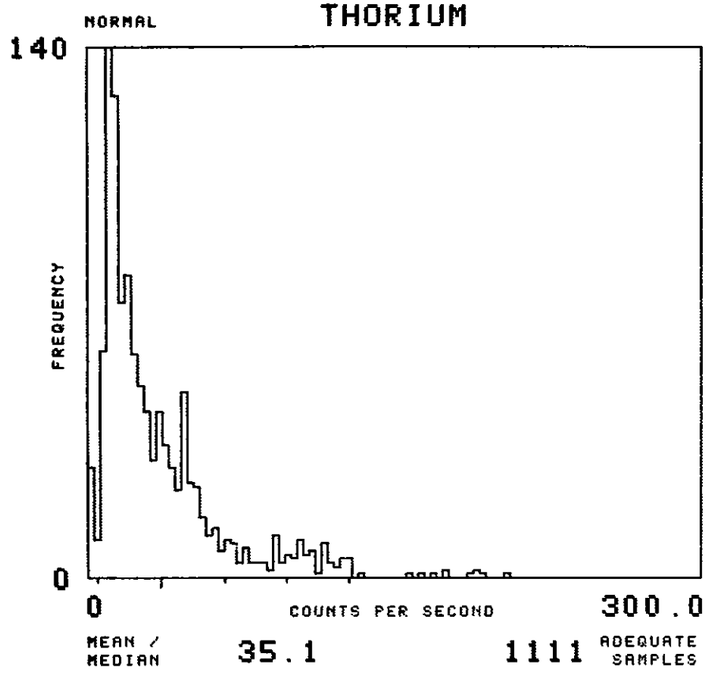
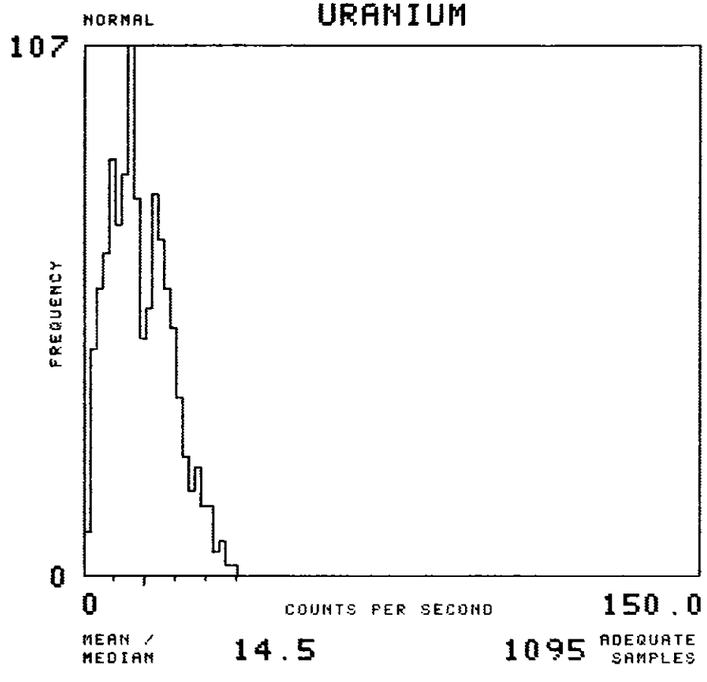
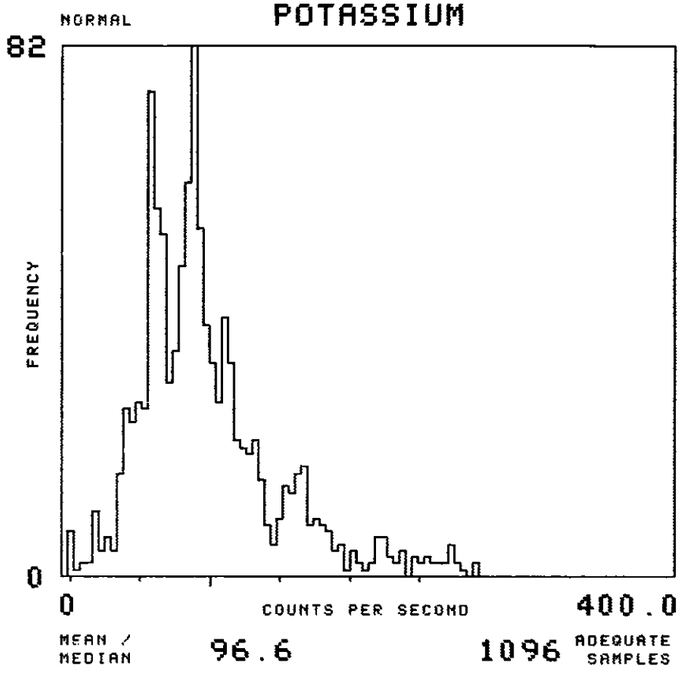
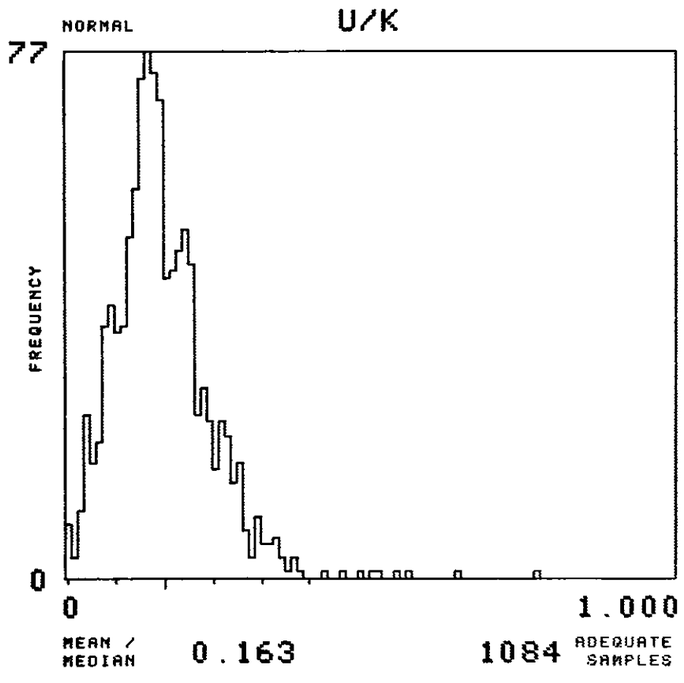
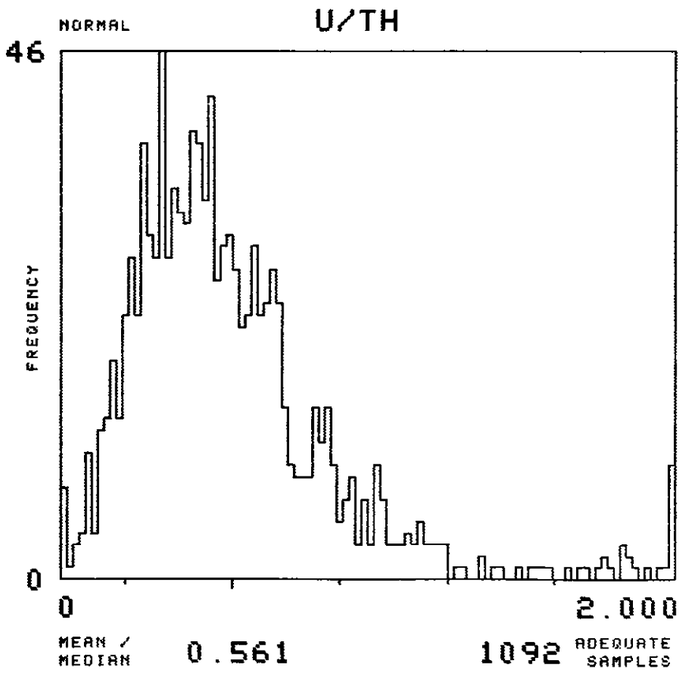
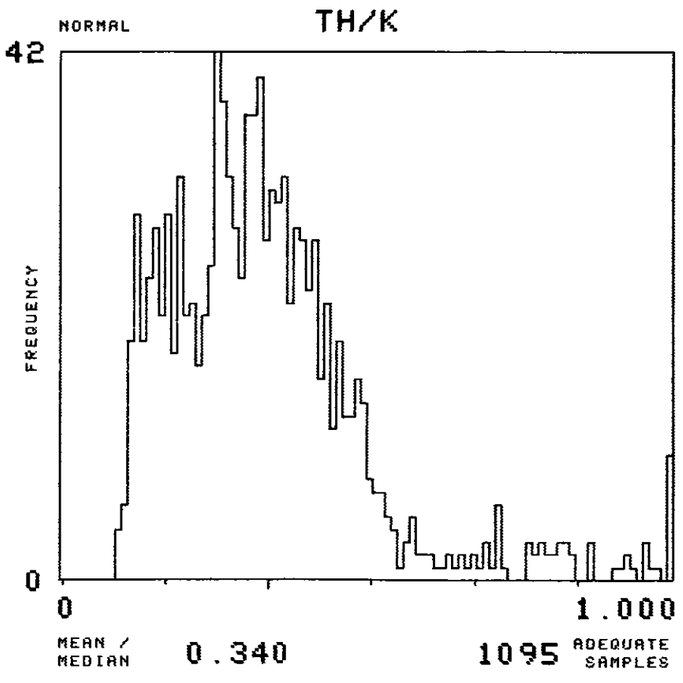






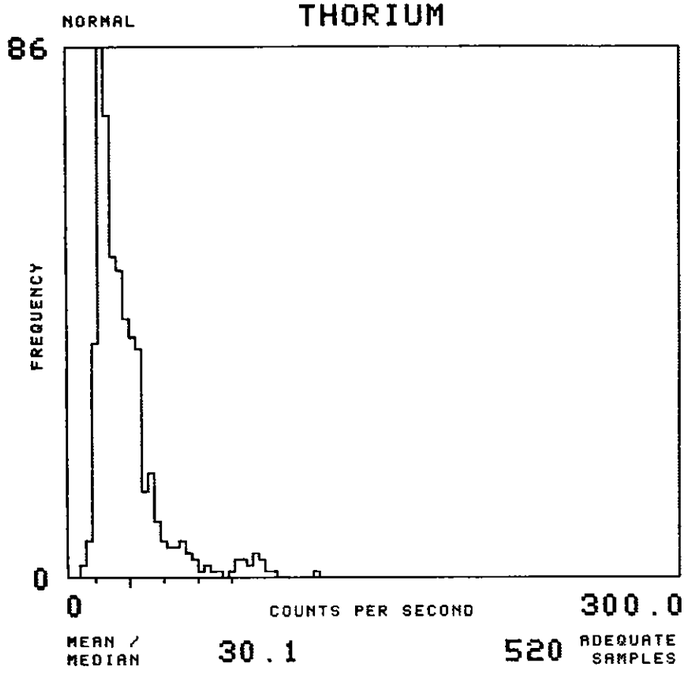


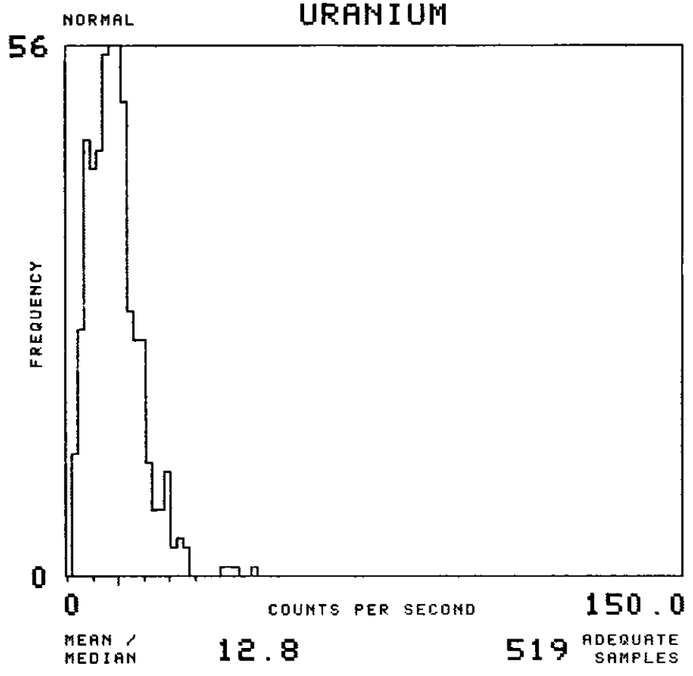


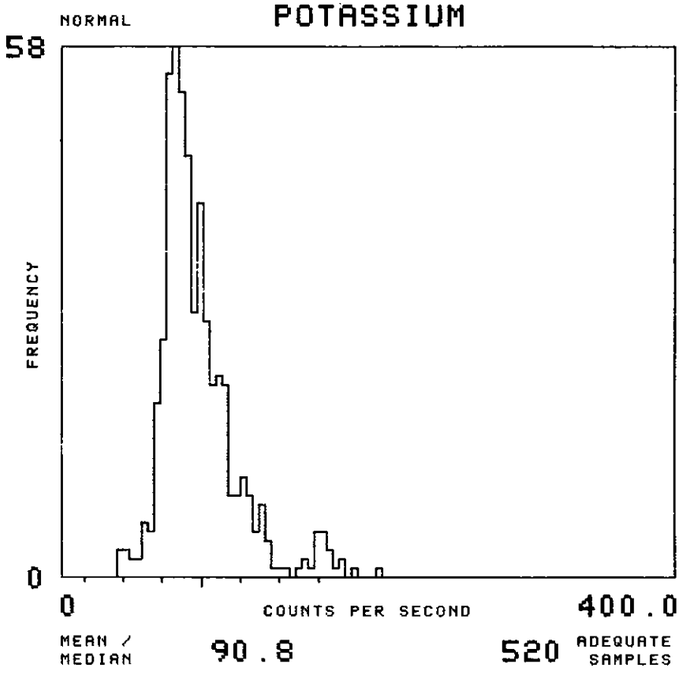


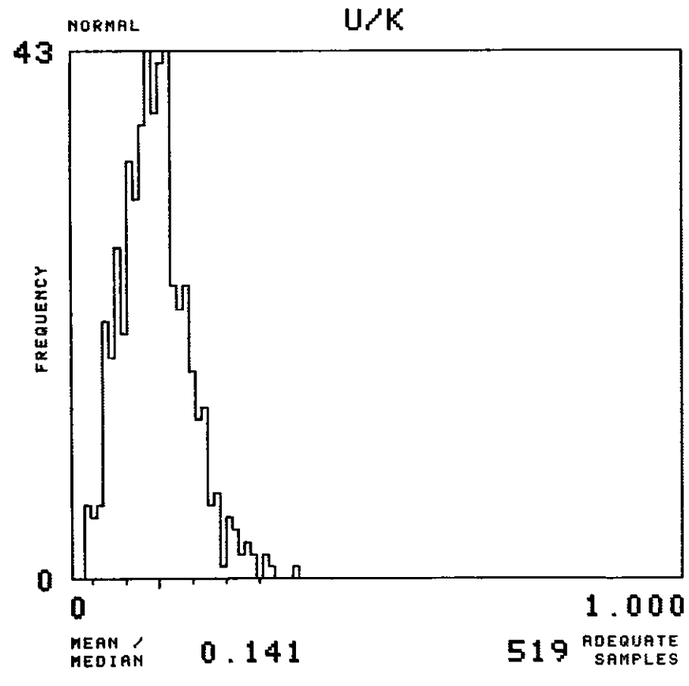
NTMS NK 13-4 CASPER

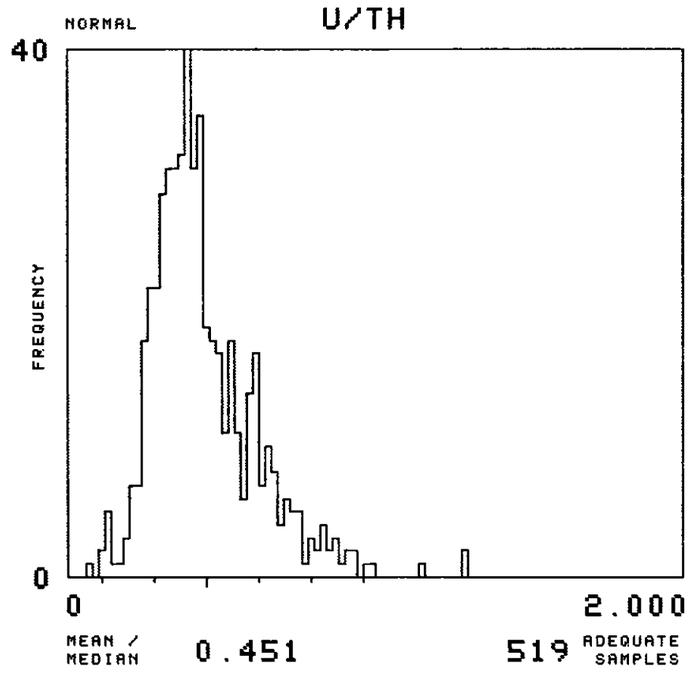
MAP UNIT : PPC TOTAL NUMBER OF SAMPLES 547

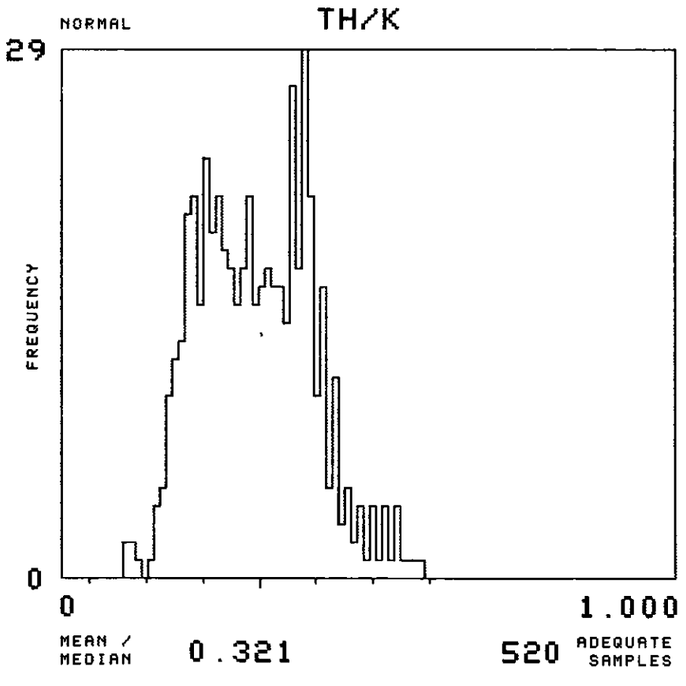












NTMS NK 13-4 CASPER

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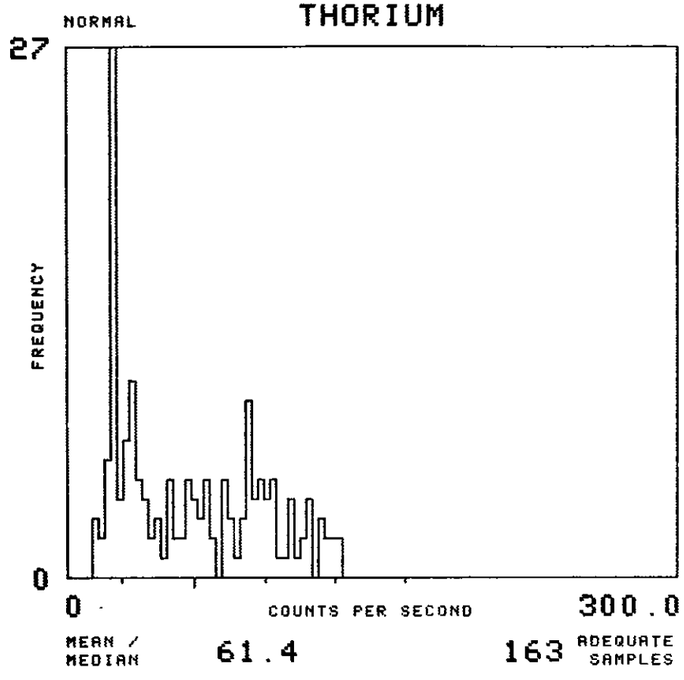
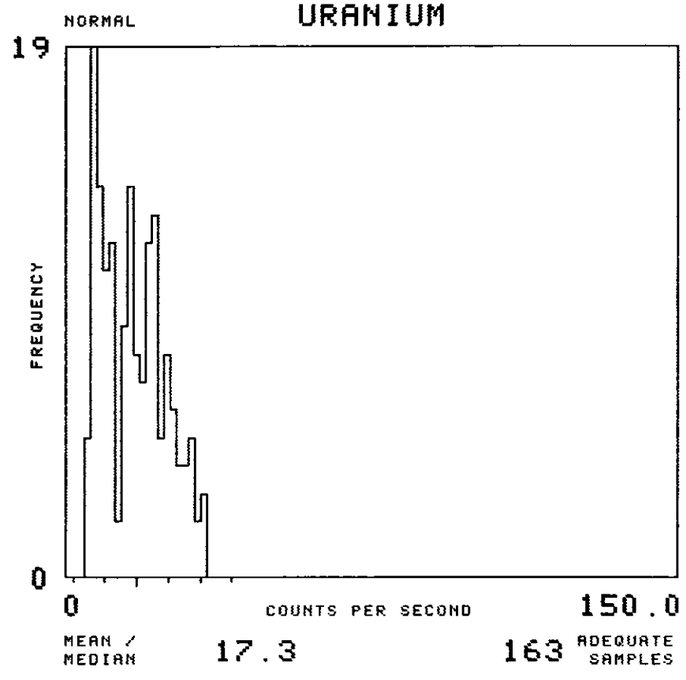
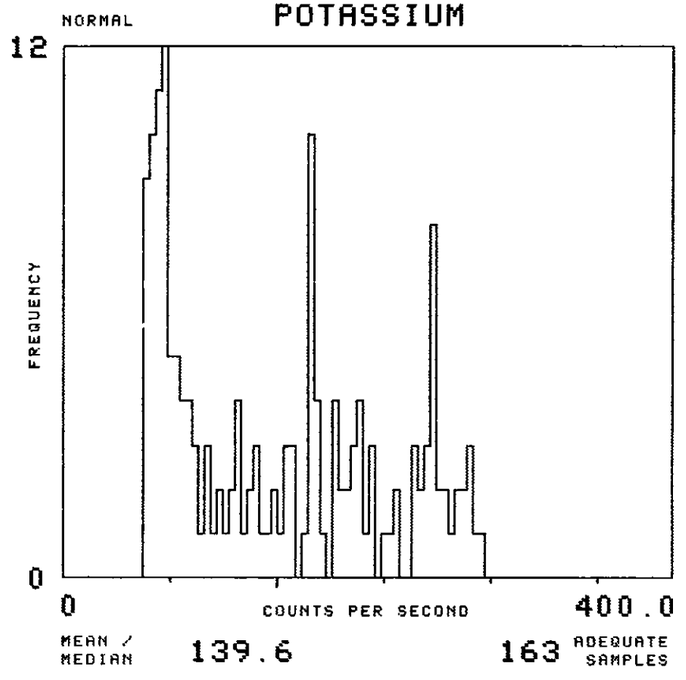
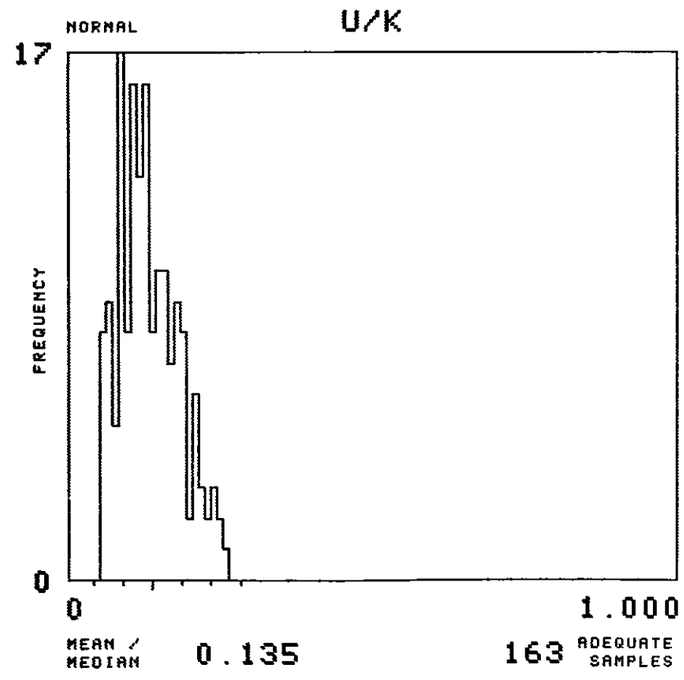
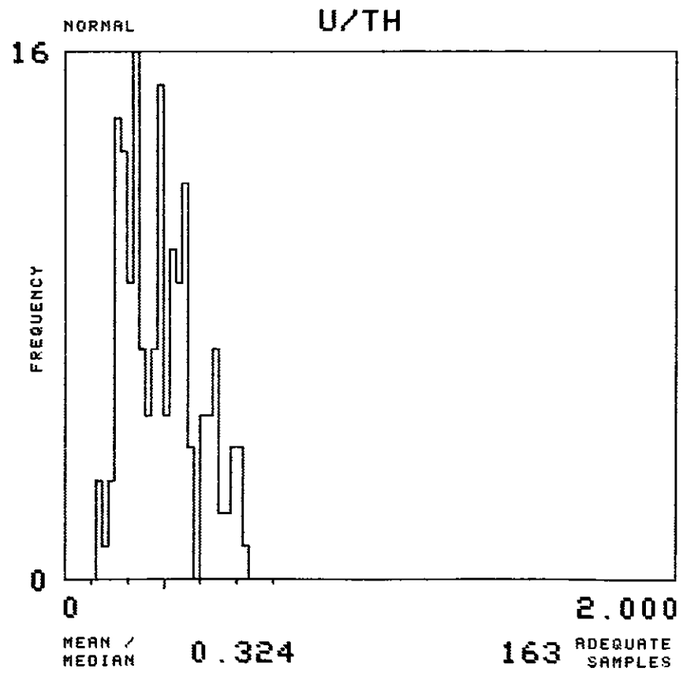
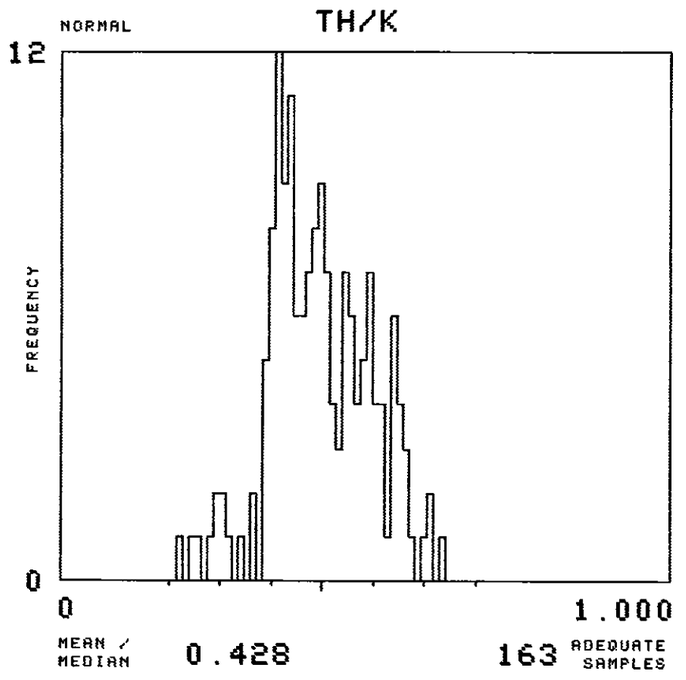






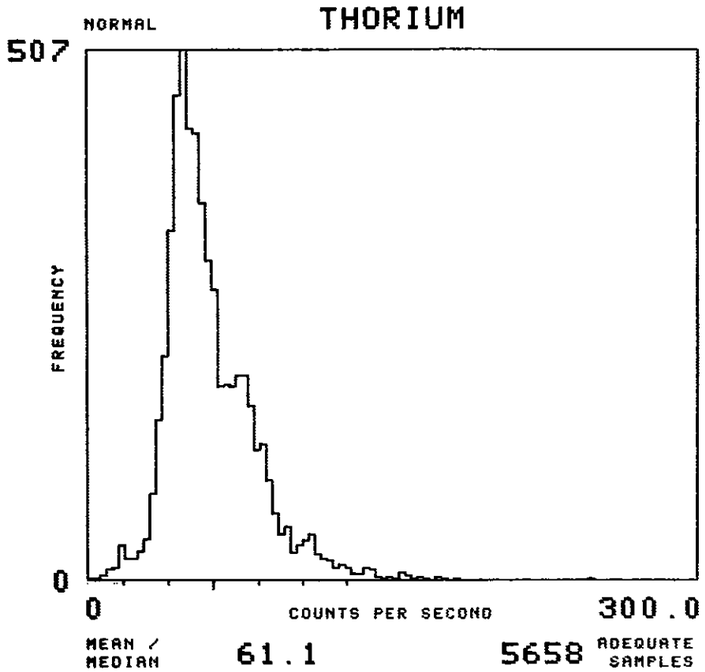


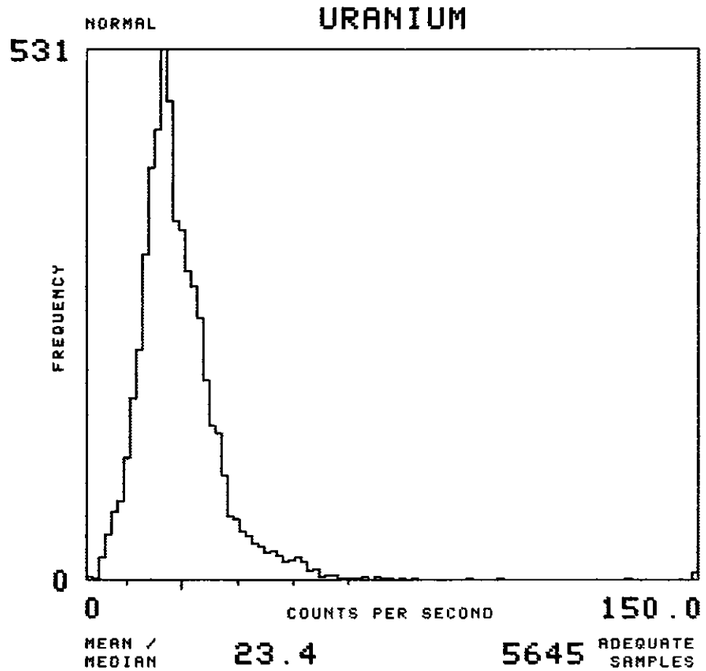


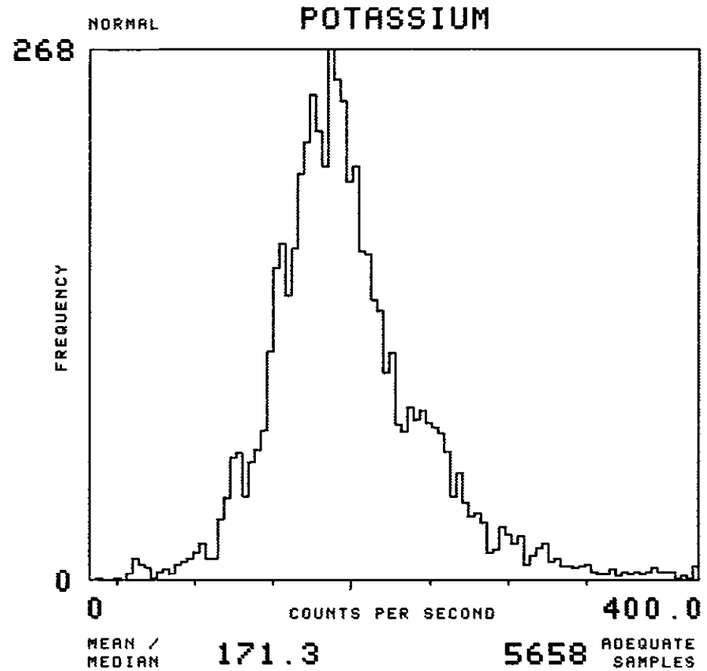


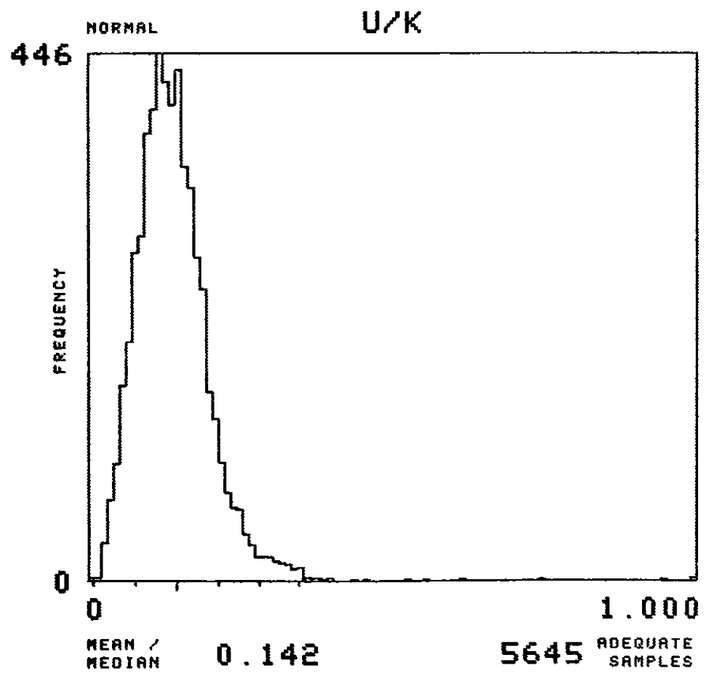
NTMS NK 13-4 CASPER

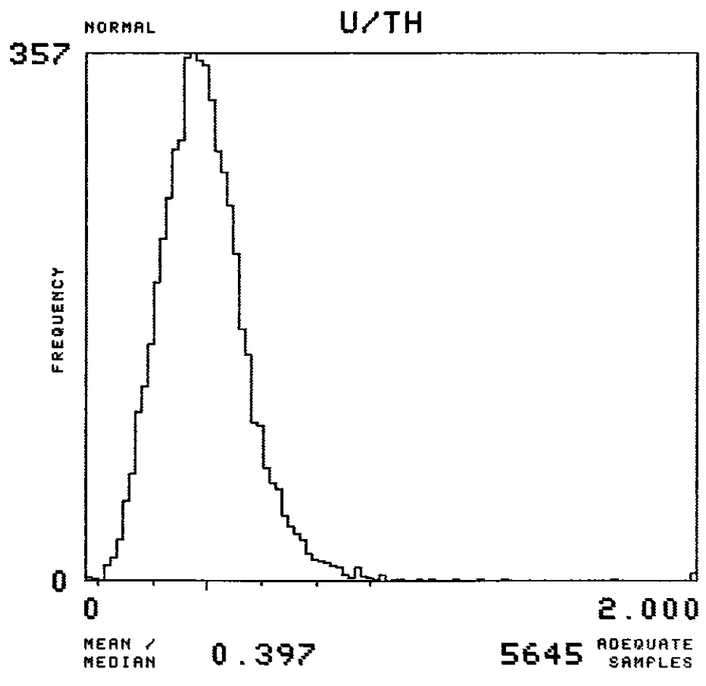
MAP UNIT : QA TOTAL NUMBER OF SAMPLES 5805

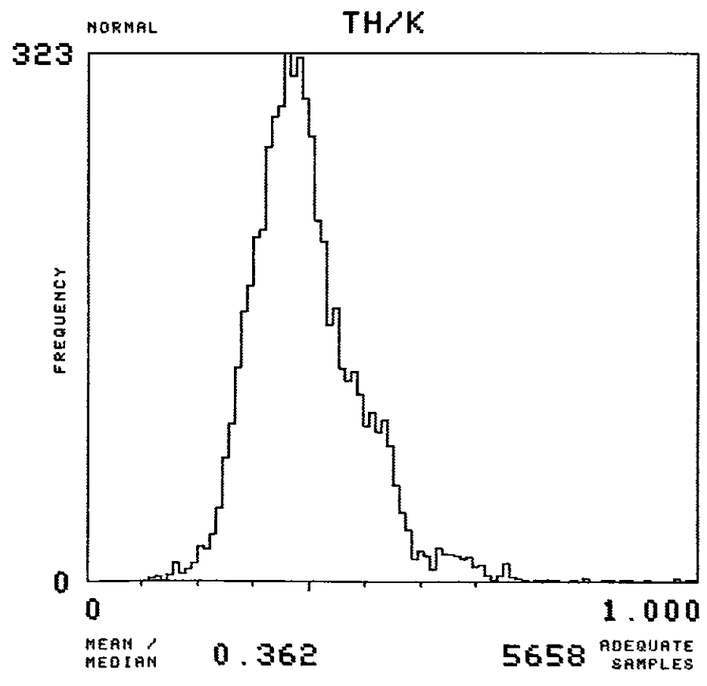






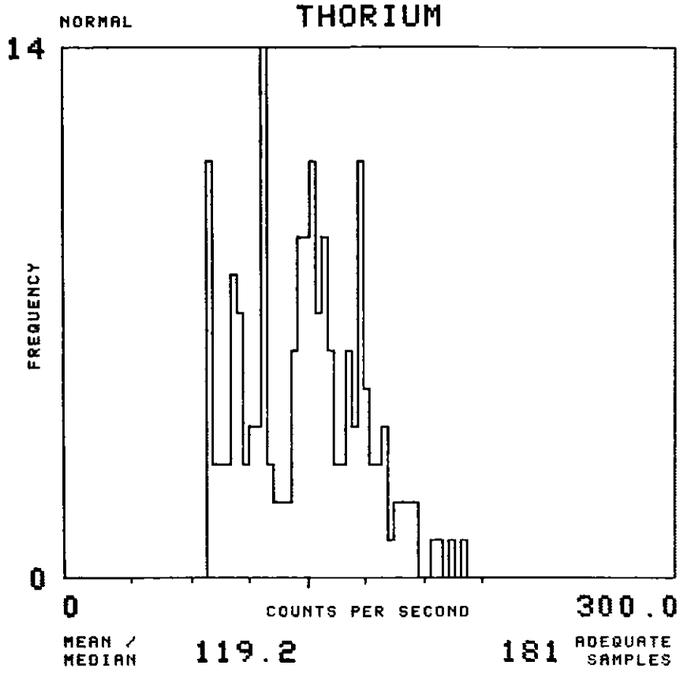


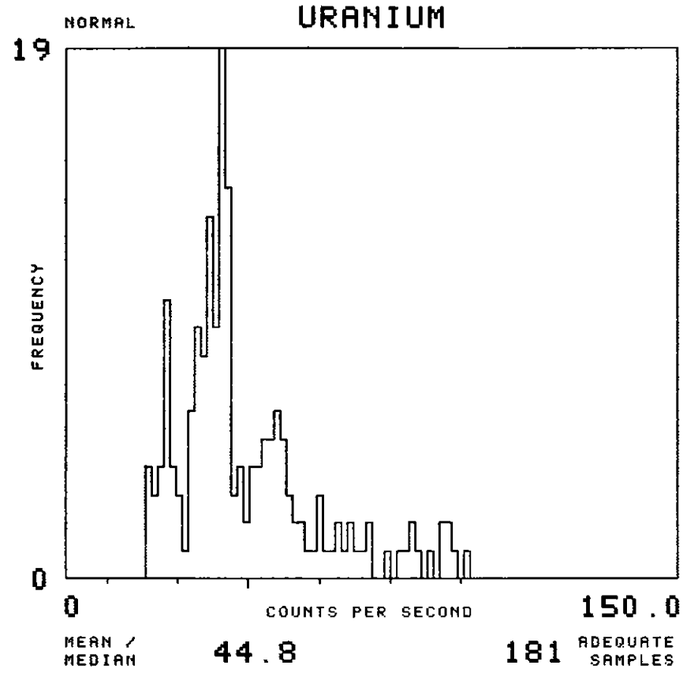


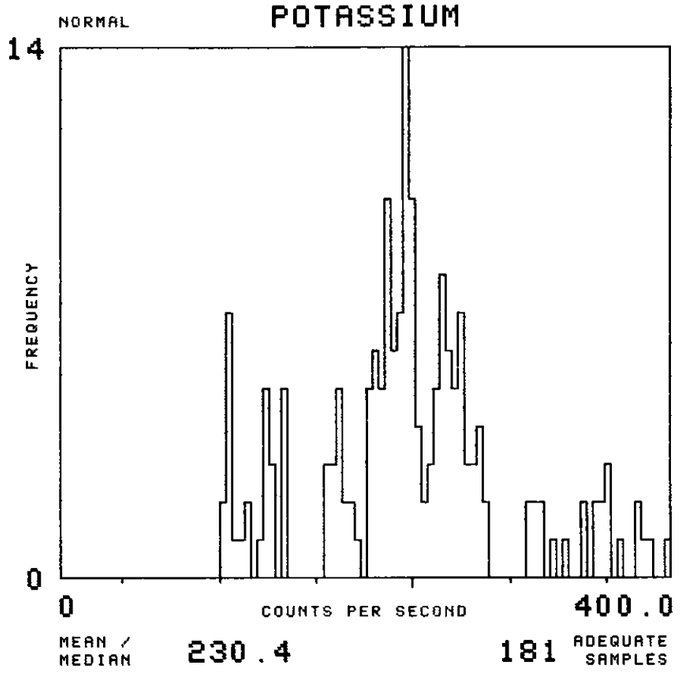


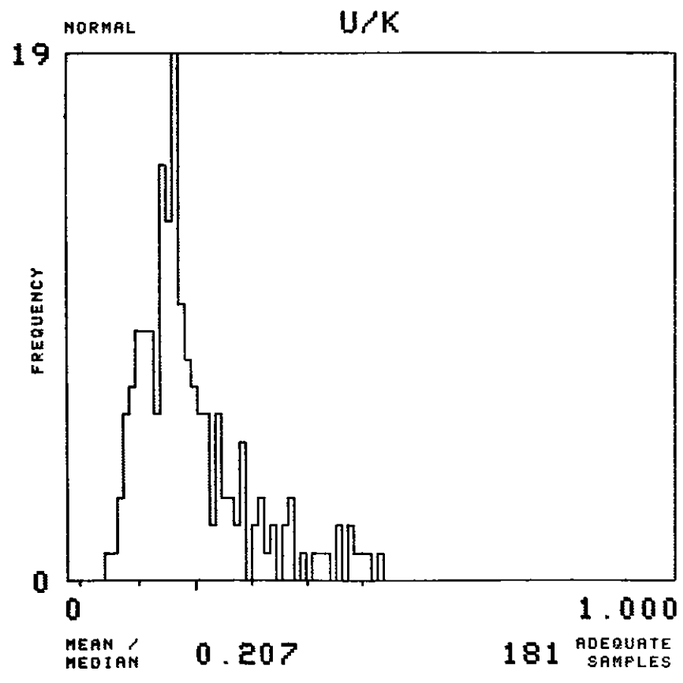
NTMS NK 13-4 CASPER

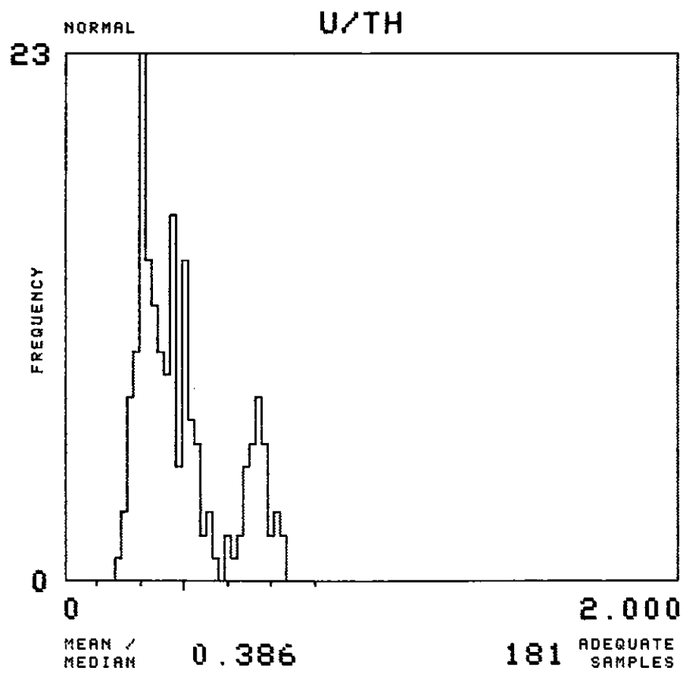
MAP UNIT : QAC TOTAL NUMBER OF SAMPLES 181

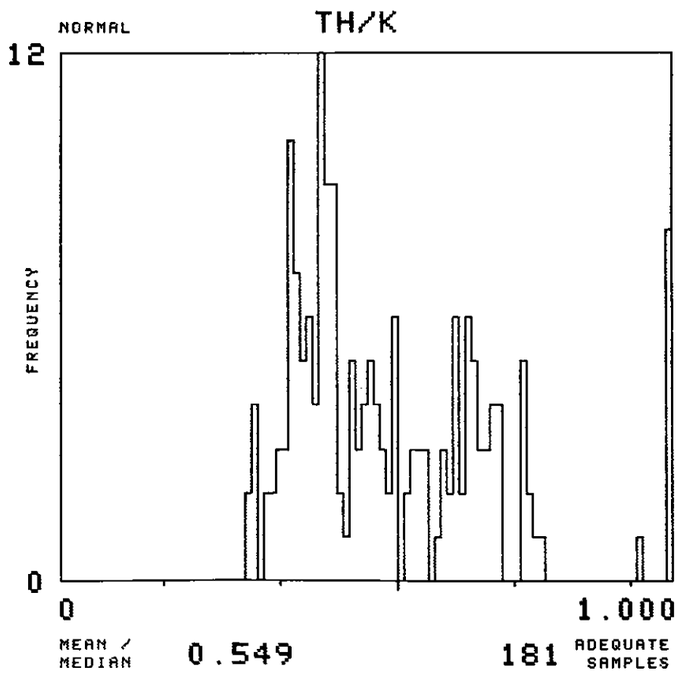






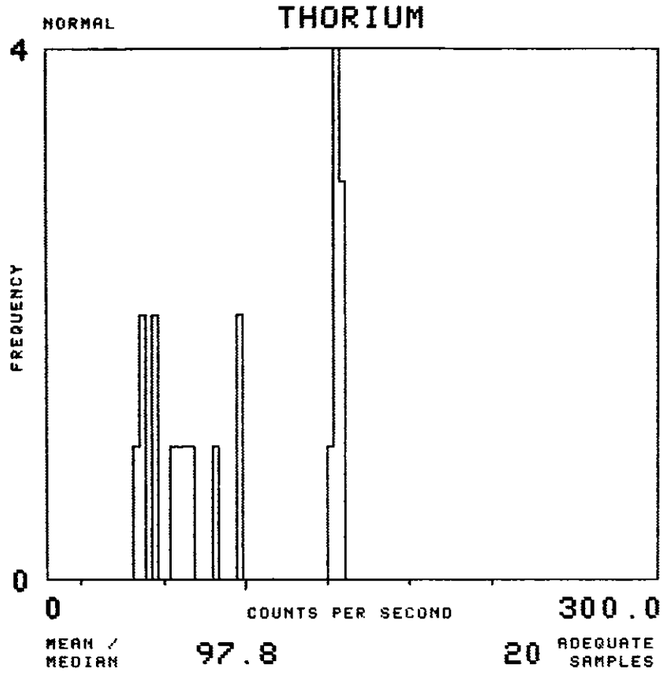


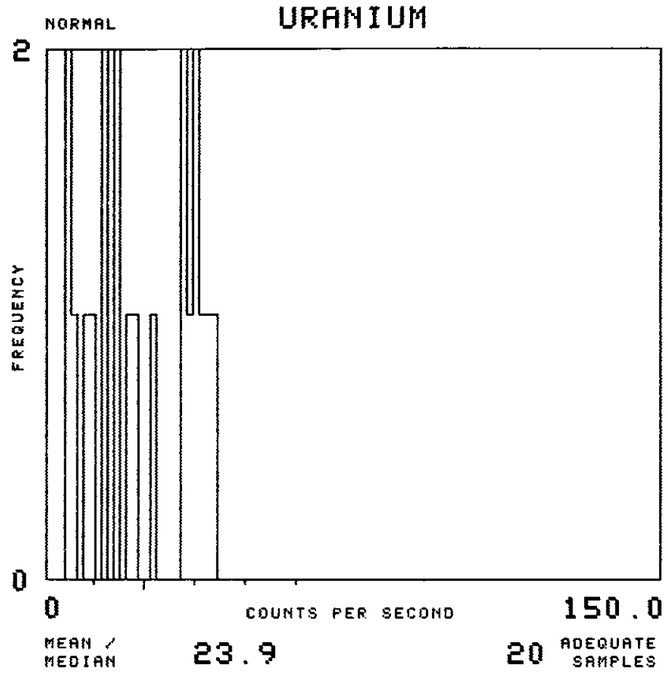


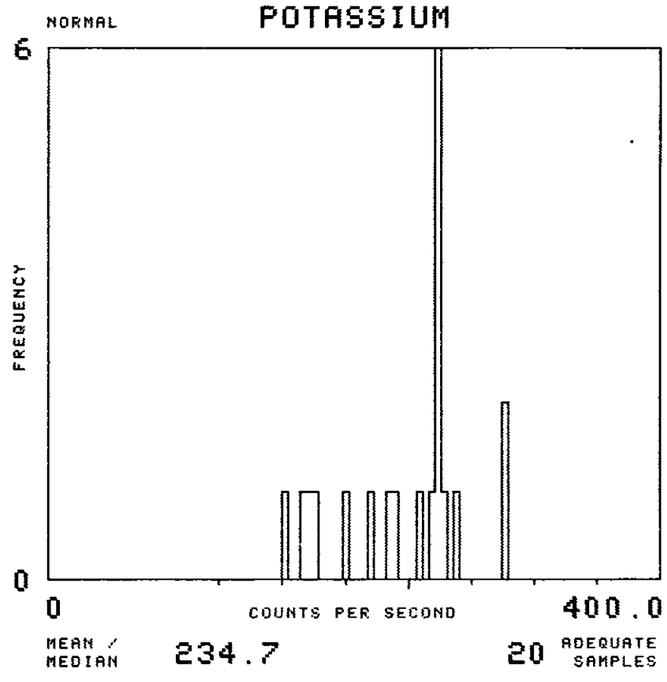


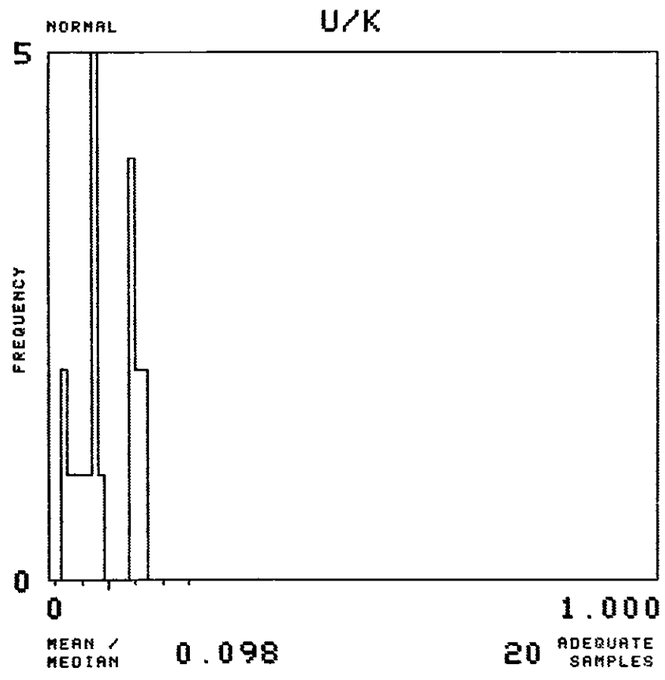
NTMS NK 13-4 CASPER

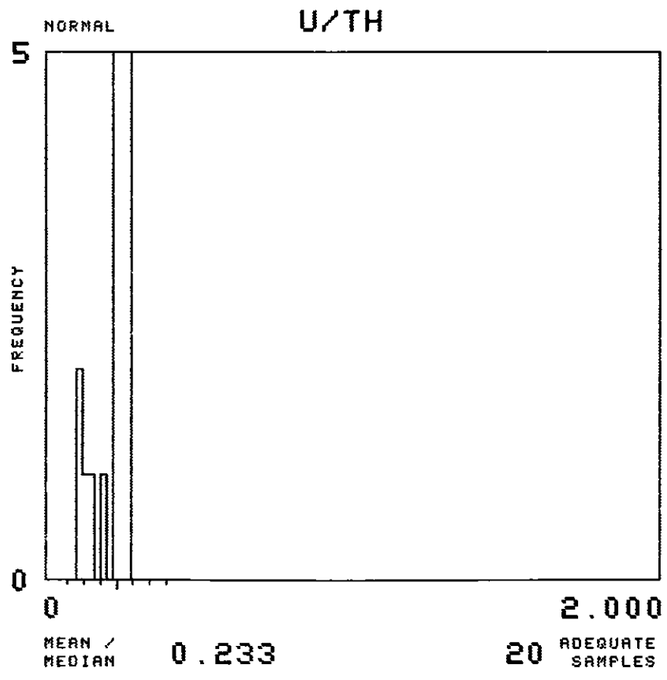
MAP UNIT : QC TOTAL NUMBER OF SAMPLES 20

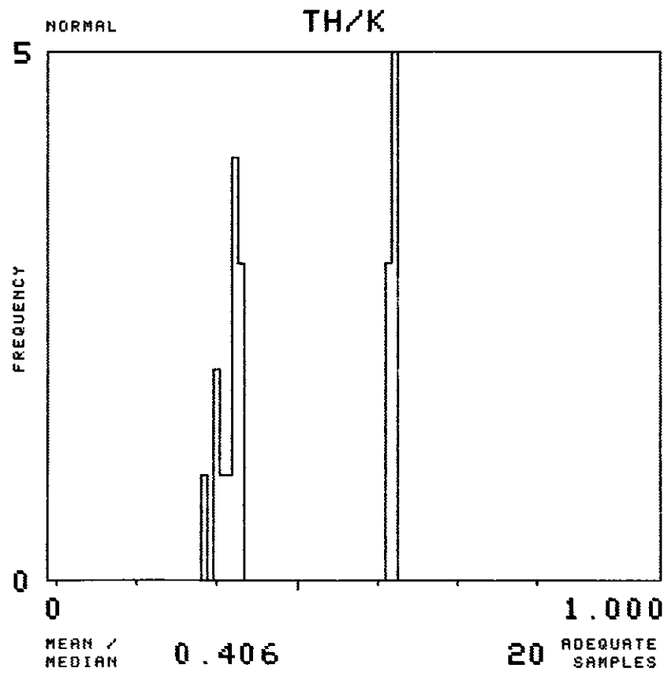






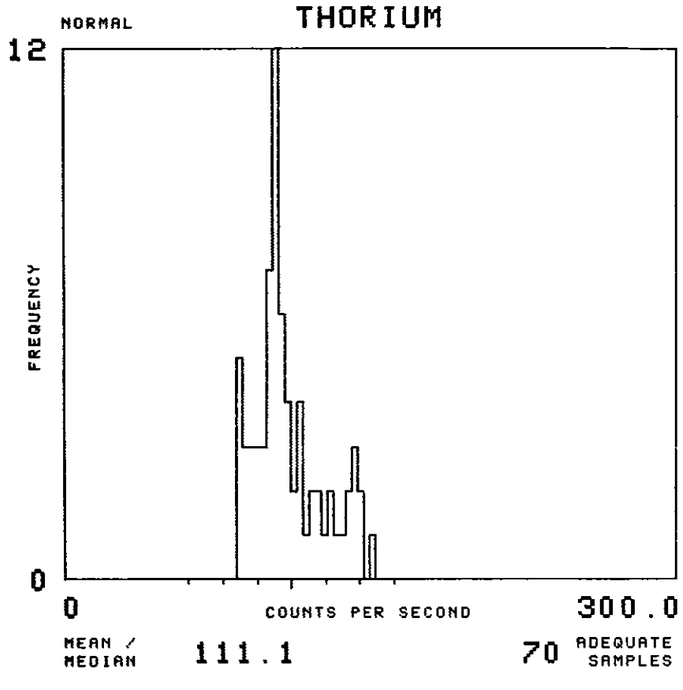


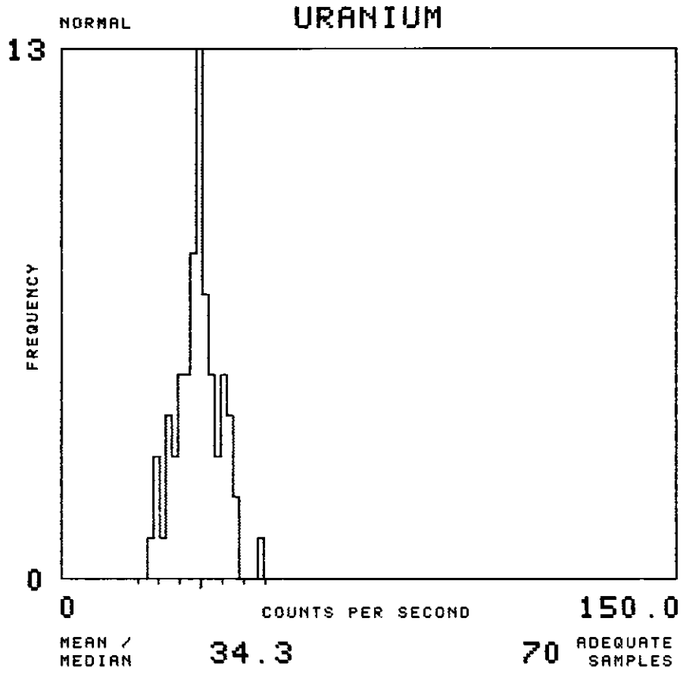


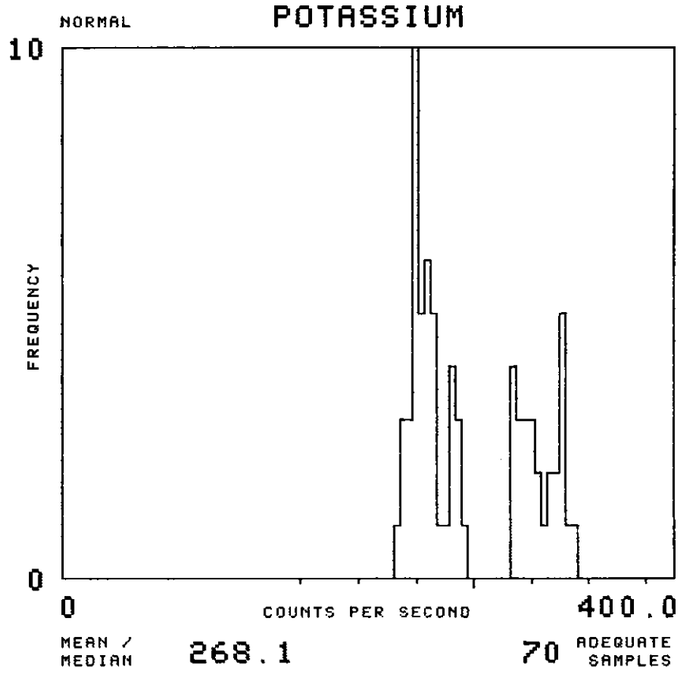


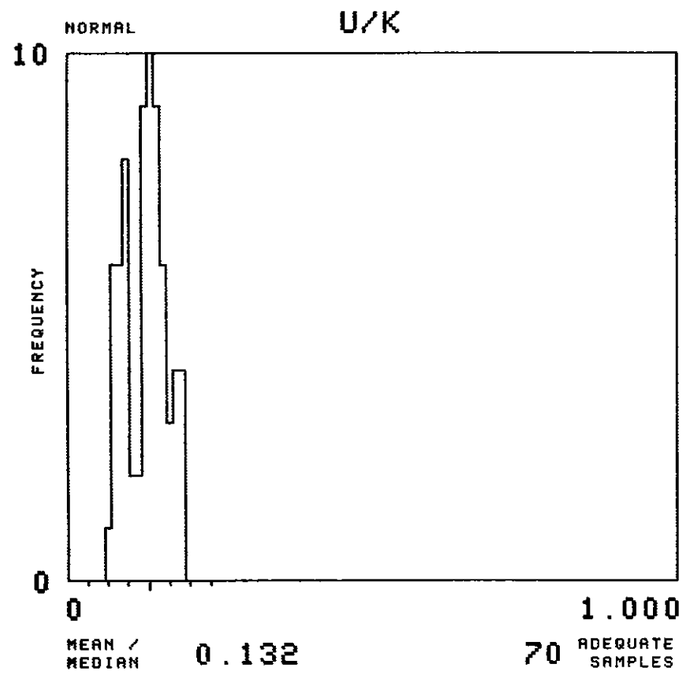
NTMS NK 13-4 CASPER

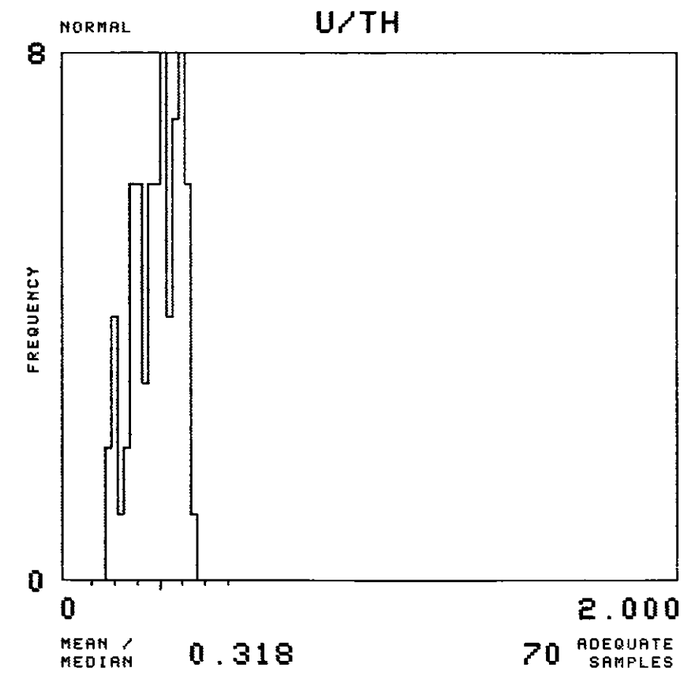
MAP UNIT : QF TOTAL NUMBER OF SAMPLES 70

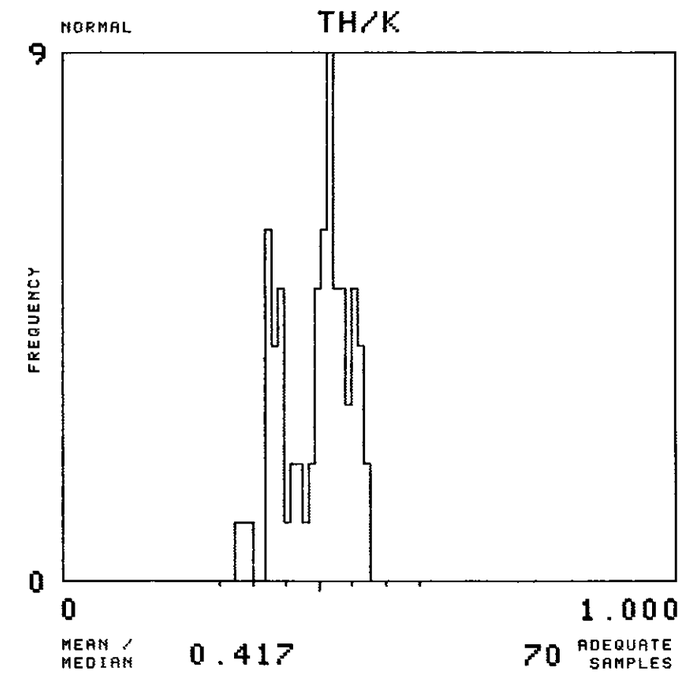






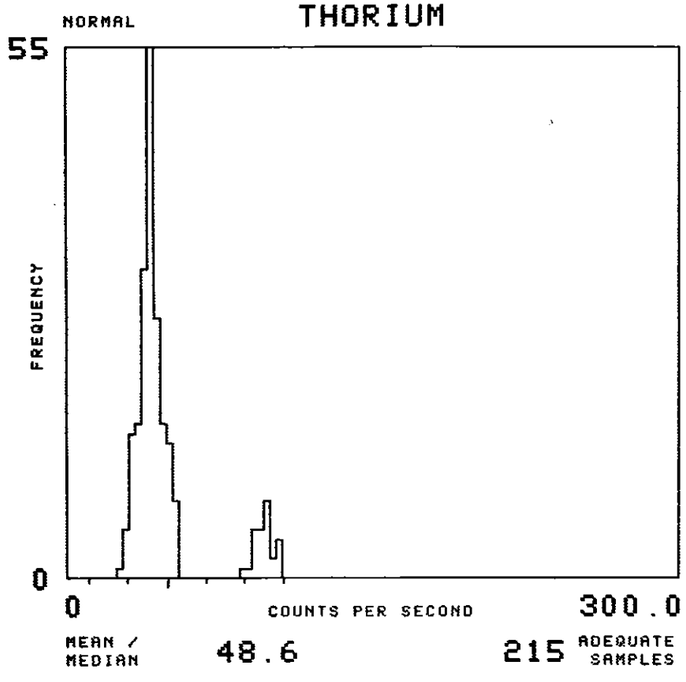


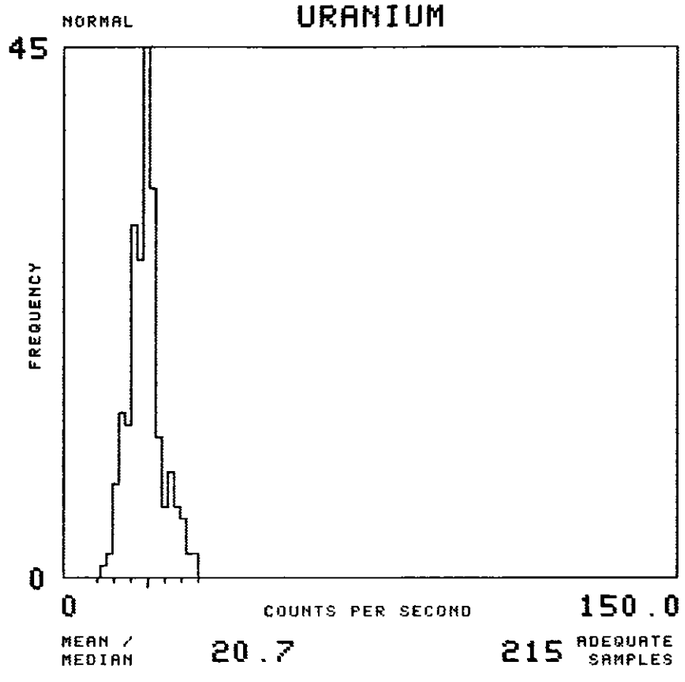


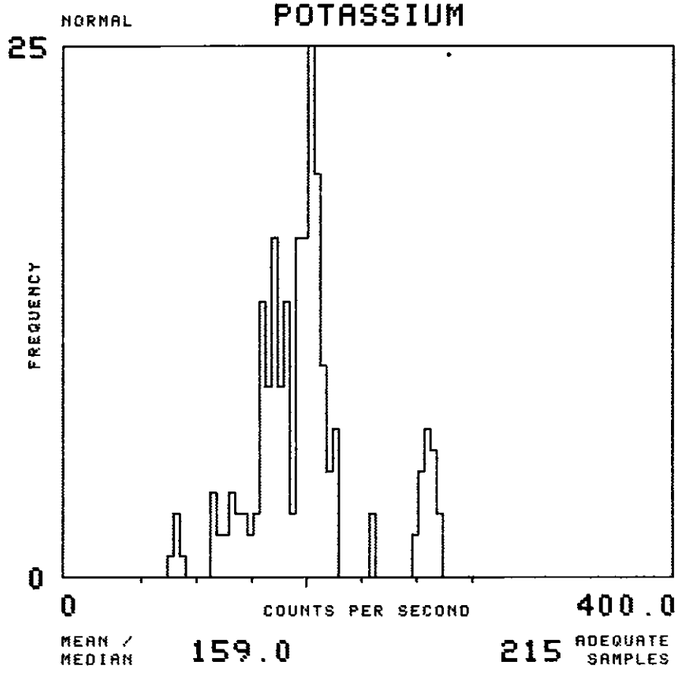


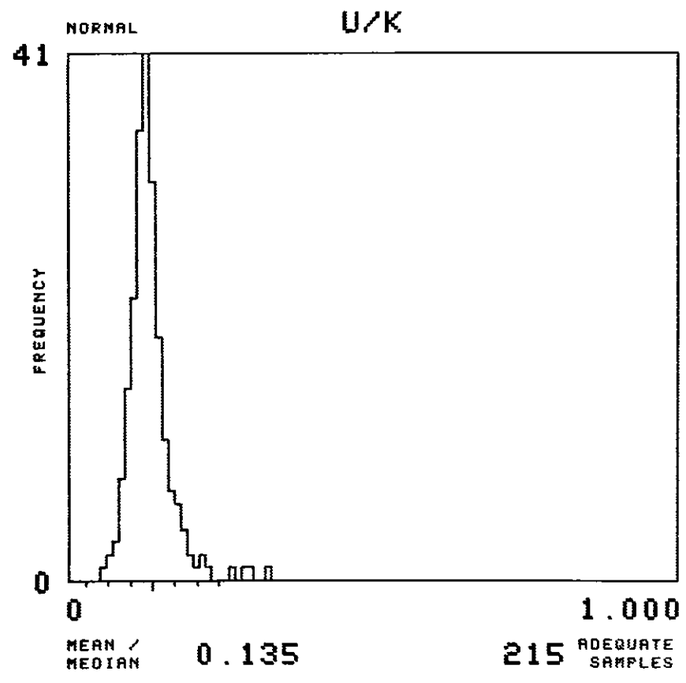
NTMS NK 13-4 CASPER

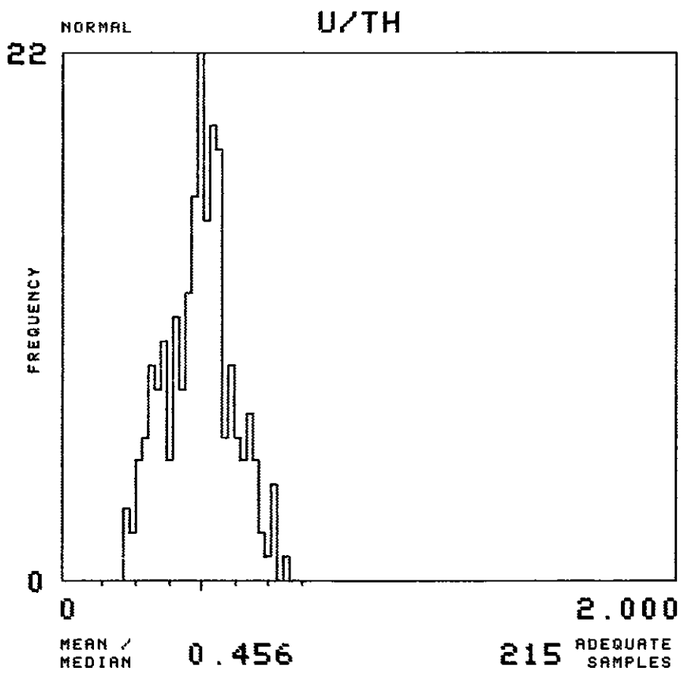
MAP UNIT : QL TOTAL NUMBER OF SAMPLES 215

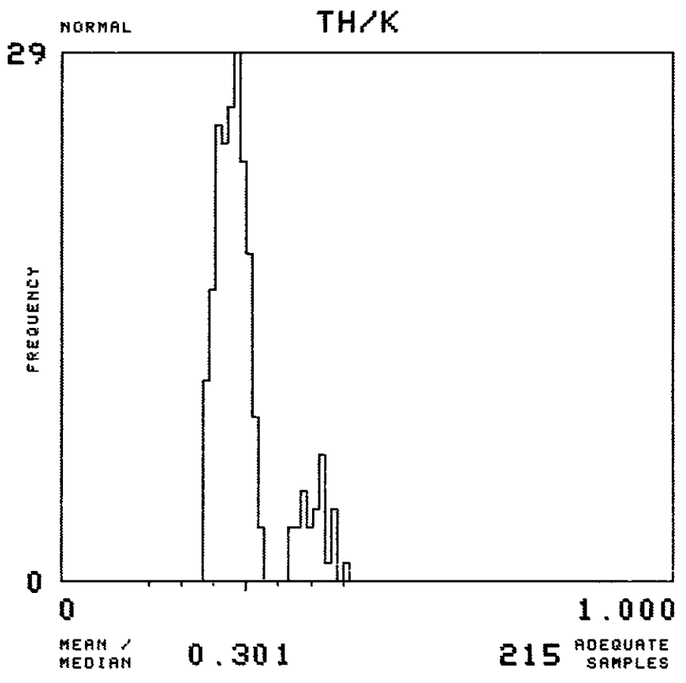






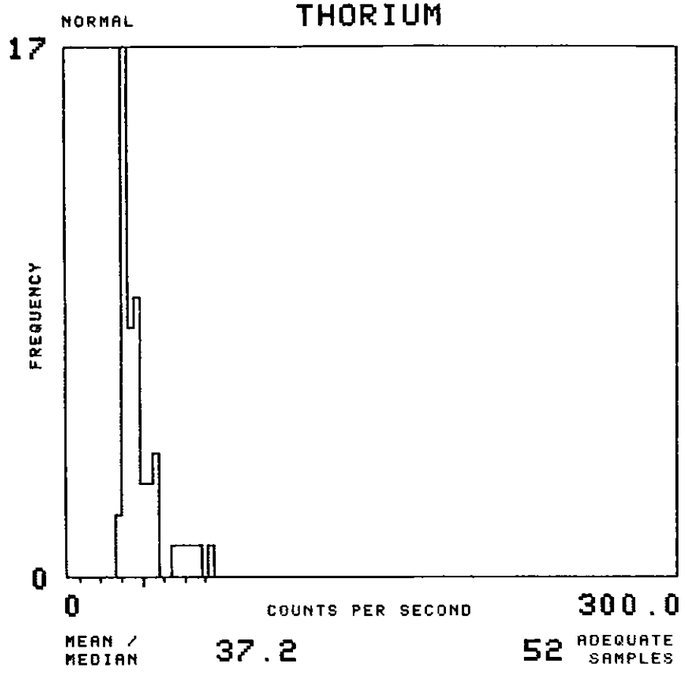


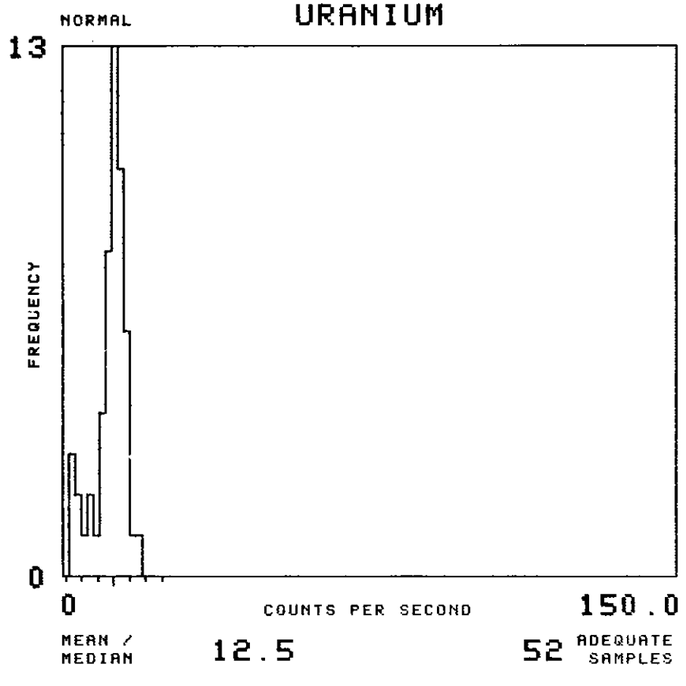


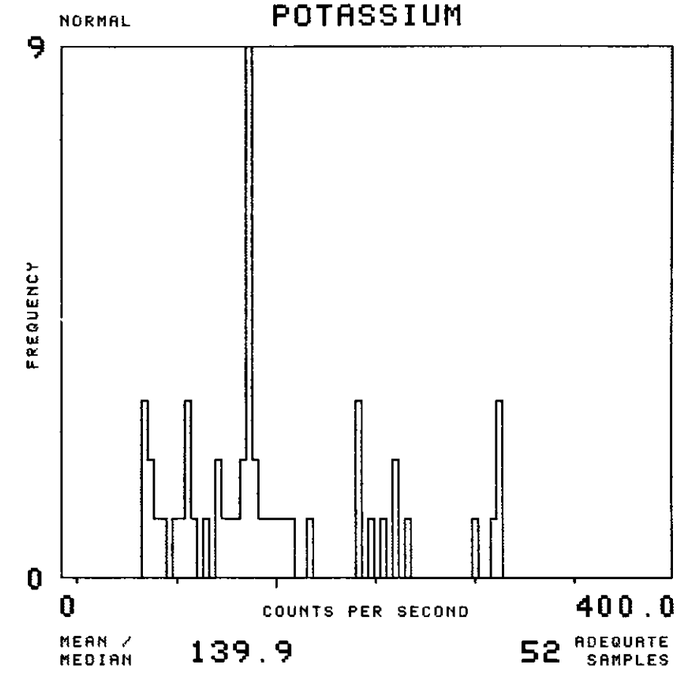


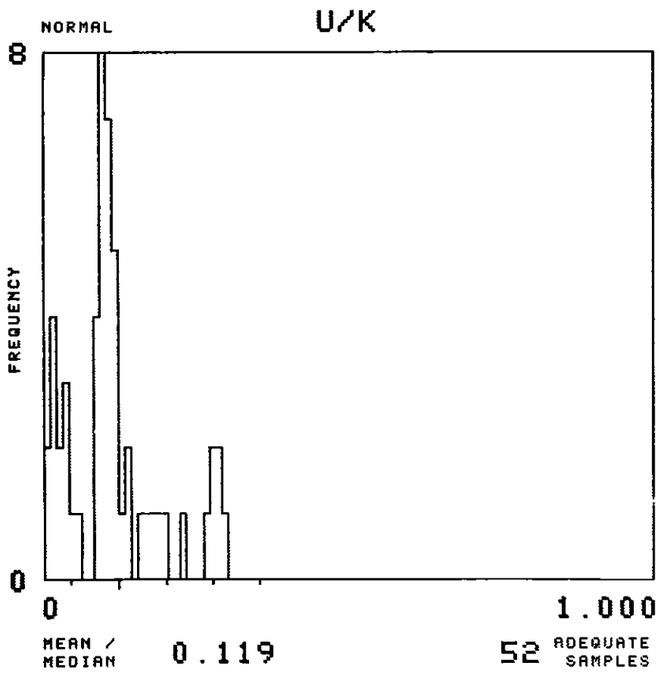
NTMS NK 13-4 CASPER

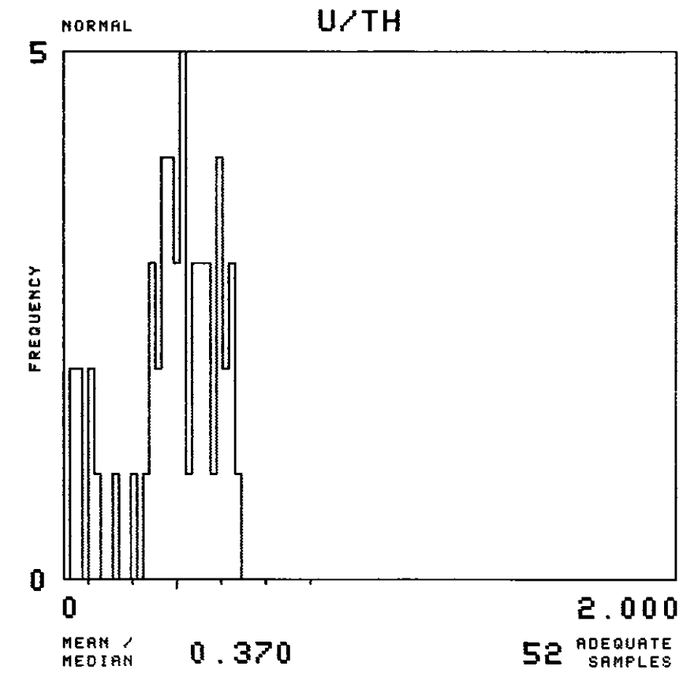
MAP UNIT : QLS TOTAL NUMBER OF SAMPLES 68

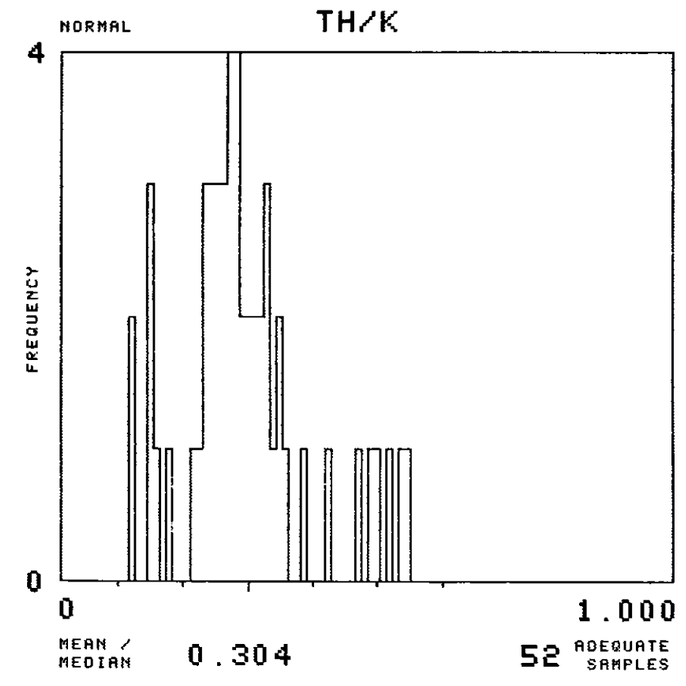












NTMS NK 13-4 CASPER

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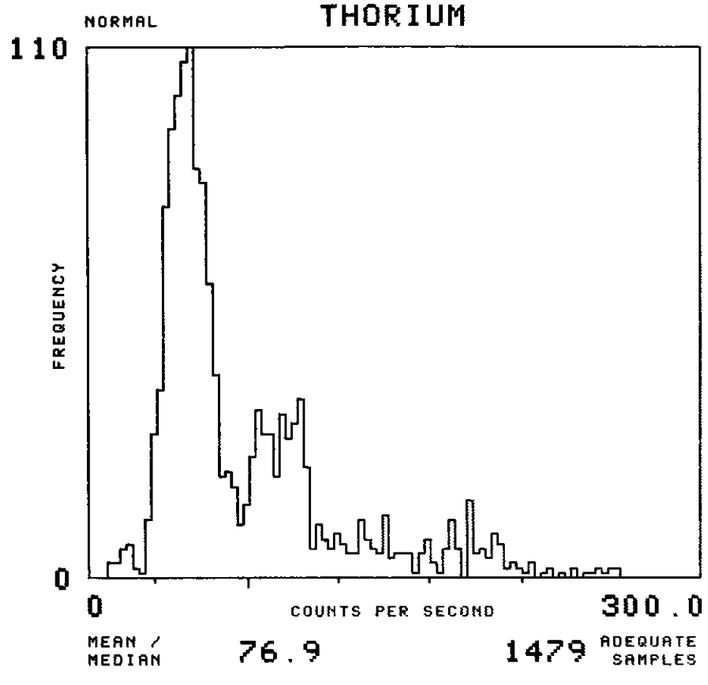

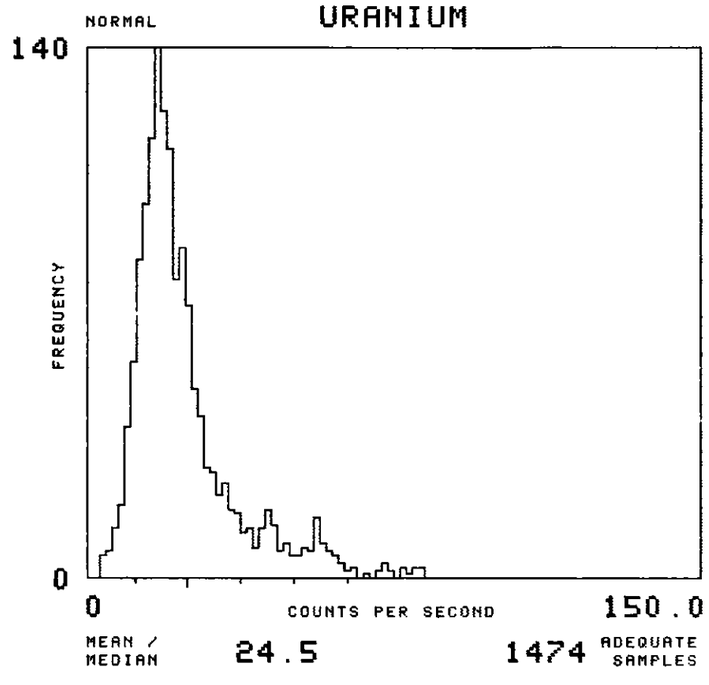

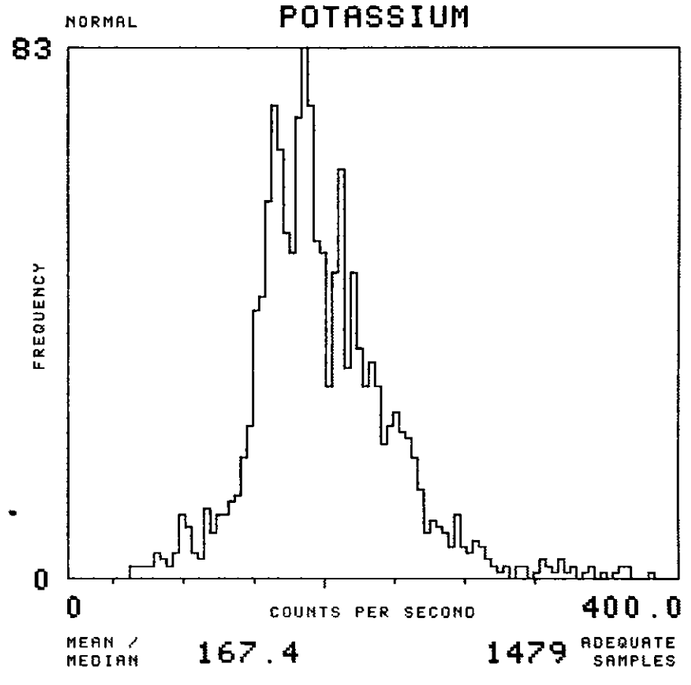

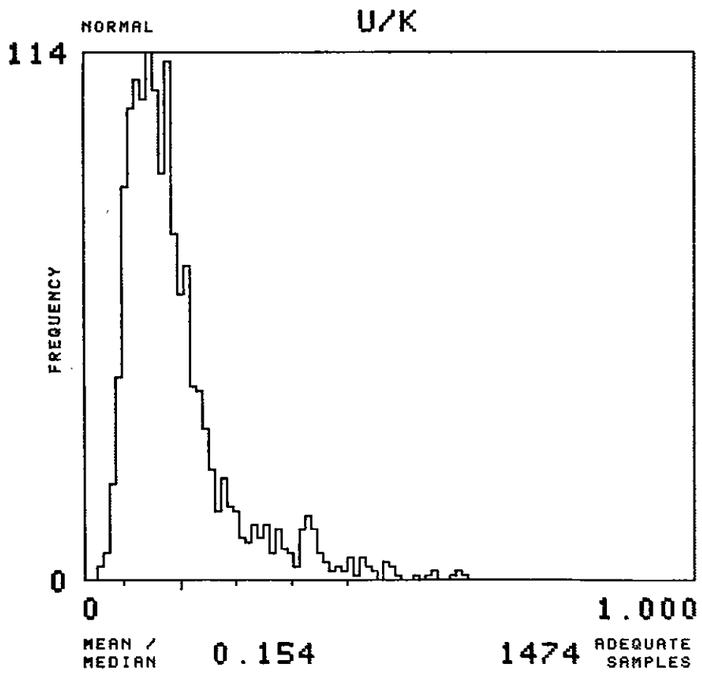

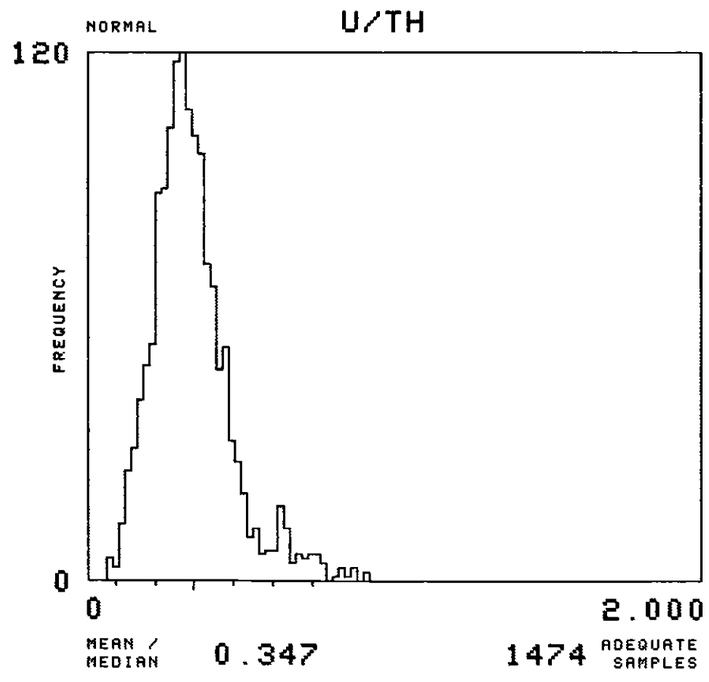

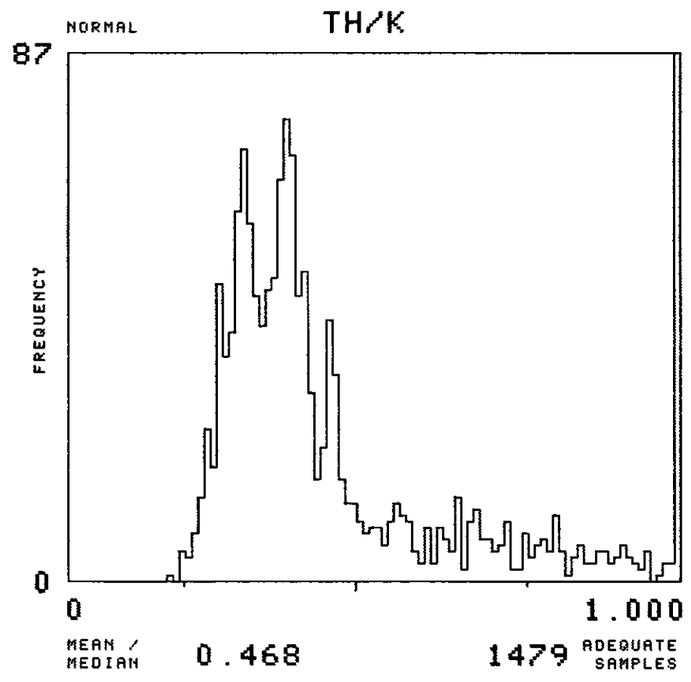

NTMS NK 13-4 CASPER

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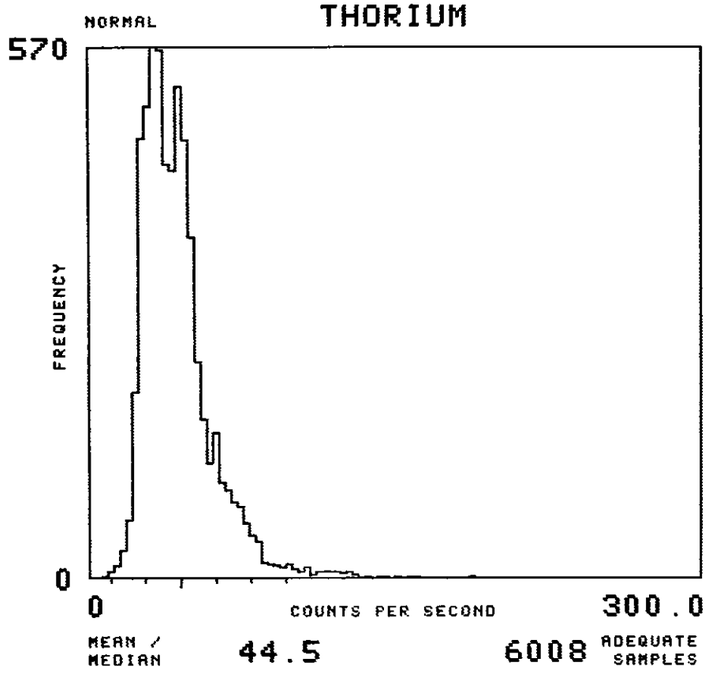

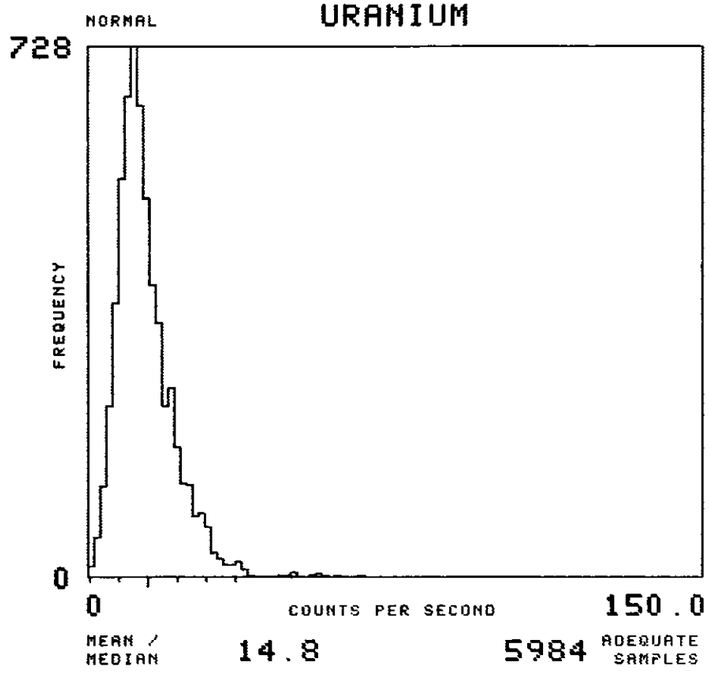

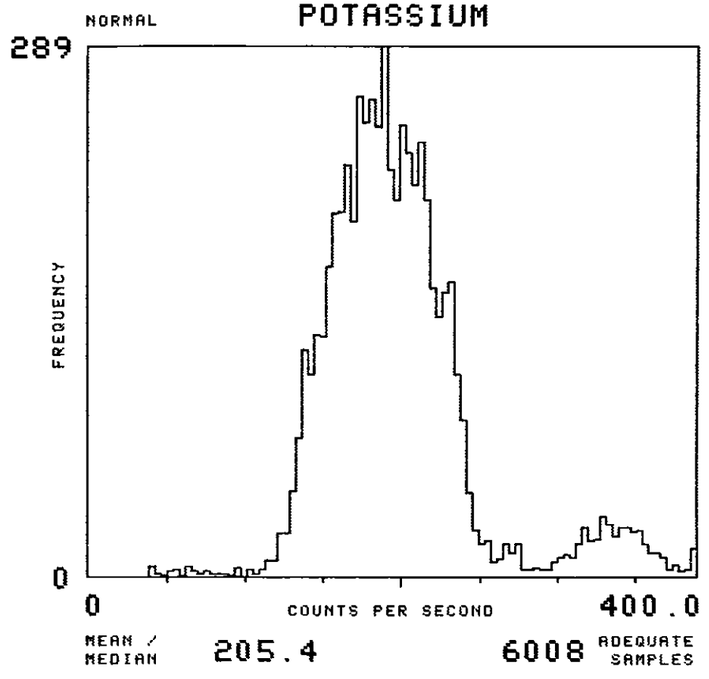

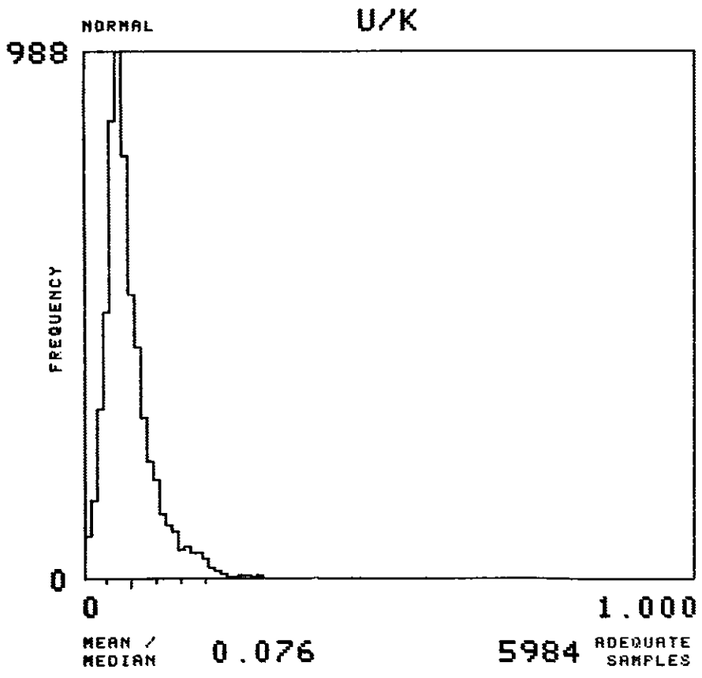

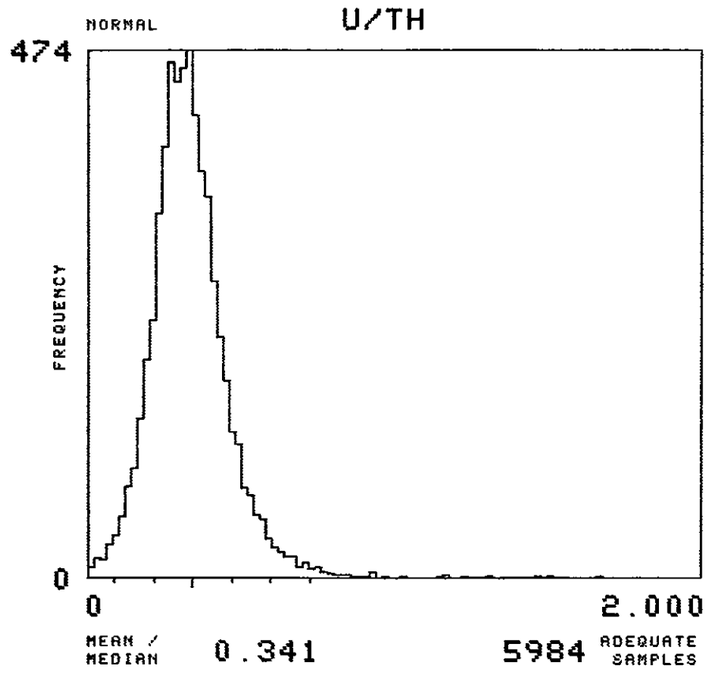

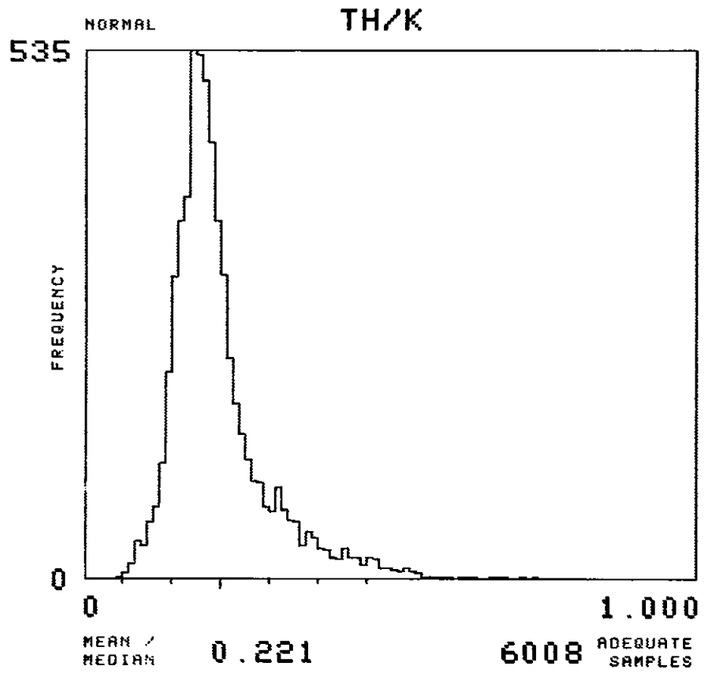

NTMS NK 13-4 CASPER

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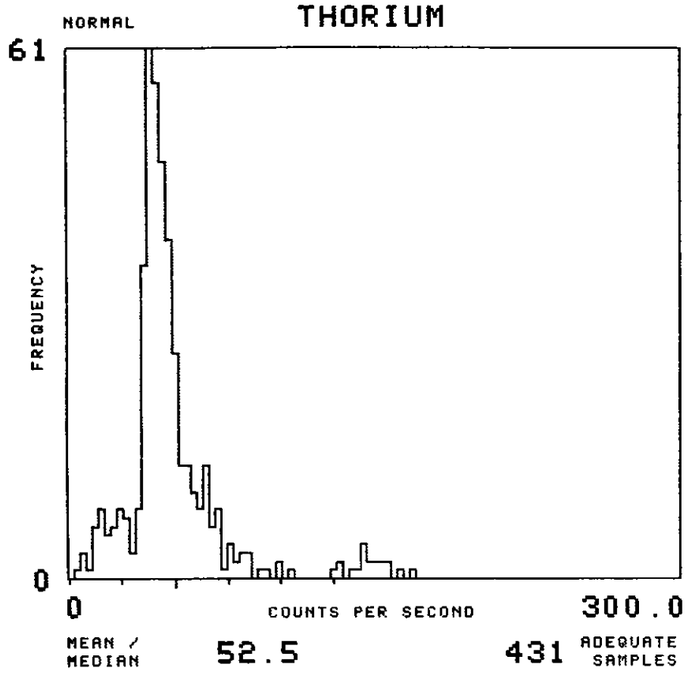

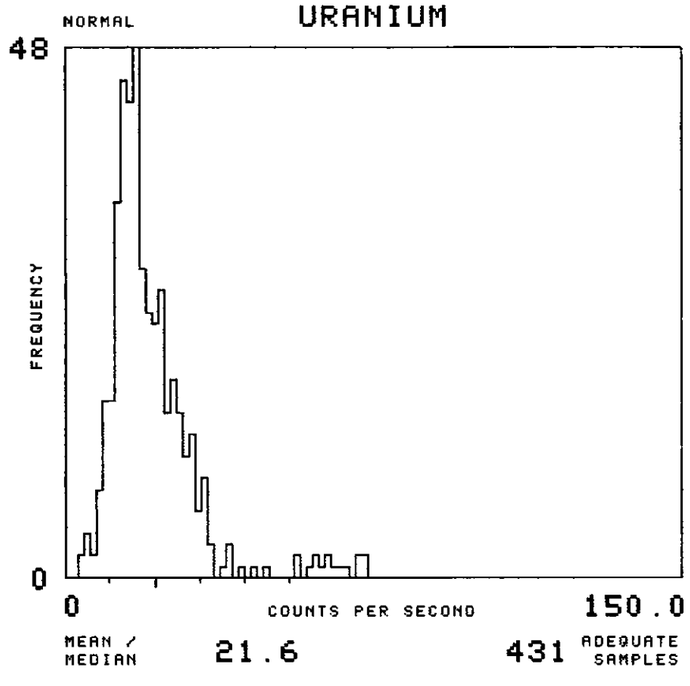

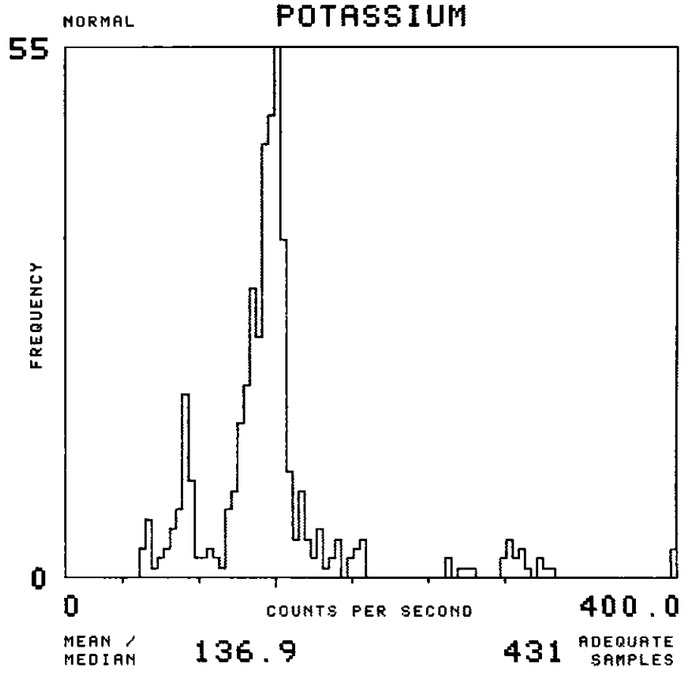

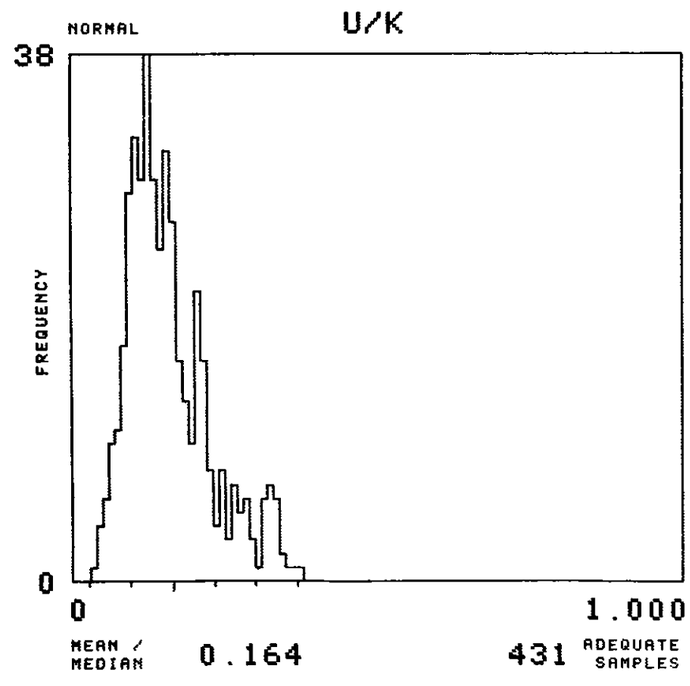

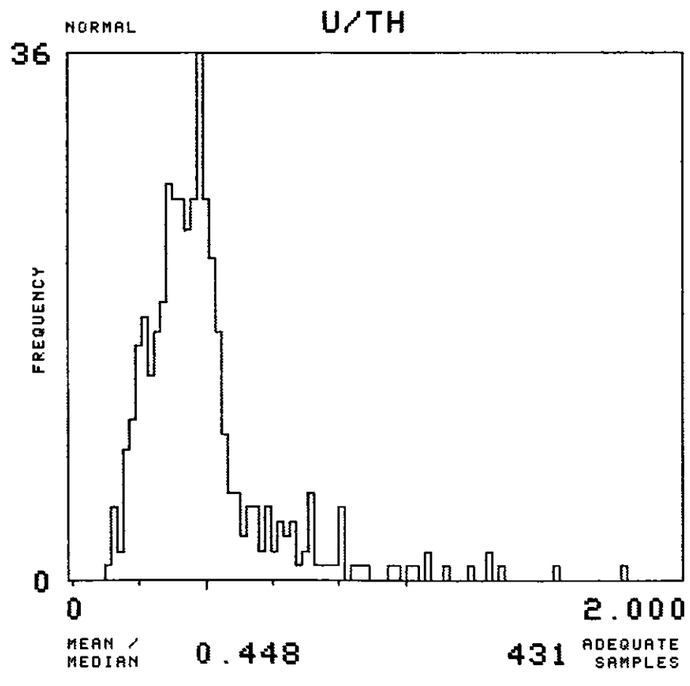

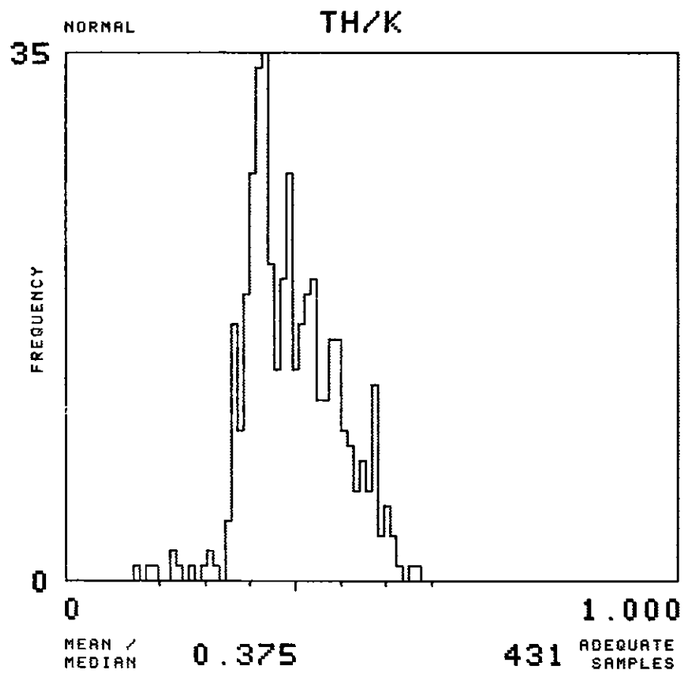

NTMS NK 13-4 CASPER

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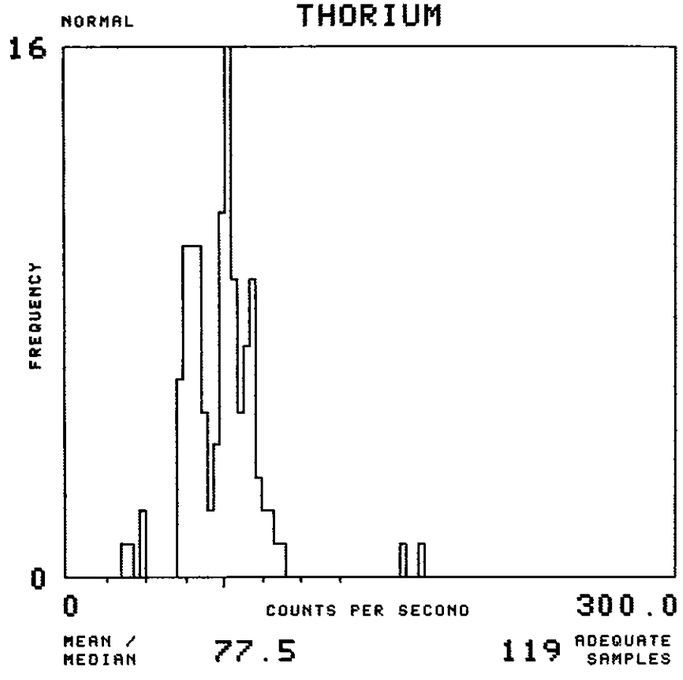

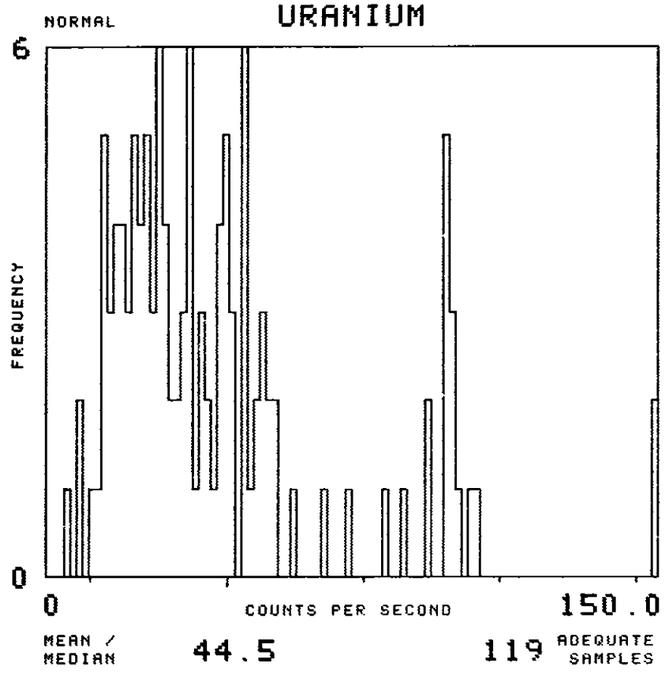

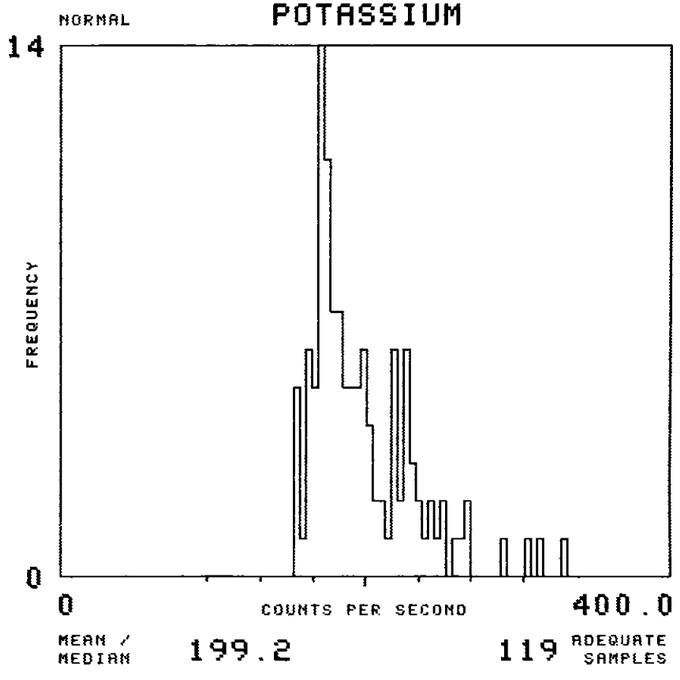

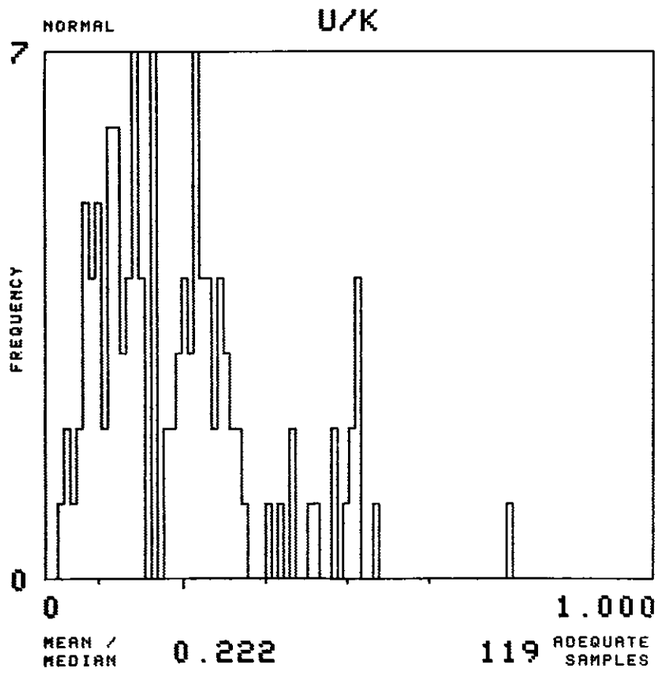

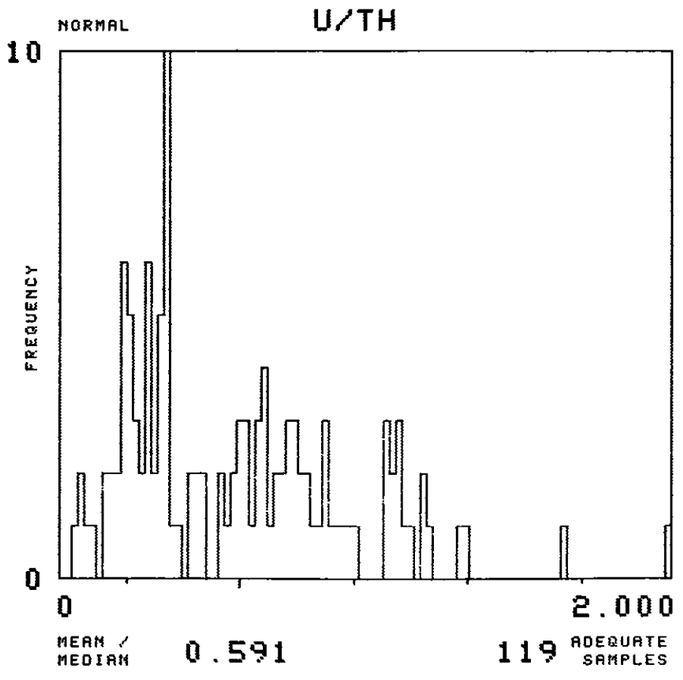

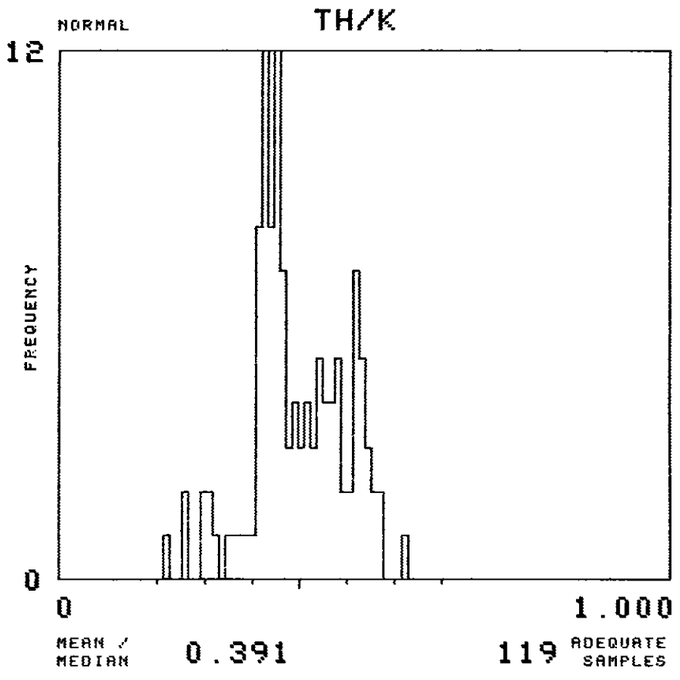

NTMS NK 13-4 CASPER

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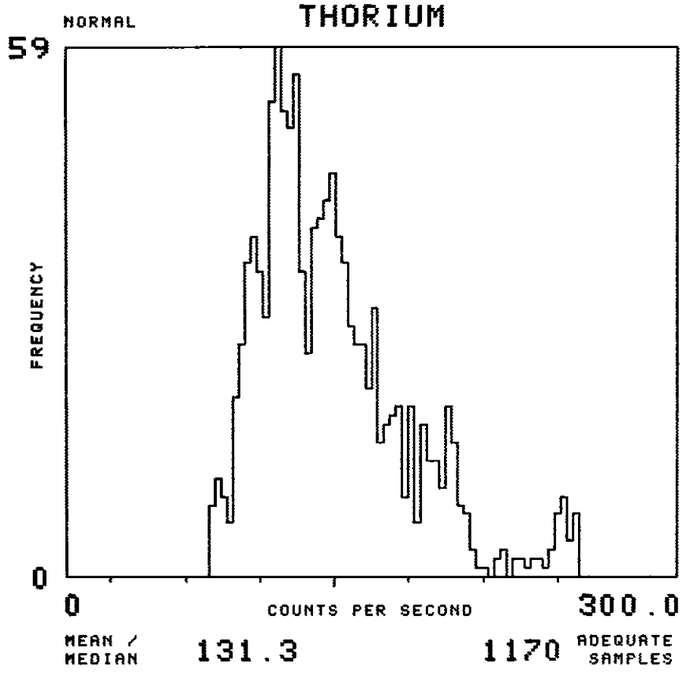

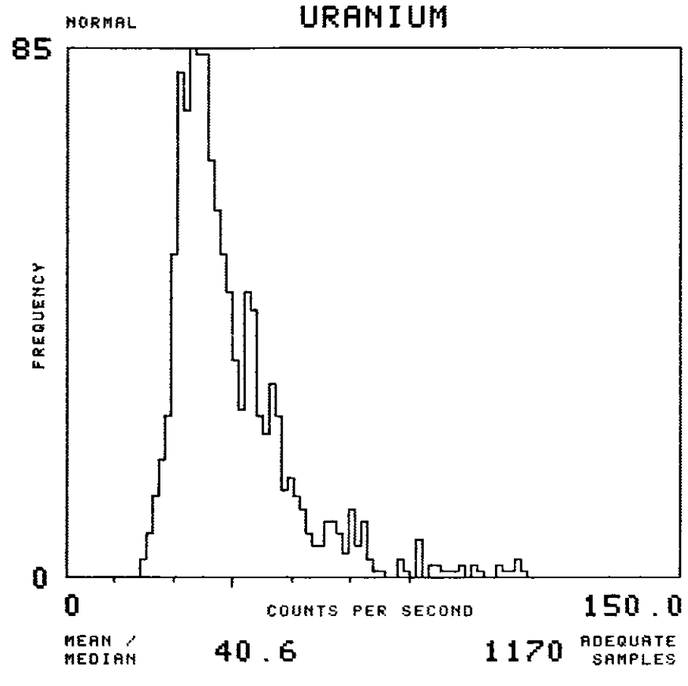

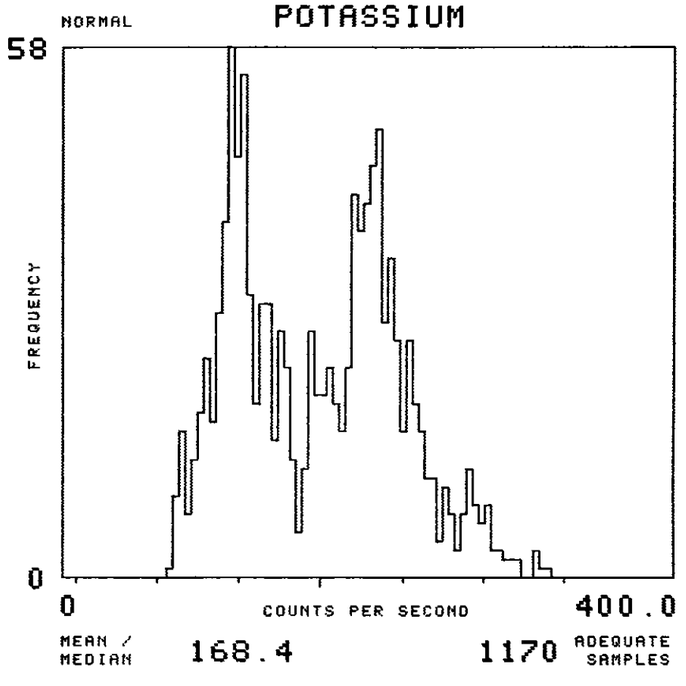

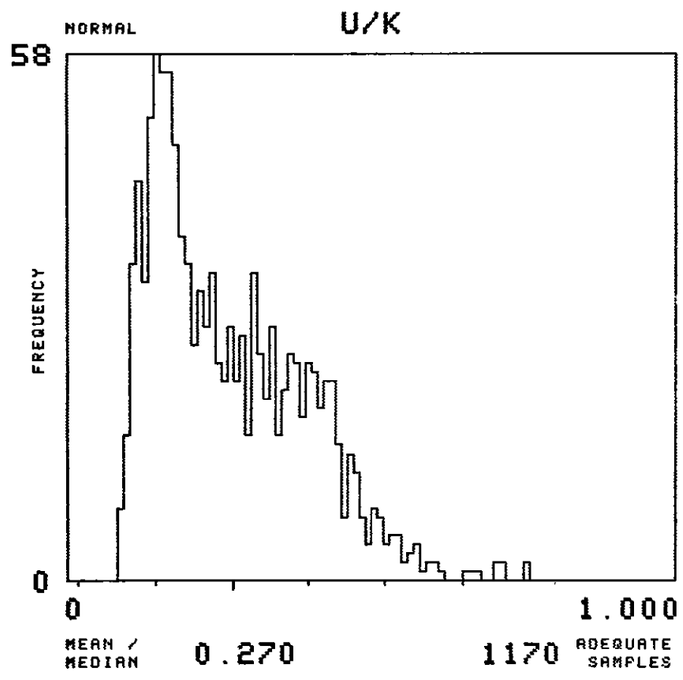

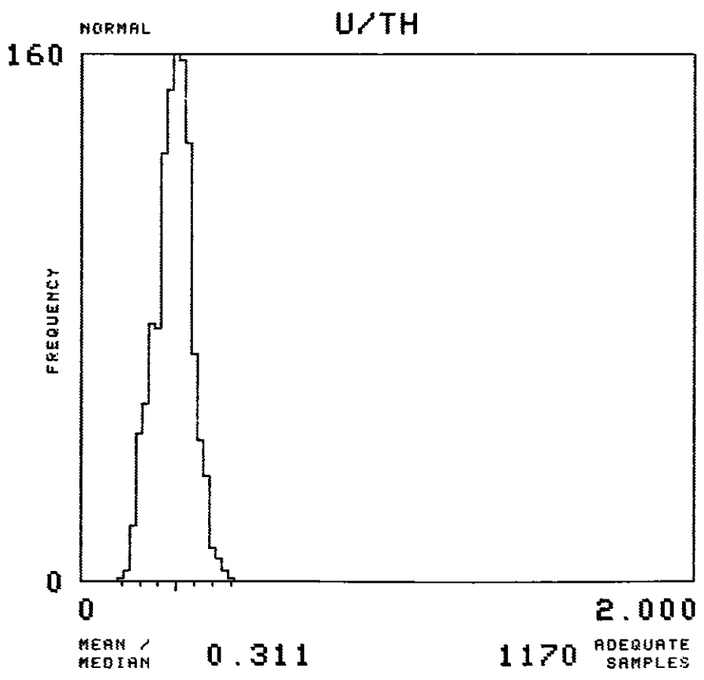

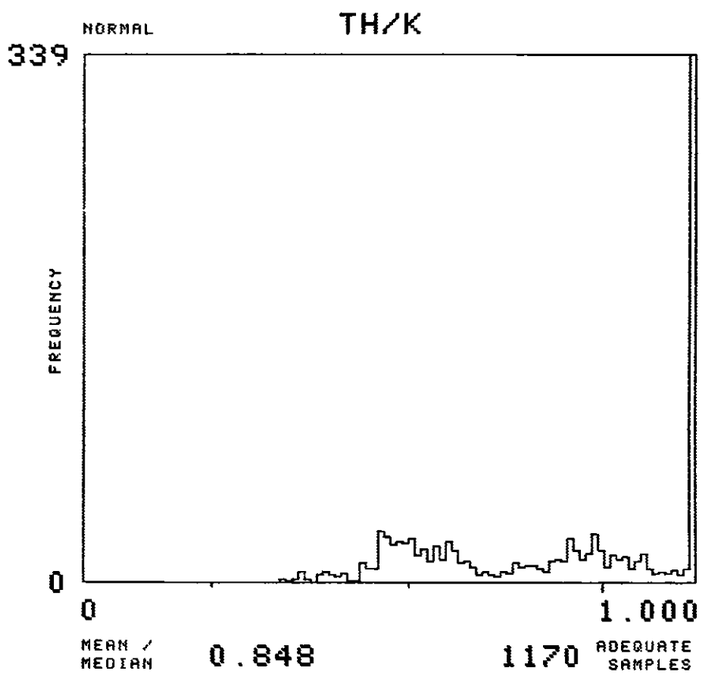

NTMS NK 13-4 CASPER

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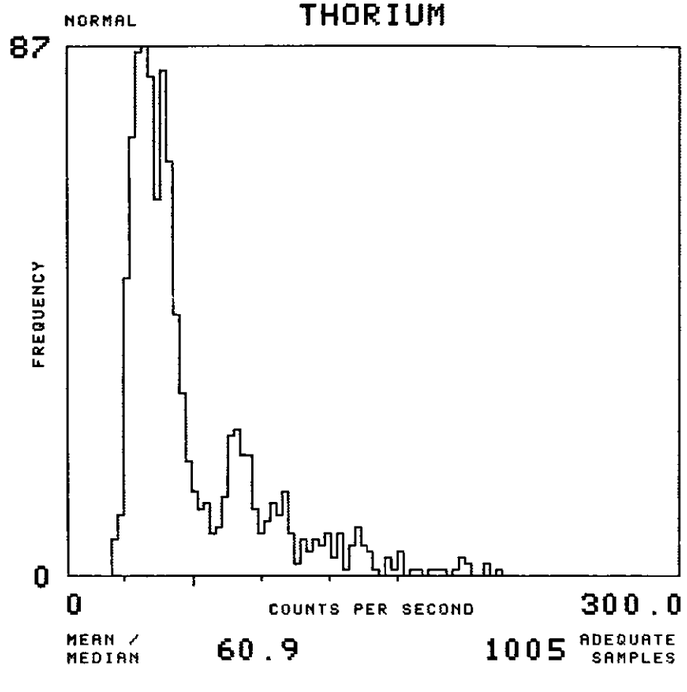

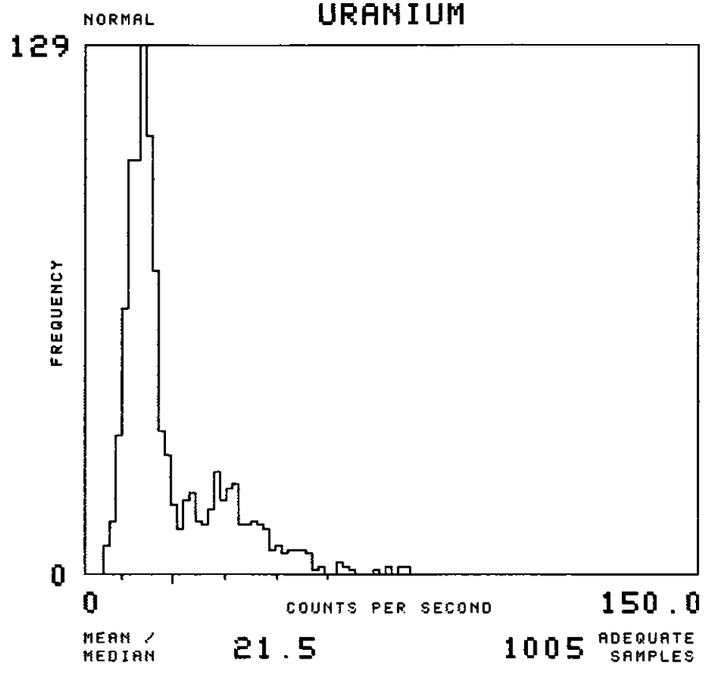

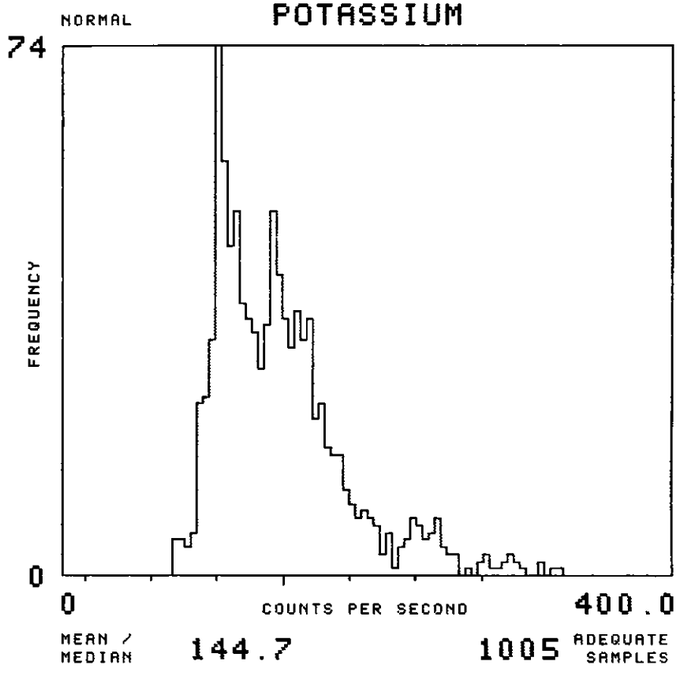

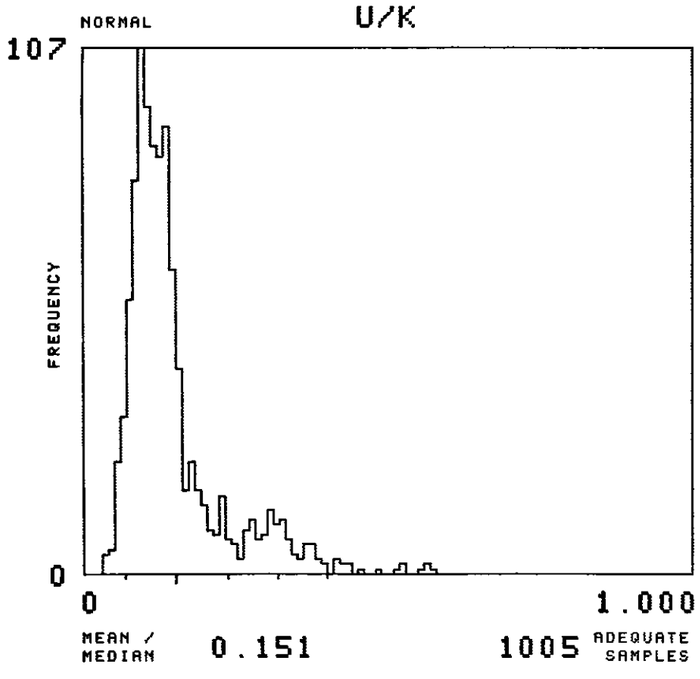

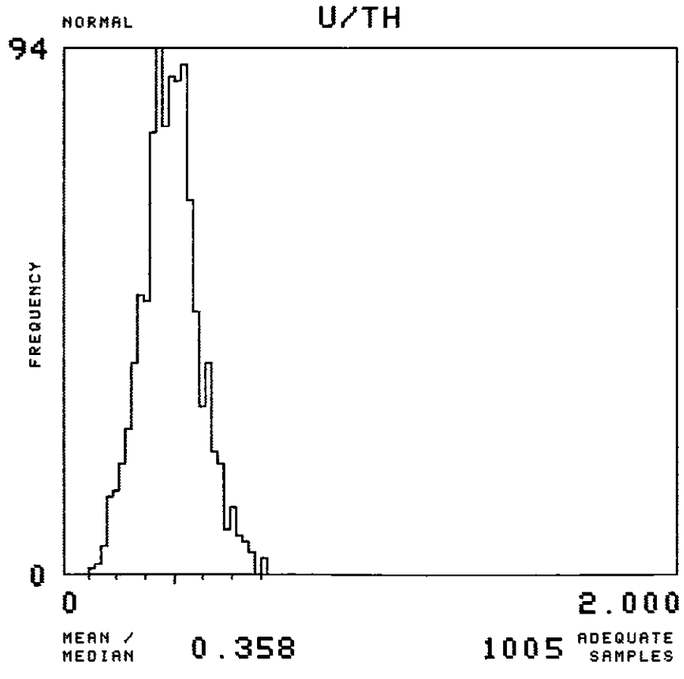

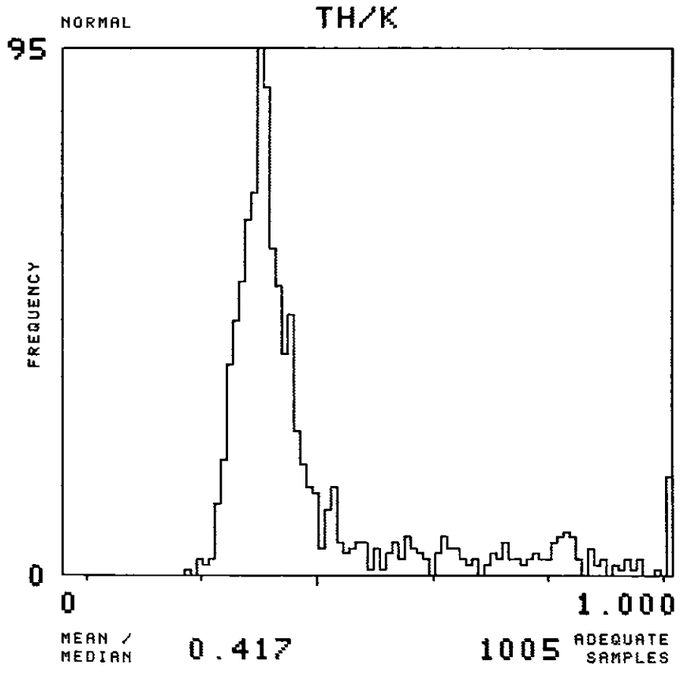

NTMS NK 13-4 CASPER

MAP UNIT : TI TOTAL NUMBER OF SAMPLES 46

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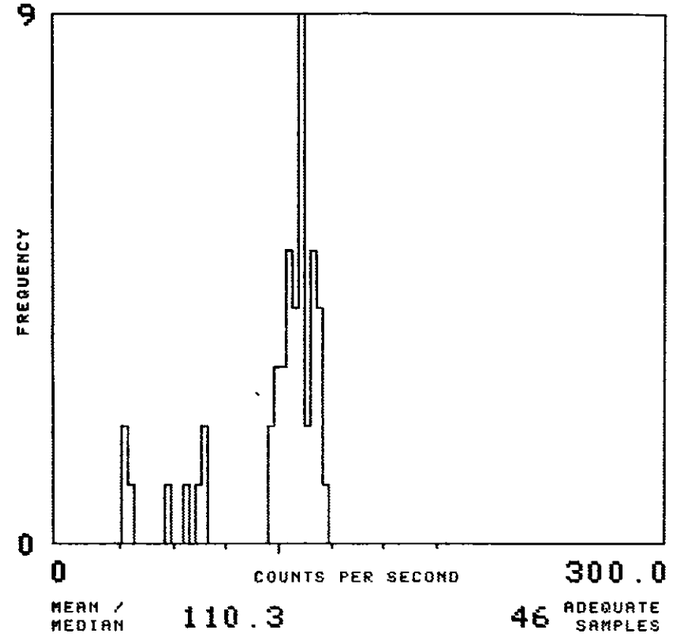
THORIUM



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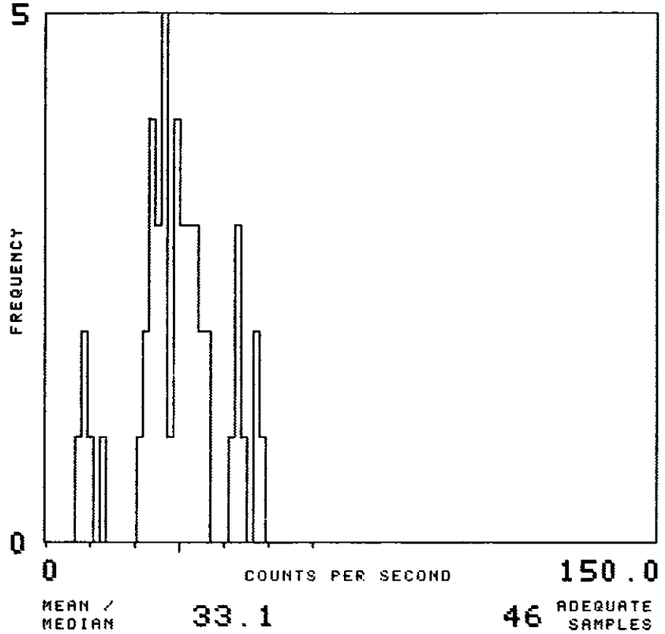

NORMAL

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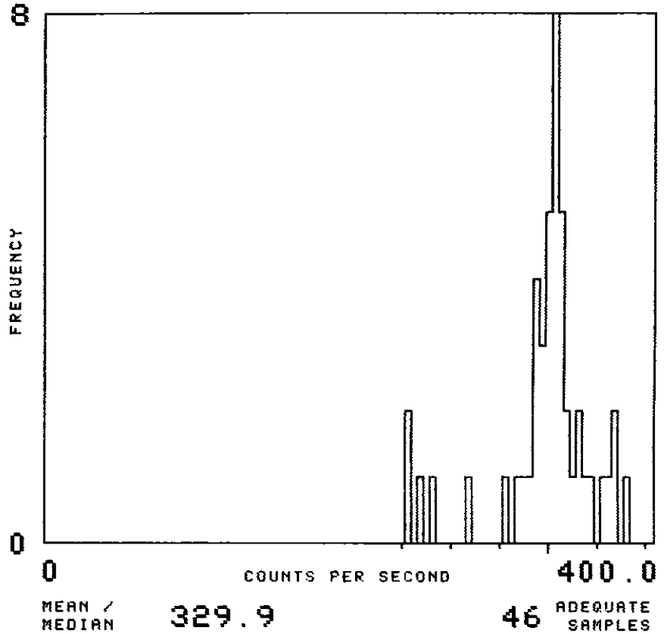

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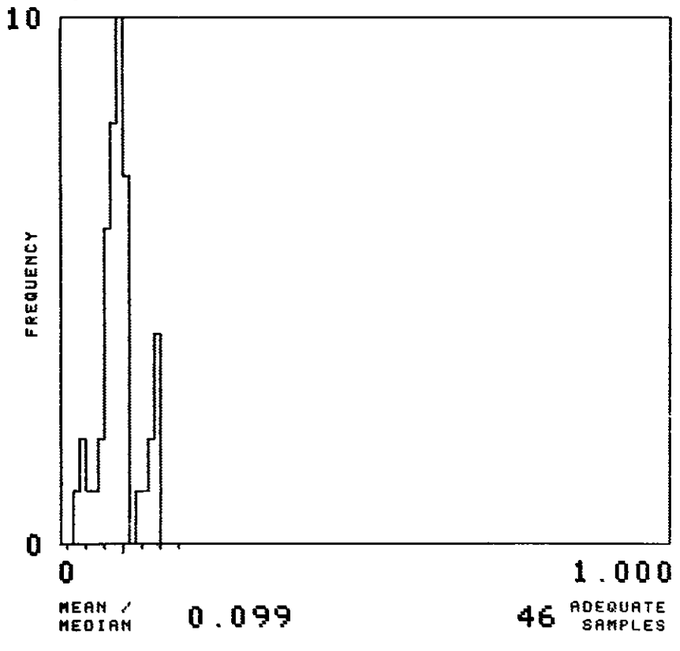
U/K



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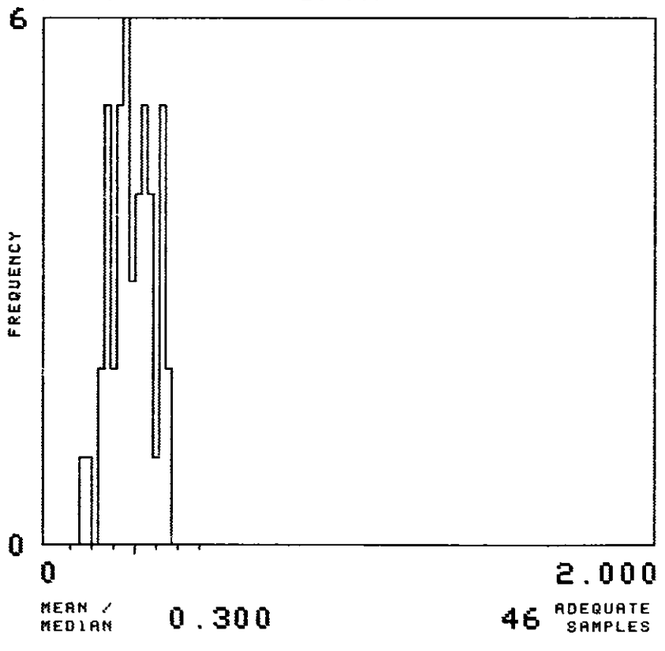

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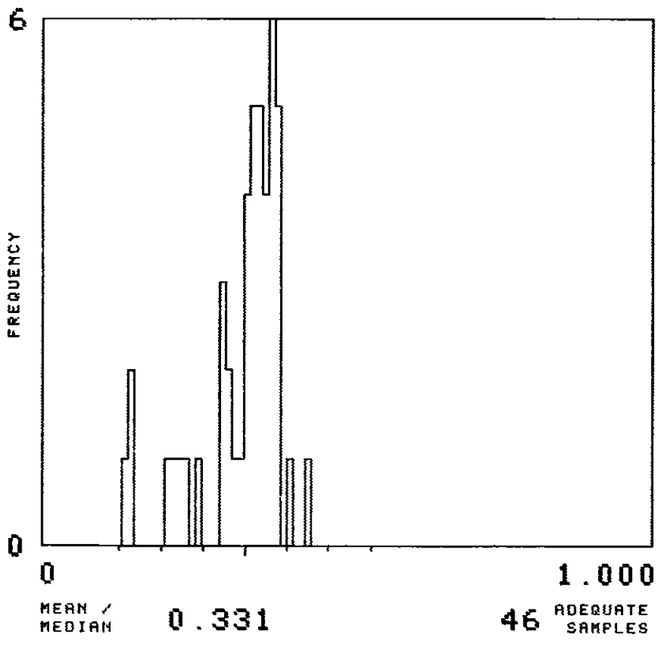
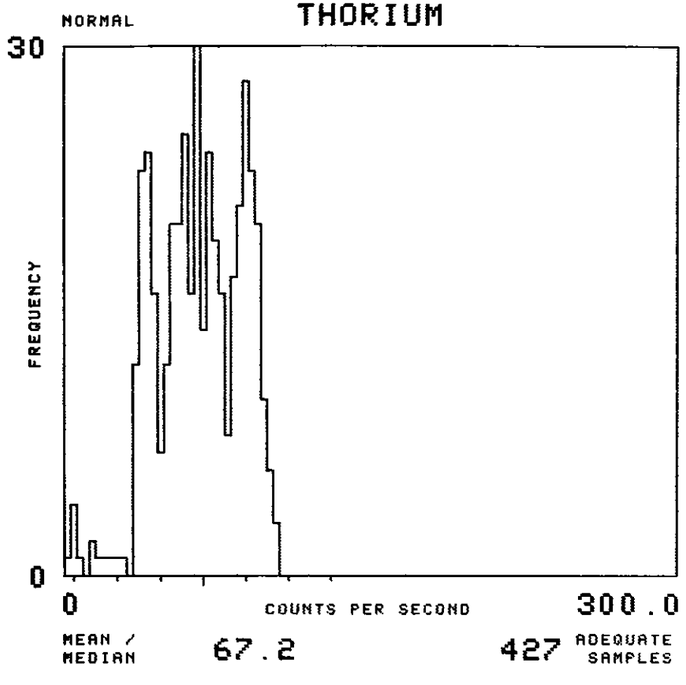
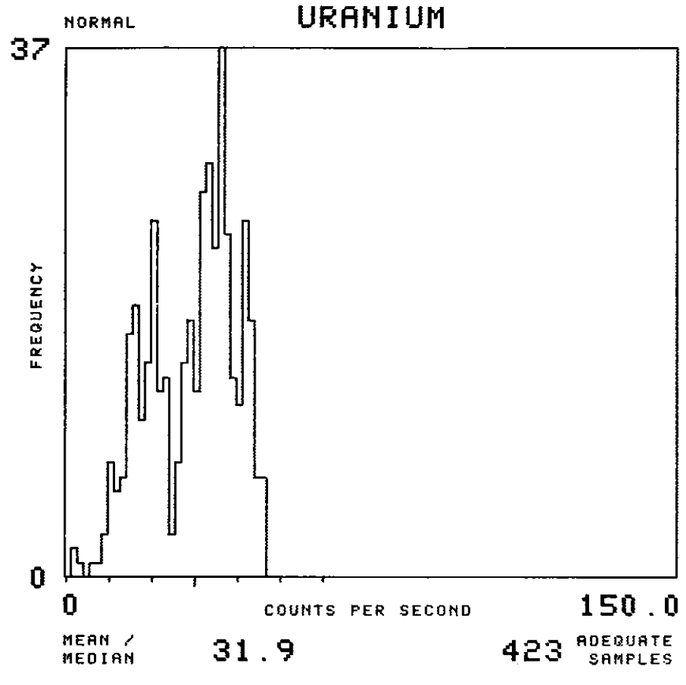
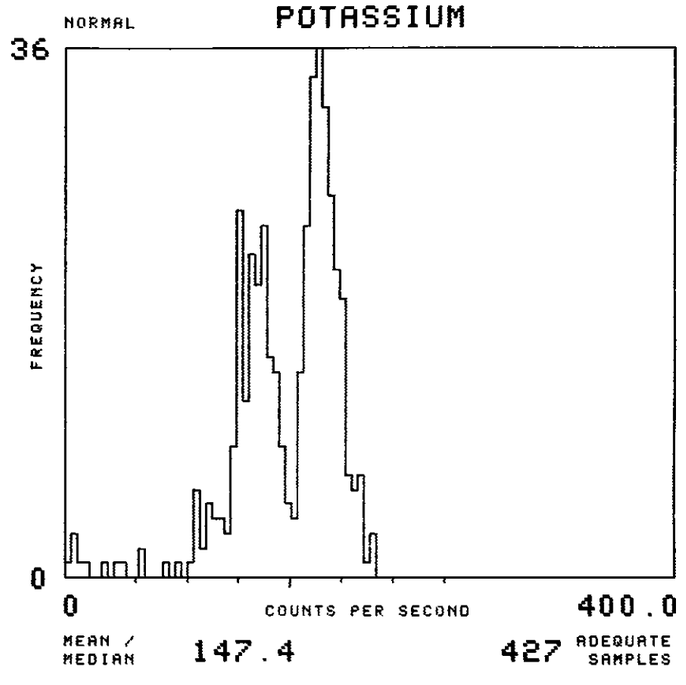


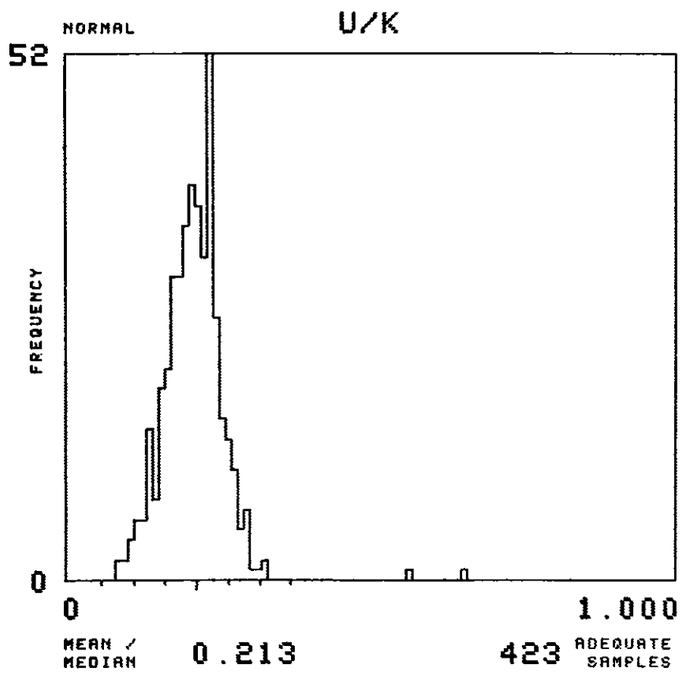
NTMS NK 13-4 CASPER

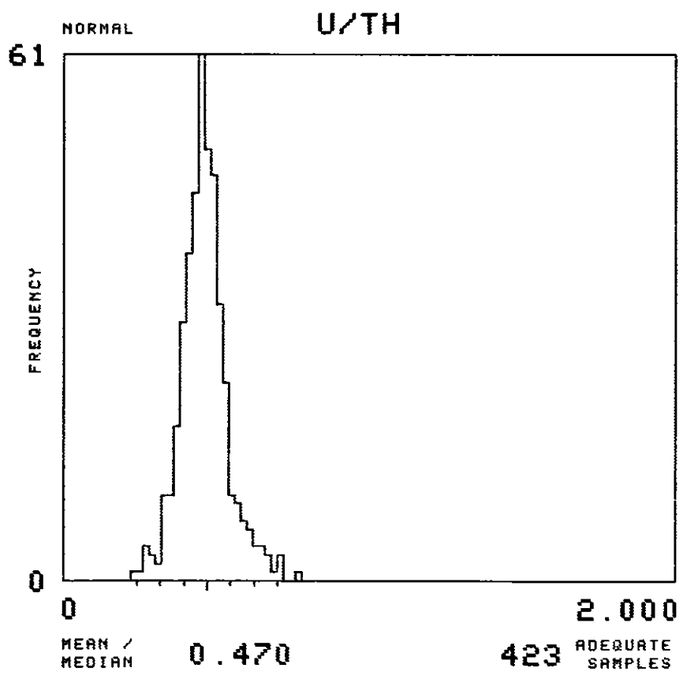
MAP UNIT : TH TOTAL NUMBER OF SAMPLES 427

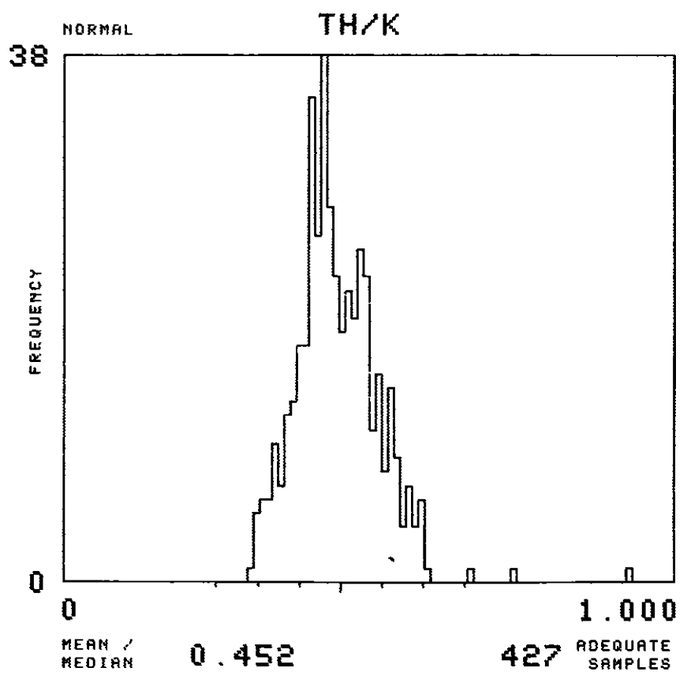






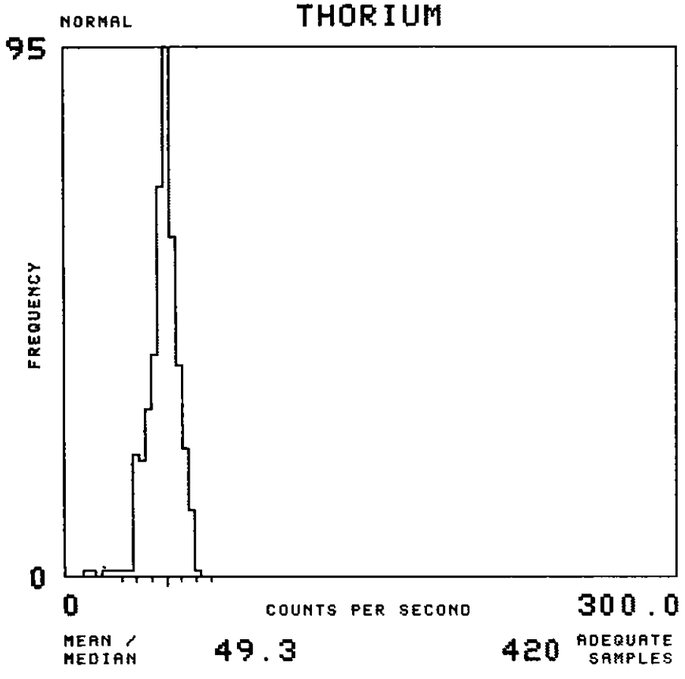


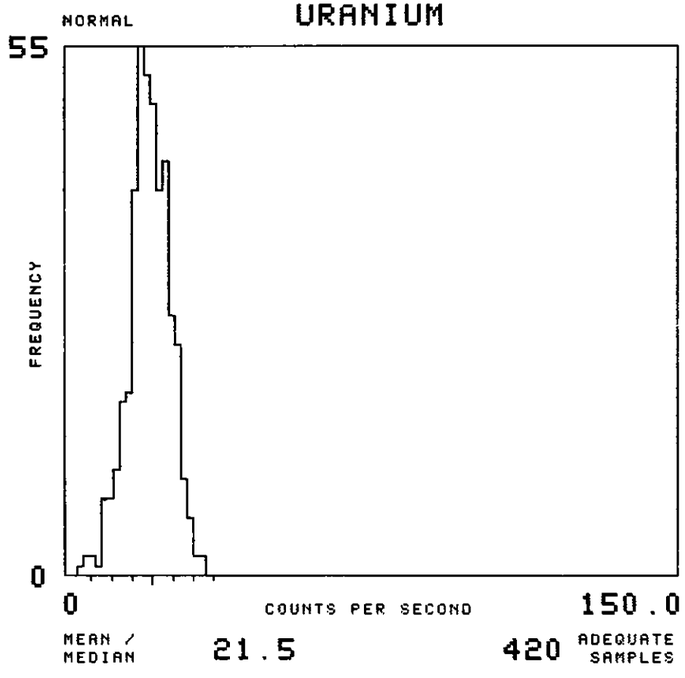


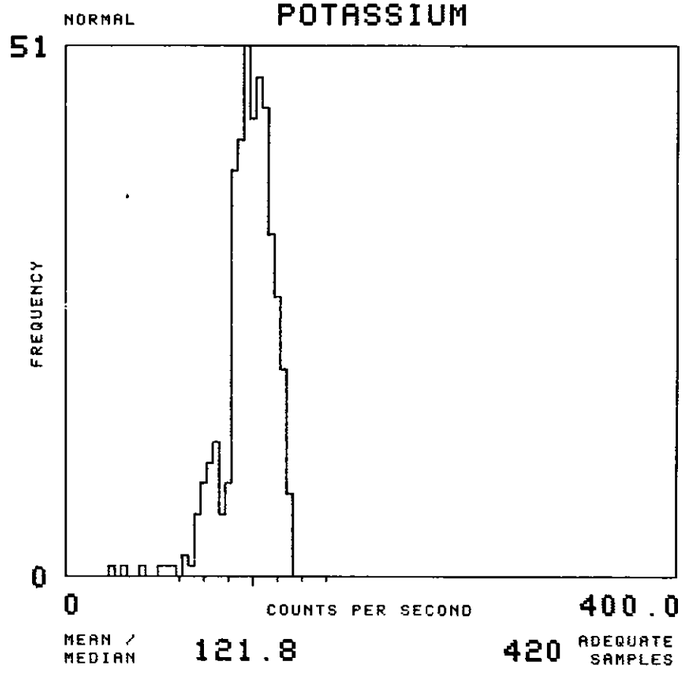


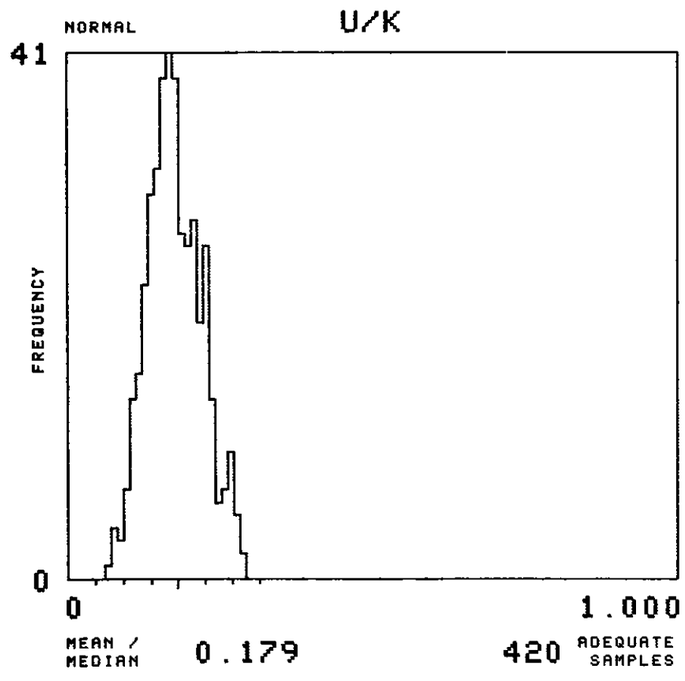
NTMS NK 13-4 CASPER

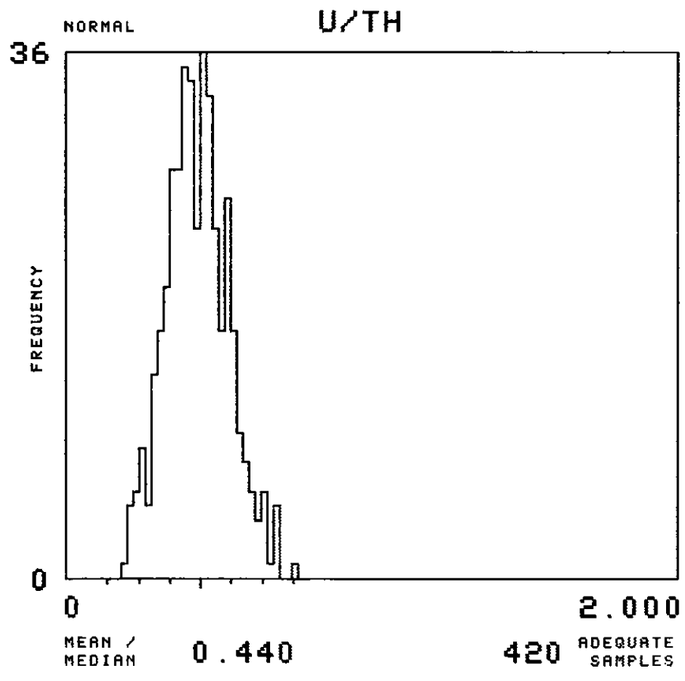
MAP UNIT : TKF TOTAL NUMBER OF SAMPLES 420

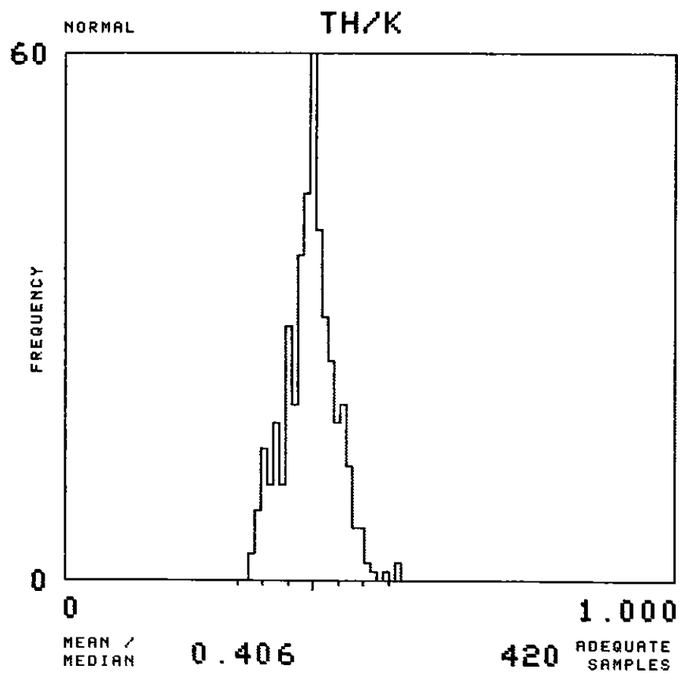






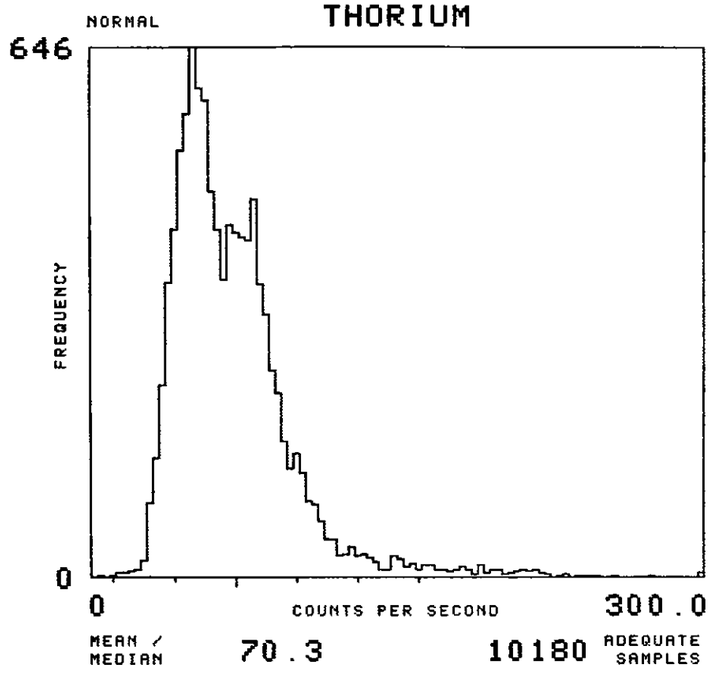


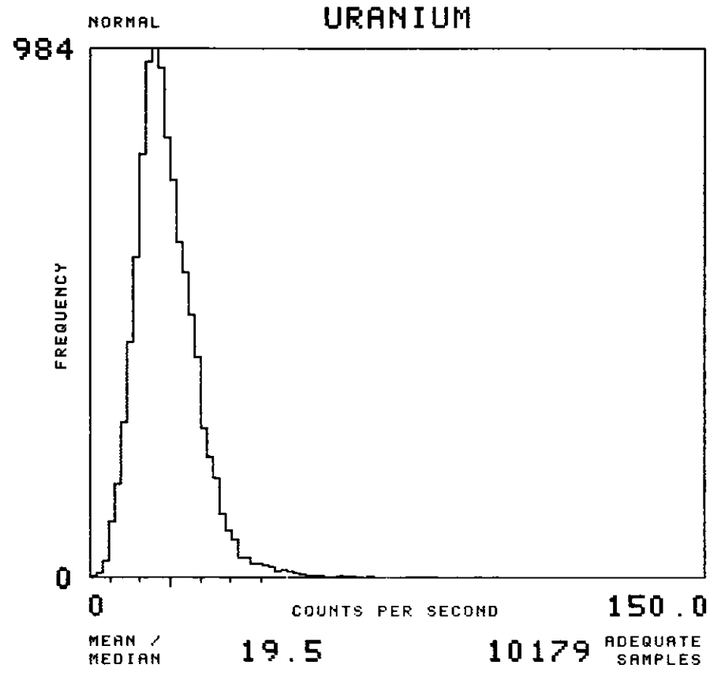


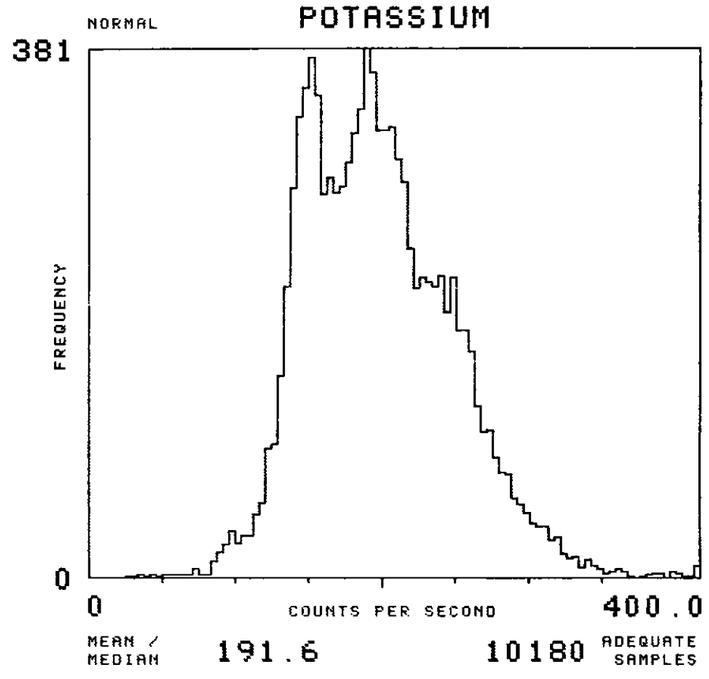


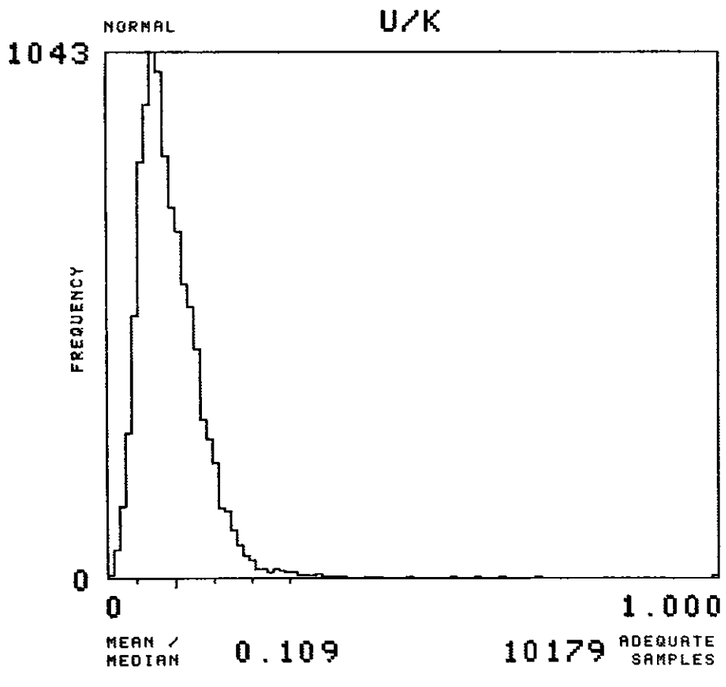
NTMS NK 13-4 CASPER

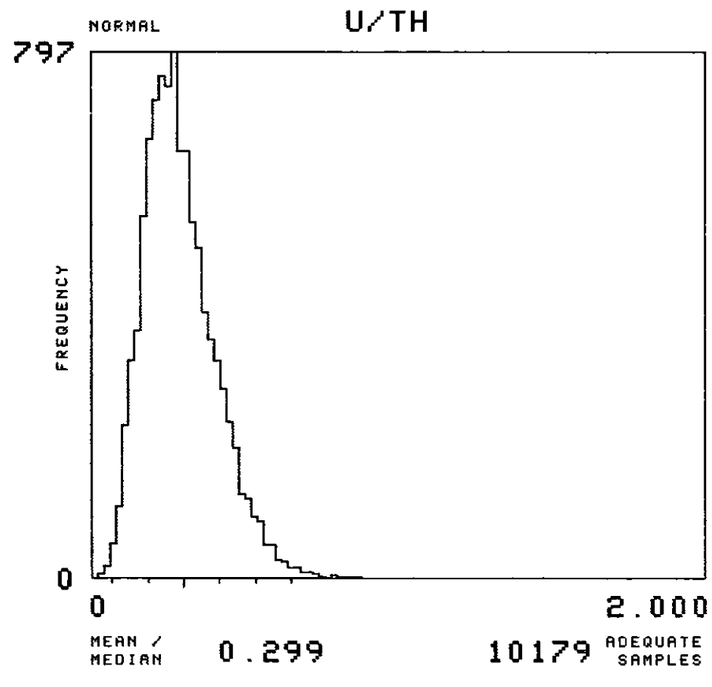
MAP UNIT : TM TOTAL NUMBER OF SAMPLES 10411

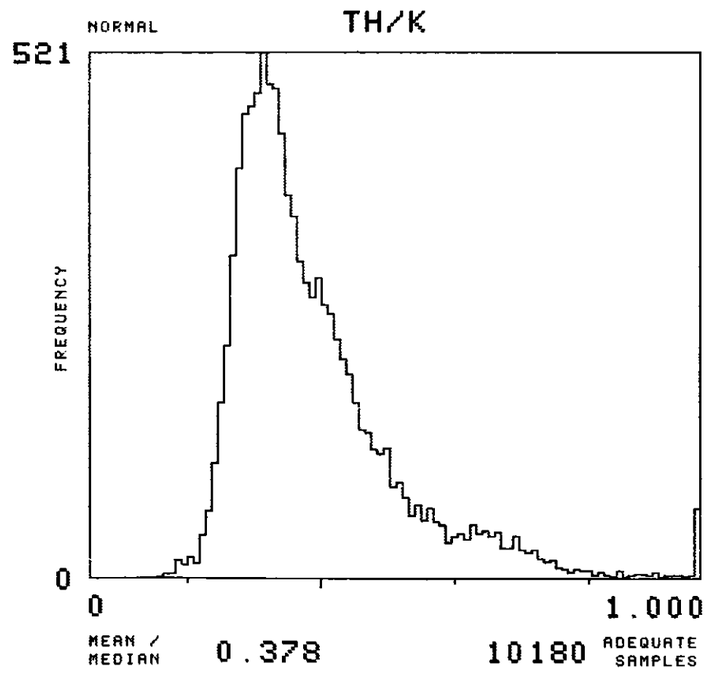












NTMS NK 13-4 CASPER

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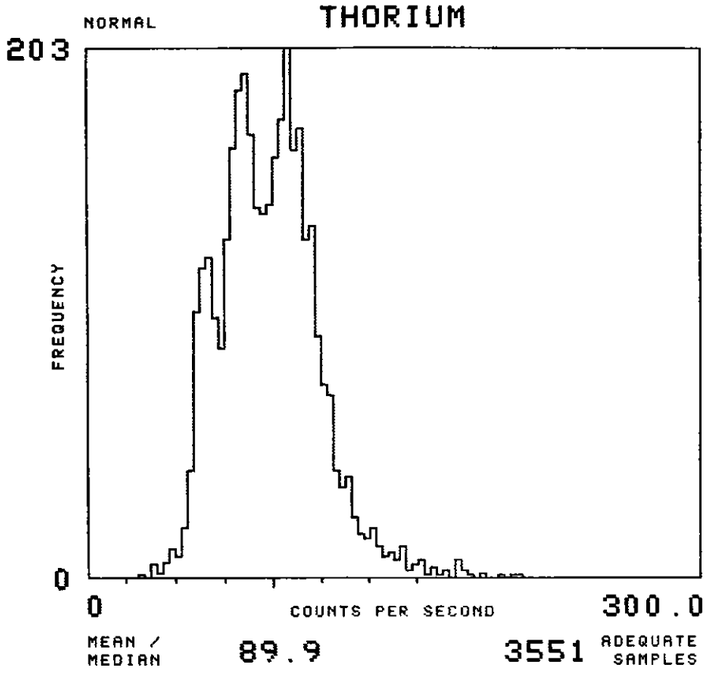
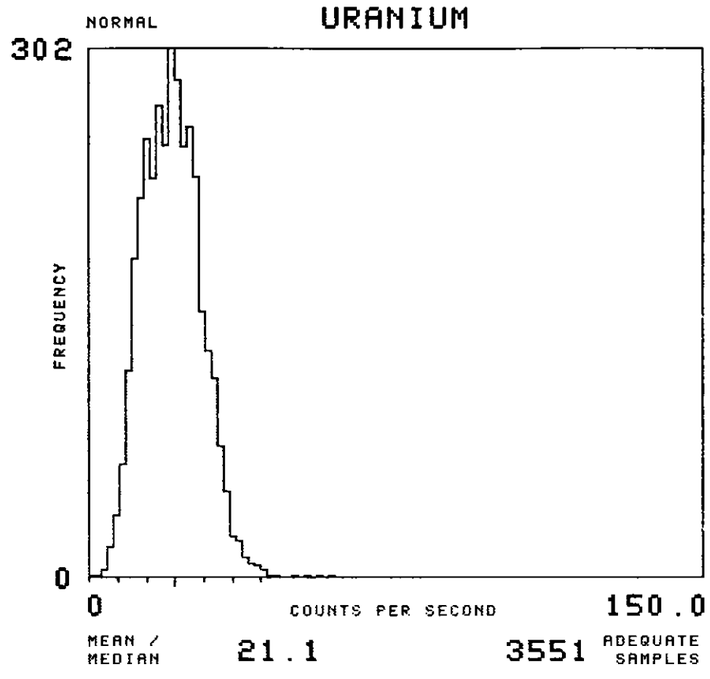
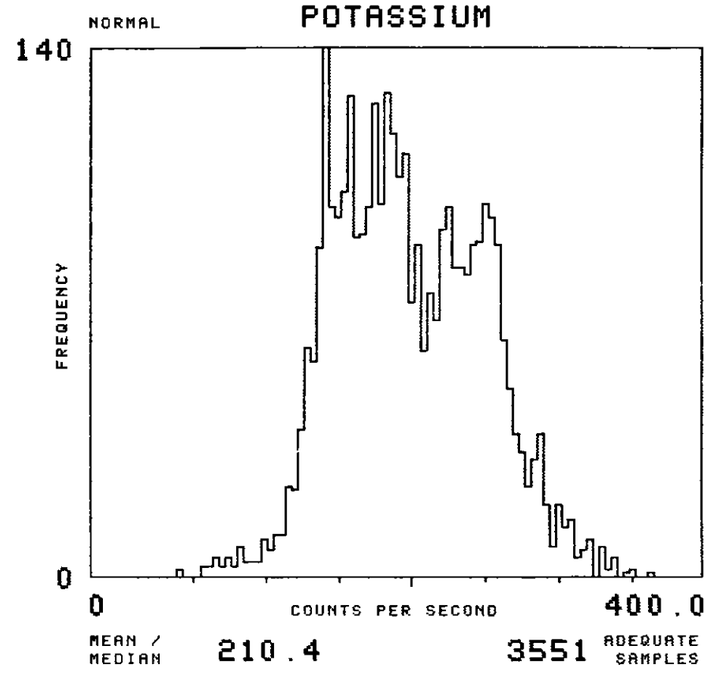
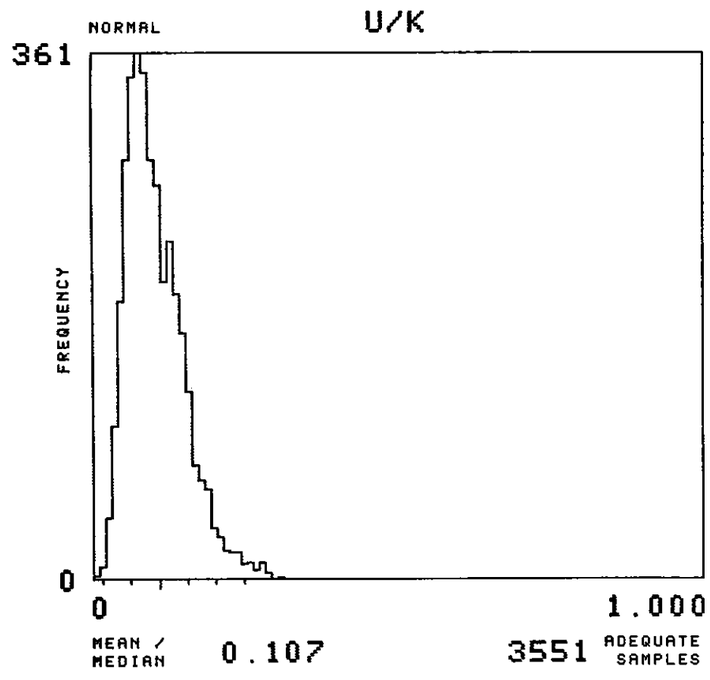
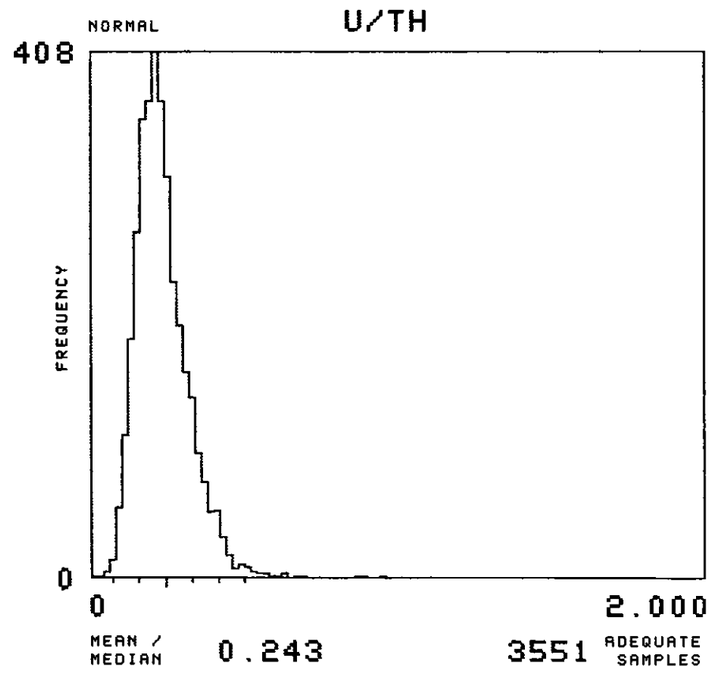
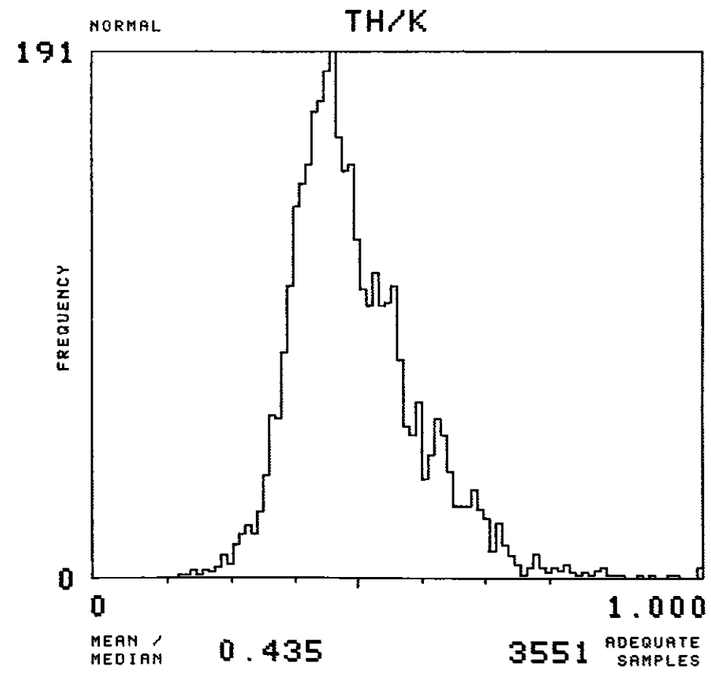






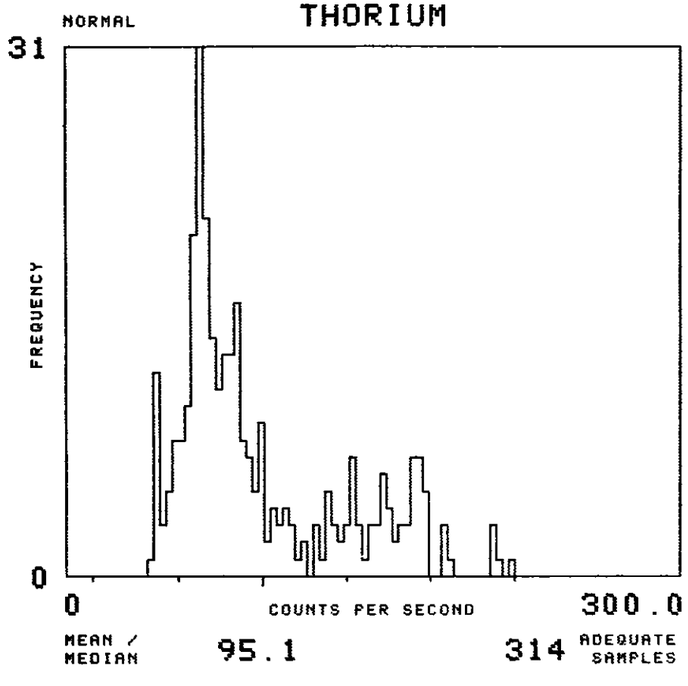


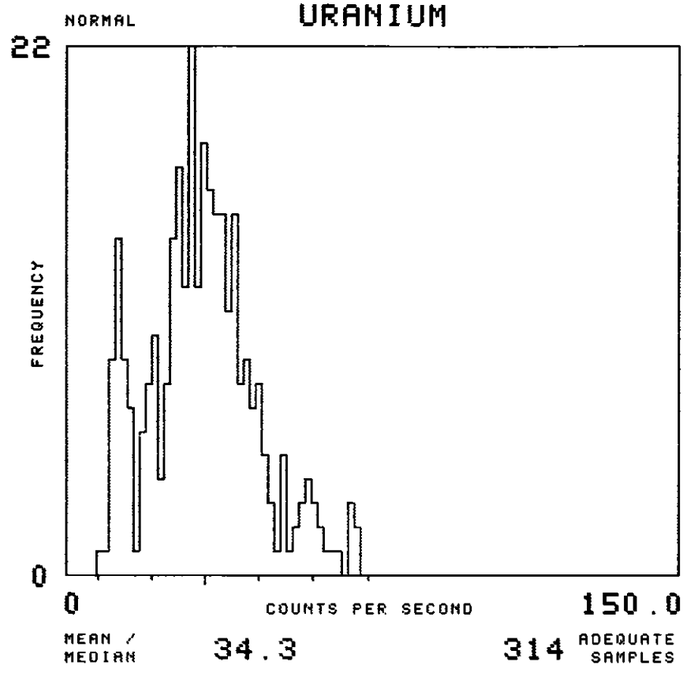


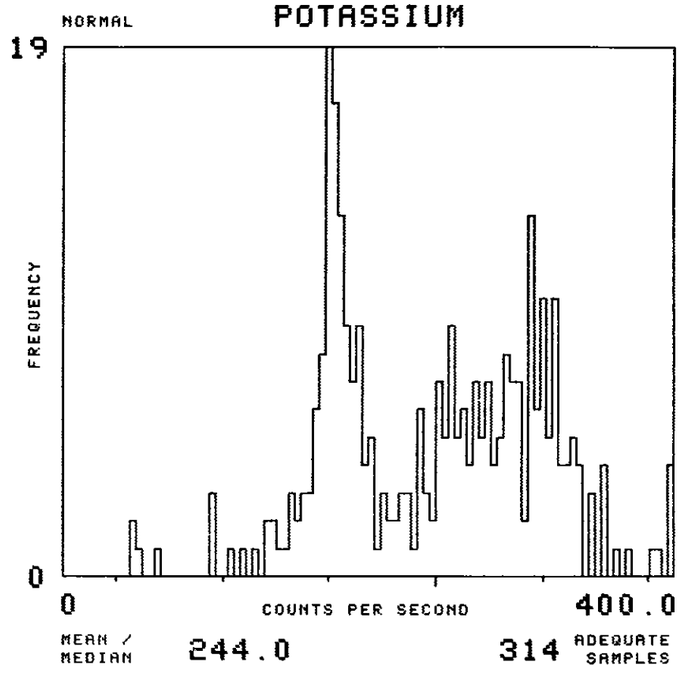


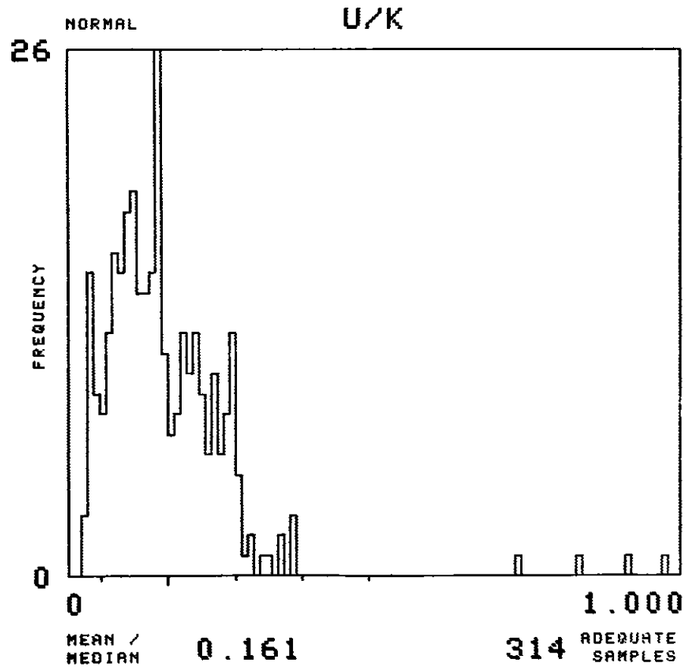
NTMS NK 13-4 CASPER

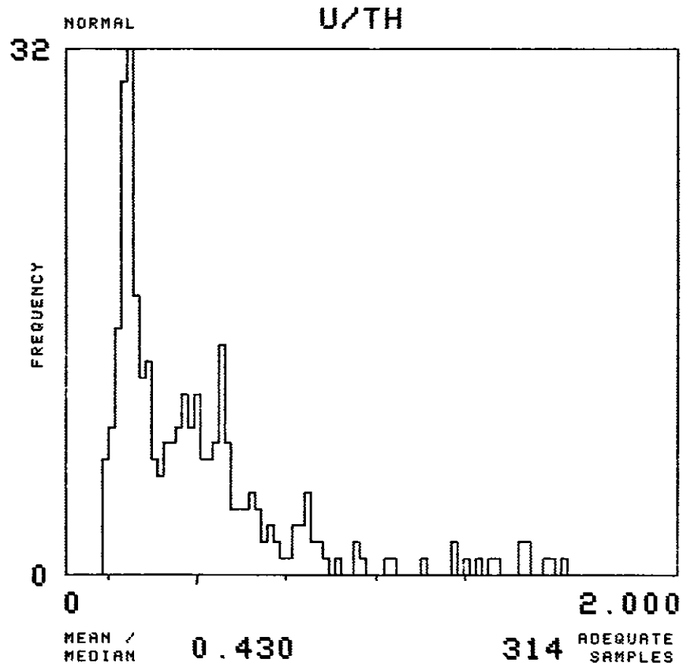
MAP UNIT : TMS TOTAL NUMBER OF SAMPLES 343

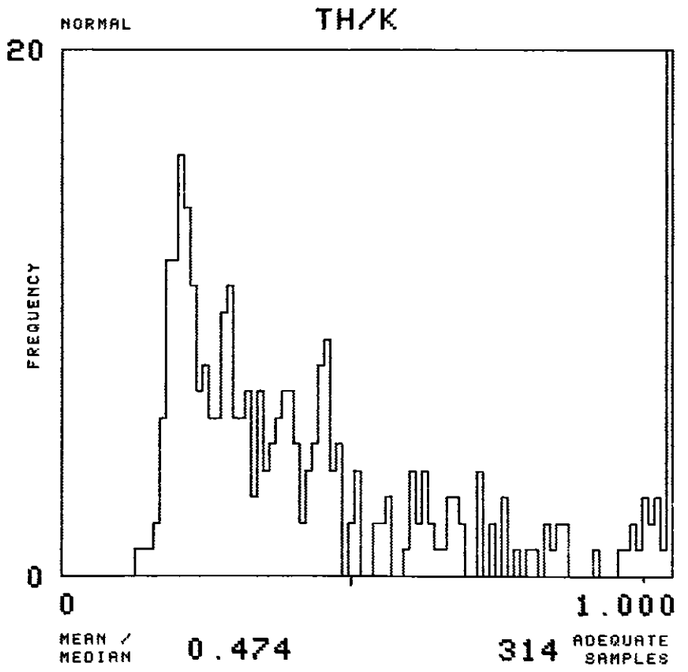












NTMS NK 13-4 CASPER

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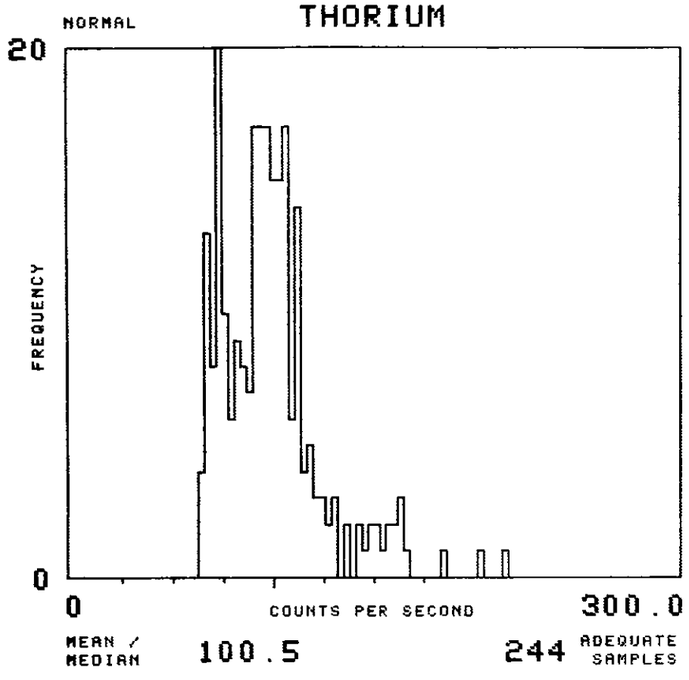

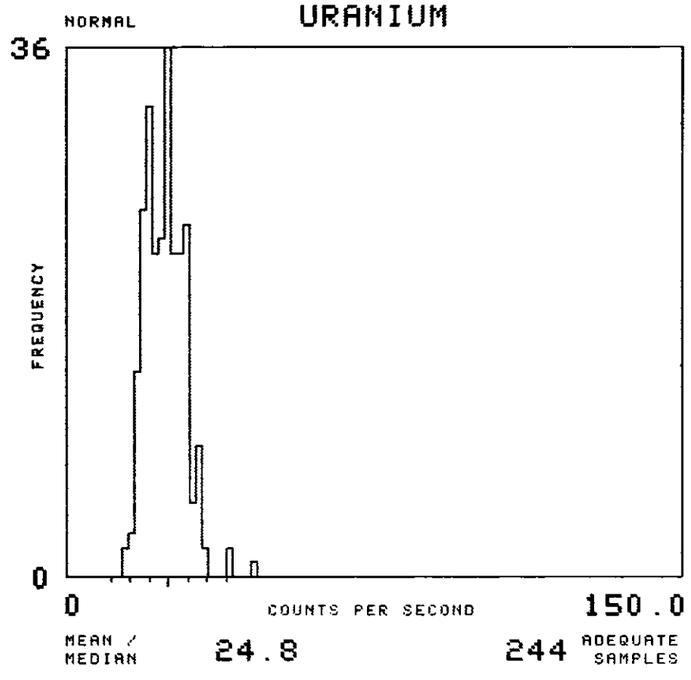

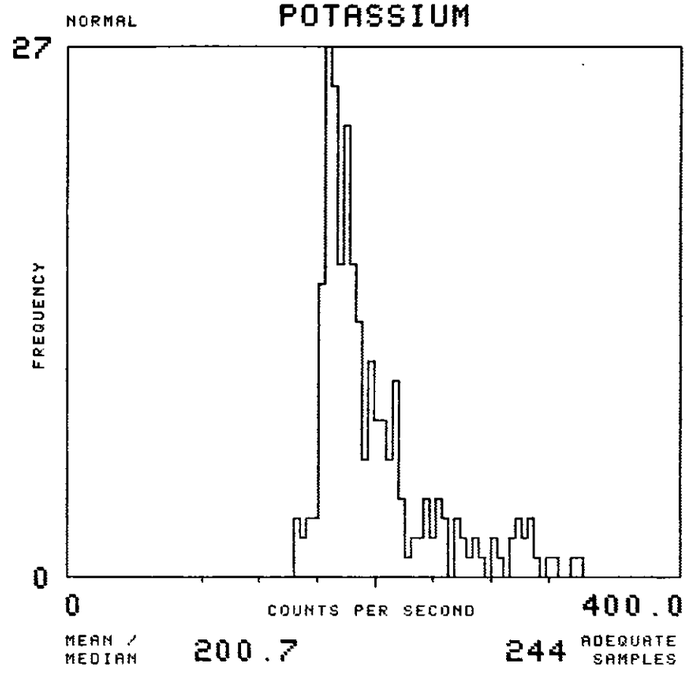

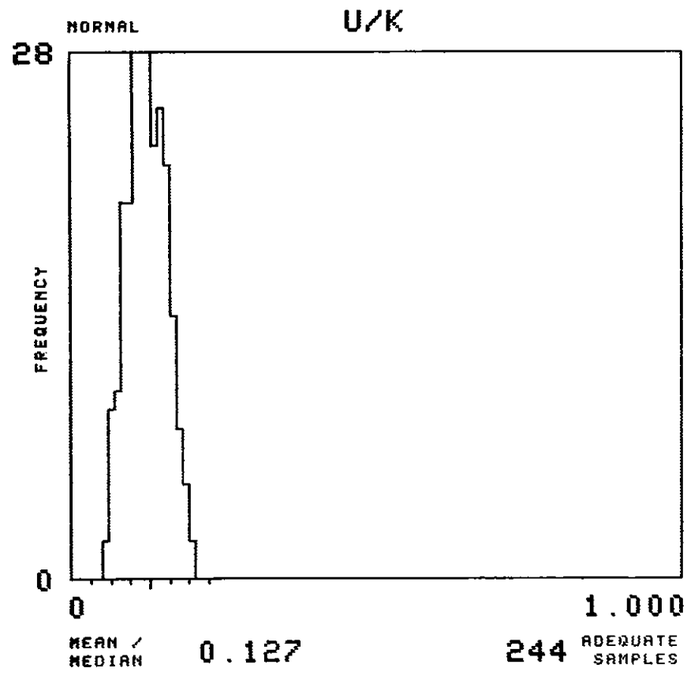

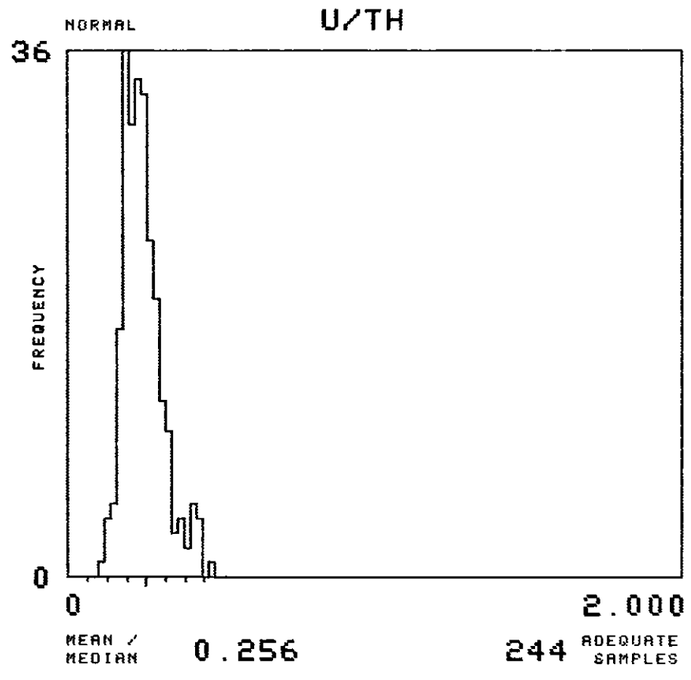

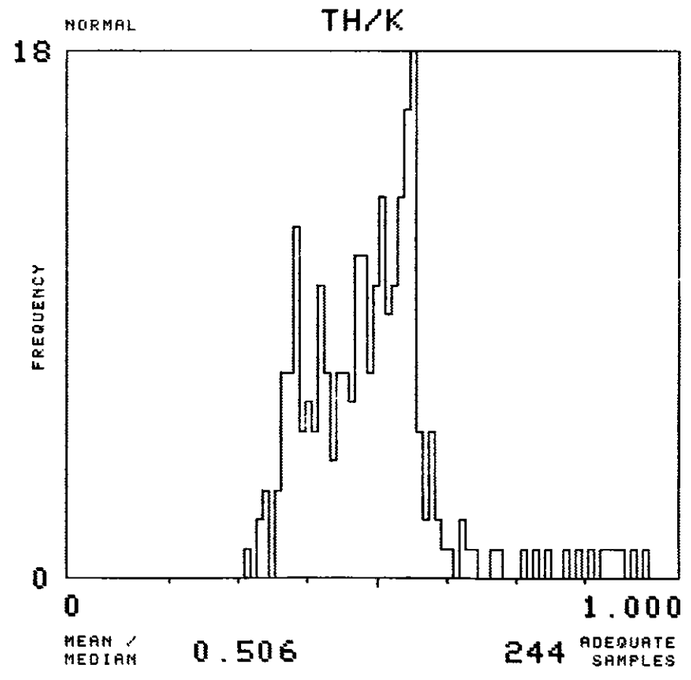

NTMS NK 13-4 CASPER

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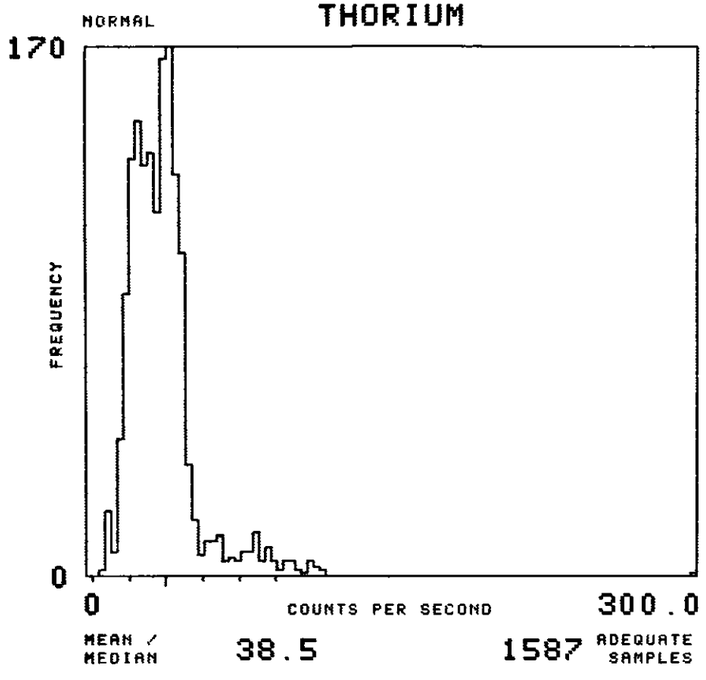

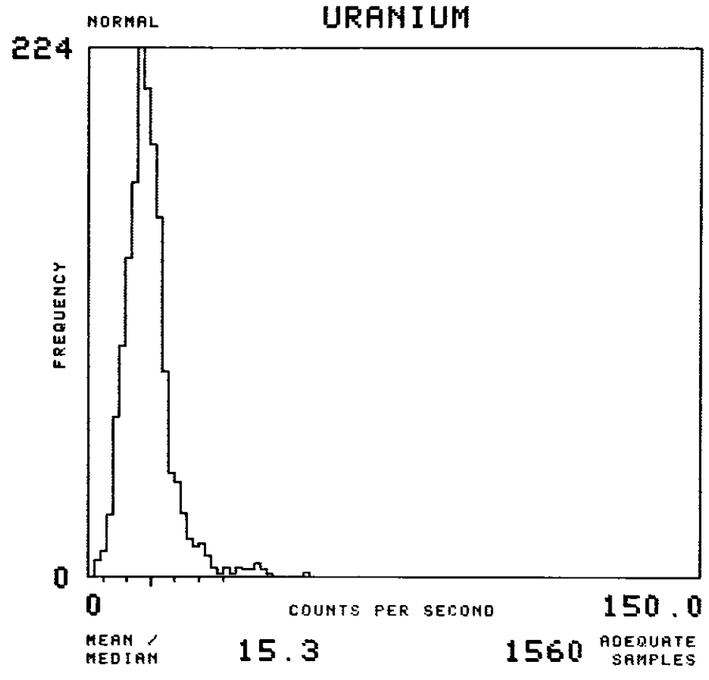

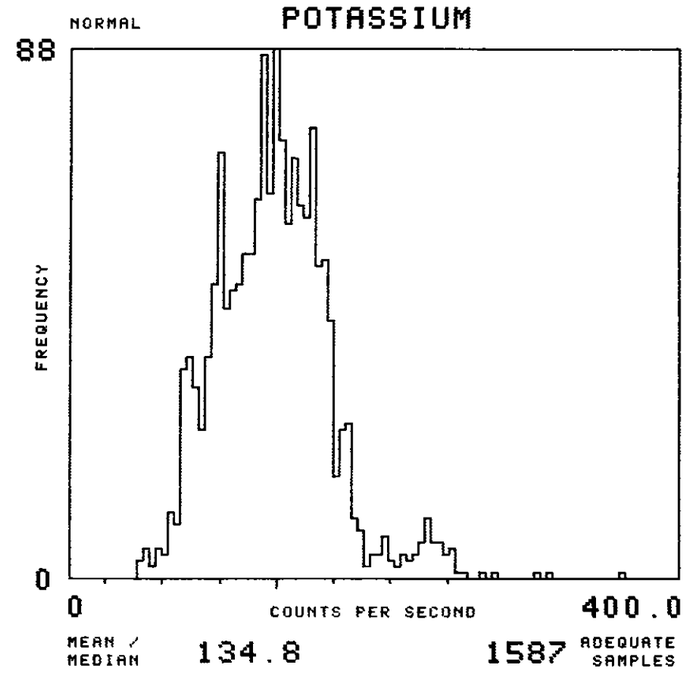

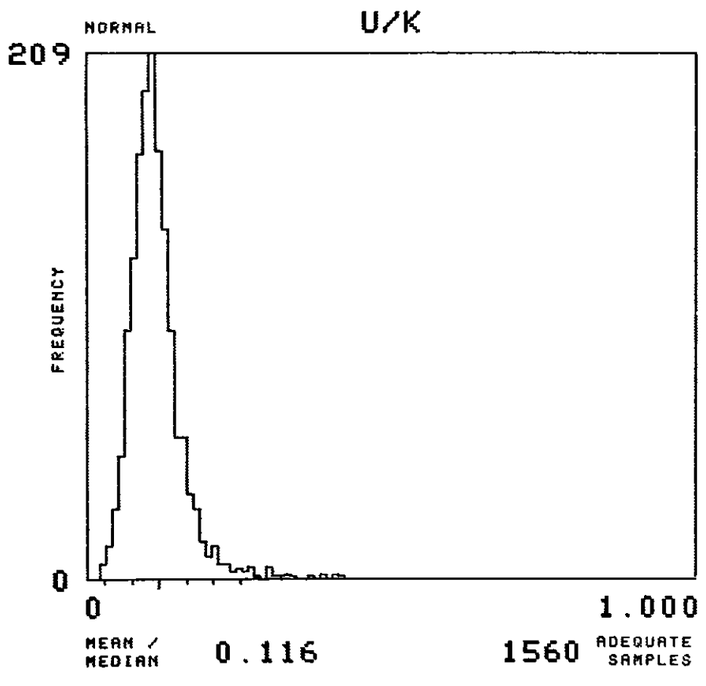

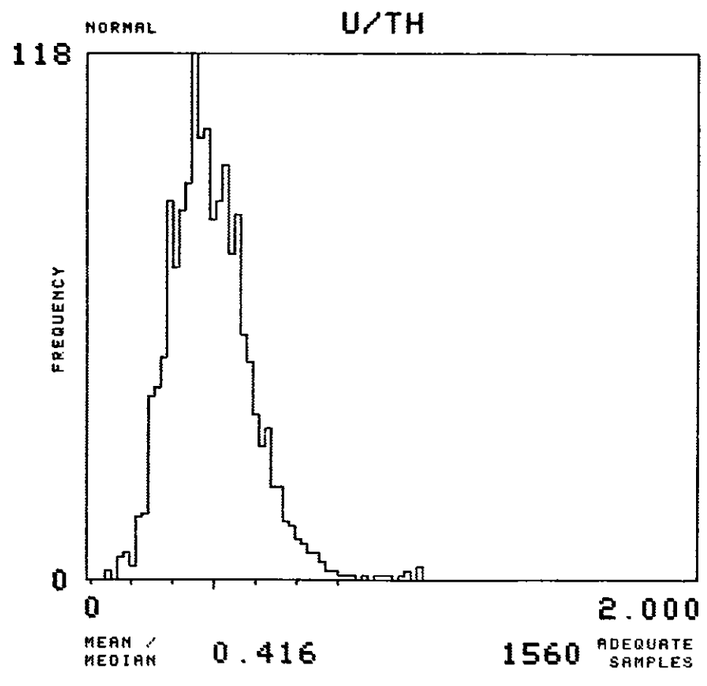

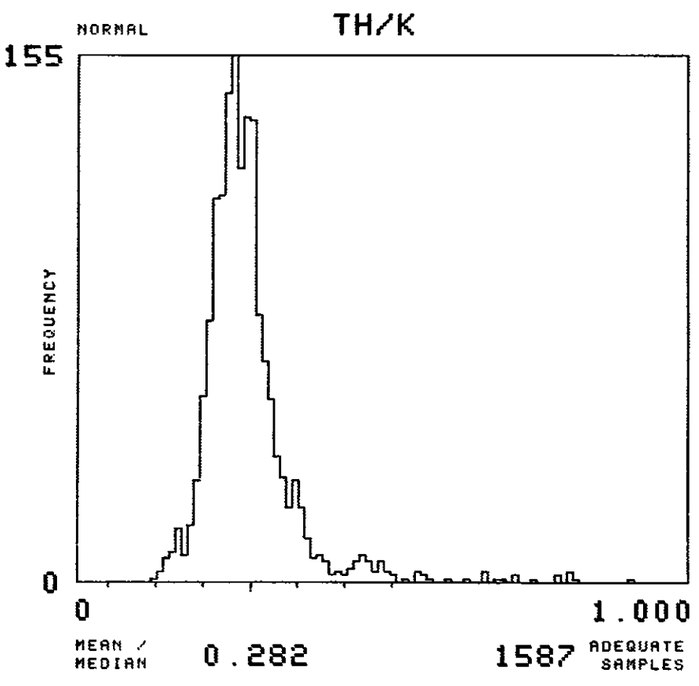

NTMS NK 13-4 CASPER

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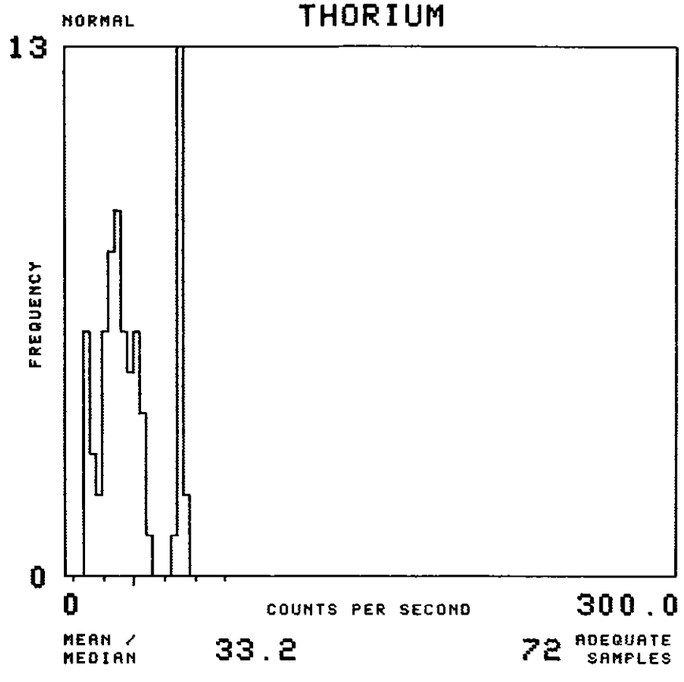

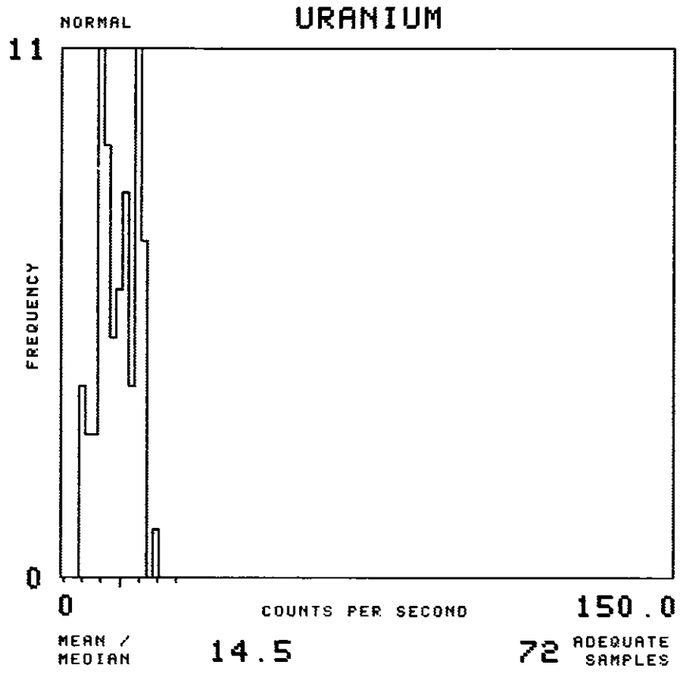

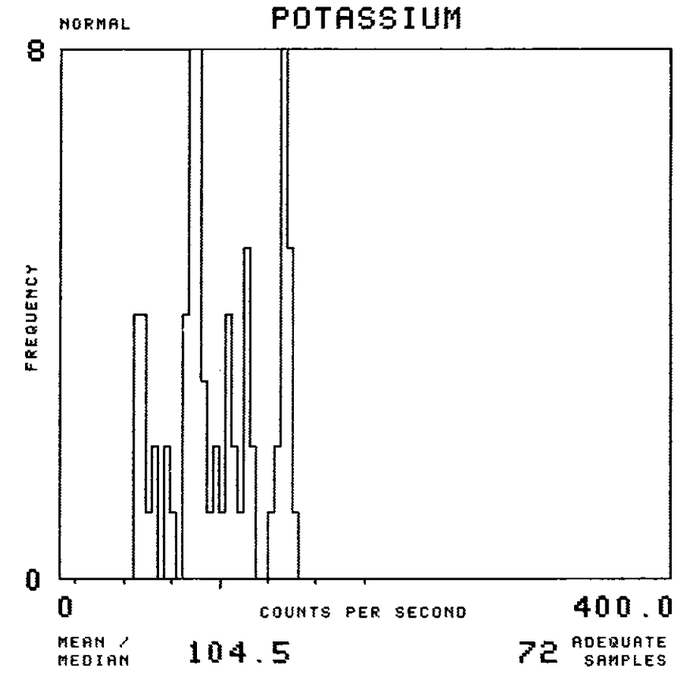

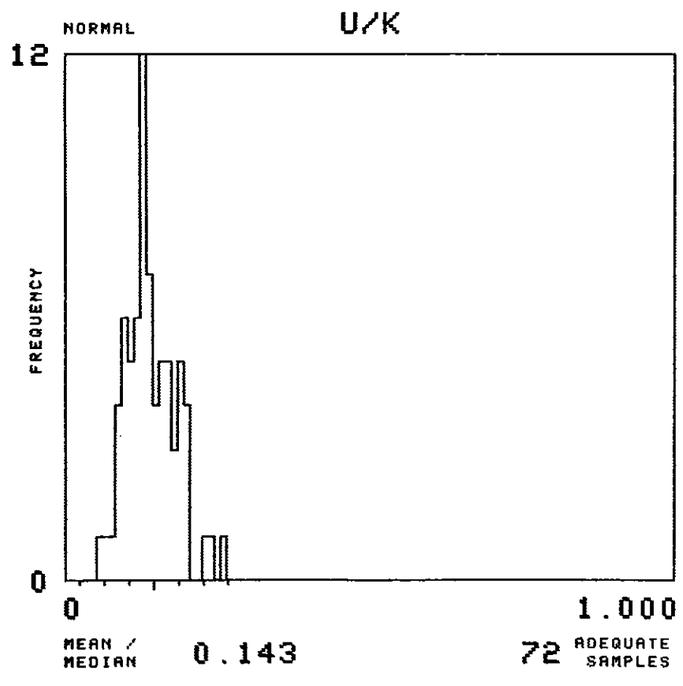

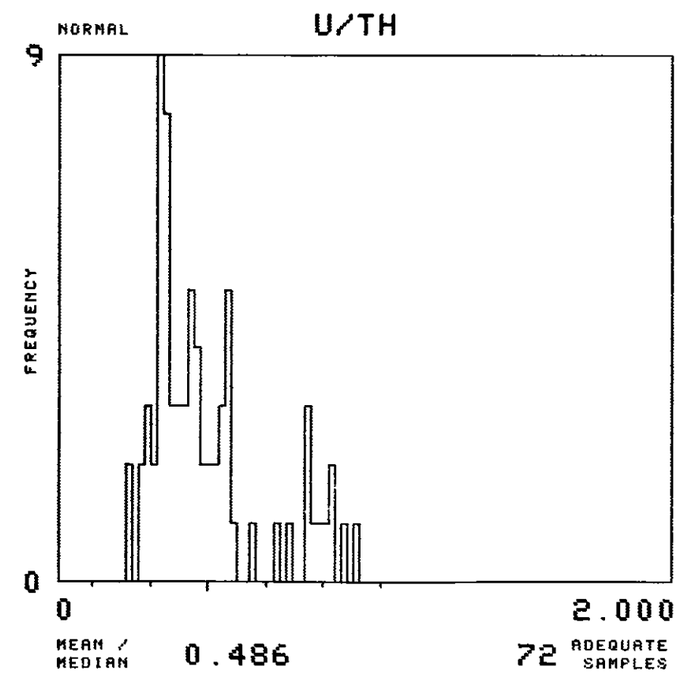

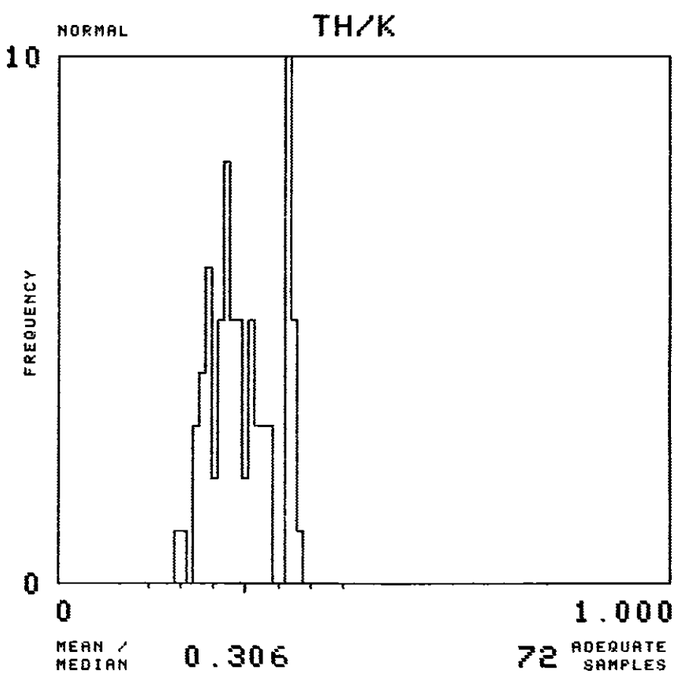

NTMS NK 13-4 CASPER

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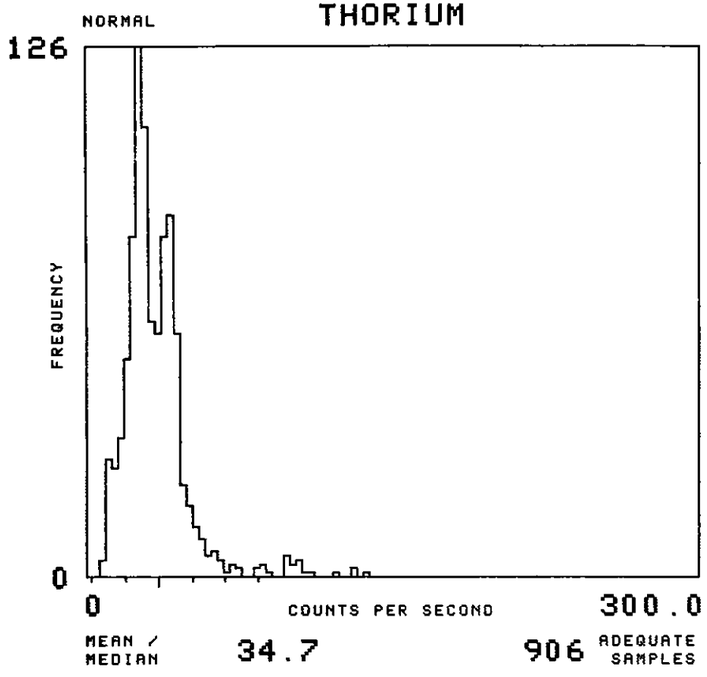
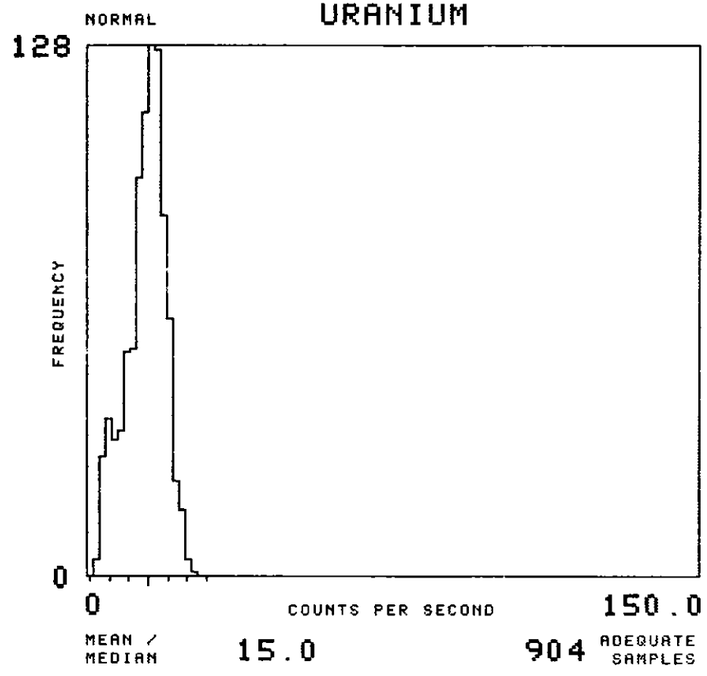
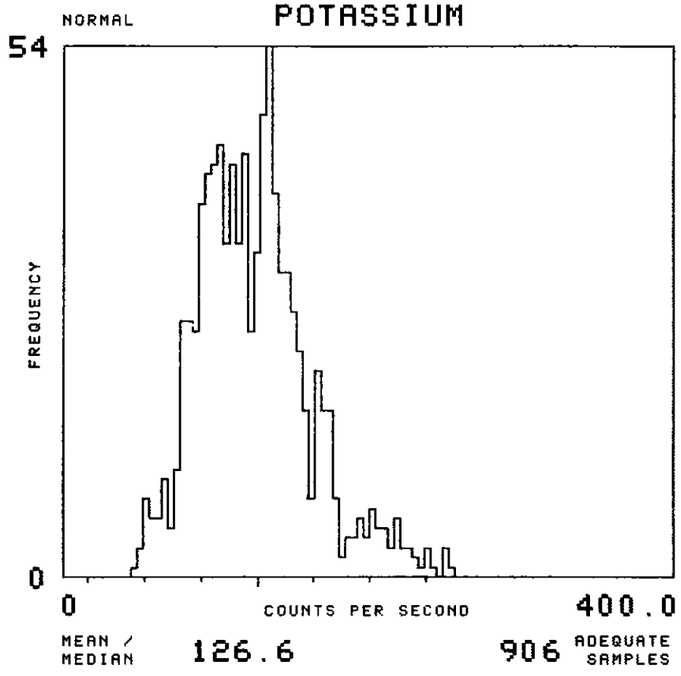
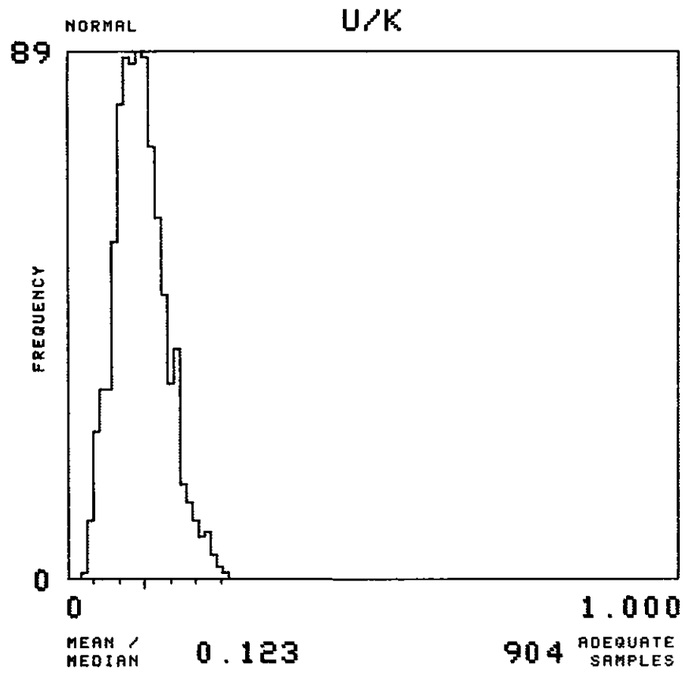
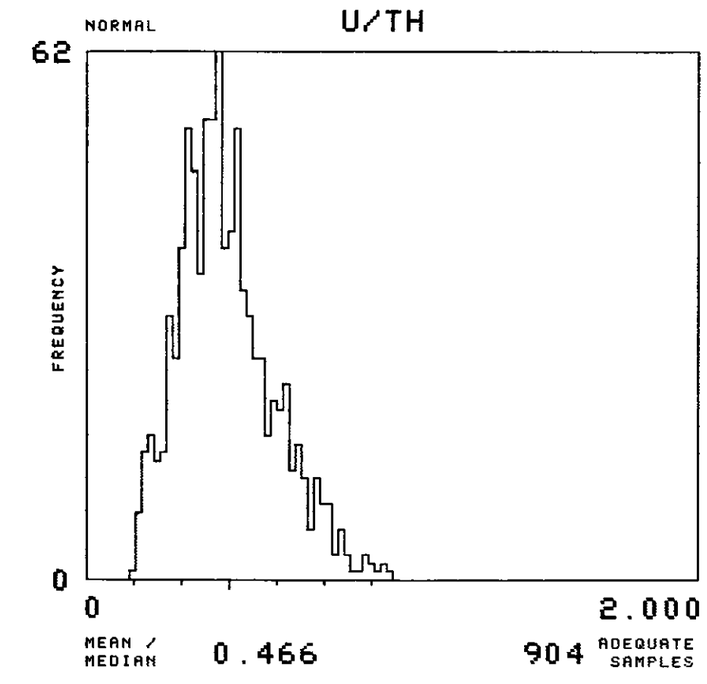
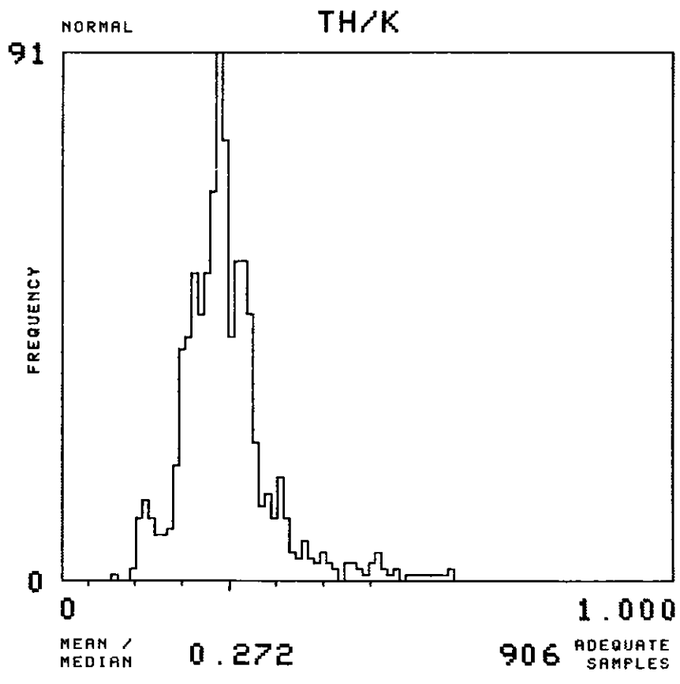






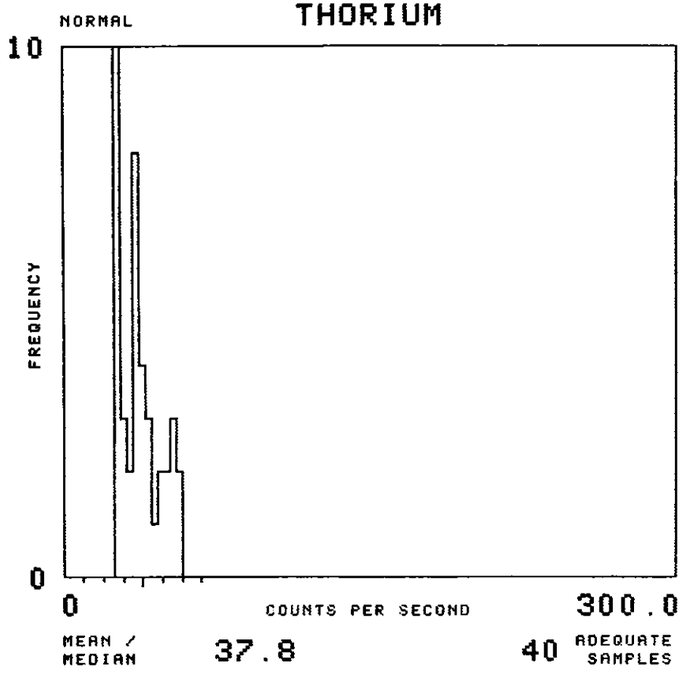


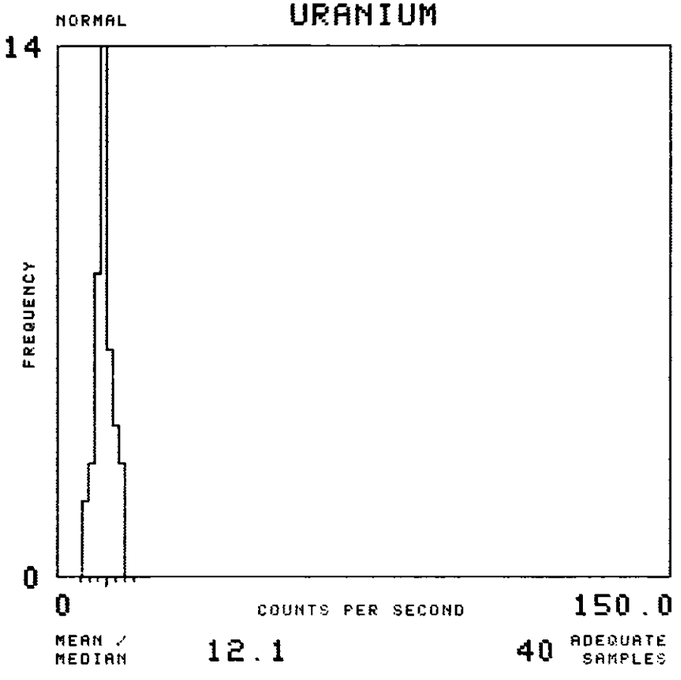


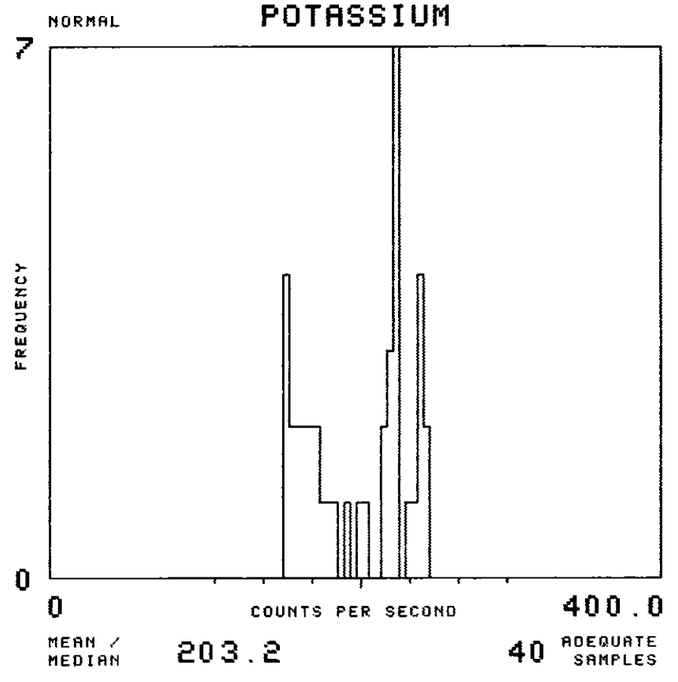


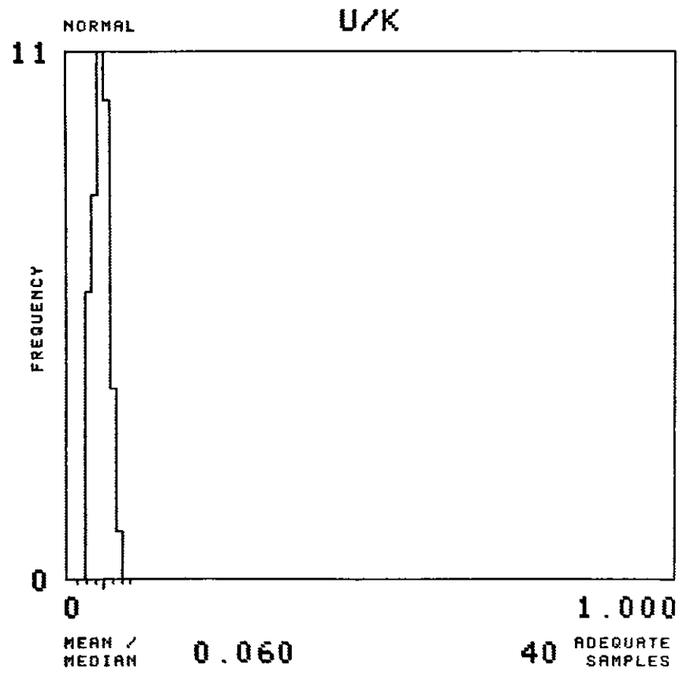
NTMS NK 13-4 CASPER

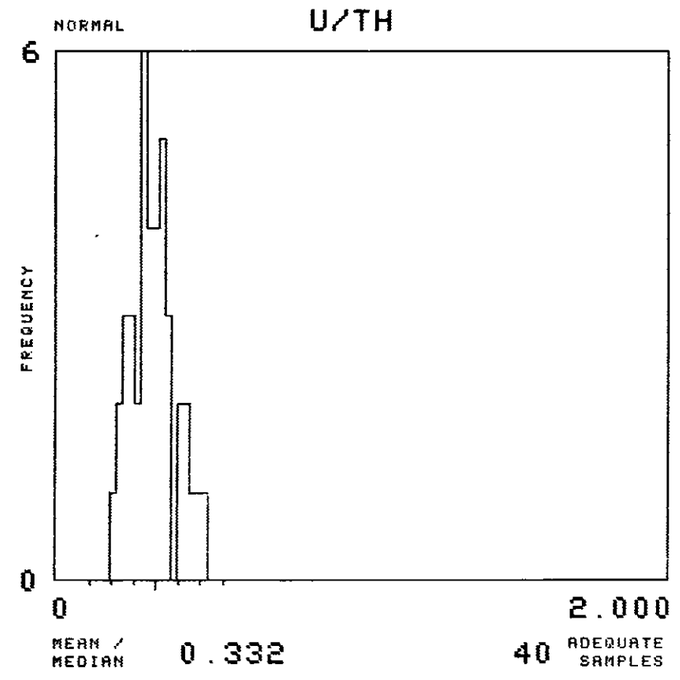
MAP UNIT : TU TOTAL NUMBER OF SAMPLES 40

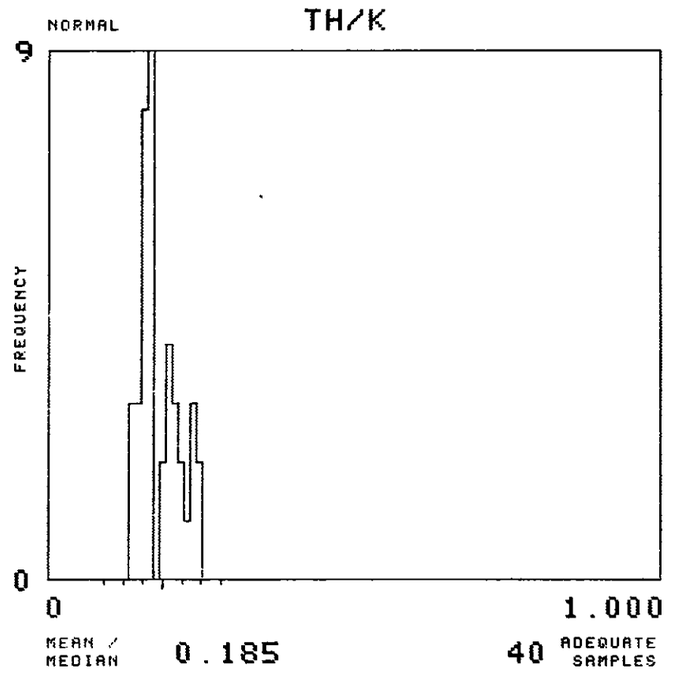






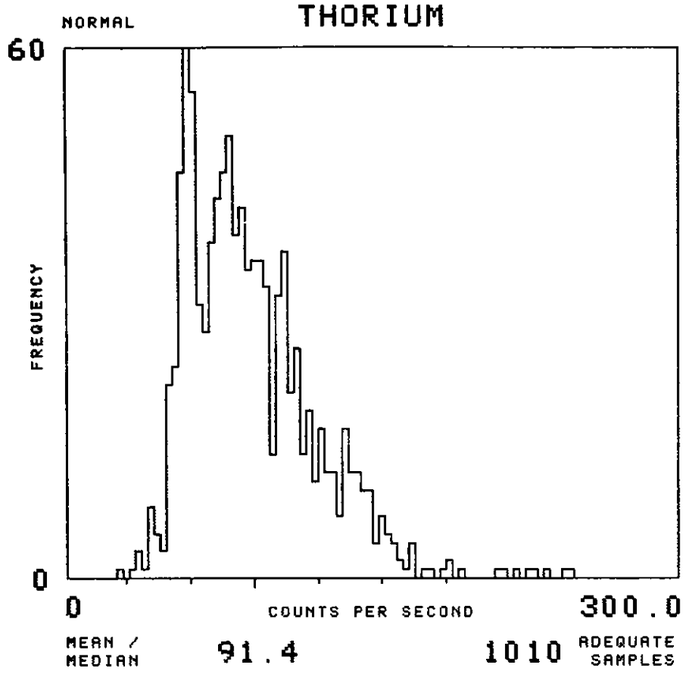


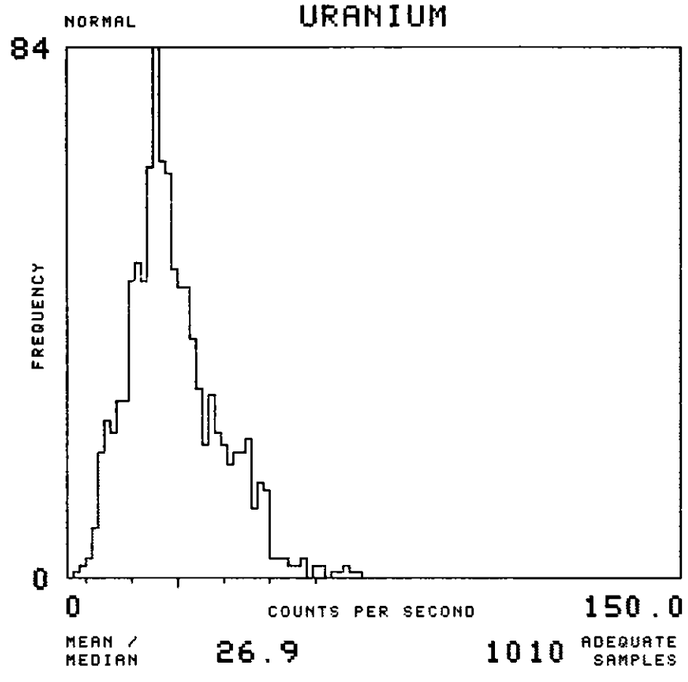


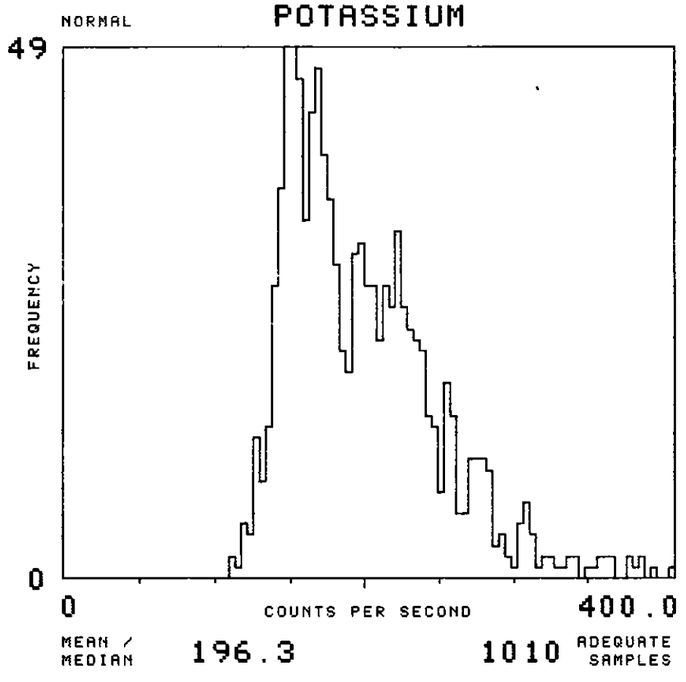


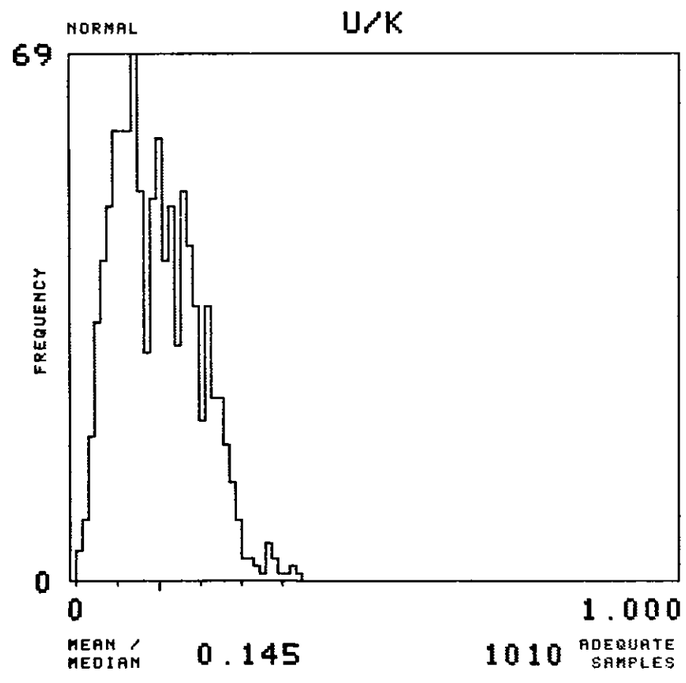
NTMS NK 13-4 CASPER

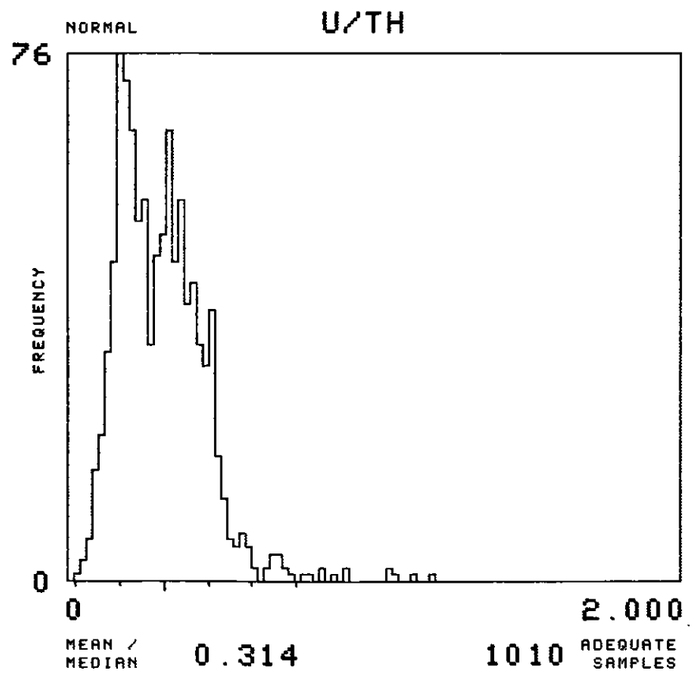
MAP UNIT : TWB TOTAL NUMBER OF SAMPLES 1044

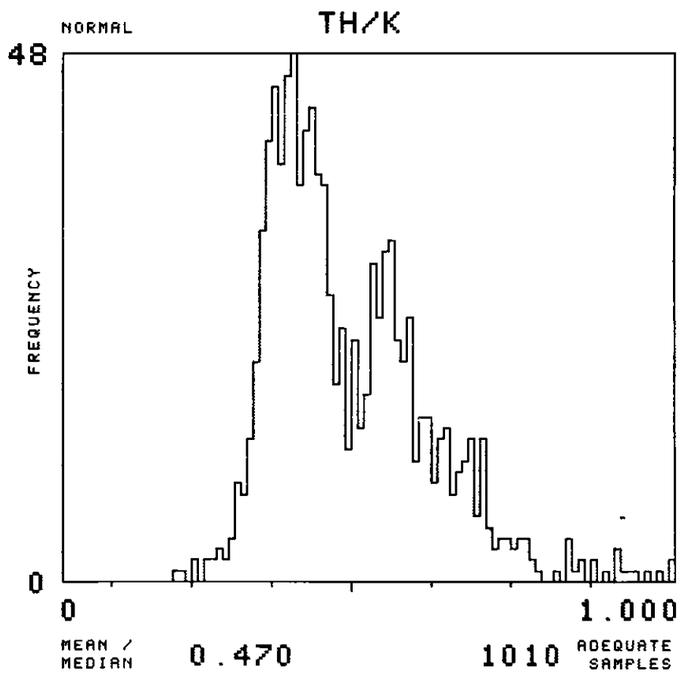






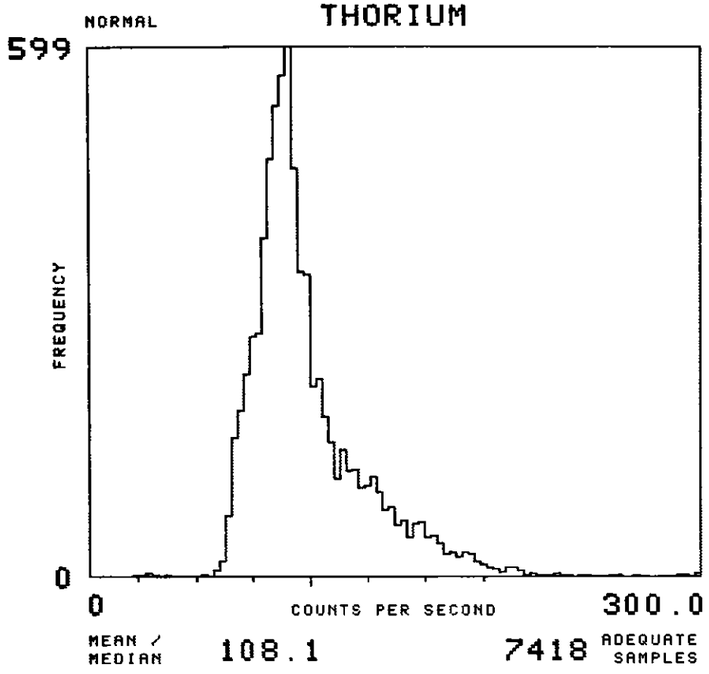


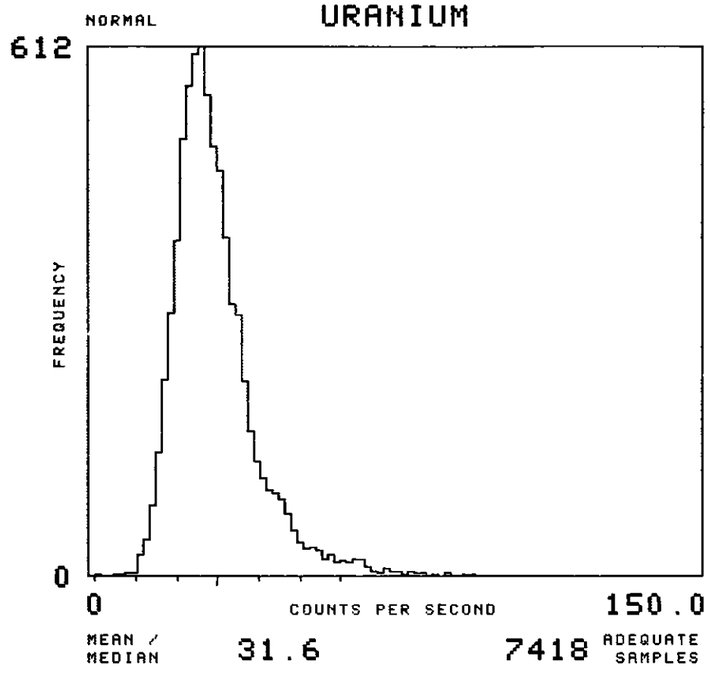


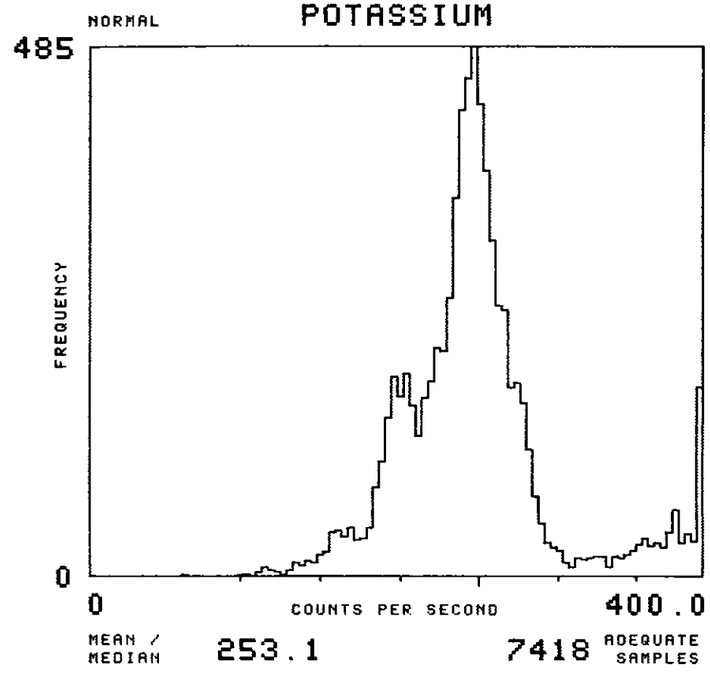


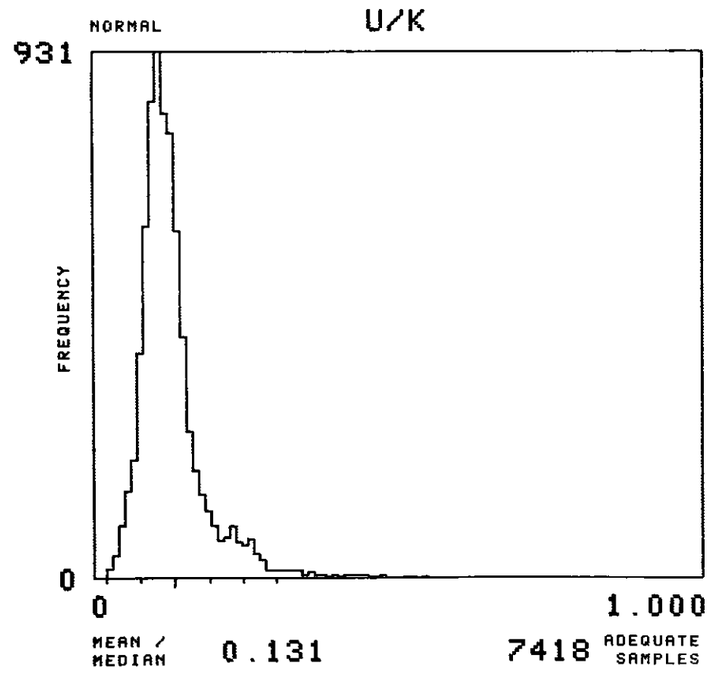
NTMS NK 13-4 CASPER

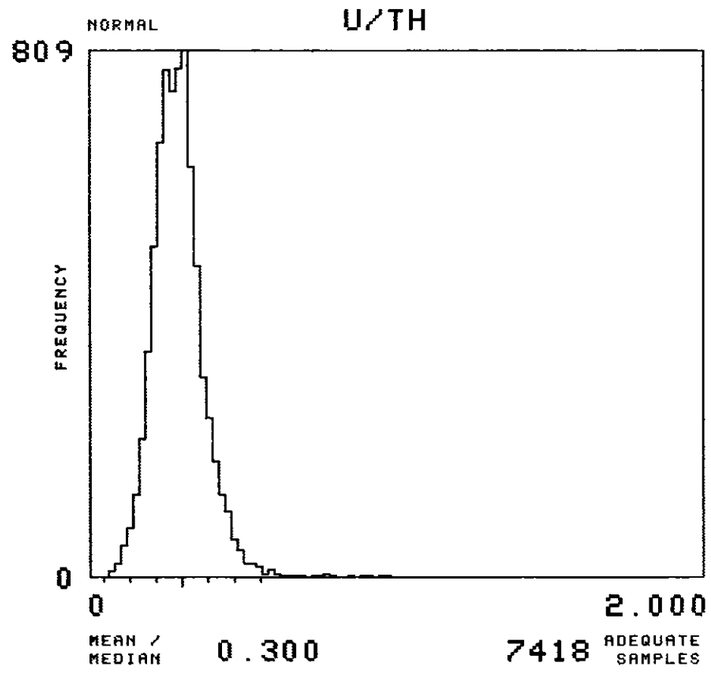
MAP UNIT : TWBS TOTAL NUMBER OF SAMPLES 7519

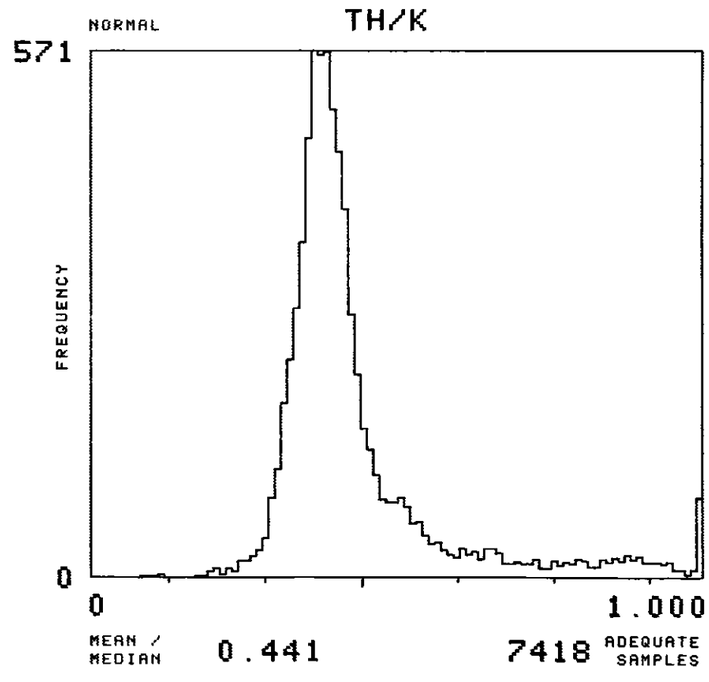












NTMS NK 13-4 CASPER

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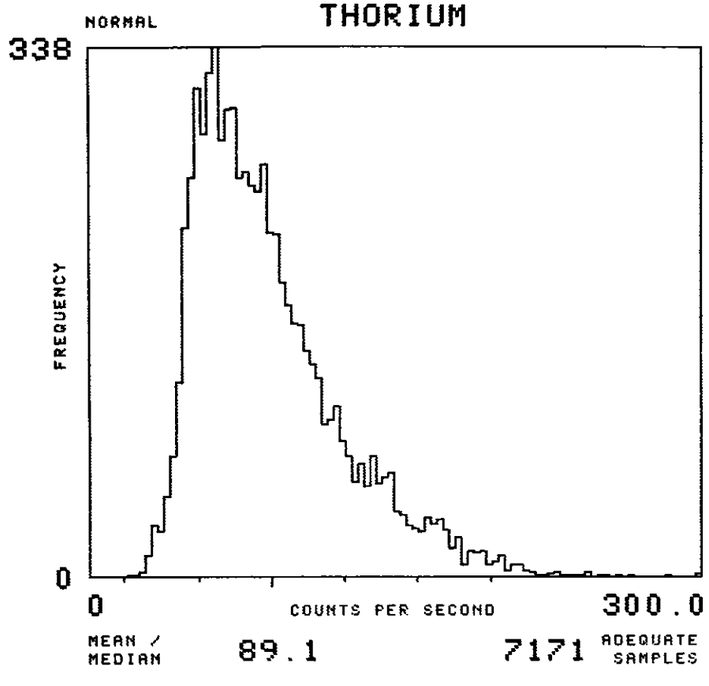

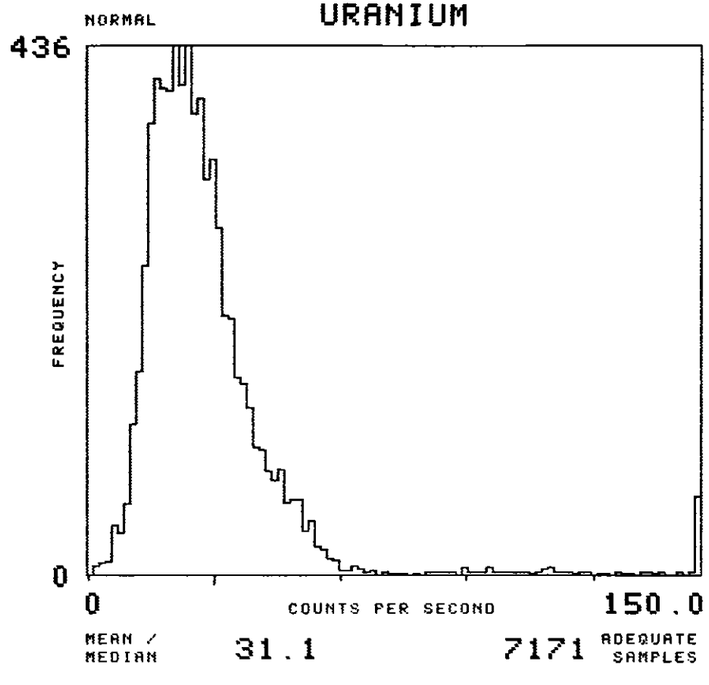

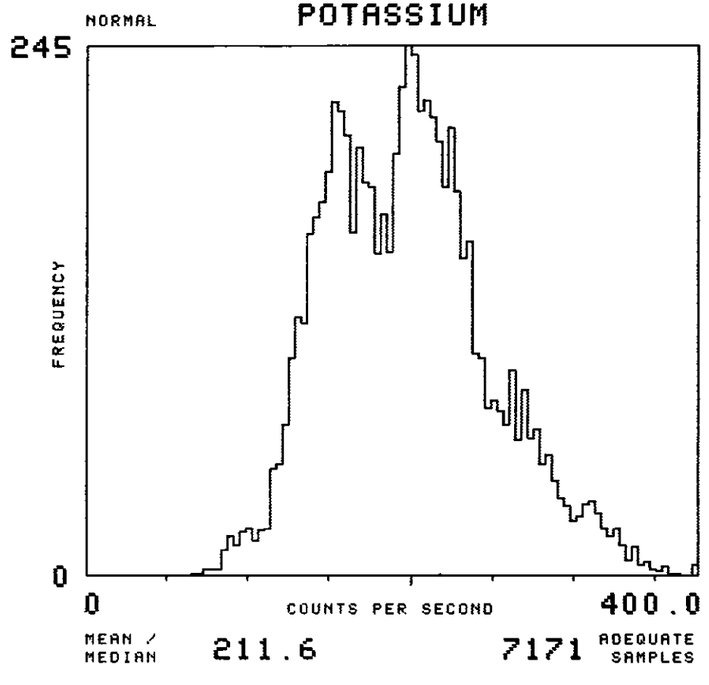

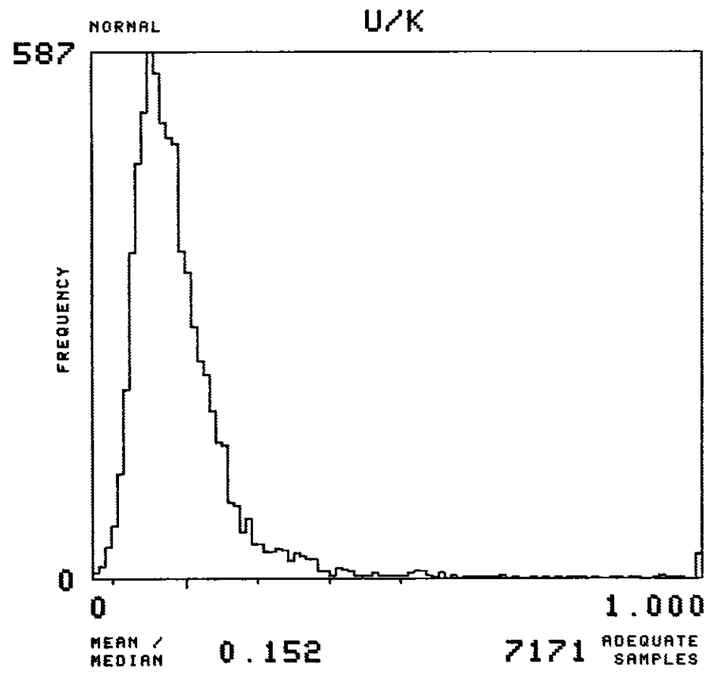

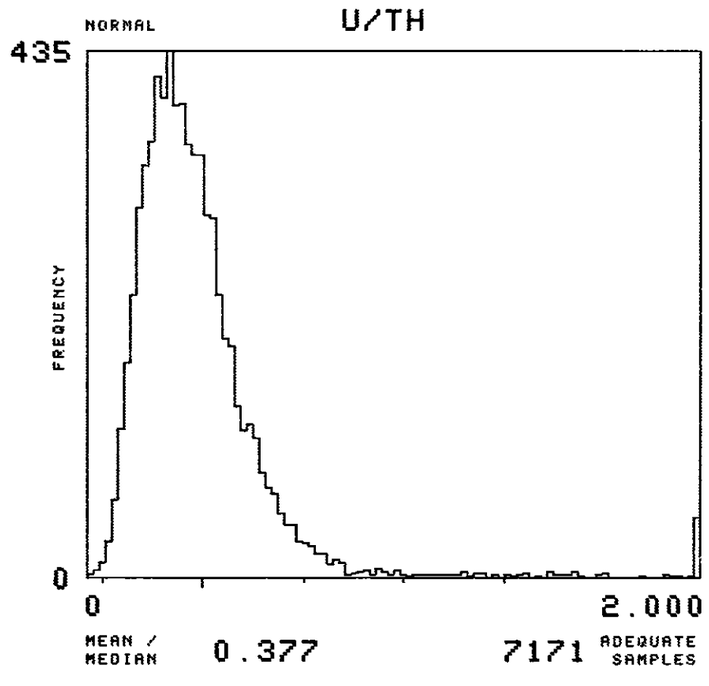

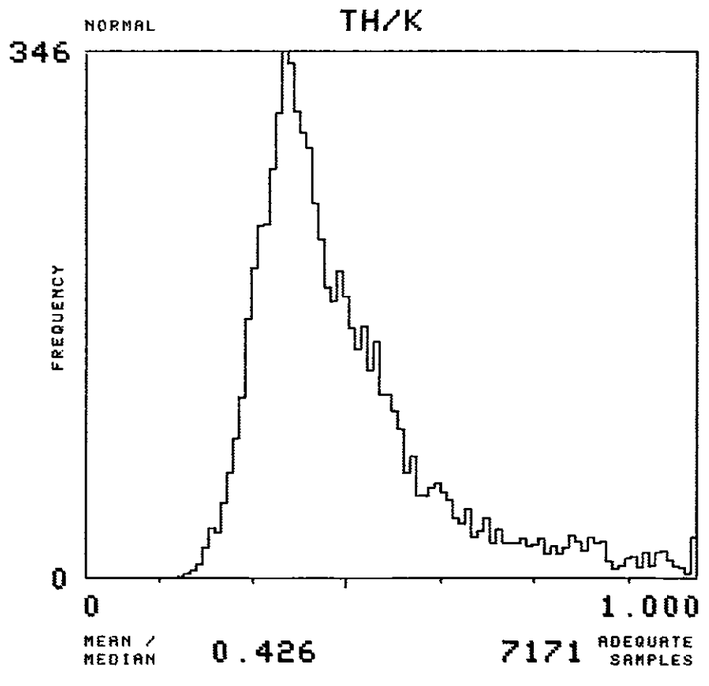

NTMS NK 13-4 CASPER

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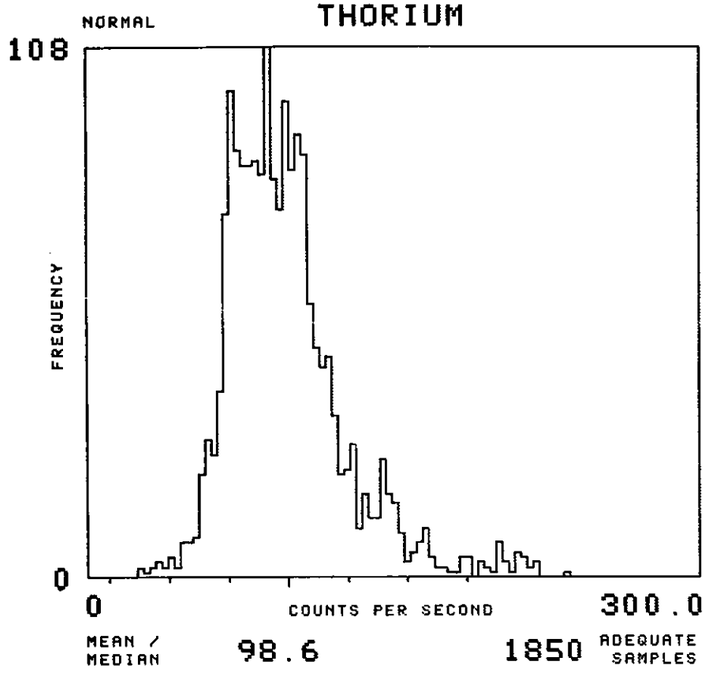

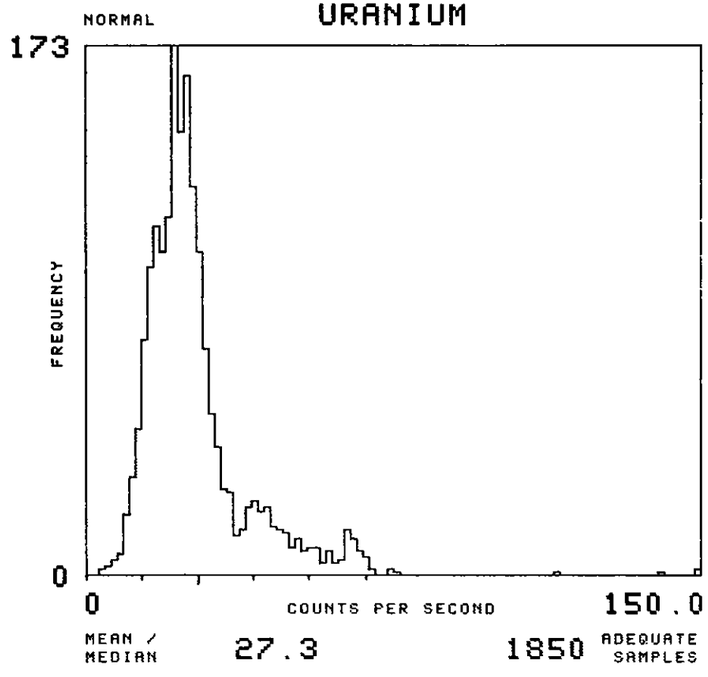

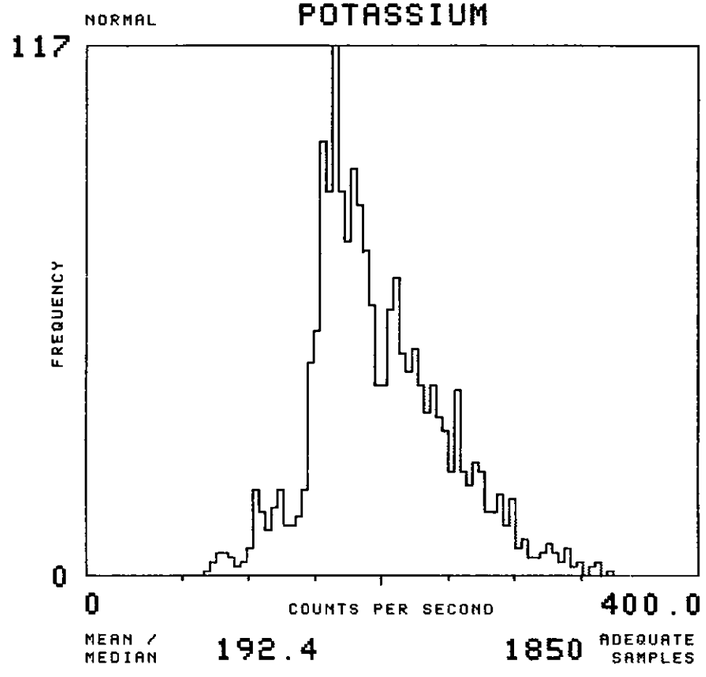

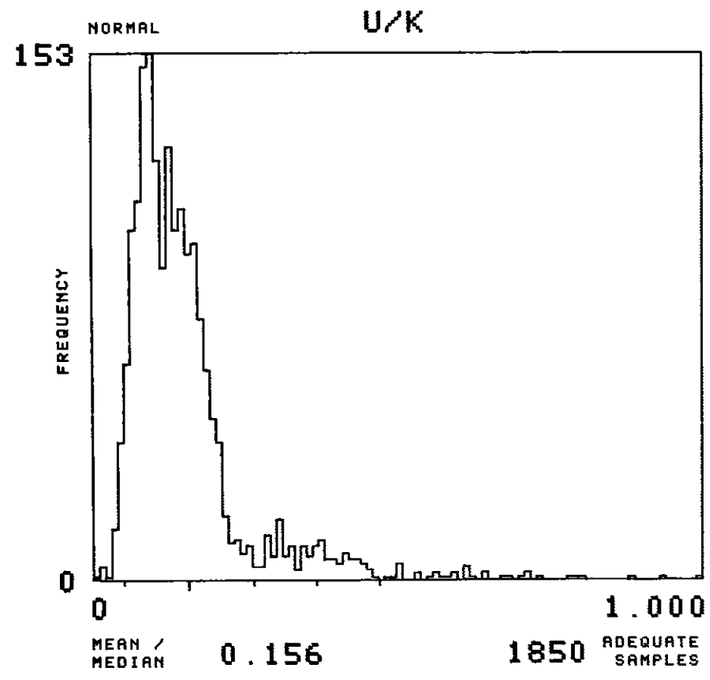

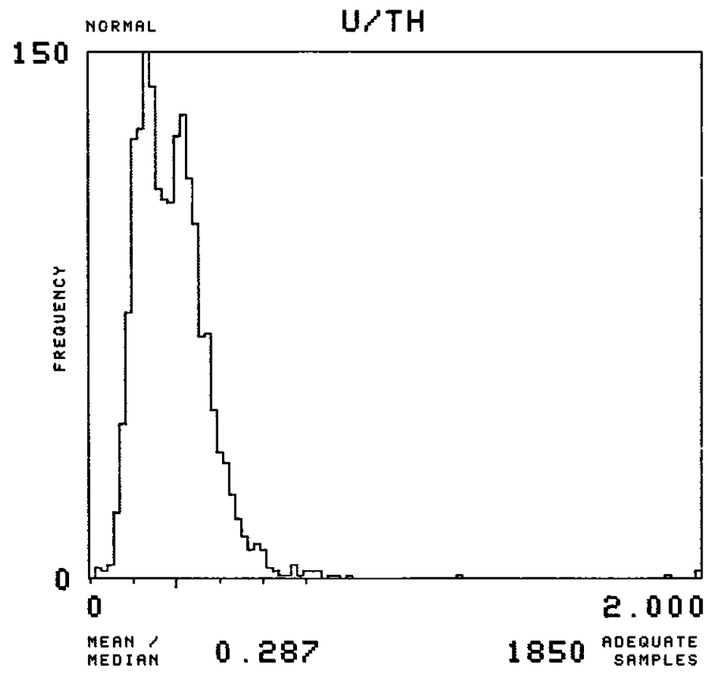

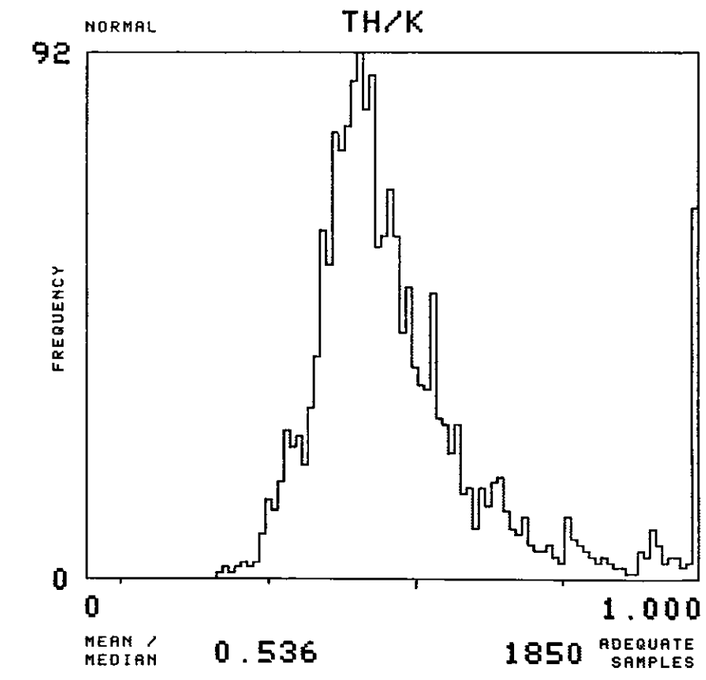

APPENDIX E - Statistical Tables

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*ADD,P CASPER,DISTFILE
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ROCK UNIT QA

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	132,0355	145,1237	158,2118	171,3000	184,3882	197,4763	210,5645
BI214	DIST	NORMAL	8,8879	13,7253	18,5626	23,4000	28,2374	33,0747	37,9121
TL208	DIST	NORMAL	37,6501	45,4667	53,2834	61,1000	68,9166	76,7333	84,5499
U/K	DIST	NORMAL	-,9894	-,6122	-,2349	,1423	,5195	,8968	1,2740
U/TH	DIST	NORMAL	-1,4939	-,8635	-,2330	,3975	1,0280	1,6585	2,2889
TH/K	DIST	NORMAL	-1,4428	-,8413	-,2397	,3619	,9635	1,5651	2,1666

ROCK UNIT QAC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	184,8632	200,0421	215,2211	230,4000	245,5789	260,7579	275,9368
BI214	DIST	NORMAL	24,7202	31,4134	38,1067	44,8000	51,4933	58,1866	64,8798
TL208	DIST	NORMAL	86,4464	97,3642	108,2821	119,2000	130,1179	141,0357	151,9536
U/K	DIST	NORMAL	-1,1570	-,7025	-,2479	,2066	,6611	1,1157	1,5702
U/TH	DIST	NORMAL	-1,4780	-,8566	-,2353	,3861	1,0075	1,6288	2,2502
TH/K	DIST	NORMAL	-1,6739	-,9329	-,1919	,5491	1,2901	2,0311	2,7721

ROCK UNIT QC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	188,7402	204,0602	219,3801	234,7000	250,0199	265,3398	280,6598
BI214	DIST	NORMAL	9,2337	14,1225	19,0112	23,9000	28,7888	33,6775	38,5663
TL208	DIST	NORMAL	68,1318	78,0212	87,9106	97,8000	107,6894	117,5788	127,4682
U/K	DIST	NORMAL	-,8396	-,5272	-,2148	,0976	,4100	,7224	1,0348
U/TH	DIST	NORMAL	-1,2145	-,7321	-,2497	,2327	,7151	1,1975	1,6799
TH/K	DIST	NORMAL	-1,5059	-,8685	-,2311	,4063	1,0437	1,6811	2,3185

ROCK UNIT QF

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	218,9787	235,3525	251,7262	268,1000	284,4738	300,8475	317,2213
BI214	DIST	NORMAL	16,7301	22,5868	28,4434	34,3000	40,1566	46,0132	51,8699
TL208	DIST	NORMAL	79,4788	90,0192	100,5596	111,1000	121,6404	132,1808	142,7212
U/K	DIST	NORMAL	-,9576	-,5945	-,2313	,1319	,4951	,8583	1,2214
U/TH	DIST	NORMAL	-1,3741	-,8100	-,2459	,3182	,8823	1,4464	2,0105
TH/K	DIST	NORMAL	-1,5207	-,8747	-,2287	,4173	1,0633	1,7093	2,3553

ROCK UNIT QS

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	162,4047	176,7364	191,0682	205,4000	219,7318	234,0636	248,3953
BI214	DIST	NORMAL	3,2588	7,1058	10,9529	14,8000	18,6471	22,4942	26,3412
TL208	DIST	NORMAL	24,4875	31,1583	37,8292	44,5000	51,1708	57,8417	64,5125
U/K	DIST	NORMAL	-,7497	-,4746	-,1994	,0757	,3508	,6260	,9011
U/TH	DIST	NORMAL	-1,4109	-,8269	-,2430	,3410	,9250	1,5089	2,0929
TH/K	DIST	NORMAL	-1,1893	-,7192	-,2491	,2210	,6911	1,1612	1,6313

ROCK UNIT QT

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	101,7987	113,4991	125,1996	136,9000	148,6004	160,3009	172,0013
BI214	DIST	NORMAL	7,6573	12,3048	16,9524	21,6000	26,2476	30,8952	35,5427
TL208	DIST	NORMAL	30,7629	38,0086	45,2543	52,5000	59,7457	66,9914	74,2371
U/K	DIST	NORMAL	-1,0509	-,6459	-,2410	,1640	,5690	,9739	1,3789
U/TH	DIST	NORMAL	-1,5605	-,8909	-,2212	,4484	1,1180	1,7877	2,4573
TH/K	DIST	NORMAL	-1,4621	-,8497	-,2374	,3750	,9874	1,5997	2,2121

ROCK UNIT QTP

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	156,8585	170,9724	185,0862	199,2000	213,3138	227,4276	241,5415
BI214	DIST	NORMAL	24,4875	31,1583	37,8292	44,5000	51,1708	57,8417	64,5125
TL208	DIST	NORMAL	51,0898	59,8932	68,6966	77,5000	86,3034	95,1068	103,9102
U/K	DIST	NORMAL	-1,1922	-,7207	-,2492	,2223	,6938	1,1653	1,6368
U/TH	DIST	NORMAL	-1,7154	-,9466	-,1777	,5911	1,3599	2,1288	2,8976
TH/K	DIST	NORMAL	-1,4855	-,8598	-,2342	,3914	1,0170	1,6426	2,2683

ROCK UNIT QP

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	128,5851	141,5234	154,4617	167,4000	180,3383	193,2766	206,2149
BI214	DIST	NORMAL	9,6508	14,6005	19,5503	24,5000	29,4497	34,3995	39,3492
TL208	DIST	NORMAL	50,5922	59,3615	68,1307	76,9000	85,6693	94,4385	103,2078
U/K	DIST	NORMAL	-1,0244	-,6315	-,2385	,1544	,5473	,9403	1,3332
U/TH	DIST	NORMAL	-1,4207	-,8313	-,2420	,3473	,9366	1,5259	2,1153
TH/K	DIST	NORMAL	-1,5838	-,9000	-,2162	,4676	1,1514	1,8352	2,5190

ROCK UNIT QL

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	121.1714	133.7810	146.3905	159.0000	171.6095	184.2190	196.8286
BI214	DIST	NORMAL	7.0508	11.6005	16.1503	20.7000	25.2497	29.7995	34.3492
TL208	DIST	NORMAL	27.6859	34.6573	41.6286	48.6000	55.5714	62.5427	69.5141
U/K	DIST	NORMAL	-.9676	-.6000	-.2325	.1351	.5027	.8702	1.2378
U/TH	DIST	NORMAL	-1.5697	-.8945	-.2193	.4559	1.1311	1.8063	2.4815
TH/K	DIST	NORMAL	-1.3442	-.7959	-.2477	.3006	.8489	1.3971	1.9454

ROCK UNIT QLS

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	104.4162	116.2441	128.0721	139.9000	151.7279	163.5559	175.3838
BI214	DIST	NORMAL	1.8934	5.4289	8.9645	12.5000	16.0355	19.5711	23.1066
TL208	DIST	NORMAL	18.9025	25.0016	31.1008	37.2000	43.2992	49.3984	55.4975
U/K	DIST	NORMAL	-.9159	-.5709	-.2260	.1190	.4640	.8089	1.1539
U/TH	DIST	NORMAL	-1.4553	-.8467	-.2382	.3703	.9788	1.5873	2.1959
TH/K	DIST	NORMAL	-1.3504	-.7989	-.2473	.3042	.8557	1.4073	1.9588

ROCK UNIT TMS

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	197.1385	212.7590	228.3795	244.0000	259.6205	275.2410	290.8615
BI214	DIST	NORMAL	16.7301	22.5868	28.4434	34.3000	40.1566	46.0132	51.8699
TL208	DIST	NORMAL	65.8442	75.5962	85.3481	95.1000	104.8519	114.6038	124.3558
U/K	DIST	NORMAL	-1.0422	-.6412	-.2402	.1608	.5618	.9628	1.3638
U/TH	DIST	NORMAL	-1.5370	-.8814	-.2258	.4298	1.0854	1.7410	2.3966
TH/K	DIST	NORMAL	-1.5918	-.9031	-.2144	.4743	1.1630	1.8517	2.5404

ROCK UNIT TM

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	150.0741	163.9161	177.7580	191.6000	205.4420	219.2839	233.1259
BI214	DIST	NORMAL	6.2524	10.6682	15.0841	19.5000	23.9159	28.3318	32.7476
TL208	DIST	NORMAL	45.1465	53.5310	61.9155	70.3000	78.6845	87.0690	95.4535
U/K	DIST	NORMAL	-.8822	-.5517	-.2213	.1092	.4397	.7701	1.1006
U/TH	DIST	NORMAL	-1.3423	-.7950	-.2478	.2995	.8468	1.3940	1.9413
TH/K	DIST	NORMAL	-1.4659	-.8514	-.2369	.3776	.9921	1.6066	2.2211

ROCK UNIT TMU

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	158.1994	172.3663	186.5331	200.7000	214.8669	229.0337	243.2006
BI214	DIST	NORMAL	9.8601	14.8401	19.8200	24.8000	29.7800	34.7599	39.7399
TL208	DIST	NORMAL	70.4251	80.4501	90.4750	100.5000	110.5250	120.5499	130.5749
U/K	DIST	NORMAL	-.9428	-.5861	-.2295	.1272	.4839	.8405	1.1972
U/TH	DIST	NORMAL	-1.2621	-.7560	-.2500	.2561	.7622	1.2682	1.7743
TH/K	DIST	NORMAL	-1.6286	-.9169	-.2052	.5065	1.2182	1.9299	2.6416

ROCK UNIT TMOC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	166.8845	181.3897	195.8948	210.4000	224.9052	239.4103	253.9155
BI214	DIST	NORMAL	7.3196	11.9131	16.5065	21.1000	25.6935	30.2869	34.8804
TL208	DIST	NORMAL	61.4553	70.9369	80.4184	89.9000	99.3816	108.8631	118.3447
U/K	DIST	NORMAL	-.8729	-.5464	-.2199	.1066	.4331	.7596	1.0861
U/TH	DIST	NORMAL	-1.2354	-.7427	-.2499	.2428	.7355	1.2283	1.7210
TH/K	DIST	NORMAL	-1.5440	-.8842	-.2245	.4353	1.0951	1.7548	2.4146

ROCK UNIT TU

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	160.4355	174.6904	188.9452	203.2000	217.4548	231.7096	245.9645
BI214	DIST	NORMAL	1.6645	5.1430	8.6215	12.1000	15.5785	19.0570	22.5355
TL208	DIST	NORMAL	19.3555	25.5037	31.6518	37.8000	43.9482	50.0963	56.2445
U/K	DIST	NORMAL	-.6774	-.4314	-.1855	.0605	.3065	.5524	.7984
U/TH	DIST	NORMAL	-1.3959	-.8201	-.2442	.3316	.9074	1.4833	2.0591
TH/K	DIST	NORMAL	-1.1061	-.6756	-.2452	.1853	.6158	1.0462	1.4767

ROCK UNIT TWR

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	150.7875	164.6583	178.5292	192.4000	206.2708	220.1417	234.0125
BI214	DIST	NORMAL	11.6252	16.8501	22.0751	27.3000	32.5249	37.7499	42.9748
TL208	DIST	NORMAL	68.8107	78.7405	88.6702	98.6000	108.5298	118.4595	128.3893
U/K	DIST	NORMAL	-1.0283	-.6336	-.2389	.1558	.5505	.9452	1.3399
U/TH	DIST	NORMAL	-1.3207	-.7847	-.2487	.2873	.8233	1.3593	1.8953
TH/K	DIST	NORMAL	-1.6607	-.9284	-.1960	.5363	1.2686	2.0010	2.7333

ROCK UNIT TI

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	275.4106	293.5737	311.7369	329.9000	348.0631	366.2263	384.3895
BI214	DIST	NORMAL	15.8402	21.5935	27.3467	33.1000	38.8533	44.6065	50.3598
TL208	DIST	NORMAL	78.7929	89.2952	99.7976	110.3000	120.8024	131.3048	141.8071
U/K	DIST	NORMAL	-.8449	-.5303	-.2156	.0990	.4136	.7283	1.0429
U/TH	DIST	NORMAL	-1.3435	-.7956	-.2477	.3002	.8481	1.3960	1.9439
TH/K	DIST	NORMAL	-1.3958	-.8200	-.2443	.3315	.9073	1.4830	2.0588

ROCK UNIT TWB

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	154.2679	168.2786	182.2893	196.3000	210.3107	224.3214	238.3321
BI214	DIST	NORMAL	11.3404	16.5270	21.7135	26.9000	32.0865	37.2730	42.4596
TL208	DIST	NORMAL	62.7190	72.2793	81.8397	91.4000	100.9603	110.5207	120.0810
U/K	DIST	NORMAL	-.9985	-.6172	-.2359	.1454	.5267	.9080	1.2893
U/TH	DIST	NORMAL	-1.3674	-.8069	-.2463	.3142	.8747	1.4353	1.9958
TH/K	DIST	NORMAL	-1.5865	-.9010	-.2156	.4698	1.1552	1.8406	2.5261

ROCK UNIT TC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	129.4693	142.4462	155.4231	168.4000	181.3769	194.3538	207.3307
BI214	DIST	NORMAL	21.4846	27.8564	34.2282	40.6000	46.9718	53.3436	59.7154
TL208	DIST	NORMAL	96.9241	108.3828	119.8414	131.3000	142.7586	154.2172	165.6759
U/K	DIST	NORMAL	-1.2883	-.7690	-.2496	.2697	.7890	1.3084	1.8277
U/TH	DIST	NORMAL	-1.3619	-.8043	-.2467	.3109	.8685	1.4261	1.9837
TH/K	DIST	NORMAL	-1.9149	-.9938	-.0726	.8485	1.7696	2.6908	3.6119

ROCK UNIT TWBS

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	205.3727	221.2818	237.1909	253.1000	269.0091	284.9182	300.8274
BI214	DIST	NORMAL	14.7358	20.3572	25.9786	31.6000	37.2214	42.8428	48.4642
TL208	DIST	NORMAL	76.9087	87.3058	97.7029	108.1000	118.4971	128.8942	139.2913
U/K	DIST	NORMAL	-.9545	-.5927	-.2309	.1309	.4927	.8545	1.2163
U/TH	DIST	NORMAL	-1.3430	-.7954	-.2477	.2999	.8475	1.3952	1.9428
TH/K	DIST	NORMAL	-1.5517	-.8874	-.2230	.4414	1.1058	1.7702	2.4345

ROCK UNIT TWDR

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	167.9606	182.5070	197.0535	211.6000	226.1465	240.6930	255.2394
BI214	DIST	NORMAL	14.3698	19.9465	25.5233	31.1000	36.6767	42.2535	47.8302
TL208	DIST	NORMAL	60.7822	70.2214	79.6607	89.1000	98.5393	107.9786	117.4178
U/K	DIST	NORMAL	-1.0165	-.6271	-.2378	.1516	.5410	.9303	1.3197
U/TH	DIST	NORMAL	-1.4656	-.8513	-.2369	.3774	.9917	1.6061	2.2204
TH/K	DIST	NORMAL	-1.5321	-.8794	-.2267	.4260	1.0787	1.7314	2.3841

ROCK UNIT TFU

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	108.6126	120.6417	132.6709	144.7000	156.7291	168.7583	180.7874
BI214	DIST	NORMAL	7.5896	12.2264	16.8632	21.5000	26.1368	30.7736	35.4104
TL208	DIST	NORMAL	37.4885	45.2923	53.0962	60.9000	68.7038	76.5077	84.3115
U/K	DIST	NORMAL	-1.0139	-.6257	-.2375	.1507	.5389	.9271	1.3153
U/TH	DIST	NORMAL	-1.4374	-.8389	-.2403	.3583	.9569	1.5555	2.1540
TH/K	DIST	NORMAL	-1.5209	-.8748	-.2286	.4175	1.0636	1.7098	2.3559

ROCK UNIT TH

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	110.9775	123.1183	135.2592	147.4000	159.5408	171.6817	183.8225
BI214	DIST	NORMAL	14.9560	20.6040	26.2520	31.9000	37.5480	43.1960	48.8440
TL208	DIST	NORMAL	42.6073	50.8049	59.0024	67.2000	75.3976	83.5951	91.7927
U/K	DIST	NORMAL	-1.1709	-.7097	-.2485	.2127	.6739	1.1351	1.5963
U/TH	DIST	NORMAL	-1.5869	-.9012	-.2155	.4702	1.1559	1.8416	2.5273
TH/K	DIST	NORMAL	-1.5648	-.8926	-.2203	.4519	1.1241	1.7964	2.4686

ROCK UNIT TKF

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	88.6911	99.7274	110.7637	121.8000	132.8363	143.8726	154.9089
BI214	DIST	NORMAL	7.5896	12.2264	16.8632	21.5000	26.1368	30.7736	35.4104
TL208	DIST	NORMAL	28.2358	35.2572	42.2786	49.3000	56.3214	63.3428	70.3642
U/K	DIST	NORMAL	-1.0892	-.6666	-.2440	.1786	.6012	1.0238	1.4464
U/TH	DIST	NORMAL	-1.5506	-.8869	-.2232	.4405	1.1042	1.7679	2.4316
TH/K	DIST	NORMAL	-1.5053	-.8682	-.2312	.4058	1.0428	1.6798	2.3169

ROCK UNIT KL

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	116,8589	129,2726	141,6863	154,1000	166,5137	178,9274	191,3411
BI214	DIST	NORMAL	8,4066	13,1711	17,9355	22,7000	27,4645	32,2289	36,9934
TL208	DIST	NORMAL	35,5544	43,2029	50,8515	58,5000	66,1485	73,7971	81,4456
U/K	DIST	NORMAL	-1,0267	-,6327	-,2388	,1552	,5492	,9431	1,3371
U/TH	DIST	NORMAL	-1,4981	-,8652	-,2324	,4005	1,0334	1,6662	2,2991
TH/K	DIST	NORMAL	-1,4818	-,8583	-,2347	,3888	1,0123	1,6359	2,2594

ROCK UNIT KMB

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	95,0133	106,3756	117,7378	129,1000	140,4622	151,8244	163,1867
BI214	DIST	NORMAL	6,2524	10,6682	15,0841	19,5000	23,9159	28,3318	32,7476
TL208	DIST	NORMAL	24,8754	31,5836	38,2918	45,0000	51,7082	58,4164	65,1246
U/K	DIST	NORMAL	-1,0236	-,6310	-,2385	,1541	,5467	,9392	1,3318
U/TH	DIST	NORMAL	-1,5388	-,8821	-,2255	,4312	1,0879	1,7445	2,4012
TH/K	DIST	NORMAL	-1,4326	-,8367	-,2408	,3551	,9510	1,5469	2,1428

ROCK UNIT KFH

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	108,9628	121,0085	133,0543	145,1000	157,1457	169,1915	181,2372
BI214	DIST	NORMAL	6,0547	10,4364	14,8182	19,2000	23,5818	27,9636	32,3453
TL208	DIST	NORMAL	23,3277	29,8851	36,4426	43,0000	49,5574	56,1149	62,6723
U/K	DIST	NORMAL	-,9728	-,6029	-,2331	,1368	,5067	,8765	1,2464
U/TH	DIST	NORMAL	-1,5789	-,8981	-,2173	,4635	1,1443	1,8251	2,5059
TH/K	DIST	NORMAL	-1,3395	-,7937	-,2479	,2979	,8437	1,3895	1,9353

ROCK UNIT KLE

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	109,8385	121,9256	134,0128	146,1000	158,1872	170,2744	182,3615
BI214	DIST	NORMAL	4,7581	8,9054	13,0527	17,2000	21,3473	25,4946	29,6419
TL208	DIST	NORMAL	22,3273	28,7849	35,2424	41,7000	48,1576	54,6151	61,0727
U/K	DIST	NORMAL	-,9189	-,5726	-,2264	,1199	,4662	,8124	1,1587
U/TH	DIST	NORMAL	-1,5107	-,8705	-,2304	,4098	1,0500	1,6901	2,3303
TH/K	DIST	NORMAL	-1,3205	-,7846	-,2487	,2872	,8231	1,3590	1,8949

ROCK UNIT KLML

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	117,1227	129,5484	141,9742	154,4000	166,8258	179,2516	191,6773
BI214	DIST	NORMAL	6,7833	11,2889	15,7944	20,3000	24,8056	29,3111	33,8167
TL208	DIST	NORMAL	32,6716	40,0811	47,4905	54,9000	62,3095	69,7189	77,1284
U/K	DIST	NORMAL	-,9768	-,6051	-,2335	,1381	,5097	,8813	1,2530
U/TH	DIST	NORMAL	-1,4582	-,8480	-,2379	,3723	,9825	1,5926	2,2028
TH/K	DIST	NORMAL	-1,4452	-,8423	-,2394	,3635	,9664	1,5693	2,1722

ROCK UNIT KML

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	134,0728	147,2485	160,4243	173,6000	186,7757	199,9515	213,1272
BI214	DIST	NORMAL	9,9300	14,9200	19,9100	24,9000	29,8900	34,8800	39,8700
TL208	DIST	NORMAL	38,0543	45,9029	53,7514	61,6000	69,4486	77,2971	85,1457
U/K	DIST	NORMAL	-1,0090	-,6230	-,2370	,1490	,5350	,9210	1,3070
U/TH	DIST	NORMAL	-1,5297	-,8784	-,2271	,4242	1,0755	1,7268	2,3781
TH/K	DIST	NORMAL	-1,4296	-,8353	-,2411	,3531	,9473	1,5415	2,1358

ROCK UNIT KMV

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	108,8752	120,9168	132,9584	145,0000	157,0416	169,0832	181,1248
BI214	DIST	NORMAL	4,8860	9,0573	13,2287	17,4000	21,5713	25,7427	29,9140
TL208	DIST	NORMAL	24,6426	31,3284	38,0142	44,7000	51,3858	58,0716	64,7574
U/K	DIST	NORMAL	-,9447	-,5872	-,2297	,1278	,4853	,8428	1,2003
U/TH	DIST	NORMAL	-1,4949	-,8639	-,2328	,3982	1,0292	1,6603	2,2913
TH/K	DIST	NORMAL	-1,3756	-,8107	-,2458	,3191	,8840	1,4489	2,0138

ROCK UNIT KC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	135,3137	148,5425	161,7712	175,0000	188,2288	201,4575	214,6863
BI214	DIST	NORMAL	6,3184	10,7456	15,1728	19,6000	24,0272	28,4544	32,8816
TL208	DIST	NORMAL	31,8750	39,2167	46,5583	53,9000	61,2417	68,5833	75,9250
U/K	DIST	NORMAL	-,9146	-,5702	-,2258	,1186	,4630	,8074	1,1518
U/TH	DIST	NORMAL	-1,4705	-,8534	-,2363	,3808	,9979	1,6150	2,2321
TH/K	DIST	NORMAL	-1,3659	-,8062	-,2464	,3133	,8730	1,4328	1,9925

ROCK UNIT KS

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	133,8956	147,0637	160,2319	173,4000	186,5681	199,7363	212,9044
BI214	DIST	NORMAL	7,5220	12,1480	16,7740	21,4000	26,0260	30,6520	35,2780
TL208	DIST	NORMAL	40,9760	49,0507	57,1253	65,2000	73,2747	81,3493	89,4240
U/K	DIST	NORMAL	-,9460	-,5879	-,2299	,1282	,4863	,8443	1,2024
U/TH	DIST	NORMAL	-1,4383	-,8393	-,2402	,3589	,9580	1,5571	2,1561
TH/K	DIST	NORMAL	-1,4612	-,8494	-,2375	,3744	,9863	1,5982	2,2100

ROCK UNIT KN

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	125,5813	138,3875	151,1938	164,0000	176,8062	189,6125	202,4187
BI214	DIST	NORMAL	9,8601	14,8401	19,8200	24,8000	29,7800	34,7599	39,7399
TL208	DIST	NORMAL	41,5464	49,6642	57,7821	65,9000	74,0179	82,1358	90,2536
U/K	DIST	NORMAL	-1,0547	-,6480	-,2413	,1654	,5721	,9788	1,3855
U/TH	DIST	NORMAL	-1,5600	-,8907	-,2213	,4480	1,1173	1,7867	2,4560
TH/K	DIST	NORMAL	-1,4923	-,8627	-,2332	,3963	1,0258	1,6553	2,2849

ROCK UNIT KF

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	118,4420	130,9280	143,4140	155,9000	168,3860	180,8720	193,3580
BI214	DIST	NORMAL	7,3196	11,9131	16,5065	21,1000	25,6935	30,2869	34,8804
TL208	DIST	NORMAL	36,3591	44,0728	51,7864	59,5000	67,2136	74,9272	82,6409
U/K	DIST	NORMAL	-,9926	-,6140	-,2353	,1434	,5221	,9008	1,2794
U/TH	DIST	NORMAL	-1,4626	-,8499	-,2373	,3753	,9879	1,6005	2,2132
TH/K	DIST	NORMAL	-1,4832	-,8589	-,2345	,3898	1,0141	1,6385	2,2628

ROCK UNIT KMT

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	81,7109	92,3740	103,0370	113,7000	124,3630	135,0260	145,6891
BI214	DIST	NORMAL	7,9288	12,6192	17,3096	22,0000	26,6904	31,3808	36,0712
TL208	DIST	NORMAL	29,3388	36,4592	43,5796	50,7000	57,8204	64,9408	72,0612
U/K	DIST	NORMAL	-1,1679	-,7082	-,2484	,2114	,6712	1,1310	1,5907
U/TH	DIST	NORMAL	-1,5626	-,8917	-,2208	,4501	1,1210	1,7919	2,4628
TH/K	DIST	NORMAL	-1,5818	-,8992	-,2167	,4659	1,1485	1,8310	2,5136

ROCK UNIT KJ

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	63,2250	72,8167	82,4083	92,0000	101,5917	111,1833	120,7750
BI214	DIST	NORMAL	4,5037	8,6024	12,7012	16,8000	20,8988	24,9976	29,0963
TL208	DIST	NORMAL	18,9025	25,0016	31,1008	37,2000	43,2992	49,3984	55,4975
U/K	DIST	NORMAL	-1,1593	-,7037	-,2480	,2076	,6632	1,1189	1,5745
U/TH	DIST	NORMAL	-1,6156	-,9121	-,2086	,4949	1,1984	1,9019	2,6054
TH/K	DIST	NORMAL	-1,5244	-,8762	-,2281	,4201	1,0683	1,7164	2,3646

ROCK UNIT JS

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	93,3651	104,6434	115,9217	127,2000	138,4783	149,7566	161,0349
BI214	DIST	NORMAL	3,0763	6,8842	10,6921	14,5000	18,3079	22,1158	25,9237
TL208	DIST	NORMAL	18,5258	24,5839	30,6419	36,7000	42,7581	48,8161	54,8742
U/K	DIST	NORMAL	-,9229	-,5749	-,2269	,1211	,4691	,8171	1,1651
U/TH	DIST	NORMAL	-1,5298	-,8785	-,2271	,4243	1,0757	1,7271	2,3784
TH/K	DIST	NORMAL	-1,3254	-,7869	-,2485	,2899	,8283	1,3667	1,9052

ROCK UNIT KJS

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	74,0031	84,2354	94,4677	104,7000	114,9323	125,1646	135,3969
BI214	DIST	NORMAL	5,2075	9,4383	13,6692	17,9000	22,1308	26,3617	30,5925
TL208	DIST	NORMAL	20,1131	26,3421	32,5710	38,8000	45,0290	51,2579	57,4869
U/K	DIST	NORMAL	-1,1021	-,6735	-,2449	,1837	,6123	1,0409	1,4695
U/TH	DIST	NORMAL	-1,5940	-,9039	-,2139	,4762	1,1663	1,8563	2,5464
TH/K	DIST	NORMAL	-1,4774	-,8564	-,2353	,3857	1,0067	1,6278	2,2488

ROCK UNIT JTRP

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	90,7665	101,9110	113,0555	124,2000	135,3445	146,4890	157,6335
BI214	DIST	NORMAL	3,5654	7,4770	11,3885	15,3000	19,2115	23,1230	27,0346
TL208	DIST	NORMAL	16,7301	22,5868	28,4434	34,3000	40,1566	46,0132	51,8699
U/K	DIST	NORMAL	-,9402	-,5847	-,2291	,1264	,4819	,8375	1,1930
U/TH	DIST	NORMAL	-1,6252	-,9157	-,2061	,5035	1,2131	1,9227	2,6322
TH/K	DIST	NORMAL	-1,3040	-,7766	-,2493	,2781	,8055	1,3328	1,8602

ROCK UNIT TRC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	99.9690	111.5793	123.1897	134.8000	146.4103	158.0207	169.6310
BI214	DIST	NORMAL	3.5654	7.4770	11.3885	15.3000	19.2115	23.1230	27.0346
TL208	DIST	NORMAL	19.8855	26.0903	32.2952	38.5000	44.7048	50.9097	57.1145
U/K	DIST	NORMAL	-.9044	-.5644	-.2244	.1156	.4556	.7956	1.1356
U/TH	DIST	NORMAL	-1.5195	-.8742	-.2289	.4164	1.0617	1.7070	2.3523
TH/K	DIST	NORMAL	-1.3104	-.7797	-.2491	.2816	.8123	1.3429	1.8736

ROCK UNIT TRPG

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	92.8450	104.0967	115.3483	126.6000	137.8517	149.1033	160.3550
BI214	DIST	NORMAL	3.3810	7.2540	11.1270	15.0000	18.8730	22.7460	26.6189
TL208	DIST	NORMAL	17.0280	22.9187	28.8093	34.7000	40.5907	46.4813	52.3720
U/K	DIST	NORMAL	-.9278	-.5777	-.2275	.1226	.4727	.8229	1.1730
U/TH	DIST	NORMAL	-1.5814	-.8991	-.2167	.4656	1.1479	1.8303	2.5126
TH/K	DIST	NORMAL	-1.2924	-.7710	-.2495	.2719	.7933	1.3148	1.8362

ROCK UNIT TRPCG

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	73.8324	84.0550	94.2775	104.5000	114.7225	124.9450	135.1676
BI214	DIST	NORMAL	3.0763	6.8842	10.6921	14.5000	18.3079	22.1158	25.9237
TL208	DIST	NORMAL	15.9142	21.6761	27.4381	33.2000	38.9619	44.7239	50.4858
U/K	DIST	NORMAL	-.9906	-.6128	-.2351	.1427	.5205	.8982	1.2760
U/TH	DIST	NORMAL	-1.6054	-.9083	-.2111	.4860	1.1831	1.8803	2.5774
TH/K	DIST	NORMAL	-1.3535	-.8003	-.2472	.3060	.8592	1.4123	1.9655

ROCK UNIT PPC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	62.2133	71.7422	81.2711	90.8000	100.3289	109.8578	119.3867
BI214	DIST	NORMAL	2.0669	5.6446	9.2223	12.8000	16.3777	19.9554	23.5331
TL208	DIST	NORMAL	13.6410	19.1273	24.6137	30.1000	35.5863	41.0727	46.5590
U/K	DIST	NORMAL	-.9861	-.6103	-.2346	.1412	.5170	.8927	1.2685
U/TH	DIST	NORMAL	-1.5637	-.8921	-.2206	.4510	1.1226	1.7941	2.4657
TH/K	DIST	NORMAL	-1.3794	-.8124	-.2455	.3214	.8883	1.4552	2.0222

ROCK UNIT PM

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	67.1144	76.9429	86.7715	96.6000	106.4285	116.2571	126.0856
BI214	DIST	NORMAL	3.0763	6.8842	10.6921	14.5000	18.3079	22.1158	25.9237
TL208	DIST	NORMAL	17.3264	23.2509	29.1755	35.1000	41.0245	46.9491	52.8736
U/K	DIST	NORMAL	-1.0479	-.6443	-.2407	.1629	.5665	.9701	1.3737
U/TH	DIST	NORMAL	-1.6858	-.9369	-.1881	.5608	1.3097	2.0585	2.8074
TH/K	DIST	NORMAL	-1.4101	-.8265	-.2430	.3405	.9240	1.5075	2.0911

ROCK UNIT MM

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	94.1456	105.4637	116.7819	128.1000	139.4181	150.7363	162.0544
BI214	DIST	NORMAL	6.1864	10.5909	14.9955	19.4000	23.8045	28.2091	32.6136
TL208	DIST	NORMAL	39.4316	47.3877	55.3439	63.3000	71.2561	79.2123	87.1684
U/K	DIST	NORMAL	-1.0587	-.6502	-.2416	.1669	.5754	.9840	1.3925
U/TH	DIST	NORMAL	-1.4950	-.8639	-.2328	.3983	1.0294	1.6605	2.2916
TH/K	DIST	NORMAL	-1.5783	-.8979	-.2174	.4630	1.1434	1.8239	2.5043

ROCK UNIT MC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	100.2302	111.8535	123.4767	135.1000	146.7233	158.3465	169.9698
BI214	DIST	NORMAL	4.2509	8.3006	12.3503	16.4000	20.4497	24.4994	28.5491
TL208	DIST	NORMAL	33.5501	41.0334	48.5167	56.0000	63.4833	70.9666	78.4499
U/K	DIST	NORMAL	-.9617	-.5967	-.2318	.1332	.4982	.8631	1.2281
U/TH	DIST	NORMAL	-1.4034	-.8235	-.2436	.3363	.9162	1.4961	2.0760
TH/K	DIST	NORMAL	-1.5035	-.8675	-.2315	.4045	1.0405	1.6765	2.3125

ROCK UNIT CR

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	128.0547	140.9698	153.8849	166.8000	179.7151	192.6302	205.5453
BI214	DIST	NORMAL	5.9233	10.2822	14.6411	19.0000	23.3589	27.7178	32.0767
TL208	DIST	NORMAL	46.0504	54.5003	62.9501	71.4000	79.8499	88.2997	96.7496
U/K	DIST	NORMAL	-.9676	-.6000	-.2325	.1351	.5027	.8702	1.2378
U/TH	DIST	NORMAL	-1.3797	-.8126	-.2455	.3216	.8887	1.4558	2.0229
TH/K	DIST	NORMAL	-1.5958	-.9046	-.2135	.4777	1.1689	1.8600	2.5512

ROCK UNIT PZR

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	104.1543	115.9695	127.7848	139.6000	151.4152	163.2305	175.0457
BI214	DIST	NORMAL	4.8220	8.9813	13.1407	17.3000	21.4593	25.6187	29.7780
TL208	DIST	NORMAL	37.8926	45.7284	53.5642	61.4000	69.2358	77.0716	84.9074
U/K	DIST	NORMAL	-.9676	-.6000	-.2325	.1351	.5027	.8702	1.2378
U/TH	DIST	NORMAL	-1.3831	-.8142	-.2452	.3237	.8926	1.4616	2.0305
TH/K	DIST	NORMAL	-1.5348	-.8805	-.2262	.4281	1.0824	1.7367	2.3910

ROCK UNIT PC

			-3	-2	-1	0	+1	+2	+3
K40	DIST	NORMAL	164.7334	179.1556	193.5778	208.0000	222.4222	236.8444	251.2666
BI214	DIST	NORMAL	10.9149	16.0433	21.1716	26.3000	31.4284	36.5567	41.6851
TL208	DIST	NORMAL	91.8920	103.0946	114.2973	125.5000	136.7027	147.9054	159.1080
U/K	DIST	NORMAL	-.9663	-.5993	-.2323	.1347	.5017	.8687	1.2357
U/TH	DIST	NORMAL	-1.2193	-.7345	-.2498	.2350	.7198	1.2045	1.6893
TH/K	DIST	NORMAL	-1.7298	-.9511	-.1723	.6065	1.3853	2.1641	2.9428