

MAPS

- #1 Geochem. survey - graph, 1973
 - #2 " " values, 1973
 - #3 Geology map
 - #4 Geochem results
- BENPEL INDUSTRIES LTD
(1973-1974) GEOCHEMICAL REPORT ON PIK 11 -16.

SIMILKAMEEN MINING DISTRICT.



Location and Access.

The group of six claims is located at the north end of the Copper Mountain mining camp, four to five miles south of the town of Princeton B.C.

The road from Allenby B.C. to the Copper Mountain mine camp gives access to the eastern side of the property.

Title.

Six claims are held by loaction as follows:

PIK 11 - 16	35782 - 35787	Exp. Date 30 May 1974
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History.

Fifty eight claims of BEN and PIK groups were staked in 1972. During 1973, a soil sampling program, under Fred Kerns Jr B.S.C. was carried out over the entire group. The best results were obtained in the area covered by PIK 11 - 16. During 1974, this anomalous area was checksampled.

Topography.

Proceeding south from Allenby, the road enters PIK 12 in the valley of Wolfe Creek, which is crossed at an elevation of 2500 feet.

Wolfe Creek flows north across PIK 16, 14, 12 and turns east to join the Similkameen River. A height of land extends southerly from Allenby to Smelter Lake with maximum elevation of 3900 feet. PIK claims are situated at the bottom of the eastern slope of this ridge and occupy the valley of Wolfe Creek for a distance of 4500 feet.

Summary of the Geology of the Area.

The stratigraphy and intrusive pattern of the area are shown on the accompanying map. Details are transferred from Can. Geol. Sur. Mem. 243, H.M.A.Rice, 1947, map 888A.

There are two principal stratigraphic units in the area:

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **4992** MAP



(a) Nicola Group.

A thick series of andesite porphyries, intercalated with fine grained tuffs and argillaceous sediments has been established as Upper Triassic age. The Lost Horse intrusives are irregular bodies of fine grained plutonic rocks occurring within the Nicola Group.

(b) Princeton Group.

These rocks are Upper Oligocene or Lower Miocene in age. This is a mixed series of freshwater sediments, including coal measures, overlain by andesite and basalt flow rocks.

(c) Igneous Rocks.

Three principal igneous bodies intrude the Nicola Group. These are known as the Copper Mountain, Smelter Lake and Voight stocks. They are, in general of dioritic composition, partly differentiated to pegmatite.

Mineralization has been found to occur in the Nicola and Lost Horse formations, close to and within the differentiated igneous rocks. PIK 11,13,15 claims are underlain by Nicola or Lost Horse rocks; PIK 12,14,16 cover the contact of the northerly extension of the Voight stock. Rock outcrops are rare in the valley of Wolfe Creek.

For more complete geological data on the area, refer to the report "BEN, DEC-GAM and WR Groups, Similkameen M.D." C.E. Gordon Brown P.ENG. 31 May 1972, made for Benpel Industries Ltd.

Soil Sampling.

A. Work done in 1973

It was recommended in the above report that a soil sampling program be undertaken to cover BEN 1 - 36 and PIK 1 - 22 claims, to take in the entire ridge north of Smelter Lake, over an area 13500 feet by 9000 feet, north-south and east-west respectively. This work was performed by Fred Kerns Jr B.Sc. during the period 8 - 29 May 1973. Mr Kerns report, dated 29 May 1973, is available from Benpel Industries Ltd.

Using standard geochemical procedures, 631 soil samples were taken from B zone horizon at 200 foot sample spacing on lines 400 feet apart. A total of 23.7 line miles was tested. The central part of the BEN group was not sampled since this area is covered by several hundred feet of Princeton Group sediments and volcanics. Samples were assayed by Core Laboratories Ltd, 325 Howe St, Vancouver B.C.

The histogram and standard calculations from the

gaussian curve are shown in Figs 1 and 2. These show that \bar{x} or average value is 21.3 p.p.m. and that the variance s is 25.3 p.p.m.² It is generally considered that values in excess of $\bar{x} + 2s$, or $21.3 + 2(25.3) = 71.9$ p.p.m. may be considered an omalous.

An anomalous area with north-south trend was discovered on PIK 11, having a length of 1500 feet. This anomaly appears to be in the Nicola or Lost Horse rocks, adjacent to the contact of the Voight intrusive.

B. Work done in 1974.

It was decided to resample the vicinity of the anomaly discovered the previous year, taking samples at closer intervals. A total of 118 soil samples were taken at 150 foot intervals or 3.35 line miles. One small area and one larger area were found to contain anomalous readings as shown on the accompanying map. The value of 71.9 p.p.m. obtained in 1973 work was used as a criterion for anomalies in this latest work.

Interpretation, Soil Sampling.

Referring to the results, which appear on the accompanying map, superimposed on the 1973 results, it would appear that there is an anomaly, striking due south for 1500 feet across PIK 11, which appears again in one sample on PIK 13, and reappears in Mr Kern's resampling on PIK 15, in an area containing seven anomalous readings. This might indicate a mineralized structure 4000 feet long, located in Nicola or Lost Horse formations, within the contact aureole of the Voight stock. A further extension of 800 feet is possible in one sample on PIK 18.

It should be noted that the present course of Wolfe Creek is separated from the anomalous area by 1400 - 1800 feet. This would indicate that the anomalous soil content was not, recently, deposited from copper bearing rocks or copper refuse from mining operations, laid down in the stream channel. The creek, however, does traverse a copper bearing area and a former channel could have given rise to the observed anomalies.

Reccommendations.

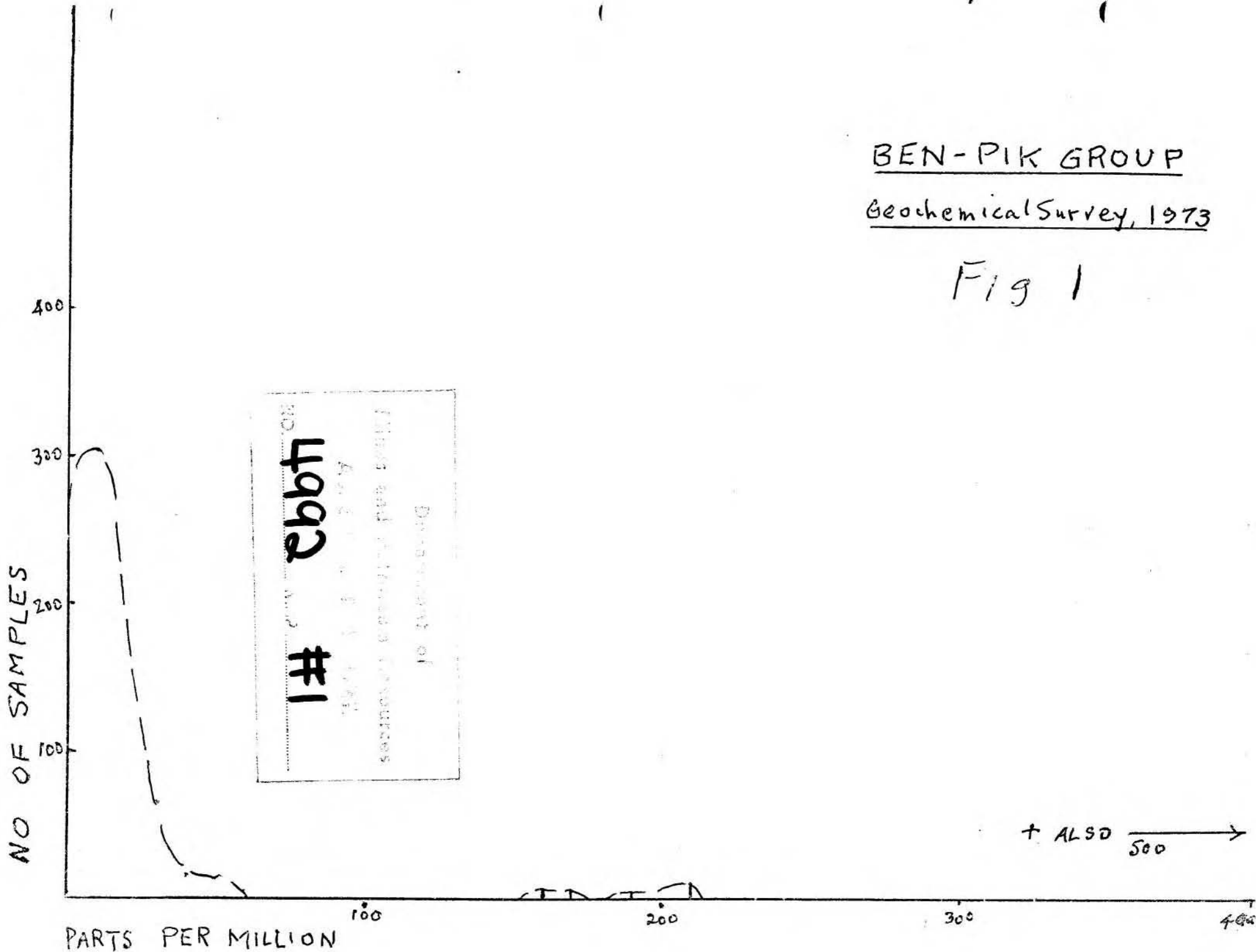
Notwithstanding the previous paragraph, the anomaly is situated in a logical place for an orebody to occur; namely, close to an igneous contact, in favorable host rocks and in geological environment similar to occurrences of known ore in the district.

It is therefore reccommended that the structure be investigated by 5000 feet of diamond drill hole.

BEN-PIK GROUP

Geochemical Survey, 1973

Fig 1



x	f	x ²	fx ²	fx
10	309	100	30900	3090
20	189	400	75600	3780
30	62	900	5580	1240
40	30	1600	48000	1200
50	16	2500	40000	800
60	13	3600	46800	780
70	1	4900	4900	70
80	2	6400	12800	160
90	2	8100	16200	180
100	-	-	-	-
150	-	-	-	-
160	1	25600	25600	160
170	1	28900	28900	170
180	-	-	-	-
190	1	36100	36100	190
200	-	-	-	-
210	3	44100	132300	630
220	-	-	-	-
490	-	-	-	-
500	1	250000	250000	1000
	631	413200	753680	13450

BEN-PIK GROUP

Geochemical Survey, 1973

$$Av \bar{x} = \frac{\sum fx}{\sum f}$$

$$\bar{x} = \frac{13450}{631} = 21.3 \text{ p.p.m.}$$

$$\text{Variance} = s = \sqrt{\frac{\sum fx^2}{n} - \bar{x}^2}$$

$$= \sqrt{\frac{753680}{631} - [21.3]^2}$$

$$= 25.3$$

$$21.3 + 2[25.3] = 71.9 \text{ p.p.m.}$$

Any values in excess of 71.9 p.p.m. are considered anomalous.

FIG. 2

4992 #2

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
TO WIT:

In the Matter of

PIK claims 11 to 16
record numbers 35782-87

I, W. Romalis president of Benpel Industries Ltd., 535 Howe St.,
Vancouver B.C. free miners license 117763 127992 WR,

of

in the Province of British Columbia, do solemnly declare that

the following expenses were incumbent
in carrying out a geochemical survey on PIK 11 to 16 record numbers
35782-87

Professional Engineer	\$400.00
Fred Kern	225.00
Supervision, layout & overhead	340.00
Transportation meals etc.	81.38
General Laboratories	<u>175.00</u>
	\$1,221.38

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the
of _____, in the
Province of British Columbia, this
VANCOUVER, B. C.
day of _____, A.D.

MAY 31 1974

Sub-Mining Recorder
A Commissioner for taking Affidavits for British Columbia or
A Notary Public in and for the Province of British Columbia.

Cost of 1974 Program.

The cost of the 1974 program of soil sampling was reported as follows:

Professional Engineer	\$400.00
Fred Kern Jr	225.00
Supervision, layout, overhead	340.00
Transportation, meals, etc	81.38
General Laboratories	<u>175.00</u>
	1,221.38

Respectfully submitted,

C.E. Gordon Brown P.Eng.

C.E. Gordon Brown

5 June 1974

GENERAL TESTING LABORATORIES

DIVISION: SUPERINTENDENCE COMPANY (CANADA) LTD

1001 EAST PENDER STREET, VANCOUVER 6, B.C. CANADA
 PHONE (604) 254-1647 TELEX 04-507514 CABLE SUPERVISE

TO:
 Benpel Industries Ltd.
 #210 - 535 Howe St.
 Vancouver, B.C.
 Attention: Mr. Fred Kern

CERTIFICATE OF ANALYSIS

No.: 7405-2350	DATE:
FILE:	May 28th, 1974

	NO	PPM	NO	PPM	NO	PPM	NO	PPM	NO	PPM
K	1	71	2	20	3	29	4	29	5	15
	6	27	7	22	8	45	9	124	10	37
	11	19	12	17	13	17	14	17	15	59✓
K-1-	1	24	2	25	3	16	4	32	5	38
	6	153	7	17	8	250	9	179	10	73
	11	22	12	94	13	39	14	29	15	22
K-2-	1	48	2	22	3	18	4	20	5	16
	6	18	7	231	8	32	9	45	10	76
	11	12	12	29						
K-3-	1	66	2	23	3	55	4	31	5	67
	6	32	7	57						
K-4-	1	54	2	23	3	69	4	25	5	69
	6	55	7	27						
K-5-	1	63	2	129	3	127	4	19	5	17
	6	41	7	17	8	22	9	22	10	32
K-6-	1	27	2	19	3	18	4	20	5	31
	6	40	7	53	8	23	9	39	10	119
	11	18	12	27						
K-7-	1	16	2	17	3	17	4	18	5	26
	6	12	7	18	8	41	9	27	10	32
	11	32	12	44	13	14	14	16	15	14
K-8-	1	32	2	76	3	18	4	17	5	20
	6	12	7	17	8	24	9	25	10	12
	11	15	12	22	13	19	14	16	15	17

Cont'd.....

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THIS COMPANY ACCEPTS NO RESPONSIBILITY EXCEPT FOR THE DUE PERFORMANCE OF INSPECTION AND/OR ANALYSIS IN GOOD FAITH AND ACCORDING TO THE RULES OF THE TRADE AND OF SCIENCE.

B/ Given - Industrial Chemist

SIGNATURE AND TITLE

Analytical and Consulting Chemists, Bulk Cargo Specialists, Surveyors, Inspectors, Samplers, Weighers

MEMBER: American Society For Testing Materials • The American Oil Chemists' Society • Canadian Testing Association
 REFEREE AND/OR OFFICIAL CHEMISTS FOR: Vancouver Merchants Exchange • National Institute Of Oilseed Products • The American Oil Chemists' Society
 OFFICIAL WEIGHMASTERS FOR: Vancouver Board Of Trade • Vancouver Merchants Exchange

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No.: 7405-2350	DATE:
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* ASSAY RECOMMENDED

NUMBER OF SAMPLES 108
 MEAN 40.6
 VARIANCE 1699.48
 STANDARD DEVIATION 41.22

FREQUENCY DISTRIBUTION

CLASS	LIMIT : LOW	HIGH	FREQUENCY	% REL.	% CUM.
1	.0	21.0	39	36.11	36.11
2	21.0	42.0	41	37.96	74.07
3	42.0	63.0	10	9.26	83.33
4	63.0	84.0	9	8.33	91.66
5	84.0	105.0	1	.93	92.59
6	105.0	126.0	2	1.85	94.44
7	126.0	147.0	2	1.85	96.29
8	HIGHER THEN	147.0	4	3.71	100.00

HISTOGRAM



THIS COMPANY ACCEPTS NO RESPONSIBILITY EXCEPT FOR THE DUE PERFORMANCE OF INSPECTION AND/OR ANALYSIS IN GOOD FAITH AND ACCORDING TO THE RULES OF THE TRADE AND OF SCIENCE.

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C.E. GORDON BROWN, P.ENG.
MINING GEOLOGIST

4445 HIGHLAND BOULEVARD
NORTH VANCOUVER, B.C.

PHONE 985-1048

CERTIFICATE.

I, C.E. Gordon Brown, of the District of North Vancouver in the Province of British Columbia, hereby certify that:

1. I am a geologist with offices at 4445, Highland Boulevard, North Vancouver B.C.
2. I am a graduate of the University of British Columbia, Vancouver B.C. and have been granted the degree of Bachelor of Applied Science, 1932, and Master of Applied Science, 1936.
3. I am a member of the Association of Professional Engineers of the Province of British Columbia.
4. I have no direct or indirect interest in either the property or securities of Benpel Industries Ltd or it's affiliates, nor do I expect to receive any such interest.
5. This report is based on records, maps and reports, and on my knowledge of the geology of the area.

DATED AT NORTH VANCOUVER, BRITISH COLUMBIA.

5 June 1974

C.E. Gordon Brown P.Eng.

C.E. Gordon Brown

COPPER MOUNTAIN MINING CAMP.
 SHOWING BEN, DEC-GAM, AND WR CLAIM GROUPS
 SCALE ONE INCH = THREE THOUSAND FEET

LEGEND.

Cenozoic. Miocene or earlier. Shale, sandstone, andesite and basalt flows, coal.



Mesozoic. Jurassic or later. Lost Horse Intrusions. Syenogabbro, augite diorite, pegmatite.



Upper Triassic. Nicola Group. Varicolored lava, argillite, tuff, chlorite and sericite schist, lime silicate rocks.

Uncolored



4992
M3



4992
M4

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4992 MAP #4

BENPEL INDUSTRIES LTD
PIK GROUP, SIMILKAMEEN M.D.
Geochem Results, 1973 - 74
Scale approx 500' = 1"
(Reduced from 200' = 1")

Only 1974 check readings shown