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Report

on the

GEOLOGY AND GEOCHEMISTRY

of the

ALLIE, MICKI, CAT, MOUSE, IAN AND ASTRO 1-46 CLAIMS

Osoyoos Mining Division

Latitude 49°11'     Longitude 119°36'

NTS 52E/4E,4W,5E,5W

by

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## INTRODUCTION AND PERSONNEL

As the result of a reconnaissance geochemical survey for uranium, B. D. Pearson staked the Allie, Micki, Cat, Mouse and Ian claims (total 70 units) in late 1976 and early 1977.

Pacific Petroleums Ltd. acquired the Pearson claims and an additional 46 claims (total 674 units) known as the Astro claims in February, 1977. These claims were staked by Amex Exploration Services Ltd. of Kamloops on behalf of Pacific.

The Pearson claims and the Astro claims are referred to hereafter as "the property".

The 1977 exploration program on the property consisted of geochemical and geological-radiometric surveys which were conducted from May 2 to August 30. Field work was done by B. D. Pearson, S.B., M.A., P. Eng. (B.C.) of Richmond, British Columbia and F. M. Mitchell, B.A. of Pacific Petroleums Ltd. Mitchell received his professional education at the University of Saskatchewan, has been employed for 14 years as a geologist by Pacific, and was formerly employed for 6 years as a geologist by Iron Ore Company of Canada. Assistance in the field was given by Mark Pearson of Richmond and Michael Zeindler of Calgary. R. B. Rowe, Ph.D., P. Eng. (B.C.) was responsible for technical supervision and the preparation of this report.

## LOCATION AND PROPERTY

Figure 1 is a map on 1:25,000 scale showing the claims that comprise the property and their locations with respect to Penticton, Oliver and Keremeos. The inset map shows the general location of the claim-area. Provincial Highways 3A and 97, secondary gravel roads, and farm and logging roads provide excellent general access. A few places are very rugged and are easily accessible only by helicopter.

The property occurs in low mountainous terrain between the Similkameen drainage system on the west and the Okanagan tributary valley on the east. High parts and north-facing slopes are forested, whereas low parts and south-facing slopes are open ranch and farm lands. Annual precipitation is only about 11 inches and temperatures in excess of 100 degrees Fahrenheit are commonly recorded for short periods in mid-summer. Many streams are active only during spring runoff. Several lakes and ponds in the area are stagnant or saline. Care must be taken to avoid the rattlesnakes that inhabit talus slopes and rocky ledges.

The property is in the Osoyoos Mining Division and the following is a list of the claims with pertinent information:

| Claim | No. of Units | Map No. | Tag No. | Staking Date | Record No. | Recording Date |
|---|---|---|---|---|---|---|
| Allie | 20 | 82E/4E | 34547 | Nov. 26, 1976 | 161 | Dec. 1, 1976 |
| Micki | 20 | 82E/4E | 34548 | Nov. 27, 1976 | 162 | Dec. 1, 1976 |
| Cat | 12 | 82E/4E | 34551 | Nov. 28, 1976 | 163 | Dec. 1, 1976 |
| Mouse | 12 | 82E/4E | 34552 | Nov. 28, 1976 | 164 | Dec. 1, 1976 |
| Ian | 6 | 82E/5E | 34554 | Jan. 16, 1976 | 194 | Feb. 11, 1977 |
| Astro 1 | 16 | 82E/5W | 11847 | Feb. 15, 1977 | 213 | Mar. 9, 1977 |
| Astro 2 | 20 | 82E/5W | 03800 | Feb. 15, 1977 | 214 | Mar. 9, 1977 |
| Astro 3 | 20 | 82E/5E | 03807 | Feb. 16, 1977 | 215 | Mar. 9, 1977 |
| Astro 4 | 20 | 82E/5E | 03813 | Feb. 17, 1977 | 216 | Mar. 9, 1977 |
| Astro 5 | 16 | 82E/5E | 03814 | Feb. 17, 1977 | 217 | Mar. 9, 1977 |
| Astro 6 | 10 | 82E/5E | 03793 | Feb. 17, 1977 | 218 | Mar. 9, 1977 |
| Astro 7 | 20 | 82E/5E | 03794 | Feb. 16, 1977 | 219 | Mar. 9, 1977 |
| Astro 8 | 16 | 82E/5E | 03795 | Feb. 17, 1977 | 220 | Mar. 9, 1977 |
| Astro 9 | 8 | 82E/5W | 21491 | Feb. 21, 1977 | 221 | Mar. 9, 1977 |
| Astro 10 | 4 | 82E/5W | 21482 | Feb. 18, 1977 | 222 | Mar. 9, 1977 |
| Astro 11 | 12 | 82E/5W | 21444 | Feb. 18, 1977 | 223 | Mar. 9, 1977 |
| Astro 12 | 12 | 82E/5W | 21445 | Feb. 18, 1977 | 224 | Mar. 9, 1977 |
| Astro 13 | 20 | 82E/5E | 21446 | Feb. 20, 1977 | 225 | Mar. 9, 1977 |
| Astro 14 | 20 | 82E/5E | 21447 | Feb. 20, 1977 | 226 | Mar. 9, 1977 |
| Astro 15 | 6 | 82E/5E | 21448 | Feb. 19, 1977 | 227 | Mar. 9, 1977 |
| Astro 16 | 20 | 82E/5W | 21449 | Feb. 20, 1977 | 228 | Mar. 9, 1977 |
| Astro 17 | 20 | 82E/5E | 21450 | Feb. 20, 1977 | 229 | Mar. 9, 1977 |
| Astro 18 | 20 | 82E/5W | 21451 | Feb. 19, 1977 | 230 | Mar. 9, 1977 |
| Astro 19 | 20 | 82E/4E | 21452 | Feb. 19, 1977 | 231 | Mar. 9, 1977 |
| Astro 20 | 20 | 82E/4E | 21430 | Feb. 14, 1977 | 232 | Mar. 9, 1977 |
| Astro 21 | 20 | 82E/5E | 21431 | Feb. 14, 1977 | 233 | Mar. 9, 1977 |
| Astro 22 | 18 | 82E/4E | 21432 | Feb. 14, 1977 | 234 | Mar. 9, 1977 |
| Astro 23 | 16 | 82E/4E | 21433 | Feb. 14, 1977 | 235 | Mar. 9, 1977 |
| Astro 24 | 16 | 82E/4E | 21434 | Feb. 14, 1977 | 236 | Mar. 9, 1977 |
| Astro 25 | 12 | 82E/4W | 21435 | Feb. 19, 1977 | 237 | Mar. 9, 1977 |
| Astro 26 | 18 | 82E/4W | 21436 | Feb. 19, 1977 | 238 | Mar. 9, 1977 |
| Astro 27 | 18 | 82E/4E | 21437 | Feb. 14, 1977 | 239 | Mar. 9, 1977 |
| Astro 28 | 16 | 82E/4E | 21438 | Feb. 17, 1977 | 240 | Mar. 9, 1977 |
| Astro 29 | 16 | 82E/4E | 21439 | Feb. 14, 1977 | 241 | Mar. 9, 1977 |
| Astro 30 | 12 | 82E/4E | 21440 | Feb. 17, 1977 | 242 | Mar. 9, 1977 |
| Astro 31 | 12 | 82E/4E | 21441 | Feb. 17, 1977 | 243 | Mar. 9, 1977 |
| Astro 32 | 20 | 82E/5E | 21520 | Feb. 15, 1977 | 244 | Mar. 9, 1977 |
| Astro 33 | 20 | 82E/5E | 21422 | Feb. 14, 1977 | 245 | Mar. 9, 1977 |
| Astro 34 | 20 | 82E/5E | 21423 | Feb. 15, 1977 | 246 | Mar. 9, 1977 |
| Astro 35 | 10 | 82E/5E | 21428 | Feb. 15, 1977 | 247 | Mar. 9, 1977 |
| Astro 36 | 20 | 82E/5E | 21425 | Feb. 16, 1977 | 248 | Mar. 9, 1977 |
| Astro 37 | 20 | 82E/5E | 21426 | Feb. 13, 1977 | 249 | Mar. 9, 1977 |
| Astro 38 | 15 | 82E/5E | 21456 | Feb. 16, 1977 | 250 | Mar. 9, 1977 |
| Astro 39 | 4 | 82E/5E | 21428 | Feb. 16, 1977 | 251 | Mar. 9, 1977 |
| Astro 40 | 3 | 82E/5E | 21429 | Feb. 12, 1977 | 252 | Mar. 9, 1977 |
| Astro 41 | 2 | 82E/5W | 21453 | Feb. 13, 1977 | 253 | Mar. 9, 1977 |
| Astro 42 | 6 | 82E/5W | 21494 | Feb. 20, 1977 | 254 | Mar. 9, 1977 |
| Astro 43 | 4 | 82E/5W | 21455 | Feb. 13, 1977 | 255 | Mar. 9, 1977 |
| Astro 44 | 8 | 82E/5W | 21495 | Feb. 20, 1977 | 256 | Mar. 9, 1977 |
| Astro 45 | 20 | 82E/5E | 03796 | Feb. 18, 1977 | 257 | Mar. 9, 1977 |
| Astro 46 | 8 | 82E/5W | 21484 | Feb. 24, 1977 | 258 | Mar. 9, 1977 |
| | 744 | | | | | |

# GEOLOGY

## General Statement

The first detailed geological survey of the area was conducted by Bostock (1940, 1941 and 1941a), followed by Little (1961) who was concerned chiefly with the structural aspects, and by Church (1973) who described the Tertiary rocks of a selected area in considerable detail.

A geological survey of the property and adjacent areas was conducted between July 24 and August 30, 1977. The purpose of the survey was to produce a geological outcrop map to aid in the interpretation of the geochemical survey and in planning future work, and also to prospect for uranium and other mineral occurrences.

Figure 2 is the resulting geological map which is on a scale of 1:25,000. Field mapping was done using aerial photographs on a scale of approximately 1 inch to 1,700 feet. The geological map is essentially a lithological map. Because of the nature of the rocks and the structural complexity, it is believed that reliable structural data can be obtained only by very detailed mapping such as conducted by Church in the vicinity of White Lake. A few faults were seen in the field and these are shown on the map.

## General Geology

The salient feature of the geology is the presence of an erosional remnant of Tertiary volcanic, sedimentary and pyroclastic rocks. This remnant is one of many of a once continuous belt composed mainly of volcanic rocks and extending from central Washington through the Interior to central British Columbia.

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Bostock, H. S.: Keremeos, British Columbia; Geological Survey of Canada, Map 341A, 1940.

Bostock, H.S.: Okanagan Falls, British Columbia; Geological Survey of Canada, Map 627A, 1941.

Bostock, H.S.: Olalla, British Columbia; Geological Survey of Canada, Map 628A, 1941a.

Church, B. N. : Geology of the White Lake Basin; British Columbia Department of Mines and Petroleum Resources, Bulletin 61, 1973.

Little, H. W.: Kettle River (West Half), British Columbia; Geological Survey of Canada, Map 15-1961, 1961.

Pre-Tertiary rocks consist of Triassic and older meta-sedimentary and metavolcanic rocks intruded by Cretaceous and Jurassic igneous rocks.

The basal Tertiary surface is believed by Church to be warped and faulted and he estimates that the thickness of Tertiary strata northeast of White Lake is about 8,000 feet.

The Tertiary geological events have been summarized by Church as follows. Deposition of Springbrook valley - talus and stream gravels was followed by slight eastward tilting of the Springbrook beds and a period of intense volcanic activity when the Marron flows were deposited. Erosion then cut deeply into the upper Marron rocks followed by renewed volcanic activity and the extrusion of Marama flows. An interval of erosion and gravity faulting followed. The next event involved the deposition of White Lake lavas from vents centred near the Oakanagan Valley and the coincidental deposition of sediments in Tertiary White Lake. Normal faulting continued during the deposition of Skaha beds which consist of slide breccias, lava and conglomerates. Post-Skaha deformation included folding and the development of gravity and strike-slip faults.

The structural features of the Tertiary remnant are complex. According to Church, the remnant is bounded in most places by gravity faults and is cut by northerly-trending gravity faults resulting in easterly dips and a general thickening of the Tertiary pile to the east.

## Descriptive Notes

Gneisses (map-units 1A and 1C) and greenish quartzite (map-unit 1C) were mapped as Carboniferous or earlier. The gneisses are banded and intruded by dykes of pegmatite and granite and veins of quartz. These rocks outcrop in the south-east part of the map-area and probably correspond to the Vaseaux Formation and Kobau Group of Bostock.

Rocks mapped as Triassic or earlier consist of quartz-feldspar-biotite gneiss (map-unit 2A) and tuffs and cherts (map-unit 2B). This gneiss outcrops in a few places in the south-east part of the map-area and is similar in appearance to the older gneisses. The tuffs and cherts are probably equivalent to the Shoemaker Formation of Bostock and Little. They outcrop where Orofino Creek enters Meyers Flats and on the lower slopes of the prominent cliffs along the western part of the map-area.

The Cretaceous-Jurassic rocks consist of a complex that is intrusive into the older rocks. Lithologic types mapped include hornblendite (map-unit 3A), diorite (map-unit 3B), granodiorite (map-unit 3C), granite with pegmatite and aplite (map-unit 3D), and syenite (map-unit 3E). Zenolites of older rocks are present in the granite which is the most abundant rock of the complex. Dark, fine-grained dykes intrude the granite and the syenite. The complex outcrops prominently in the south-east part of the map-area.

In mapping the Tertiary rocks, Church's formations were recognized, however the survey was not sufficiently detailed to distinguish members.

The Springbank Formation (map-unit 4) consists of conglomerates and sandstones and is exposed by steep, west-facing cliffs in the western part of the map-area. Access to outcorps is poor to almost impossible and much of the mapping was done from a helicopter. Boulders and pebbles consist of a variety of Pre-Tertiary rocks and range to several feet in size. The matrix is composed of fine sand-size material of mixed origin. Thickness of the formation is highly variable with the maximum estimated to be about 800 feet. Dips of individual beds are from almost zero to about 20 degrees, however the overall dip of the formation appears to be very low to the east.

Lava flows of variable composition and texture and minor amounts of tuff comprise the Marron Formation (map-unit 5). No attempt was made to follow Church's classification but rather five lithological sub-types were mapped. Map-unit 5A is feldspar-augite porphyry with feldspar phenocrysts to ½ inch and comprising as much as 30 percent of the rock, and augite laths that are not generally apparent unless the rock is examined closely. The cryptocrystalline groundmass commonly weathers to a reddish hue. Basalt (map-unit 5B) resembles the matrix of the feldspar-augite porphyry and also weathers red in places. Vesicles, and amygdules of zeolite and chalcedony are common. Fracture fillings of chalcedony were also observed in places. Map-unit 5C consists of dark brown andesitic to basaltic flows. Vesicles, and amygdules of calcite and chalcedony are common. This unit is recessive and outcrops were found at only one locality. Small outcrops of tuff (map-unit 5D) were found in several places. The tuff is siliceous with small fragments of quartz and mafic minerals and commonly contains volcanic bombs. Trachyte (map-unit 5E) was found only in a small area along the north boundary of the main group of claims. Rhyolite and rhyodacite (map-unit 5F) occur north of the Observatory and west of Marron Lake. Church mapped these rocks as the Marama Formation. According to Church, the Marron Formation has an aggregate thickness of about 5,000 feet.

Massive conglomerates of the White Lake Formation (map-unit 6A) were found only on the Ian claim. Many of the rock types of the Marron Formation occur as fragments in this conglomerate. Volcanic rocks of the White Lake Formation were seen north of the Ian claim but are not shown on the geological map.

## Economic Geology

Gold-quartz veins in Pre-Tertiary rocks were mined in the vicinity of Fairview in the 1890's, and small amounts of coal have been recovered from thin seams in the White Lake Formation.

The Dusty Mac silver-gold deposit, about 1 mile east of Oakanagan Falls, is of particular interest because the host rock is volcanic rock of the White Lake Formation. According to Church, mineralization appears to be controlled by a fault system. Quartz veins with minor bornite and chalcopyrite and gossans are in or near most of the main faults. The principle mineralized zone is a gently-dipping lens of quartz breccia with varying admixtures of crushed andesite and disseminated pyrite and native silver. Dimensions of the lens are 700 x 160 x 30 feet. The deposit was mined by open pit for a few months in 1976-7.

In recent years, uranium deposits have been found in Tertiary sedimentary rocks in southern British Columbia.

Prospecting for uranium on the property was done with gamma-ray spectrometers (Exploranium Model GRS-101A), and readings were taken at each geochemical survey site and on every outcrop that was visited. Unfortunately, no uranium mineralization was found. In general, however, background radioactivity is highest in terrain of the Marron Formation. Total count readings in Marron terrain range to 600 counts per second, whereas background elsewhere is 80 to 240 counts per second.

Disseminated pyrite was found in places in the Pre-Tertiary rocks and malachite-stained float in places near outcroups of Tertiary volcanic rocks. (See Figure 2.)

## GEOCHEMISTRY

### General Statement

The geochemical survey was in two phases. Phase I was conducted in May 1977 and 1,005 samples of a variety of materials were collected for analysis. The resulting analytical values were studied statistically and preliminary geochemical maps on a scale of 1;50,000 were prepared and sent to the field. Phase II was done during June, July and August of 1977 concurrently with the geological survey and an additional 492 samples were collected. These samples were obtained at good sampling sites that were found on geological traverses, at sites of highly anomalous samples collected in Phase I so that check analyses could be made, and at sites that could be reached conveniently only by helicopter.

At the completion of the field work and on receipt of all analytical data from the lab, geochemical maps of the entire sampled area and showing all values were prepared on a scale of 1:25,000. The statistical interpretation was revised to incorporate data obtained in Phase II in cases where it was felt that the additional data might change the interpretation.

Sampling information is given in Table 1 and includes types of materials sampled, number of samples collected, elements and compounds reported by the analytical lab, and sampling procedures.

## Table 1 Sampling Information

| Type of Material | No. of Samples | Elements or Compounds Reported | Sampling Procedure |
|---|---|---|---|
| Lake and Swamp Waters | 237 | $U_3O_8$, F, pH | New or lab-washed, 250 mL, hard plastic bottle rinsed twice with water to be sampled then filled with water sample and capped. |
| Stream Waters | 192 | " | |
| Seep Waters | 43 | " | |
| Well Waters | 5 | " | |
| Lake and Swamp Sediments | 364 | $U_3O_8$, Mo, Cu, $\pm F$ | Sample collected by hand or by digging with geological hammer or shovel and placed in high wet-strength, metal-free, Kraft envelope supplied by analytical lab. Envelope sealed by folding and dried as much as possible before shipping. Lake and swamp sediments collected under water near shore if feasible. If not, collected as close to present water level as possible. |
| Stream Sediments | 449 | " | |
| Sediments at Seeps | 34 | " | |
| Old Mine Tailings | 4 | " | |
| Rocks for Geochemical Analysis | 162 | $U_3O_8$, Mo, Cu, $\pm F$ | Rock chips placed in Kraft envelopes as above. |
| Rocks for Assay | 7 | $U_3O_8$, $ThO_2$ | As above. |

Analytical procedures are in Appendix A.

Tables 2 to 10 report analyses and assays according to population type and are in Appendix B.

## Comparison Analyses

Prior to property acquisition, several sediment and water samples were split in three and splits sent to Min-En Laboratories Ltd. and Vangeochem Lab. Ltd. in Vancouver and Loring Laboratories in Calgary for uranium analysis. Results checked very well and Loring was selected as the analyst for the post-acquisition survey because of convenience in shipping and consultation.

During the post-acquisition survey, fifteen sediment samples and nine water samples were collected at previously sampled sites and sent to Chemex Labs (Alberta) Ltd. of Calgary for analysis.

Comparison of results are given in Tables 11 and 12.

For uranium in both sediments and waters, the second set of analyses certainly confirms the highly anomalous values in the first set. In the case of uranium in sediments, nine correlations are considered to be good, four are fair, and two are poor. For uranium in waters, six correlations are good, one is fair, and two are poor.

Values for copper in sediments compare reasonably well, but molybdenum correlation is poor in thirteen of fifteen cases.

The second set of water samples confirm the alkaline nature of the waters of the first set, however, in six of nine cases, pH of the second group is lower than that of the first group. One would expect that the pH of lake and swamp waters would increase as the air temperature increases and evaporation increases.

Considering the volatility of fluorine, values compare reasonably well, however, in every case the second lab reports a higher value.

## Statistical Treatment of Data

### Method

The geochemical data obtained by this survey have been treated statistically as a basis for preparing geochemical maps which are essential for interpreting the results of the survey.

Geochemical populations commonly have distributions that are approximately lognormal and this appears to be true for the geochemical data herein discussed.

## Table 11 Comparison of Sediment Analyses

Note: First set of samples were collected in May 1977 and sent to Loring Laboratories Ltd. of Calgary. Second set of samples were collected in June 1977 at or as near as possible to the original sites and sent to Chemex Labs (Alberta) Ltd. of Calgary.

Sample No.

| Loring | Chemex | ppm U | ppm Cu | ppm Mo |
|---|---|---|---|---|
| R13 | | 2.8 | 32 | 3 |
| | RR13 | 2.5 | 22 | Less than 1 |
| R14a | | 16.3 | 25 | 6 |
| | RR14a | 12.5 | 33 | Less than 1 |
| R14b | | 6.2 | 16 | 5 |
| | RR14b | 7.0 | 11 | Less than 1 |
| R14c | | 3.6 | 15 | 3 |
| | RR14c | 6.0 | 6 | Less than 1 |
| R14d | | 28.2 | 47 | 7 |
| | RR14d | 22.0 | 47 | Less than 1 |
| R26 | | 254.4 | 32 | 64 |
| | RR26 | 195.0 | 32 | 76 |
| R28B | | 10.8 | 8 | 4 |
| | RR28a | 78.0 | 22 | 16 |
| R28A | | 169.6 | 25 | 17 |
| | RR28 | 16.5 | 9 | Less than 1 |
| R48 | | 581.7 | 10 | 92 |
| | RR48 | 690.0 | 10 | 27 |
| R50a | | 59.4 | 21 | 8 |
| | RR50a | 40.0 | 11 | 16 |
| R50B | | 39.0 | 17 | 5 |
| | RR50b | 35.5 | 5 | Less than 1 |
| R53 | | 32.2 | 14 | 9 |
| | RR53 | 49.5 | 11 | 13 |
| R56 | | 52.7 | 18 | 5 |
| | RR56 | 110.0 | 16 | Less than 1 |
| R126 | | 52.7 | 13 | 4 |
| | RR126 | 60.0 | 10 | Less than 1 |
| R127 | | 42.4 | 14 | 7 |
| | RR127 | 31.5 | 8 | Less than 1 |

## Table 12 Comparison of Water Analyses

Note: First set of samples were collected in May 1977 and sent to Loring Laboratories Ltd. of Calgary. Second set of samples were collected in June 1977 at or as near as possible to the original sites and sent to Chemex Labs (Alberta) Ltd. of Calgary.

| Sample No. Loring | Chemex | ppb U | pH | ppm F |
|---|---|---|---|---|
| R14 | | 135.7 | 7.30 | 0.43 |
| | RR14 | 29 | 7.2 | 0.54 |
| R26 | | 11.6 | 7.60 | 0.22 |
| | RR26 | 66.0 | 7.0 | 0.39 |
| R28 | | 15.3 | 7.65 | 0.19 |
| | RR28a | 39.0 | 7.1 | 0.39 |
| R48 | | 18,740 | 8.75 | 1.06 |
| | RR48 | 35,500 | 7.7 | 2.70 |
| R50 | | 5,037 | 8.10 | 0.96 |
| | RR50 | 4,900 | 7.15 | 2.00 |
| R53 | | 1,874 | 8.50 | 0.62 |
| | RR53 | 1,780 | 9.4 | 0.85 |
| R56 | | 9,243 | 8.80 | 0.45 |
| | RR56 | 9,600 | 8.75 | 1.00 |
| R126 | | 2,637 | 8.65 | 1.41 |
| | RR126 | 1,420 | 7.9 | 2.30 |
| R127 | | 1,806 | 8.75 | 1.10 |
| | RR127 | 1,500 | 9.1 | 1.65 |

The survey was sufficiently detailed to warrant sophisticated treatment of the data, consequently it was decided to use the method suggested by Lepeltier (1969) and elaborated upon by Sinclair (1974). This method involves the construction and interpretation of probability graphs and is particularly useful for studying lognormal populations and mixtures of lognormal populations. In brief, a class interval is established for each sample population, classes are set up, class frequencies are counted, percent frequency for each class is calculated, and the percent frequencies are cumulated from the highest to the lowest values. The graph is constructed on log probability paper by plotting cumulative frequencies against lower class limits. (Arithmetic probability paper is used for pH graphs because pH is a logarithmic function.) A single lognormal distribution plots as a straight line, whereas a polymodal distribution plots as a curve. If the graph plots as a curve and there is no reason to consider that the curve represents a truncated or censored population, individual populations are extracted and plotted separately. The partitioning procedure can be checked by combining the partitioned populations to construct the curve representing the polymodal distribution. After partitioning, parameters of the individual populations can be estimated. For example, the geometric mean (background) of each can be read at the 50 percentile and the range including 68 percent of the values (geometric mean plus 1 standard deviation) can be determined at the 84 and 16 percentiles.

If the sample population is small, say less than one hundred, the analytical values are converted to log base 10, individual log values rather than classes are used, and the individual values are plotted against cumulative percent frequencies on arithmetic probability paper.

Threshold values are chosen after partitioning. These thresholds separate values that reflect different causes. In the case of two populations, A and B, that represent anomalous and background populations, Sinclair recommends thresholds that correspond to the 99 and 1 cumulative percentiles respectively, thus dividing the total data into three groups. The group above the upper threshold consists almost entirely of anomalous values and can be assigned top priority for follow-up examination. Lower priority can be assigned to the intermediate group which contains almost all of the remaining anomalous values as well as background values. Partitioning and choosing thresholds where three or more populations are present is more complex and the reader is referred to Sinclair for suggestions, however the general principal is to select thresholds that separate populations as much as possible. In this study, additional thresholds that represent parameters of the population of high values were selected where appropriate to provide more groups for the geochemical maps and thus enhance trends.

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Lepeltier, Claude: A Simplified Statistical Treatment of Geochemical Data by Graphic Representation; Economic Geology, vol. 64, pp. 538-550, 1969

Sinclair, A. J.: Selection of Threshold Values in Geochemical Data Using Probability Graphs; Journal of Geochemical Exploration, vol. 3, pp. 129-149, 1974

In some cases, more than one interpretation of a graph is possible. Unfortunately, there are few examples in the literature to draw upon to aid in making a choice. However, even if a wrong interpretation is made, trends and clusters of high values should be apparent on the geochemical map.

## Probability Graphs and Related Data

Figures 3 to 14 are probability graphs of geochemical values obtained by this survey and constructed as described above.

Tables 13 to 36 contain grouped data used to plot the graphs, and thresholds obtained from the graphs together with information concerning groups of values resulting from the partitioning of the values by the thresholds.

Probability graphs were constructed from data obtained by Phase I of the geochemical survey, and preliminary geochemical maps were prepared and sent to the field parties.

At the completion of Phase II, probability graphs were reconstructed using the combined Phase I and Phase II data for $U_3O_8$ values in lake and swamp sediments, $U_3O_8$ values in stream sediments and Mo values in stream sediments. The reconstructed graphs do not differ significantly from the original graphs.

## Geochemical Maps

Figures 15 to 36 (in folder) are geochemical maps of the sampled area and show all values obtained from Phases I and II of the geochemical survey. All sample sites are shown on each map by numbered circles, however, only those circles that are coloured represent sample sites of the particular population and particular element indicated by the map title. Colours of the circles designate groups of values separated by thresholds obtained from the probability graphs. Thresholds and groups are described in the tables accompanying the probability graphs.

Table 13 Grouped Data for $U_3O_8$ in Lake and Swamp Waters

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0-5.0 | 91 | 47.6 | 99.5 |
| 5.1-10.0 | 24 | 12.6 | 51.9 |
| 10.1-15.0 | 16 | 8.4 | 39.3 |
| 15.1-20.0 | 7 | 3.7 | 30.9 |
| 20.1-25.0 | 4 | 2.1 | 27.2 |
| 25.1-30.0 | 8 | 4.2 | 25.1 |
| 30.1-35.0 | | | |
| 35.1-40.0 | 5 | 2.6 | 20.9 |
| 40.1-45.0 | 3 | 1.6 | 18.3 |
| 45.1-50.0 | 2 | 1.0 | 16.7 |
| 50.1-55.0 | | | |
| 55.1-60.0 | 2 | 1.0 | 15.7 |
| 60.1-65.0 | | | |
| 65.1-70.0 | 1 | 0.5 | 14.7 |
| 70.1-75.0 | | | |
| 75.1-80.0 | | | |
| 80.1-85.0 | 4 | 2.1 | 14.2 |
| 85.1-90.0 | 3 | 1.6 | 12.1 |
| 90.1-95.0 | | | |
| 95.1-100.0 | | | |
| 100.1-105.0 | | | |
| 105.1-110.0 | 1 | 0.5 | 10.5 |
| 110.1-115.0 | 1 | 0.5 | 10.0 |
| 115.1-120.0 | 1 | 0.5 | 9.5 |
| 120.1-125.0 | | | |
| 125.1-130.0 | | | |
| 130.1-135.0 | | | |
| 135.1-140.0 | 1 | 0.5 | 9.0 |
| 140.1-145.0 | | | |
| 145.1-150.0 | | | |
| 150.1-155.0 | | | |
| 155.1-160.0 | 1 | 0.5 | 8.5 |
| 185.1-190.0 | 1 | 0.5 | 8.0 |
| 205.1-210.0 | 1 | 0.5 | 7.5 |
| 210.1-215.0 | 1 | 0.5 | 7.0 |
| 245.1-250.0 | 2 | 1.0 | 6.5 |
| 270.1-275.0 | 1 | 0.5 | 5.5 |
| 395.1-400.0 | 1 | 0.5 | 5.0 |
| 430.1-435.0 | 1 | 0.5 | 4.5 |
| 665.1-670.0 | 1 | 0.5 | 4.0 |
| 795.1-800.0 | 1 | 0.5 | 3.5 |
| 2,125.1-2,130.0 | 1 | 0.5 | 3.0 |
| 2,205.1-2,210.0 | 1 | 0.5 | 2.5 |
| 3,105.1-3,110.0 | 1 | 0.5 | 2.0 |
| 5,935.1-5,940.0 | 1 | 0.5 | 1.5 |
| 10,895.1-10,900.0 | 1 | 0.5 | 1.0 |
| 22,095.1-22,100.0 | 1 | 0.5 | 0.5 |
| | N = 191 | | |

## Table 14 Estimated Thresholds and Resulting Groups for $U_3O_8$ in Lake and Swamp Waters

| Threshold | Group | Total Data % | Total Data No.* | A Popluation % | A Popluation No.* | B Population % | B Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|
| | I | 1.8 | 3.4 | 27.5 | 3.7 | 0 | 0 | Entirely A population. |
| 3,800.ppb $U_3O_8$ | | | | | | | | |
| | II | 3.5 | 6.7 | 22.5 | 3.0 | 0.2 | 0.4 | Almost entire A population above b. |
| 800.0 | | | | | | | | |
| | III | 4.8 | 9.2 | 14.0 | 1.9 | 1.0 | 1.8 | Mixed A and B population. |
| 320.0 | | | | | | | | |
| | IV | 4.9 | 9.4 | 20.0 | 2.7 | 7.2 | 12.8 | Mixed A and B populations. A population above b - $S_L$. B population above b + $S_L$. |
| 58.0 | | | | | | | | |
| | V | 55.0 | 105.1 | 15.0 | 2.0 | 60.6 | 107.6 | Mainly B population above b + $S_L$. |
| 1.8 | | | | | | | | |
| | VI | 30.0 | 57.3 | 1.0 | 0.1 | 31.0 | 55.1 | Almost entirely B population. |
| | | 100.0 | | 100.0 | 13.4 | 100.0 | | |

* Sample = 191 of which 13.4 are A population and 177.6 are B population.

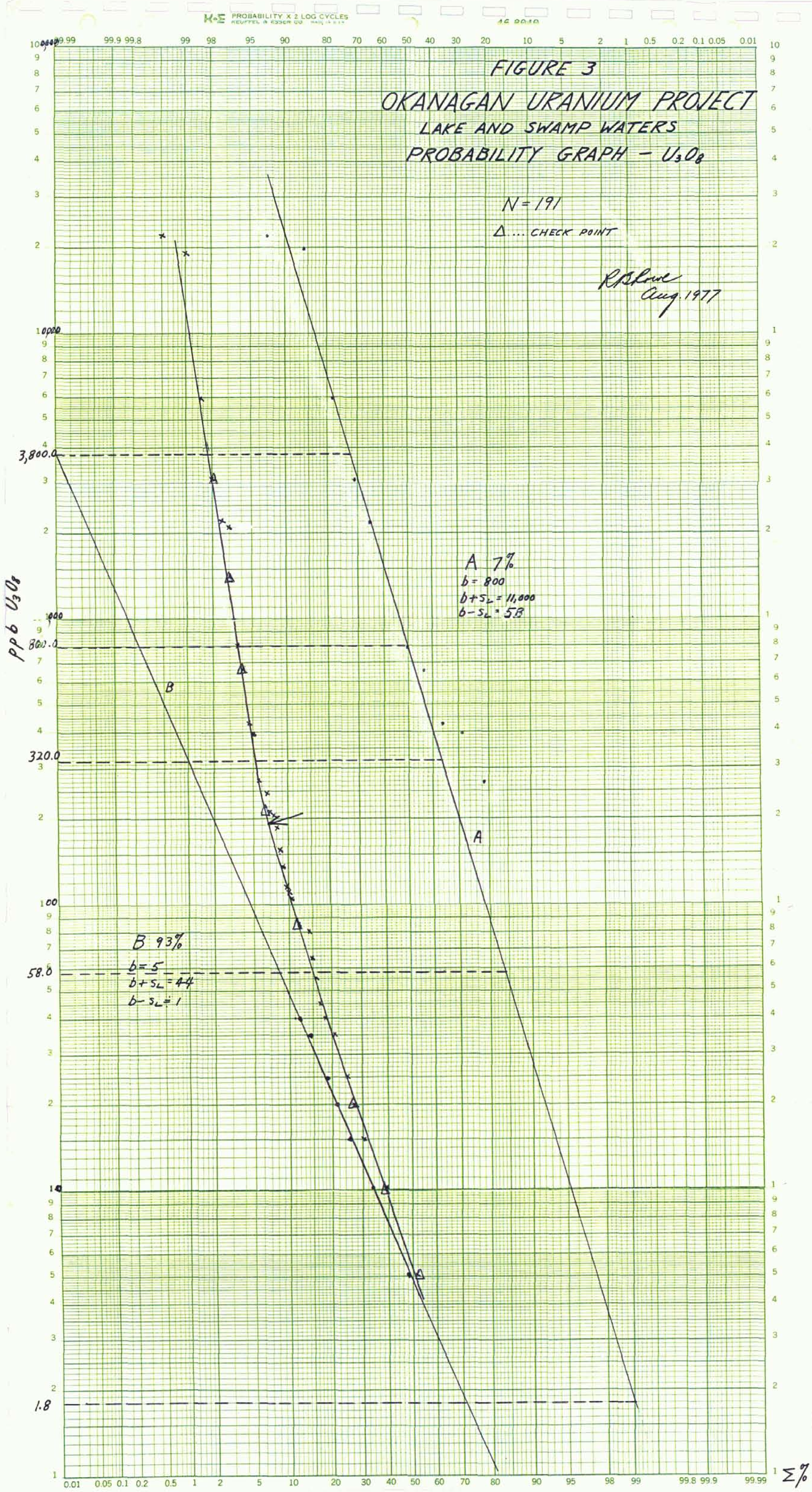


FIGURE 3
OKANAGAN URANIUM PROJECT
LAKE AND SWAMP WATERS
PROBABILITY GRAPH – U3O8
N = 191
Δ.... CHECK POINT
Aug. 1977
K+E PROBABILITY X 2 LOG CYCLES
KEUFFEL & ESSER CO.
A 7%
b = 800
b+sL = 11,000
b-sL = 58
B 93%
b = 5
b+sL = 44
b-sL = 1
A
B
3,800.0
800.0
320.0
58.0
1.8
ppb U3O8
Σ%

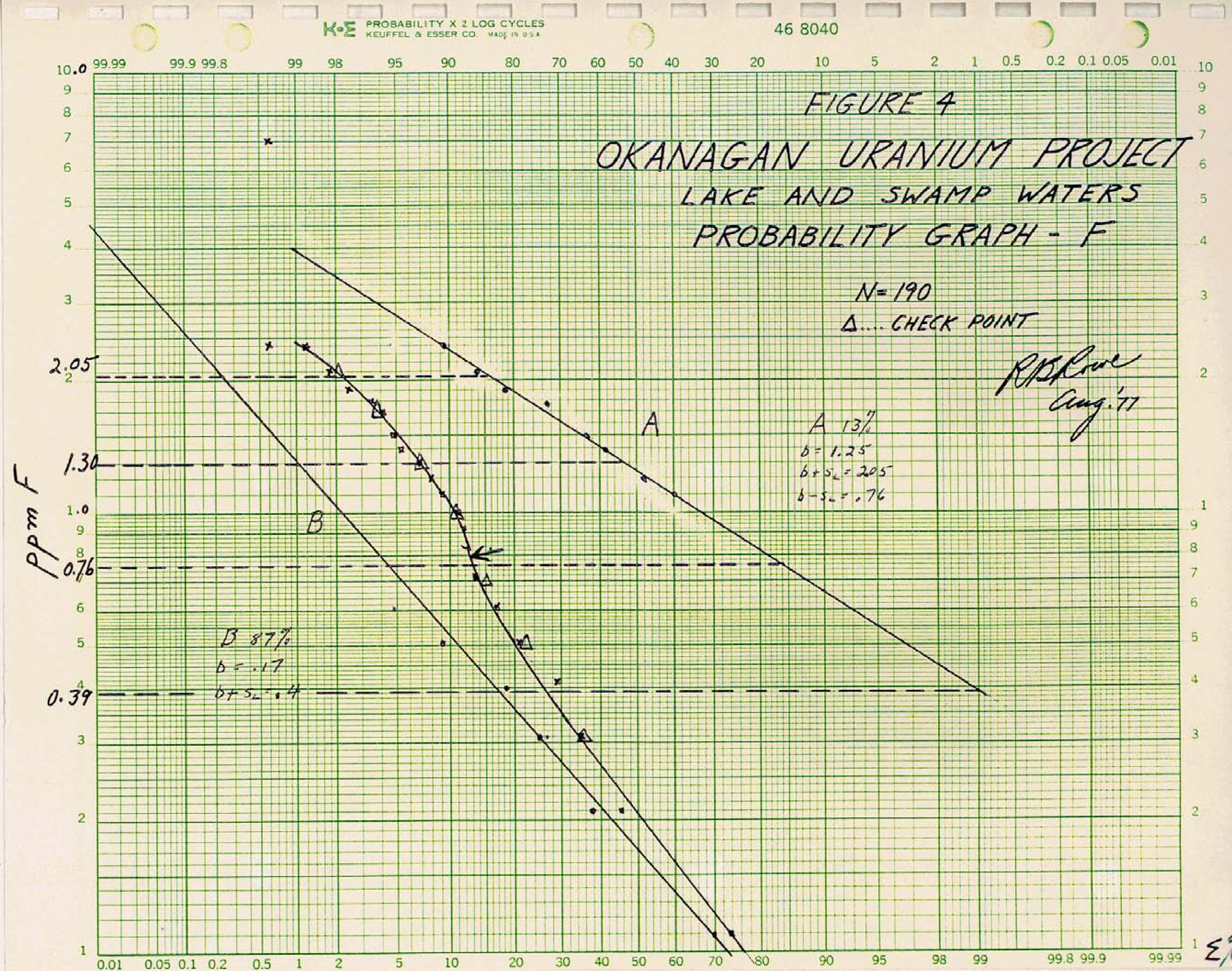
Table 15 Grouped Data for F in Lake and Swamp Waters

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0-0.10 | 51 | 26.8 | 100.7 |
| 0.11-0.20 | 54 | 28.4 | 73.9 |
| 0.21-0.30 | 20 | 10.5 | 45.5 |
| 0.31-0.40 | 11 | 5.8 | 35.0 |
| 0.41-0.50 | 16 | 8.4 | 29.2 |
| 0.51-0.60 | 7 | 3.7 | 20.8 |
| 0.61-0.70 | 7 | 3.7 | 17.1 |
| 0.71-0.80 | 3 | 1.6 | 13.4 |
| 0.81-0.90 | | | |
| 0.91-1.00 | 1 | 0.6 | 11.8 |
| 1.01-1.10 | 4 | 2.1 | 11.2 |
| 1.11-1.20 | 2 | 1.1 | 9.1 |
| 1.21-1.30 | 2 | 1.1 | 8.0 |
| 1.31-1.40 | 3 | 1.6 | 6.9 |
| 1.41-1.50 | 1 | 0.6 | 5.3 |
| 1.51-1.60 | 1 | 0.6 | 4.7 |
| 1.61-1.70 | | | |
| 1.71-1.80 | 1 | 0.6 | 4.1 |
| 1.81-1.90 | 2 | 1.1 | 3.5 |
| 1.91-2.00 | 1 | 0.6 | 2.4 |
| 2.01-2.10 | | | |
| 2.11-2.20 | 1 | 0.6 | 1.8 |
| 2.21-2.30 | | | |
| 2.31-2.40 | | | |
| 2.41-2.50 | 1 | 0.6 | 1.2 |
| 6.91-7.00 | | | |
| 7.01-7.10 | 1 | 0.6 | 0.6 |
| | N = 190 | | |

## Table 16 Estimated Thresholds and Resulting Groups for F in Lake and Swamp Waters

| Threshold | Group | Total Data % | Total Data No.* | A Popluation % | A Popluation No.* | B Population % | B Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|
| | I | 2.3 | 4.4 | 16 | 4.0 | 0.22 | 0.4 | Mainly A population $b + S_L$. |
| 2.05 ppm F | | | | | | | | |
| | II | 4.7 | 8.9 | 30 | 7.4 | 0.78 | 1.3 | Mainly A population. |
| 1.30 | | | | | | | | |
| | III | 6.0 | 11.4 | 38 | 9.4 | 3.4 | 5.6 | Mixed A and B populations. |
| 0.76 | | | | | | | | |
| | IV | 13.5 | 25.6 | 15 | 3.7 | 12.6 | 20.8 | Mixed A and B populations |
| 0.39 | | | | | | | | |
| | V | 73.5 | 139.7 | 1 | 0.2 | 83.0 | 137.2 | Mainly B population. |
| | | 100 | 190 | 100 | 24.7 | 100 | 165.3 | |

* Sample = 190 of which 24.7 are A population and 165.3 are B population.



K&E PROBABILITY X 2 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8040
FIGURE 4
OKANAGAN URANIUM PROJECT
LAKE AND SWAMP WATERS
PROBABILITY GRAPH - F
N= 190
Δ.... CHECK POINT
A 13%
b = 1.25
b+sL = 2.05
b-sL = .76
B 87%
b = .17
b+sL = .4
A
B
2.05
1.30
0.76
0.39
ppm F
Σ%
Aug.'77

Table 17 Grouped Data for pH of Lake and Swamp Waters

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 5.11-5.30 | 1 | 0.5 | 100.0 |
| 5.31-5.50 | | | |
| 5.51-5.70 | 4 | 2.1 | 99.5 |
| 5.71-5.90 | 5 | 2.6 | 97.4 |
| 5.91-6.10 | 5 | 2.6 | 94.8 |
| 6.11-6.30 | 13 | 6.8 | 92.2 |
| 6.31-6.50 | 14 | 7.3 | 85.4 |
| 6.51-6.70 | 11 | 5.8 | 78.1 |
| 6.71-6.90 | 7 | 3.7 | 72.3 |
| 6.91-7.10 | 10 | 5.2 | 68.6 |
| 7.11-7.30 | 19 | 9.9 | 63.4 |
| 7.31-7.50 | 33 | 17.3 | 53.5 |
| 7.51-7.70 | 16 | 8.4 | 36.2 |
| 7.71-7.90 | 16 | 8.4 | 27.8 |
| 7.91-8.10 | 12 | 6.3 | 19.4 |
| 8.11-8.30 | 3 | 1.6 | 13.1 |
| 8.31-8.50 | 4 | 2.1 | 11.5 |
| 8.51-8.70 | 9 | 4.7 | 9.4 |
| 8.71-8.90 | 6 | 3.1 | 4.7 |
| 8.91-9.10 | 3 | 1.6 | 1.6 |
| | N = 191 | | |

## Table 18 Estimated Thresholds and Resulting Groups for pH of Lake and Swamp Waters

| Threshold | Group | Total Data % | Total Data No.* | A Population % | A Population No.* | B Population % | B Population No.* | C Population % | C Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|---|---|
| | I | 11.3 | 21.6 | 85 | 21.1 | 1.0 | 1.1 | 0 | 0 | Mainly A population. |
| pH = 8.35 | | | | | | | | | | |
| | II | 4.7 | 9.0 | 14.0 | 3.5 | 7.0 | 7.6 | 0.2 | 0.1 | Mixed A and B populations. |
| 8.00 | | | | | | | | | | |
| | III | 27.0 | 51.6 | 1.0 | 0.2 | 44.0 | 47.9 | 1.0 | 0.6 | Mainly B population. |
| 7.42 | | | | | | | | | | |
| | IV | 35.0 | 66.8 | 0 | 0 | 47.0 | 51.2 | 37.0 | 21.2 | Mixed B and C population. |
| 6.50 | | | | | | | | | | |
| | V | 22.0 | 42.0 | 0 | 0 | 1.0 | 1.1 | 62.0 | 35.5 | Mainly C population. |
| | | 100.0 | 191.0 | 100.0 | 24.8 | 100.0 | 108.9 | 100.0 | 57.4 | |

* Sampel = 191 of which 24.8 are population A, 108.9 are population B, and 57.3 are population C.

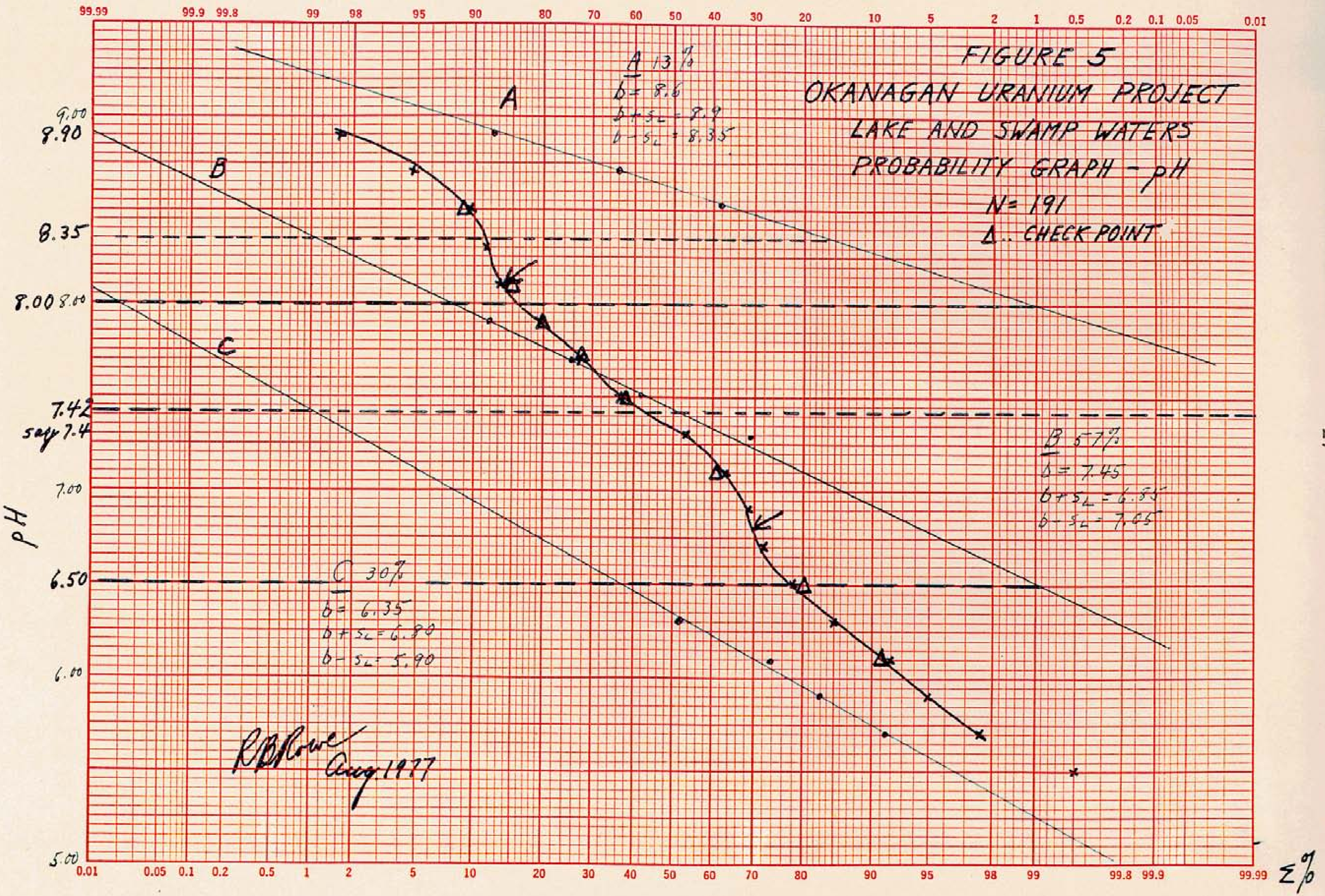


FIGURE 5
OKANAGAN URANIUM PROJECT
LAKE AND SWAMP WATERS
PROBABILITY GRAPH - pH
N= 191
Δ.. CHECK POINT
A
B
C
A 13%
b= 8.6
b+s_L= 8.9
b-s_L= 8.35
B 57%
b= 7.45
b+s_L= 6.85
b-s_L= 7.05
C 30%
b= 6.35
b+s_L= 6.80
b-s_L= 5.90
pH
9.00
8.90
8.35
8.00
7.42
say 7.4
7.00
6.50
6.00
5.00
Σ%
99.99
99.9
99.8
99
98
95
90
80
70
60
50
40
30
20
10
5
2
1
0.5
0.2
0.1
0.05
0.01
R.B. Rowe
Aug. 1977

Table 19 Grouped Data for $U_3O_8$ in Stream Waters

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0-5.6 | 50 | 32.9 | 99.8 |
| 5.7-11.2 | 48 | 31.6 | 66.9 |
| 11.3-16.8 | 29 | 19.1 | 35.3 |
| 16.9-22.4 | 6 | 3.9 | 16.2 |
| 22.5-28.0 | 6 | 3.9 | 12.3 |
| 28.1-33.6 | 4 | 2.6 | 8.4 |
| 33.7-39.2 | 2 | 1.3 | 5.8 |
| 39.3-44.8 | | | |
| 44.9-50.4 | 1 | 0.7 | 4.8 |
| 50.5-56.0 | 1 | 0.7 | 4.1 |
| 56.1-61.6 | 2 | 1.3 | 3.4 |
| 61.7-67.2 | 1 | 0.7 | 2.1 |
| 67.3-72.8 | | | |
| 123.2-128.8 | 1 | 0.7 | 1.4 |
| 218.4-224.0 | 1 | 0.7 | 0.7 |
| | N = 152 | | |

Table 20 Estimated Thresholds and Resulting Groups for $U_3O_8$ in Stream Waters

| Threshold | Group | Total Data % | Total Data No.* | A Popluation % | A Popluation No.* | B Population % | B Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|
| | I | 4.1 | 6.2 | 65.0 | 5.9 | 1.0 | 1.4 | Mainly A population. |
| 45.0 ppb $U_3O_8$ | | | | | | | | |
| | II | 55.9 | 85.0 | 34.0 | 3.1 | 57.0 | 81.5 | Mixed A and B populations. |
| 6.6 | | | | | | | | |
| | III | 40.0 | 60.8 | 1.0 | 0.1 | 42.0 | 60.0 | Almost entirely B population. |
| | | 100.0 | 152.0 | 100.0 | 9.1 | 100.0 | 142.9 | |

* Sample = 152 of which 9.1 are A population and 142.9 are B population.

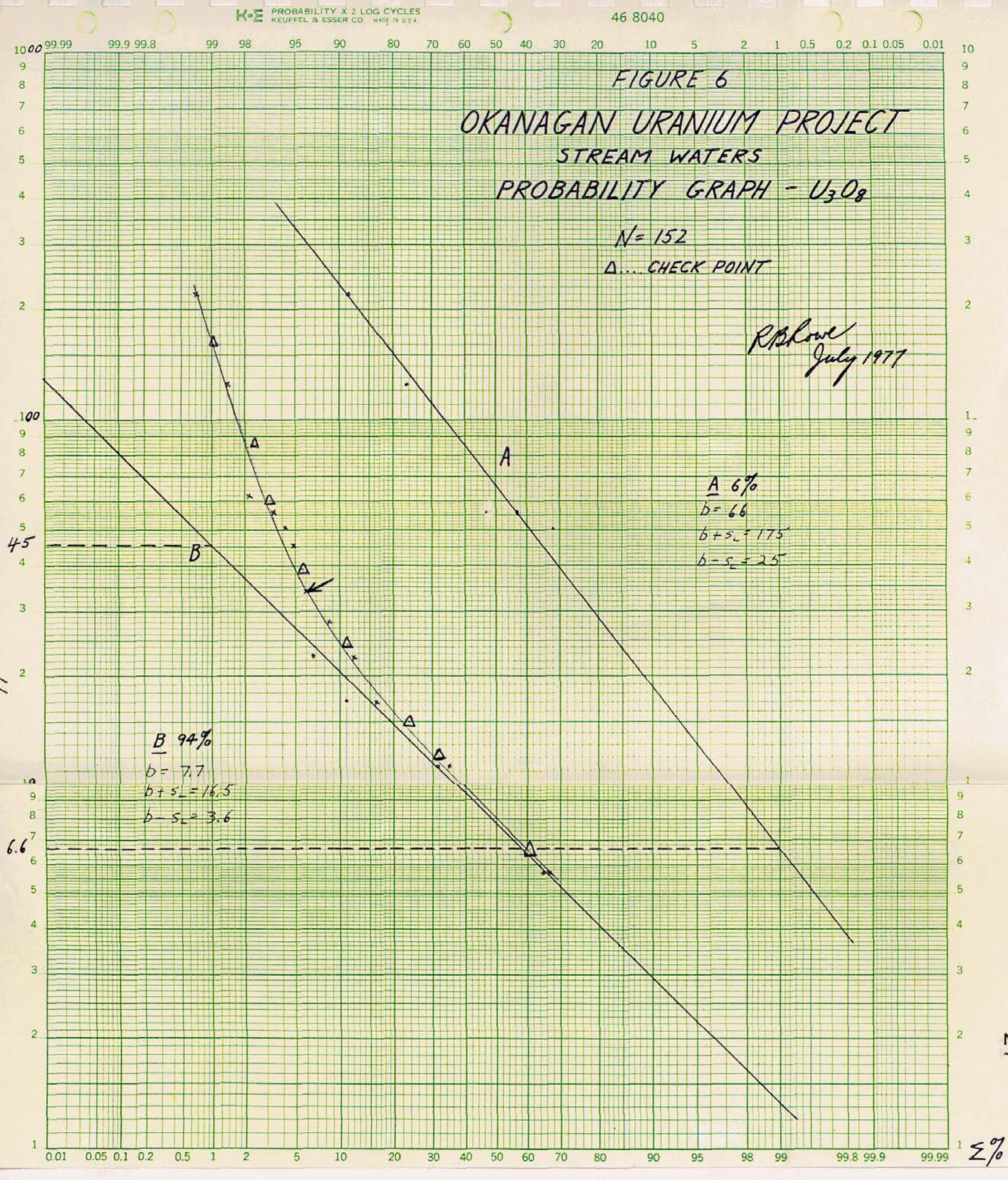

K+E PROBABILITY X 2 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8040
FIGURE 6
OKANAGAN URANIUM PROJECT
STREAM WATERS
PROBABILITY GRAPH - $U_3O_8$
N= 152
Δ... CHECK POINT
RBRowe
July 1977
A
A 6%
b= 66
$b+s_L$ = 175
$b-s_L$ = 25
B
B 94%
b= 7.7
$b+s_L$ = 16.5
$b-s_L$ = 3.6
45
6.6
ppb $U_3O_8$
Σ%

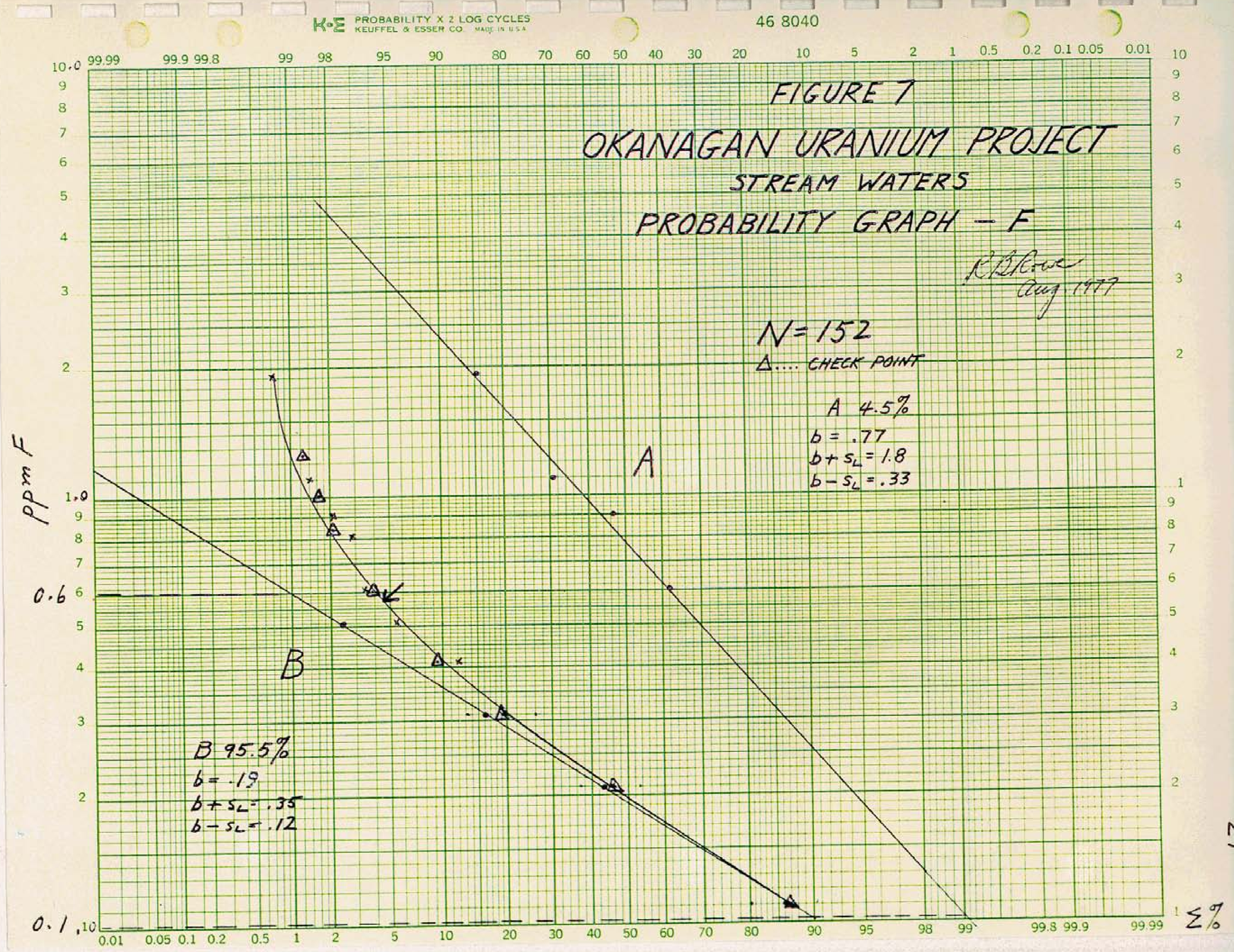
Table 21 Grouped Data for F in Stream Waters

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0-0.10 | 20 | 13.2 | 100.2 |
| 0.11-0.20 | 63 | 41.4 | 87.0 |
| 0.21-0.30 | 40 | 26.3 | 45.6 |
| 0.31-0.40 | 11 | 7.2 | 19.3 |
| 0.41-0.50 | 10 | 6.6 | 12.1 |
| 0.51-0.60 | 3 | 2.0 | 5.5 |
| 0.61-0.70 | 1 | 0.7 | 3.5 |
| 0.71-0.80 | | | |
| 0.81-0.90 | 1 | 0.7 | 2.8 |
| 0.91-1.00 | 1 | 0.7 | 2.1 |
| 1.01-1.10 | | | |
| 1.11-1.20 | 1 | 0.7 | 1.4 |
| 1.21-1.30 | | | |
| 1.31-1.40 | | | |
| 1.41-1.50 | | | |
| 1.51-1.60 | | | |
| 1.61-1.70 | | | |
| 1.71-1.80 | | | |
| 1.81-1.90 | | | |
| 1.91-2.00 | 1 | 0.7 | 0.7 |
| | N = 152 | | |

Table 22 Estimated Thresholds and Resulting Groups for F in Stream Waters

| Threshold | Group | Total Data % | Total Data No.* | A Popluation % | A Popluation No.* | B Population % | B Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|
| | I | 4.0 | 6.1 | 62.0 | 4.2 | 1.0 | 1.5 | Mainly population A. |
| 0.6 ppm F | | | | | | | | |
| | II | 87.0 | 132.2 | 37.0 | 2.5 | 90.0 | 130.7 | Mainly population B. |
| 0.1 | | | | | | | | |
| | III | 9.0 | 13.7 | 1.0 | 0.1 | 9.0 | 13.1 | Entirely population B. |
| | | 100.0 | 152.0 | 100.0 | 6.8 | 100.0 | 145.3 | |

* Sample = 152 of which 6.8 are population A and 145.2 are population B.



K+E PROBABILITY X 2 LOG CYCLES KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8040
FIGURE 7
OKANAGAN URANIUM PROJECT
STREAM WATERS
PROBABILITY GRAPH – F
R.B. Rowe Aug 1977
N = 152
Δ.... CHECK POINT
A 4.5%
b = .77
b + $s_L$ = 1.8
b − $s_L$ = .33
A
B
B 95.5%
b = .19
b + $s_L$ = .35
b − $s_L$ = .12
ppm F
0.6
0.1
Σ%

Table 23 Grouped Data for pH of Stream Waters

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 6.16-6.25 | 1 | 0.7 | 100.0 |
| 6.26-6.35 | | | |
| 6.36-6.45 | | | |
| 6.46-6.55 | | | |
| 6.56-6.65 | | | |
| 6.66-6.75 | 2 | 1.3 | 99.3 |
| 6.76-6.85 | | | |
| 6.86-6.95 | | | |
| 6.96-7.05 | 3 | 2.0 | 98.0 |
| 7.06-7.15 | 3 | 2.0 | 96.0 |
| 7.16-7.25 | 7 | 4.6 | 94.0 |
| 7.26-7.35 | 7 | 4.6 | 89.4 |
| 7.36-7.45 | 14 | 9.2 | 84.8 |
| 7.46-7.55 | 10 | 6.6 | 75.6 |
| 7.56-7.65 | 16 | 10.5 | 69.0 |
| 7.66-7.75 | 30 | 19.7 | 58.5 |
| 7.76-7.85 | 21 | 13.8 | 38.8 |
| 7.86-7.95 | 15 | 9.9 | 25.0 |
| 7.96-8.05 | 7 | 4.6 | 15.1 |
| 8.06-8.15 | 9 | 5.9 | 10.5 |
| 8.16-8.25 | 5 | 3.3 | 4.6 |
| 8.26-8.35 | 2 | 1.3 | 1.3 |
| | N = 152 | | |

Table 24 Estimated Thresholds and Resulting Groups for pH of Stream Waters

| Threshold | Group | Total Data % | Total Data No.* | A Population % | A Population No.* | B Population % | B Population No.* | C Population % | C Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|---|---|
| | I | 7.2 | 10.9 | 40.0 | 10.3 | 0 | 0 | 1.0 | 0.6 | Mainly A population |
| pH = 8.25 | | | | | | | | | | |
| | II | 68.3 | 103.8 | 60.0 | 15.5 | 99.0 | 67.7 | 36.0 | 20.8 | Mixed A, B, and C population |
| 7.55 | | | | | | | | | | |
| | III | 24.0 | 36.5 | 0 | 0 | 1.0 | 0.7 | 62.0 | 35.8 | Almost entirely C population |
| 6.75 | | | | | | | | | | |
| | IV | 1.0 | 0.6 | 0 | 0 | 0 | 0 | 1.0 | 0.6 | Lower 1% of C population |
| | | 100.0 | 152 | 100.0 | 25.8 | 100.0 | 68.4 | 100.0 | 57.8 | |

* Sample = 152 of which 25.8 are population A, 68.4 are population B and 57.8 are population C.

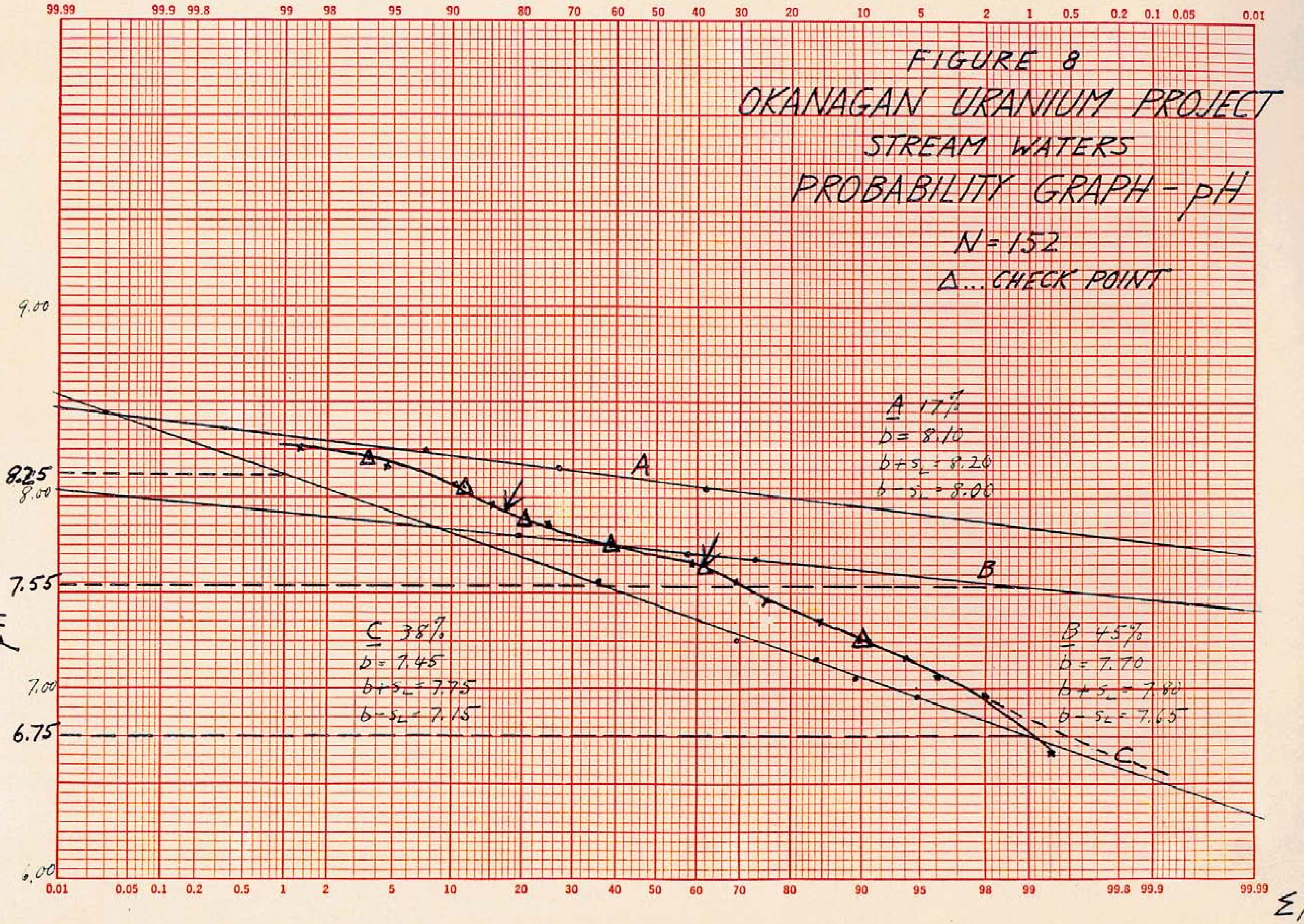


FIGURE 8
OKANAGAN URANIUM PROJECT
STREAM WATERS
PROBABILITY GRAPH - pH
N = 152
Δ... CHECK POINT
A 17%
b = 8.10
b+s_L = 8.20
b-s_L = 8.00
B 45%
b = 7.70
b+s_L = 7.80
b-s_L = 7.65
C 38%
b = 7.45
b+s_L = 7.75
b-s_L = 7.15
A
B
C
pH
9.00
8.25
8.00
7.55
7.00
6.75
6.00
Σ%

Table 25 Grouped Data for $U_3O_8$ in Lake and Swamp Sediments

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0-4.0 ppm | 162 | 45.5 | 100.2 |
| 4.1-8.0 | 72 | 20.2 | 54.7 |
| 8.1-12.0 | 35 | 9.8 | 34.5 |
| 12.1-16.0 | 12 | 3.4 | 24.7 |
| 16.1-20.0 | 19 | 5.3 | 21.3 |
| 20.1-24.0 | 7 | 2.0 | 16.0 |
| 24.1-28.0 | 6 | 1.7 | 14.0 |
| 28.1-32.0 | 1 | 0.3 | 12.3 |
| 32.1-36.0 | 4 | 1.1 | 12.0 |
| 36.1-40.0 | 6 | 1.7 | 10.9 |
| 40.1-44.0 | 3 | 0.8 | 9.2 |
| 44.1-48.0 | 2 | 0.6 | 8.4 |
| 48.1-52.0 | 3 | 0.8 | 7.8 |
| 52.1-56.0 | 2 | 0.6 | 7.0 |
| 56.1-60.0 | 3 | 0.8 | 6.4 |
| 60.1-64.0 | 3 | 0.8 | 5.6 |
| 64.1-68.0 | 1 | 0.3 | 4.8 |
| 68.1-72.0 | 1 | 0.3 | 4.5 |
| 72.1-76.0 | 1 | 0.3 | 4.2 |
| 76.1-80.0 | 1 | 0.3 | 3.9 |
| 80.1-84.0 | 2 | 0.6 | 3.6 |
| 84.1-88.0 | 1 | 0.3 | 3.0 |
| 88.1-92.0 | 1 | 0.3 | 2.7 |
| 132.1-136.0 | 1 | 0.3 | 2.4 |
| 164.1-168.0 | 1 | 0.3 | 2.1 |
| 196.1-200.0 | 1 | 0.3 | 1.8 |
| 272.1-276.0 | 1 | 0.3 | 1.5 |
| 296.1-300.0 | 1 | 0.3 | 1.2 |
| 604.1-608.0 | 2 | 0.6 | 0.9 |
| 684.1-688.0 | 1 | 0.3 | 0.3 |
| | 356 | | |

## Table 26 Estimated Thresholds and Resulting Groups for $U_3O_8$ in Lake and Swamp Sediments

| Threshold | Group | Total Data % | Total Data No.* | A Population % | A Population No.* | B Population % | B Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|
| | I | 0.9 | 3.6 | 100 | 3.0 | 0.04 | 0.1 | A population |
| 510 | | | | | | | | |
| | II | 0.2 | 0.6 | 0 | 0 | 0.16 | 0.6 | B population above $b + 4S_L$ |
| 360 | | | | | | | | |
| | III | 2.3 | 8.1 | 0 | 0 | 2.3 | 8.1 | B population between $b + 2S_L$ and $b + 4S_L$ |
| 72 | | | | | | | | |
| | IV | 13.4 | 47.6 | 0 | 0 | 13.5 | 47.6 | B population between $b + S_L$ and $b + 2S_L$ |
| 19 | | | | | | | | |
| | V | 33.7 | 119.8 | 0 | 0 | 34.0 | 119.8 | B population between $b$ and $b + S_L$ |
| 5 | | | | | | | | |
| | VI | 49.5 | 176.2 | 0 | 0 | 50.0 | 176.2 | Lower 50% of B population |
| | | 100.0 | 356 | 100 | 3.0 | 100.0 | 352.4 | |

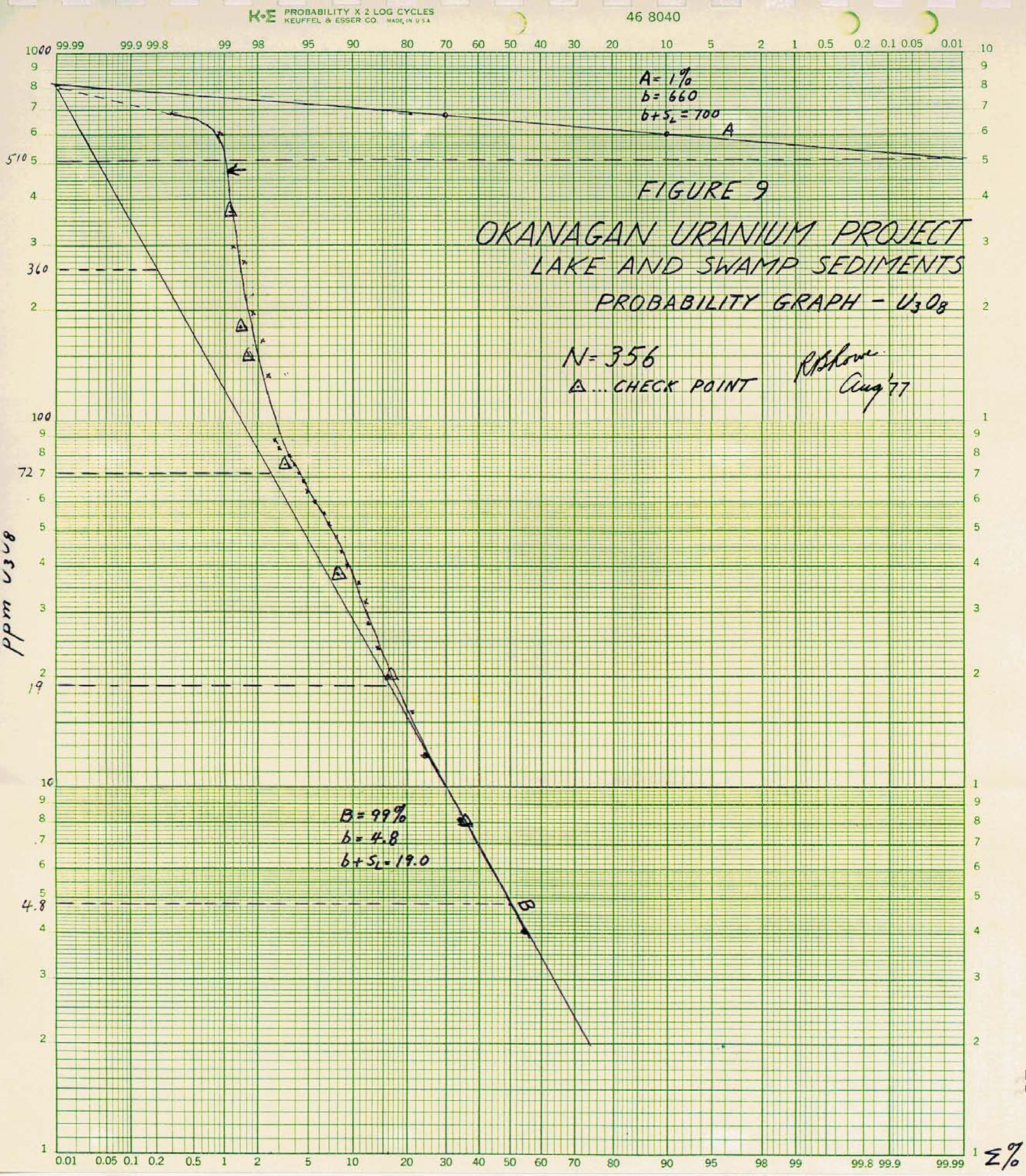

K+E PROBABILITY X 2 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8040
FIGURE 9
OKANAGAN URANIUM PROJECT
LAKE AND SWAMP SEDIMENTS
PROBABILITY GRAPH - U3O8
N = 356
△ ... CHECK POINT
A = 1%
b = 660
b + SL = 700
B = 99%
b = 4.8
b + SL = 19.0
510
360
72
19
4.8
ppm U3O8
Σ%
Aug '77

Table 27 Grouped Data for Mo in Lake and Swamp Sediments

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0-4 | 117 | 70.5 | 100.0 |
| 4.1-8 | 32 | 19.3 | 29.5 |
| 8.1-12 | 9 | 5.4 | 10.2 |
| 12.1-16 | 2 | 1.2 | 4.8 |
| 16.1-20 | 1 | 0.6 | 3.6 |
| 20.1-24 | | | |
| 24.1-28 | | | |
| 28.1-32 | | | |
| 32.1-36 | 1 | 0.6 | 3.0 |
| 36.1-40 | | | |
| 40.1-44 | 1 | 0.6 | 2.4 |
| 44.1-48 | | | |
| 48.1-52 | | | |
| 52.1-56 | | | |
| 56.1-60 | | | |
| 60.1-64 | 1 | 0.6 | 1.8 |
| 64.1-68 | | | |
| 68.1-72 | | | |
| 72.1-76 | | | |
| 76.1-80 | | | |
| 80.1-84 | | | |
| 84.1-88 | | | |
| 88.1-92 | 1 | 0.6 | 1.2 |
| 92.1-96 | | | |
| 96.1-100 | 1 | 0.6 | 0.6 |
| | N = 166 | | |

## Table 28 Estimated Thresholds and Resulting Groups for Mo in Lake and Swamp Sediments

| Threshold | Group | Total Data % | Total Data No.* | A Popluation % | A Popluation No.* | B Population % | B Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|
| | I | 2.7 | 4.5 | 84.0 | 4.2 | 0 | 0 | Entirely A population above b - $S_L$. |
| 35 ppm Mo | | | | | | | | |
| | II | 1.6 | 2.7 | 15.0 | 0.8 | 1.0 | 1.6 | Mixed A and B populations. |
| 14 | | | | | | | | |
| | III | 95.7 | 158.9 | 1.0 | 0.1 | 99.0 | 159.4 | Entirely B population. |
| | | 100.0 | 166.1 | 100.0 | 5.1 | 100.0 | 161.0 | |

* Sample = 166 of which 5 are A population and 161 are B population.

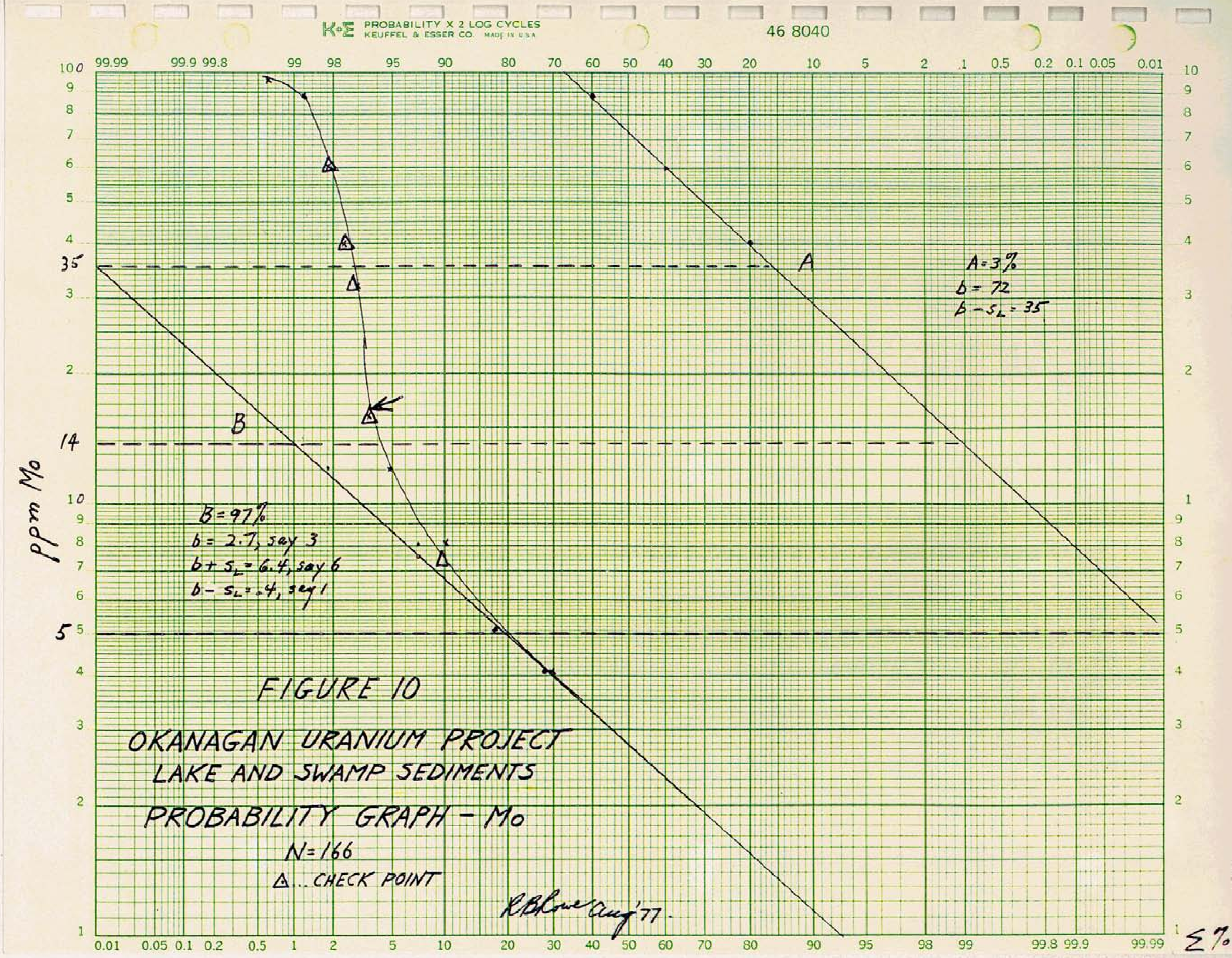



FIGURE 10

OKANAGAN URANIUM PROJECT
LAKE AND SWAMP SEDIMENTS
PROBABILITY GRAPH - Mo

Table 29 Grouped Data for Cu in Lake and Swamp Sediments

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0-5 | 3 | 1.8 | 99.7 |
| 6-10 | 13 | 7.9 | 97.9 |
| 11-15 | 22 | 13.3 | 90.0 |
| 16-20 | 21 | 12.7 | 76.7 |
| 21-25 | 20 | 12.1 | 64.0 |
| 26-30 | 20 | 12.1 | 51.9 |
| 31-35 | 8 | 4.8 | 39.8 |
| 36-40 | 19 | 11.5 | 35.0 |
| 41-45 | 4 | 2.4 | 23.5 |
| 46-50 | 10 | 6.1 | 21.1 |
| 51-55 | 3 | 1.8 | 15.0 |
| 56-60 | 3 | 1.8 | 13.2 |
| 61-65 | 1 | 0.6 | 11.4 |
| 66-70 | 4 | 2.4 | 10.8 |
| 71-75 | 3 | 1.8 | 8.4 |
| 76-80 | | | |
| 81-85 | 1 | 0.6 | 6.6 |
| 86-90 | | | |
| 91-95 | | | |
| 96-100 | 1 | 0.6 | 6.0 |
| 101-105 | | | |
| 106-110 | 1 | 0.6 | 5.4 |
| 111-115 | 1 | 0.6 | 4.8 |
| 116-120 | | | |
| 121-125 | | | |
| 126-130 | 1 | 0.6 | 4.2 |
| 156-160 | 1 | 0.6 | 3.6 |
| 176-180 | 1 | 0.6 | 3.0 |
| 186-190 | 1 | 0.6 | 2.4 |
| 196-200 | 1 | 0.6 | 1.8 |
| 221-225 | 1 | 0.6 | 1.2 |
| 566-570 | 1 | 0.6 | 0.6 |

N = 165

## Table 30 Estimated Thresholds and Resulting Groups for Cu in Lake and Swamp Sediments

| Threshold | Group | Total Data % | Total Data No.* | A Popluation % | A Popluation No.* | B Population % | B Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|
| | I | 2.0 | 3.3 | 50 | 3.5 | 0.1 | 0.2 | Almost entirely population A above b. |
| 195 ppm Cu | | | | | | | | |
| | II | 2.3 | 3.8 | 50 | 3.5 | 0.3 | 0.5 | Almost entirely population A below b. |
| 130 | | | | | | | | |
| | III | 95.7 | 157.9 | 0 | 0 | 99.6 | 157.4 | Entirely population B. |
| | | 100.0 | 165.0 | 100.0 | 7.0 | 100.0 | 158.1 | |

* Sample = 165 of which 7 are population A and 158 are population B.

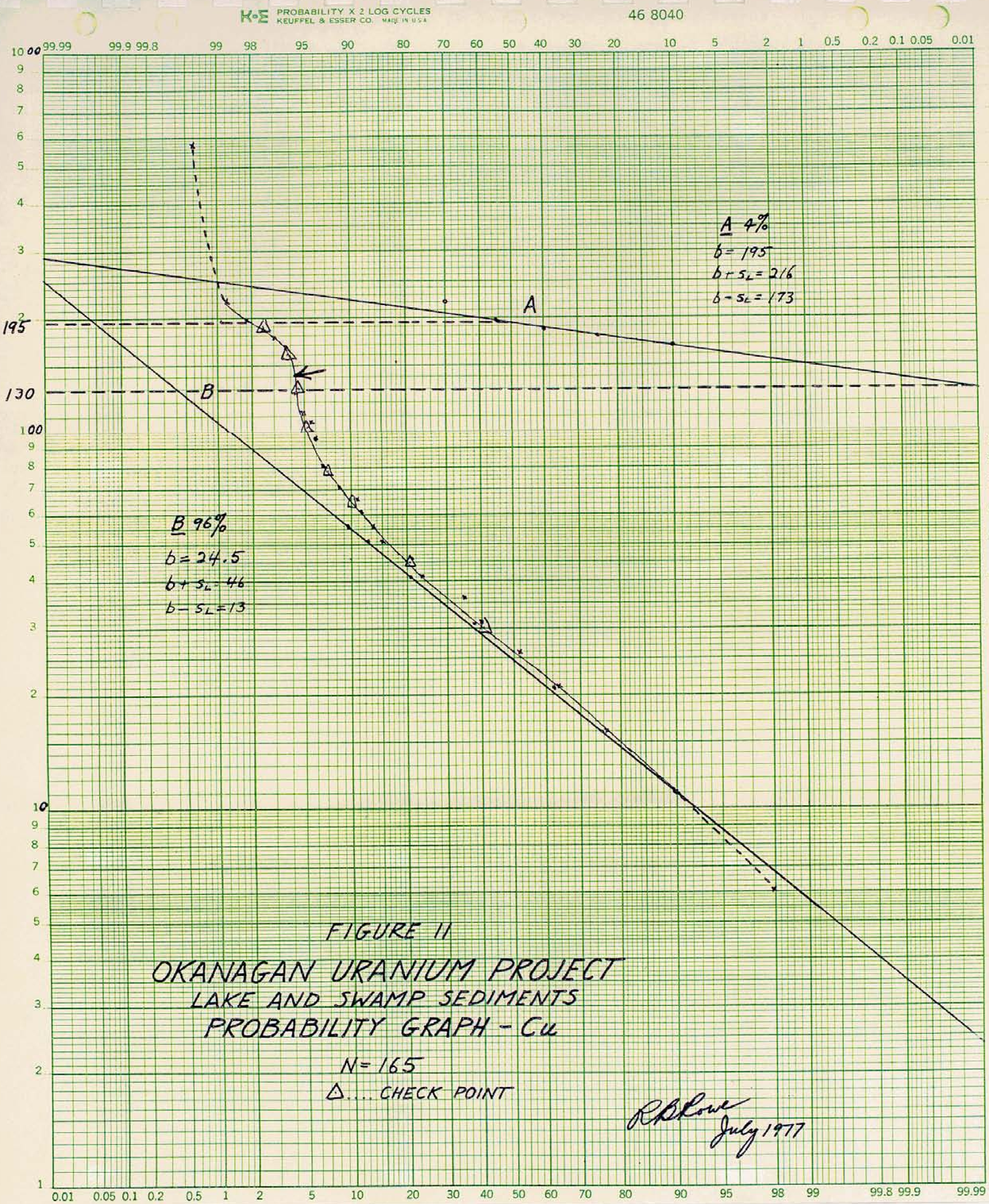



FIGURE 11

OKANAGAN URANIUM PROJECT

LAKE AND SWAMP SEDIMENTS

PROBABILITY GRAPH - Cu

N= 165

Δ.... CHECK POINT

R.B. Rowe July 1977

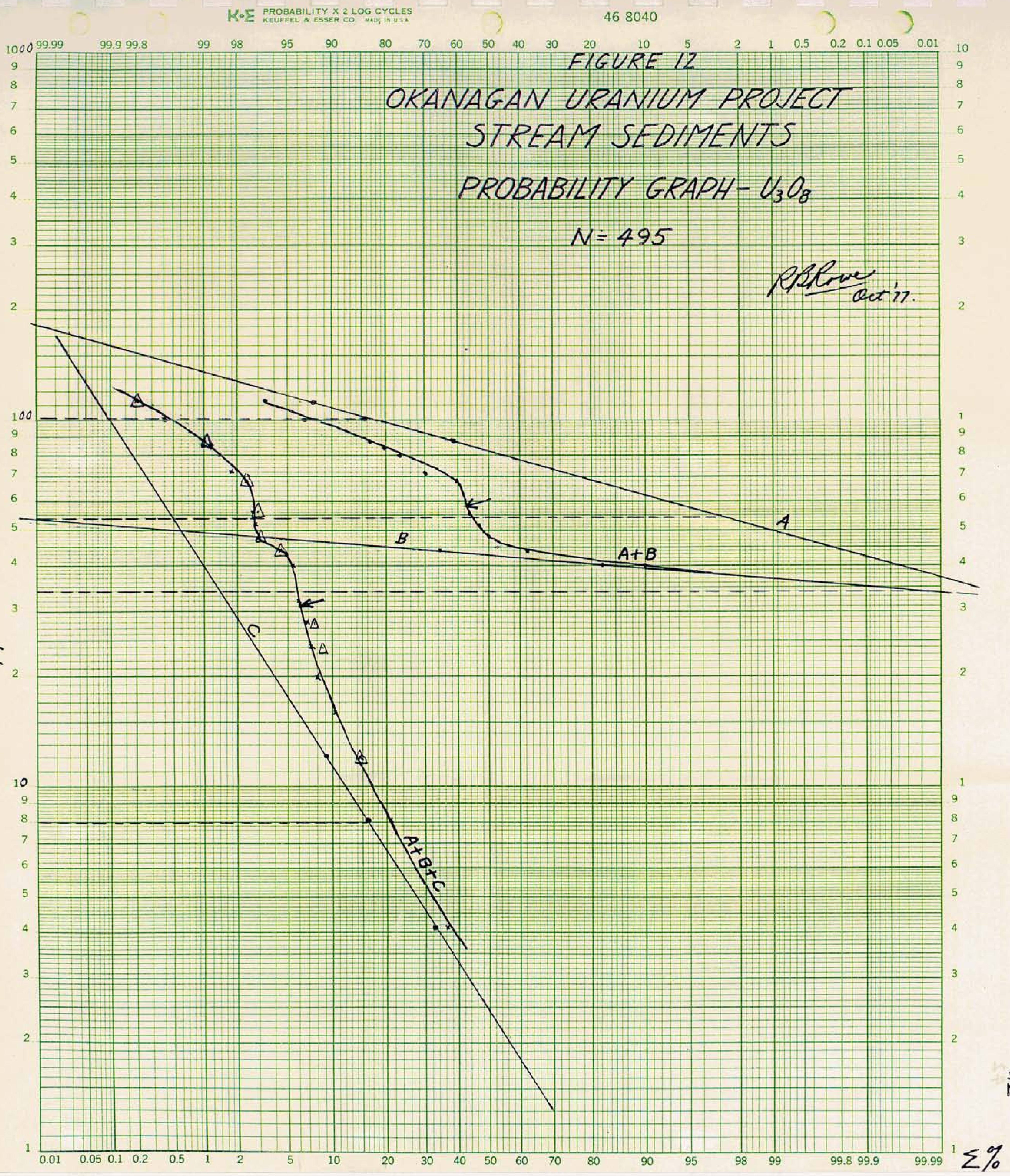
Table 31 Grouped Data for $U_3O_8$ in Stream Sediments

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0- 4.0ppm | 313 | 63.2 | 99.9 |
| 4.1- 8.0 | 77 | 15.6 | 36.7 |
| 8.1- 12.0 | 32 | 6.5 | 21.1 |
| 12.1- 16.0 | 21 | 4.2 | 14.6 |
| 16.1- 20.0 | 12 | 2.4 | 10.4 |
| 20.1- 24.0 | 4 | 0.8 | 8.0 |
| 24.1- 28.0 | 2 | 0.4 | 7.2 |
| 28.1- 32.0 | 4 | 0.8 | 6.8 |
| 32.1- 36.0 | 3 | 0.6 | 6.0 |
| 36.1- 40.0 | | | |
| 40.1- 44.0 | 5 | 1.0 | 5.4 |
| 44.1- 48.0 | 7 | 1.4 | 4.4 |
| 48.1- 52.0 | 1 | 0.2 | 3.0 |
| 52.1- 56.0 | 1 | 0.2 | 2.8 |
| 56.1- 60.0 | 1 | 0.2 | 2.6 |
| 60.1- 64.0 | | | |
| 64.1- 68.0 | | | |
| 68.1- 72.0 | 3 | 0.6 | 2.4 |
| 72.1- 76.0 | 2 | 0.4 | 1.8 |
| 76.1- 80.0 | | | |
| 80.1- 84.0 | 1 | 0.2 | 1.4 |
| 84.1- 88.0 | 1 | 0.2 | 1.2 |
| 88.1- 92.0 | 3 | 0.6 | 1.0 |
| 92.1- 96.0 | | | |
| 96.1-100.0 | | | |
| 100.1-104.0 | 1 | 0.2 | 0.4 |
| 104.1-108.0 | | | |
| 108.1-112.0 | | | |
| 112.1-116.0 | 1 | 0.2 | 0.2 |
| | N = 495 | | |

## Table 32 Estimated Thresholds and Resulting Groups for $U_3O_8$ in Stream Sediments

| Threshold | Group | Total Data % | Total Data No.* | A Population % | A Population No.* | B Population % | B Population No.* | C Population % | C Population No.* | Composition of Group |
|---|---|---|---|---|---|---|---|---|---|---|
| | I | 0.5 | 2.5 | 16.0 | 2.0 | 0 | 0 | 0.1 | 0.5 | Almost entirely A Population above b + $S_L$. |
| 100 ppm $U_3O_8$ | | | | | | | | | | |
| | II | 2.5 | 12.4 | 81.0 | 10.1 | 0 | 0 | 0.5 | 2.3 | Mainly A Population |
| 54 | | | | | | | | | | |
| | III | 4.9 | 24.1 | 3.0 | 0.3 | 100 | 17.3 | 1.4 | 6.5 | All of B Population and part of C Population |
| 34 | | | | | | | | | | |
| | IV | 13.2 | 65.1 | 0 | 0 | 0 | 0 | 14.0 | 65.1 | Entirely C Population above b + $S_L$. |
| 8 | | | | | | | | | | |
| | V | 78.9 | 390.9 | 0 | 0 | 0 | 0 | 84.0 | 390.9 | Entirely C Population below b + $S_L$. |
| | | 100.0 | 495.0 | 100.0 | 12.4 | 100 | 17.3 | 100.0 | 465.3 | |

* Sample + 495 of which 12.4 are population A, 17.3 are population B and 465.3 are population C.



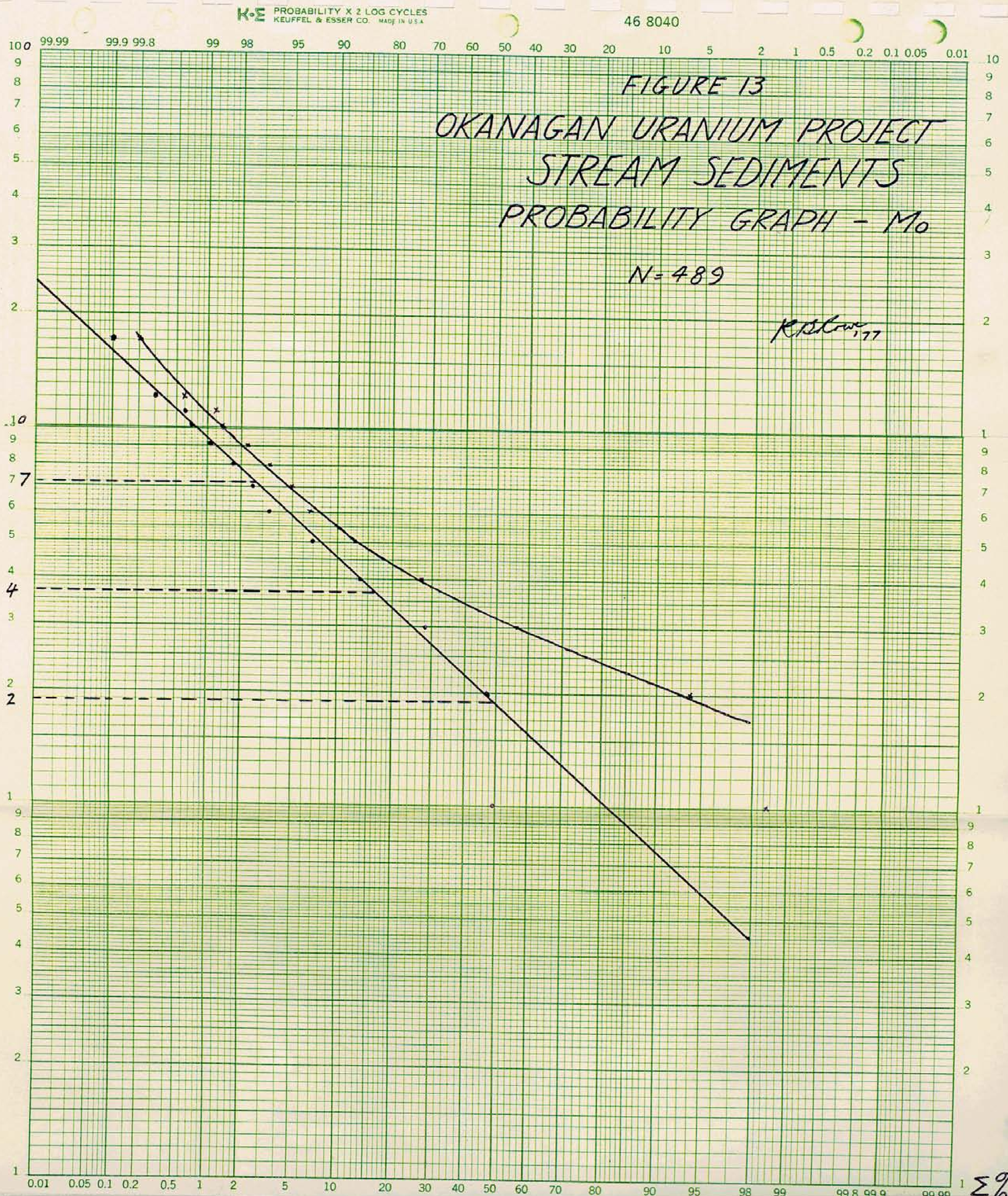
K+E PROBABILITY X 2 LOG CYCLES KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8040
FIGURE 12
OKANAGAN URANIUM PROJECT
STREAM SEDIMENTS
PROBABILITY GRAPH - $U_3O_8$
N = 495
RBRowe Oct '77.
A
B
A+B
C
A+B+C
Σ%

Table 33 Grouped Data for Mo in Stream Sediments

| Class | Frequency | % Frequency | Cumulative % Frequency | Cumulative % Frequency x 0.5 |
|---|---|---|---|---|
| 0 ppm Mo | 6 | 1.2 | 99.7 | |
| 1 | 22 | 4.5 | 98.5 | 49.3 |
| 2 | 183 | 37.4 | 94.0 | 47.0 |
| 3 | 144 | 29.4 | 56.6 | 28.3 |
| 4 | 71 | 14.5 | 27.2 | 13.6 |
| 5 | 30 | 6.1 | 12.7 | 6.9 |
| 6 | 8 | 1.6 | 6.6 | 3.3 |
| 7 | 8 | 1.6 | 5.0 | 2.5 |
| 8 | 6 | 1.2 | 3.4 | 1.7 |
| 9 | 4 | 0.8 | 2.2 | 1.1 |
| 10 | 1 | 0.2 | 1.4 | 0.7 |
| 11 | 3 | 0.6 | 1.2 | 0.6 |
| 12 | 2 | 0.4 | 0.6 | 0.3 |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | 1 | 0.2 | 0.2 | 0.1 |
| | N = 489 | | | |

## Table 34 Estimated Thresholds and Resulting Groups for Mo in Stream Sediments

| Threshold | Group | Total % | Data No. | Composition of Group |
|---|---|---|---|---|
| | I | 2.5 | 12.2 | $b + S_{2L}$ |
| 7 ppm Mo | | | | |
| | II | 13.5 | 66.0 | $b + S_L$ |
| 4 | | | | |
| | III | 34.0 | 166.3 | b to $b + S_L$ |
| 2 | | | | |
| | IV | 50.0 | 244.5 | lower 50% |
| | | 100.0 | 489.0 | |



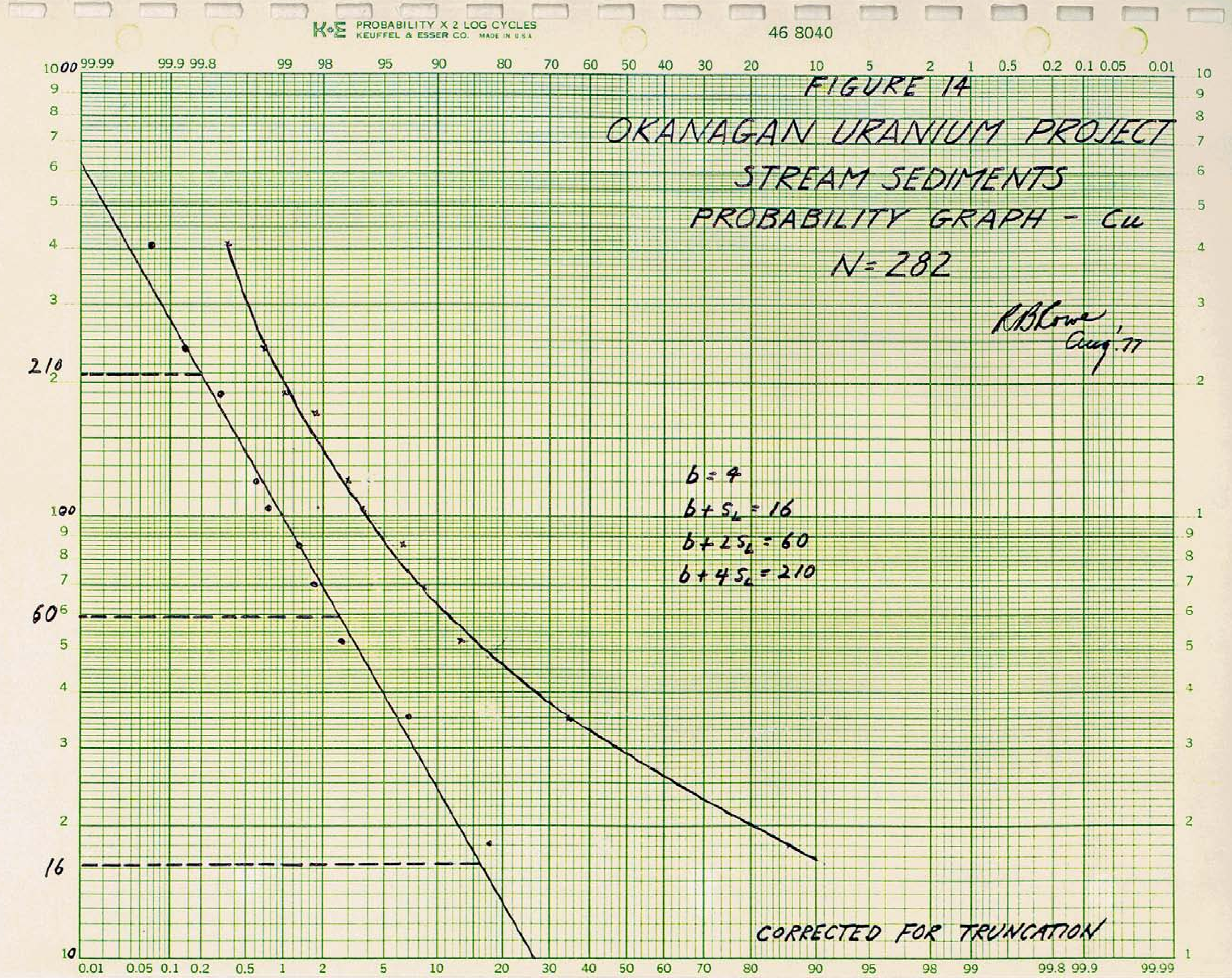
K+E PROBABILITY X 2 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8040
FIGURE 13
OKANAGAN URANIUM PROJECT
STREAM SEDIMENTS
PROBABILITY GRAPH - Mo
N= 489
7
4
2
Σ%

Table 35 Grouped Data for Cu in Stream Sediments

| Class | Frequency | % Frequency | Cumulative % Frequency |
|---|---|---|---|
| 0-17 | 38 | 13.5 | 99.90 |
| 18-34 | 146 | 51.8 | 86.40 |
| 35-51 | 61 | 21.6 | 34.60 |
| 52-68 | 13 | 4.6 | 13.00 |
| 69-85 | 6 | 2.1 | 8.40 |
| 86-102 | 8 | 2.8 | 6.40 |
| 103-119 | 2 | 0.7 | 3.60 |
| 120-136 | 3 | 1.1 | 2.85 |
| 137-153 | | | |
| 154-170 | | | |
| 171-187 | 2 | 0.7 | 1.75 |
| 188-204 | 1 | 0.35 | 1.05 |
| 205-221 | | | |
| 222-238 | | | |
| 239-255 | 1 | 0.35 | 0.70 |
| 256-272 | | | |
| 273-289 | | | |
| 290-306 | | | |
| 307-323 | | | |
| 324-340 | | | |
| 341-357 | | | |
| 358-374 | | | |
| 375-391 | | | |
| 392-408 | | | |
| 409-425 | 1 | 0.35 | 0.35 |
| | N = 282 | | |

## Table 36 Estimated Thresholds and Resulting Groups for Cu in Stream Sediments

| Threshold | Group | Total Data % | Total Data No. | Composition of Group |
|---|---|---|---|---|
| | I | 0.7 | 2.0 | more than $4S_L$ |
| 210 | | | | |
| | II | 14.9 | 42.0 | $2S_L$ to $4S_L$ |
| 60 | | | | |
| | III | 64.9 | 183.0 | $S_L$ to $2S_L$ |
| 16 | | | | |
| | IV | 19.1 | 54.0 | b to $S_L$ |
| 4 | | | | |
| | V | 0.4 | 1.0 | less than b |
| | | 100.0 | 282.0 | |


K+E PROBABILITY X 2 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 8040
FIGURE 14
OKANAGAN URANIUM PROJECT
STREAM SEDIMENTS
PROBABILITY GRAPH - Cu
N=282
RBLowe
Aug.'77
b = 4
b + $s_L$ = 16
b + 2$s_L$ = 60
b + 4$s_L$ = 210
210
100
60
16
CORRECTED FOR TRUNCATION

48

## Interpretation

### Geochemical Environment

The geochemical environment must be considered in the interpretation of a geochemical survey.

In this survey-area, the environment is unusual because of the combination of the following major factors:

1. the complex geology (lithology and structure).
2. the wide range of pH and Eh, and
3. the high uranium content of the Tertiary rocks and Pre-Tertiary metasedimentary rocks.

The complexity of the geology of the area is well-established and the fact that it complicates the geochemistry needs no comment beyond noting that the numerous faults are probably involved in an elaborate groundwater plumbing system.

Eh - pH conditions range from oxidizing-acidic to neutral in the high parts of the area to reducing - strongly alkaline in the low parts. Lake and swamp waters have pH values of 5.15 to 10.1 and 162 of 237 samples tested alkaline (pH of 7 or less). Lake bottom sediments from intermediate to low elevations have the smell of rotting vegetation. Most of the lakes are stagnant and those at low elevations are generally highly alkaline, whereas those at higher elevations are generally acid to neutral. Stream waters have pH values of 5.95 to 8.35 and only 5 of 192 samples tested acid. The general alkaline nature of the stream waters is not unexpected because the soils are undoubtedly alkaline in this arid to semi-arid climate, except possibly at higher elevations which are forested.

Eh and pH are very important factors in the mobility of elements in aqueous phases. Geochemical samples collected in our survey were analyzed for uranium, molybdenum, copper and fluorine. According to D. A. Andrews-Jones (Levinson, 1974, p. 143), uranium and molybdenum have very high mobility under neutral to alkaline conditions, and high mobility under acid and oxidizing conditions. Copper has high mobility under acid conditions, medium mobility under oxidizing conditions, and very low mobility under neutral to alkaline conditions. All three elements are immobile or have very low mobility in a reducing environment. Fluorine is highly mobile in all Eh - pH environments.

---

Levinson, A. A.: Introduction to Exploration Geochemistry; Applied Publishing Ltd., Calgary, 1974.

Information concerning the uranium content of rocks in the survey area is given in Table 37. In comparison with the average contents of the earth's crust and various rock types as reported by Levinson and Hawkes and Webb (1962), it is apparent that the uranium content of the Tertiary rocks is much higher than average. This confirms radiometric observations. Although only a few samples were analyzed, it appears that the Pre-Tertiary metasedimentary rocks may also have uranium contents that are much above normal. The highest contents found in these rocks are many times reported averages and are obviously highly anomalous.

It can be concluded, in view of Eh - pH conditions and the high primary uranium background, that the uranium background in the secondary environment will be high and that uranium will be highly mobile.

Only two samples contained anomalous amounts of copper: one represented a small pyrite-chalcopyrite vein in the old silica quarry near Oliver; the other consisted of chert that had no visible copper mineral.

Several samples of White Lake conglomerate (map-unit 6A) from the Ian claim at Mount Hawthorne, and two samples of Tertiary lavas (map-units 5A and 5F) contained highly anomalous amounts of molybdenum.

## Probability Graphs and Geochemical Maps

It was decided to use probability graphs when it became apparent that the geochemical environment is complex and that a sophisticated approach was therefore appropriate.

All except two of the probability graphs (Figures. 3 to 14) indicate the presence of populations of high values that possibly reflect the presence of mineralization.

The geochemical maps (Figures 15 to 28) show the locations of samples that contained high geochemical values. These sample sites are concentrated in the eastern part of the survey-area at low to intermediate elevations, and are in both Tertiary and Pre-Tertiary terrain. Samples from high to intermediate elevations also report high values, however, their sites are more scattered.

All areas of high geochemical values are worthy of further exploration. Care should be taken not to place undue emphasis on the exceptionally high uranium values contained in water and sediment samples from stagnant, saline lakes because these are ideal places for the build-up of migrating elements and are highly suspect of being false anomalies.

---

Hawkes, H. E. and Webb, J. S.: Geochemistry in Mineral Exploration; Harper and Row, Publishers, Incorporated, New York, 1962

## Table 37 $U_3O_8$ Content of Rock Types

| Age | Rock Type | Map-Unit | No. of Samples | ppm $U_3O_8$ Range | Ave. |
|---|---|---|---|---|---|
| Pre-Tertiary | quartz-biotite gneiss | 1B | 3 | 0.0,1.0,2.9 | 1.0 |
| | quartzite | 1C | 5 | 1.5 - 14.2 | 6.3 |
| | gneiss | 2A | 2 | 0.5,0.5 | 0.5 |
| | tuff and chert | 2B | 12 | 0.0 - 8.3 | 1.3 |
| | diorite | 3B | 6 | 0.2 - 3.4 | 1.2 |
| | granodiorite | 3C | 1 | 0.2 | |
| | granite | 3D | 18 | 0.0 - 9.1 | 2.8 |
| | syenite | 3E | 1 | 6.3 | |
| Tertiary | sandstone | 4(ss) | 3 | 3.6,4.2,4.7 | 4.2 |
| | conglomerate | 4(cgl) | 11 | 0.0 - 2.3 | 0.9 |
| | augite-feldspar porphyry | 5A | 41 | 1.1 - 30.9 | 5.0 |
| | basalt | 5B | 23 | 0.9 - 15.6 | 3.7 |
| | andesite-basalt | 5C | 4 | 0.7,1.1,1.3,5.2 | 2.1 |
| | tuff | 5D | 6 | 1.1 - 23.6 | 5.8 |
| | trachyte | 5E | 7 (1 locality) | 2.0 - 3.8 | 2.9 |
| | rhyolite and rhyodacite | 5F | 8 | 1.6 - 16.0 | 4.6 |
| | conglomerate | 6A | 11 (1 locality) | 0.8 - 4.6 | 1.7 |

Note: Average Abundance of Uranium in ppm in the Earth's Crust and Various Rocks

Earth's crust: 2.7 (Levinson)
Average igneous rock: 2.6 (Hawkes and Webb)
Basalt: 0.6 (Levinson)
Mafic rocks: 0.8 (Hawkes and Webb)
Granodiorite: 3 (Levinson)
Granite: 4.8 (Levinson)
Felsic rocks: 3.5 (Hawkes and Webb)
Sandstone: 0.45 (Hawkes and Webb)
Limestone: 2 (Levinson); 2.5 (Hawkes and Webb)
Shale: 4 (Levinson); 4.1 (Hawkes and Webb)

Eh - pH conditions at intermediate and higher elevations are more normal, hence high geochemical values from these areas may be more significant. In this regard, it is possible that the statistical interpretation of data from higher ground has been masked by data from lower ground. To test this possibility, sample populations from the higher elevations should be separated and probability graphs constructed.

## CONCLUSIONS AND RECOMMENDATIONS

The fact that no uranium mineralization was found in the course of the surveys is somewhat disappointing, however there is geochemical evidence that uranium mineralization may exist within the survey-area and therefore additional exploration work is warranted.

Detailed prospecting with gamma-ray spectrometers should be undertaken. Particular attention should be paid to topographically high and intermediate parts where samples reported high and intermediate geochemical values. The low parts should not be neglected, however it should be borne in mind that the stagnant, saline lakes may be false anomalies.

Prior to additional field work, it is recommended that sample populations from high to intermediate elevations be separated and studied statistically. A computer program for constructing and partitioning probability graphs has been developed at Pacific and will greatly facilitate these studies.

Consideration should be given to conducting soil sampling on grids, particularly if additional statistical studies provide a better definition of anomalous areas.

R B Rowe

# Appendix A

## Analytical Procedures

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## Assay Uraniums - Fluorimetric

### Sample Preparation

All cores and chips are crushed and ground to 100% minus 100 mesh, mixed and placed in pre-marked assay bags.

### Sample Dissolution

If samples contain carbon, the 1 gram samples are calcined in porcelain crucibles at 500° C and transferred to 250 ml. beakers.

10 mls. HCl are added, boiled gently for ten minutes, 5 mls. HNO3 are then added and boiled a further 10 minutes. Remove lids and wash down sides of beakers. 3 mls. HF and 10 mls. (1:1) H2SO4 are added and assays are taken to dryness overnight.

10 mls. HCl are added to cooled beaker, the assay is then boiled gently for 10 minutes and filtered into 100 ml. volumetrics. After washing well with hot distilled water the flasks are cooled and shaken. A 100 lambda aliquot is then taken in triplicate to platinum crucibles. Standards of 0, .1, 1.0, 3.0, 5.0, 10.0 and 50.0 ppm conc U3O8 are carried with each series of samples and used to calibrate instrument. Also, standards of known value are carried with each series of samples to correct for any variance in fusion temperature or instrument fluctuation.

0.3 g of Na2CO3 - NaF flux are placed in pt. crucible and they are then fused at 850° C for 2½ minutes.

When samples have solidified and cooled they are read on flurimeter.

9. Transfer precipitate back to beaker and dissolve any precipitate adhering to filter paper with hot 30% HCl into beaker. Wash well with hot $H_2O$.
10. Place on hot plate, add 5 ml. $HNO_3$ and boil.
11. Remove from hot plate, dissolve 1-2 grams $NH_4Cl$. Precipitate with $NH_4OH$ and boil.
12. Filter and wash with $NH_4OH$ water.
13. Repeat step 9. (Note 3)
14. Evaporate to low volume but do not allow to go dry.
15. Transfer to centrifuge tubes, add 2 ml. $LaCl_3$ solution, ½ ml. Hydroxylamine solution and mix. Standards should be carried from this step.
16. Add 1 ml. HF, mix and allow to stand for a few minutes.
17. Centrifuge for 5 min. at 70.
18. Pour off supernatant liquid, repulp precipitate with water, bulk to mark and centrifuge for another 5 min.
19. Pour off supernatant liquor, repulp and transfer to 100 ml. beaker.
20. Add 3 or 4 ml. HCl and $HClO_4$ and take to dryness.
21. Take up with 5 or 6 drops of HCl and a little water
22. Add 2 ml. Hudroxylamine hydrochloride and boil. (Note 4)
23. Transfer clear solution to 25 ml. vol. flask.
24. Add 1 ml. Thoron reagent bulk to mark, shake and allow to stand for a few minutes. (Note 5)
25. Read absorbance at 545 mu and slit at .015.

NOTES:

1. If all HF is not driven off Thorium will be precipitated and lost on filtration.

2. The filter paper from the acid treatment should be dried and tested for gamma radioactivity. If any is present (as much as 10% of original may remain) the paper should be dried and ashed in a Pt crucible. A ml. or 2 of HF should be added and taken to dryness. Fuse with carbonate mixture, dissolve, melt with HCl and filter into original filtrate.

3. The gravimetric procedure may be carried from this step for higher grade samples i.e. .50% or over Bulk the dissolved hydroxides to 200 ml. and boil. Add oxalic acid solution in excess to the boiling solution with stirring. Remove from hot plate and allow to stand overnight. Filter through # 42 paper, wash, dry, ash and ignite at 900$^0$ C. in tared Pt Crucible. Weigh as $ThO_2$.

4. The colorimetric procedure is reliable in the range of .03 mg. to 1 mg. $ThO_2$. For lower grade samples the solution from step 22 should be transferred to 10 ml. tube and the coloring agent added dropwise and read against a distilled $H_2O$ blank. Solution should be faintly pink otherwise no $ThO_2$ is present.

5. If any sulfate is present in solution color will not develop.

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## U308 In Water Samples

- 3 mls of filtered sample are placed in 13/8" gold fluorimeter crucible and evaporated to dryness.
- A constant amount of fusion mixture is added and the sample fused at ~~670° C~~ 640° for 15 minutes.
- The sample is cooled and analyzed on the previously calibrated fluorimeter.

*A blank and standards containing .01, 0.1, 0.5, 1.0 and 5.0 micrograms U308 are carried through total procedure and used to calibrate fluorimeter.

Fusion Mixture - 455 K2CO3
455 Na2CO3
90 NaF

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Fluorine in H2O

1. Aliquot 25 ml sample to 100 ml polypropylene beaker.
2. Adjust pH to 6.00 using 1M NaOH or 1M HNO3.
3. Add 50 mls TISAB (Total Ionic Strength Adjustment Buffer)
4. Measure fluoride ion activity on previously calibrated selective-ion meter.

*Standards used to calibrate meter are .1, 1.0, and 10 PPM F concentration.

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## U3O8 In Sediments

- 0.5 g of prepared sample (hand mulled to pass 80 mesh nylon sieve) is digested in test tube using hot HCl for 3 hrs.
- Cool sample, diluted to known volume.
- 100 lamda aliquot is taken to 16 mm O.D. platinum cruc. and evaporated to dryness.
- 0.500 grams of fusion mixture is added and the sample is fused at 900°C for 1½ minutes.
- The sample is cooled and analyzed on the previously calibrated fluorimeter.

*A blank and standards containing .01, 0.1, 0.5, 1.0 and 5.0 micrograms U3O8 are carried through total procedure and used to calibrate fluorimeter.

Fusion Mixture - 1 part $Na_2CO_3$
1 part NaF

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## Fluorine In Sediments

1. Weigh 0.5 g of previously prepared sample (80 mesh) into nickel crucible.
2. Add 2 g fusion mixture and fuse at 800°C for 15 min.
3. Cool crucible and leach with distilled $H_2O$.
4. Transfer leach to 100 ml polypropylene beaker and adjust volume to 25 mls.
5. Carry on as per F in $H_2O$ from step 2.

*Blanks carried throughout procedure.

Flux - 5 parts $Na_2CO_3$
4 parts NaCl
1 part $KNO_3$

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## METHODS OF ANALYSIS FOR GEOCHEMS

1. COPPER, LEAD, ZINC, NICKEL, COBALT, SILVER

500 milligrams of -80 mesh material are weighed into coor cups, placed in muffle at 500°C to remove organics. The oxidized samples are then transfered to test tubes, aqua regia added and digested in water bath at 100°C for three hours.

The test tubes are then bulked to the 10 ml. level, mixed and allowed to settle overnite.

The samples are then put through the atomic absorption with appropriate standards and reported in PPM.

2. MOLYBDENUM GEOCHEMS

The same sample weight is used; the organics are also removed; aqua regia is also used, but just prior to bulking up to 10 mls. volume, 3 mls. of aluminum chloride solution is added to enhance the molybdenum atom. After standing overnite the samples are put through the atomic absorption using a nitrous oxide and acetylene flame. Reported in PPM Mo.

# Appendix B

## Analyses and Assays

Table 2. Analyses of Rock Samples

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F | Geol. Map Unit |
|---|---|---|---|---|---|
| A 1 | 1.0 | 16 | 2 | | 3D |
| 31 | 2.8 | 5 | 3 | | 3D |
| 38 | 2.8 | 8 | 2 | | 3D |
| AK | 1.3 | 20 | 5 | | 5A |
| AP | 2.4 | 22 | 3 | | 5A |
| G 12 | 1.4 | 19 | 4 | | 6A (cgl) |
| 13 | 0.8 | 36 | 5 | | 6A (cgl) |
| 14 | 1.4 | 29 | 5 | | 6A (cgl) |
| 16 | 1.4 | 13 | 5 | | 6A (cgl) |
| 18 | 2.2 | 29 | 29 | | 6A (cgl) |
| 21 | 1.4 | 23 | 66 | | 6A (cgl) |
| 23 | 1.0 | 30 | 27 | | 6A (cgl) |
| 25 | 1.6 | 30 | 10 | | 6A (cgl) |
| 27 | 1.2 | 27 | 7 | | 6A (cgl) |
| M 13 | 0.6 | 67 | 4 | | 1B |
| 14 | 0.6 | 27 | 4 | | 1B |
| Q 29 | 5.2 | 5 | 2 | | 3D |
| R 3 | 1.6 | 4 | 8 | tr. | tufa |
| 35 | 3.4 | 12 | 2 | tr. | 3B |
| 117A | 6.3 | 18 | nil | tr. | 3E |
| 352 | 3.4 | 26 | 2 | | 3D |
| 428 | 0.2 | 184 | 4 | | 3D |
| 436R | 3.8 | 40 | 3 | | 3D |
| 453 | 0.2 | 84 | 3 | | 3C |
| SQ | nil | 1300 | 1 | | py-cpy vein |
| SQA | 3.8 | 64 | 2 | | py-cpy vein |
| SU-1 | 0.2 | 67 | 4 | | 3D |
| SU-2 | 0.8 | 34 | 2 | | 3D |
| W2017 | 1.2 | 61 | 4 | | 5A |
| 2032 | 2.6 | 34 | 2 | | 5A |
| 2040 | 3.4 | 36 | 2 | | 5A |
| 2042 | 1.6 | 51 | 18 | | 5F |
| Y-6-R | 4.7 | 28 | 3 | tr. | 4 (ss) |
| 1-1 | 0.2 | 0 | 4 | | 2B |
| 1-3 | 0.7 | 40 | 3 | | 5C |
| 1-5 | 1.1 | 34 | 3 | | 5C |
| 1-11 | 8.3 | 23 | 4 | | 2B |
| 1-13 | 0.2 | 28 | 3 | | 2B |
| 1-15 | 0.7 | 57 | 3 | | 4 (cgl) |
| 1-21 | nil | 75 | 4 | | 4 (cgl) |
| 1-23 | 1.1 | 20 | 4 | | 2B |
| 1-25R | 0.2 | 16 | 3 | | 2B |
| 1-31 | 0.2 | 32 | 3 | | 2B |
| 2-1 | 16.1 | 39 | 5 | | 5B |
| 2-3 | 5.3 | 19 | 5 | | 5B |
| 2-25R | 6.1 | 14 | 5 | | 5A |
| 2-31 | 7.9 | 16 | 4 | | 5B |
| 2-35 | 4.6 | 29 | 3 | | 5A |

Table 2 Analyses of Rock Samples (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F | Geol. Map Unit |
|---|---|---|---|---|---|
| 2-39 | 0.7 | 45 | 3 | | 4 (cgl) |
| 2-41 | 0.2 | 48 | 4 | | 4 (cgl) |
| 2-43 | 0.2 | 43 | 4 | | 4 (cgl) |
| 2-45 | 0.4 | 37 | 3 | | 2B |
| 3-1 | 2.2 | 18 | 4 | | 5B |
| 3-2 | 4.2 | 22 | 5 | | 5A |
| 7-1 | 1.4 | 27 | 2 | | 5B |
| 7-2 | 15.6 | 69 | 2 | | 5B |
| 7-4 | 1.2 | 18 | 2 | | 5A |
| 7-8 | 7.8 | 43 | 3 | | 5A |
| 7-12R | 2.6 | 22 | 5 | | 5A |
| 13-6R | 1.8 | 3 | 3 | | 5A |
| 13-7 | 11.1 | 23 | 3 | | 5A |
| 13-9 | 3.3 | 56 | 2 | | 5D |
| 13-13 | 3.3 | 48 | 2 | | 5A |
| 13-55 | 3.8 | 43 | 5 | | 5A |
| 13-59 | 4.2 | 17 | 15 | | 5A |
| 13-59B | 5.9 | 26 | 5 | | 5A |
| 14-12 | 1.2 | 34 | 3 | | 5B |
| 14-16 | 5.0 | 65 | 4 | | 5A |
| 14-30 | 1.6 | 4 | 2 | | 5A |
| 14-32 | 3.0 | 8 | 3 | | 5A |
| 17-13 | 1.2 | 31 | 3 | | 3B |
| 17-14 | 0.2 | 14 | 3 | | 3B |
| 17-15 | 0.2 | 12 | 2 | | 3B |
| 17-16 | 0.6 | 12 | 2 | | 3D |
| 17-19 | 1.6 | 4 | 1 | | 3D |
| 17-51 | 3.8 | 8 | 2 | | 5A |
| 17-53 | 5.0 | 39 | 4 | | 5A |
| 20-4 | 0.2 | 4 | 3 | | 3D |
| 20-21A | 0.6 | 81 | 2 | | 2B |
| 21-1 | 0.5 | 40 | 5 | | 2A |
| 21-1A | 0.5 | 23 | 4 | | 2A |
| 21-5 | 1.6 | 3 | 4 | | 3B |
| 23-1R | 0.8 | 3 | 3 | | 3D |
| 27-1 | 7.2 | 12 | 2 | | 5A |
| 27-6 | 3.4 | 22 | 4 | | 5D |
| 27-7 | 7.8 | 38 | 4 | | 5A |
| 27-8R | 6.6 | 31 | 3 | | 5A |
| 27-9 | 2.0 | 8 | 3 | | 5A |
| 27-10R | 6.4 | 61 | 4 | | 5A |
| 27-11 | 0.6 | 8 | 2 | | 4 (cgl) |
| 27-12 | 0.6 | 20 | 5 | | 4 (cgl) |
| 27-14 | 1.0 | 20 | 4 | | 4 (cgl) |
| 32-3 | nil | 200 | 2 | | 2B |
| 32-4 | 3.4 | 58 | 5 | | 2B |
| 35-1 | 4.4 | 22 | 6 | | 5B |

Table 2 Analyses of Rock Samples (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F | Geol. Map-Unit |
|---|---|---|---|---|---|
| 35-3R | 4.2 | 20 | 4 | | 5A |
| 35-5 | 5.0 | 23 | 5 | | 5A |
| 35-15 | 2.0 | 34 | 4 | | 5B |
| 35-17 | 4.2 | 25 | 5 | | 4 (ss) |
| 35-19 | 1.3 | 53 | 5 | | 5C |
| 36-1 | 3.6 | 16 | 4 | | 4 (ss) |
| 36-8R-1 | 3.3 | 16 | 4 | | 5E |
| 36-8R-2 | 2.0 | 15 | 2 | | 5E |
| 36-8R-3 | 2.0 | 14 | 1 | | 5E |
| 36-8C | 3.8 | 11 | 2 | | 5E |
| 36-8N | 3.3 | 13 | 2 | | 5E |
| 36-8S | 2.0 | 11 | 4 | | 5E |
| 36-18 | 2.4 | 15 | 3 | | 5E |
| 36-30 | 2.0 | 38 | 4 | | 5B |
| 36-34 | 2.8 | 19 | 3 | | 5B |
| 37-1 | 2.9 | 25 | 2 | | 5A |
| 37-2 | 3.8 | 28 | 3 | | 5A |
| 37-6 | 2.4 | 29 | 4 | | 5B |
| 37-7 | 2.0 | 27 | 2 | | 5B |
| 37-8 | 1.1 | 28 | 2 | | 5A |
| 37-11 | 2.0 | 25 | 2 | | 5B |
| 37-12 | 1.6 | 23 | 3 | | 5A |
| 37-17 | 2.0 | 19 | 2 | | 5B |
| 37-29 | 1.1 | 20 | 4 | | 5B |
| 37-39 | 1.1 | 9 | 2 | | 5B |
| 37-41 | 1.6 | 12 | 4 | | 5B |
| 37-43 | 1.6 | 12 | 3 | | 5B |
| 37-49 | 1.1 | 24 | 2 | | 5D |
| 38-7 | 3.8 | 17 | 2 | | 5A |
| 38-13 | 4.2 | 31 | 5 | | 5A |
| 38-15 | 3.8 | 27 | 2 | | 5A |
| 38-17 | 2.0 | 16 | 1 | | 5F |
| 45-3L | 4.6 | 47 | 1 | | 5B |
| 45-30 | 2.9 | 38 | 2 | | 5B |
| 45-7 | 0.9 | 19 | 3 | | 5B |
| 45-13 | 2.4 | 43 | 2 | | 5F |
| 45-15 | 2.0 | 22 | 2 | | 5F |
| 45-19 | 0.7 | 15 | 7 | | 3B |
| 17-71 | 1.9 | 20 | 2 | | 5A |
| 18-1 | 20.0 | 104 | 4 | | 5A |
| 18-9 | 30.9 | 6 | 95 | | 5A |
| 19-1 | 1.0 | 39 | 3 | | 5B |
| 19-3 | 4.0 | 31 | 5 | | 1C |
| 20-49 | 9.4 | 24 | 2 | | 1C |
| 23-7A | 3.5 | 7 | 3 | | 3D |
| 23-7B | 7.3 | 7 | 3 | | 3D |
| 23-7C | 2.3 | 9 | 2 | | 1C |

Table 2 Analyses of Rock Samples (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F | Geol. Map Unit |
|---|---|---|---|---|---|
| 23-11 | 1.5 | 71 | 3 | | 1C |
| 23-13 | 1.9 | 21 | 3 | | 5A |
| 24-23 | 2.9 | 121 | 2 | | 1B |
| 29-1 | 1.0 | 70 | 4 | | 1B |
| 42-4 | 2.3 | 36 | 4 | | 4 (cgl) |
| 42-6 | 1.5 | 42 | 3 | | 4 (cgl) |
| 42-8 | 0.6 | 1380 | 1 | | 2B |
| 44-24 | 1.9 | 44 | 2 | | 4 (cgl) |
| 46-1 | 1.7 | 9 | 4 | | 5D |
| 46-5 | 1.9 | 7 | 2 | | 5D |
| 46-7 | 5.2 | 24 | 4 | | 5C |
| 46-12 | 4.8 | 28 | 5 | | 5A |
| 46-18 | 3.1 | 12 | 2 | | 5F |
| F 8R | 4.6 | 76 | 6 | tr. | 5F |
| G 3 | 4.6 | 28 | 105 | tr. | 6A (cgl) |
| 4 | 2.2 | 42 | 7 | tr. | 6A (cgl) |
| R 62R | 7.1 | 14 | 2 | tr. | 3D |
| W 76 | 1.0 | 36 | 5 | tr. | shaly coal |
| 80 | 1.0 | 62 | 14 | tr. | shaly coal |
| 84 | 1.8 | 30 | 7 | tr. | shaly coal |

Table 3. Assays of Rock Samples

| Sample # | ppm $U_3O_8$ | % Th $O_2$ | Geol. Map Unit |
|---|---|---|---|
| R 35 | 9.1 | tr. | 3D |
| 148 | nil | tr. | 3D |
| 369 | 14.2 | tr. | 1C |
| 369C | 16.0 | tr. | 5F |
| 369F | 5.1 | tr. | 5F |
| W2047 | 23.6 | .003 | 5D |
| Y 50 | nil | tr. | 2B |

Table 4 Analyses of Lake and Swamp Waters

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| F 6 | 9.05 | 1.40 | 21.0 |
| 7 | 7.50 | 1.40 | 7.3 |
| K 1 | 7.25 | .78 | 1.3 |
| 2 | 5.85 | tr. | 5.7 |
| 5 | 6.25 | .14 | 1.3 |
| K200 | 6.75 | .30 | 2.0 |
| 201 | 7.05 | .16 | 0.3 |
| 202 | 7.30 | .20 | 2.7 |
| 203 | 5.80 | tr. | 0.3 |
| 204 | 6.15 | tr. | 0.3 |
| 400 | 6.60 | .15 | 1.0 |
| 401 | 6.35 | .12 | 4.0 |
| 402 | 6.70 | .11 | 3.3 |
| 403 | 6.60 | .32 | 0.7 |
| 404 | 6.70 | tr. | 3.3 |
| 406 | 6.30 | tr. | 1.3 |
| 407 | 6.35 | tr. | 2.3 |
| 408 | 6.35 | tr. | 2.3 |
| 409 | 6.35 | tr. | 0.7 |
| 412 | 6.30 | .13 | 2.0 |
| 413 | 5.65 | tr. | 2.0 |
| 414 | 6.25 | tr. | 2.0 |
| 415 | 6.10 | tr. | 0.7 |
| P 1 | 8.55 | 1.30 | 8.0 |
| 4 | 8.00 | 2.00 | 4.3 |
| 5 | 8.30 | 1.85 | 4.3 |
| 8 | 8.55 | 2.45 | 13.3 |
| R 6 | 8.65 | .24 | 24.3 |
| 7 | 7.75 | .31 | 55.7 |
| 10 | 7.30 | .46 | 29.0 |
| 14 | 7.30 | .43 | 160.0 |
| 15 | 7.95 | .47 | 85.0 |
| 16 | 7.50 | 1.18 | 667.0 |
| 17 | 7.40 | .60 | 207.0 |
| 19 | 8.05 | .54 | 40.7 |
| 20 | 7.45 | .57 | 59.3 |
| 21 | 7.40 | .46 | 18.7 |
| 23 | 7.75 | .27 | 66.7 |
| 24 | 7.90 | .23 | 40.7 |
| 25 | 7.60 | .23 | 18.7 |
| 26 | 7.60 | .22 | 13.7 |
| 28 | 7.65 | .19 | 18.0 |
| 29 | 7.65 | .17 | 20.3 |
| 30 | 7.75 | .17 | 38.3 |
| 31 | 7.80 | .60 | 800.0 |
| 33 | 7.45 | .27 | 50.0 |

Table 4 Analyses of Lake and Swamp Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| R 42 | 8.65 | .62 | 213.0 |
| 44 | 8.65 | .42 | 110.0 |
| 48 | 8.75 | 1.06 | 22,100.0 |
| 50 | 8.10 | .96 | 5,940.0 |
| 51 | 8.65 | .62 | 273.0 |
| 53 | 8.50 | .62 | 2,210.0 |
| 55 | 7.35 | 1.10 | 250.0 |
| 56 | 8.80 | .45 | 10,900.0 |
| 59 | 8.65 | .40 | 433.0 |
| 60 | 8.25 | .46 | 43.3 |
| 73 | 7.50 | .26 | 113.0 |
| 76 | 7.55 | .18 | 86.7 |
| 77 | 7.60 | .15 | 36.7 |
| 78 | 7.50 | .12 | 11.3 |
| 83 | 7.25 | .12 | 2.5 |
| 85 | 7.80 | .13 | 36.7 |
| 104 | 7.40 | .27 | 13.7 |
| 113 | 9.10 | .18 | 36.3 |
| 114 | 7.00 | .11 | 12.7 |
| 115 | 7.05 | .14 | 17.3 |
| 116B | 7.15 | .16 | 11.0 |
| 116C | 7.85 | .18 | 6.3 |
| 117 | 8.10 | .12 | 8.3 |
| 119 | 8.50 | .33 | 83.3 |
| 123 | 7.35 | .50 | 89.0 |
| 126 | 8.65 | 1.41 | 3,110.0 |
| 127 | 8.75 | 1.10 | 2,130.0 |
| 131 | 8.40 | .44 | 187.0 |
| 136 | 8.45 | .24 | 400.0 |
| 137 | 7.90 | .21 | 90.0 |
| 139 | 8.05 | .16 | 29.7 |
| 141 | 7.40 | .15 | 82.7 |
| 143 | 7.90 | .16 | 26.3 |
| 146 | 6.55 | .14 | 29.0 |
| 170 | 6.90 | .11 | 1.3 |
| 175 | 7.50 | .11 | 0.7 |
| 176 | 7.60 | .19 | 1.0 |
| 177 | 7.30 | .28 | 3.3 |
| 180 | 7.45 | .32 | 9.3 |
| 185 | 6.45 | tr. | 1.7 |
| 193 | 6.20 | tr. | 0.3 |
| 194 | 6.40 | tr. | 2.0 |
| 200 | 7.40 | .12 | 12.3 |
| 208 | 7.40 | tr. | 1.7 |
| 219 | 6.55 | .10 | 2.0 |

Table 4 Analyses of Lake and Swamp Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| R328 | 7.10 | .14 | 5.0 |
| 329 | 6.80 | .34 | 2.7 |
| 331 | 8.10 | .34 | 5.3 |
| 332 | 7.20 | .14 | 6.3 |
| 333 | 7.50 | .17 | 4.3 |
| 336 | 7.25 | .19 | 9.0 |
| 338 | 7.30 | .25 | 82.7 |
| 342 | 7.60 | .47 | 119.0 |
| 344 | 7.35 | .19 | 4.3 |
| 345 | 7.50 | .60 | 12.3 |
| 349 | 6.65 | tr. | 0.7 |
| 350 | 7.00 | tr. | 4.0 |
| 352 | 6.45 | tr. | 1.3 |
| 355 | 7.35 | tr. | 1.0 |
| 363 | 7.45 | tr. | 0.7 |
| 364 | 7.25 | .10 | 1.0 |
| 369 | 7.50 | .20 | 0.7 |
| 370 | 7.05 | .16 | 0.7 |
| 373 | 7.10 | .10 | 6.0 |
| 375 | 8.75 | .41 | 13.3 |
| 376 | 7.50 | .15 | 9.7 |
| 377 | 7.50 | .27 | 9.7 |
| 378 | 7.75 | .49 | 13.3 |
| 384 | 7.45 | .52 | 6.0 |
| 385 | 7.20 | .19 | 3.7 |
| 392 | 7.65 | .26 | 4.7 |
| 393 | 7.75 | .18 | 3.7 |
| 394 | 7.30 | .18 | 1.3 |
| 395 | 7.10 | .16 | 0.7 |
| 403 | 7.80 | 1.85 | 11.3 |
| 405 | 7.30 | 1.15 | 5.3 |
| 406 | 7.70 | .13 | 0.7 |
| 407 | 7.05 | tr. | 0.3 |
| 501 | 7.40 | .23 | 18.0 |
| W 75 | 7.85 | .63 | 26.0 |
| 88 | 7.95 | .50 | 14.0 |
| 100 | 8.80 | 1.23 | 29.3 |
| 101 | 7.80 | .69 | 1.3 |
| 106 | 8.10 | .43 | 5.3 |
| 107 | 8.30 | .36 | 6.7 |
| 108 | 7.65 | .24 | 6.0 |
| 112 | 8.75 | 7.10 | 48.3 |
| 113 | 9.10 | .18 | 36.3 |
| 116 | 8.10 | .44 | 10.7 |
| 120 | 8.70 | 1.38 | 5.3 |
| 124 | 7.95 | 1.78 | 15.7 |

Table 4 Analyses of Lake and Swamp Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| Y 2 | 6.05 | .23 | 1.7 |
| 3 | 6.05 | .28 | 139.0 |
| 4 | 6.20 | .19 | 18.7 |
| 5 | 7.15 | .11 | - |
| 9 | 6.80 | tr. | - |
| 10 | 7.75 | .38 | 1.7 |
| 11 | 6.35 | tr. | 0.7 |
| 12 | 6.20 | .14 | 1.0 |
| 14 | 7.40 | tr. | 1.0 |
| 15 | 7.75 | .14 | 0.7 |
| 16 | 7.30 | .11 | 0.3 |
| 20 | 6.45 | tr. | - |
| 21 | 6.55 | tr. | 1.0 |
| 23 | 5.75 | tr. | 1.3 |
| 24 | 6.70 | tr. | 1.3 |
| 25 | 7.15 | tr. | 0.7 |
| 29 | 6.20 | tr. | - |
| 30 | 6.30 | tr. | - |
| 48 | 6.80 | .10 | 0.7 |
| 58 | 7.55 | .66 | 6.7 |
| 62 | 8.00 | .55 | 9.7 |
| 68 | 7.70 | .36 | 11.3 |
| 69 | 7.40 | .65 | 4.7 |
| 73 | 7.50 | 1.52 | 22.0 |
| 90 | 6.85 | 2.15 | 12.0 |
| 204 | 7.65 | .47 | 6.7 |
| 207 | 7.20 | .80 | 9.7 |
| 208 | 7.55 | .39 | 5.0 |
| 211 | 7.55 | .29 | 14.0 |
| 214 | 5.85 | tr. | 1.3 |
| 215 | 5.60 | tr. | 2.7 |
| 220 | 6.25 | .11 | 1.3 |
| 221 | 6.20 | .18 | 1.3 |
| 222 | 5.70 | .12 | 2.0 |
| 223 | 5.55 | tr. | 2.7 |
| 224 | 7.60 | .12 | 2.7 |
| 228 | 7.50 | .72 | 28.0 |
| 229 | 6.75 | tr. | 2.7 |
| 230 | 6.35 | tr. | 1.0 |
| 231 | 6.40 | tr. | 0.3 |
| 233 | 6.40 | tr. | 0.3 |
| 234 | 6.10 | .12 | 29.3 |
| 236 | 6.70 | .10 | 9.0 |
| 237 | 6.10 | tr. | 7.3 |
| 238 | 6.40 | .16 | 1.0 |

Table 4 Analyses of Lake and Swamp Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| Y500 | 7.50 | tr. | 0.7 |
| 501 | 7.25 | .10 | 1.3 |
| 502 | 5.15 | tr. | 1.3 |
| 503 | 5.90 | tr. | 2.7 |
| 505 | 6.40 | tr. | 2.7 |
| 506 | 6.30 | tr. | 1.3 |
| 507 | 6.95 | .11 | 0.7 |
| 508 | 7.40 | tr. | 0.7 |

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| AS | 8.35 | 1.32 | 16.3 |
| AT | 8.40 | .65 | 0.7 |
| AW | 9.30 | 3.60 | 13.7 |
| AX | 9.25 | 5.50 | 7.0 |
| C 9 | 7.45 | .20 | 167.0 |
| 11 | 7.70 | .28 | 2.0 |
| G 6 | 8.05 | .46 | 3.0 |
| K 6 | 6.15 | tr. | 2.0 |
| 7 | 6.25 | .13 | 1.0 |
| 14 | 7.90 | 2.60 | 39.3 |
| 18 | 7.50 | .75 | 3.3 |
| 19 | 7.60 | 1.05 | 3.3 |
| 20 | 8.00 | 1.50 | 9.0 |
| 405 | 6.40 | tr. | 2.0 |
| 411A | 6.40 | .12 | 0.7 |
| 411B | 7.25 | tr. | 3.3 |
| R220 | 6.80 | tr. | 2.0 |
| 347 | 7.20 | .17 | 121.0 |
| 435 | 7.20 | .20 | 0.3 |
| 441 | 7.30 | .12 | 0.3 |
| 446 | 7.15 | .21 | 0.3 |
| W122 | 8.65 | 1.10 | 5.0 |
| 128 | 7.90 | .75 | 63.3 |
| 129 | 7.40 | .51 | 0.6 |
| 2001 | 8.05 | 4.03 | 50.0 |
| 2002 | 10.00 | 168.00 | 1,570.0 |
| 2039 | 7.25 | .55 | 1.3 |
| Y 17 | 7.10 | .15 | 1.3 |
| 18 | 6.80 | tr. | 0.3 |
| 19 | 6.80 | tr. | 0.7 |
| 61 | 8.00 | .44 | 8.0 |
| 213 | 8.10 | .42 | 4.7 |
| 219 | 6.30 | tr. | 2.7 |
| 7-5 | 6.50 | .19 | 0.7 |
| 7-6 | 6.65 | .29 | 0.3 |
| 21-15 | 6.70 | .26 | 2.0 |

Table 4. Analyses of Lake and Swamp Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| 21-21 | 7.10 | .23 | 2.3 |
| 23-1 | 6.75 | .20 | 0.7 |
| 24-1 | 7.40 | .15 | 2.0 |
| 34-42 | 7.80 | 1.70 | 226.7 |
| U 1 | 10.10 | 42.00 | 1,313.0 |
| 2 | 8.25 | .24 | 40.0 |
| 17-22D | 6.40 | .16 | 0.3 |
| 17-24D | 6.20 | .17 | 0.7 |
| 16-202 | 7.10 | .15 | 0.3 |
| 16-214 | 6.20 | .21 | 0.3 |
| 18-19 | 7.50 | .19 | 3.0 |

Table 5. Analyses of Stream Waters

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| F 1 | 7.50 | .42 | 16.4 |
| 3 | 7.30 | .40 | 4.6 |
| 4 | 7.45 | .44 | 3.8 |
| 5 | 7.75 | .38 | 17.6 |
| 9 | 7.50 | .28 | 7.3 |
| K 4 | 6.75 | tr. | nil |
| 8 | 6.25 | .10 | 0.7 |
| 9 | 7.05 | tr. | 4.3 |
| 10 | 7.20 | .15 | 14.0 |
| 11 | 7.50 | .28 | 1.3 |
| 12 | 7.10 | .13 | 1.3 |
| 416 | 6.75 | tr. | 2.7 |
| 417 | 7.20 | .13 | 6.0 |
| 419 | 7.65 | .28 | 2.7 |
| 420 | 7.35 | .32 | 5.3 |
| 421 | 7.90 | .26 | 5.7 |
| 422 | 7.90 | .29 | 3.7 |
| 423 | 8.10 | .22 | 4.7 |
| P 10 | 7.45 | 2.05 | 5.7 |
| 11 | 8.20 | .92 | 8.0 |
| R 1 | 7.45 | .16 | 224.0 |
| 2 | 8.30 | .15 | 66.7 |
| 4 | 7.80 | .14 | 35.7 |
| 5 | 8.10 | .17 | 24.3 |
| 11 | 7.95 | .35 | 28.0 |
| 36 | 8.00 | .19 | 23.3 |
| 63 | 8.10 | .36 | 127.0 |
| 68 | 8.35 | .31 | 56.7 |
| 69 | 7.70 | .27 | 56.7 |
| 70 | 7.75 | .23 | 53.3 |
| 71 | 7.65 | .26 | 24.3 |
| 72 | 7.85 | .18 | 36.7 |
| 79 | 7.60 | .16 | 12.7 |
| 80 | 7.70 | .14 | 15.3 |
| 82 | 7.70 | .14 | 19.7 |
| 84 | 7.80 | .14 | 16.7 |
| 86 | 7.20 | .14 | 9.0 |
| 90 | 7.80 | .14 | 20.0 |
| 91 | 7.85 | .12 | 20.3 |
| 103 | 7.75 | .21 | 10.3 |
| 105 | 7.90 | .22 | 4.0 |
| 111B | 7.45 | .11 | 14.3 |
| 112B | 7.60 | .13 | 32.7 |
| 140 | 8.05 | .18 | 50.0 |
| 142 | 7.65 | .18 | 33.3 |

Table 5 Analyses of Stream Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| R 144 | 7.25 | tr. | 13.0 |
| 151 | 7.70 | .21 | 10.0 |
| 152 | 7.90 | .24 | 16.7 |
| 154 | 7.70 | .23 | 14.7 |
| 167 | 7.65 | .28 | 19.3 |
| 174 | 8.10 | .12 | 1.7 |
| 181 | 7.80 | .23 | 4.3 |
| 182 | 7.75 | .25 | 8.0 |
| 183 | 7.65 | .23 | 4.3 |
| 184 | 7.65 | .22 | 4.0 |
| 195 | 7.05 | .10 | 12.7 |
| 196 | 7.15 | tr. | 4.3 |
| 197 | 7.75 | tr. | 2.7 |
| 202 | 7.30 | tr. | 4.7 |
| 210 | 7.30 | .10 | 6.7 |
| 211 | 7.50 | .14 | 8.7 |
| 212 | 7.85 | .19 | 10.7 |
| 213 | 7.70 | .21 | 9.3 |
| 214A | 7.75 | .25 | 8.7 |
| 214B | 7.75 | .18 | 8.7 |
| 215 | 7.90 | .19 | 6.7 |
| 216A | 7.85 | .23 | 7.0 |
| 216B | 7.80 | .21 | 8.0 |
| 217 | 7.75 | tr. | 7.7 |
| 218 | 7.10 | .11 | 5.0 |
| 222 | 7.40 | .19 | 10.3 |
| 223 | 7.85 | .40 | 15.0 |
| 303 | 7.70 | .15 | 14.0 |
| 304 | 7.80 | .19 | 17.3 |
| 307 | 7.75 | .15 | 5.0 |
| 309 | 7.75 | .42 | 7.7 |
| 312 | 7.30 | .19 | 7.3 |
| 314 | 7.55 | .19 | 5.0 |
| 315 | 7.40 | .19 | 4.0 |
| 316 | 7.80 | .23 | 7.7 |
| 317 | 7.40 | .27 | 6.3 |
| 318 | 7.45 | .32 | 6.7 |
| 320 | 7.50 | .24 | 8.0 |
| 321 | 7.75 | .25 | 6.3 |
| 322 | 7.90 | .22 | 5.7 |
| 323 | 7.45 | .12 | 7.7 |
| 326 | 7.40 | tr. | 4.0 |
| 335 | 7.80 | .14 | 12.7 |
| 339 | 7.65 | .18 | 14.0 |

Table 5 Analyses of Stream Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| R340 | 7.70 | .18 | 30.7 |
| 341 | 7.75 | .17 | 15.0 |
| 343 | 7.70 | .22 | 33.3 |
| 346 | 7.70 | .59 | 13.7 |
| 351 | 7.60 | tr. | 0.3 |
| 354 | 7.40 | .10 | 1.3 |
| 356 | 7.00 | .12 | 9.3 |
| 358 | 7.20 | tr. | 5.7 |
| 362 | 7.65 | tr. | 3.0 |
| 365 | 7.75 | .10 | 5.3 |
| 367 | 7.90 | .11 | 6.0 |
| 368 | 7.90 | .15 | 6.0 |
| 371 | 7.60 | .14 | 3.0 |
| 372 | 7.55 | .16 | 4.7 |
| 386 | 7.70 | .17 | 3.7 |
| 387 | 7.65 | .11 | 4.0 |
| 388 | 7.55 | .16 | 4.7 |
| 389 | 7.85 | .13 | 7.0 |
| 390 | 7.80 | .14 | 12.0 |
| 396 | 7.45 | .20 | 11.3 |
| 398 | 7.80 | .19 | 10.0 |
| 399 | 7.90 | .19 | 12.0 |
| 400 | 7.80 | .21 | 11.7 |
| 401 | 7.90 | .21 | 14.0 |
| 402 | 7.60 | .24 | 15.7 |
| 404 | 7.90 | .48 | 16.0 |
| 409 | 8.20 | .25 | 13.7 |
| 410 | 8.15 | .27 | 14.7 |
| 411 | 8.20 | .16 | 10.0 |
| 412 | 8.05 | .37 | 9.7 |
| 413 | 8.10 | .17 | 8.7 |
| 414 | 7.70 | .24 | 8.7 |
| W105 | 8.10 | .28 | 12.7 |
| 109 | 7.75 | .16 | 24.7 |
| 110 | 8.10 | .43 | 9.3 |
| 114 | 7.95 | .47 | 13.0 |
| 115 | 7.90 | .59 | 24.3 |
| 117 | 7.45 | tr. | 1.0 |
| 118 | 7.75 | tr. | 0.7 |
| 119 | 7.85 | tr. | 2.0 |
| Y 1 | 7.30 | 1.20 | 6.7 |
| 8 | 7.50 | .25 | 0.3 |
| 33 | 7.65 | .27 | 8.7 |
| 34 | 8.20 | .49 | 11.3 |
| 37 | 7.70 | .12 | nil |

Table 5 Analyses of Stream Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| Y 38 | 8.05 | .27 | 1.7 |
| 39 | 8.00 | .42 | 9.7 |
| 40 | 7.75 | .15 | 3.0 |
| 41 | 7.45 | .13 | nil |
| 42 | 7.85 | .18 | 2.0 |
| 53 | 7.25 | .13 | nil |
| 55 | 7.95 | .67 | 5.3 |
| 56 | 7.75 | .85 | 7.3 |
| 65 | 7.50 | .12 | nil |
| 66 | 7.20 | .14 | 1.7 |
| 67 | 7.65 | .31 | 9.0 |
| 70 | 8.00 | .49 | 5.0 |
| 71 | 7.80 | .55 | 11.3 |
| 91 | 7.35 | .33 | 2.3 |
| 212 | 8.00 | .27 | 6.0 |
| 227 | 7.80 | .13 | 1.7 |

| | | | |
|---|---|---|---|
| A 78 | 7.45 | .25 | 2.3 |
| C 1 | 7.80 | .15 | 3.3 |
| 6 | 7.70 | .17 | 3.3 |
| 17 | 8.05 | .20 | 4.3 |
| 20 | 7.90 | .11 | 2.3 |
| M101 | 7.20 | .12 | 1.3 |
| R448 | 7.60 | .24 | 4.0 |
| 20-20 | 8.05 | .21 | 3.0 |
| 20-22S | 7.80 | .18 | 4.3 |
| 20-28 | 7.75 | .20 | 6.7 |
| 27-4 | 7.70 | .17 | 6.0 |
| 27-10 | 7.10 | .14 | 4.0 |
| 32-20 | 7.80 | .64 | 20.0 |
| 35-11 | 7.20 | .32 | 1.7 |
| 36-20 | 7.45 | .65 | 4.3 |
| 45-21 | 7.40 | .86 | 4.0 |
| 2-33 | 7.60 | .19 | 3.0 |
| 1-19 | 7.40 | .18 | 2.0 |
| 1-21 | 7.55 | .18 | 1.7 |
| 1-25 | 7.40 | .19 | 3.7 |
| R 66 | 7.75 | .79 | 56.7 |
| 168 | 7.90 | .21 | 5.0 |
| 313 | 7.25 | .19 | 7.0 |
| Y 13 | 5.95 | .19 | 3.0 |
| 43 | 7.45 | .14 | 0.6 |
| 44 | 6.80 | tr. | nil |
| 45 | 7.35 | tr. | 3.0 |
| 46 | 7.30 | tr. | 1.7 |
| 47 | 7.40 | .10 | 1.3 |
| 49 | 8.05 | .17 | 1.7 |
| 51 | 7.25 | tr. | 0.7 |

Table 5. Analyses of Stream Waters (cont'd.)

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| Y 52 | 7.65 | .15 | 2.7 |
| 52A | 7.10 | .14 | 1.0 |
| 54 | 7.70 | .14 | 0.3 |
| 72 | 7.65 | .61 | 8.7 |
| 201 | 8.05 | .55 | 2.7 |
| 202 | 8.10 | .63 | 2.0 |
| 203 | 7.65 | .52 | 9.7 |
| 205 | 7.95 | .48 | 5.0 |
| 206 | 8.00 | .51 | 8.0 |
| 209 | 7.20 | .29 | 4.3 |
| 210 | 7.80 | .30 | 2.7 |

Table 6. Analyses of Water from Seeps

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| K 13 | 8.00 | .30 | 16.3 |
| 424 | 7.85 | .60 | 14.0 |
| R 3 | 7.75 | .14 | 37.3 |
| 49 | 7.75 | 1.24 | 900.0 |
| 61 | 8.15 | .39 | 73.3 |
| 67 | 8.05 | .18 | 567.0 |
| 81 | 7.55 | .13 | 22.0 |
| 89 | 7.30 | .23 | 9.3 |
| 96 | 7.75 | .18 | 2.0 |
| 102 | 7.70 | .22 | 19.0 |
| 108 | 7.80 | .24 | 3.7 |
| 111A | 7.90 | .14 | 11.0 |
| 149 | 7.15 | .18 | 24.0 |
| 157C | 7.15 | .15 | 14.7 |
| 161 | 7.65 | .17 | 11.7 |
| 188 | 6.60 | tr. | 23.3 |
| 189 | 7.25 | tr. | 19.0 |
| 224 | 7.60 | .53 | 13.0 |
| 225 | 7.40 | .30 | 28.3 |
| 324 | 7.65 | .18 | 1.0 |
| 327 | 7.40 | tr. | 2.0 |
| 330 | 7.45 | .15 | 4.0 |
| 366 | 7.60 | .22 | 7.3 |
| 391 | 7.80 | .13 | 3.7 |
| W104 | 7.75 | .51 | 4.0 |
| Y 27 | 7.05 | tr. | 0.3 |
| 28 | 7.10 | .24 | nil |
| 32 | 6.90 | .32 | 2.3 |
| 36 | 7.70 | .17 | 1.3 |
| 239 | 7.00 | .15 | nil |
| 240 | 7.35 | .17 | 7.3 |

| | | | |
|---|---|---|---|
| A 80 | 7.80 | .27 | 18.3 |
| C 26A | 7.25 | .15 | 93.3 |
| R1019 | 7.90 | .15 | 10.0 |
| 7-13 | 7.70 | 1.00 | 12.7 |
| 7-14 | 7.35 | 1.12 | 12.0 |
| 14-21 | 7.50 | .24 | 31.3 |
| 14-22 | 7.50 | .18 | 8.7 |
| 14-37 | 7.80 | .35 | 8.0 |
| 14-40 | 8.00 | .30 | 10.3 |
| 21-2 | 7.45 | .17 | 16.7 |
| 27-15 | 7.80 | .67 | 5.7 |
| 37-23 | 7.20 | .23 | 1.0 |

Table 7. Analyses of Water Well Samples

| Sample # | pH | ppm F | ppb $U_3O_8$ |
|---|---|---|---|
| AN | 7.75 | 1.55 | 10.0 |
| W126 | 7.85 | .36 | 10.0 |
| 142 | 7.75 | .43 | 10.7 |
| 200 | 7.55 | .68 | 126.7 |
| 32-14 | 7.75 | 1.00 | 11.0 |

Table 8 Analyses of Lake and Swamp Sediments

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| R 6 | 0.7 | 38 | 1 | tr. |
| 14A 0" to 4" | 19.2 | 25 | 6 | tr. |
| 14B 4" to 12" | 7.3 | 16 | 5 | 40.0 |
| 14C 12" to 24" | 4.2 | 15 | 3 | tr. |
| 14D 24" plus | 33.3 | 47 | 7 | tr. |
| 16 | 8.8 | 16 | 2 | tr. |
| 17 | 39.3 | 27 | 1 | tr. |
| 19 | 24.4 | 20 | 5 | tr. |
| 20 | 20.8 | 22 | 6 | tr. |
| 21 | 3.0 | 52 | 2 | tr. |
| 23A 0" to 8" | 8.8 | 20 | 5 | tr. |
| 23B below 8" | 13.2 | 16 | 5 | tr. |
| 24 | 15.4 | 30 | 5 | 0.10 |
| 25 | 46.0 | 21 | 12 | tr. |
| 26 | 300.0 | 32 | 64 | tr. |
| 31 | 48.9 | 27 | 6 | tr. |
| 33 | 74.0 | 570 | 13 | tr. |
| 34 | 7.1 | 28 | 3 | tr. |
| 42 | 17.6 | 18 | 8 | tr. |
| 44 | 4.2 | 10 | 2 | tr. |
| 48 | 686.0 | 10 | 92 | tr. |
| 51 | 40.7 | 25 | 6 | tr. |
| 53 | 38.0 | 14 | 9 | tr. |
| 56 | 62.2 | 18 | 5 | tr. |
| 59 | 37.8 | 20 | 5 | tr. |
| 60 | 3.8 | 14 | 3 | 0.18 |
| 66 | 40.7 | 70 | 6 | tr. |
| 73 | 3.6 | 73 | 2 | tr. |
| 76 | 58.0 | 37 | 7 | tr. |
| 77 | 6.7 | 30 | 2 | tr. |
| 78 | 8.2 | 57 | 3 | tr. |
| 83 | 5.7 | 28 | 4 | tr. |
| 85 | 3.3 | 39 | 3 | tr. |
| 104 | 0.4 | 28 | 6 | tr. |
| 114 | 2.1 | 14 | 5 | tr. |
| 115 | 135.0 | 56 | 2 | tr. |
| 116A 0" to 6" | 3.0 | 19 | 3 | tr. |
| 116C 6" to 14" | 5.9 | 25 | 4 | tr. |
| 119 | 20.8 | 23 | 5 | tr. |
| 123 | 54.0 | 9 | 35 | tr. |
| 126 | 62.2 | 13 | 4 | tr. |
| 127 | 50.0 | 14 | 7 | tr. |
| 136 | 91.8 | 75 | 9 | tr. |
| 141A 0" to 8" | 6.2 | 22 | 3 | 0.36 |
| 141B below 8" | 6.7 | 27 | 2 | tr. |
| 143 | 2.4 | 28 | 4 | tr. |
| 146 | 273.0 | 177 | 6 | tr. |

Table 8 Analyses of Lake and Swamp Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| R170 | 4.4 | 47 | 4 | tr. |
| 176 | 3.5 | 21 | 4 | tr. |
| 177 | 5.7 | 31 | 10 | tr. |
| 180 | 4.8 | 26 | 9 | tr. |
| 193 | 8.8 | 47 | 2 | tr. |
| 194 | 20.0 | 38 | 2 | tr. |
| 201 | 6.5 | 37 | 3 | tr. |
| 221A below 24" | 6.7 | 160 | 2 | tr. |
| 221B 6" to 24" | 11.9 | 225 | 2 | tr. |
| 221C 0" to 6" | 16.6 | 225 | 2 | tr. |
| 328 | 1.1 | 38 | 4 | tr. |
| 329 | 6.5 | 43 | 12 | tr. |
| 331 | 0.7 | 49 | 3 | 0.10 |
| 332 | 1.2 | 72 | 4 | tr. |
| 333 | 1.1 | 54 | 2 | 0.11 |
| 336 | 19.7 | 39 | 6 | 0.11 |
| 338 | 5.7 | 16 | 2 | tr. |
| 342 | 27.3 | 25 | 7 | tr. |
| 344 | 20.4 | 46 | 5 | tr. |
| 349 | 9.7 | 27 | 3 | tr. |
| 350 | 50.0 | 195 | 2 | tr. |
| 355 | 9.9 | 31 | 1 | tr. |
| 363A | 1.8 | 124 | 2 | tr. |
| 364 | 17.2 | 186 | 2 | tr. |
| 369S | 10.0 | 110 | 2 | tr. |
| 370 | 4.6 | 33 | 4 | tr. |
| 375A below 6" | 3.3 | 18 | 1 | tr. |
| 375B 0" to 6" | 2.2 | 17 | 2 | tr. |
| 376A 0" to 6" | 1.8 | 18 | 3 | tr. |
| 376B below 6" | 1.8 | 14 | 3 | tr. |
| 377 | 1.0 | 47 | 1 | tr. |
| 378 | 1.0 | 30 | 2 | tr. |
| 385 | 3.0 | 22 | 1 | tr. |
| 392 | 18.2 | 20 | 2 | tr. |
| 393 | 1.4 | 18 | 2 | tr. |
| 394 | 6.5 | 25 | 1 | tr. |
| 395 | 4.6 | 15 | 2 | tr. |
| 403 | 3.4 | 14 | 3 | tr. |
| 405 | 17.6 | 33 | 3 | tr. |
| 406A 0" to 6" | 1.4 | 50 | 1 | tr. |
| 406B below 6" | 0.6 | 21 | 2 | tr. |
| 407 | 1.0 | 36 | 1 | tr. |
| 500 | 64.1 | 46 | 3 | tr. |
| 501 | 13.6 | 56 | 2 | tr. |

Table 8 Analyses of Lake and Swamp Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| F 6 | 2.2 | 11 | 3 | tr. |
| 7A | 3.0 | 8 | 5 | tr. |
| 7B | 11.0 | 46 | 4 | 0.14 |
| G 6 | 0.2 | 23 | 3 | tr. |
| K 1 | 1.8 | 22 | 2 | tr. |
| 2 | 7.0 | 42 | 1 | tr. |
| 5 | 5.2 | 15 | 2 | tr. |
| 200 | 2.0 | 26 | 3 | tr. |
| 201 | 6.4 | 36 | 2 | tr. |
| 202 | 16.8 | 18 | 4 | - |
| 203 | 4.8 | 40 | 2 | tr. |
| 400 | 1.0 | 24 | 4 | tr. |
| 401 | 1.0 | 34 | 4 | tr. |
| 406 | 5.8 | 22 | 4 | tr. |
| 408 | 11.8 | 67 | 3 | tr. |
| 409 | 3.8 | 82 | 3 | tr. |
| 413 | 11.1 | 25 | 2 | tr. |
| 414 | 4.8 | 36 | 3 | 0.28 |
| P 1 | 1.6 | 10 | 3 | tr. |
| 4A 0" to 6" | 4.4 | 6 | 7 | 1.80 |
| 4B below 6" | 5.4 | 5 | 5 | tr. |
| 5 | 0.6 | 22 | 4 | tr. |
| 8 | 1.4 | 48 | 5 | tr. |
| W 75 | 12.4 | 4 | 100 | 1.35 |
| 88 | 2.6 | 10 | 4 | tr. |
| 100 | 8.0 | 6 | 9 | 2.15 |
| 101A | 8.2 | 27 | 8 | tr. |
| 106 | 4.0 | 11 | 6 | 0.11 |
| 107 | 6.4 | 10 | 2 | tr. |
| 108 | 18.8 | 6 | 3 | tr. |
| 111A | 1.6 | 13 | 5 | tr. |
| 120 | 2.2 | 15 | 4 | tr. |
| 122 | 1.1 | 6 | 4 | tr. |
| 124 | 2.0 | 28 | 2 | tr. |
| Y 2 | 2.4 | 15 | 6 | tr. |
| 3 | 7.8 | 28 | 4 | tr. |
| 4 | 4.2 | 27 | 3 | tr. |
| 5 | 3.1 | 30 | 3 | tr. |
| 9 | 5.6 | 40 | 3 | - |
| 10 | 1.6 | 23 | 5 | - |
| 11 | 20.0 | 40 | 10 | tr. |
| 12 | 2.9 | 100 | 2 | tr. |
| 13 | 3.3 | 38 | 3 | tr. |
| 15 | 16.6 | 21 | 3 | tr. |
| 16 | 1.4 | 14 | 2 | tr. |
| 17 | 2.4 | 30 | 3 | tr. |
| 18 | 5.0 | 42 | 4 | tr. |

Table 8 Analyses of Lake and Swamp Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| G 2 | 1.8 | 50 | 5 | tr. |
| 7 | 0.2 | 32 | 10 | tr. |
| 8 | 5.2 | 60 | 5 | tr. |
| K 6 | 0.5 | 6 | 3 | tr. |
| 7 | 8.4 | 38 | 3 | tr. |
| 15 | 2.0 | 30 | 3 | tr. |
| 16 | 57.2 | 62 | 19 | tr. |
| 18 | 39.2 | 18 | 5 | tr. |
| 19 | 9.8 | 10 | 3 | tr. |
| 20 | 5.0 | 20 | 7 | tr. |
| 404 | 42.8 | 27 | 3 | tr. |
| 404S | 1.0 | 14 | 2 | tr. |
| 415 | 0.5 | 16 | 2 | tr. |
| P 3 | 1.8 | 28 | 2 | tr. |
| 6 | 1.2 | 18 | 2 | tr. |
| 7 | 2.6 | 18 | 5 | tr. |
| 9 | 0.8 | 21 | 3 | tr. |
| 10 | 0.4 | 14 | 4 | tr. |
| R 28A | 200.0 | 25 | 17 | tr. |
| 28B | 12.7 | 8 | 4 | tr. |
| 132B | 4.8 | 21 | 3 | tr. |
| 200 | 19.3 | 95 | 3 | |
| 220 | 86.9 | 61 | 2 | |
| 325 | 0.5 | 25 | 3 | |
| 337A | 12.3 | 17 | 5 | |
| 337B | 17.3 | 15 | 4 | |
| 337C | 5.1 | 10 | 2 | |
| 352 | 27.3 | 109 | 2 | |
| 352SA | 2.0 | 20 | 2 | |
| 352SB | 1.6 | 21 | 2 | |
| 352SC | 3.2 | 21 | 2 | |
| 357 | 1.8 | 10 | - | |
| W 1A | 1.8 | 6 | 8 | 3.60 |
| 1B | 1.2 | 9 | 7 | 2.80 |
| 1C | 1.3 | 19 | 6 | tr. |
| 102B | 0.2 | 9 | 5 | tr. |
| 111B | 1.4 | 9 | 3 | tr. |
| Y 14 | 1.4 | 50 | 5 | tr. |
| 219 | 1.6 | 14 | 2 | |
| 228 | 2.6 | 80 | 3 | tr. |
| 229P | 6.0 | 39 | 4 | tr. |
| 236 | 8.1 | 58 | 4 | |
| 237 | 0.2 | 25 | 4 | tr. |
| 500 | 2.2 | 29 | 2 | tr. |
| 501 | 1.6 | 32 | 2 | tr. |

Table 8 Analyses of Lake and Swamp Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| Y 20 | 5.0 | 33 | 3 | 0.22 |
| 21 | 3.6 | 36 | 3 | 0.38 |
| 23 | 1.4 | 8 | 3 | 0.11 |
| 24 | 5.8 | 52 | 8 | tr. |
| 25 | 1.2 | 14 | 3 | tr. |
| 29 | 14.0 | 40 | 2 | – |
| 30 | 4.2 | 68 | 4 | tr. |
| 31 | 1.8 | 12 | 3 | tr. |
| 48 | 2.8 | 16 | 14 | 0.35 |
| 58 | 1.2 | 36 | 2 | tr. |
| 62 | 2.0 | 16 | 2 | tr. |
| 68 | 8.7 | 5 | 8 | tr. |
| 69 | 2.2 | 28 | 11 | 0.11 |
| 73 | 25.4 | 7 | 19 | tr. |
| 90 | 1.2 | 62 | 4 | tr. |
| 204 | 4.0 | 23 | 5 | tr. |
| 207 | 14.4 | 20 | 4 | tr. |
| 208 | 4.7 | 37 | 3 | tr. |
| 211 | 1.8 | 48 | 4 | tr. |
| 214 | 0.7 | 12 | 3 | tr. |
| 215 | 14.9 | 113 | 1 | tr. |
| 218 | 9.6 | 40 | 3 | tr. |
| 220 | 7.8 | 37 | 2 | tr. |
| 229 | 4.4 | 41 | 2 | tr. |
| 230 | 1.1 | 15 | 3 | tr. |
| 231 | 1.4 | 21 | 3 | tr. |
| 233 | 1.0 | 20 | 3 | tr. |
| 234 | 1.1 | 15 | 4 | tr. |
| 238 | 23.6 | 50 | 3 | tr. |
| 502 | 2.6 | 18 | 2 | tr. |
| 503 | 2.0 | 15 | 1 | tr. |
| 505 | 6.0 | 66 | 4 | tr. |
| 506 | 4.4 | 17 | 3 | tr. |
| 507 | 3.0 | 13 | 2 | tr. |
| 508 | 5.8 | 34 | 42 | tr. |
| A 34 | 34.6 | 18 | 7 | |
| A 38-102 | 1.0 | 10 | 3 | |
| AS | 3.3 | 20 | 3 | |
| AT | 0.4 | 8 | 1 | |
| AW | 5.1 | 14 | 7 | |
| AX | 1.6 | 14 | 6 | |
| AYC | 4.3 | 18 | 6 | |
| AYW | 4.3 | 20 | 5 | |
| AYE | 2.4 | 12 | 7 | |

Table 8 Analyses of Lake and Swamp Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| B-1 | 23.6 | 9 | 5 | |
| B-5 | 36.4 | 6 | 5 | |
| BASE | 3.4 | 26 | 8 | |
| B+1 | 1.3 | 380 | 68 | |
| B+2 | 3.2 | 19 | 5 | |
| B+3 | 3.0 | 18 | 3 | |
| B+4 | 8.8 | 42 | 3 | |
| B+5 | 14.2 | 51 | 4 | |
| C-2 | 608.0 | 37 | 3 | |
| C-9A | 608.0 | 75 | 5 | |
| C-9B | 165.0 | 48 | 1 | |
| C-10 | 78.6 | 43 | 10 | |
| C-13 | 1.0 | 38 | 1 | |
| C-24 | 0.7 | 36 | 4 | |
| Q 24 | 10.6 | 61 | 5 | |
| R 421 | 3.3 | 40 | 2 | |
| 425 | 5.4 | 51 | 5 | |
| 426 | 4.2 | 29 | 4 | |
| 427 | 2.7 | 31 | 2 | |
| 435 | 6.2 | 174 | 12 | |
| 437 | 2.0 | 43 | 2 | |
| 440 | 10.1 | 114 | 5 | |
| 441 | 16.8 | 138 | 9 | |
| 442 | 6.3 | 54 | 2 | |
| 446 | 10.1 | 22 | 4 | |
| 451 | 1.6 | 34 | 2 | |
| 452 | 11.9 | 79 | 4 | |
| 1001 | 21.3 | 34 | 6 | |
| 1014 | 9.1 | 77 | 2 | |
| W 127 | 13.3 | 14 | 5 | |
| 128 | 61.7 | 40 | 14 | |
| 129 | 24.4 | 22 | 16 | |
| 131 | 0.4 | 27 | 4 | |
| 133 | 2.2 | 155 | 3 | |
| 136 | 3.8 | 43 | 5 | |
| 137 | 1.0 | 18 | 4 | |
| 138 | 1.0 | 25 | 3 | |
| 139 | 0.8 | 25 | 2 | |
| 140 | 5.4 | 77 | 4 | |
| 2001 | 4.2 | 20 | 5 | |
| 2002 | 2.6 | 5 | 2 | |
| 2004 | 0.6 | 14 | 3 | |
| 2007 | 3.0 | 12 | 2 | |
| 2008 | 9.4 | 18 | 3 | |
| 2009 | 9.0 | 18 | 5 | |

Table 8. Analyses of Lake and Swamp Sediments (cont'd.)

| Sample # | | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|---|
| W2015A | 0" to 6" | 81.1 | 1 | 34 | |
| 2015B | below 6" | 10.0 | 5 | 17 | |
| 2021 | | 1.4 | 10 | 2 | |
| 2024 | | 1.2 | 18 | 4 | |
| 2027 | | 4.6 | 31 | 4 | |
| 2031 | | 1.4 | 12 | 2 | |
| 2033 | | 3.8 | 25 | 2 | |
| 2035 | | 4.2 | 22 | 4 | |
| 2036 | | 4.2 | 22 | 4 | |
| 2038 | | 15.4 | 10 | 5 | |
| 2039 | | 27.3 | 10 | 4 | |
| 2056 | | 0.7 | 10 | 5 | |
| 2061 | | 2.4 | 14 | 5 | |
| 2062 | | 2.0 | 12 | 4 | |
| 2-5 | | 1.1 | 18 | 2 | |
| 2-11 | | 1.3 | 11 | 2 | |
| 2-25 | | 3.3 | 25 | 3 | |
| 2-37 | | 0.6 | 20 | 2 | |
| 3-1 | | 58.5 | 4 | 16 | |
| 7-3 | | 0.7 | 14 | 2 | |
| 7-5 | | 2.4 | 25 | 4 | |
| 7-6 | | 2.9 | 22 | 3 | |
| 7-12S | | 3.3 | 16 | 2 | |
| 7-19-2 | | 1.8 | 13 | 3 | |
| 7-19-3 | | 1.1 | 12 | 2 | |
| 7-19-6 | | 1.6 | 10 | 1 | |
| 7-19-7 | | 1.1 | 14 | 3 | |
| 7-19-9 | | 2.4 | 26 | 2 | |
| 11-6 | | 11.8 | 18 | 2 | |
| 11-16 | | 4.4 | 26 | 4 | |
| 11-18 | | 32.7 | 29 | 2 | |
| 14-38 | | 20.0 | 56 | 3 | |
| 20-19A | | 0.8 | 13 | 1 | |
| 21-15 | | 6.7 | 53 | 4 | |
| 21-21 | | 39.6 | 12 | 3 | |
| 21-25 | | 8.3 | 29 | 2 | |
| 21-27 | | 1.1 | 21 | 4 | |
| 21-31 | | 9.5 | 57 | 2 | |
| 23-1 | | 1.8 | 27 | 2 | |
| 23-2 | | 6.7 | 31 | 2 | |
| 23-3 | | 21.8 | 100 | 3 | |
| 24-1 | | 6.7 | 20 | 4 | |
| 24-8 | | 34.5 | 83 | 2 | |
| 32-13 | | 1.0 | 16 | 2 | |
| 32-14 | | 0.8 | 12 | 3 | |
| 32-15 | | 1.0 | 16 | 2 | |
| 32-16 | | 0.8 | 12 | 2 | |

Table 8 Analyses of Lake and Swamp Sediments (cont'd.)

| Sample # | | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|---|
| 32-17 | | 0.8 | 12 | 4 | |
| 32-18 | | 4.4 | 14 | 3 | |
| 32-19 | | 2.0 | 22 | 3 | |
| 33-14 | | 11.5 | 87 | 3 | |
| 33-16 | | 6.3 | 48 | 2 | |
| 36-12A | 0" to 6" | 12.3 | 13 | 3 | |
| 36-12B | below 6" | 15.3 | 18 | 1 | |
| 36-14A | 0" to 4" | 47.2 | 35 | 3 | |
| 36-14B | below 4" | 5.3 | 112 | 2 | |
| 36-20 | | 2.0 | 17 | 4 | |
| 45-34 | | 0.2 | 10 | 3 | |
| U 1 | | 2.2 | 11 | 2 | |
| 2 | | 1.6 | 16 | 2 | |
| 16-6 | | 3.3 | 23 | 3 | |
| 16-18 | | 5.4 | 25 | 2 | |
| 16-20 | | 2.9 | 24 | 1 | |
| 16-22 | | 3.8 | 25 | 4 | |
| 16-202 | | 3.3 | 20 | 3 | |
| 16-214 | | 7.5 | 32 | 3 | |
| 16-216 | | 11.1 | 24 | 5 | |
| 17-22D | | 3.6 | 16 | 4 | |
| 17-24D | | 8.6 | 25 | 5 | |
| 17-57 | | 4.2 | 19 | 4 | |
| 17-63 | | 4.6 | 23 | 3 | |
| 17-65 | | 4.8 | 35 | 2 | |
| 19-5 | | 6.7 | 77 | 4 | |
| 19-9 | | 6.3 | 19 | 2 | |
| 19-20 | | 30.9 | 67 | 2 | |
| 19-30 | | 8.7 | 67 | 2 | |
| 21-33 | | 54.3 | 24 | 6 | |
| 22-3 | | 80.4 | 123 | 4 | |
| 22-7 | | 18.2 | 71 | 3 | |
| 23-23 | | 71.7 | 60 | 3 | |
| 34-42 | | 9.2 | 38 | 4 | |
| 37-10 | | 19.2 | 49 | 2 | |
| 37-21 | | 2.6 | 21 | 2 | |
| 37-26 | | 4.6 | 46 | 2 | |
| 38-1 | | 9.8 | 41 | 2 | |
| 44-20A | 0" to 6" | 5.4 | 78 | 4 | |
| 44-20B | 6" to 12" | 2.4 | 75 | 4 | |
| 44-20C | below 12" | 3.3 | 21 | 6 | |
| 46-3 | | 2.9 | 17 | 3 | |
| 46-4 | | 3.1 | 39 | 5 | |
| 46-9 | | 1.6 | 23 | 4 | |
| 46-16 | | 2.0 | 25 | 4 | |

Table 9 Analyses of Stream Sediments

| Sample # | | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|---|
| F 1 | | 5.2 | 22 | 3 | 0.41 |
| 2 | | 3.3 | 50 | 5 | tr. |
| 3 | | 6.5 | 35 | 2 | tr. |
| 4 | | 17.3 | 27 | 7 | tr. |
| 9 | | 3.0 | 26 | 1 | tr. |
| K 3 | | 13.7 | 38 | 2 | tr. |
| 4 | | 10.6 | 16 | 3 | tr. |
| 8 | | 4.4 | 26 | 2 | tr. |
| 9 | | 18.2 | 32 | 3 | tr. |
| 10 | | 23.6 | 36 | 3 | tr. |
| 11 | | 4.4 | 18 | 4 | tr. |
| 12 | | 9.0 | 32 | 3 | tr. |
| 410 | | 4.8 | 21 | 2 | tr. |
| 411 | | 3.8 | 11 | 2 | tr. |
| 417 | | 43.4 | 38 | 5 | tr. |
| 418 | | 7.5 | 20 | 3 | 0.12 |
| 419 | | 14.1 | 18 | 4 | tr. |
| 420 | | 12.1 | 26 | 2 | tr. |
| 421 | | 5.7 | 17 | 1 | tr. |
| 422 | | 5.1 | 20 | 1 | tr. |
| 423 | | 2.2 | 16 | 4 | tr. |
| R 1 | | 0.0 | 14 | 3 | tr. |
| 2 | | 0.2 | 19 | 3 | tr. |
| 5 | | 0.7 | 22 | 5 | tr. |
| 7A | 0" to 12" | 8.6 | 29 | 17 | tr. |
| 7B | below 12" | 3.3 | 7 | 8 | tr. |
| 8 | | 0.2 | 420 | 7 | tr. |
| 9 | | 1.6 | 201 | 9 | 60.00 |
| 15 | | 46.7 | 57 | 4 | tr. |
| 18 | | 6.3 | 27 | 2 | tr. |
| 22 | | 1.1 | 49 | 2 | tr. |
| 27 | | 12.7 | 91 | 2 | tr. |
| 29 | | 2.0 | 25 | 3 | tr. |
| 30 | | 4.5 | 56 | 0 | tr. |
| 36 | | 6.7 | 30 | 3 | tr. |
| 37 | | 13.2 | 38 | 2 | tr. |
| 38A | 0" to 1" | 19.2 | 38 | 2 | tr. |
| 38B | 1" to 10" | 28.9 | 46 | 0 | tr. |
| 38C | below 10" | 0.7 | 21 | 0 | tr. |
| 39 | | 4.8 | 19 | 4 | tr. |
| 40 | | 28.9 | 21 | 6 | tr. |
| 41 | | 8.0 | 17 | 5 | tr. |
| 43 | | 18.8 | 20 | 5 | tr. |
| 45A | 0" to 14" | 18.1 | 28 | 3 | tr. |
| 45B | below 14" | 14.9 | 16 | 4 | tr. |

Table 9 Analyses of Stream Sediments (cont'd.)

| Sample # | | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|---|
| R 46 | | 16.7 | 25 | 5 | tr. |
| 47 | | 24.4 | 18 | 5 | tr. |
| 49 | | 87.8 | 15 | 11 | 0.26 |
| 50A | 0" to 12" | 70.0 | 21 | 8 | tr. |
| 50B | below 12" | 46.0 | 17 | 5 | tr. |
| 52 | | 35.6 | 21 | 6 | 0.90 |
| 54 | | 44.4 | 21 | 5 | tr. |
| 55 | | 7.5 | 27 | 3 | tr. |
| 57 | | 12.4 | 16 | 2 | tr. |
| 58 | | 46.7 | 19 | 7 | tr. |
| 62 | | 4.9 | 20 | 2 | tr. |
| 63 | | 4.2 | 17 | 3 | tr. |
| 64 | | 4.9 | 17 | 3 | tr. |
| 65 | | 42.9 | 32 | 9 | tr. |
| 68 | | 10.2 | 21 | 12 | tr. |
| 69 | | 3.3 | 27 | 3 | tr. |
| 70 | | 13.2 | 36 | 6 | tr. |
| 72 | | 7.3 | 23 | 4 | 0.26 |
| 74 | | 8.5 | 46 | 3 | tr. |
| 75 | | 1.1 | 23 | 2 | tr. |
| 79 | | 8.3 | 38 | 2 | tr. |
| 80 | | 1.6 | 31 | 2 | tr. |
| 82 | | 2.1 | 35 | 3 | tr. |
| 84 | | 3.2 | 43 | 3 | tr. |
| 86 | | 3.0 | 36 | 3 | tr. |
| 90 | | 2.1 | 27 | 4 | tr. |
| 91 | | 5.5 | 37 | 4 | tr. |
| 92 | | 1.6 | 27 | 3 | tr. |
| 93 | | 2.0 | 39 | 2 | tr. |
| 94 | | 2.9 | 38 | 3 | tr. |
| 95 | | 1.1 | 31 | 3 | tr. |
| 97 | | 0.0 | 51 | 5 | tr. |
| 98 | | 0.2 | 43 | 3 | tr. |
| 99 | | 2.0 | 28 | 3 | tr. |
| 101A | 0" to 16" | 3.8 | 29 | 5 | tr. |
| 101B | below 16" | 5.8 | 70 | 7 | tr. |
| 103 | | 1.6 | 23 | 4 | tr. |
| 105 | | 0.7 | 21 | 4 | tr. |
| 107 | | 0.7 | 39 | 2 | tr. |
| 110 | | 1.8 | 25 | 3 | tr. |
| 111B | below 3" | 2.4 | 40 | 4 | tr. |
| 112A | 0" to 4" | 1.6 | 20 | 2 | tr. |
| 112B | 0" to 4" | 0.2 | 30 | 0 | tr. |
| 112C | 0" to 4" | 2.0 | 77 | 3 | tr. |
| 118 | | 1.8 | 23 | 4 | tr. |
| 120 | | 40.7 | 22 | 5 | tr. |
| 121 | | 113.0 | 28 | 8 | tr. |
| 122 | | 55.7 | 14 | 9 | tr. |

Table 9 Analyses of Stream Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| R124 | 68.6 | 22 | 8 | tr. |
| 125 | 91.5 | 26 | 7 | tr. |
| 128 | 75.0 | 25 | 6 | tr. |
| 129 | 43.3 | 20 | 6 | tr. |
| 133 | 9.4 | 47 | 4 | tr. |
| 134 | 12.6 | 26 | 3 | tr. |
| 135 | 46.0 | 48 | 10 | tr. |
| 137 | 20.9 | 184 | 4 | tr. |
| 138 | 10.4 | 27 | 3 | tr. |
| 139 | 6.2 | 51 | 4 | tr. |
| 140 | 3.0 | 23 | 3 | tr. |
| 142 | 6.0 | 51 | 4 | tr. |
| 144 | 10.7 | 54 | 3 | tr. |
| 145 | 2.4 | 23 | 2 | tr. |
| 150 | 0.9 | 28 | 2 | tr. |
| 151 | 2.0 | 29 | 4 | tr. |
| 152 | 3.1 | 22 | 5 | tr. |
| 153 | 4.1 | 11 | 4 | tr. |
| 155 | 0.7 | 27 | 3 | tr. |
| 156 | 9.8 | 22 | 3 | tr. |
| 157 | 2.4 | 35 | 3 | tr. |
| 158 | 0.7 | 28 | 2 | tr. |
| 159 | 0.2 | 51 | 3 | tr. |
| 160 | 2.0 | 48 | 2 | tr. |
| 162 | 0.7 | 40 | 2 | tr. |
| 163 | 0.2 | 30 | 3 | tr. |
| 164 | 1.1 | 39 | 3 | tr. |
| 165 | 1.3 | 31 | 3 | tr. |
| 166 | 0.5 | 49 | 1 | tr. |
| 167 | 0.5 | 34 | 5 | 0.26 |
| 168 | 2.0 | 120 | 3 | tr. |
| 169 | 13.9 | 22 | 3 | tr. |
| 171 | 1.6 | 87 | 2 | 0.15 |
| 172 | 1.3 | 39 | 3 | tr. |
| 173 | 2.5 | 57 | 2 | tr. |
| 178 | 2.9 | 26 | 5 | tr. |
| 181 | 0.7 | 23 | 2 | tr. |
| 182 | 1.4 | 22 | 2 | tr. |
| 183 | 0.9 | 28 | 3 | tr. |
| 184 | 0.7 | 23 | 3 | tr. |
| 190 | 3.3 | 14 | 2 | tr. |
| 195 | 9.0 | 40 | 12 | tr. |
| 196 | 11.9 | 35 | 3 | tr. |
| 197 | 2.4 | 30 | 3 | tr. |
| 198 | 2.0 | 35 | 2 | tr. |

Table 9 Analyses of Stream Sediments (cont'd.)

| Sample # | | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|---|
| R200 | | 19.3 | 95 | 3 | tr. |
| 202 | | 7.4 | 35 | 2 | tr. |
| 203 | | 7.9 | 89 | 2 | tr. |
| 204 | | 9.0 | 240 | 2 | tr. |
| 205 | | 2.6 | 19 | 2 | tr. |
| 206 | | 2.6 | 39 | 0 | tr. |
| 207 | | 5.7 | 54 | 2 | tr. |
| 210 | | 3.3 | 22 | 2 | 0.11 |
| 211 | | 2.4 | 20 | 0 | tr. |
| 212 | | 1.6 | 25 | 2 | tr. |
| 213A | | 2.4 | 18 | 3 | tr. |
| 214A | 0" to 6" | 2.0 | 21 | 2 | 0.12 |
| 214B | 0" to 6" | 1.6 | 21 | 2 | tr. |
| 215 | | 1.6 | 15 | 3 | tr. |
| 216A | 0" to 6" | 1.6 | 17 | 2 | tr. |
| 216B | 0" to 6" | 1.6 | 21 | 2 | tr. |
| 217 | | 1.6 | 29 | 2 | tr. |
| 218 | | 3.8 | 30 | 2 | tr. |
| 222 | | 2.9 | 43 | 2 | tr. |
| 223 | | 1.6 | 47 | 2 | - |
| 301 | | 2.4 | 31 | 3 | tr. |
| 302 | | 0.2 | 43 | 4 | tr. |
| 303 | | 1.6 | 22 | 2 | tr. |
| 304 | | 4.2 | 20 | 3 | tr. |
| 305 | | 0.2 | 48 | 2 | tr. |
| 306 | | 6.2 | 31 | 3 | tr. |
| 307 | | 8.0 | 39 | 3 | tr. |
| 308 | | 6.2 | 35 | 2 | tr. |
| 309 | | 2.9 | 174 | 2 | tr. |
| 310 | | 1.6 | 94 | 1 | tr. |
| 311 | | 6.6 | 36 | 2 | tr. |
| 314 | | 3.3 | 37 | 2 | tr. |
| 315 | | 2.0 | 35 | 4 | tr. |
| 316 | | 2.0 | 43 | 3 | tr. |
| 317 | | 2.7 | 31 | 2 | tr. |
| 318 | | 2.6 | 34 | 2 | tr. |
| 319 | | 1.6 | 29 | 3 | - |
| 320 | | 2.0 | 34 | 3 | tr. |
| 321 | | 1.6 | 29 | 2 | tr. |
| 323 | | 1.0 | 33 | 2 | tr. |
| 325 | | 0.5 | 25 | 3 | tr. |
| 334 | | 1.1 | 51 | 2 | tr. |
| 335 | | 3.8 | 23 | 3 | tr. |
| 339 | | 1.3 | 22 | 4 | tr. |
| 340 | | 3.3 | 28 | 4 | tr. |
| 341 | | 6.8 | 23 | 5 | tr. |

Table 9 Analyses of Stream Sediments (cont'd.)

| Sample # | | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|---|
| R347A | 0" to 6" | 2.5 | 26 | 3 | tr. |
| 347B | 6" to 24" | 2.7 | 22 | 2 | tr. |
| 347C | below 24" | 2.4 | 20 | 3 | tr. |
| 351 | | 8.1 | 35 | 3 | - |
| 354 | | 6.5 | 22 | 3 | tr. |
| 356 | | 80.7 | 68 | 3 | tr. |
| 358 | | 7.5 | 35 | 3 | tr. |
| 359 | | 5.7 | 31 | 2 | tr. |
| 362 | | 1.2 | 93 | 2 | tr. |
| 365 | | 1.4 | 23 | 2 | tr. |
| 367 | | 1.8 | 22 | 3 | tr. |
| 368 | | 1.8 | 33 | 1 | tr. |
| 371 | | 2.7 | 70 | 2 | tr. |
| 372 | | 1.4 | 28 | 4 | tr. |
| 382 | | 2.4 | 63 | 2 | 0.59 |
| 386 | | 1.0 | 73 | 1 | tr. |
| 387 | | 5.4 | 38 | 1 | 0.28 |
| 388 | | 3.4 | 57 | 2 | 0.13 |
| 389 | | 3.4 | 22 | 2 | tr. |
| 390 | | 1.8 | 20 | 2 | tr. |
| 398 | | 1.0 | 15 | 2 | tr. |
| 399 | | 1.4 | 23 | 3 | tr. |
| 400 | | 1.4 | 22 | 2 | tr. |
| 401 | | 1.4 | 33 | 2 | tr. |
| 402 | | 1.8 | 43 | 1 | tr. |
| 404 | | 1.8 | 23 | 2 | tr. |
| 408 | | 0.6 | 25 | 3 | tr. |
| 409 | | 1.4 | 21 | 3 | tr. |
| 410 | | 1.4 | 22 | 4 | tr. |
| 411 | | 1.2 | 18 | 4 | tr. |
| 412 | | 1.4 | 16 | 2 | tr. |
| 413 | | 0.8 | 12 | 3 | tr. |
| 414 | | 1.0 | 20 | 3 | tr. |
| W 74 | | 1.2 | 17 | 5 | 0.12 |
| 103 | | 1.2 | 18 | 3 | tr. |
| 105 | | 1.4 | 20 | 2 | 0.45 |
| 109 | | 1.4 | 10 | 2 | tr. |
| 110 | | 0.8 | 22 | 2 | 0.26 |
| 112 | | 2.2 | 10 | 4 | 0.83 |
| 113 | | 1.0 | 4 | 2 | 4.80 |
| 114 | | 3.0 | 32 | 4 | tr. |
| 115 | | 1.6 | 14 | 4 | tr. |
| 116 | | 2.2 | 36 | 5 | tr. |
| 117 | | 0.3 | 27 | 2 | tr. |
| 118 | | 1.8 | 60 | 3 | tr. |
| 119 | | 2.4 | 18 | 3 | tr. |

Table 9 Analyses of Stream Sediments (cont'd.)

| Sample # | | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|---|
| W121A | 0" to 12" | 1.0 | 30 | 9 | 0.20 |
| 121B | below 12" | 1.0 | 10 | 7 | tr. |
| 123 | | 0.2 | 22 | 5 | tr. |
| 125 | | 1.8 | 44 | 4 | tr. |
| Y 1 | | 2.9 | 14 | 5 | tr. |
| 7 | | 3.3 | 57 | 3 | tr. |
| 8 | | 3.1 | 17 | 2 | tr. |
| 19 | | 3.2 | 39 | 3 | tr. |
| 22 | | 4.2 | 15 | 4 | tr. |
| 26 | | 1.6 | 16 | 3 | tr. |
| 33 | | 6.8 | 24 | 4 | tr. |
| 34 | | 0.8 | 20 | 4 | tr. |
| 37 | | 1.4 | 28 | 2 | tr. |
| 38 | | 1.2 | 18 | 1 | tr. |
| 39 | | 1.4 | 18 | 3 | tr. |
| 40 | | 3.0 | 52 | 2 | tr. |
| 41 | | 1.6 | 12 | 3 | tr. |
| 42 | | 1.2 | 20 | 2 | tr. |
| 43 | | 0.6 | 24 | 3 | tr. |
| 44 | | 0.7 | 20 | 5 | tr. |
| 45 | | 0.6 | 24 | 2 | tr. |
| 46 | | 1.0 | 11 | 3 | tr. |
| 49 | | 1.8 | 26 | 6 | tr. |
| 51 | | 0.6 | 18 | 2 | tr. |
| 53 | | 2.5 | 25 | 2 | tr. |
| 55 | | 1.2 | 30 | 3 | tr. |
| 56 | | 5.9 | 44 | 4 | tr. |
| 57A | 0" to 14" | 4.8 | 84 | 2 | tr. |
| 59 | | 4.8 | 42 | 3 | tr. |
| 60 | | 1.6 | 28 | 4 | tr. |
| 61 | | 6.5 | 7 | 3 | 0.15 |
| 65 | | 13.2 | 26 | 2 | 0.51 |
| 66 | | 18.3 | 20 | 1 | 0.10 |
| 67 | | 0.8 | 8 | 2 | – |
| 70 | | 0.7 | 5 | 2 | 0.38 |
| 72 | | 1.4 | 8 | 2 | tr. |
| 91 | | 3.0 | 38 | 2 | tr. |
| 201 | | 22.8 | 50 | 4 | tr. |
| 202 | | 1.6 | 40 | 2 | – |
| 203 | | 6.7 | 87 | 3 | tr. |
| 205 | | 3.3 | 23 | 2 | tr. |
| 206 | | 7.8 | 42 | 4 | tr. |
| 209 | | 43.1 | 75 | 5 | tr. |
| 210 | | 8.9 | 115 | 2 | tr. |
| 212 | | 2.4 | 52 | 2 | tr. |
| 213 | | 3.8 | 30 | 2 | tr. |
| 216 | | 6.0 | 23 | 3 | tr. |

Table 9 Analyses of Stream Sediments (cont'd.)

| Sample # | | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|---|
| 217 | | 10.0 | 120 | 3 | tr. |
| 218 | | 9.6 | 40 | 3 | tr. |
| 232 | | 9.0 | 110 | 4 | tr. |
| 235 | | 12.4 | 98 | 3 | tr. |
| 241 | | 7.2 | 134 | 3 | tr. |

| | | | | |
|---|---|---|---|---|
| A 2 | | 20.0 | 47 | 6 |
| 75 | | 0.4 | 16 | 2 |
| 77 | | 1.8 | 142 | 2 |
| 78 | | 31.0 | 56 | 2 |
| 79 | | 0.6 | 37 | 3 |
| B 3 | | 2.0 | 6 | 3 |
| 4 | | 4.2 | 6 | 2 |
| C 4 | | 2.0 | 87 | 2 |
| 5 | | 4.8 | 34 | 3 |
| 6 | | 4.0 | 25 | 2 |
| 7 | | 1.0 | 16 | 2 |
| 8 | | 7.6 | 22 | 2 |
| 12 | | 6.6 | 18 | 1 |
| 14 | | 0.4 | 51 | 2 |
| 15 | | 1.8 | 23 | 2 |
| 17 | | 2.4 | 22 | 3 |
| 19 | | 1.6 | 64 | 2 |
| 20 | | 2.0 | 30 | 2 |
| 22 | | 8.2 | 31 | 3 |
| Q 25 | | 10.6 | 100 | 8 |
| M 3 | | 1.6 | 27 | 2 |
| 5 | | 2.2 | 22 | 2 |
| 15 | | 0.7 | 26 | 2 |
| 16 | | 0.2 | 19 | 2 |
| 101 | | 8.8 | 25 | 2 |
| 102 | | 12.4 | 20 | 1 |
| R 422 | | 1.3 | 35 | 2 |
| 431 | | 0.7 | 77 | 2 |
| 434 | | 0.9 | 52 | 2 |
| 448 | | 2.0 | 39 | 4 |
| 1002 | | 2.0 | 38 | 4 |
| W 130 | | 1.1 | 20 | 4 |
| 132 | | 0.7 | 38 | 3 |
| 134 | | 0.6 | 18 | 2 |
| 135 | | 0.8 | 36 | 4 |
| 141A | 0" to 6" | 7.8 | 48 | 6 |
| 141B | 6" to 12" | 3.0 | 27 | 4 |
| 141C | below 12" | 1.8 | 31 | 2 |

Table 9 Analyses of Stream Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| W2012 | 1.4 | 16 | 3 | |
| 2013 | 2.6 | 16 | 3 | |
| 2016 | 14.6 | 25 | 7 | |
| 2026 | 2.2 | 16 | 2 | |
| 2-9 | 5.4 | 70 | 2 | |
| 2-27 | 0.7 | 13 | 2 | |
| 2-29 | 5.0 | 54 | 3 | |
| 2-47 | 0.6 | 62 | 2 | |
| 7-9 | 1.1 | 16 | 1 | |
| 7-10 | 5.9 | 64 | 3 | |
| 11-3 | 0.8 | 12 | 4 | |
| 11-5 | 0.6 | 13 | 3 | |
| 11-12 | 50.8 | 64 | 5 | |
| 11-14 | 4.0 | 26 | 4 | |
| 11-20 | 3.2 | 23 | 2 | |
| 13-1 | 0.6 | 12 | 4 | |
| 14-10 | 2.4 | 43 | 3 | |
| 14-11 | 0.8 | 29 | 2 | |
| 17-1 | 3.0 | 46 | 3 | |
| 17-18 | 4.0 | 18 | 2 | |
| 17-21 | 59.6 | 77 | 3 | |
| 20-20 | 1.0 | 77 | 2 | |
| 20-22S | 0.7 | 27 | 2 | |
| 20-28 | 2.0 | 75 | 2 | |
| 21-4 | 1.3 | 34 | 3 | |
| 21-6 | 2.0 | 24 | 2 | |
| 21-8 | 1.1 | 69 | 1 | |
| 21-29 | 12.3 | 67 | 4 | |
| 23-4 | 88.7 | 51 | 1 | |
| 24-2 | 1.1 | 17 | 1 | |
| 24-4 | 1.6 | 16 | 3 | |
| 24-6 | 0.9 | 15 | 2 | |
| 24-10 | 20.0 | 36 | 2 | |
| 24-12 | 12.5 | 40 | 2 | |
| 27-2 | 34.6 | 43 | 2 | |
| 27-4 | 2.6 | 38 | 2 | |
| 27-5B | 8.4 | 48 | 1 | |
| 27-8 | 5.2 | 22 | 3 | |
| 27-13 | 6.7 | 38 | 3 | |
| 33-6 | 1.6 | 26 | 2 | |
| 33-8 | 8.1 | 43 | 2 | |
| 33-10 | 6.1 | 33 | 4 | |
| 33-12 | 2.9 | 25 | 2 | |
| 35-3 | 2.9 | 20 | 2 | |
| 35-11 | 5.0 | 50 | 3 | |
| 35-13 | 4.6 | 42 | 2 | |
| 36-26 | 2.0 | 18 | 3 | |
| 45-20 | 2.8 | 43 | 3 | |
| 45-21 | 74.6 | 37 | 11 | |

Table 9 Analyses of Stream Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| 1-9 | 3.8 | 45 | 4 | |
| 1-17 | 1.4 | 15 | 3 | |
| 1-19 | 3.3 | 22 | 3 | |
| 1-25S | 2.0 | 58 | 2 | |
| 13-8 | 2.4 | 20 | 4 | |
| 17-8D | 14.6 | 30 | 2 | |
| 18-17 | 3.3 | 14 | 4 | |
| 18-21 | 2.4 | 19 | 4 | |
| 18-23 | 2.4 | 18 | 4 | |
| 19-2 | 5.0 | 18 | 4 | |
| 19-15 | 71.7 | 45 | 2 | |
| 19-17 | 27.3 | 29 | 3 | |
| 20-43 | 9.9 | 36 | 3 | |
| 24-7 | 4.6 | 16 | 3 | |
| 24-17 | 2.4 | 68 | 3 | |
| 24-19 | 4.0 | 33 | 2 | |
| 29-10 | 1.1 | 20 | 2 | |
| 34-44 | 3.6 | 64 | 1 | |
| 37-31 | 9.6 | 52 | 3 | |
| 37-33 | 5.2 | 42 | 1 | |
| 37-39A | 2.6 | 21 | 5 | |
| 37-45 | 13.8 | 37 | 4 | |
| 37-47 | 47.2 | 55 | 5 | |
| 38-3 | 45.4 | 96 | 4 | |
| 46-6 | 2.0 | 24 | 5 | |
| 46-8 | 2.7 | 26 | 5 | |
| F 5S | 2.4 | 20 | 5 | |
| G 1 | 1.6 | 26 | 4 | tr. |
| 5 | - | 18 | 4 | tr. |
| 9 | 0.6 | 10 | 3 | tr. |
| 10 | 1.4 | 32 | 3 | tr. |
| 11 | 2.2 | 41 | 4 | tr. |
| K 17 | 4.4 | 36 | 3 | tr. |
| 405 | 10.4 | 38 | 4 | tr. |
| P 2 | 4.8 | 330 | 7 | 1.35 |
| 11 | 3.4 | 20 | 3 | tr. |
| R 4 | 0.7 | 20 | 2 | tr. |
| 10 | 0.7 | 46 | 11 | tr. |
| 11 | - | 26 | 2 | tr. |
| 13 | 3.3 | 32 | 3 | tr. |
| 32A | 104.0 | 48 | 5 | tr. |
| 32B | 8.8 | 25 | 4 | tr. |
| 32C | 33.3 | 15 | - | tr. |
| 87 | 0.7 | 32 | 2 | tr. |
| 106 | 2.2 | 35 | 2 | tr. |
| 109A | 1.0 | 20 | 3 | tr. |
| 109B | 1.4 | 19 | 3 | tr. |
| 117B | 1.0 | 21 | 3 | tr. |
| 117C | 1.6 | 38 | 4 | tr. |
| 132C | 31.1 | 29 | 4 | tr. |

Table 9. Analyses of Stream Sediments (cont'd.)

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| R179 | 3.8 | 23 | 4 | tr. |
| 186 | 9.2 | 32 | 4 | |
| 187 | 12.8 | 26 | 2 | |
| 191 | 8.8 | 32 | 4 | |
| 192 | 15.5 | 56 | 4 | |
| 199 | 0.5 | 15 | 2 | |
| 209A | 4.6 | 23 | 2 | |
| 209B | 6.7 | 52 | 3 | |
| 348B | 19.5 | 40 | 2 | |
| 348C | 13.7 | 17 | 3 | |
| 353 | 23.6 | 36 | 3 | |
| 360 | 90.6 | 23 | 8 | |
| 361 | 1.1 | 37 | 3 | |
| 363B | 1.0 | 39 | 2 | |
| 374 | 3.3 | 45 | 2 | |
| 379 | 1.4 | 33 | 2 | |
| 380 | 1.6 | 32 | 3 | |
| 381A | 1.6 | 28 | 3 | |
| 381B | 1.6 | 28 | 2 | |
| 397 | 16.8 | 23 | 2 | |
| Y 28 | 1.6 | 38 | 2 | tr. |
| 28B | 8.0 | 78 | 1 | tr. |
| 35 | 0.8 | 17 | 3 | tr. |
| 50 | 0.2 | 82 | 5 | tr. |
| 57B | 9.8 | 94 | 3 | tr. |
| 63 | 1.4 | 28 | 3 | tr. |
| 64 | 7.6 | 26 | 3 | tr. |
| 225 | 6.2 | 41 | 4 | tr. |
| 226 | 1.4 | 17 | 3 | tr. |
| 227 | 3.4 | 18 | 2 | tr. |

Table 10 Analyses of Sediments from Seeps

| Sample # | ppm $U_3O_8$ | ppm Cu | ppm Mo | ppm F |
|---|---|---|---|---|
| K 13 | 1.4 | 14 | 4 | tr. |
| 424 | 4.2 | 42 | 3 | tr. |
| R 61 | 7.1 | 20 | 4 | tr. |
| 81 | 3.4 | 26 | 4 | tr. |
| 89A | 0.2 | 64 | 2 | tr. |
| 89B | 1.8 | 30 | 5 | tr. |
| 96 | 0.4 | 21 | 5 | |
| 108 | 0.2 | 174 | 4 | tr. |
| 111A | 1.6 | 32 | 2 | tr. |
| 147 | 7.7 | 83 | 5 | tr. |
| 149 | 2.2 | 32 | 4 | |
| 157B | 7.7 | 36 | 4 | tr. |
| 161 | 1.8 | 42 | 3 | |
| 188 | 10.1 | 35 | 2 | |
| 189 | 24.4 | 32 | 1 | |
| 224 | 2.0 | 97 | 2 | |
| 225 | 5.8 | 35 | 3 | |
| 324 | 0.5 | 28 | 4 | |
| 327 | 1.3 | 72 | 2 | |
| 366 | 1.6 | 42 | 3 | |
| 391 | 5.4 | 58 | 2 | |
| W104 | 1.2 | 18 | 3 | tr. |
| Y 27 | 14.8 | 20 | 4 | tr. |
| 32 | 6.2 | 18 | 4 | tr. |
| 36 | 2.0 | 38 | 4 | tr. |
| 240 | 5.2 | 26 | 3 | tr. |
| A 80 | 0.4 | 20 | 4 | |
| C 1 | 5.2 | 20 | 2 | |
| 26A | 19.0 | 25 | 2 | |
| 14-21 | 4.8 | 20 | 2 | |
| 14-22 | 6.4 | 14 | 2 | |
| 14-37 | 2.0 | 31 | 4 | |
| 14-40 | 4.2 | 14 | 3 | |
| 37-23 | 15.2 | 24 | 2 | |

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tont continued

To accompany
Affidavit on Application to Record Work
dated November 30, 1977

## SUMMARY

ITEMIZED COST STATEMENT

ALLIE, MICKI, CAT, MOUSE, IAN, AND ASTRO 1-46 CLAIMS

OSOYOOS MINING DIVISION

LATITUDE 49°11' LONGITUDE 119°36'

NTS 52E/4E, 4W, 5E, 5W.

| | |
|---|---|
| Consulting | $16,152.12 |
| Transportation | 2,825.77 |
| Air Support | 6,858.17 |
| Food & Accommodation | 10,081.34 |
| Costs of Analysis | 13,486.90 |
| Instrument Rentals | 2,256.00 |
| Wages | 24,065.00 |
| Miscellaneous | 3,803.20 |
| | $79,528.50 |

1. Transportation Costs

| | | | |
|---|---|---|---|
| Automotive Costs - | 8134 miles @ 23¢/mile | = | $1,870.82 |
| | Repairs | = | 72.18 |
| | Rental of U Drive | = | 144.72 |
| | | | $2,087.72 |

| | | |
|---|---|---|
| Aircraft Costs - | Pearson | $341.45 |
| | Mitchell | 198.30 |
| | Zeindler | 198.30 |

2. Support By Aircraft

Okanagan Helicopters $6,858.17

3. Food and Accommodation

| Food | Pearson | Mitchell | Zeindler |
|---|---|---|---|
| April | $ 57.17 | $ | $ |
| May | 351.95 | 364.75 | |
| June | {822.50 | 135.75 | 109.15 |
| July | { | 369.75 | 358.42 |
| Aug. | 357.00 | 296.00 | 260.05 |
| | 1,588.62 | 1,166.25 | 727.62 |
| Total | $3,482.49 | | |

Accommodation

| | |
|---|---|
| May | $1,604.40 |
| June | 673.50 |
| July | 2,498.00 |
| Aug. | 1,822.95 |
| Total | $6,598.85 |

4. Cost of Analysis for a Geochemical Survey

| | |
|---|---|
| April | $ 345.05 |
| May | 1,402.80 |
| June | 1,445.55 |
| July | 6,712.95 |
| Aug. | 3,053.75 |
| Sept. | 526.80 |
| Total | $13,486.90 |

5. Instrument Rentals

| | |
|---|---|
| May | $ 660.00 |
| June | 677.25 |
| July | 498.75 |
| Aug. | 420.00 |
| Total | $2,256.00 |

6. Number of Days Worked

FIELD

| Mitchell | Days |
|---|---|
| May 2 to May 31 | 30 |
| June 1, 3, 24-30 | 9 |
| July 1-July 29 | 29 |
| August 10-August 31 | 22 |
| | 90 |

| Zeindler | |
|---|---|
| May 2 to May 31 | 30 |
| June 1, 3, 24-30 | 9 |
| July 1-July 29 | 29 |
| August 10-August 28 | 19 |
| | 87 |

OFFICE

| Mitchell | |
|---|---|
| June 6-10, 20, 22, 23 | 8 |
| August 8, 9 | 2 |
| Sept. 1, 2, 5-9, 12-16, 19, 30 | 14 |
| October 3-7, 11-14, 17-21, 24-28 | 19 |
| | 43 |

| Zeindler | |
|---|---|
| June 6-10, 13-17, 20-23 | 14 |
| August 2-5, 8, 9, 29, 30 | 8 |
| | 22 |

OFFICE (con't) — Days

Rowe

| | |
|---|---|
| July 4-8, 18, 19, 20, 25, & ½ 26 & 27 | 10 |
| Aug. 2, 8-10, 15-17, 22, 23, 26 | 10 |
| Sept. 6-9, 19-23 | 9 |
| Oct. 25-28 | 4 |
| Nov. 1, 2, 7-10, 14-16, 18, 21-25, 28-29 | 17 |
| | 50 |

7. Rates of Fee, Salary or Wage Paid

| Mitchell | Days | Rate | Wage Paid |
|---|---|---|---|
| May | 30 | $115/Day | $ 3,450.00 |
| June | 17 | $115/Day | 1,955.00 |
| July | 29 | $115/Day | 3,335.00 |
| Aug. | 24 | $115/Day | 2,760.00 |
| Sept. | 14 | $115/Day | 1,610.00 |
| Oct. | 19 | $115/Day | 2,185.00 |
| | 133 | | $15,295.00 |

Zeindler

| | | | |
|---|---|---|---|
| May | 30 | $755/Mon. | $ 755.00 |
| June | 23 | $755/Mon. | 755.00 |
| July | 29 | $755/Mon. | 755.00 |
| Aug. | 27 | $755/Mon. | 755.00 |
| | 109 | | 3,020.00 |

Rowe

| | | | |
|---|---|---|---|
| July | 10 | $115/Day | $1,150.00 |
| Aug. | 10 | $115/Day | 1,150.00 |
| Sept. | 9 | $115/Day | 1,035.00 |
| Oct. | 4 | $115/Day | 460.00 |
| Nov. | 17 | $115/Day | 1,955.00 |
| | 50 | | $5,750.00 |

8. Miscellaneous Costs — $ 3,803.20

9. Consulting — $16,152.12

Bradford D. Pearson
743 Lindsay Road
Richmond, B.C.