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31M04SE0006 63G.8 CASSELS

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REPORT  
ON  
GEOCHEMICAL SURVEY  
SILVER LEADER CLAIMS  
CASSELS & RIDDELL TWPS.  
TEMAGAMI, ONT.

Haileybury, Ont.  
22 January 1969

E.K. Campbell, P. Eng.

## SUMMARY & CONCLUSIONS

This report describes a geochemical soil sampling survey in 1968 on a block of 107 claims in Cassels and Riddell Twps., Temagami, Ontario. The object of the survey has been the discovery of economic silver deposition.

The 6.5 sq. mi. area of the claims is but a portion of a 25 sq. mi. area sampled; that 25 sq. mi. area is but a portion of a 300 sq. mi. area on which a stream sediment geochemical survey was conducted in 1967.

The results of sampling from the small area of the claims do not of themselves permit an assessment of the agencies dispersing the geochemical values. That assessment is made largely upon data obtained beyond the claim boundaries.

Five possible occurrences of silver deposition are indicated by the survey. The vicinity of one requires further sampling; all require further topographic and geologic study before specific recommendations for further work can be made.

INTRODUCTION

This report covers a submission of a report of work made by Barringer Research Limited on 107 claims situated in Cassels and Riddell Twps., Temagami Area, Ontario, and presents an interpretation of the geochemical data contained therein.

The claims covered by that submission are:

T 58963 - 59016  
 T 60414  
 T 60465 - 60489  
 T 60704 - 60707  
 T 61302 - 61319  
 T 61526 - 61528  
 T 61898 - 61899

The programme of exploration for silver ore deposits was conceived by the writer and recommended to Silver Leader Mines Limited in a private report dated 28 February 1967. It proposed a 2 phase, 2 year programme in the area generally defined as being south of the Montreal River, west of Lake Temiskaming, north of the south boundaries of Riddell and Eldridge Twps., and east of the Ontario Northland Railway, - an area containing approximately 300 square miles.

Phase I of the programme was to cover the entire area by stream and lake shore sediment sampling with the object of selecting an area of about 30 square miles for subsequent more detailed soil sampling. Phase I was completed in the 1967 field season.

Phase II covering the detailed soil sampling was conducted on an area containing approx. 25 square miles bounded on the north by the north boundary of the Silver Leader claims, on the east by the east boundaries of Cassels and Riddell Twps., and on the south and west by Rabbit Lake - Cassels Lake - west boundary of the Silver Leader claims. Phase II was completed in the 1968 field season.

There are peculiar difficulties in making a report on the interpretation of this extensive programme. The area covered by the claims is about 6.5 square miles; the evidence on which a thorough interpretation can be made was obtained throughout an area of 300 square miles, at considerable effort and expense. Only a fraction of all this evidence was collected on the claims themselves, and only this fraction has been used as a basis for applying for assessment work credits. It would be absolutely impossible to make any sensible interpretation based upon the evidence collected only from the claims, and the reader will doubtlessly feel that the deductions presented herein do not follow naturally from the evidence disclosed.

References for this report are:

Preliminary Geological Map No. p 321, Haileybury Sheet, Geologi-

cal Compilation Series, Ont. Dept. of Mines, 1" to 2 mi.

Map 31 M/SW Haileybury Sheet, National Topographic Series,  
Canada Dept. Mines & Technical Resources,  
1:125,000

R. Thomson, 1960-61; Preliminary reports covering townships  
in the vicinity of Cobalt.

E.W. Todd, 1925; The Matabitaban Area; O.D.M. vol 34, pt. 3.

Air photos; 1" to 1 mile RCAF; 1" to  $\frac{1}{4}$  mile ODLF.

GENERAL GEOLOGY

The geology of the area in which the claims lie is described and mapped in Todd's report, op. cit.. The writer has gone to considerable effort to check the results of Todd's mapping, and has found that they are truly accurate. A structural conflict, or an observation casting some doubt upon the diabase "sill", is inherent in Todd's observations on page 24, lines 4 and 12. The writer was unable to find either of these exposures.

Details of the characteristics of silver deposits can be learned from R. Thomson's reports (op. cit.) and it would be superfluous to set them down herein. Only two general comments require expression in this report:

- (i) In the richest of known deposits, there is a discouragingly small weight of metallic elements available for release into the surface environment by processes of erosion.
- (ii) All known Ag and Co deposits occur within 600 feet of a contact of Nipissing diabase.

### SURVEY CONTROL & SAMPLING PROCEDURES

The reconnaissance soil sampling results are presented on map sheets to the scale of 1" to 400'. The base map for these sheets is a photo enlargement to that scale of the local Forest Resources Inventory sheets to the scale of 1" to 1320'.

The point of origin for the line grid is the surveyed post at the SE corner of Cassels Twp.; the base line is the south boundary of Cassels Twp.. North-south lines were run from the base line over the sampled area at spacing varying between 3000 and 3500 feet depending upon the topography as determined by stereoscopic examination of air photographs. Stations along these lines were measured and marked at 100 ft. intervals; 40.3 miles of line were out and measured.

Sampling was conducted on compass and pacing traverse lines between fixed points on the out lines. Old picket lines running EW magnetic in the vicinity of Gosselin Lake were brushed out and used for traverse lines. The areas on which detailed sampling was conducted were covered by grids of rigidly controlled picket lines, in general 500' apart.

Sample density was 200' x 500' generally, 200' x 400' on the grid of old picket lines around Gosselin Lake, and 100' x 100' in the detail areas. Soil sampling was scrupulously restricted to the B- horizon and was conducted either by a hand auger or by grub-hoe. Samples were transported in specially designed Kraft paper bags, and shipped for analysis to Barringer Research's laboratories at Rexdale, Ont..

ANALYTICAL TECHNIQUES

At the laboratory, the samples were dried, screened to -80 mesh, and analysed by atomic absorption techniques for Ag, total Co, and total Cu. The selection of these elements was based upon the experience of Barringer Research and that of the writer with the Temiskaming-type silver deposits. It must be stated that, in the writer's experience with similar surveys, their success is delicately dependent upon precision of analyses. There is little metal at the source; the detection of an anomalous soil sample is not uncommonly the product of careful statistical examination of a large array of data which must be of a precision compatible to the demands of the statistical treatment. The writer knows of no other laboratory in the world where an attempt is made to perform custom silver analyses down to a level of 0.1 parts per million.

### SUPERVISION

The writer laid out the area for reconnaissance soil sampling on the basis of his interpretation of the previous stream and lake sediment sampling results. He laid out and supervised the line-cutting, laid out the areas for subsequent detail sampling as the reconnaissance results were obtained, examined the topography and geology of the anomalous areas, and adjusted the plotted locations of the sample stations. Stereoscopic study of air photographs was employed extensively.

Barringer Research conducted the sampling, provided field supervision of the sampling parties, administered them and provisioned them, and did the draughting required of the programme. They provided the consulting services necessary for the sampling procedures.



## DISCUSSION OF RESULTS

The general principles governing the dispersion of geochemical values in areas of continental glaciation have been established in exploration and research projects conducted by Sisece Metals of Ontario Ltd. under the writer's direction since 1964. Many of these are evident in the Silver Leader programme, which displays a wide dispersion of metal values in complex and varying patterns.

The two principal agencies producing these patterns are glacial and hydromorphic. Interpretation requires that hydromorphic patterns emanating from a bed rock source be distinguished from those emanating from glacial fans of transported soils, and that both be distinguished from unmodified patterns in the transported soils.

Hydromorphic patterns can be detected by comparing the results of analyses for the total amounts of metals present with the results produced by cold extraction techniques for the same metals. This procedure is time-consuming and expensive, and its results are usually predictable by a detailed study of topography.

Distinction between hydromorphic anomalies emanating from a bed-rock source and those emanating from transported soils can be achieved with difficulty by applied knowledge of the decay rates, or the chemical susceptibilities of the different metals. This distinction is based upon the hypothesis, for which the writer has elsewhere collected some evidence, that anomalies in transported soils are in the process of decay, while those from bed-rock sources are in equilibrium. Anomalies from bedrock sources in general show a close relationship of anomalous values between the different metals being tested; those in or emanating from transported soils exhibit divergent patterns for the different metals, and contain a greater proportion of those elements with the slower decay rates. In the array of elements used in this survey, the order of decreasing decay rate is Co, Cu, Ag, - their relative positions in the Schurman series being supported by the distribution of their anomalous patterns in the survey.

It is quite possible that local Archaean copper deposits have interfered with the relationship between the metals in the soil anomalies (Map P321 op. cit.); it is safe to accept that silver and cobalt deposition is confined exclusively to the Nipissing diabase environment.

There is one overwhelming difficulty in interpreting such a survey: where glacial dispersion from one source overlies a second source, it is virtually impossible to detect the second source.

The statistics resulting from study of the frequency values of the elements analysed in this survey are presented be-

low. They are based upon 8676 samples taken from the whole survey area. Statistics based on only those samples from the staked claims would be quite different and not so reliable.

	<u>Copper</u>	<u>Cobalt</u>	<u>Silver</u>
Background	0 - 19 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd Order Anomalies	-	22 - 28 ppm	0.2 - 0.3 ppm
1st Order Anomalies	+ 27 ppm	+ 28 ppm	+ 0.3 ppm

Reconnaissance work 1" = 400'

Silver Noteworthy concentrations of anomalous silver values occur at the following locations; the letters following them indicate the detailed surveys that were conducted on them:

NW corner of the claim group, claim T 58999 and surroundings, "F".

East and west of Gosselin Lake, claims T 61528 and T 61526, "A", "BC", "D".

Peninsula in Cassels Lake, claim T 60479, "E"

Other notable silver anomalies lack coincident copper and cobalt confirmation and are dismissed as being of glacial origin. All of the above locations are in areas in which silver deposition is geologically possible.

Copper Anomalies with good coincidence with silver anomalies are:

NW corner of the claims group, claim T 58999 and surroundings.

West of Gosselin Lake, claim T 61526.

East of Gosselin Lake there is coincidence only in part. Elsewhere, coincidence is poor or lacking.

Cobalt Coincident areas are

NW corner of the claim group  
West of Gosselin Lake.

East of Gosselin Lake there is only partial coincidence. In the other silver anomalies the cobalt coincidence is poor.

The geology and topography of these areas were examined in detail. There is some suggestion that there has been lacustrine interference or modification of all anomalies on the W

shore of Obushkong Lake and in a large area around the N end of Gosselin Lake at elevations below 1050 feet (Map 31M/SW op. cit.), suggesting that at some recent time the water level of the Cassels Lake system was about 50 feet higher than at present. Possibly lake sediments overlie the glacial morrain below this former water level.

### Detail Work

Selection of areas for detail work was done as the results of analyses were being received; the order of their lettering should not be construed as their order of importance.

### Area A

Better coincidence of values is apparent on the detail sheet than on the reconnaissance sheet. Coincidence is exact however only in the linear anomaly trending NE to the NE corner of the area. Possibly there is a bedrock source mineralization on L 2 S, 200' E. Most of the anomalous values are interpreted as being of glacial origin. The area requires further topographic study.

### Area BC

The strongest Ag values in the vicinity of L 3 S, 0 - 200'E lack support from coincident copper and cobalt values. Highly anomalous copper and cobalt values elsewhere lack strong confirmation from silver values. These anomalies are interpreted as being of glacial origin.

### Area D

The absence of coincident anomalous values suggests that there is no source of silver mineralization within the area. An interesting succession of strong copper-cobalt anomalies extends from the pond at departure 40 W, SW into the large swamp and then SE to cross the NS road. This is an obvious hydro-morphic anomaly conforming faithfully to the local seepage pattern. The absence of silver anomalies makes the source of these values purely academic.

### Area E

The area is noteworthy for its many high silver values. High copper and cobalt values seem scattered in a random pattern bearing no relationship with the silver anomalies. Values in this area are interpreted as arising from a glacial dispersion fan.

Area F, 2 sheets

Throughout most of this area the base line for the grid is a series of surveyed points on the road traversing it. High silver values coincident with high copper and cobalt values suggest that there are several bed-rock sources. The precise locations of these are difficult to determine from the geo-chemical data, but the following possible sites are indicated:

I. L 2N, 350'W. Only moderate glacial and hydromorphic dispersion is indicated in the array of values from this location, in a SE direction, that of ground slope. The location is in Huronian rocks within 50 feet of the Huronian:Keewatin contact; overlying diabase has been removed by erosion.

II. L 3.5 N, 250'E. Moderate dispersion in a S to SE direction is apparent. The location is on the Huronian:diabase contact; there is topographic evidence that this contact is a NS fault.

III. L 15N, 250'W. Good coincidence of high values occurs at this location, but this anomalous centre might be part of an interrupted hydromorphic train originating at the intersection of L 12 N with the road. The former location is in Huronian rocks within 75' of an inferred Huronian:Keewatin contact; the latter is 120'W and down-slope from the Huronian:diabase contact. Close examination of the local topography and drainage will be required to resolve this ambiguity.

IV. L 2 NE at the road, or L 15 N, 200'E. Loss of samples in this vicinity is distressing and makes more difficult the resolution of what is obviously a sharply definable pattern. The ground slope is NW toward the pond (Hogie Lake) and the array of anomalous values strongly suggests hydromorphic dispersion from a bed rock source. Re-sampling and close examination are required for a more precise interpretation.

  
 .....  
 E.E. Campbell, P. Eng.

GEOCHEMICAL SURVEY - PROCEDURE RECORD

APPLICANT C. Polson

AREA Cassells Twp.

CLAIM NOS. T60465, 67, 68, 70, 71, 72, 75, 76, 77, 78, 79, 80, 83, 84, 85, 86, 87, 88

SAMPLING DATA

ANALYSIS DATA

Sampling dates See List # L To .....

Analysis dates June 3/68 To Aug 21/68

Sampler(s) See List # L .....

Analyst(s) L. Davis, B. Clews, D. Ridout,

M. Hazeldene, E. Barclay .....

Sampling method Auger .....

Values in ~~PPM~~ PPM Cu Pb Zn Ag Ni Co.

Sample depth Average 8 ins. .....

As. Others .....

Average Sample Weight 1 pound .....

Field Analysis (.....tests) None .....

Horizon Sampled 'B' .....

Horizon Development Fair .....

Field lab Analysis (.....tests) None .....

Terrain Rugged in part .....

Sample Preparation Air dried sieved .....

to -80 mesh .....

Commercial Laboratory (248 tests) .....

for each metal .....

General .....

General .....

COMMENTS \_\_\_\_\_

Signed John L. Walker

Date Jan 10/69

GEOCHEMICAL SURVEY - PROCEDURE RECORD

APPLICANT Silver Leader Mines Limited

AREA Cassells Twp.

CLAIM NOS. T58972, T58973, T61898, T61899, T58999, T59001, T59002, T59005, T59006

SAMPLING DATA

ANALYSIS DATA

Sampling dates Aug 12..... To Nov 4...

Analysis dates Nov 11..... To 19.....

Sampler(s) D. Bernier, N. Wilson.....

Analyst(s) L. Davis, M. Hamill.....

A. Paine, Y. Hazeldene.....

METHODS

Sampling method Auger.....

Values in ~~%~~ PPM Cu Pb Zn Ag Ni Co.

Sample depth Average 8".....

As Others.....

Average Sample Weight .1 pound.....

Field Analysis (.....tests) .....

Horizon Sampled 'B'.....

Horizon Development Fair.....

Field lab Analysis (.....tests).....

Terrain..... Rough in part.....

Sample Preparation Air dried.....

sieved to #80 mesh.....

Commercial Laboratory (.512..tests)...

for each metal.....

General .....

General .....

COMMENTS \_\_\_\_\_

Signed John L. Walker.....

Date Jan 15, 1969.....

GEOCHEMICAL SURVEY - PROCEDURE RECORD

APPLICANT Silver Leader Mines Limited

AREA Cassells Township

CLAIM NOS. See List 'F'

SAMPLING DATA

ANALYSIS DATA

Sampling dates See List 'G'.. To .....

Analysis dates June 3. 1968..... To Aug. 21., 68

Sampler(s) See List 'G'.....

Analyst(s) L. Davis, B. Clews, D. Ridout, ..

Y. Hazeldene, E. Barclay.....

Sampling method Auger.....

METHODS  
Values in ~~PPM~~ PPM Cu Pb Zn Ag Ni Co.

Sample depth Average 8 ins.....

As Others.....

Average Sample Weight .1 pound.....

Field Analysis (.....tests) none...

Horizon Sampled 'B'.....

Horizon Development Fair.....

Field lab Analysis (.....tests) none

Terrain Rugged in part.....

Sample Preparation air dried and.....

sieved to -80 mesh.....

Commercial Laboratory (..1541 tests)...

.....for each metal.....

General .....

General .....

COMMENTS .....

Signed John L. Walker  
Date Jan 10 / 69

E

GEOCHEMICAL SURVEY - PROCEDURE RECORD

APPLICANT C. Polson

AREA Cassells Twp.

CLAIM NOS. T60476, T60477, T60478, T60479, T60484

SAMPLING DATA

ANALYSIS DATA

Sampling dates Aug 12..... To Nov 4....

Analysis dates Oct 21..... To 28.....

Sampler(s) W. Barclay, D. Bernier.....

Analyst(s) L. Davis, M. Hamill.....

N. Wilson.....

A. Paine, Y. Hazeldene.....

Sampling method Auger.....

METHODS

Values in ~~PPM~~ PPM Cu Pb Zn Ag Ni Co.

Sample depth Average 8".....

As.Others.....

Average Sample Weight 1 pound.....

Field Analysis (.....tests).....

Horizon Sampled 'B'.....

Horizon Development Fair.....

Field lab Analysis (.....tests).....

Terrain... Rough in part.....

Sample Preparation Air dried.....

sieved to -80 mesh.....

Commercial Laboratory (536..tests)...

..... for each metal.....

General .....

General .....

COMMENTS \_\_\_\_\_

Signed John L. Walker.....

Date Jan 15, 1969.....



GEOCHEMICAL SURVEY - PROCEDURE RECORD

APPLICANT Silver Leader Mines Ltd.

AREA Cassells Twp.

CLAIM NOS. T59005, T59006, T59007, T59009

SAMPLING DATA

ANALYSIS DATA

Sampling dates Aug 12..... To Nov 24..

Analysis dates Sept 20..... To 27....

Sampler(s) W. Barclay, D. Bernier.....

Analyst(s) L. Davis, M. Hamill.....

D. Squires, D. Squires, J. Larway.....

A. Paine, Y. Hazeldene.....

D. Ridley.....

METHODS

Sampling method Auger.....

Values in ~~%~~ PPM Cu Pb Zn Ag Ni Co.

Sample depth Average 8".....

As Others.....

Average Sample Weight 1 pound.....

Field Analysis (.....tests).....

Horizon Sampled B.....

Horizon Development Fair.....

Field lab Analysis (.....tests).....

Terrain..... Rough in part.....

Sample Preparation air dried.....

sieved to -80 mesh.....

Commercial Laboratory (..467..tests)...

....for each metal.....

General .....

General .....

COMMENTS \_\_\_\_\_

Signed .....

*John L. Walker*  
*Jan 15, 1969*

GEOCHEMICAL SURVEY - PROCEDURE RECORD

APPLICANT Silver Leader Mines Limited  
 AREA Cassells Twp. Ontario  
 CLAIM NOS. T58979, T59000, T59001, T59007, T59006, T61526, T61527, T60707, T60414

SAMPLING DATA	ANALYSIS DATA
Sampling dates . . . Aug 12 . . . . . To Nov 4 . . . . .	Analysis dates Sept. 10 . . . . . To 19 . . . . .
Sampler(s) . . . W. Barclay; D. Bernier . . . . .	Analyst(s) L. Davis, M. Hamill . . . . .
. . . Doug Squires, Dennis Squires . . . . .	. . . Y. Hazeldene, E. Barclay . . . . .
. . . J. Larway; D. Ridley . . . . .	. . . . .
Sampling method . . . Auger . . . . .	<u>METHODS</u> Values in % PPM Cu Pb Zn Ag Ni Co. XXX
Sample depth . . . . . Approx. 8 ins. . . . .	As Others . . . . .
Average Sample Weight . . . . . 1 pound . . . . .	Field Analysis ( . . . . . tests) . . . . .
Horizon Sampled . . . . . tp . . . . .	. . . . .
Horizon Development . . . . . Fair . . . . .	Field lab Analysis ( . . . . . tests) . . . . .
Terrain . . . . . Rough in part . . . . .	. . . . .
Sample Preparation . . . . . air dried sieved . . . . .	. . . . .
. . . . . to -80 mesh . . . . .	Commercial Laboratory ( . . . . . tests) . . . . .
. . . . .	. . . . . for each metal . . . . .
General . . . . .	General . . . . .
. . . . .	. . . . .

COMMENTS \_\_\_\_\_  
 \_\_\_\_\_

Signed John L. Walker  
 Date Jan 15, 1969

GEOCHEMICAL SURVEY - PROCEDURE RECORD

APPLICANT Silver LEader Mines Limited

AREA Cassells Twp.

CLAIM NOS. T58978, T58990, T58991, T58995, T61528, T61527

SAMPLING DATA

ANALYSIS DATA

Sampling dates Aug 12 To Nov 4

Analysis dates Aug 20 To 29

Sampler(s) W. Barclay, D. Bernier,

Analyst(s) L. Davis, M. Hamill

Doug Squires, Dennis Squires,

Y. Hazeldene, E. Barclay

J. Larway, D. Ridley

METHODS

Sampling method Auger

Values in ~~ppm~~ PPM Cu Pb Zn Ag Ni Co.

Sample depth Average 8 ins.

As Others

Average Sample Weight 1 pound

Field Analysis (.....tests)

Horizon Sampled 'B'

Horizon Development Fair

Field lab Analysis (.....tests)

Terrain Rough in part

Sample Preparation air dried

.....sieved to: 80 mesh

Commercial Laboratory (.319 tests)

for each metal

General

General

COMMENTS

Signed John L. Walker

Date Jan 15, 1969

GEOCHEMICAL SURVEY - PROCEDURE RECORD

APPLICANT Silver Leader Mines Limited

AREA Riddell Twp.

CLAIM NOS. T61306, 07, 09, 10, 12, 13, 14, 15, 16, 17, 18, 19

SAMPLING DATA

ANALYSIS DATA

Sampling dates July 31/68 To Aug 6/68

Analysis dates June 3/68 To Aug. 21/68

Sampler(s) W. Barclay, Doug Squires  
P. McKinley, A. Robertson

Analyst(s) L. Davis, B. Clews  
D. Ridout, Y. Hazeldene, E. Barclay

METHODS

Sampling method Auger

Values in ~~PPM~~ PPM Cu Pb Zn Ag Ni Co

Sample depth Average 8 ins.

As Others.....

Average Sample Weight 1 pound

Field Analysis (.....tests) none

Horizon Sampled 'B'

Horizon Development Fair

Field lab Analysis (.....tests) none

Terrain Rugged in part

Sample Preparation air dried and  
sieved to -80 mesh

Commercial Laboratory (.191..tests)...

for each metal

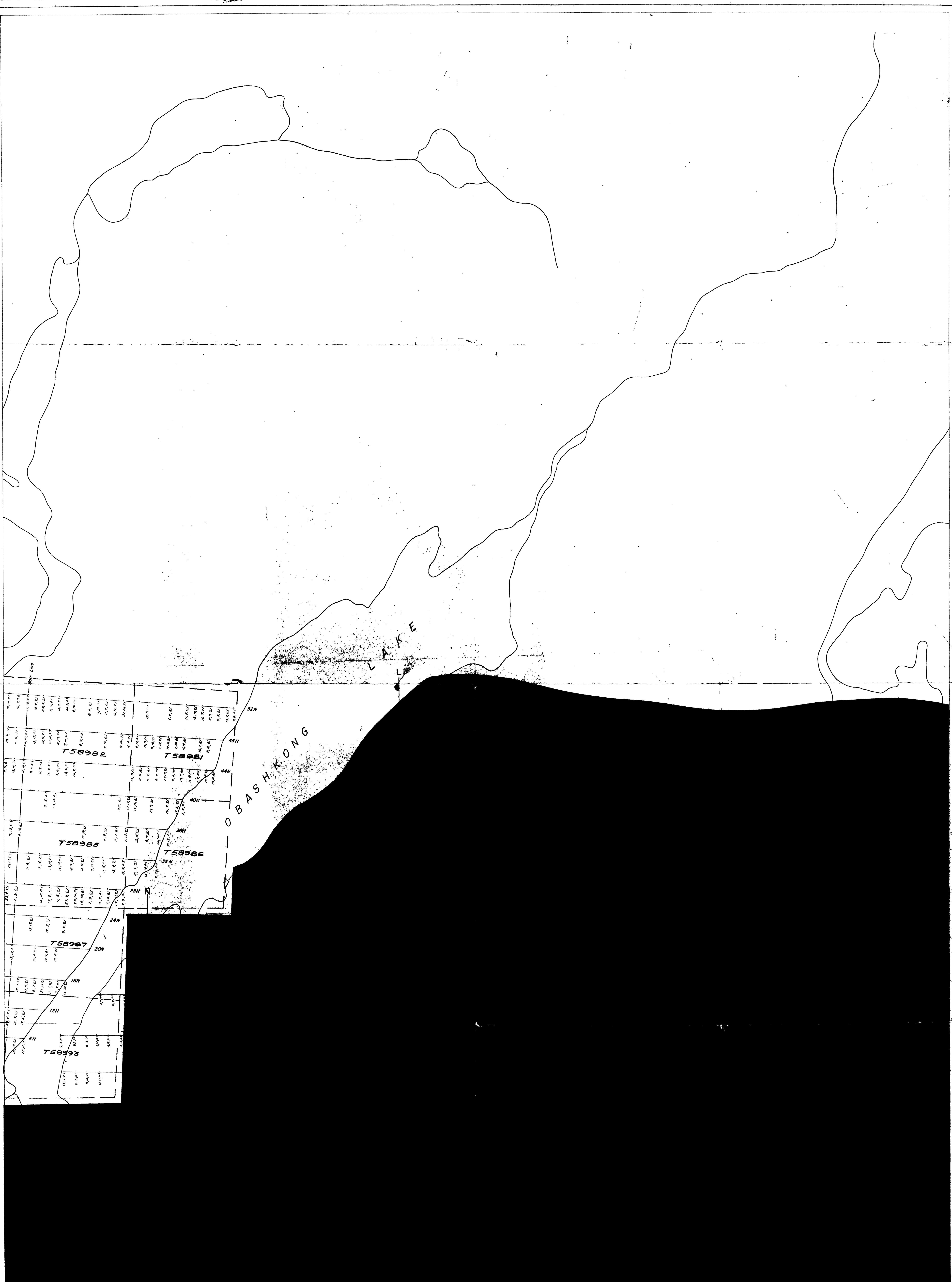
General .....

General .....

COMMENTS .....

Signed John L. Walker

Date Jan 10 / 69



**LEGEND**

Geochem. Values in ppm— Cu, Ca, Ag, — 1/2, 1/4, 1/8  
 Note Ag values less than 0.1 ppm shown thus: 0.1

	COPPER	COBALT	SILVER
Background	0-19 ppm	0-15 ppm	0-0.1 ppm
Threshold	20-27 ppm	16-21 ppm	0.12-0.2 ppm
2nd order Anomalous	—	22-28 ppm	0.2-0.3 ppm
1st order Anomalous	+27 ppm	+28 ppm	+0.3 ppm

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*John L. Walker*  
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Work undertaken by  
**BARRINGER RESEARCH LTD.** Toronto, Canada.

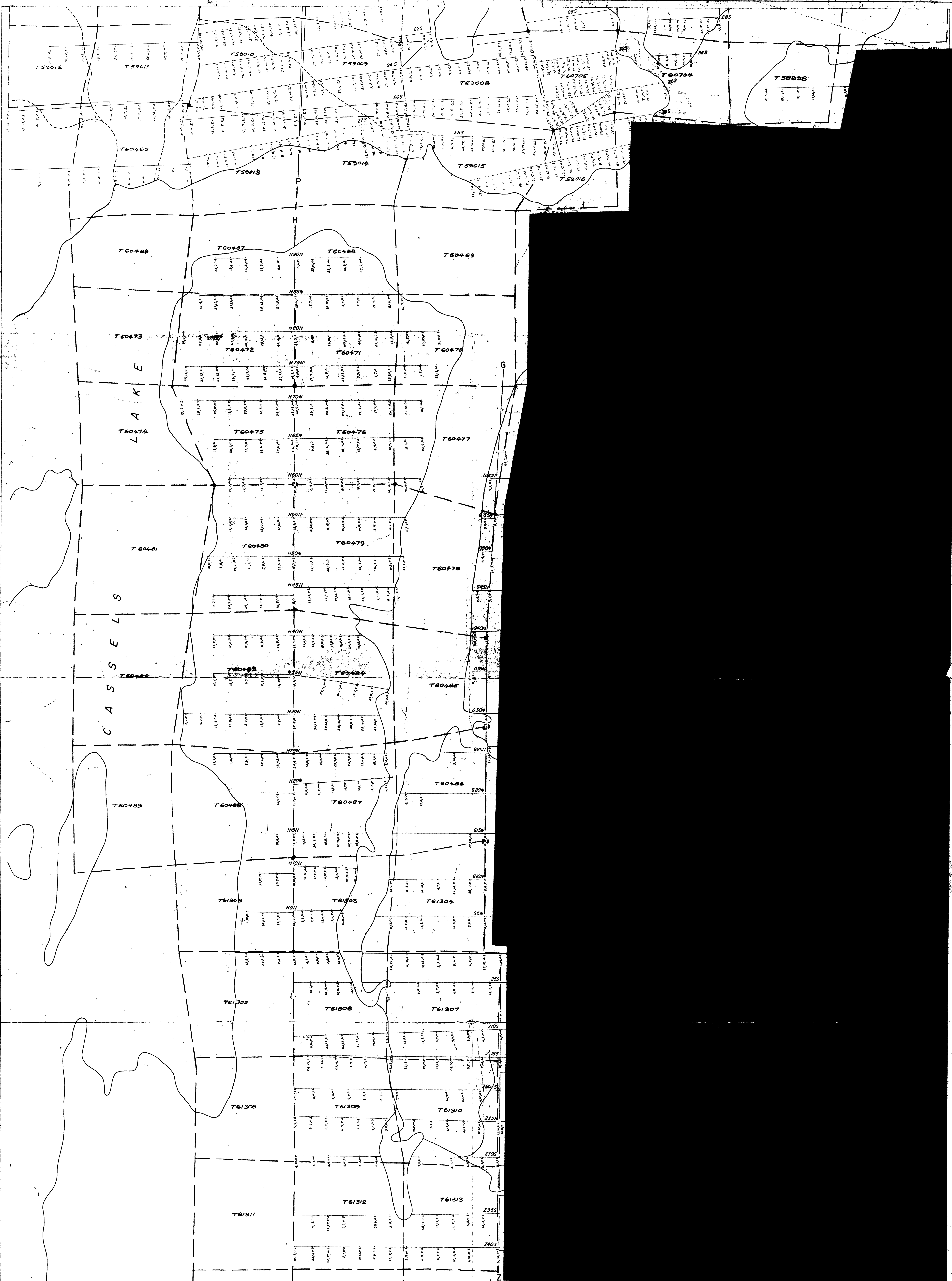
NEW SILVER LEADER MINES LTD.

CASSELS & RIDDEL TWPS - ONT.

**GEOCHEMICAL SOIL SURVEY**

JUNE - AUG. 1968 Scale 1" = 400' DWG. 5-197-





**LEGEND**  
 Geochem. Values in ppm - Cu, Co, Ag, —  
 Note: Ag values less than 0.1 ppm shown thus: 0/1

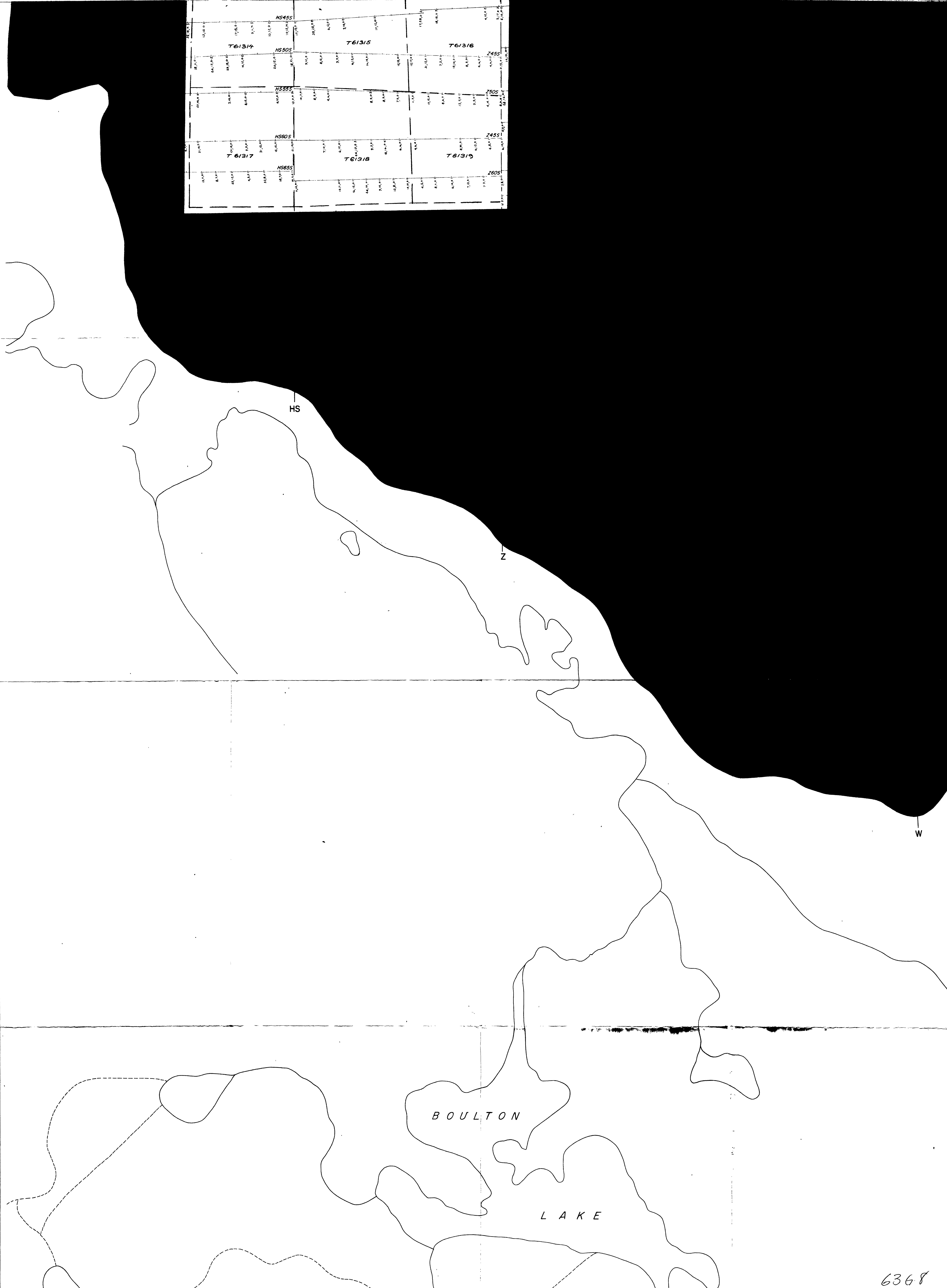
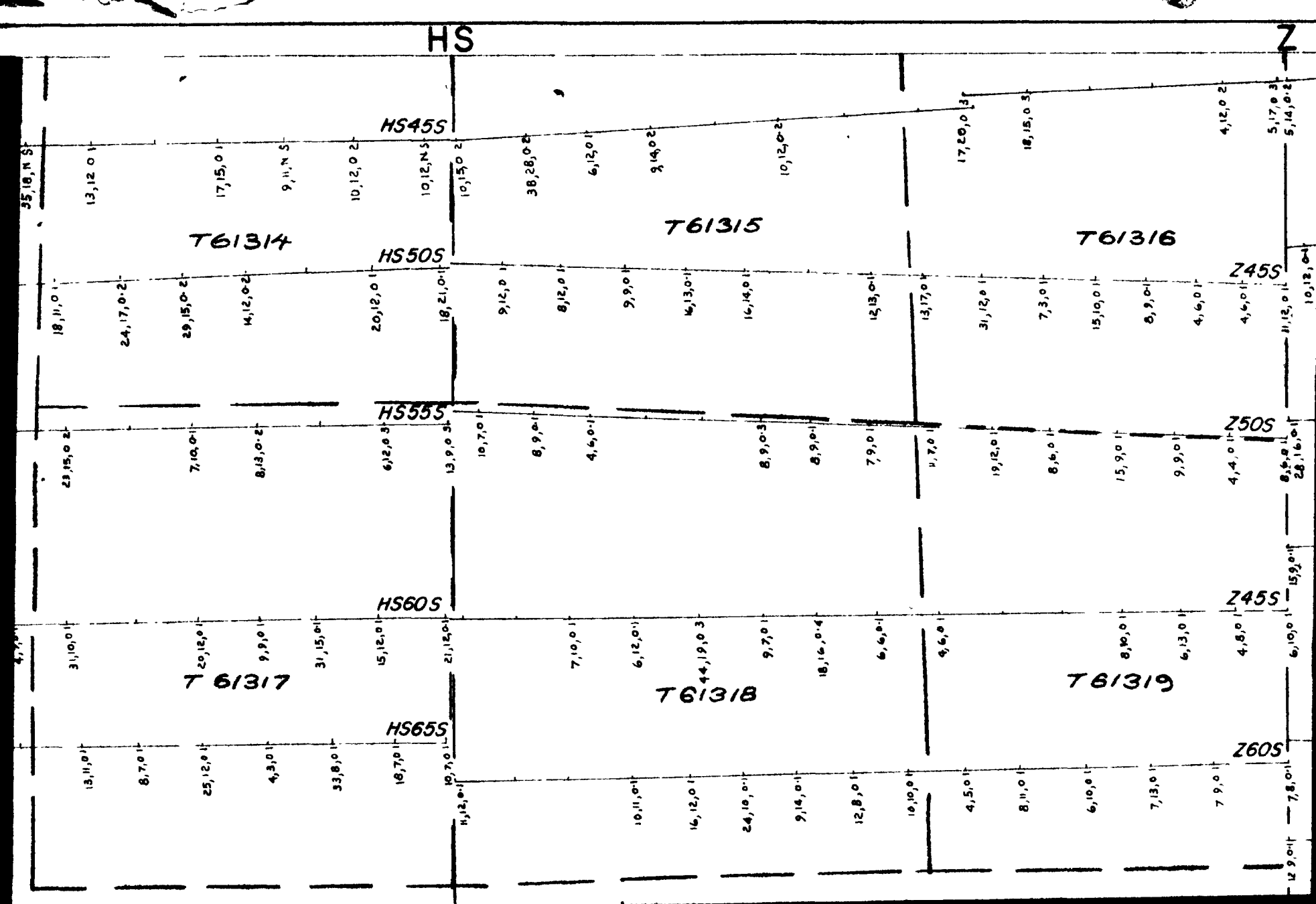
	COPPER	COBALT	SILVER
Background	0 - 19 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd order Anomalous	22 - 39 ppm	0.2 - 0.3 ppm	0.2 - 0.3 ppm
1st order Anomalous	+27 ppm	+26 ppm	+0.3 ppm

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*John L. Walker*  
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NEW SILVER LEADER MINES LTD.  
 CASSELS & RIDDEL TWPS - ONT.  
 GEOCHEMICAL SOIL SURVEY



6368



**LEGEND**  
 Geochem. Values in ppm. - Cu, Co, Ag, — 10, 10, 0.1  
 Note Ag values less than 0.1 ppm. shown thus: 0.1

	COPPER	COBALT	SILVER
Background	0 - 19 ppm.	0 - 15 ppm.	0 - 0.1 ppm.
Threshold	20 - 27 ppm.	16 - 21 ppm.	0.12 - 0.2 ppm.
2nd order Anomalous	—	22 - 28 ppm.	0.2 - 0.3 ppm.
1st order Anomalous	+ 27 ppm.	+ 28 ppm.	+ 0.3 ppm.

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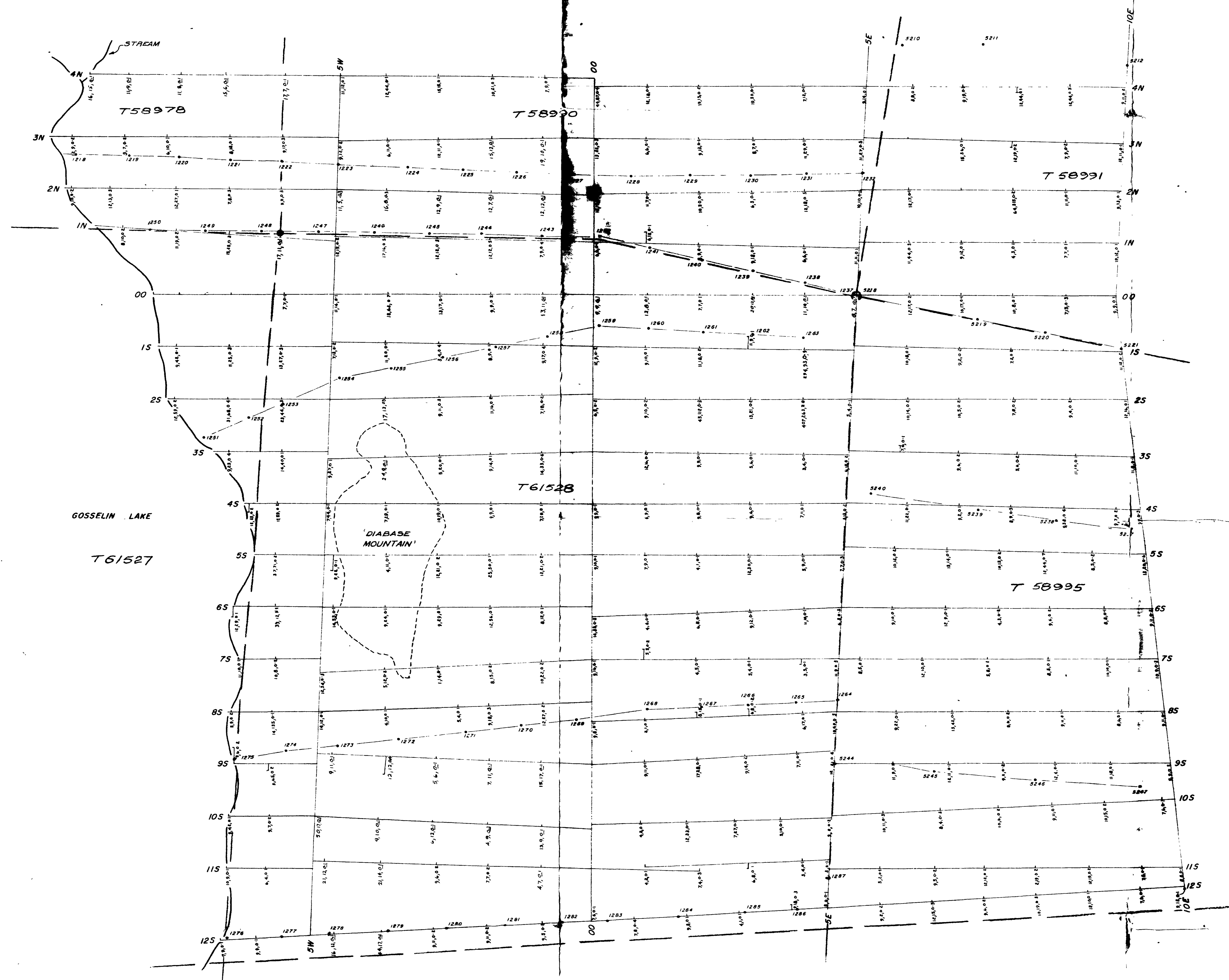
*John L. Walker*



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Work undertaken by  
**BARRINGER RESEARCH LTD.** Toronto, Canada

NEW SILVER LEADER MINES LTD.		
CASSELS & RIDDEL TWPS. - ONT.		
<b>GEOCHEMICAL SOIL SURVEY</b>		
JUNE - AUG. 1968	Scale 1" = 400'	DWG. 5-197-



**LEGEND**

Geochem. Values in ppm. - Cu, Co, Ag, — Au, Pt, Or  
 Note. Ag values less than 0.1 ppm shown thus: 0.1

	COPPER	COBALT	SILVER
Background	0 - 19 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd order Anomalous	—	22 - 28 ppm	0.2 - 0.3 ppm
1st order Anomalous	+27 ppm	+28 ppm	+0.3 ppm

*John L. Walker*

NEW SILVER LEADER MINES LTD.

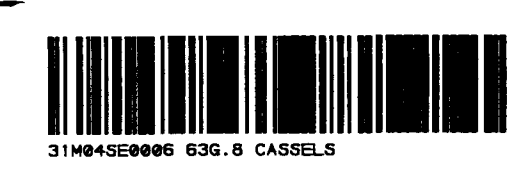
GRID 'A' CASSELS TWR-ONT.

GEOCHEMICAL SOIL SURVEY

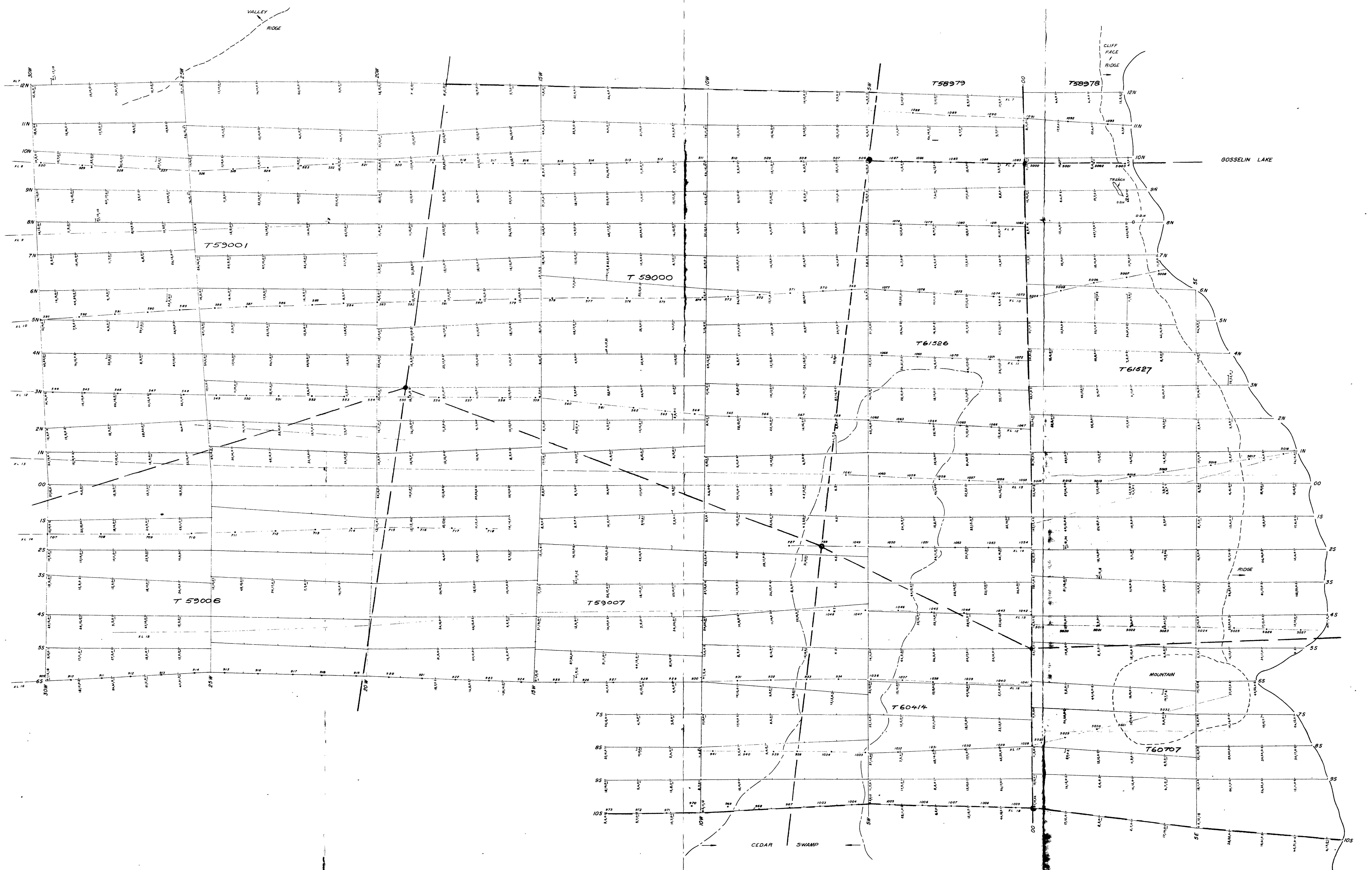
Work undertaken by  
**BARRINGER RESEARCH LTD., Toronto, Canada.**

AUG. 1968 Scale 1"=100' DWG. 5-207-

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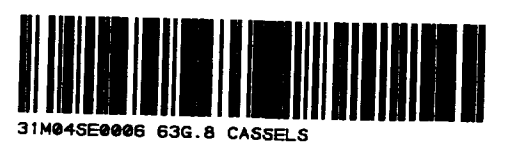
**LEGEND**  
 Geochem. Values in ppm - Cu, Co, Ag, — Fe, Pb, Zn  
 Note: Ag values less than 0.1 ppm shown thus:  $\frac{0.05}{0.1}$

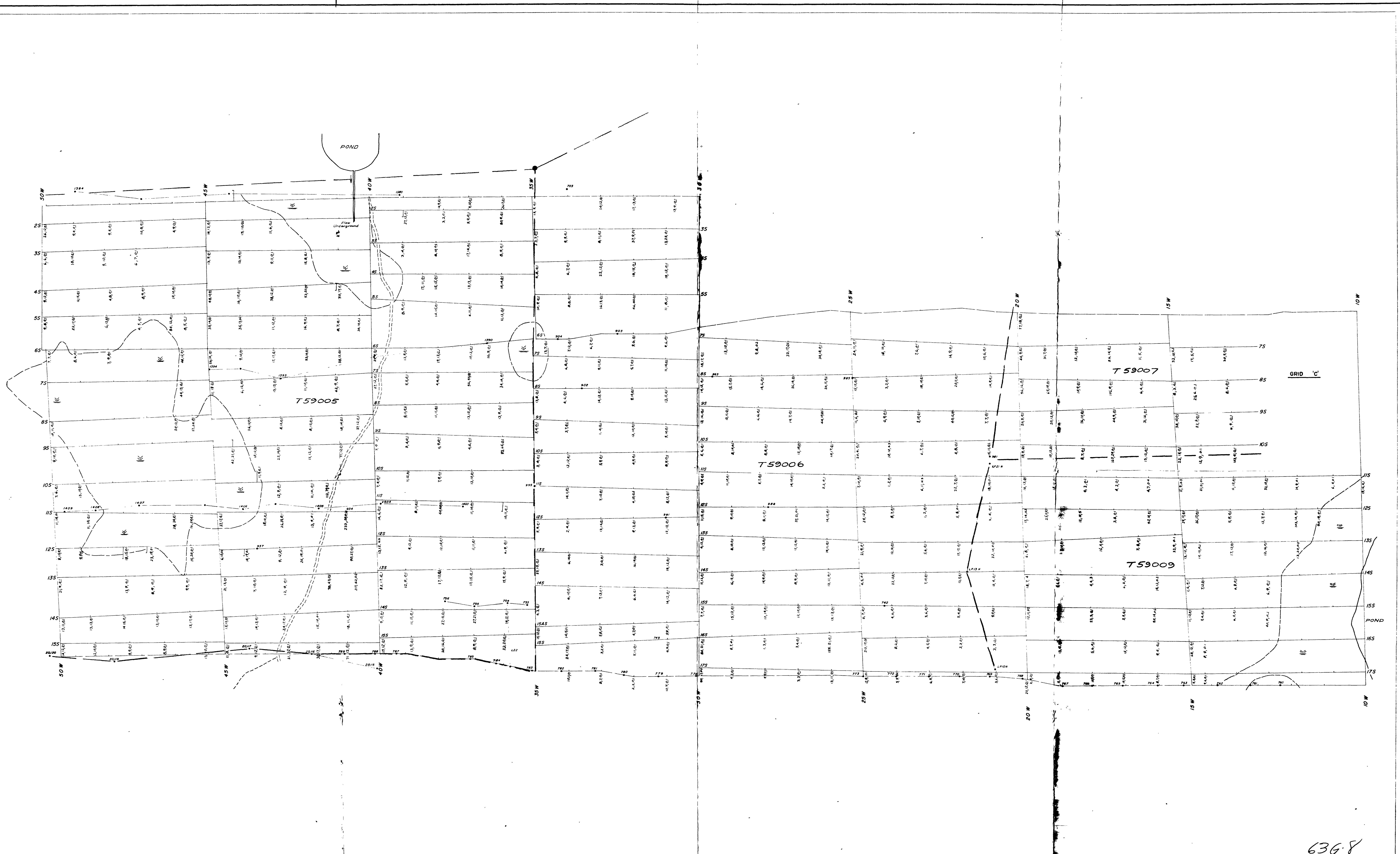
	COPPER	COBALT	SILVER
Background	0 - 10 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd order Anomalous	—	22 - 28 ppm	0.2 - 0.3 ppm
1st order Anomalous	+ 27 ppm	+ 28 ppm	+ 0.3 ppm

*John L. Walker*

NEW SILVER LEADER MINES LTD.  
 GRIDS 'B' & 'C' - CASSELS TWP. - ONT.  
 GEOCHEMICAL SOIL SURVEY  
 AUG. 1968 Scale 1" = 100' DWG. 5-207-

Work undertaken by  
**BARRINGER RESEARCH LTD., Toronto, Canada.**





6368

**LEGEND**

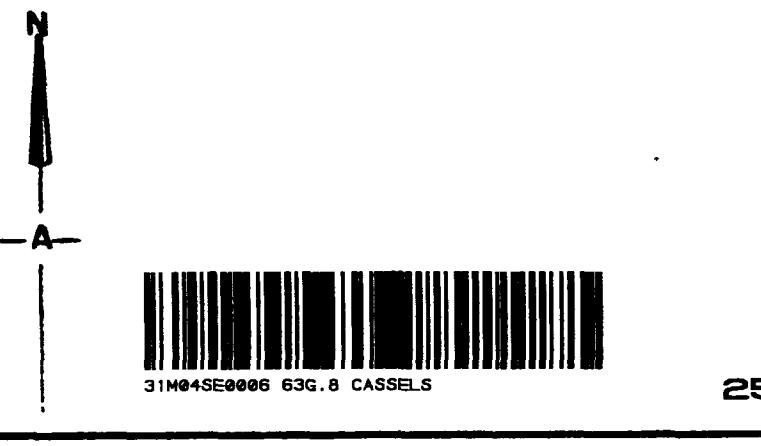
Geochem. Values in ppm - Cu, Co, Ag, - 10, 2, 20  
 Note: Ag values less than 0.1 ppm shown thus: 0.1

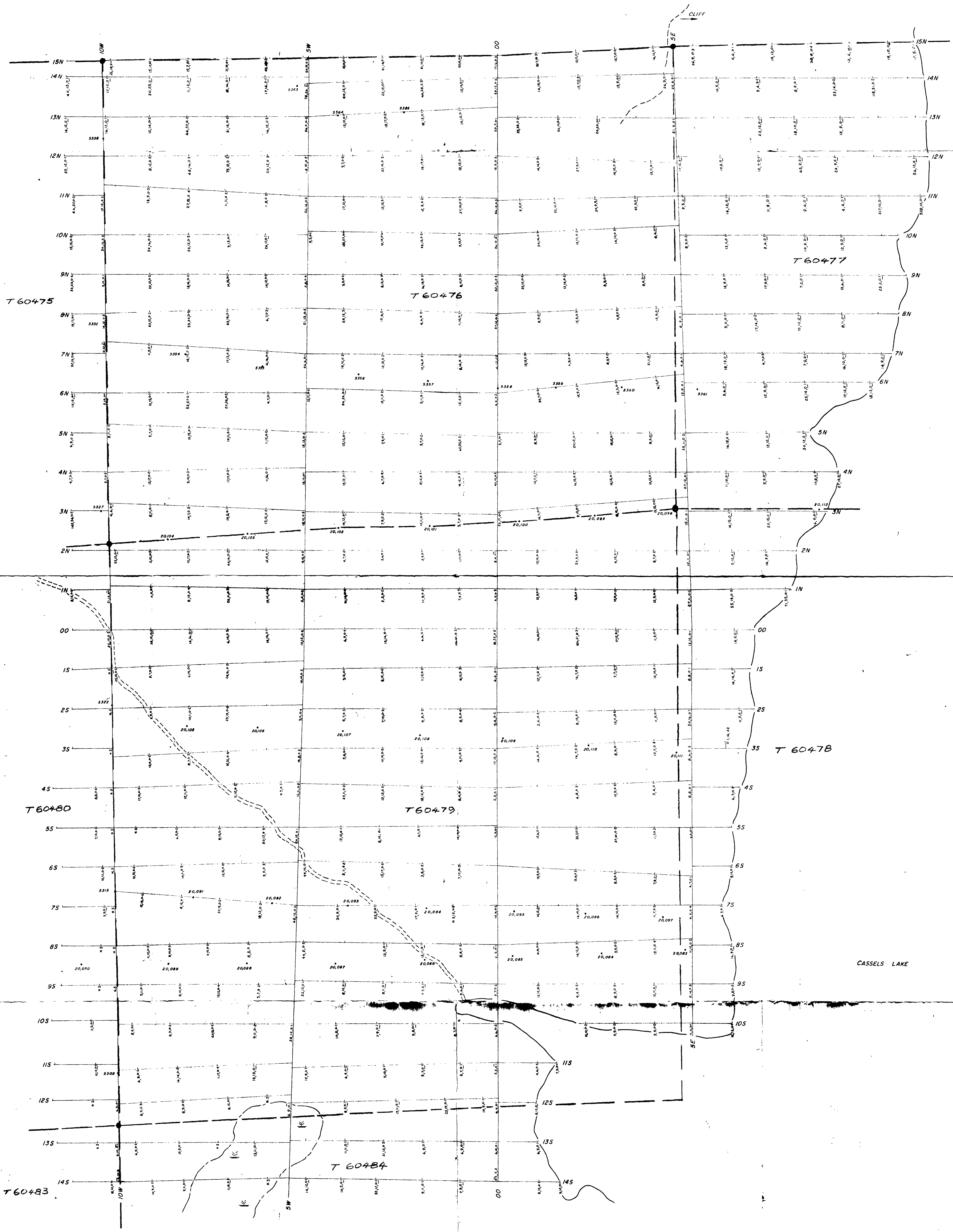
	COPPER	COBALT	SILVER
Background	0 - 19 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd order Anomalous	-	22 - 28 ppm	0.2 - 0.3 ppm
1st order Anomalous	+27 ppm	+28 ppm	+0.3 ppm

*John L. Walker*

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NEW SILVER LEADER MINES LTD.		
GRID 'D' CASSELS TWR - ONT.		
GEOCHEMICAL SOIL SURVEY		
AUG. 1968	Scale 1" = 100'	DWG. 5-207-





**LEGEND**

Geochem. Values in ppm - Cu, Co, Ag, — 18, 14, 01  
 Note: Ag values less than 0.1 ppm shown thus: 0.1

	COPPER	COBALT	SILVER
Background	0 - 19 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd order Anomalous	—	22 - 28 ppm	0.2 - 0.3 ppm
1st order Anomalous	+27 ppm	+28 ppm	+0.3 ppm

*John Walker*

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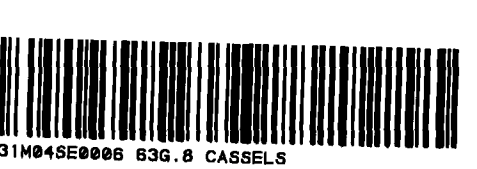
NEW SILVER LEADER MINES LTD.

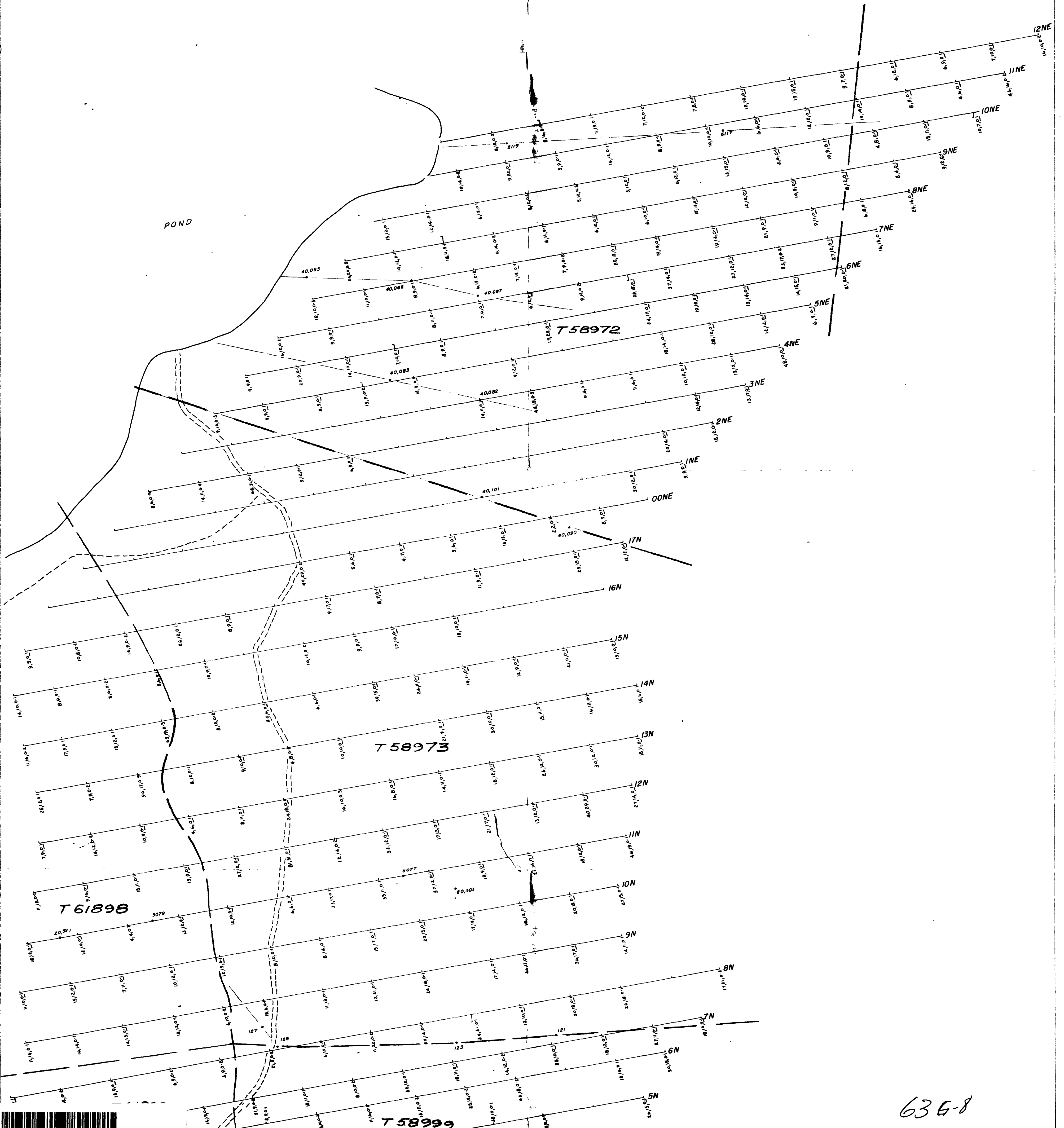
GRID 'E' CASSELLS TWP.-ONT.

GEOCHEMICAL SOIL SURVEY

AUG. 1968 Scale 1"=100' DWG. 5-207-

636-8





634-8



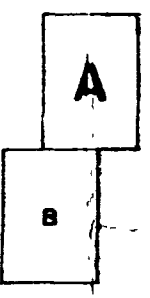
270

**LEGEND**

Geochem. Values in p.p.m. — Cu, Co, Ag, — 16, 14, 01  
 Note. Ag values less than 0.1ppm. shown thus: 0.1

	<b>COPPER</b>	<b>COBALT</b>	<b>SILVER</b>
Background	0 - 19 p.p.m.	0 - 15 p.p.m.	0 - 0.1 p.p.m.
Threshold	20 - 27 p.p.m.	16 - 21 p.p.m.	0.12 - 0.2 p.p.m.
2nd order Anomalous	—	22 - 28 p.p.m.	0.2 - 0.3 p.p.m.
1st order Anomalous	+ 27 p.p.m.	+ 28 p.p.m.	+ 0.3 p.p.m.

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*John L. Walker*

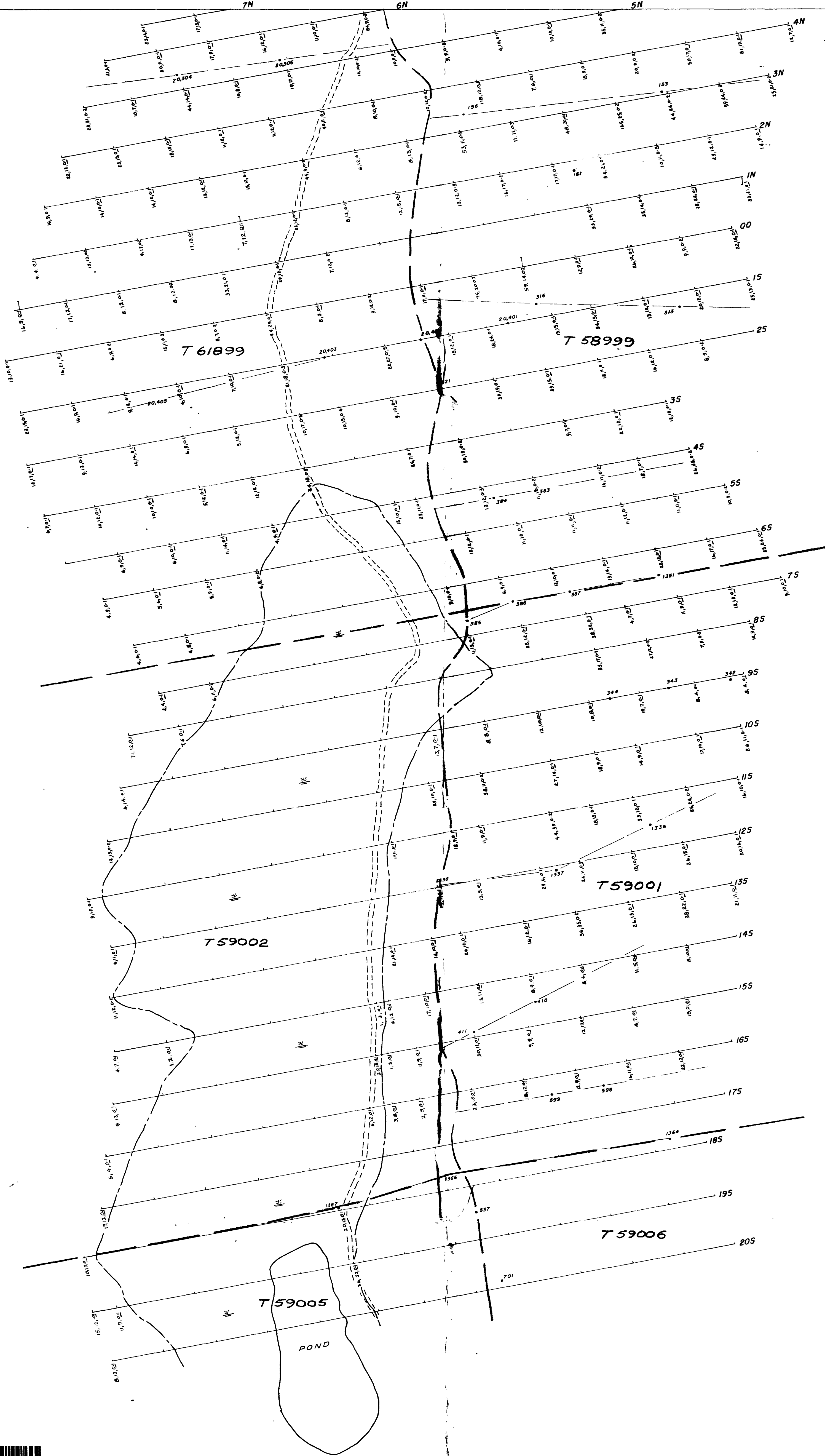
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NEW SILVER LEADER MINES LTD.

GRID 'F' CASSELS TWP.—ONT.

**GEOCHEMICAL SOIL SURVEY**

AUG. 1968      Scale 1" = 100'      DWG. 5-207-



31M45E0086 63G.8 CASSELS

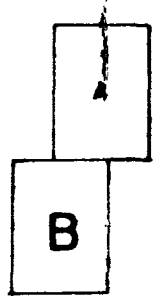
280

**LEGEND**

Geochem. Values in ppm - Cu, Co, Ag, — 10, 14, 0.1  
 Note. Ag values less than 0.1 ppm shown thus. 0.1

	<b>COPPER</b>	<b>COBALT</b>	<b>SILVER</b>
Background	0 - 19 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd order Anomalous	—	22 - 28 ppm	0.2 - 0.3 ppm
1st order Anomalous	+ 27 ppm	+ 28 ppm	+ 0.3 ppm

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GRID 'F' CASSELS TWP.-ONT.

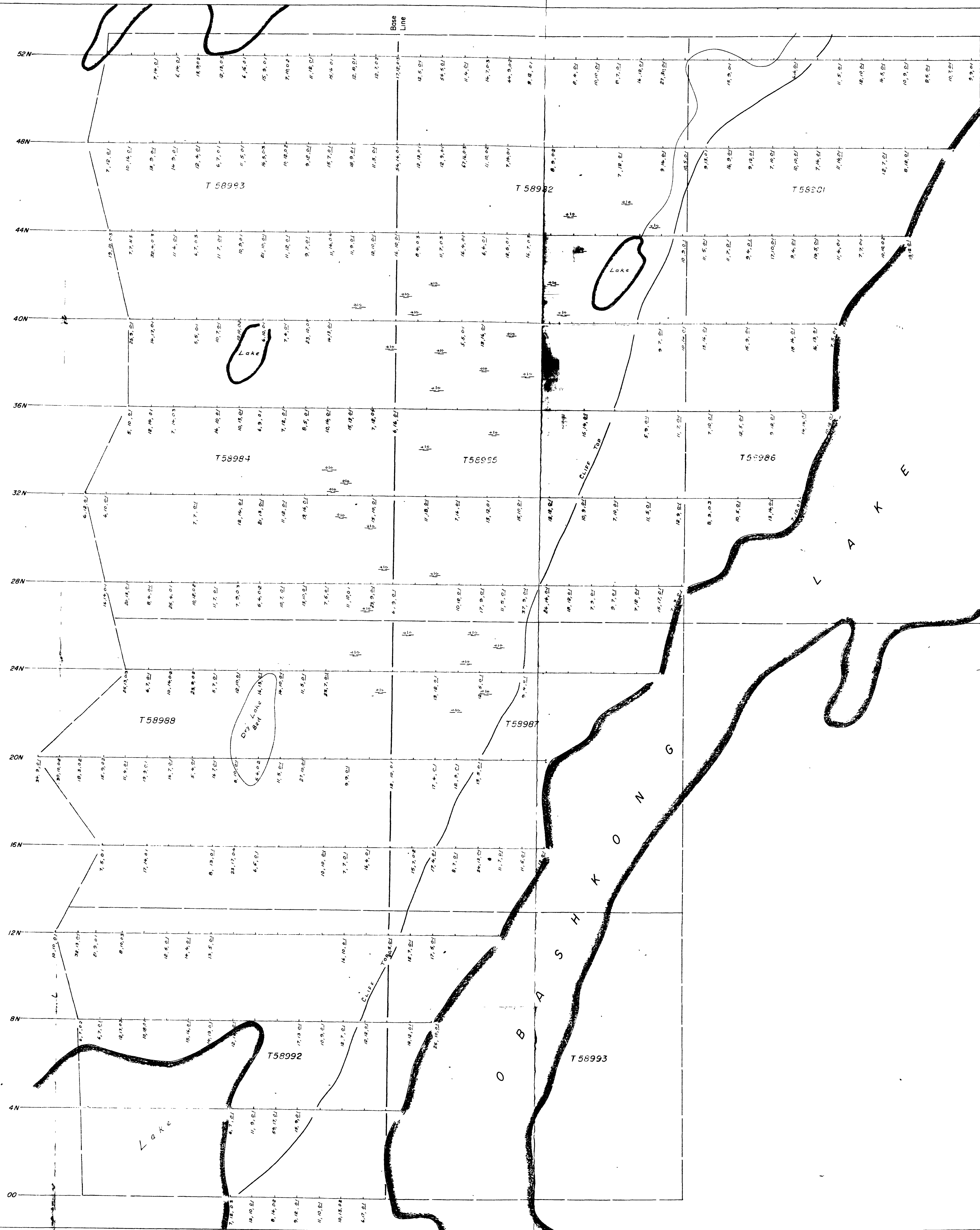
**GEOCHEMICAL SOIL SURVEY**

AUG. 1968

Scale 1" = 100'

DWG. 5-207-

63G-8



**LEGEND**

Geochem Values in ppm - Cu, Co, Ag, — 10, 14, 01  
 Note: Ag values less than 0.1 ppm shown thus: 0.1

	COPPER	COBALT	SILVER
Background	0 - 19 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd order Anomalous	—	22 - 28 ppm	0.2 - 0.3 ppm
1st order Anomalous	+27 ppm	+28 ppm	+0.3 ppm

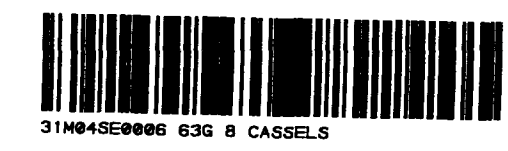
636-8

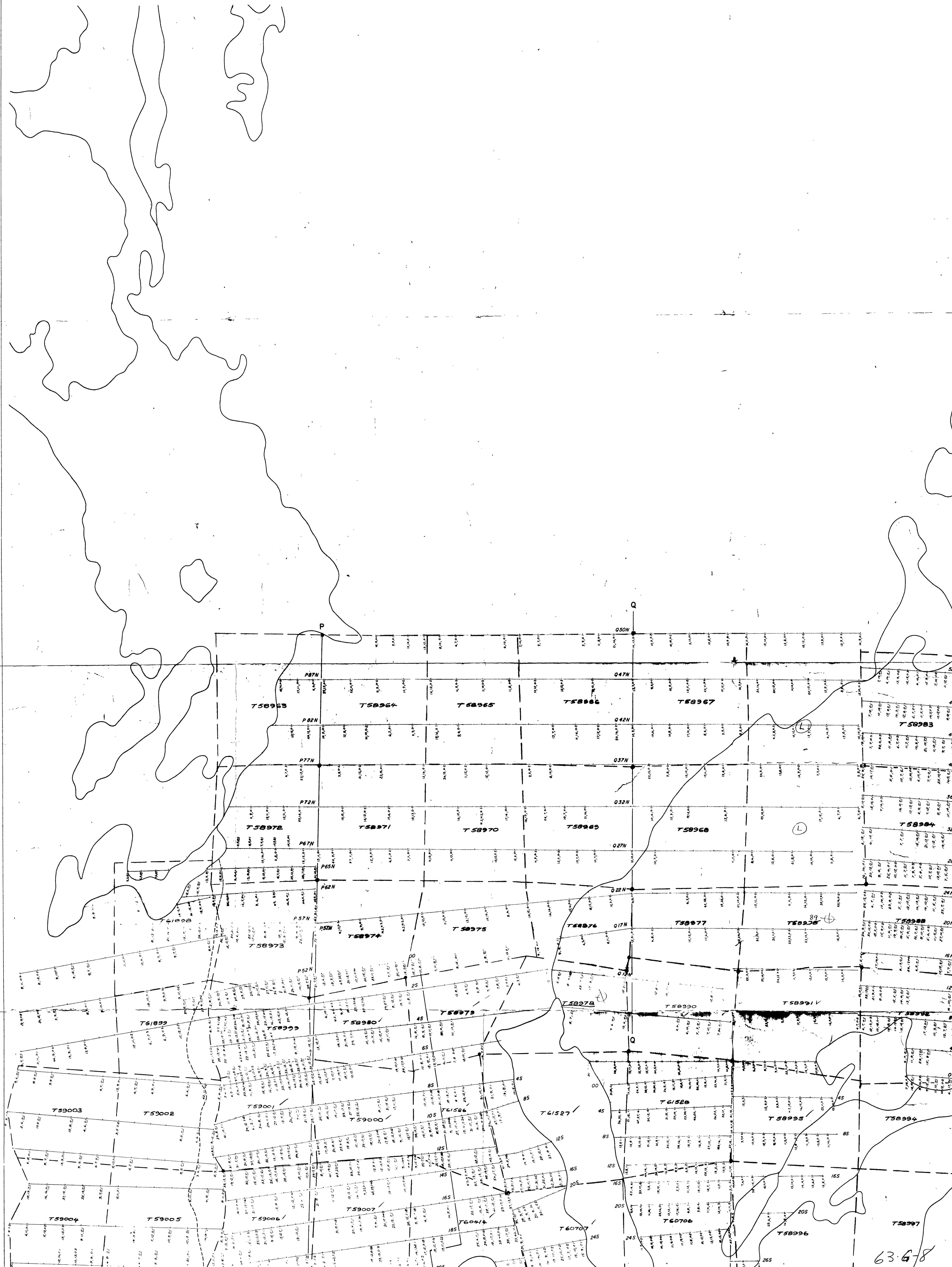
*John L. Walker*

NEW SILVER LEADER MINES LTD.  
 Ag ANOMALY No. 8 - CASSELS TWP. - ONT.  
 GEOCHEMICAL SOIL SURVEY

Work undertaken by  
 BARRINGER RESEARCH LTD, Toronto, Canada.

NOV. 1968 Scale 1" = 200' DWG. 5-186-





**LEGEND**  
 Gechem. Values in ppm - Cu, Co, Ag, Fe, Pb, Zn  
 Note Ag values less than 0.1 ppm shown thus: 0.1

	COPPER	COBALT	SILVER
Background	0 - 19 ppm	0 - 15 ppm	0 - 0.1 ppm
Threshold	20 - 27 ppm	16 - 21 ppm	0.12 - 0.2 ppm
2nd order Anomalous	28 - 28 ppm	22 - 28 ppm	0.2 - 0.3 ppm
1st order Anomalous	+ 27 ppm	+ 28 ppm	+ 0.3 ppm

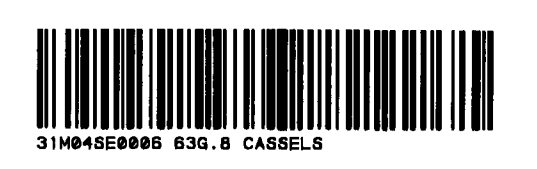
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*John L. Walker*

NEW SILVER LEADER MINES LTD.  
 CASSELS & RIDDEL TWP. - ONT.  
**GEOCHEMICAL SOIL SURVEY**  
 Scale 1" = 400'  
 DWG. 5-197-

Work undertaken by  
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63-6-8