

ARCHER, CATHRO  
AND ASSOCIATES LTD.  
CONSULTING GEOLOGICAL ENGINEERS

APPENDIX "A"  
STUMP MINES  
FEB. 11/69

CASCA BUILDING, WHITEHORSE, Y.T. 667-4113

BENTALL CENTRE, VANCOUVER, B.C. 688-3022 OR 522-1562

770 ONE BENTALL CENTRE  
505 BARRARD ST.  
VANCOUVER 1, B.C.

FINAL REPORT

on

1968 GEOCHEMICAL EXPLORATION PROGRAM

KETZA RIVER AREA, YUKON

for

STUMP MINES LTD. and SILVER KEY MINES LTD.

December, 1968

Alan R. Archer

Consultant

Vancouver, B.C.

TEXT

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APPENDIX

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Scale

Figure 1 - Grid Location Map

1" = 1/2 mile

In Pockets

Figure 2 - Detailed Geochemistry Grid 1 - 1" = 200 feet  
Figure 3 - Detailed Geochemistry Grid 2 - 1" = 200 feet  
Figure 4 - Detailed Geochemistry Grid 3 - 1" = 200 feet  
Figure 5 - Detailed Geochemistry Grid 4 - 1" = 200 feet  
Figure 6 - Detailed Geochemistry Grid 5 - 1" = 200 feet  
Figure 7 - Detailed Geochemistry Grid 6 - 1" = 200 feet  
Figure 8 - Detailed Geochemistry Grid 7 - 1" = 200 feet

## SUMMARY

Approximately 50 claims of the Silver Key Mines and Stump Mines property in the Ketz River area of the Yukon were soil sampled in 1968. Sampling was done at 100 foot intervals on lines 200 feet apart and a total of 5178 samples were taken. Lead was used as the indicator metal and analyses was by a hot acid extraction and atomic absorption spectrometry technique.

A total of 25 distinct anomalies were outlined of which 15 are equal or larger in size and intensity to the soil anomaly found in 1966 that led to the discovery of the A1 vein. The A1 showing, exposed by bulldozer trenching in 1966 and 1967, grades 24.9 ounces silver per ton and 22.2% lead over a 4.0 foot width and an 810 foot length. Exploration of one of the new soil anomalies in September 1968 led to the discovery of the Key 18B zone presently being developed underground. A program of bulldozer trenching of soil anomalies to cost \$50,000 is recommended for the 1969 summer season.

## INTRODUCTION

This report details results of the 1968 soil sampling program conducted on property held jointly by Stump Mines Ltd. and Silver Key Mines Ltd. in the Ketz River area of the Yukon Territory. An area of 50 claims or approximately 30% of the total holdings were sampled. Property location, access, history of the area and regional geological setting are amply described in previous reports by the writer and are not repeated here.

A limited program of follow-up bulldozer trenching of soil anomalies was done during September and October and results of this work are briefly mentioned. Detailed mapping and sampling of the trenches has already been reported separately by the writer and M.P. Phillips.

## PROJECT AREA

The 1968 soil sampling program was generally restricted to accessible parts of the property and to the lower, overburden covered mountain slopes. This area is illustrated on Figure 1 in the appendix and more or less follows the west side of the upper Ketz

River and the north and south side of Cache Creek to its junction with Misery Creek.

The project area was divided into seven separate contiguous grid areas for convenience of mapping and interpretation. Each grid area is oriented parallel to the topography with elevations decreasing toward the bottom of the grid map.

#### SURVEY and ANALYSES PROCEDURE

Two parallel base-lines, 1400 feet apart, were cut under contract by White, Hosford and Impey Ltd. through each grid area. These base lines, totalling 14 miles in length, were chained and picketed at 200 foot intervals. The terminus and major turning points of each was marked with a large white cloth cross for location on air photographs that were flown later in the season. Soil samples were taken at 100 foot intervals on lines 200 feet apart oriented at right angles to the base lines. Sample points were located by pace and compass and marked with a red tipped 18 inch wooden picket.

Soil sample pits were dug with a mattock grub-hoe.

and individual samples were collected from the "C" horizon in Kraft sample bags. Samples were sent to Chemex Laboratories Ltd., North Vancouver, where they were dried, sieved and assayed for lead in parts per million (ppm) using a hot acid extraction and atomic absorption spectrometry technique. A total of 5,178 samples were collected and, in addition, 56 duplicate samples were taken for check purposes.

#### INTERPRETATION

Interpretation of the sampling consists simply of postulating mineralized silver-lead vein faults immediately uphill from a lead-rich area indicated by soil analyses. Other important aids to interpretation are:

- (a) the knowledge that most veins strike northerly,
- (b) the fact that areas underlain by black schists and/or greenstone have a higher lead background than areas underlain by limestone, dolomite or quartzite and,
- (c) familiarity with the detailed topography of the anomalous area.

A discussion of the interpretation of the individual grid areas follows. It is important to remember that each map is oriented parallel to the topography with downhill toward the bottom. For comparison to previous geochemical works in the area the reader is referred to the writer's paper in the April 1967 issue of the Western Miner titled "Geochemical Prospecting in the Ketzá River District".

Grid 1 - This grid is located on the west side of the Ketzá River immediately north of Cache Creek. The hillside is steep, almost  $30^{\circ}$ , and is well timbered and overburden covered. Glacial direction is from left to right and deposits of glacial till are not extensive.

Three distinct anomalies are present. Anomaly 1 and 2 may represent a single structure. Anomaly 1 is not intense but has a well developed downhill expression and a strike length of 800 feet. Anomaly 2 is more intense, has a strike length of 1000 feet, and is the best initial target area for trenching. Anomaly 3 is an extension of a well defined anomalous area discussed under Grid 2.

Grid 2 - This grid is located on the north side of Cache Creek. The hillside is steep with considerable talus and is less timbered than Grid 1. The geology is complex with numerous greenstone sills and lenses intruding schists and phyllites. The only vein known to occur in the grid area is the Cache Creek zone, an easterly striking structure exposed by trenching at about 9+00S on line 14+00W. The glacial direction is from left to right and the lower portion of the grid (from about 1+00S to 11+00S) contains extensive lateral moraine type deposits.

Six distinctly anomalous zones have been outlined. Because of the complex geology there is a good probability that some of the anomalies are due to fractured and weakly mineralized rock types rather than vein faults.

Anomaly 1 is the extension of Anomaly 3 from Grid 1 and is probably caused by a high metal content in the glacial till rather than a vein fault. Bulldozing in the area of Line 0 and Line 2+00W confirmed this by exposing glacial till containing significant amounts of mineralized float similar to the massive sulfides found by Canwest Explorations Ltd. further up Cache Creek.

Anomaly 2 is an extension of Anomaly 2 in Grid 1 and because of its intensity is a top priority exploration target. Anomalies 3, 5 and 6 are strong but their erratic nature suggest a stratigraphic rather than vein source. Anomaly 4. requires sampling further uphill beyond the grid area for better definition.

Grid 3 - This grid is located on the east side of Misery Creek, is well timbered, and has little evidence of glacial deposits. The geology is similar to Grid 2 and the same high lead background prevails. The only exposed vein in the grid area is the Lap 10 at 11+00E in line 25+00N.

Anomaly 1, although poorly defined, is quite likely due to a mineralized vein and should be given top priority for further work on this grid. Anomaly 2, associated with the Lap 10, is actually caused by a metal rich black schist outcropping along the footwall of the Lap 10 structure. Anomalies 3, 4 and 5 similarly have the appearance of being caused by metal rich rock types rather than vein zones.

Grid 4 - This grid is located along the west side of the Ketz River immediately north of the camp. The hillside is well timbered and overburden covered and the topography is more irregular and less steep than Grids 1 to 3. Glacial direction is from left to right

and glacial deposits are extensive but usually less than 15 feet thick. Rock types are mainly thin bedded dolomitic limestones and black to silver-grey phyllites.

Anomalies 1 and 2 were extensively explored by bulldozing in September to December 1968 and details have been recorded in separate reports. Exploration of Anomaly 2 resulted in the discovery of the Key 18B vein while exploration of Anomaly 1 failed to locate a source vein although considerable high grade float was found in the overburden. Exploration of Anomaly 1 has top priority for the 1969 season. Anomaly 5 is associated with the F4 vein, an erratic zone of mineralization cutting black phyllites. The long downhill train of high values is due to contamination along a water course. Anomalies 3 and 4 could be mineralized continuations of the F4 zone and therefore merit follow-up work.

Grid 5 - This grid is located on the north side of the west fork of the headwaters of the Ketzá River. Topography is fairly regular and moderately steep (15° to 20°). Timber cover is light and overburden, although extensive, is thin. Bedrock is a thin bedded

limy dolomite.

The grid was designed to explore the southern projection of the A1 vein zone. No anomalies were found.

Grid 6 - This grid is located on the south side of Cache Creek immediately west of the Ketzal River. Topography is very complex with many deep draws, ridges and irregularities. Effect of glaciation is also complex with introduction of glacial material from a south to north direction, from a west to east direction along Cache Creek and from cirques beyond the southwest corner of the grid. The unusually high lead background is due to lead rich glacial float from the F2 and F3 zones and possibly due to lead rich greenstones and black schists found in the southwest corner of the grid area.

Four possible vein zones are interpreted. Of these, Anomaly 4 would appear to have the most validity and could in fact line up with the F3 zone. Anomaly 1 is very intense but has a configuration suggesting a stratigraphic source. Anomalies 2 and 3 also appear to have a stratigraphic or a glacial till source.

Grid 7 - This grid lies along the south side of Cache Creek immediately west of Grid 6. Topography is steep and fairly regular. Slopes are heavily timbered and overburden covered.

A single complex anomalous zone has been interpreted to being caused by two separate veins. Of these, Anomaly 2 is the most intense and should be explored first.

#### CONCLUSIONS and RECOMMENDATIONS

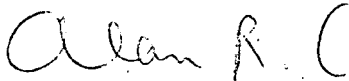
A total of 25 geochemical anomalies have been outlined of which 15 are equal or larger in size and intensity to the anomaly found in 1966 that led to the discovery of the A1 surface showing that assayed 24.9 ounces silver per ton and 22.2% lead over a 4.0 foot width and a length of 810 feet. Not all anomalies are thought to be caused by silver-lead veins and a preliminary evaluation of each, based on the writer's general knowledge of the area has been made.

A program of bulldozer trenching is recommended for the 1969 summer season with priority given to Anomalies 1 and 2 on Grid 1, Anomaly 2 on Grid 2,

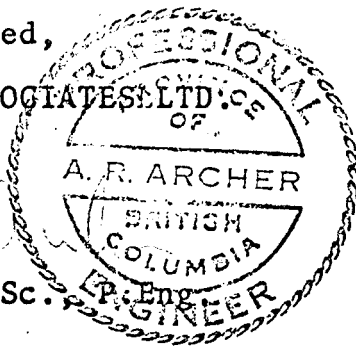
Anomaly 1 and 3 on Grid 4 and Anomaly 4 on Grid 6. Results of this work should aid in establishing a priority rating for exploration of the remaining anomalies. Total cost of operating a D7E bulldozer with rippers for a four month period is estimated at \$50,000.

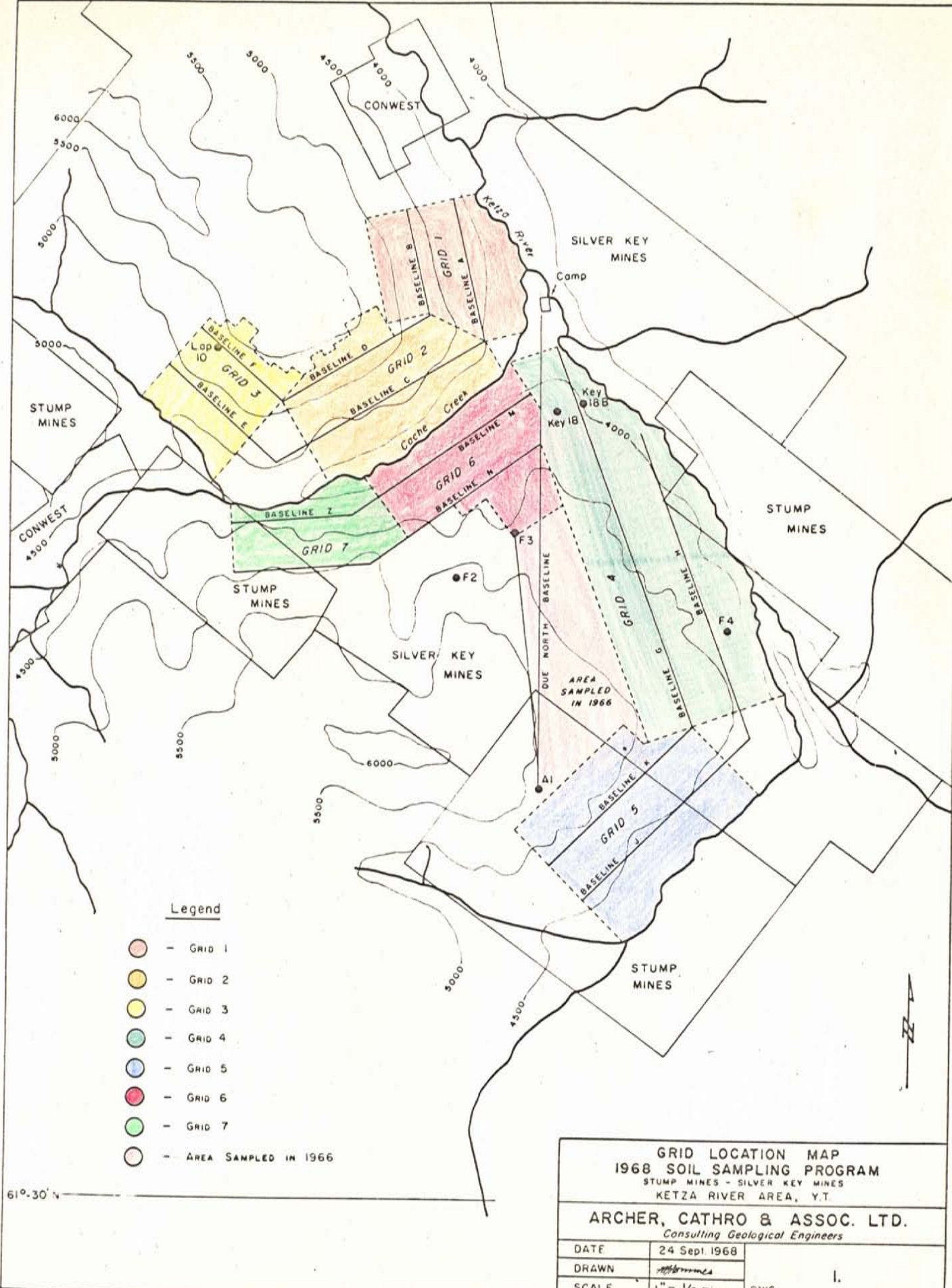
Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD. INC.



Alan R. Archer, B.A.Sc.





**Legend**

- GRID 1
- GRID 2
- GRID 3
- GRID 4
- GRID 5
- GRID 6
- GRID 7
- AREA SAMPLED IN 1966

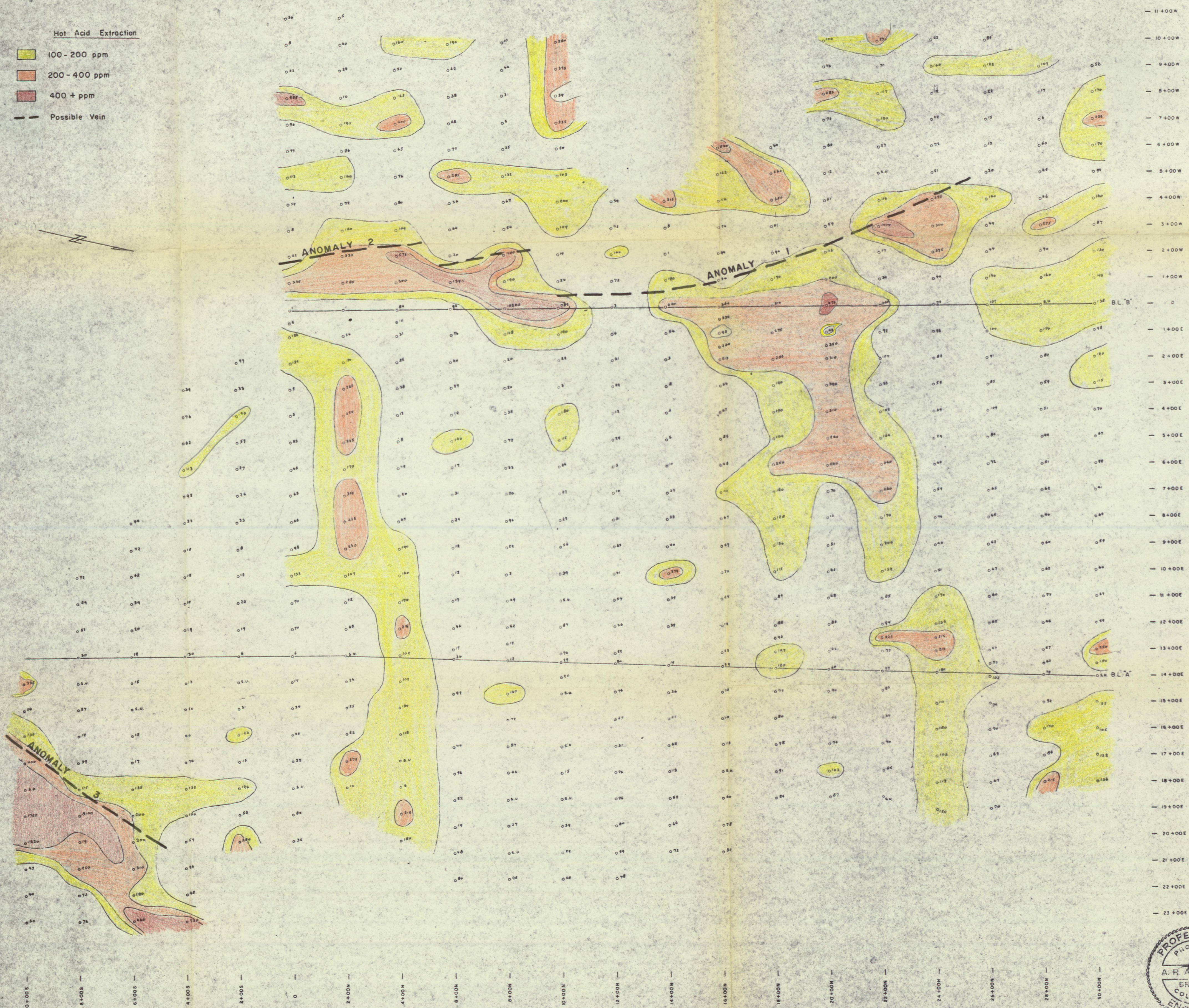
<b>GRID LOCATION MAP</b> <b>1968 SOIL SAMPLING PROGRAM</b> STUMP MINES - SILVER KEY MINES KETZA RIVER AREA, Y.T.		
<b>ARCHER, CATHRO &amp; ASSOC. LTD.</b> <i>Consulting Geological Engineers</i>		
DATE	24 Sept. 1968	DWG. 1.
DRAWN	<i>[Signature]</i>	
SCALE	1" = 1/2 mi.	

61°-30' N

# GRID 1

Hot Acid Extraction

- 100 - 200 ppm
- 200 - 400 ppm
- 400 + ppm
- Possible Vein



STUMP MINES LTD.  
SOIL GEOCHEMISTRY  
BASELINES A & B  
KETZA RIVER AREA, Y.T.

ARCHER, CATHRO & ASSOC. LTD.  
Consulting Geological Engineers

DATE	8 Aug. 1968	DWG.
DRAWN	<i>[Signature]</i>	
SCALE	1" = 200'	

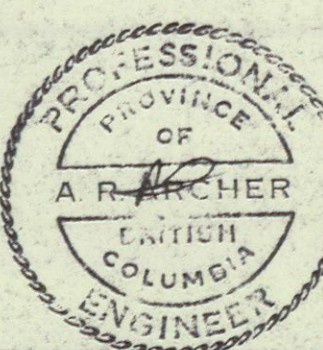
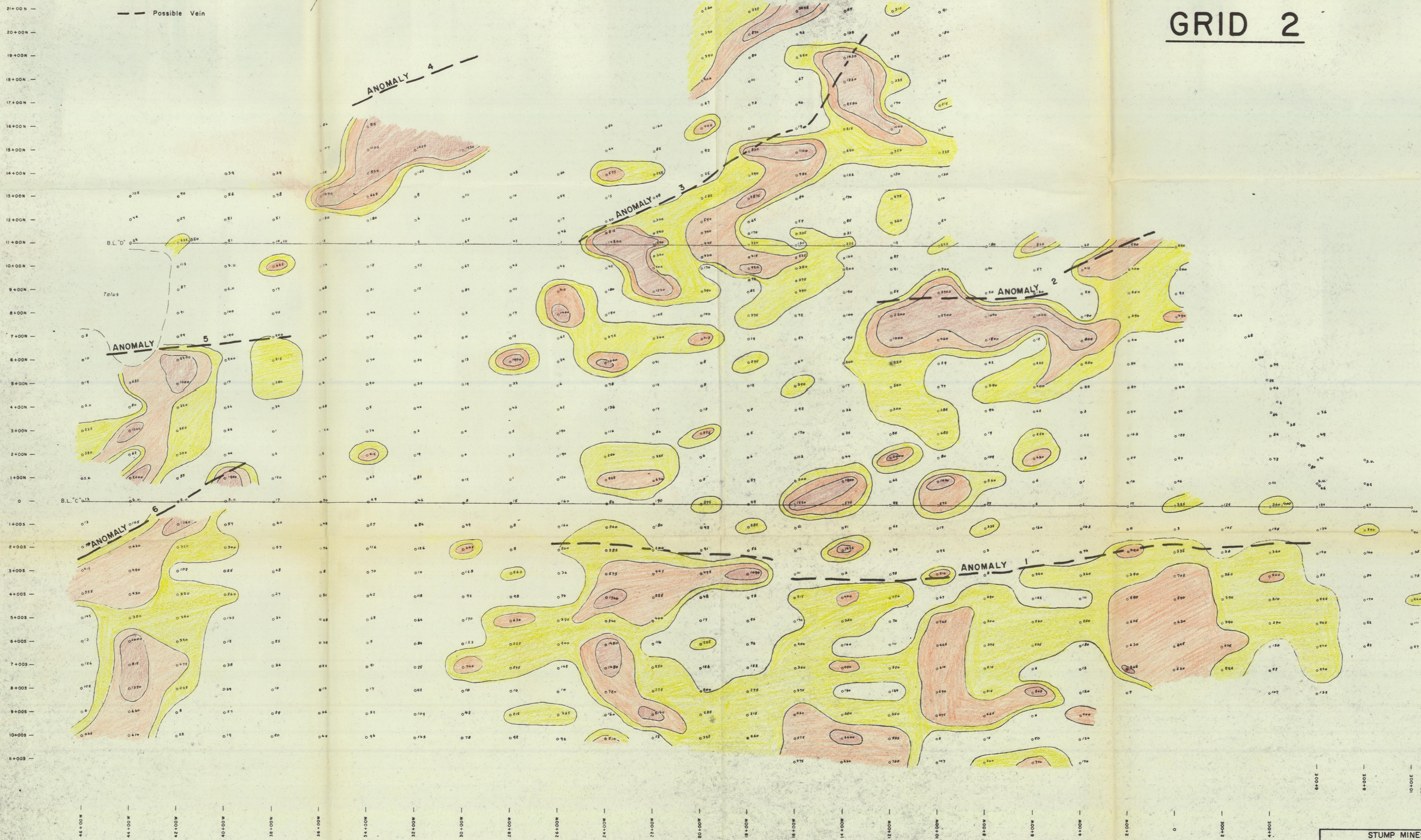
GRID 1  
Fig. 2

Hot Acid Extraction

- 200 - 400 ppm
- 400 - 800 ppm
- 800+ ppm

--- Possible Vein

# GRID 2



STUMP MINES LTD.  
 SOIL GEOCHEMISTRY  
 BASELINES C&D  
 KETZA RIVER AREA, Y.T.

ARCHER, CATHRO & ASSOC. LTD.  
 Consulting Geological Engineers

DATE 9 Aug. 1968  
 DRAWN [Signature]  
 SCALE 1" = 200'

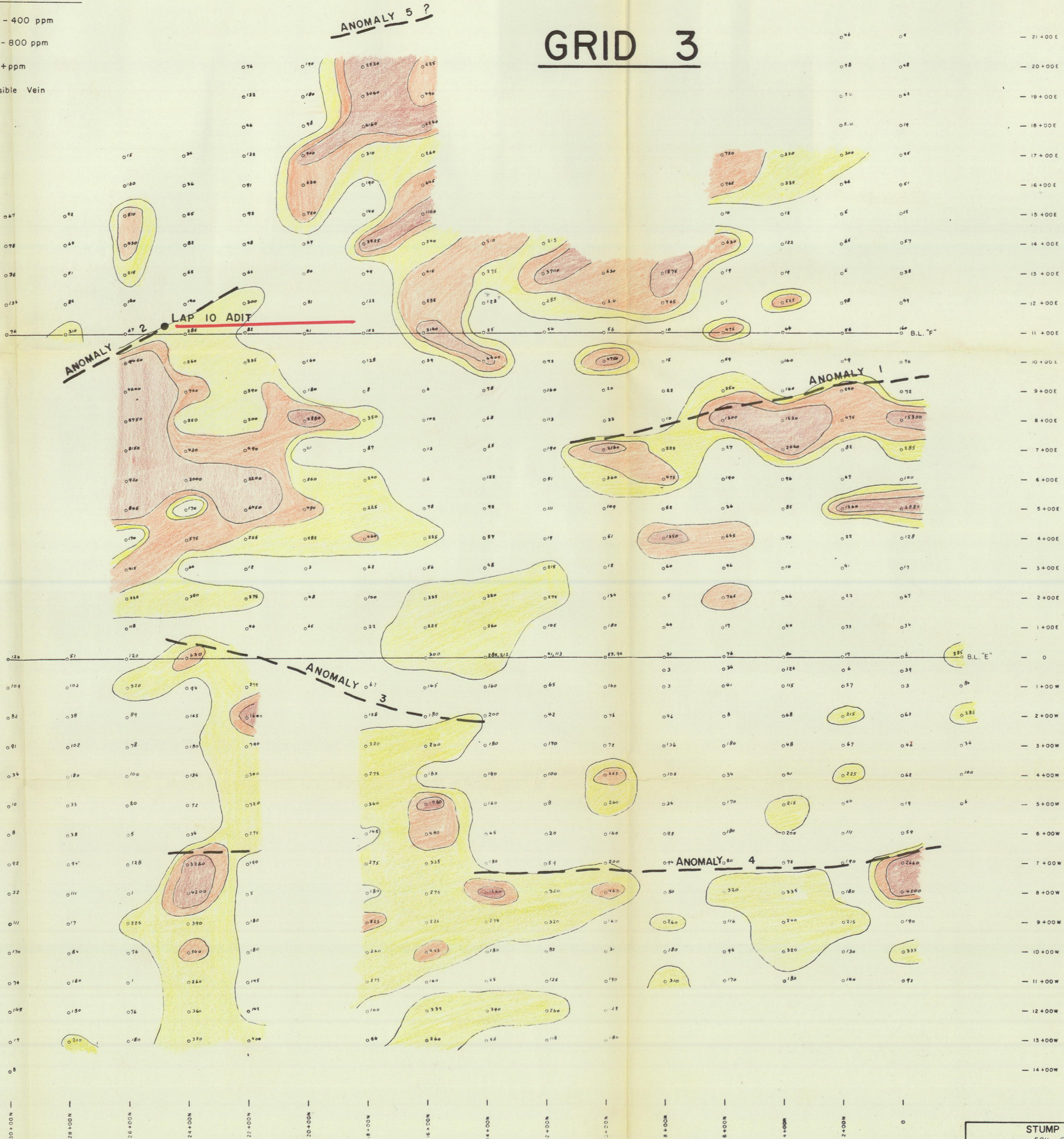
GRID 2  
 Fig. 3

Hot Acid Extraction

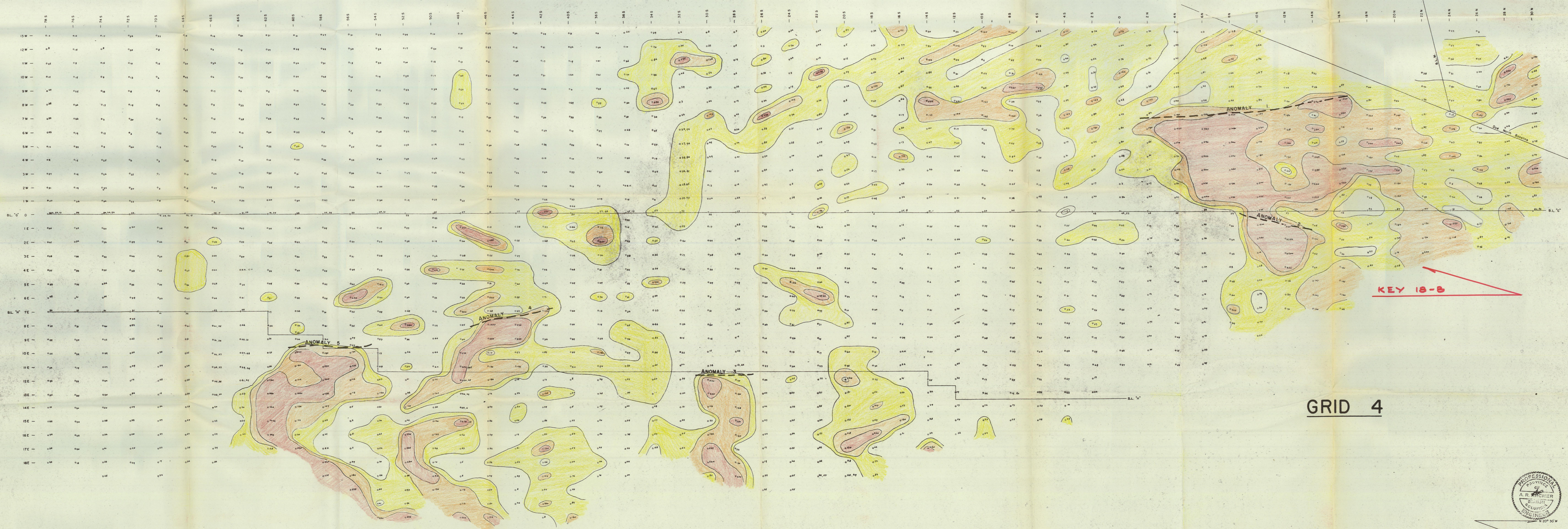
- 200 - 400 ppm
- 400 - 800 ppm
- 800+ ppm

--- Possible Vein

# GRID 3



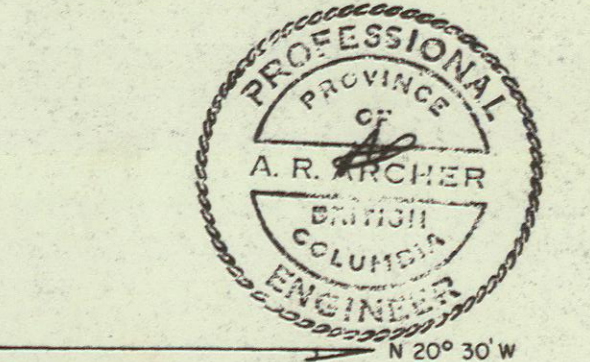
STUMP MINES LTD.	
SOIL GEOCHEMISTRY	
BASELINES E & F	
KETZA RIVER AREA, Y.T.	
ARCHER, CATHRO & ASSOC. LTD.	
<i>Consulting Geological Engineers</i>	
DATE	8 Aug. 1968
DRAWN	<i>W. H. H. H.</i>
SCALE	1" = 200'
GRID 3 Fig. 4	



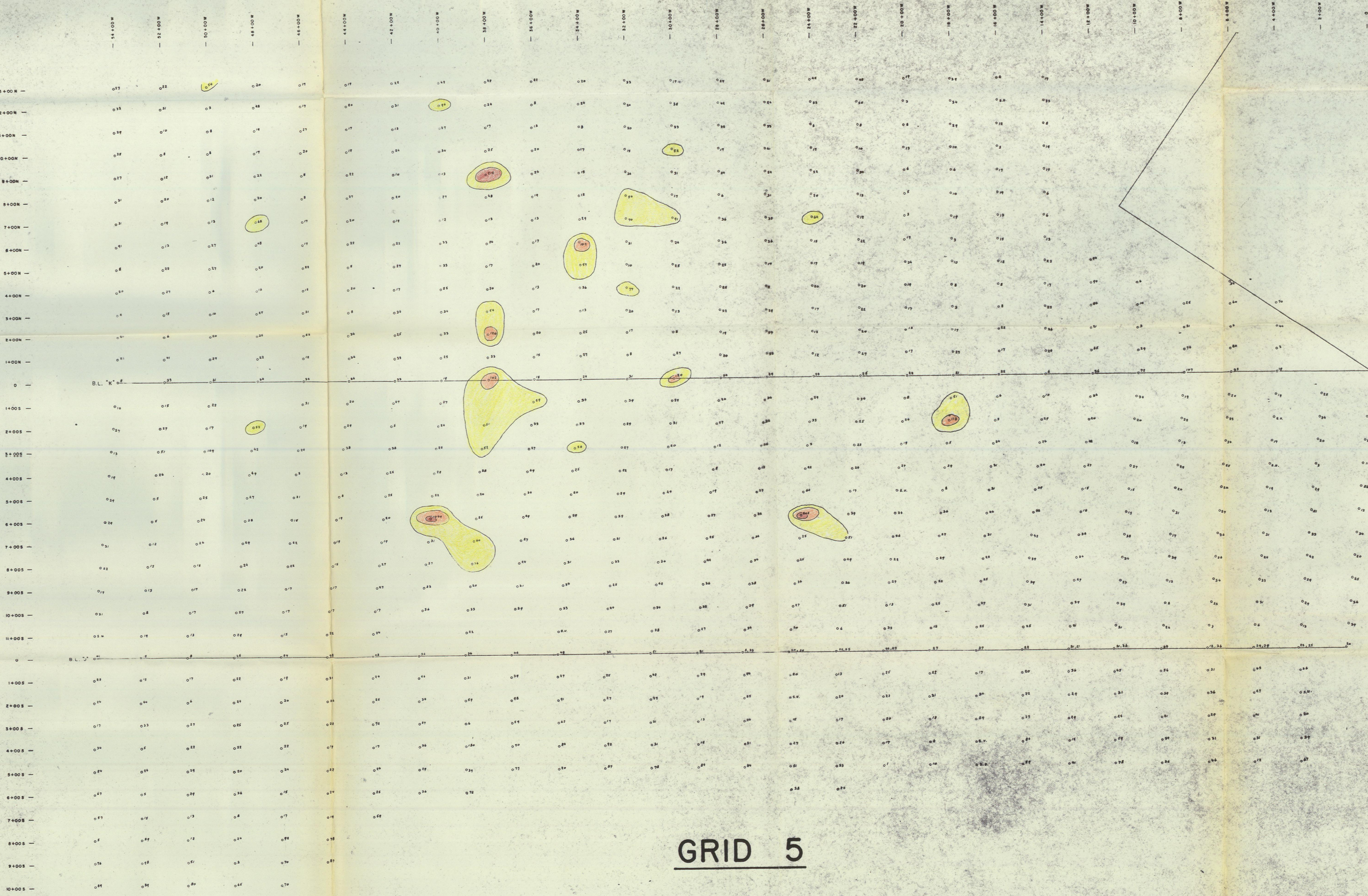
**GRID 4**

**KEY 18-B**

- Hot Acid Extraction**
- 50-100 ppm
  - 100-200 ppm
  - 200+ ppm
  - Possible Vein

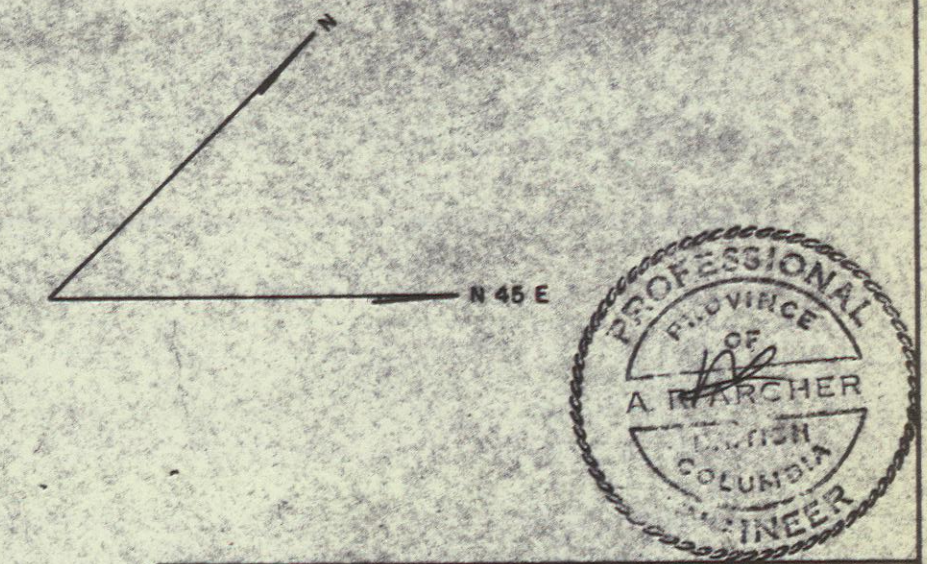


STUMP MINES LTD.	
SOIL GEOCHEMISTRY	
BASELINES H & G	
KEETA RIVER AREA, Y.T.	
ARCHER, CATHRO & ASSOC. LTD.	
Consulting Geologists, Engineers	
DATE	16 July 1968
DRAWN	[Signature]
SCALE	1" = 200'
DWG.	Fig. 5



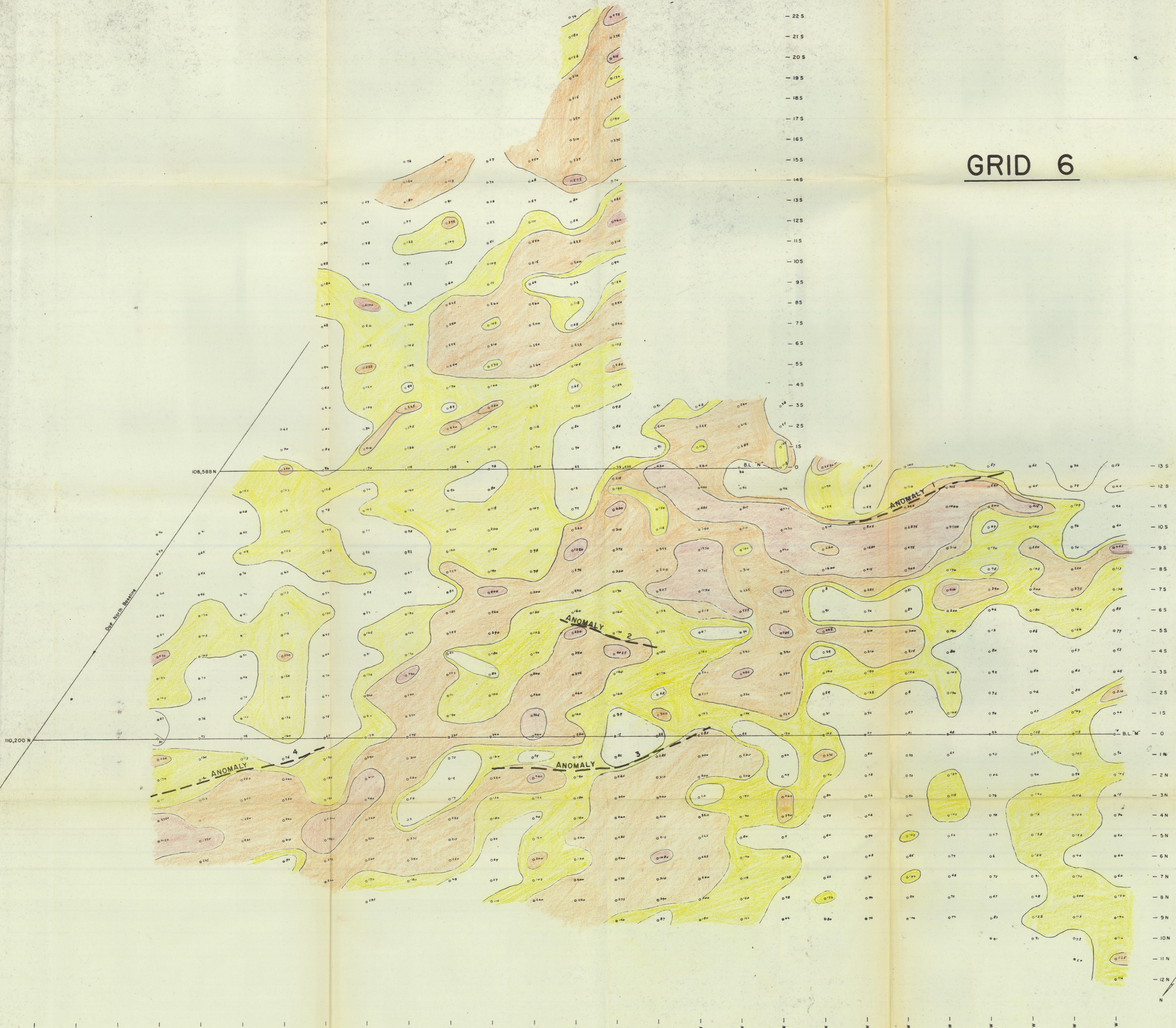
# GRID 5

- Hot Acid Extraction**
- 50-100 ppm
  - 100-200 ppm
  - 200+ ppm

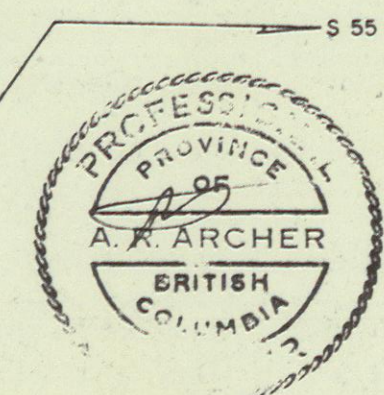


STUMP MINES LTD. SOIL GEOCHEMISTRY BASELINES J & K 5725 RIVER AREA 133	
ARCHER, CATHRO & ASSOC. LTD. <i>Consulting Geological Engineers</i>	
DATE	22 July 1988
DRAWN	[Signature]
SCALE	1" = 200' DWG
GRID 5 Fig. 6	

# GRID 6



- Hot Acid Extraction
- 100 - 200 ppm
  - 200 - 400 ppm
  - 400 + ppm
  - Possible Vein



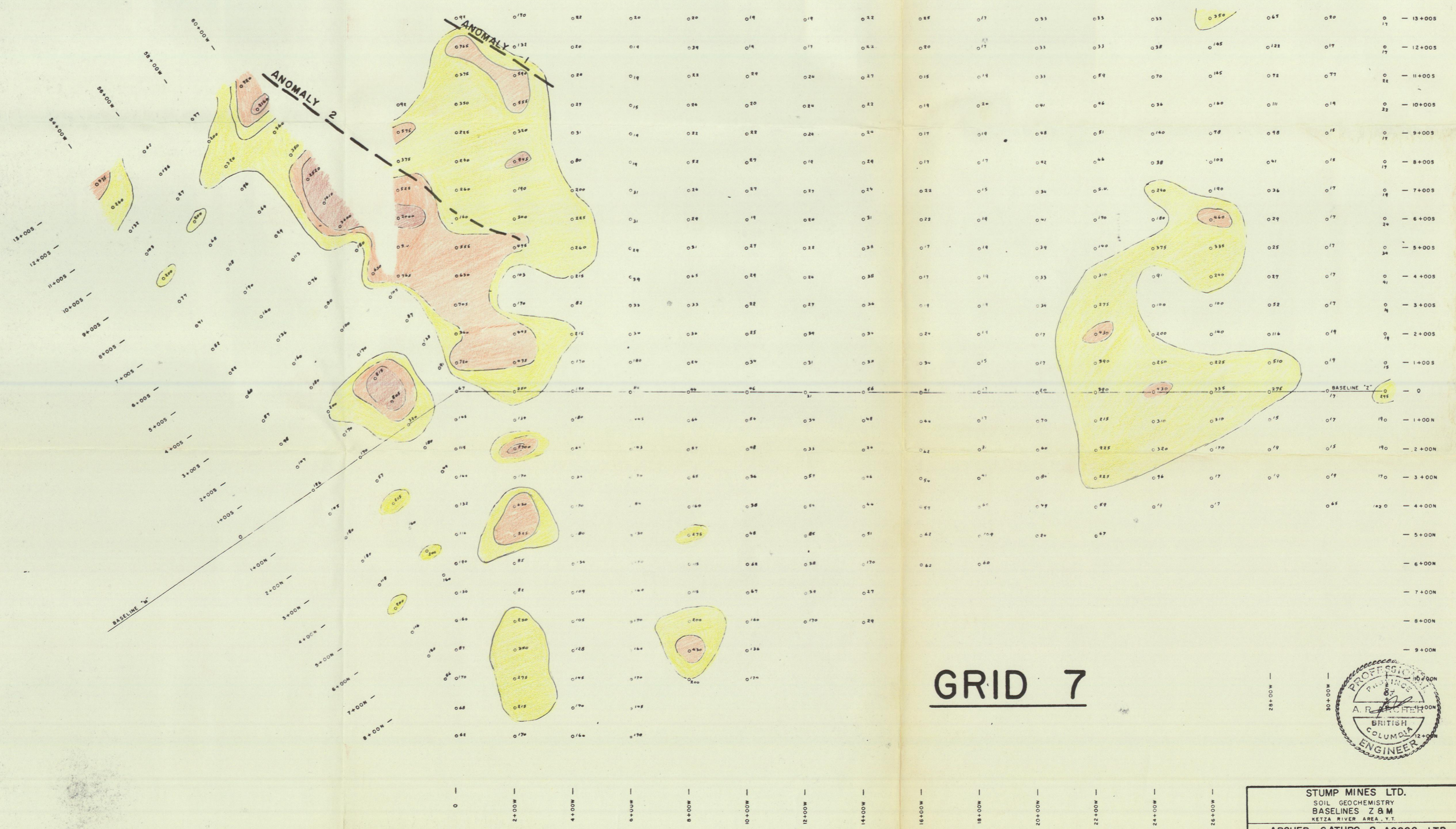
STUMP MINES LTD.  
 SOIL GEOCHEMISTRY  
 BASELINES M & N  
 METZ MINE AREA, B.C.

ARCHER, CATRO & ASSOC. LTD.  
 Consulting Geological Engineers

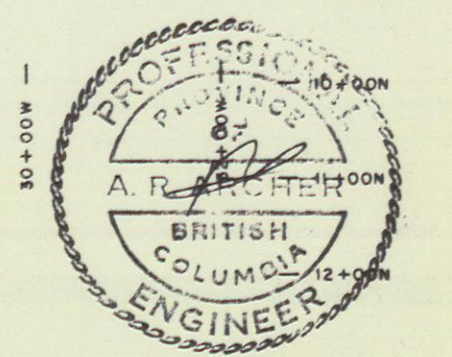
DATE	25 July 1968	GRID 6
DRAWN		
SCALE	1" = 200'	DWG. Fig. 7

Hot Acid Extraction

- 200 - 400 ppm
- 400 - 800 ppm
- 800 + ppm
- Possible Vein



# GRID 7



STUMP MINES LTD. SOIL GEOCHEMISTRY BASELINES Z & M KETZA RIVER AREA, Y.T.	
ARCHER, CATHRO & ASSOC. LTD. <i>Consulting Geological Engineers</i>	
DATE	16 Sept 1968
DRAWN	<i>Archer</i>
SCALE	1" = 200'
GRID 7 Fig. 8	