# 83-#484 (d)-11985

GUICHON EXPLORCO LIMITED

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SUMMARY OF PERCUSSION DRILLING

AND

INDUCED POLARIZATION GEOPHYSICAL SURVEYS

ON THE

TY 6, 7, 8, 9 CLAIMS

CLINTON MINING DIVISION

NTS: 92 P/14W

51°57.5'N, 121°26.5'W

## GEOLOGICAL BRANCH ASSESSMENT REPORT

D. GAMBLE SEPTEMBER 1983

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#### SECTION 1

INTRODUCTION LOCATION AND ACCESS TOPOGRAPHY AND VEGETATION CLAIM STATISTICS PREVIOUS WORK GEOPHYSICAL SURVEYS

#### INTRODUCTION

Two Geophysical Induced Polarization and Resistivity surveys were conducted over the TY 6-9 claims by Guichon Explorco Limited in November 1982 and in June 1983 using geophysical contractors.

During November 1982, a percussion drill program consisting of six (6) percussion drill holes (1220 feet) were completed.

This report contains the results obtained from these work programs.

#### LOCATION AND ACCESS

The TY 6, 7, 8 and 9 claims are located 15 kms north of Lac la Hache, B.C. The co-ordinates of the centre of the property are 51°57.5'N, 121°26.5'W on N.T.S. map sheet 92-P-14.

Access is gained via the Spout Lake road which leads to the western limit of the property. Rail Lake bounds the western border of the claim group. Several logging roads leading from the Spout Lake road provide access to the central part of the property. (See Figure 1, Location Map.)



#### TOPOGRAPHY & VEGETATION

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Relief is gentle to flat throughout the claim group. Elevations vary from 3600 to 3700 feet (asl).

Vegetation consists of scattered pine and fir forest with open swamps.

#### CLAIM STATISTICS

All the claims are in the Clinton Mining Division and are registered in the name of Guichon Explorco Limited, of Toronto. The names, record numbers, number of units and recorded dates are as listed:

<u>Claim Name</u>	Record No.	<u>Units</u>	Record Date			
тү б	1138	12	August 28, 1981			
TY 7	1139	15	August 28, 1981			
TY 8	1140	20	August 28, 1981			
TY 9	1315	б	November 29, 1982			

(See Figure 2, Location of TY 6-9 claims with detailed topography.)



A geochemical reconnaissance soil survey was conducted over the TY 6, 7 and 8 claims by Guichon Explorco Limited in 1981 (filed for assessment in 1982). The TY 6 grid system was utilized in the current work program. (See Figure 3 for TY 6 Grid plan.)



#### GEOPHYSICAL SURVEYS

Geophysical survey lines were selected to cover moderate soil geochemical anomalous zones from a previous survey that showed a good correlation to a strong linear magnetic feature.

The selected lines were brushed out to I.P. survey standard. The grid preparation was accomplished using company personnel and Amex Exploration Services Limited under field supervision of G. Owsiacki under the direction of D. Gamble.

Two Induced Polarization surveys were carried out over the selected grid lines under the supervision of A. Wynne.

The first survey was conducted in November 1982 over 4.15 line kilometres by Peter E. Wolcott and Associates Limited. The report and results of this survey are enclosed as part of this work report.

The second Induced Polarization survey was conducted in June 1983 over 4.0 line kilometres by Phoenix Geophysics Limited. The purpose of this survey was to further delineate the anomalous I.P. response discovered in the November 1982 geophysical survey. The report and results of the second follow-up Induced Polarization survey are enclosed and form part of this work report.

The following two sections contain the contract geophysical reports and results of the surveys. The location map, Figure 3, shows the TY 6 grid system with the geophysical survey lines indicated. SECTION 2

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A GEOPHYSICAL REPORT BY PETER E. WALCOTT AND ASSOCIATES LIMITED, NOVEMBER 1982 ۰.

#### A GEOPHYSICAL REPORT

#### ON

#### INDUCED POLARIZATION SURVEYS

Timothy Lake Area, Clinton M.D., B.C.

(51° 55'N, 121° 23'W) N.T.S. 92-P-14W

<u>Claims Surveyed</u>: TY 1, 2, 5, 6 GN 1, 2, 3, 5 7

Survey Dates: October 27th -November 22nd, 1982

#### FOR

#### SELCO INC.

Vancouver, British Columbia.

BY

Peter E. Walcott, P.Eng. PETER E. WALCOTT & ASSOC. LIMITED Vancouver, British Columbia

JANUARY 1983

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#### INTRODUCTION.

Between October 27th and November 22nd, 1982, Peter E. Walcott & Associates Limited carried out limited induced polarization surveys for Selco Inc. on their properties in the Timothy Lake area of British Columbia.

The surveys were carried out over preselected lines - 17 in all - of seven reconnaissance compass and chain soil sampling grids.

These lines were supposedly cut and rechained, and in some cases, established across the geochemical grids to I.P. specifications but in many cases evidence of this was hard to find.

Measurements of apparent chargeability - the I.P. response parameter - and resistivity were made along these lines using the <u>dipole-dipole</u> methof of surveying. Readings were made with a 50 metre dipole and first to fourth separation measurements obtained.

The data are presented in pseudo section form on individual line profiles bound in this report.

#### PROPERTY, LOCATION AND ACCESS.

The properties are located for the most some 12 kilometres east of Lac La Hache in the Clinton Mining Division of British Columbia.

Claim Na	ame	Record No.	Units	Record Date
TY I	1	1133	20	August 28th, 1981
TY 2	2	1134	16	August 28th, 1981
TY	5	1137	20	August 28th, 1981
TY 6	6	1138	12	August 28th, 1981
GN ]	1	1125	20	August 28th, 1981
GN 2	2	1126	20	August 28th, 1981
GN .	3	1127	18	August 28th, 1981
GN	5	1129	20	August 28th, 1981
GN	7	1131	20	August 28th, 1981

They consist of the following claims.

Access is easily obtainable by 2 wheel drive vehicle from Hwy 97 at Lac La Hache via the Timothy Lake road and numerous logging roads that exist in that country. PURPOSE.

The purpose of the survey was to search for possible occurrences of sulphide mineralization within and around the large airborne magnetic feature on which basis the ground was obtained. ,

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#### PREVIOUS WORK.

Previous work in the area is believed by the writer to have consisted of prospecting, geochemical and geophysical surveying and drilling on the Coronex property to the east. However the reader is referred to detailed information held by Selco Inc.

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#### GEOLOGY.

The reader is referred to reports and material held by Selco Inc.

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#### SURVEY SPECIFICATIONS.

The induced polarization (I.P.) survey was carried out using a pulse type system, the principal components of which are manufactured by Huntec Limited and Phoenix Geophysics Limited of Metropolitan Toronto, Ontario.

The system consists basically of three units, a receiver (Huntec), a transmitter and a motor generator (Phoenix). The transmitter, which provides a maximum of 2.0 kw d.c. to the ground, obtains its power from a 2.0 kw 400 c.p.s. three phase alternator driven by a gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 seconds "current-off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through electrodes C<sub>1</sub> and C<sub>2</sub>, the primary voltage (V) appearing between the two potential electrodes, P<sub>1</sub> and P<sub>2</sub>, during the "turrent-on" part of the cycle, and the apparent chargeability (M<sub>a</sub>) presented as a direct readout using a 450 millisecond delay and a 650 millisecond sample window by the receiver, a digital receiver controlled by a micro-processor.

The apparent resistivity  $(P_a)$  in ohm metres is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity are called apparent as they are values which that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

The survey was carried out using the "dipole-dipole" electrode array. This electrode configuration and the methods of presenting the results are illustrated in the appendix. Depth penetration with this array is increased or decreased by increasing or decreasing "a" and/or "n".

In practise, the equipment is set up at a particular station of the line to be surveyed: three transmitting dipoles are laid out to the rear, measurements are made for all possible combinations of transmitting and receiving dipoles, the latter consisting of two porous pots filled with an electrolyte copper sulphate solution "a" feet apart, up to the fourth separation, i.e. n = 4; the equipment is then moved 3 "a" feet along the line to the next set-up. - 7 -

SURVEY SPECIFICATIONS cont'd

A 50 metre dipole was used on the survey and first to fourth separation measurements were made.

In all some 35.9 kilometres were covered using the above method.

GEOPHYSICAL SERVICES

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#### DISCUSSION OF RESULTS.

The chargeability results in general showed the areas surveyed to exhibit a very low chargeability background - in the order of 1 to 3 milliseconds - probably occasioned in places by the fairly thick overburden cover. Thus although areas exhibiting chargeabilities of 3 to 4 milliseconds are shown as possible anomalous areas, they probably in most cases reflect a change in background due to a rock type change, etc.

The widths of the anomalous zones shown here are the maximum possible, and in all probability are considerably less than illustrated.

The areas surveyed will now best be discussed on an individual basis.

#### GRID GN 1.

Four lines were traversed with the I.P. method in this area. As can be seen from the pseudo-sections of Lines 56, 60, 64 and 68 S respectively the resistivity results reflected the topography and underlying bedrock as can be seen by the higher values over the hill to the east, and the lows over the lake, swamps, etc.

Two zones of poor to moderate I.P. response and limited strike extent can be seen striking across the eastern ends of Line 60 and 64S respectively.

A possible anomalous zone open to the west is observed at the western extremity of Line 68S. This zone should be delineated by additional work.

Another possible zone that could extend to the south is observed at depth in the middle of Line 68S.

#### GRID GN 2, 3, 5.

Here five lines were traversed using the I.P. technique -Lines 24, 28, 32, 36 and 40S respectively - and yielded the most interesting results.

Numerous anomalous and possible anomalous zones are discernible on the pseudo-sections, two of which stand out as better targets for further investigation. They are (1) the zone(s) between the BL and 6W on Line 40S and 4W and 8W on Line 36S and (2) the zone(s)

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#### DISCUSSION OF RESULTS cont'd

centred around 12 and 13W on Line 28S and extending from Line 32S to Line 24S.

The former is open both to the east and the south and requires further delineation there, whereas the latter is also open north of Line 24S but appears to be weakening in response.

A case could also be made for extending the latter all the way through to Line 40S but the writer believes this to be a separate zone or joined to those on the southernmost extremities of Line 28 and 32S.

Low resistivity readings are obtained east of Timothy Creek on Line 28S, and in the swamp on the eastern end of Line 32S.

#### GRID GN 7.

No resistivity and/or I.P. contrasts are observed on the two lines traversed here.

#### TY I GRID.

A large resistivity low, most probably reflecting deep overburden conditions, is observed between 13 and 19 NE on the only line traversed here. Low chargeability values are coincident with this feature.

Another resistivity break occurs at the 20 meter deep ravine circa 5NE as evidenced by the lower resistivity values to the southwest.

Anomalous chargeability conditions appear to exist all the way across the line but would seem to be caused by changed in background due to the changes in rock type. It could well be that anomalous conditions only exist southwest of the ravine, but in any case additional work is needed to further investigate this.

#### TY 2 GRID.

A moderately strong double peak anomaly, suggestive of a body of limited depth extent, is observed striking across the south western ends of Lines G-1 and 2 respectively.

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DISCUSSION OF RESULTS cont'd

A zone of higher chargeability open to the north-east can also be observed at the other ends of the lines.

Low chargeability readings are obtained over the outcropping topographic rises clearly discernible on the resistivity results.

#### TY 5 GRID.

Here the resistivity survey suggests four rock type changes circa 4, 7, 8.5 and 14SW respectively. A resistivity low appears to occur at depth at 13 SW. This complex resistivity pattern is attributable to patches of outcrop and/or boulders encountered in the emplacement of electrodes from 11 to 13SW. It also gives rise to a complex I.P. pattern. It would appear that a small zone of anomalous chargeability readings exists around 11SW, and that the rest of the higher readings on the line are due to a background change caused by changes in bedrock and/or oberburden cover. Again more work is necessary to sort out these responses.

#### TY 6 GRID.

A strong response caused by a shallow body of limited depth extent is observed centred around 18N on the baseline. This would appear to be associated with a contact indicated by a resistivity change at 17N.

It would appear that a second possible deeper zone could be associated with the higher resistivity at 16N.

Another resistivity contact could exist at 8.5N.

Three possible anomalous zones are observed on Line 10W with the southernmost two probably indicative of a background change as the chargeability values are fairly consistent over some 500 metres.

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#### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

Between October 27th and November 22nd, 1982, Peter E. Walcott and Associates Limited carried out reconnaissance I.P. profiling over several soil sampling grids for Selco Inc. over their Timothy Lake properties, Clinton Mining Division, British Columbia.

Several anomalous zones, worthy of further investigation of one kind or another are observed over the low chargeability backgrounds.

These zones are noted in the previous section.

Although definition of these zones is sufficient on GN 2, 3, 5 for investigation by diamond drilling, further I.P. work is necessary for better delineation of the rest of the I.P. hopefuls.

As a result the writer recommends that the results be studied in conjunction with the limited geology, the soil sampling results, and the results of the percussion drilling programme before committing to further work of any description.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

Peter E. Walcott, P.Eng. Geophysicist

Vancouver, British Columbia

January 1983

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COST OS SURVEY.

Peter E. Walcott & Associates Limited undertook the survey on a kilometre basis, so that the total cost of services provided was \$29,770.10.

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## PERSONNEL EMPLOYED ON SURVEY.

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Name	Occupation	Address D	ates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C. V3J 3T8	Oct. 27th - Nov. 22nd, 1982 Jan 10 - 12, 1983
G. MacMillan	Geophysical Operator	17	Oct. 27th - Nov. 22nd, 1982 Nov. 25 - 29th, 82 Dec. 12 - 20th, 82
V. A. Pashniak	11	"	Oct. 27th - Nov. 22nd, 1982
F. Von Flotow	11	. 11	u
J. Walcott	Typing	11	Jan. 14th, 1983

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#### CERTIFICATION.

I, Peter E. Walcott of the Municipality of Coquitlam, British Columbia, hereby certify that:

- 1. I am a Graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics Option.
- 2. I have been practising my profession for the last twenty years.
- 3. I am a member of the Association of Professional Engineers of British Columbia, and Ontario.
- 4. I hold no interest, direct or indirect, in the Timothy Lake properties nor do I expect to receive any.

Peter E. Walcott, P.Eng.

Vancouver, British Columbia

January 1983

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# SELCO INC.

TIMOTHY LAKE AREA, B.C.

## INDUCED POLARIZATION SURVEY

DIPOLE - DIPOLE ARRAY a = 50 METRES

TY #6 GRID

BASE-LINE

SCALE 1:2500

PETER E. WALCOTT & ASSOC LTD. OCT. - NOV. 1982

# ASSESSMENT PERMIT






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# SELCO INC.

TIMOTHY LAKE AREA, B.C.

# INDUCED POLARIZATION SURVEY

DIPOLE - DIPOLE ARRAY a = 50 METRES

TY # 6 GIRD

LINE IO-W

SCALE 1:2500

PETER E. WALCOTT & ASSOC. LTD. OCT. - NOV. 1982



SECTION 3

A GEOPHYSICAL REPORT BY PHOENIX GEOPHYSICS LIMITED, JUNE 1983

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REPORT ON THE

INDUCED POLARIZATION

# AND RESISTIVITY SURVEY

ON THE

# TIMOTHY LAKE PROJECT

CLINTON MINING DIVISION BRITISH COLUMBIA

FOR

# SELCO MINING CORPORATION LIMITED

Latitude: 51°52'N

Longitude: 121°18'W

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N.T.S. 92 P/14

OPERATOR: SELCO MINING CORPORATION LIMITED

BY

Paul A. Cartwright, B.Sc. Geophysicist

Dated

September 16, 1983

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	I.P. Data Plots	Dwgs. I.P. 5832-1 to -15	
	Location Map	Figure 1	

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1. Introduction

An Induced Polarization and Resistivity survey has been completed on the Timothy Lake Project, Clinton Mining Division, British Columbia, on behalf of Selco Mining Corporation Limited.

The project area is located immediately northeast of the community of Lac La Hache, B.C., which is on Highway 97. Access to the individual grids on the property is via gravel logging roads from Highway 97.

Previous work during 1982, included airborne magnetic surveying. IP and Resistivity surveying was then used to further evaluate anomalous magnetic responses.

Objective of the present IP and Resistivity survey was to provide more complete coverage over some of the anomalous IP zones outlined during last seasons work.

A Phoenix Model IPV-1, IP and Resistivity receiver unit was used in conjunction with a Phoenix Model IPT-1, IP and Resistivity transmitter powered by a 2 Kw motor-generator. IP effect is recorded directly as Percent Frequency Effect (P.F.E.) at operating frequencies of 4.0 Hz and 0.25 Hz. Apparent resistivity values are normalized in units of ohm-meters, while Metal Factor values are calculated according to the formula: M.F. = (P.F.E. x 1000)  $\div$  Apparent Resistivity.

Dipole-Dipole array was utilized to make the majority of the measurements, with a basic inter-electrode distance of 50 meters.

Four dipole separations were recorded in every case. Number of line kilometers surveyed during the present survey was 14.35 line kilometers.

Field work was carried out during June, 1983, under the supervision of Mr. John Marsh and Mr. Peter Gardner, geophysical crew leaders. Their Certificates of qualification are included with this report.

2. Presentation of Data

The Induced Polarization and Resistivity results are shown on the following data plots in the manner described in the notes (Part B) following this report.

Grid	Line	Electrode Interval	Dwg. No.
GN-1	58+00S	50 meters	5832-1
	62+00S	50 meters	5832-2
	66+00S	50 meters	5832-3
GN-4	76+00S	50 meters	5832-4
	78+00S	50 meters	5832-5
	79+00S	50 meters	5832-6

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Grid	Line	Electrode Interval	Dwg. No.
TY-1	1+00W	50 meters	5832-7
	2+00W	50 meters	5832 <b>-</b> 8
TY-2	1+00E	50 meters	5832-9
	1+00W	50 meters	5832-10
TY-5	1+00S	50 meters	. 5832–11
TY-6	2+00E	50 meters	5832-12
	2+00W	50 meters	5832-13
	4+00W	50 meters	5832-14
	6+00W	50 meters	5832-15

Also enclosed with this report is Dwg. I.P.P.-B-4027, a plan map of the Timothy Lake Project area at a scale of 1:20,000. The definite, probable and possible Induced Polarization anomalies are indicated by bars, in the manner shown on the legend, on this plan map as well as on the data plots. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

Since the Induced Polarization measurement is essentially an averaging process, as are all potential methods, it is frequently difficult to exactly pinpoint the source of an anomaly. Certainly, no anomaly can be located with more accuracy than the electrode interval length; i.e. when using 50 meter electrode intervals the position of a narrow sulphide body can only be determined to lie between two stations 50 meters apart. In order to definitely locate, and fully evaluate, a narrow, shallow source it is necessary to use shorter electrode intervals. In order to locate sources at some depth, larger electrode intervals must be used, with a corresponding increase in the uncertainties of location. Therefore, while the centre of the indicated anomaly probably corresponds fairly well with source, the length of the indicated anomaly along the line should not be taken to represent the exact edges of the anomalous material.

The topographical, geologic, magnetic and grid information shown on Dwg. I.P.P.-B-4027, has been taken from maps made available by the staff of Selco Mining Corporation Limited.

#### 3. Discussion of Results

Six separate grids lying within the Timothy Lake Project area, have been investigated by the present Induced Polarization and Resistivity survey, and are shown on Dwg. I.P.P.-B-4027.

Results from each grid are discussed separately below.

- 2 -

Grid GN-1

Two anomalous IP zones are interpreted in the data acquired on the three lines surveyed on this grid.

Both zones are weakly to moderately anomalous, with the more western trend being open towards the west, as well as to the north and south. The best defined individual anomaly occurs on the eastern IP trend in the vicinity of Line 58+00S, between station 36+00E and station 37+50E. Small concentrations of mostly disseminated material are the probable source of these anomalous IP effects seen on Line 58+00S, as generally high apparent resistivity values are evident coincident with the higher than background Per Cent Frequency Effect (P.F.E.) values. While a narrow zone of lower resistivity material is evident near the western margin of the zone, it is not clear if more conductive mineralization is present, or if an ionic conductor, such as a fault is the cause.

Depth to the source of the IP response is indicated to be less than 50 meters in the case of the northern end of the east zone, with the zone apparently plunging towards the south. Additional surveying would be required to fully define the western margin of the second IP zone.

#### Grid GN-4

The IP and Resistivity results recorded on the three lines from Grid GN-4 are interpreted to show three separate, weakly anomalous trends, all striking north-south. There is some uncertainty in this evaluation due to the fact that the most westerly zone is undefined along its western margin.

The highest magnitude IP response is noted on Line 76+00S, in the interval between station 5+50W and station 5+00W, where a local P.F.E. high exists, set within a background of less anomalous values. Depth to the source in this case is less than 50 meters subsurface.

#### Grid TY-1

Two lines were surveyed on this grid area during the 1983 IP program. Strongly anomalous responses are evident in the data from both lines. In each case there appears to be a central zone of concentrated mineralization surrounded by considerable widths of less sulphide-rich rock.

The highest magnitude response is detected on Line 1+00W, centered on station 2+00N, where depth to the target is less than 50 meters, subsurface.

Although the lines are orientated north-east, the core of the IP zone may strike in a more northerly direction, and appears to be more deeply buried towards the south.

#### Grid TY-2

The most encouraging results seen in the IP data collected on this grid are noted on Line 1+00E, between station 1+00N and station 2+00N, where a moderately anomalous response is interpreted. A flat lying, shallow conductive zone appears to cover the area between station 0+50N and station 2+50N, and may be caused by a superficial deposit such as thick swamp. However, depth to the top of the polarizable material is less than 50 meters.

On the second line, Line 1+00W, the IP response is much less anomalous, while displaying a more complicated signature. Two separate, near surface sources are interpreted in the data.

#### Grid TY-5

Line 1+00S was the only line surveyed on Grid TY-5 during the present IP program. Two weakly anomalous responses are outlined by the data. The western anomaly consists of somewhat anomalous IP effects accompanied by moderate magnitude apparent resistivity values, situated on the eastern flank of a very resistive rock unit, which seems to be hosting small amounts of disseminated sulphide, judging by the relatively high magnitude of the P.F.E. values recorded within the high resistivity rock unit.

On the eastern end of the line, small concentrations of polarizable material are the probable source of the IP anomaly.

#### Grid TY-6

One very anomalous IP zone is evident striking roughly in a northwesterly direction. It is seen in the data on all four lines surveyed, with the highest magnitudes being indicated on Line 2+00W, between station 0+50N and station 1+50N. The source of the trend lies within 50 meters of the surface on the three most northerly lines, but appears to be slightly deeper in the case of Line 2+00E, as well as being wider.

Although apparent resistivity values in the general area of the anomalous IP effects seem to be quite low in absolute terms, there does not appear to be any clear correlation between the P.F.E. patterns and the resistivity patterns. This suggests that the sulphide rich zone is hosted by loosely consolidated or weathered rocks.

#### 4. Summary and Recommendations

The Induced Polarization and Resistivity survey of six separate grid areas within the Timothy Lake Project area has recorded anomalous values in every area. Grid GN-1

Two anomalous IP zones are evident. A drill hole located so as to pass through a point 75 meters under Line 58+00S, station 36+50E would test the source of the eastern zone.

Additional IP coverage is required to fully outline the western margin of the other zone, before drill testing is considered.

#### Grid GN-4

Although three separate, weakly anomalous zones are interpreted in the IP data from Grid GN-4, only the center zone, which is slightly more anomalous than the others should initially be considered for drill testing, unless other information is available to recommend them. A drill hole spotted so as to intersect a point approximately 50 meters below Line 76+00S, station 5+25W is suggested.

Additional IP and Resistivity surveying is needed to close off the western side of the most westerly zone.

#### Grid TY-1

One highly anomalous IP zone is detected on this grid. A drill hole situated so as to pass approximately 75 meters beneath Line 1+00W, station 2+00N is recommended to test the source of the most anomalous response.

#### Grid TY-2

One anomalous IP zone is detected on Grid TY-2. A drill hole located to intersect a point approximately 50 meters under Line 1+00E, station 1+75N would test the most anomalous response.

#### Grid TY-5

A single line was surveyed on this grid, and two weak IP anomalies are noted in the data. The western response could be drill evaluated on a low priority basis by a drill hole spotted to pass approximately 50 meters beneath station 10+85W on Line 1+00S.

Additional IP and Resistivity surveying using shorter electrode intervals is recommended to better define the source of the eastern anomaly before drilling is considered. Grid TY-6

A very anomalous IP zone is outlined by the data from this grid. A drill hole located so as to intersect a point approximately 50 meters below Line 2+00W, station 1+00N is recommended.

PHOENIX GEOPHYSICS LIMITED

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Paul A. Cartwright, B.Sc.

Geophysicist

Dated: September 16, 1983

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# ASSESSMENT DETAILS

PROPERTY:	Timothy Lake Project	t	MINING DIVI	CSION: C	linton
SPONSOR:	Selco Mining Corp.L	tđ.	PROVINCE:	British	Columbia
LOCATION:	Lac La Hache, B.C.				
TYPE OF SUI	RVEY: Induced Polar: and Resist:	ization lvity			
OPERATING N	AAN DAYS:	27	DATE STARTE	D: June	8, 1983
EQUIVALENT	8 HR.MAN DAYS:	40.5	DATE FINISH	HED: June	19, 1983
CONSULTING	MAN DAYS:	4	NUMBER OF S	STATIONS:	302
DRAFTING MA	AN DAYS:	6	NUMBER OF R	READINGS:	1716
TOTAL MAN I	DAYS:	50.5	KILOMETERS SURVEY	OF LINE	14.35

CONSULTANTS:

Paul A. Cartwright, 4238 W. 11th Avenue, Vancouver, B.C.

FIELD TECHNICIANS:

J. Marsh, 200 Yorkland Blvd. Willowdale, Ontario. P. Gardner, 393 Connaught Avenue, Willowdale, Ontario.

G. Richardson, 4161 Crown Crescent, Vancouver, B.C.

DRAUGHTSMEN:

R. C. Norris, 2499 Linwood Street, Pickering, Ontario.

PHOENIX GEOPHYSICS LIMITED 10 and

Paul A. Cartwright, B.Sc., Geophysicist

Dated: September 16, 1983

# STATEMENT OF COST

Selco Mining Corporation Limited

Induced Polarization and Resistivity Survey Timothy Lake Project, Clinton M.D., Lac La Hache, B.C.

Crew: J. Marsh, P. Gardner, G.Richardson

Period: June 8, 1983 to June 19, 1983.

14.35 1.km @ \$780.00/1.km.

\$11,193.00

PHOENIX GEOPHYSICS LIMITED rom

Paul A. Cartwright, B.Sc.' Geophysicist

Dated: September 16, 1983

#### CERTIFICATE

I, Paul A. Cartwright, of the City of Vancouver, Province of British Columbia, do hereby certify that:

- I am a geophysicist residing at 4238 W. 11th Avenue, Vancouver B.C.
- 2. I am a graduate of the University of British Columbia, B.C. with a B.Sc. Degree.
- 3. I am a member of the Society of Exploration Geophysicists and the European Association of Exploration Geophysicists.
- 4. I have been practicing my profession for 13 years
- 5. I have no direct interest directly or indirectly, in the properties or securities of Selco Mining Corporation Limited, or any affiliate.
- The statements made in this report are based on a study of published geological literature and unpublished private reports.
- 7. Permission is granted to use in whole or in part for assessment and qualification requirements but not for advertising purposes.

Dated at Vancouver, B.C. This 16th day of September, 1983

Paul A. Cartwright, B.Sc.

#### CERTIFICATE

I, JOHN MARSH, of the Municipality of North York, Ontario, North York, Ontario, DO HEREBY CERTIFY THAT:

1. I am a geophysical crew leader residing at 200 Yorkland Blvd., Willowdale, Ontario.

2. I am a graduate of the City of Norwich Technical College, U.K., ordinary National Certificate (Electrical Engineering).

3. I worked with McPhar Geophysics Company from 1968 to 1975 as a geophysical crew leader.

4. I am presently employed as a geophysical crew leader by Phoenix Geophysics Limited of 214 - 744 West Hastings Street, Vancouver, B.C.

Dated at Vancouver, B.C. This 16th day of September, 1983

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# CERTIFICATE

I, Peter Gardner, of the City of Toronto, Province of Ontario, DO HEREBY CERTIFY THAT:

1. I am a geophysical crew leader residing at 393 Connaught Avenue, Willowdale, Ontario.

2. I am a graduate of Radio College of Canada in Electronics Technology.

I have been practicing my vocation about six 3. years.

4. I am presently employed as a geophysical crew leader by Phoenix Geophysics Limited of 214 - 744 West Hastings Street, Vancouver, B.C.

Dated at Vancouver, B.C.

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This 16th day of September, 1983

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#### PART B

# PHOENIX GEOPHYSICS LIMITED

# NOTES ON THE THEORY, METHOD OF FIELD OPERATION AND PRESENTATION OF DATA . FOR THE INDUCED POLARIZATION METHOD

Induced Polarization as a geophysical measurement refers to the blocking action or polarization of metallic or electronic conductors in a medium of ionic solution conduction.

This electro-chemical phenomenon occurs wherever electrical current is passed through an area which contains metallic minerals such as base metal sulphides. Normally, when current is passed through the ground, as in resistivity measurements, all of the conduction takes place through ions present in the water content of the rock, or soil, i.e., by ionic conduction. This is because almost all minerals have a much higher specific resistivity than ground water. The group of minerals commonly described as "metallic", however, have specific resistivities much lower than ground waters. The induced polarization effect takes place at those interfaces where the mode of conduction changes from ionic in the solutions filling the interstices of the rock to electronic in the metallic minerals present in the rock.

The blocking action or induced polarization mentioned above, which depends upon the chemical energies necessary to allow the ions to give up or receive electrons from the metallic surface, increases with the time that a d.c. current is allowed to flow through the rock; i.e., as ions pile up against the metallic interface the resistance to current flow increases. Eventually, there is enough polarization in the form of excess ions at the interfaces, to appreciably reduce the amount of current flow through the metallic particle. This polarization takes place at each of the infinite number of solution-metal interfaces in a mineralized rock.

When the d.c. voltage used to create this d.c. current flow is cut off, the Coulomb forces between the charged ions forming the polarization cause them to return to their normal position. This movement of charge creates a small current flow which can be measured on the surface of the ground as a decaying potential difference.

From an alternate viewpoint it can be seen that if the direction of the current through the system is reversed repeatedly before the polarization occurs, the effective resistivity of the system as a whole will change as the frequency of the switching is changed. This is a consequence of the fact that the amount of current flowing through each metallic interface depends upon the length of time that current has been passing through it in one direction.

The values of the per cent frequency effect or F.E. are a measurement of the polarization in the rock mass. However, since the measurement of the degree of polarization is related to the apparent resistivity of the rock mass, it is found that the metal factor values or M.F. can be useful values

-2-

determining the amount of polarization present in the rock mass. The MF values are obtained by normalizing the F.E. values for varying resistivities.

The Induced Polarization measurement is perhaps the most powerful geophysical method for the direct detection of metallic sulphide mineralization, even when this mineralization is of very low concentration. The lower limit of volume per cent sulphide necessary to produce a recognizable IP anomaly will vary with the geometry and geologic environment of the source, and the method of executing the survey. However, sulphide mineralization of less than one per cent by volume has been detected by the IP method under proper geological conditions.

The greatest application of the IP method has been in the search for disseminated metallic sulphides of less than 20% by volume. However, it has also been used successfully in the search for massive sulphides in situations where, due to source geometry, depth of source, or low resistivity of surface layer, the EM method cannot be successfully applied. The ability to differentiate ionic conductors, such as water-filled shear zones, makes the IP method a useful tool in checking EM anomalies which are suspected of being due to these causes.

In normal field applications the IP method does not differentiate between the economically important metallic minerals such as chalcopyrite, chalcocite, molybdenite, galena, etc., and the other metallic minerals such as pyrite. The Induced Polarization effect is due to the total of all electronic conducting minerals in the rock mass. Other electronic conducting

-3-

materials which can produce an IP response are magnetite, pyrolusite, graphite, and some forms of hematite.

In the field procedure, measurements on the surface are made in a way that allows the effects of lateral changes in the properties of the ground to be separated from the effects of vertical changes in the properties. Current is applied to the ground at two points in distance (X) apart. The potentials are measured at two points (X) feet apart, in line with the current electrodes is an integer number (n) times the basic distance (X).

The measurements are made along a surveyed line, with a constant distance (nX) between the nearest current and potential electrodes. In most surveys, several traverses are made with various values of (n); i.e., (n) = 1, 2, 3, 4, etc. The kind of survey required (detailed or reconnaissance) decides the number of values of (n) used.

In plotting the results, the values of apparent resistivity, apparent per cent frequency effect, and the apparent metal factor measured for each set of electrode positions are plotted at the intersection of grid lines, one from the center point of the current electrodes and the other from the center point of the potential electrodes. (See Figure A) The resistivity values are plotted at the top of the data profile, above the metal factor values. On a third line, below the metal factor values, are plotted the values of the percent frequency effect. The lateral displacement of a given value is determined by the location along the survey line of the center

-4-

point between the current and potential electrodes. The distance of the value from the line is determined by the distance (nX) between the current and potential electrodes when the measurement was made.

The separation between sender and receiver electrodes is only one factor which determines the depth to which the ground is being sampled in any particular measurement. The plots then, when contoured, are not section maps of the electrical properties of the ground under the survey line. The interpretation of the results from any given survey must be carried out using the combined experience gained from field results, model study results and the theoretical investigations. The position of the electrodes when anomalous values are measured is important in the interpretation.

In the field procedure, the interval over which the potential differences are measured is the same as the interval over which the electrodes are moved after a series of potential readings has been made. One of the advantages of the Induced Polarization method is that the same equipment can be used for both detailed and reconnaissance surveys merely by changing the distance (X) over which the electrodes are moved each time. In the past, intervals have been used ranging from 25 feet to 2000 feet for (X). In each case, the decision as to the distance (X) and the values of (n) to be used is largely determined by the expected size of the mineral deposit being sought, the size of the expected anomaly and the speed with which it is desired to progress.

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The diagram in Figure A demonstrates the method used in plotting the results. Each value of the apparent resistivity, apparent metal factor, and apparent per cent frequency effect is plotted and identified by the position of the four electrodes when the measurement was made. It can be seen that the values measured for the larger values of (n) are plotted farther from the line indicating that the thickness of the layer of the earth that is being tested is greater than for the smaller values of (n); i.e., the depth of the measurement is increased.

The IP measurement is basically obtained by measuring the difference in potential or voltage ( $\Delta V$ ) obtained at two operating frequencies. The voltage is the product of the current through the ground and the apparent resistivity of the ground. Therefore, in field situations where the current is very low due to poor electrode contact, or the apparent resistivity is very low, or a combination of the two effects; the value of ( $\Delta V$ ) the change is potential will be too small to be measurable. The symbol "TL" on the data plots indicates this situation.

In some situations spurious noise, either man-made or natural, will render it impossible to obtain a reading. The symbol "N" on the data plots indicates a station at which it is too noisy to record a reading. If a reading can be obtained, but for reasons of noise there is some doubt as to its accuracy, the reading is bracketed in the data plot ( ).

In certain situations negative values of Apparent Frequency Effect are recorded. This may be due to the geologic

-6-

environment or spurious electrical effects. The actual negative frequency effect value recorded is indicated on the data plot; however, the symbol "NEG" is indicated for the corresponding value of Apparent Metal Factor. In contouring negative values the contour lines are indicated to the nearest positive value in the immediate vicinity of the negative value.

The symbol "NR" indicates that for some reason the operator did not attempt to record a reading, although normal survey procedures would suggest that one was required. This may be due to inaccessible topography or other similar reasons. Any symbol other than those discussed above is unique to a particular situation and is described within the body of the report.

# PHOENIX GEOPHYSICS LIMITED

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SECTION 4

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PERCUSSION

DRILL PROGRAM

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### PERCUSSION DRILLING

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During the period November 3, 1982 through to November 19, 1982, six (6) percussion drill holes totalling 1220 feet (372 m) were completed to test soil geochemical anomalies that had been previously outlined in an earlier survey. The drill hole locations are tabulated in a summary table and drill hole collar locations are shown on the accompanying TY 6 grid plan, Figure 3, and Figure 3a.





# Summary Table

\*\*\* \*\* \* \*\*

1	P.D.H.	Coordinates	Dip	<u>T.D.</u>	Geochemically Elevated Values
тү	6-82-1	L24+00mN/5+00mW	-900	200'	Cu
ΤY	6-82-2	Ll+00mS /7+00mW	-900	220'	none
ΤY	6-82-3	L5+00mS /4+00mW	-900	200'	none
ΤY	6-82-4	L7+00mS /5+00mE	-90 <sup>0</sup>	200'	none
ΤY	6-82-5	L0+00mN /14+00mE	-90 <sup>0</sup>	200'	none
ΤY	6-82-6	L12+00mN/8+00mE	-90 <sup>0</sup>	200'	none

A record of each hole was constructed on a wooden slat by washing and sieving a portion of each drill chip interval. The cleaned and dried, recovered coarse fraction was then glued to the appropriate scaled off intervals on the grooved slat. The log chip boards for each hole were then examined visually under a binocular microscope and logged. Accompanying this report are the drill logs for each percussion hole.

### DRILL RESULTS

The drill holes returned low, uneconomic values for copper, silver, arsenic and gold. One hole returned geochemical elevated values in copper which may offer some encouragement. Percussion drill hole TY 6-82-1 returned elevated copper values averaging 261 ppm over 40 feet between the 160-200 foot interval.

#### CONCLUSIONS

Slightly encouraging geochemically elevated copper values were obtained in one percussion drill hole, TY 6-82-1. Further examination in this area seems warranted in light of the favourable geophysical response.

SELCO MINING CORPORATION LIMITED   PERCIESSION   HOLE NO. TY-6-82-1   PROPERTY TIMOTHY PROJECT   TTY-6   SHEET NO   LOCATION   LOCATION												
FROM	то,	DESCRIPTION	SAMPLE NO.	FROM	то	CORE	CORE	ASSAY		SAYS		REMARKS
	100				•				Aq	As	Au	
		O/B	-									0-70' Casing
	200			100	110	101		120	1			Burke Lasing off at 55
	FOH	- angular and irregular shaped chips consisting of	b2001	1110	120	101		123	2		20	
		90% diorite and 10% white carbonate chips.	22002	120	1.30	10		123	• <u></u> 2	3	5	
		- diorite chips const of 70% plaqioclase feldspar,	22004	130	140	10'		94	.2	2	5	
		a clear twinned and cream white varieties;	22005	140	150	10'		91	.1	3	5	
		25% amphiboles	22006	150	160	10'_		83	,1	3	5	
		5% biotite	22007	160	170	י0נ		160	.1	2	5	
		occassional trace epidote.	22008	170	180	י10		285	.1	2	5	3
			22009	180	190	10'		240	.3	3_	5	
		(0.2 c.q.s. magnetic susceptibility over length of	22010	190	200_	10'_		360	.2	3	5	
		hole)	<u> </u>									
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1 5 1	Hole N Sheet Locatio	SEL PER 10. TY6-82-2 <b>PROPERTYTIMOTHY_</b> NO 1 DN L1+00mS/7+00mW	CO MININ CUSSIC PROJEC BEARI DIP C	IG CORP DN DR CT TY ING COLLAR	0RATIO 	RECC	DRD	ARTED	Nov	4 3 	32	ELEVATION TOTAL DEPTH 220 FEET CORE SIZE 2 INCH(WET) COMPLETED NOV. 10/82
FROM	то.	DESCRIPTION	SAMPLE No.	FROM	то	CORE LENGTH	CORE RECOV-		AS:	SAYS	<b>n</b>	REMARKS
0	220	0/B	22011	170		201		<u> </u>	Ag	AS	Au	
-	EOH	0-170 - no sample recovered.	22011	180	190	10'		42	.2	- 4	20	<u>0-30' casing</u>
		170-220 - soft agglomeration of sand & mud.	22013	190	200	10'		45	.1	2	10	
		- rounded red brown and black basalt	22014	200	210	10'		39	.1	5	5	
		grains	22015	210	220	10'		45	.1	3	5	
		0.0 c.g.s. magnetic susceptibility										· · · · · · · · · · · · · · · · · · ·
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-	HOLE N Sheet	SEL PERCI NO. TY 6-82-3 <b>PROPERTY</b> <u>TIMOTHY PI</u> NO 1	CO MININ USSION ROJECT BEARI	ig corp DR TY-	ORATIO	n Limiti RECC	ED DRD					ELEVATION TOTAL DEPTH 200 FEET
		ON L5+00mS/4+00mW	DIP C	OLLAF	₹ -90	) <sup>0</sup>	ST.	ARTE	Nov.	. 11/8	32 (	CORE SIZE 2 INCH (WET)
FROM	то,	DESCRIPTION	SAMPLE ND.	FROM	то	CORE	CORE RECOV-		AS	SAYS		REMARKS
0	150	0/в	22016	150	160	ימד		<u>Cu</u> 76	Ag_	_As	<u>Au</u> 10	0-30' Casing
			22017	160	170	107		51		<u> </u>	15	
	200	DIORITE - SYENODIORITE	22018	170	180	10'		36	.2	6	- 5	
		- pale green-grey diorite chips at beginning with	22019	180	190	10!		25	.1	5	5	
		white and pink felsic intrusive symitic chips	22020	190	200	10'		29	.2	5	5	
		becoming more pervasive downhole.										
		- Mafic minerals consist of chlorite and amphibole										
		- weak to trace carbonate			_							
		- no sulphides										
		(0.0_c.g.s. magnetic_susceptibility)	ļ									
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	HOLE NO	SEL PER O. TY 6-82-4 <b>PROPERTY</b> <u>TIMOTHY PROJE</u> IO 1 IN L7+00mS/5+00mE	CO MININ CUSSIO CT TY BEARI DIP C	IG CORP N <b>DR</b> -6 G ING OLLAF	RID	N LIMITE RECC	ED DRD	ARTED	Nov	<b>4</b> 	2	ELEVATION TOTAL DEPTH 200 FEET CORE SIZE 2 INCH (WET) COMPLETED Nov. 12/82
FROM	то.	DESCRIPTION	SAMFLE NO.	FROM	то	CORE LENGTH			AS	SAYS		REMARKS
0	70	0/B	02027			101		<u>Cu</u>	Aq	As.	Au	
			22022	80	90	10'		33	.1	4	5	0-40: (Asing
70	200	BASALT (anyqdaloidal) TERTIARY	22023	90	100	10'		37	.1	3	5	
<u> </u>	_ EOH	70-80 bleached subcrop, tan coloured chips.	22024	100	110	10'	~	40	.1	3	5	
		70-100 red brown basalt chips (60%) and buff tan	22025	110	120	10'		37	.2	3	5	
·		anygdaloidal filling material (40%).	22026	120	1.30	10'		37	.1	4	5	
		100-200 red brown and black basalt chips with 10%	22027	130	140	10'		40	1	3	_5	
		tan coloured fine grained anygdaloidal filling chips.	22028	140	150	_10'		41	.1	-3	5	
<u> </u>		180-190 bleached chips.	22029	150	160	<u>10'</u>		46	.1	2	5	
		- no sulphides present.	22030	160	.170	10'		47	<b>.</b> 1	3	5	
		- 0.0 c.g.s. magnetic susceptibility)	22031	170	180_	10'		50	_1	3	5	· · · · · · · · · · · · · · · · · · ·
			220.32	180_	190_	. 10'		48	1	3	5_	
		· · · · · · · · · · · · · · · · · · ·	22033	190	200	_10"		44	<u> </u>		5	·····
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1	HOLE N Sheet I Locatic	SEI PER O. TY 6-82-5 <b>PROPERTY</b>	CO MININ CUSSION ( PROJI BEARI DIP C	g corp DR SCT J NG OLLAR	oratio ILL 12-6 2 -90	N LIMITI <b>RECC</b> <u>GRID</u>	⊡ DRD	ARTED	NO	- - - - - - - - - - - - - - - - - - -		J ELEVATION TOTAL DEPTH 200 FEET CORE SIZE 2 INCH (WET) COMPLETED NOV. 17/82
FROM	то.	DESCRIPTION	SAMPLE NO.	FROM	то	CORE LENGTH	CORE Recev- tred	Cu	ASS	AYS As	Au	REMARKS
0	80	0/в	22034	80	. 90	_101		4	1	4	5_	0-20' Casing
			22035	90	_100	10'		3	_1_	4	5	
80	200	MONZONTTE	22036	_100	_110	10'		2	_1_	4	5_	
		- pale pink to white fine grained rock chips with	22037	110	120	י10		2	_1_	3	5	
		less than 5 mm cream white and pink feldspar	22038	120	130	10'		2		3	5	
		crystals.	22039	130	140	10'		2	.1	. 4	5	
		- trace to 1% brown-black biotite.	22040	_140	150	10'		_18_	1	12	10	
		- trace black unknown (?) non-magnetic octahedral	22041	150	160	10'		29	.2	.5	5	
		crystal.	22042	160	<u>1</u> 70	10'		6	.2	4	5	
		80-120' pale pink and cream white chips,	22043	170	180	10'		5	.1	4	5	
		120-150' pale pink chips, a larger sized chip	22044	180	190	10'		5	.1	3	5	
	_	than above or below.	22045	190	200	10'		5	.1_	3	5	
		150-200' pale white chips with white feldspar										
		crystals in a pale grey matrix.										
		- no carbonate										
		0.0 c.q.s. magnetic susceptibility										
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SIGNED Dave Jambo

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-	Hole N Sheet I Locatic	SELO PERC O. TY 6-82-6 <b>PROPERTY</b> <u>TIMOTHY PRO</u> NO 1 DN L12+00mN/8+00mE	O MININ CUSSIO DJECT BEARI DIP C	IG CORP IN <b>DR</b> ING OLLAR	0RATIO 	N LIMITE RECC	⊡ DRD 	ARTED	Nov			ELEVATION TOTAL DEPTH 200 FEET CORE SIZE 2 INCH (WET)
FROM	то				<u>}</u>	CORE		[ <u> </u>	ASS	SAYS		
			NO.	FROM	то	LENGTH	RECOV-	Cu	Ag	As	Au	REMARKS
0	_50	<u>0/B</u>	22046	50	60	10'		36	.1	3	5	
			22047	60	70	10'		40	.1	3	5	
50	120	BASALT (anygdaloidal)	22048	70	80	י10		45	.1	3	5	
	<u> </u>	- amber, red, and black basalt chips with occasional	22049	_ 80	90	10'		48	.1	4	5	
		chips of anygdaloidal filling material - tan fine	22050		100	10'		45	.1	6	5	
		grained filling and carbonate.	22051	100	110	י01		35	.2	6	5	
		- 90-100' interval with high percentage of	22052	110	120	10'		35	.1	9	_5	
		anygdaloidal filling material.	22053	120	1.30	10'		33	.1	-6	5	
			22054	_130	140	10'		37	.1	9	5	
120	200	FELSIC INTRUSIVE (?)	22055	140	150	10'		35	.2	9	5	
	EOH	- white and rusty pink chips with occasional white	22056	150	_160	10'		51	.1	12	5	· · · · · · · · · · · · · · · · · · ·
		feldspar phenocrysts and biotite flakes,	22057	160	170	10'		54	. 3	.7	5	
		- occasional white carbonate chips.	22058	170	180	.10'		60	.1	6	5	·····
		<u>(0.0 c.g.s. magnetic susceptibility over entire</u>	22059	180	190	10'		71	.1	6	5	
		hole length)	22060	190	200	10'		73	.1	6	5	
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DRILLED BY Merritt-Funk

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SIGNED Dave Janth

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SECTION 5

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COST STATEMENT

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### COST STATEMENT

## TY 6,7,8,9 RECORD NOS. 1138-1140 INCLUSIVE, No. 1315. (53 units)

1.	Grid	Preparation to I.P. Standard	
	a)	November 1982;	
		4.15 kms by Company personnel	
		5 man days @ \$204.00/day	\$ 1,020.00
	b)	May 1983; 4.8 kms @ \$188.60/km	
		as per Invoice June 3, 1983; Amex Exploration Services Ltd.	905.28

2. <u>Induced Polarization Surveys</u> a) November 1982; 4.15 kms @ \$829.25 as per Invoice January 1983; Peter E. Walcott & Associates Ltd. 3,441.39 b) June 1983; 4.0 kms @ \$780.00/km as per Invoice #3677, June 30, 1983 Phoenix Geophysics Ltd. 3,120.00

3. <u>Field Supervision for Linecutting and I.P. Surveys</u> 4 man days @ \$204.00/day 816.00

4. <u>Accommodation</u> Cabin rental @ \$485.00/month 1 week @ \$485.00 <del>:</del> 4

121.50

5.	Food		
	9 man days @ \$22.50	\$	202.50
6.	Transportation		
	Vehicle Operation		
	б days @ \$25.00/day		150.00
	Lease charges @ \$375.00/month		
	l week @ \$375.00 ÷ 4 =		93.75
7.	Report Compilation, Reproduction, Typing		
	3 man days @ \$204.00/day		612.00
	Reproduction costs, typing of report		250.00
			····
		\$ 1	0,732.42

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### COST STATEMENT

TY 6,7,8,9, RECORD NOS. 1138 - 1140 INCL., No. 1315; (53 UNITS)

1. <u>Road and Drill Site Preparation</u> Moving charges for D8H Tractor Bulldozer to TY 6-9 Property as per Invoice November 10, 1982 Katchmar Construction Ltd. \$ 264.85

D8H Tractor Bulldozer Work as per Invoice November 10, 1982 Katchmar Construction Ltd., 17.0 hrs. @ \$100.00/hr 1,700.00

### 3. Field Supervision

i) flagging in drill roads to drill sites
3 man days @ \$138.75
416.25

Field Supervision (Con't) 3. ii) supervision of drill road construction and site preparation \$ 416.25 3 man days @ \$138.75 iii) drill supervision November 2, 1982-November 19, 1982 18 man days @ \$138.75 2,497.50 drying and splitting of percussion iv) chips, packaging, 2 man days @ \$138.75 277.50 v) preparing drill chip log boards and logging drill holes 2 man days @ \$138.75 277.50 204.00 1 man day @ \$204.00 4. Accommodation Cabin rental \$485/month 363.75 (3 weeks @ \$121.25/wk) 5. Food 652.50 29 man days @ \$22.50/day 6. Transportation Vehicle Operation 25 days @ \$25.00/day 625.00 375.00 Leas charges @ \$375/month - 1 month

- 7. <u>Field Supplies</u> Sample bags, flagging, tin foil drying pans, wooden log boards, shipping charges. \$ 150.00
- 8. <u>Geochemical Analysis</u> Chemex Labs Ltd., as per Invoice # 18214717 - December 15, 1982 60 samples @ \$12.96 each. 777.60

9.	Report Compi	lation, Reproduction & Typing	
	2 man days @	\$204.00/day	408.00
	Reproduction	costs, typing of report	250.00

10. <u>Reclamation Costs</u> Slash cleanup along drill site, access roads and at drill sites, as per Amex Exploration Services Ltd., Invoice July 30, 1983 Cost per drill hole (\$7000. : 30) 6 holes @ \$233.33 per site. 1,399.98

\$ 20,753.68

## AMEX EXPLORATION SERVICES LTD.

### A A. (AB) ABLETT



Confidential Work

BUS. 376-0433 RES. 376-7490

1714 CLIFFORD AVE. V2B 4G6 BOX 286 KAMLOOPS, B.C.

June 3rd, 1983.

Selco Inc. 402 - 535 Thurlow Street, Vancouver, B.C.

Attention: Mr. Dave Gamble

STATEMENT OF ACCOUNT

Re: Grid Preparation on GN & TY Mineral Claims, Lac La Hache area, Clinton Mining Division

### GRID BREAKDOWN

ТΥ	1		2.2	k m	6	\$188.60/km	=	\$ 414.92
ΤY	5		1.0	km	6	\$188.60/km	-	188.60
ΤY	6	- !	94.8	km	0	\$188.60/km	=	905.28
ΤY	2		2.2	km	0	\$188.60/km	=	414.92
GN	1		3.0	km	0	\$188.60/km	-	565.80
GN	4		3.0	kш	6	\$188.60/km	•	565.80

TOTAL REQUESTED

\$3.055.32

Respectfully submitted.

A.A. Ablett, President, Amex Exploration Services Ltd.

Amex Job Number 83-80

AAA/da

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"OVER 125,000 MINERAL CLAIMS AND UNITS STAKED FOR THE MINING INDUSTRY" MAGNETOMETER AND GEOCHEMICAL SURVEYS. CLAIM STAKING, LINE CUTTING, SURVEYING, ETC.

STATEMENT 17. ł ĸ e DATE St. Lin 19-4 - <sub>19-1</sub> ----La ter with the a bridden Selay is Muli P Vic . . . . DATI 11146 5 กายก ALA . 1 il ..... if mit al ~~~~ 4 L 11/4-Nova . 4 fria - ino 5:50 Ļ ..... ... + fordaldate -11.3 Frank Arther 08954 Little is ... 44 25 HALLANG FARBE 1200 f's a Cal TERMS: NET 15 DAYS. INTEREST AT 25 100 2% PER MONTH ON OVERDUE ACCOUNTS. (24% PER ANNUM) Total Aly - K- in granding - ANO. . . . . . F.O.8. الى تەربى لايدىن كو 6129 18 Peril and 42:41 85 237 27 00 ١, AN\_ACCILINTANC.SERVICE/CHARGE.... ί., OF 255 PLR MONTH WHAT BE CHARGED ON ACCOUNTS PAST 30 DAYS 26483 PEALS - SE PUBLICATION LOWBED & HI-BOY SERVICE . INSURED 0

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HERALD HOUSE PUBLICATIONS

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YUKON - N.W.T. - BRITISH COLUMBIA - ALBERTA - U S.A.

Merritt - Funk Brothers Drilling Company Limited

Exploration and Development

Aberdean Road, Lower Nicole, B C

PO Box 2077 Merritt, B.C. - VOK 2B0

November 18,1982

SELCO INC. Suite 402 535 Thurlow Street Vancouver, B.C. V6E 3L2

NOV 2 2 1982

Attention: Dr. H. Squair

Re: Accounts Payable

The following is our invoice for Percussion Drilling on your Timothy Lake Property during the period of Nov. 1 to Nov. 12,1982:

<u>Hole #</u>	Depth to Overburden	Depth of Hole	Size of Hole	Water Supply
TY6/82-1	100 feet	200 feet .	3 inch	500' w/1 /
TY6/82-2	170 feet ?	220 feet '	2 inch	600' H/1
TY6/82-3	150 feet	200 feet	2 1nch	truck
тү6/82-4	70 feet	200 feet	2 inch	truck

Drilling Charges- (3") 200 feet 2 \$7.40 per foot ..... \$ 1490.00 (2") 620 feet @ \$5.75 per foot ..... 3565.00 Mobilization Charges- flat rate as per quote ..... 1603.00 Water Supply Charges- water/line 1100' @ \$10.00/ 100' .... 110.00 water truck 2 holes @ \$200.00 per ... 400.00 Total Charges \$ 7158.00 Advances Ø TOTAL AMOUNT DUE \$ 7158.00

THANK YOU.

DATE COUDS PROFINED א ה בנומנייי XTENSION CHUMED G K. FOR PAYMENT COB COUL NUMBER 11 140 221

Yours truly

Cary E. Funk

Merritt-Funk Brothers Drilling Company Ltd.

G Eugene Funk

Telephone 378 4152 or 378-2333

Cary E. Funk

YUKON --- N.W.T. -- BRITISH COLUMBIA --- ALBERTA --- U.S.A.

Merritt - Funk Brothers Drilling Company Limited

**Exploration and Development** 

G Eugene Funk Gary E. Funk Telephone 378-4152 or 378-2333

DEC - 6 1982

Aberdeen Road, Lower Nicole, B.C. P.O. Box 2077 Merritt, B.C. · VOK 280

December 2,1982

SELCO INC	CO INC.	DATE GOODS RECEIVED								
Suite # 4 535 Thurl	402 Low Street	THES O.K								
Vancouver	r, B.C.	EXTENSION CHECKED								
V65 3L2		O.K. FCR PAYMENT								
Attention: Dr. H. Squair		JOB CODE								
Dear Sirs	;;	221-2890-1014C = \$2\$45.00V								
Re: ACCOU	NTS PAYABLE	221- 2890-10145 = \$ 3608.751								
	The following is	Our invoice for Ponoussien Duistin								
Timothy Lake Property during the period of Nov. 16 to Nov. 27,1982:										
Hole No. Depth of Overburden Depth of Hole Size of Hole Kator Sumala										
T16/82-5	80 feet	200 feet 2 inch truck								
110/02-0	55 feet	200 feet 2 inch 400 w/1								
GA /82-1	30 feet	120 feet 2 inch 100' w/1								
GN /82-2	20 feet	100 feet 2 inch 100' w/1								
GN /82-3	40 feet	165 feet 2 inch 300' w/1								
GN /82-4	150 feet	200 feet 2 inch 300' w/1								
Drilling Charges- (2") 985 feet @ \$ 5.75 per foot\$ 5663.75 Water Supply Charges- water / line 1200 feet @ \$10.00 per 100' 120.00 water truck 1 hole @ \$200.00 per										
moving una	arges- from TY6/82	2-6 to GN /82-1								
(4 hrs. total) 2 hrs. @ \$85.00 per hour										
		Advances g Total Amount Dur 5 6153 25								
Thank you										
mank you	)	Maria da m								
		Iours truly								
		221								
		· · · · · · · · · · · · · · · · · · ·								
		Cary E. Funk								

Merritt-Funk Brothers Drilling Company Limited



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**PHOENIX Geophysics Limited** 

200 YORKLAND BLVD WILLOWDALL ONTARIO CANADA M21 TR5 TELEPHONE (416) 493-6350 Telex 06 986856 Cable PHEXCO TORONTO INVOI CE INVOICE No. 3677 DATE : June 30, 1983. Selco Mining Corp Ltd., 55 University Avenue Suite 1700 JUL 3 1983 Toronto, Ontario M5J 2H7 **REFERENCE:** Geophysical Survey Contract PV 1405 IP and Resistivity Survey - Lac La Hache, B.C. CREW: J. Marsh, P. Gardner, G. Richardson June 8, 1983 to June 19, 1983 PERIOD: 14.35 1.km. @ \$780,00/1.km \$11,193.00 10145 One Operating Day @ \$850.00/day 850.00 10111 \$12,043.00 // DATE GOODS JUL 1 3 1983 PRICES O.K. TXTENSION CHECKED O.K FOIC FAYMENT **JOB** NUMBER CODE PHOENIX GEOPHYSICS LIMITED 221 2440 epho-10140 221 2440 5.596 50 10145 221 2440 5 596 50 101,1 850 00

Vancouver Office 214-744 West Hastings Street, British Columbia V6C 1A6 Telephone (604) 669-1070 Denver Office 4891 Independence St. Suite #270, Wheat Ridge, Colorado 80033 U.S.A. Telephone (303) 425-9353

# AMEX EXPLORATION SERVICES LTD.

A A (AB) ABLETT



**Confidential Work** 

BUS. 376-0433 RES. 376-7490

1714 CLIFFORD AVE. V2B 4G6 BOX 286 KAMLOOPS, B.C.

July 30, 1983

Selco Inc. 402-535 Thurlow Street, Vancouver, B.C.

Attention: Mr. Dave Gamble

### STATEMENT OF ACCOUNT

Re: Slash clean-up along drill site access roads, Lac La Hache Area, Clintion Mining Division.

### Amex Fees

10 kilometers @ \$700.00 per kilometer

= \$ 7000.00

total requested

\$ 7000.00

ENITINOTHY F.K.

Respectfully submitted,

Ark. Ablett, President, Amex Exploration Services Ltd.

Amex Job No. 83-81

"OVER 125,000 MINERAL CLAIMS AND UNITS STAKED FOR THE MINING INDUSTRY" MAGNETOMETER AND GEOCHEMICAL SURVEYS CLAIM STAKING LINE CUTTING, SURVEYING, ETC.

	CHE	MEX LA	BS LTD.		212 BROOKSBANK AVE NORTH VANCOUVER B C CANADA V7J 2C1
	· ANALYTICAL CHEMISTS	• GEOCHEMISTS	• REGISTERED A	SSAYERS	TELEPHONI. (604) 984-0221 TELEX 043 52597
		*** INVCICE	***	-	
o : SELCO	MINING CORPORATION	LTD.,	Inv	oice # :	18214717
STE. Vancou V6E 31	+02-535 THURLOW STRE JVER, B.C. _2	ет DEC 17 1982	Dat P∙O Pro	e : • # : ject 101	: 16-DEC-82 : NDNE 145
<u>nvoice_fo</u> } <del>uantity</del> 120	Analytical_work re Analysed for -codedescription 002 - Cu p 006 - Ag o 013 - AS p 100 - Au FA+AA o	ported on cer pm pm pm pb	tificate(s)A unit nrice 11.90	82 <u>14717-</u> amount 1428 <b>.</b> 00	-001_to -003
Sample pr 120	eparation and other 205 - Rock geochem	charjes : - RING -	2.50	300.00	J
		Planse er	Discount	TOTAL ( 10 %)	\$ 1728.00 \$ 172.80
RMS NET 5 % per mo	30 DAYS nth (18 % per annum)	Charged on ov "All GOODS $\Rightarrow$ ECEIVED PINICES O.K. EXTENSION CHECKCO O K FOR PAYMENT JOB NUMBER 2.21-2 2.21-2	erdue account code 110 - 10145 200145	ts = 270 = 1285	·00 ·20

SECTION 6

CERTIFICATE OF ANALYSES

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## CHEMEX LABS LTD.

212 BROOKSBANK AVE NUHTH VANCOUVLR, B C

CANADA V7J 2C1

· ANALYTICAL CHEMISTS

GEOCHEMISTS
REGISTERED ASSAYERS

DEC 17 1982

TELEX 043-52597

CERTIFICATE OF ANALYSIS

TO : SELCO MINING CORPURATION TTD.,

STE. 402-535 THURLOW STREET VANCOUVER, B.C. V6E 3L2 

		· ··· ····	
CERT. #	:	A8214717-001	;
INVOICE #	:	18214717	
DATE	:	15-DEC-82	
P.O. #	:	NGNE	
10145			

### ATTN: GEORGE OWSIACKI CC: SELCO - KANLDOPS.

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212 BROOKSBANK AVE NORTH VANCOUVER, B C. CANADA V7J 2C1



MEMBER CANADIAN TESTING ASSOCIATION Certified by HauthBuchler

SECTION 7

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CERTIFICATE

CERTIFICATE OF AUTHOR

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### CERTIFICATE OF AUTHOR

I, George Owsiacki, of 631 Lyne Road, Kamloops, British Columbia hereby certify that:

- 1. I am a geologist residing at the above address.
- I am a graduate of Queen's University, Kingston, Ontario with an Honours B.Sc. degree in Geology (1981).
- 3. I have practised my profession for more than 1 year full time and for 4 summer field seasons.
- 4. I co-supervised the field activities described herein.
- 5. I hold no interest, direct or indirect, in the TY 6,7,8,9 Claim Group which is the subject of this report.

Respectfully submitted,

G. Owsiacki Field Geologist

Kamloops, B.C.

I, Alan Wynne, of 8573 Eboy Terrace, Sidney, British Columbia hereby certify that:

- 1. I am a geophysicist residing at the above address.
- I am a graduate of the University of British Columbia with a B.Sc. in Geology/Geophysics (1976).
- 3. I have practised my profession for more than seven years.
- 4. I supervised and interpreted the geophysical work described herein.
- 5. I hold no interest, direct or indirect, in the claims which are the subject of this report.

Respectfully submitted,

All Um

A. Wynne Geophysicist

Vancouver, B.C.

### CERTIFICATE OF AUTHOR

I, Dave Gamble, of 7182 Blackwell Road, Kamloops, British Columbia hereby certify that:

- 1. I am a geologist residing at the above address.
- 2. I am a graduate of the University of Ottawa with an Honours B.Sc. degree in Geology (1973) and have completed two years' graduate studies leading to a M.Sc. at Laurentian University.
- 3. I have practised my profession for more than seven years.
- 4. I supervised the survey work on the TY 6, 7, 8 and 9 claims and interpreted the results of the survey described herein.
- 5. I hold no interest, direct or indirect, in the TY 6, 7,8 and 9 Claim Group which is the subject of this report.

Respectfully submitted,

A.P.D. Gamble Project Geologist

September, 1983 Kamloops, B.C.