1861

KENNCO EXPLORATIONS, (WESTERN) LIMITED

GEOCHEMICAL REPORT ON PILLAR NO. 1 GROUP
(Pillar M.C.'s 54-56, 58-64, 66-74, 81-98)

57° 126° SW
12 miles north of Thutade Lake, B.C.
July 30 to August 7, 1968

By: R. W. Stevenson, P.Eng. May 8, 1969

KENNCO EXPLORATIONS, (WESTERN) LIMITED

REPORT

ON

GEOCHEMICAL SURVEYS

PILLAR NO. 1 GROUP
(Pillar Mineral Claims No. 54-56, 58-64, 66-74, 81-98)

Situated 12 miles north of Thutade Lake,
Omineca Mining Division
British Columbia

57° 126° SW

By

R. W. Stevenson, P. Eng.

July 30 to August 7, 1968

May 8, 1969

TABLE OF CONTENTS

NOTE: There is no Page 7 to this report.

LIST OF ILLUSTRATIONS

LIST OF CLAIMS AND DISTRIBUTION OF WORK

PILLAR No. 1 GROUP
(37 claims)

(Pillar Mineral Claims No. 54-56, 58-64, 66-74, 81-98)

Claim No.	Record No.	Staking Date	Record Date	$ Soil Geochem. Work Ea.Claim	$ Rock Geochem. Work Ea.Claim	Years Applied
54	60015	June 21	June 24	128	17	1
55	60016	"	"	18	36	1
56	60017	"	"	393	52	1
58	60019	"	"	265	69	1
59	60020	"	"		69	1
60	60021	"	"		86	1
61	60022	"	"	9	86	1
62	60023	"	"		69	1
63	60024	"	"		104	1
64	60025	"	"	82	69	1
66	60886	July 10	July 16	237		
67	61263	July 27	August 1		52	
68	61264	"	"			
69	61265	"	"			
70	61266	"	"			
71 Fr	61267	July 28	"	27	52	
72 Fr	61268	"	"	128		
73 Fr	61269	July 29	"	101	17	
74	61270	"	"	37		
81	60026	June 21	June 24			1
82	60027	"	"			
83	60028	"	"			1
84	60029	"	"			
85	60030	"	"			1
86	60031	"	"			
87	60032	"	"		86	1
88	60033	"	"			
89	60034	"	"		17	1
90	60035	"	"			
91	60036	"	"			1
92	60037	"	"			1
93	60038	"	"			1
94	60039	"	"			1
95	60040	"	"			1
96	60041	"	"			1
97	60042	"	"			1
98	60043	"	"			1
				$ 1,425	$ 881	23

$ 2,306

All the claims in the group were recorded before the start of the work; except for Pillar No. 67 to 74, which were staked July 27 to 29, and recorded on August 1, 1968. The geochemical work was done between July 30 and August 7, 1968.

STATEMENT OF COSTS INCURRED

Soil Geochemical Survey

A detailed explanation of how the soil geochemical survey expenditures were incurred is given under the section titled Soil Survey Field Work.

The total cost of the soil geochemical survey on Pillar No. 1 Group is as follows:

Chemical analysis of 156 samples - Cu, Mo, Zn, Pb		$ 936.00
Wages:		
R.W. Stevenson - July 31; August 6, 7	@ $35/d	105.00
S.C. Gower - July 30, 31; August 6, 7	@ $24/d	96.00
M. Vreugde - July 30, 31	@ $21/d	42.00
D. Stark - August 6, 7	@ $18/d	36.00
Helicopter set-out 1:30 hrs @ $140/hr		210.00
	Total ...	$1,425.00

The amount expended on each claim is shown on the list of claims.

Rock Geochemical Survey

A detailed explanation of how the rock geochemical survey expenditures were incurred is given under the section titled 'Rock Survey Field Work'.

The total cost of the rock geochemical survey on the Pillar No. 1 Group is as follows:

Chemical analysis of 51 samples - Cu, Mo, Zn, Pb		$ 382.00
Wages:		
R.W. Stevenson - August 8 to 10	@ $35/d	105.00
S.C. Gower - August 8 to 10	@ $24/d	72.00
D. Stark - August 8 to 10	@ $18/d	54.00
Helicopter set-out 1:55 hrs @ $140/hr		268.00
	Total ...	$ 881.00

The amount expended on each claim is shown on the list of claims.

INTRODUCTION

The mineral property discussed in this report is situated about 12 miles north of Thutade Lake, B.C. The exploration work on these claims consisted of a soil geochemical survey, accompanied by a rock geochemical survey. The objective of the latter survey was to measure trace amounts of metallic elements in areas where there was no soil present. The purpose of this was to search for geochemical gradients that might indicate the direction in which to search for mineralization under drift cover.

Pillar mineral claims 54-56, 58-64, 66, and 81-98 were recorded before the work was done. Pillar mineral claims 67-74 were staked before the work was done but were recorded later. The work was done under the supervision of R. W. Stevenson, P.Eng.

LOCATION AND ACCESS

The property is situated at Latitude 57°15'N, Longitude 126°55'W, about 275 miles northwest of Prince George. This is about 12 miles northeast of Thutade Lake. The survey area is in a large, north-facing cirque valley, the floor of which is mostly drift-covered. The south wall of the valley is very rugged. The east and west side walls are steep, but not rugged. Elevation of the valley floor ranges from about 5400' to 5700' above sea level. The south ridge is about 6400' in elevation. Most of the area is above tree line, but there are scattered stands of scrub Alpine Fir.

Access to the property is by fixed-wing aircraft from Smithers to Thutade Lake, a distance of about 165 miles, and by helicopter from there. Local travel is hampered by the steep topography, particularly when carrying a load of samples. There are numerous helicopter landing sites within the cirque and along the ridges. Helicopter set-outs were particularly useful where crews could be set out at higher elevations, and proceed on a sampling traverse toward lower elevations.

SOIL GEOCHEMICAL SURVEY

Soil Survey Field Work

Control Survey Lines

A control grid was established by chain and compass survey. Laths were used to mark the stations because the survey area is mostly above tree line. This gave good control of sample sites, with minimum expenditure.

The baseline direction is N57°E, except for a short section near the north end which is N24°E. The baseline direction was assumed as Grid North. This grid layout was chosen so as to give efficient coverage of the cirque floor that was to be sampled. On the lines farthest from camp, crews were set out by helicopter so as to minimize unproductive walking time. A base map with scale 1" = 400' was compiled for use in plotting the sample results.

Soil Sample Collection

The samples were taken at 100-foot intervals along the grid lines. The location of the sample sites is shown on Plate No. 5. They were taken from the top of the "B" (rusty) horizon. Exceptions to this occurred in rocky places where sufficient soil could not be found to take a sample.

The samples were collected by digging a small hole with a trenching tool type of spade. By this means it was possible to see where the top of the "B" horizon was. The soil sample was then taken from the top of the "B" horizon, either with the tip of the spade, or with a small trowel.

A note was then made of the grid line location, the sample number, the depth to the top of the "B" horizon, the direction of drainage, the type of vegetation (i.e. - grass, or scrub forest) and the soil type.

Packaging

The samples were placed in a 3" x 4½" brown paper envelope, on which the sample numbers had been marked. These were closed with a triangular triple fold. (The bags are not anomalous in trace metals).

Sample Preparation

The samples were taken to the base camp, and were oven-dried at 80°C. They were then shipped to our laboratory in North Vancouver, where they were sieved through an 80-mesh size stainless steel screen. (These sieves do not know noticeable wear even after several thousand samples have been sifted). The minus 80 mesh fraction was collected for all the analyses involved.

Analysis

The samples were analysed in the North Vancouver laboratory of Kennco Explorations, (Western) Limited under the supervision of John Barakso, MSc.

A one-gram sample is weighed to within $\pm$ 2 mgm. making a possible error of 2% at this stage. This is much more accurate than a volumetric scoop.

The sample is placed in a dry test tube, and 1 ml of reagent grade 70% nitric acid is added, or just enough to wet the sample. Four ml of reagent grade 70% perchloric acid ($H\ ClO_4.H_2O$) is added, and the sample is digested at 200°C on a hot plate for four hours. After cooling, the sample is diluted up to 50 ml with distilled water, agitated, and allowed to settle for two hours.

An aliquot of this solution is used for determination of copper, zinc, and lead by atomic absorption spectrophotometer.

An aliquot of this solution is also taken for determination of molybdenum. Ammonium thiocyanate, stannous chloride, and amyl acetate are added to the solution. Molybdenum forms a thiocyanate complex which is removed by solvent extraction in the amyl acetate. This is aspirated in the atomic absorption spectrophotometer to determine molybdenum.

Interpretation

Over most of the area, a good sample which was representative of the "B" horizon was obtained. The depth of overburden varies from a few inches to probably about 40' over most of the areas sampled. The latter depth is estimated from some stream cuts just north of the soil grid. Considering the type of soil, it would seem likely that soil geochemistry is a reliable technique on these parts of the property. The samples were analysed for total metal content in copper, molybdenum, zinc, and lead.

Sample stations that are considered to be background are uncoloured. Sample stations that are considered to be only weakly anomalous are coloured yellow. The weakly anomalous levels are 150 ppm to 299 ppm for copper, 15 ppm to 24 ppm for molybdenum, 300 ppm to 599 ppm for zinc, and 80 ppm to 149 ppm for lead. Sample stations that are definitely anomalous are coloured red. The results are plotted on Plates No. 1 to 4.

Only a few scattered samples are weakly anomalous in copper (Plate No. 1), molybdenum (Plate No. 2), and zinc (Plate No. 3). The weakly anomalous zinc samples are associated spatially with the strongest lead anomaly. Lead (Plate No. 4) is moderately anomalous over most of the grid area. A zone of low values extending from about Station 2+00W on Line 4+00N to Station 5+00W on Line 24+00N may be caused by somewhat deeper overburden, rather than by a change in mineralization.

ROCK GEOCHEMICAL SURVEY

Rock Survey Field Work

Sample Site Control

Sample sites were plotted in the field, on an aerial photograph having a scale of 1" = 2640'. The soil sample grid was also plotted on this photograph. At the base camp, the sample points were transferred to the 1" = 400' map showing the soil sample grid and the ridge lines. Crews were lifted to ridge lines by helicopter so as to utilize as much as possible of the working day in sample collection. Groups of samples were cached along the sample traverse route for pickup at the end of the day.

Sample Collection

Samples were taken at approximately 500' intervals along traverse lines that were spaced about 500' to 1000' apart. An exact grid could not be laid out because much of the area sampled is too rugged to be traversed safely.

Sample chips about 1" to 2" in size were taken with a standard prospector's hammer. About five to six pounds of these chips were collected from an area about 25' in diameter at each sample site.

The sample site and number were then plotted on the field map, and a note made of rock type.

Packaging

The samples were placed in a double layer, 12" x 18", plastic sample bag. The double layer bag minimized the possibility of contamination, if a sharp rock chip punctured the side of the bag. The sample number was written on both sides of each bag, and the top tied with string.

Sample Preparation

Particular care was taken to avoid contamination in the preparation of these samples, because the analysis was to be done in parts per million. The sample was dried; primary crushed to 1/4" mesh; secondary crushed to minus 10 mesh; redried; and then pulverized to minus 100 mesh. The pulverizer was flushed with quartz after each sample. The cost of this type of preparation is $1.50 per sample.

Analysis

The samples were analysed in the North Vancouver laboratory of Kennco Explorations, (Western) Limited under the supervision of John Barakso, MSc.

The analytical procedures used on the rock samples were the same as those used on the soil samples. These are described in the section on the Soil Geochemical Survey. As with the soil samples, a one-gram sample was taken for analysis.

Interpretation

The objective of the rock sample survey was to measure trace amounts of metallic elements in areas where there was no soil present. The purpose of this was to search for geochemical gradients that might indicate the direction in which to search for mineralization under drift cover. The configuration of outcrop and drift cover made this a practicable goal. In order to achieve the necessary precision, the samples had to be analysed as geochemical samples in parts per million, rather than being assayed to the nearest 0.01%.

Sample stations that are considered to be background are uncoloured. Sample stations that are considered to be only weakly anomalous are coloured yellow. The weakly anomalous levels are 150 ppm to 299 ppm for copper, 15 ppm to 24 ppm for molybdenum, 200 ppm

to 599 ppm for zinc, and 50 ppm to 149 ppm for lead. Sample stations that are definitely anomalous are coloured red. The results are plotted on Plates No. 1 to 4.

Copper (Plate No. 1) appears to have been depleted near the southwest edge of the survey area, and increased in the northeast half. Molybdenum (Plate No. 2) is generally not anomalous, but perhaps this is not surprising, because molybdenum gradients are usually very steep. Zinc (Plate No. 3) is anomalous in a few samples, but without forming any pattern. Lead (Plate No. 4) is increased near the west side of the sample area. This conforms with the trend indicated by soil sampling. It is interesting to note that the maximum lead values in soil are similar to the maximum lead values in rock. It is also noted that zinc is anomalous in only a few of the samples that are anomalous in lead.

Vancouver, B. C.

May 8, 1969

R. W. Stevenson

R. W. Stevenson, P.Eng.

N

74

69

73 Fr.

67

LINE 51+00N

LINE 47+00N

LINE 43+00N

LINE 39+00N

LINE 32+00N

LINE 28+00N

LINE 24+00N

LINE 20+00N

LINE 16+00N

LINE 12+00N

LINE 8+00N

LINE 4+00N

LINE 0+00N

66

58

56

55

54

KX 18693 64
KX 18692 80
KX 18694 216
KX 18695 37
KX 18696 6
KX 18697 15
KX 18698 8
KX 18699 5
KX 18700 76
KX 18701 189

KX 18689 33
KX 18688 48
KX 18687 28
KX 18686 225
KX 18685 93
KX 18684 58
KX 18683 95
KX 18682 57

63

68

KX 18676 64
KX 18677 220
KX 18675 97
KX 18674 187
KX 18680 125
KX 18681 116
KX 18678 58
KX 18679 180
KX 18673 275
KX 18672 300
KX 18671 53
KX 18670 93

72 Fr.

61

LINE 45+00N

KX 18690 119
KX 18691 82

64

62

KX 18664 174
KX 18663 85
KX 18665 152
KX 18666 145
KX 18662 50
KX 18661 292
KX 18651 58
KX 18652 39
KX 18653 37

59

60

71 Fr.

KX 18667 11
KX 18669 22
KX 18668 25
KX 18660 11
KX 18654 28
KX 18659 19
KX 18655 26
KX 18656 22
KX 18657 11
KX 18658 11

91

94

92

93

87

89

90

88

81

83

85

82

84

86

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1861 MAP 1

LEGEND

Soil Sample Site
Weakly Anomalous Soil 150 ppm to 299 ppm
Anomalous Soil 300 ≧ ppm

Rock Sample Site KX 18699
Weakly Anomalous Rock 150 ppm to 299 ppm
Anomalous Rock 300 ≧ ppm

To accompany geochemical survey report by R.W. Stevenson, P. Eng., on the Pillar No. 1 Group, 12 miles north of Thutade Lake, Omineca Mining Division, dated May 8, 1969.

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R. W. Stevenson

KENNCO EXPLORATIONS (WESTERN) LIMITED

Pillar No. 1 Group
Pillar Mineral Claims No. 54-56, 58-64, 66-74, 81-98
Omineca M.D., B.C.
Soil and Rock Geochemical Survey
Copper in Soil and Rock

DATE: 9/5/69	DRAWN BY: J.Q.L., R.J.E.	PLATE NO.: 1
REVISED BY	DATE	SCALE: 1 inch = 400 feet

N

74 69 73 Fr. 67 66 63 68 55 58 72 Fr. 64 54 56 61 62 59 60 93 71 Fr. 91 94 81 83 85 87 89 92 82 84 86 88 90

LINE 51+00N
LINE 47+00N
LINE 43+00N
LINE 39+00N
LINE 32+00N
LINE 28+00N
LINE 24+00N
LINE 20+00N
LINE 16+00N
LINE 12+00N
LINE 8+00N
LINE 4+00N
LINE 0+00N
LINE 45+00N

KX 18693 KX 18692 KX 18694 KX 18695 KX 18696 KX 18701 KX 18700 KX 18697 KX 18699 KX 18698
KX 18689 KX 18688 KX 18687 KX 18686 KX 18685 KX 18684 KX 18683 KX 18682
KX 18690 KX 18691 KX 18676 KX 18675 KX 18677 KX 18680 KX 18681 KX 18674 KX 18678 KX 18679 KX 18673 KX 18670 KX 18672 KX 18671
KX 18664 KX 18663 KX 18651 KX 18665 KX 18666 KX 18662 KX 18661 KX 18652 KX 18667 KX 18653
KX 18669 KX 18668 KX 18660 KX 18654 KX 18659 KX 18655 KX 18656 KX 18657 KX 18658

LEGEND

Soil Sample Site
Weakly Anomalous Soil 15 ppm to 24 ppm
Anomalous Soil 25 ≧ ppm
Rock Sample Site KX 18499
Weakly Anomalous Rock 15 ppm to 24 ppm
Anomalous Rock 25 ≧ ppm

To accompany geochemical survey report by R.W. Stevenson, P. Eng., on the Pillar No. 1 Group, 12 miles north of Thutade Lake, Omineca Mining Division, dated May 8, 1969.

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R.W. Stevenson

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1861 MAP 2

KENNCO EXPLORATIONS (WESTERN) LIMITED

Pillar No. 1 Group
Pillar Mineral Claims No. 54-56, 58-64, 66-74, 81-98
Omineca M.D., B.C.
Soil and Rock Geochemical Survey
Molybdenum in Soil and Rock

DATE: 9/5/69	DRAWN BY: J.Q.L., R.J.E.	PLATE NO.: 2
REVISED BY	DATE	SCALE: 1 inch = 400 feet

N

74 73 Fr. 69 67 66 63 68 55 58 72 Fr. 64 56 61 62 59 54 71 Fr. 60 93 91 94 92 81 83 85 87 89 90 82 84 86 88

LINE 51+00N
LINE 47+00N
LINE 43+00N
LINE 39+00N
LINE 32+00N
LINE 28+00N
LINE 24+00N
LINE 20+00N
LINE 16+00N
LINE 12+00N
LINE 8+00N
LINE 4+00N
LINE 0+00N

KX 18683 80
KX 18682 50
KX 18684 90
KX 18685 96
KX 18686 94
KX 18687 81
KX 18688 130
KX 18689 91
KX 18690 145
KX 18691 160
KX 18692 186
KX 18693 100
KX 18694 79
KX 18695 290
KX 18696 170
KX 18697 100
KX 18698 78
KX 18699 55
KX 18700 97
KX 18701 232
KX 18674 900
KX 18675 72
KX 18676 110
KX 18677 73
KX 18678 79
KX 18679 141
KX 18680 167
KX 18681 100
KX 18670 78
KX 18671 134
KX 18672 250
KX 18673 79
KX 18651 74
KX 18652 102
KX 18653 51
KX 18654 89
KX 18655 67
KX 18656 43
KX 18657 51
KX 18658 110
KX 18659 86
KX 18660 45
KX 18661 84
KX 18662 60
KX 18663 115
KX 18664 77
KX 18665 54
KX 18666 79
KX 18667 65
KX 18668 70
KX 18669 220

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1861 MAP 3

LEGEND

Soil Sample Site
Weakly Anomalous Soil 300 ppm to 599 ppm
Anomalous Soil 600 ≧ ppm
Rock Sample Site KX 18699
Weakly Anomalous Rock 200 ppm to 599 ppm
Anomalous Rock 600 ≧ ppm

To accompany geochemical survey report by R.W. Stevenson, P. Eng., on the Pillar No. 1 Group, 12 miles north of Thutade Lake, Omineca Mining Division, dated May 8, 1969.

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R. W. Stevenson

KENNCO EXPLORATIONS (WESTERN) LIMITED

Pillar No. 1 Group
Pillar Mineral Claims No. 54-56, 58-64, 66-74, 81-98
Omineca M.D., B.C.
Soil and Rock Geochemical Survey
Zinc in Soil and Rock

DATE: 9/5/69	DRAWN BY: J.Q.L., R.J.E.	PLATE NO.: 3
REVISED BY	DATE	SCALE: 1 inch = 400 feet

N

74 69 73 Fr. 67 66 63 68 55 58 72 Fr. 64 56 61 54 59 62 71 Fr. 60 93 91 94 81 83 85 87 89 92 82 84 86 90 88

LINE 51+00N
LINE 47+00N
LINE 43+00N
LINE 39+00N
LINE 32+00N
LINE 28+00N
LINE 24+00N
LINE 20+00N
LINE 16+00N
LINE 12+00N
LINE 8+00N
LINE 4+00N
LINE 0+00N
LINE 45+00N

KX 18693 19 · KX 18692 210 · KX 18694 13 · KX 18695 150 · KX 18696 27 · KX 18701 11 · KX 18700 25 · KX 18697 · KX 18699 13 · KX 18698 27 · KX 18669 27 · KX 18668 34 · KX 18667 9 · KX 18660 9 · KX 18659 16 · KX 18656 22 · KX 18655 27 · KX 18654 34 · KX 18657 77 · KX 18658 25 · KX 18684 34 · KX 18683 34 · KX 18682 19 · KX 18676 11 · KX 18677 27 · KX 18680 63 · KX 18681 41 · KX 18678 22 · KX 18679 22 · KX 18675 22 · KX 18674 31 · KX 18673 22 · KX 18672 620 · KX 18671 31 · KX 18670 16 · KX 18690 11 · KX 18691 22 · KX 18686 13 · KX 18685 31 · KX 18688 16 · KX 18687 27 · KX 18689 16 · KX 18664 22 · KX 18663 34 · KX 18651 34 · KX 18665 13 · KX 18662 11 · KX 18666 22 · KX 18661 19 · KX 18652 48 · KX 18653 31

LEGEND

Soil Sample Site

Weakly Anomalous Soil 80 ppm to 149 ppm

Anomalous Soil 150 ≥ ppm

Rock Sample Site KX 18699

Weakly Anomalous Rock 50 ppm to 149 ppm

Anomalous Rock 150 ≥ ppm

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R. W. Stevenson

KENNCO EXPLORATIONS (WESTERN) LIMITED

Pillar No. 1 Group

Pillar Mineral Claims No. 54-56, 58-64, 66-74, 81-98

Omineca M.D., B.C.

Soil and Rock Geochemical Survey

Lead in Soil and Rock

DATE: 9/5/69	DRAWN BY: J.Q.L., R.J.E.	PLATE NO.: 4
REVISED BY	DATE	SCALE: 1 inch = 400 feet

N

LEGEND

Soil Sample Site

Weakly Anomalous Soil ppm to ppm

Anomalous Soil ≧ ppm

Rock Sample Site KX 18699

Weakly Anomalous Rock ppm to ppm

Anomalous Rock ≧ ppm

To accompany geochemical survey report by R.W. Stevenson, P. Eng., on the Pillar No. 1 Group, 12 miles north of Thutade Lake, Omineca Mining Division, dated May 8, 1969.

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R. W. Stevenson

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1861 MAP 5

KENNCO EXPLORATIONS (WESTERN) LIMITED

Pillar No. 1 Group
Pillar Mineral Claims No. 54-56, 58-64, 66-74, 81-98
Omineca M.D., B.C.
Soil and Rock Geochemical Survey
Sample Sites

DATE: 9/5/69	DRAWN BY: J.Q.L., R.J.E.	PLATE NO.: 5
REVISED BY	DATE	SCALE: 1 inch = 400 feet