

3889

GEOCHEMICAL REPORT

CHALCO CLAIM GROUP

located

50° 120° S.W.

Nicola Mining Division

by

M. A. Kaufman, Geologist

Perry, Knox, Kaufman, Inc.

92 I / 2W

Compilation and Summary: September 15, 1972

Period of Fieldwork: May 13-15 and June 23, 1972

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
No. 3889 1972

M.A.K.

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INTRODUCTION

The Chalco claim group (Record numbers 50974-51013 and 56328-56331) consists of 44 claims (Chalco #1 through 44) staked by John M. McAndrew in December 1971, and by Perry, Knox, Kaufman, Inc. in June 1972, and recorded in the Nicola Mining Division on December 7, 1971 and July 10, 1972. It covers ground formerly covered in part by the Sid claim group. The Chalco claim group was under option to Perry, Knox, Kaufman, Inc. of Spokane, Washington at the time the assessment work was performed.

The center of the claim group is approximately 2½ miles south of the Cragmont Mine on the lower slopes of Promontory Hills and about 2½ miles northwest of Lower Nicola.

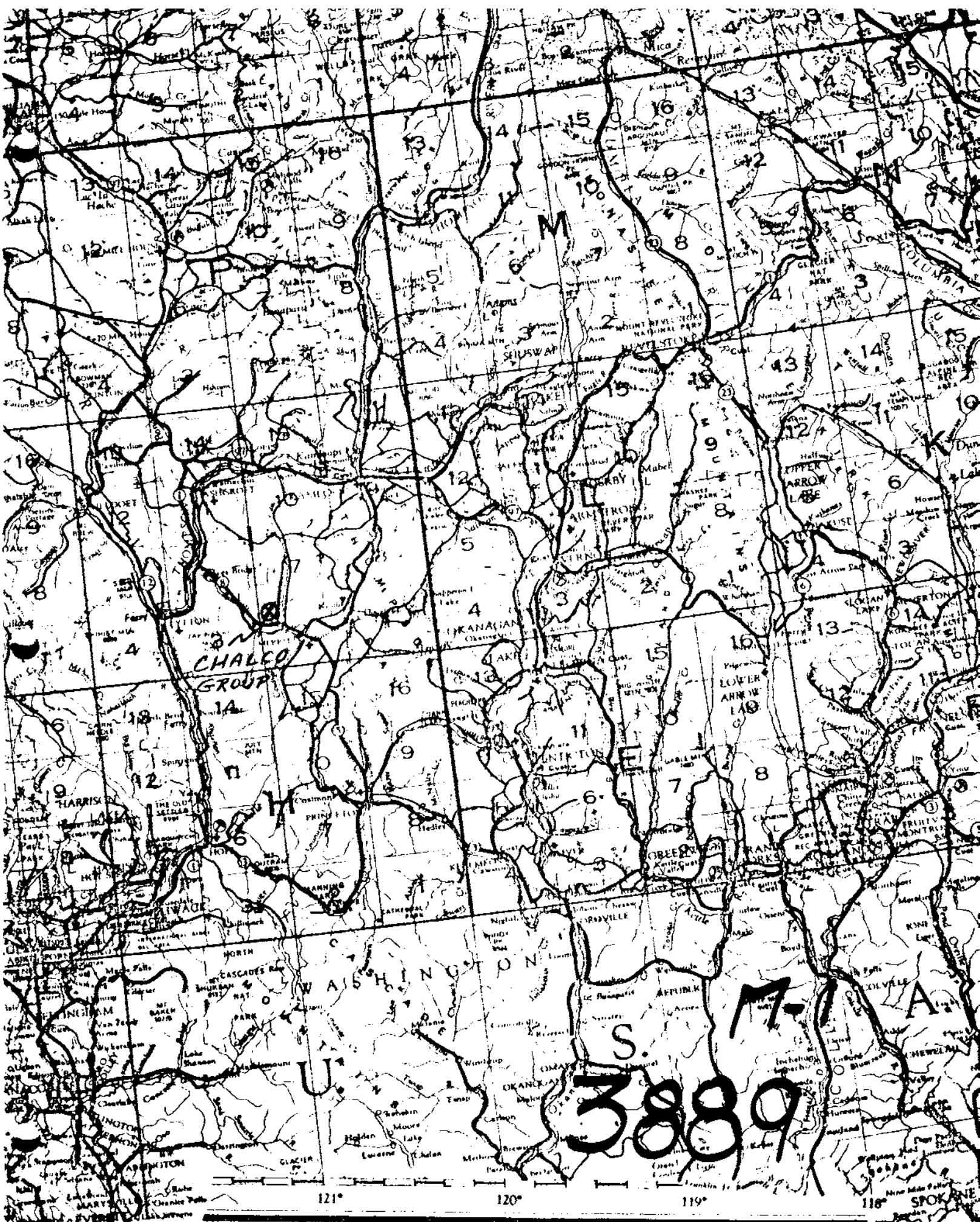
The claim group is easily accessible from Highway 8 by a well-maintained gravel road leading to the Promontory Hills lookout which traverses the property. The claims are situated on gentle easterly and southerly facing slopes at elevations ranging from 2300 to 3500 feet. Vegetation consists of light stands of timber and open fields and meadows.

Perry, Knox, Kaufman, Inc. conducted a limited geochemical survey on two portions of the claim block in May and June 1972. Parts of the areas sampled had previously been shown to contain anomalous copper values as a result of a sampling program conducted by London Pride Silver Mines in 1969. An effort was made to verify and to extend the anomalies onto other untested, geologically favorable ground. Because it had been previously demonstrated that anomalous mercury values occurred in the soils above the Cragmont ore-body and reportedly would have indicated the presence of this deposit prior to its discovery, it was also felt that soil samples taken in the vicinity of the anomalies on the Chalco claims should be analyzed for mercury.

FIELDWORK

Field work on the Chalco claim group was undertaken by E. H. Hager and W. Tisdall during the period May 13 through May 15, 1972, and by J. A. Knox on June 23, 1972. The work was supervised by M. A. Kaufman, geologist and partner in the mineral exploration firm of Perry, Knox, Kaufman, Inc.

A survey grid previously established by London Pride Silver Mines in 1969 was found to be well marked and adequate for much of the soil sampling undertaken. This grid consisted of crosslines run north-south with compass and tape from an east-west base line situated in the middle of the Chalco claim block. The crosslines were positioned at intervals of 400 feet along the base line. Stations were marked at 100 foot intervals along the crosslines with pickets on which station numbers were written. Where ground was sampled that was not covered by the original grid, the existing lines were extended with compass and tape and marked with flagging on which was written the station number.



122°

INDEX MAP

121°

120°

-10-

3889

119°

118°

CHILCO GROUP
NICOLA MINING DIVISION
SCALE 1" = 30 MILES

0

Department of
Mines and Geographical Resources
ASSESSMENT REPORT
NO. 3889 MAP #1

Soil samples were taken in general at 100 to 200 foot station intervals depending upon the purpose of the sampling; where an anomaly had previously been defined, sampling was done on 100 foot spacings, while in untested areas, sampling was at 200 foot intervals. The samples were taken with a soil auger, 4 feet long and 1½ inches in diameter. The B soil horizon was sampled in most instances, generally at a depth of approximately 2 feet; in one area, however, characterized by a meadow traversed by a braided stream system (lines 9200 and 9600W), it proved impossible to obtain a sample uncontaminated by organic material. Pertinent data regarding the samples were recorded at the time of collection. High wet strength Kraft envelopes, 4 inches x 6 inches, were used to collect the samples. The samples were then sent to a custom laboratory (Rocky Mountain Geochemical Corp.) for copper analysis using the following procedure:

1. Geochem samples are dried at 80°C. and the total -80 mesh fraction is passed through a stainless steel and nylon sieve.
2. A 0.50 gram portion of -80 mesh material is weighed into a calibrated test tube.
3. The sample is digested in a hot HClO₄ -HNO₃ acid mixture for two to three hours. This oxidation step with a final boiling temperature of 203°C completely decomposes organic material.
4. The sample volume is carefully diluted to 25 mls with demineralized water. The sample solution is thoroughly mixed and allowed to settle until clear.
5. Copper is analyzed by Atomic Absorption procedures (Techtron A-A-5). Detection limit is 1 ppm for copper.

The sample pulps were then sent to the Cordero Mining Company Laboratory in Winnemucca, Nevada for mercury analyses using the following procedure:

1. Geochem samples are dried at room temperature and the total -80 mesh fraction is passed through a stainless steel and nylon sieve.
2. A 1.25 gram sample of -80 mesh material is heated to +1200°F.
3. The vapor emitted is drawn through a spectrophotometer.
4. The mercury content is analyzed by measuring the absorption of ultraviolet light by the contained mercury vapor.
5. The detection limit for mercury is 2 parts per billion.

Geochem results are reported in parts per million for copper and parts per billion for mercury and plotted on the accompanying Geochemical Survey Maps on a scale of 1 inch = 500 feet.

GENERAL GEOLOGY

The geology of the area has been well summarized in recent literature. The general area is underlain by a northeast-trending belt of Upper Triassic Nicola volcanic and sedimentary rocks. These have been intruded by quartz diorite and diorite of the Guichon batholith to the north near the Craigmont Mine and by dioritic and granitic rocks of the Coyle stock to the south (underlying much of the Chalco claim group). The Nicola rocks and intrusives are overlain locally by Cretaceous Spencer Bridge and Kingsvale volcanics; much of the area between the Craigmont Mine and the Chalco claim area is covered by Kingsvale. Alluvial and glacial overburden masks a great portion of the area, especially on the lower slopes.

The claim area itself is underlain by Nicola rocks, including some limy units along its northwestern edge, which are cut by diorite, quartz diorite and granite differentiates of the Coyle stock. A postulated, fairly strong fault intersection apparently occurs under cover in the east-central portion of the property. Approximately 80% of the claim area is covered by glacial drift and alluvium. Several minor copper showings characterized by generally weak disseminated chalcopyrite, pyrite, malachite, and specularite are present in the claim area, apparently associated with Nicola-intrusive contacts.

GEOCHEMICAL RESULTS

Geochemical samples were collected at 132 stations, all representing soil samples. All samples were analyzed by atomic absorption spectrometry for copper; all samples except 11 were also analyzed by spectrophotometric analysis for mercury. The results have been plotted on map sheets at a scale of one inch = 500 feet. The geochemical results for copper were analyzed statistically to permit the preparation of a cumulative percent frequency plot. This analysis does not clearly indicate the threshold value for anomalous copper; the data utilized are apparently insufficient to permit such a study; previous work in the immediate area indicated a threshold value of approximately 130 parts per million for copper. Statistical analysis for the mercury data was not undertaken since it is apparent from the geochemical results that no anomalous values are present.

A copper anomaly defined by a previous survey in the east-central portion of the claim block along lines 2000W, 2400W, 2800W, and 3200W (0-1000S) could not be verified. The northwest-trending copper anomaly defined by previous work in the west-central portion of the claim block along lines 8400W, 8800W, 9200W, and 9600W was essentially duplicated and extended to the north along lines 9200W and 9600W; all anomalous samples, however, were taken in a meadow traversed by a braided stream system and were found to be at least partially contaminated by organic material; where uncontaminated samples were taken immediately adjacent to this meadow, results were negative. No other anomalous conditions were demonstrated by the remainder of the sampling.

Analysis for mercury proved completely negative. No anomalous assays were obtained.

CONCLUSIONS

The only copper anomaly defined by this survey appears to be related to unavoidable contamination of the samples by organic material which very likely concentrated migrant copper in the vicinity of the meadow traversed by the braided stream system. Samples devoid of organic material are not anomalous. None of the samples were anomalous in mercury, probably indicative of the lack of significant mineralization beneath cover in the areas sampled. Although weak copper mineralization can be observed in several instances and although similar occurrences may occur beneath cover in the survey area, the copper potential of the ground sampled by this survey is believed to be limited with respect to size possibilities.

M. A. Kaufman
M. A. Kaufman
Vice-President
PERRY, KNOX, KAUFMAN, INC.

Spokane, Washington
September 15, 1972

M. A. K.

STATEMENT OF COSTS

1. Salaries and overhead

J. A. Knox	1 day @ \$90.00	\$90.00	
	June 23, 1972		
E. H. Hager	3 days @ \$75.00	225.00	
	May 13-15, 1972		
W. H. Tisdall	3 days @ \$50.00	150.00	
	May 13-15, 1972		
		<hr/>	
Total		\$465.00	\$465.00

2. Field Expenses

J. A. Knox	1 day @ \$15.00	\$ 15.00	
E. H. Hager	3 days @ \$15.00	45.00	
W. H. Tisdall	3 days @ \$15.00	45.00	
Vehicle expenses	4 days @ \$20.00	<u>80.00</u>	
Total		\$185.00	\$185.00

3. Analysis of samples

Rocky Mountain Geochem. Lab.	\$176.00	
Cordero Mining Co., Lab.	<u>189.00</u>	
Total	\$365.00	\$365.00

4. General Supervision and Report
and Map Preparation

\$150.00	<u>\$150.00</u>
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TOTAL		\$1,165.00
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M. A. Kaufman

M. A. Kaufman
Vice-President
Perry, Knox, Kaufman, Inc.

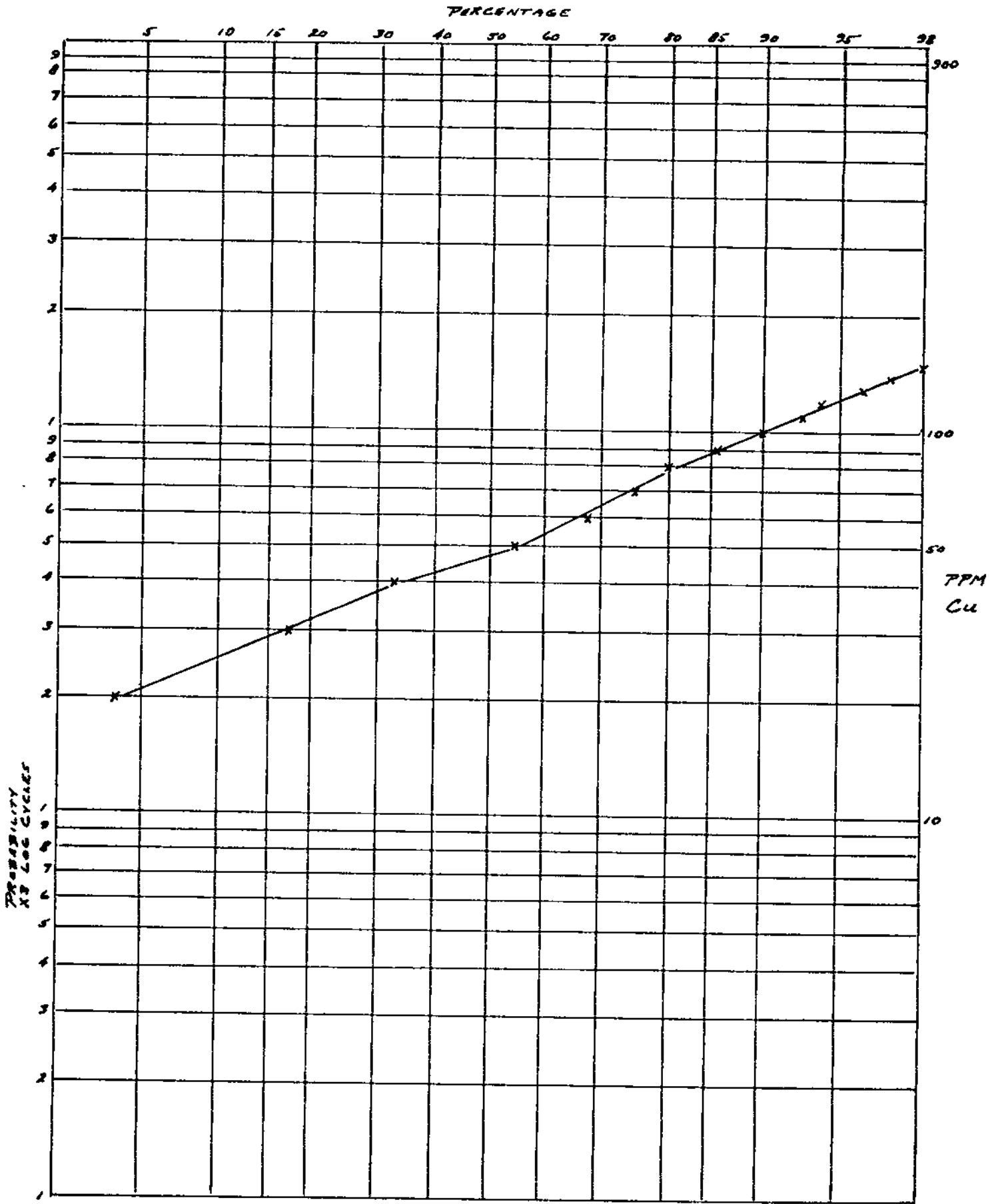
STATEMENT OF QUALIFICATIONS

I, Morris A. Kaufman, do hereby certify:

1. That I am a Consulting Geologist and Vice-President of the geological consulting and mineral exploration firm of Perry, Knox, Kaufman, Inc. with offices at Suite 21, North 20 Pines Road, Spokane, Washington.
2. That I am a graduate of Dartmouth College, 1955, with a Bachelor of Arts Degree, major in geology.
3. That I am a graduate of the University of Minnesota, 1957, with a Master of Science Degree, major in geology.
4. That I have practiced my profession for fifteen years.
5. That I have no direct, indirect, or contingent interest in the claims held by John M. McAndrew, nor do I intend to receive any interest.
6. That this report dated September 15, 1972 is based on a geochemical survey conducted by me and under my supervision at the property on May 13-15 and June 23, 1971.

DATED at Spokane, Washington, this 15th day of September, 1972.

Morris A. Kaufman
Morris A. Kaufman
Consulting Geologist
PERRY, KNOX, KAUFMAN, INC.



BAR INTERVAL 10 PPM

M.C.K.

CHALCO CLAIM GROUP
 SOIL GEOCHEM SURVEY
 CUMULATIVE % FREQUENCY PLOT
 FOR CU

Department of
Mines and Geotectonic Resources

ASSESSMENT REPORT

NO. 3889 M.P. #2



RENO OFFICE

ROCKY MOUNTAIN GEOCHEMICAL CORP.

1491 E. 7TH STREET • RENO, NEVADA 89502 • PHONE: (702) 323-3610

Certificate of Analysis

6

Page 1 of

Date: June 1, 1972
 Client: Cordero Mining Company
 Box 506
 Winnemucca, Nevada 89445

RMGC Numbers: 72-10-14R
 Local Job No.:
 Foreign Job No.:
 Invoice No.: R 4471

Client Order No.: None
 Report On: 126 Pulp Samples
 Submitted by: Johnson
 Date Received: May 25, 1972

Analysis: Copper
 Analytical Methods: Copper analysis determined by atomic absorption.

Remarks: None
 cc: Enclosed
 RMGC
 File
 GME:dkw'

CH-Series Sample No.	ppm Copper	Coordinates
A 0 E	50	3200N 1050W
A 2 E	25	3200N 850W
A 4 E	50	3200N 650W

Rocky Mountain Geochemical Corporation
 Reno, Nevada

June 1, 1972

M.O.K.

All values are reported in parts per million unless specified otherwise. A minus sign (—) is to be read "less than" and a plus sign (+) "greater than." Values in parenthesis are estimates. This analytical report is the confidential property of the above mentioned client and for the protection of this client and ourselves we reserve the right to forbid publication or reproduction of this report or any part thereof without written permission.
 ND = None Detected 1 ppm = 0.0001% 1 Troy oz./ton = 34.286 ppm 1 ppm = 0.0292 Troy oz./ton

CH-Series			ppm Copper	Page <u>2</u> of <u>6</u>	
Sample No.				Coordinates	
A	6	E	40	3200 N	450 W
	8		30	3200 N	250 W
	10		50	"	50 W
	12		55	"	150 E
	14		35	"	350 E
A	16	E	30	"	550 E
B	2	S	35	3000 N,	1050 W
	4		35	2800 N,	1050 W
	6		25	2600 N,	1050 W
	8		30	2400 N,	1050 W
	10		30	2200 N,	1050 W
	12		25	2000 N,	1050 W
	14		35	1800 N,	1100 W
	16		45	1600 N,	1200 W
	18		60	1500 N	1350 W
U	20	S	25	1400 N	1500 W
2W	11	N	35	1100 N	200 W
4W	11	N	30	1100 N	400 W
6W	11	N	40	1100 N	600 W
8W	11	N	25	1100 N	800 W
10W	12	N	45	1275 N	1000 W
12W	2	N	20	200 N	1200 W
	4		20	400 N	1200 W
	6		30	600 N	1200 W
12W	8	N	30	800 N	1200 W

Rocky Mountain Geochemical Corporation
Reno, Nevada

June 1, 1972

M.G.K.



ROCKY MOUNTAIN GEOCHEMICAL CORP.
SALT LAKE CITY UTAH • RENO NEVADA • SPOKANE WASHINGTON • TULSON ARIZONA

CII-Series Sample No.			ppm Copper	<u>COORDINATES</u>	
<u>COORDINATES</u>					
12W	10	N	45	1000 N	1200 W
	12		55	1200 N	1200 W
12W	14	N	35	1400 N	1200 W
20W	0	N	25		
	2	S	80		
	3	S	45		
	4	S	35		
	6	S	35		
	8	S	25		
	10		80		
20W	12	S	35		
24W	0	N	45		
	1	S	35		
	4		45		
	5		55		
	6		50		
	7		40		
	8		45		
	9		65		
	10		95		
	11		95		
24W	12	S	60		
	13	S	50		
	15		45		
24W	16	S	25		

Rocky Mountain Geochemical Corporation
Reno, Nevada

June 1, 1972

M G K



ROCKY MOUNTAIN GEOCHEMICAL CORP.

SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TUCSON, ARIZONA

CII-Series Sample No.			ppm Copper
<i>COORDINATES</i>			
24W	17	S	15
24W	18	S	15
25W	9	S	85
	10		60
	11		60
	12		60
	13		50
25W	14	S	35
28W	1	S	70
	2		50
	3		30
	4		30
	5		65
	6		55
	7		50
	8		85
	9		50
	10		55
	11		45
28W	12	S	35
32W	4	S	40
	6		40
	8		40
	10		70
32W	12	S	60

Rocky Mountain Geochemical Corporation
Reno, Nevada

June 1, 1972

M. G. K.



ROCKY MOUNTAIN GEOCHEMICAL CORP.

SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TUCSON, ARIZONA

CH-Series Sample No.			ppm Copper
<u>COORDINATES</u>			
32W	14	S	60
84W	0	N	30
	2	S	35
	4	S	50
	6		80
84W	8	S	45
88W	4	S	45
	3	S	30
	2	S	60
	0	N	75
	2	N	100
	4	N	90
	6		60
	7		45
	8		55
88W	10	N	70
92W	2	S	50
	0	N	50
	2	N	105
	4	N	35
	6	N	50
	8	N	120
	10	N	140
	12	N	125
92W	14	N	70

Rocky Mountain Geochemical Corporation
Reno, Nevada

June 1, 1972

M.G.K.



ROCKY MOUNTAIN GEOCHEMICAL CORP.

SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TULSON, ARIZONA

CH-Series Sample No.			ppm Copper
<i>COSTADIN HILLS</i>			
92W	16	N	50
	18		80
	20		105
	22		125
	24		255
92W	26	N	45
96W	8	N	30
	9	N	45
	10		70
	11		65
	12		95
	13		90
	14		90
	15		100
	16		85
	17		60
	18		80
	19		105
	20		150
	22		185
	24		120
	26		110
96W	28	N	65

By

Gary M. Fechko

Gary M. Fechko

*M-G-K*Rocky Mountain Geochemical Corporation
Reno, Nevada

June 1, 1972

**ROCKY MOUNTAIN GEOCHEMICAL CORP.**

SALT LAKE CITY, UTAH • RENO, NEVADA • SPOKANE, WASHINGTON • TUCSON, ARIZONA

<u>Sample Number</u>	<u>PPM Copper</u>	<u>(COORDINATES)</u>	
92W-24N	155	9200 W	2400 N
92W-26N	85	"	2600 N
92W-28N	70	"	2800 N
92W-2NW	130	2900 N	9375 W
92W-3NW	85	2500 N	9800 W
92W-4NW	55	2800 N	9550 W
92W-5NW	65	2900 N	9625 W
92W-9NW	50	2975 N	9800 W
92W-2SE	45	2450 N	9050 W
92W-4SE	40	2350 N	8875 W
92W-7W	55	2700 N	9800 W

BY Terry B. Henderson
Terry B. Henderson



ROCKY MOUNTAIN GEOCHEMICAL CORP.
SALT LAKE CITY UTAH • RENO NEVADA • SPokane WASHINGTON • TUCSON ARIZONA

M.G.K.

CORDERO MINING COMPANY

POST OFFICE BOX 506
WINNEMUCCA, NEVADA 89445
27 July, 1972

Perry, Knox & Kaufman
P.O.Box 14336
Spokane, Wash. 99214
Att: Jim Knox

Dear Sir;

*See Copper geochem sheets
for coordinates*

Sample	Hg. (ppb)	Sample	Hg. (ppb)
CH A 0 E	11	CH 24W 0N	9
	2		1S
	4		4S
	6		5
	8		6
	10		7
	12		8
	14		10
CH A 16E	5		11
CH B 2 S	5		12
	4		13
	6		15
	8		16
	10		17
	12	CH 24W 18S	4
	14	CH 25W 9S	6
	16		10
	18		11
CH B 20S	6		12
CH 2W 11N	10		13
CH 4W 11N	9	CH 25W 14S	6
CH 6W 11N	6	CH 28W 1S	5
CH 8W 11N	6		2
CH 10W 13N	6		3
CH 12W 2 N	4		4
	4		5
	6		6
	8		8
	10		9
	12		10
CH 12W 14	2		11
CH 20W 0 N	5	CH 28W 12S	3
	2 S	CH 32W 4S	3
	3		6
	4		8
	6		10
	8		12
	10	CH 32W 14S	17
CH 20W 12S	6		6

27 July, 1972
 Ferry, Knox & Kaufman
 P.O. Box 14336
 Spokane, Wash. 99214
 Att: Jim Knox
 page 2

*See Copper geochem sheets
 for coordinates.*

	Sample	Hg. (ppb)	Sample	Hg. (ppb)
CH	84W	0N	CH 92W	20N
		3		4
		3		22
		4		24
		4	CH 92W	26N
CH	84W	6S	CH 96W	8N
		3		9
CH	88W	8S		10
CH	88W	4S		11
		4		12
		3		13
		5		14
		4		15
		2		16
		2		17
		4		18
		6		19
		5		20
CH	88W	10N		22
		5		24
CH	92W	2S		26
		3	CH 96W	28N
		6		3
		5		
		5		
		4		
		2		
		5		
		4		
		4		
		3		
		4		
		4		
CH	92W	18N		
		2		

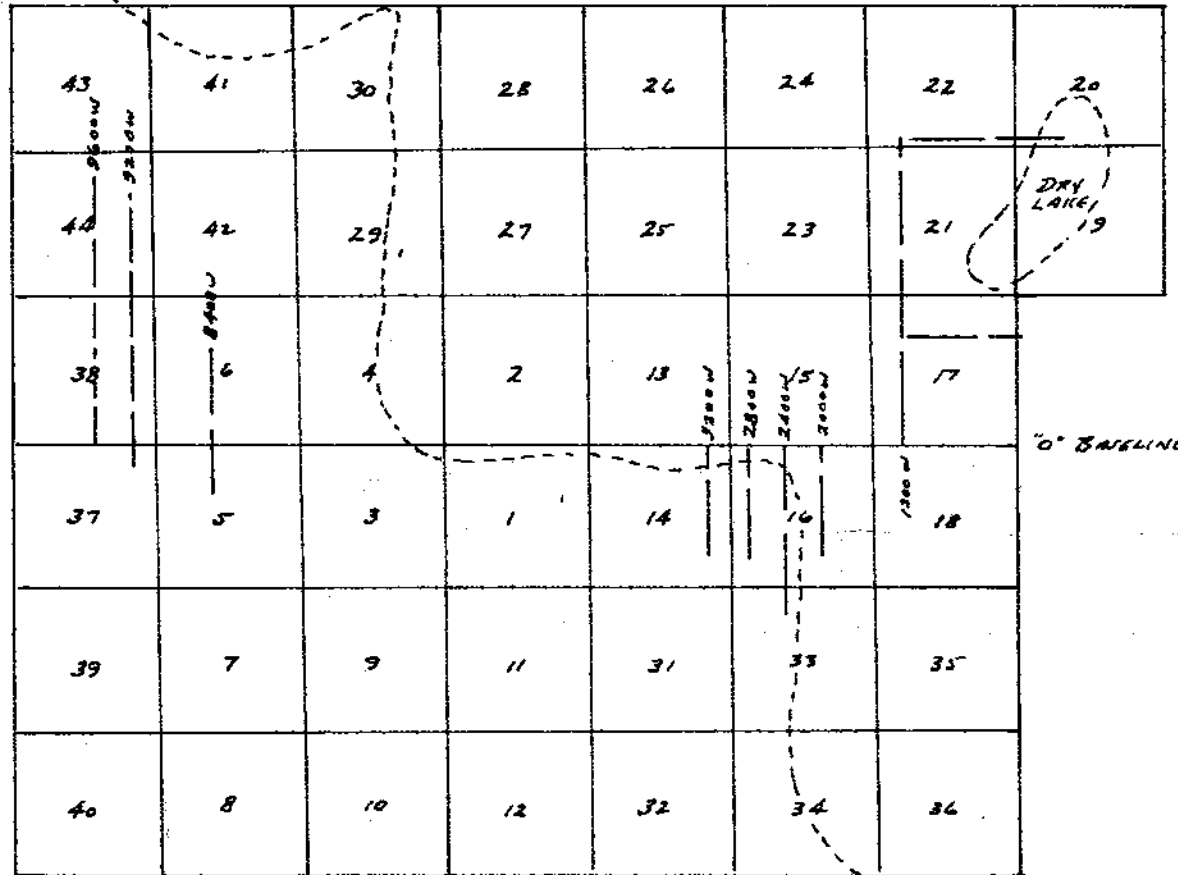
Sincerely,

Jack H. Johnson

M.A.K.

enc: Inv. W/PKK

Proclamation 5000 Forestry
Lockout



Department of
Mines and Geology Resources
ASSESSMENT REPORT
NO. 3889 M.P. #3

38889 M-3

LOWER
NICOLA

CHALCO GROUP
CLAIM LOCATION MAP

SCALE: 1" = 2000 FT.
SEPT., 1972

GEOCHEMICAL REPORT
CHALCO CLAIM GROUP, NICOLA MINING DIVISION
M.A. KAUFMAN

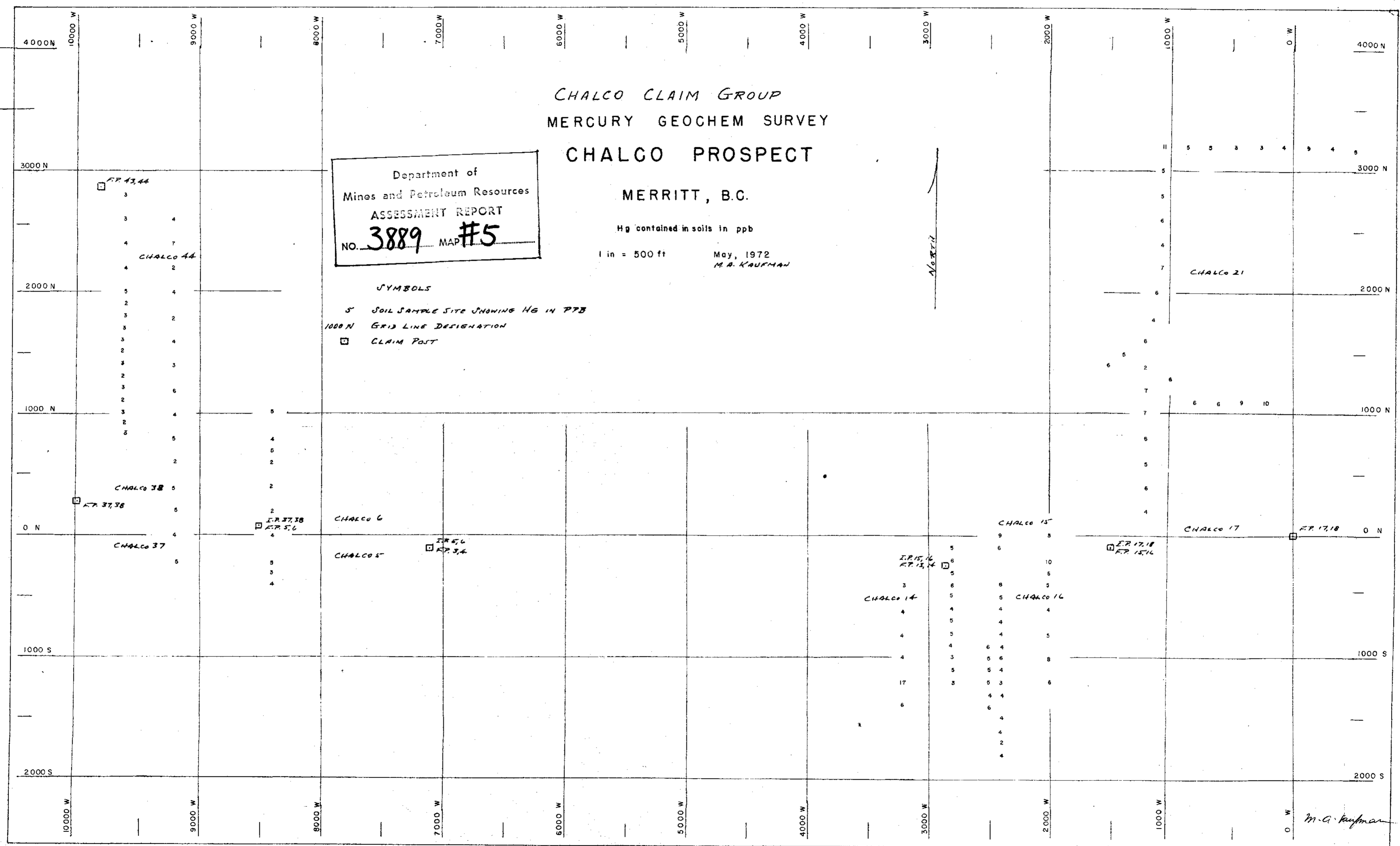
M.A. KAUFMAN
PERRY, KNOX, KAUFMAN, INC.
M.A. Kaufman

CHALCO CLAIM GROUP
 MERCURY GEOCHEM SURVEY
 CHALCO PROSPECT

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. **3889** MAP **#5**

MERRITT, B.C.
 Hg contained in soils in ppb
 1 in = 500 ft May, 1972
 M. A. KAUFMAN

SYMBOLS
 S SOIL SAMPLE SITE SHOWING Hg IN PPB
 1000 N GRID LINE DESIGNATION
 □ CLAIM POST



M.A. Kaufman

CHALCO CLAIM GROUP
COPPER GEOCHEM SURVEY

CHALCO PROSPECT

MERRITT, B.C.

Cu contained in soils in ppm

1 in. = 500 ft.

May, 1972

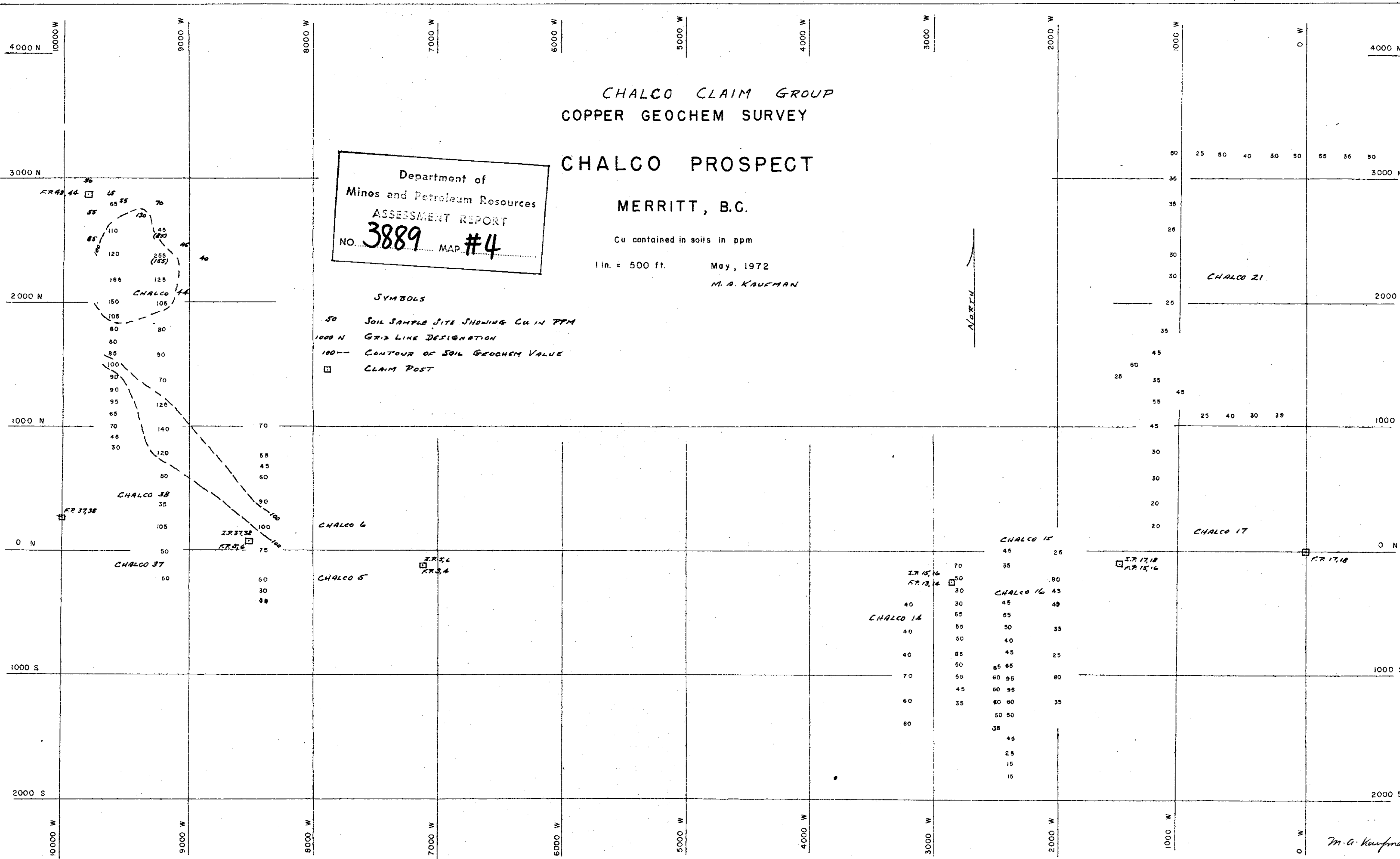
M. A. KAUFMAN

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3889 MAP #4

SYMBOLS

- SO SOIL SAMPLE SITE SHOWING CU IN PPM
- 1000 N GRID LINE DESIGNATION
- 100-- CONTOUR OF SOIL GEOCHEM VALUE
- CLAIM POST

NORTH



M. A. Kaufman