REPORT

ON

GEOPHYSICAL SURVEYS

ON PROPERTY OF

STANFORD MINES LIMITED

O'SULLIVAN - MAUN LAKE AREAS

THUNDER BAY MINING DIVISION

ONTARIO

Timmins, Ontario. July 18, 1972.

E. W. Bazinet, P. Eng.

REPORT

ON

GEOPHYSICAL SURVEYS

ON PROPERTY OF

STANFORD MINES LIMITED

O'SULLIVAN - MAUN LAKE AREAS

THUNDER BAY MINING DIVISION

ONTARIO

INTRODUCTION:

Ground geophysical work, consisting of both electromagnetic and magnetometer surveys, were completed over the 20 claim property of Stanford Mines Limited in the O'Sullivan - Maun Lake Areas in the Thunder Bay Mining Division, Ontario. The program was carried out in June and July 1972 following the recommendations made by George Dimitrieff, P. Eng.

The following report and accompanying maps describe the results of the survey and give a geological interpretation of the results.

CONCLUSIONS AND RECOMMENDATIONS:

The electromagnetic survey did not detect any significant conductors probably indicating that the known mineralization on the property occurs as small lenses or has insufficient sulfide concentrations to be outlined by the electromagnetic technique. There are however several areas on the claim group showing weakly conductive effects.

Due to changes in strike caused by an intrusive granodiorite plug in this portion of the claim group, the possibility that these weakly conductive effects are caused by sulfide concentrations closely paralleling the grid line direction warrants additional electromagnetic check work.

PROPERTY AND LOCATION:

The property consists of 20 contiguous unpatented claims covering approximately 800 acres. These are all registered with the Ontario Department of Mines as follows and are shown on the accompanying maps.

Claim No.	Status	Area	Acres
TB 307600	Unpatented	O'Sullivan Lake	40
TB 307601	"	"	"
TB 307606	"	"	"
TB 325988	"	"	"
TB 307598	"	Maun Lake	"
TB 307599	"	"	"
TB 307602	"	"	"
TB 307603	"	"	"
TB 307604	"	"	"

TB 307605	Unpatented	Maun Lake	40
TB 325978	"	"	"
TB 325979	"	"	"
TB 325980	"	"	"
TB 325981	"	"	"
TB 325982	"	"	"
TB 325983	"	"	"
TB 325984	"	"	"
TB 325985	"	"	"
TB 325986	"	"	"
TB 325987	"	"	"

The claim group is situated on the north shore of the Northeast arm of O'Sullivan Lake, approximately twenty miles Northwest of Nakina, a divisional point on the main line of the C. N. R.

A gravel road north from Cavell, a flag station fifteen miles west of Nakina passes close to the west shore of O'Sullivan Lake. From this point it is approximately nine miles by boat to the property.

GEOLOGY:

The claims lie in a greenstone belt which extends some fifty miles from the east shore of Lake Nipigon in a northeasterly direction through O'Sullivan Lake and some ten miles beyond. O.D.M. map No. 1955-2 "O'Sullivan Lake Area" shows the general geology of the area.

The property is underlain by tightly folded Keewatin andesites, rhyolites and acid fragmentals which have been intruded by numerous small bodies of gabbro, porphyry, diorite, quartz-feldspar porphyry and finally by northwesterly striking diabase dikes.

The general trend of the volcanics is northeast.

Previous work on the property has located several copper showings but diamond drilling in the 1950's to test one of these showings indicated limited depth extension.

SURVEY METHODS AND PRESENTATION OF RESULTS:

The electromagnetic survey employed the SE-600 Electromagnetic instrument operated in the horizontal coil configuration with a transmitter-receiver separation of 200 feet. A 200 foot separation was selected over a 300 foot separation to minimize short cable effects due to rugged topography and to increase sensitivity on short conductors. Readings of the in-phase and out-of-phase components of the resultant field at 1600 CPS were recorded at station intervals of 100 feet and 50 feet where greater detail was required.

A conductor will produce a curve going from positive readings through zero to negative and back again to positive. Both the in-phase and out-of-phase readings show the same general curve. The ratio between the in-phase and out-of-phase readings over a conductor is an indication of the conductivity of the body. In general the ratio increases as the conductivity of the detected conductor increases and a ratio greater than 1.0 is considered to represent a good conductor.

The magnetic readings were taken with a McPhar M700 Fluxgate magnetometer measuring the variations of vertical component of the earth's magnetic field. The magnetic responses, as plotted on the accompanying map, is corrected for diurnal variation and instru-

ment drift, and are contoured at appropriate intervals.

The electromagnetic and magnetic results are plotted on separate maps on a scale of 200 feet to the inch.

INTERPRETATION OF RESULTS OF THE EXPLORATION PROGRAM:

Electromagnetic Survey:-

The electromagnetic survey did not detect any significant conductors, probably indicating that the known mineralization on the property occurs as small disconnected lenses or has insufficient sulfide concentrations to be outlined by the electromagnetic technique. There are however several areas in the north half of the claim group showing weakly conductive effects, of the intensity some times associated with conductive overburden. For the most part these effects are in swamp areas or at the edge of swamps and areas of suspected deep overburden. The strike of the rock in the northern part of the claim group is highly variable due to deformation caused by the intrusion of a sizeable granodiorite plug in this area. As indicated by the results of the magnetic survey it is probable that the grid lines over portions of this area parallel the general structure of the rock. The possibility that these weakly conductive effects are caused by sulfide concentrations almost parallel to the grid line direction possibly warrants additional geophysical check work using lines cut in a different direction.

These areas include areas "A","B","C","D","E","F" and "G" as indicated on the electromagnetic map. None of the above weakly con-

ductive areas has associated magnetic anomalies and it is likely that if caused by sulfides concentrations the sulfide zones are of fairly limited extent.

Magnetometer Survey:-

The magnetometer survey shows several small magnetic anomalies, one of which is coincident with a known copper showing on the property. Several of these anomalies in the Northeast half of the claim group appear to occur along the postulated contact of a granodiorite plug. If these small anomalies are caused by sulfides including pyrrhotite the concentrations of sulfides are probably of only limited extent since there is no associated electromagnetic response.

Respectfully Submitted

E. W. Bazinet, P. Eng.

Timmins, Ontario.

July 18, 1972.

900

GEOPHYSICAL – GEOLO
TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey Magnetometer (including line-cutting)

Township or Area Morgan Township

Claim holder(s) Falconbridge Nickel Mines Limited,

P. O. Box 40, Commerce Court West, Toronto, Ontario

Author of Report Gordon H. Cluff

Address Falconbridge, Ontario

Covering Dates of Survey July - October, 1967
(linecutting to office)

Total Miles of Line cut 18.69

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	40 (includes line-cutting)
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: July 17, 1972 SIGNATURE: G. H. Cluff
Author of Report

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
S.	146221
S.	146222
S.	146223
S.	146224
S.	146225
S.	146226
S.	146227
S.	146228
S.	146229
S.	146230

If space insufficient, attach list

TOTAL CLAIMS _____

OFFICE USE ONLY

PROJECTS SECTION

Res. Geol. _____ Qualifications in Misfile

Previous Surveys 63.393 (mag) done 1953

Checked by _____ date _____

GEOLOGICAL BRANCH

Approved by _____ date _____

GEOLOGICAL BRANCH

Approved by _____ date _____

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 963 Number of Readings 1,844

Station interval 50'

Line spacing 200'

Profile scale or Contour intervals 1,000 gammas
(specify for each type of survey)

MAGNETIC

Instrument Sharpe MF-1

Accuracy - Scale constant 20 gamma per scale division

Diurnal correction method Time-slope graphs

Base station location

ELECTROMAGNETIC

Instrument

Coil configuration

Coil separation

Accuracy

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency
(specify V.L.F. station)

Parameters measured

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION – RESISTIVITY

Instrument

Time domain Frequency domain

Frequency Range

Power

Electrode array

Electrode spacing

Type of electrode

File _____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey Geological

Township or Area Morgan Township

Claim holder(s) Falconbridge Nickel Mines Limited,
P. O. Box 40, Commerce Court West, Toronto, Ontario

Author of Report Gordon H. Cluff,

Address Falconbridge, Ontario

Covering Dates of Survey August to October, 1967 and May, 1968
(linecutting to office)

Total Miles of Line cut Reported with geophysical survey.

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
—Electromagnetic	
—Magnetometer	
—Radiometric	
—Other	
Geological	20
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: July 17, 1972 SIGNATURE: G. H. Cluff
Author of Report

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
S.	146221
S.	146222
S.	146223
S.	146224
S.	146225
S.	146226
S.	146227
S.	146228
S.	146229
S.	146230

If space insufficient, attach list

TOTAL CLAIMS _____

OFFICE USE ONLY

PROJECTS SECTION

Res. Geol. _____ Qualifications On file

Previous Surveys _____

Checked by _____ date _____

GEOLOGICAL BRANCH

Approved by _____ date _____

GEOLOGICAL BRANCH

Approved by _____ date _____

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations_____ Number of Readings _____

Station interval _____

Line spacing _____

Profile scale or Contour intervals _____
(specify for each type of survey)

MAGNETIC

Instrument _____

Accuracy - Scale constant _____

Diurnal correction method _____

Base station location _____

_____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

_____

Base station value and location _____

_____

Elevation accuracy _____

INDUCED POLARIZATION – RESISTIVITY

Instrument _____

Time domain _____ Frequency domain _____

Frequency _____ Range _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

AREA OF

MAUN LAKE

DISTRICT OF
THUNDER BAY

THUNDER BAY
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	

NOTES

400' surface rights reservation around all lakes & rivers.

2.950

NATIONAL TOPOGRAPHIC SERIES 42 L

PLAN NO. M. 1416

ONTARIO
DEPARTMENT OF MINES
AND NORTHERN AFFAIRS

AREA OF

O'SULLIVAN LAKE

DISTRICT OF
THUNDER BAY

THUNDER BAY
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND
CROWN LAND SALE
LEASES
LOCATED LAND
LICENSE OF OCCUPATION
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED

NOTES

400' surface rights reservation around all lakes and rivers.

2 950

DATE OF ISSUE
JUL 2 1972
ONT. DEPT. OF MINES AND NORTHERN AFFAIRS

NATIONAL TOPOGRAPHIC SERIES

PLAN NO. M.141

ONTARIO
DEPARTMENT OF MINES
AND NORTHERN AFFAIRS

Abamasagi Lake

Kowashkagama R.

Licence of Occupation No. 14,498 Surface Rights Only

Superd Lake

O'Sullivan Lake

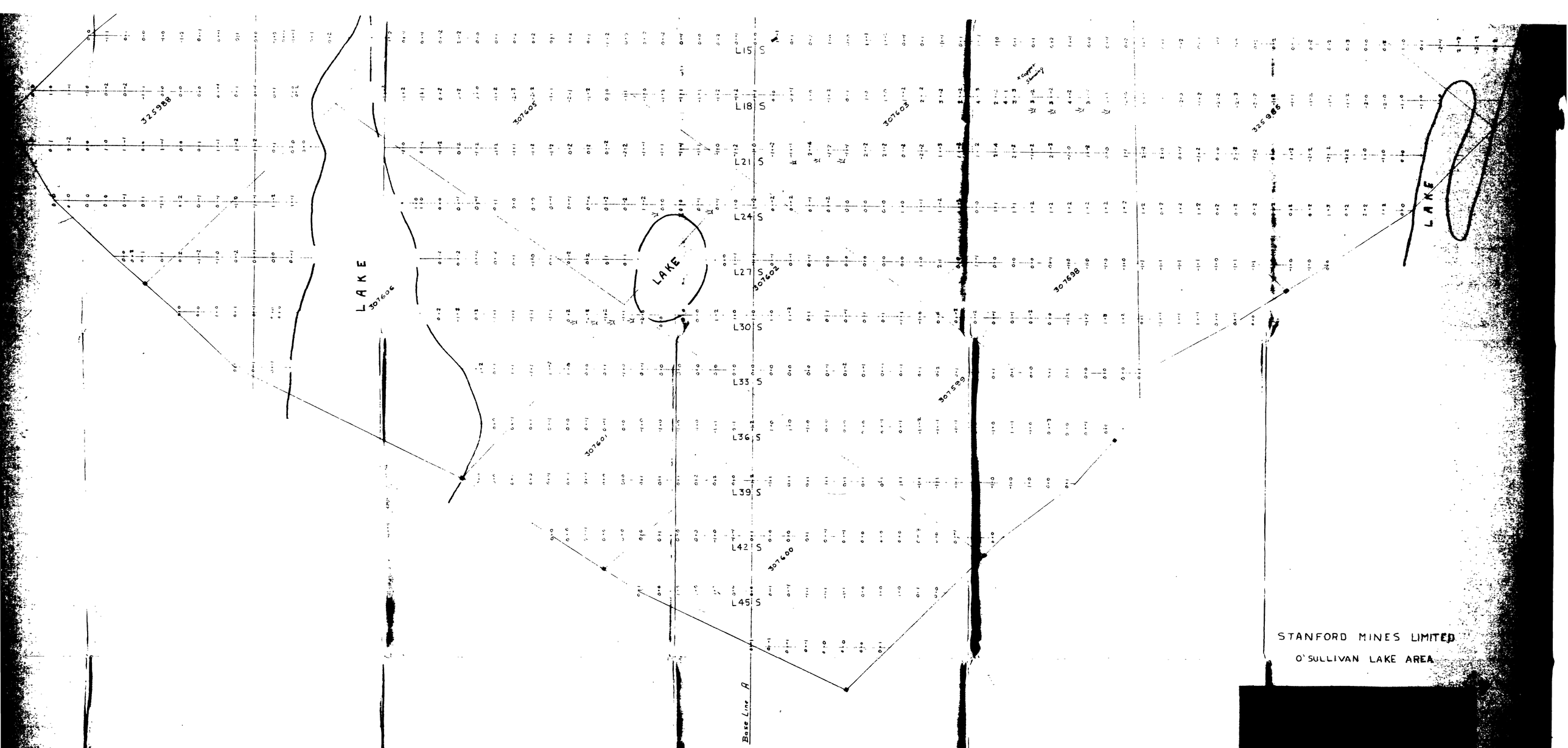
Hanover Lake

167 M 169 M 168 M 171 M

50°30'

50°22' 30"

87°00'



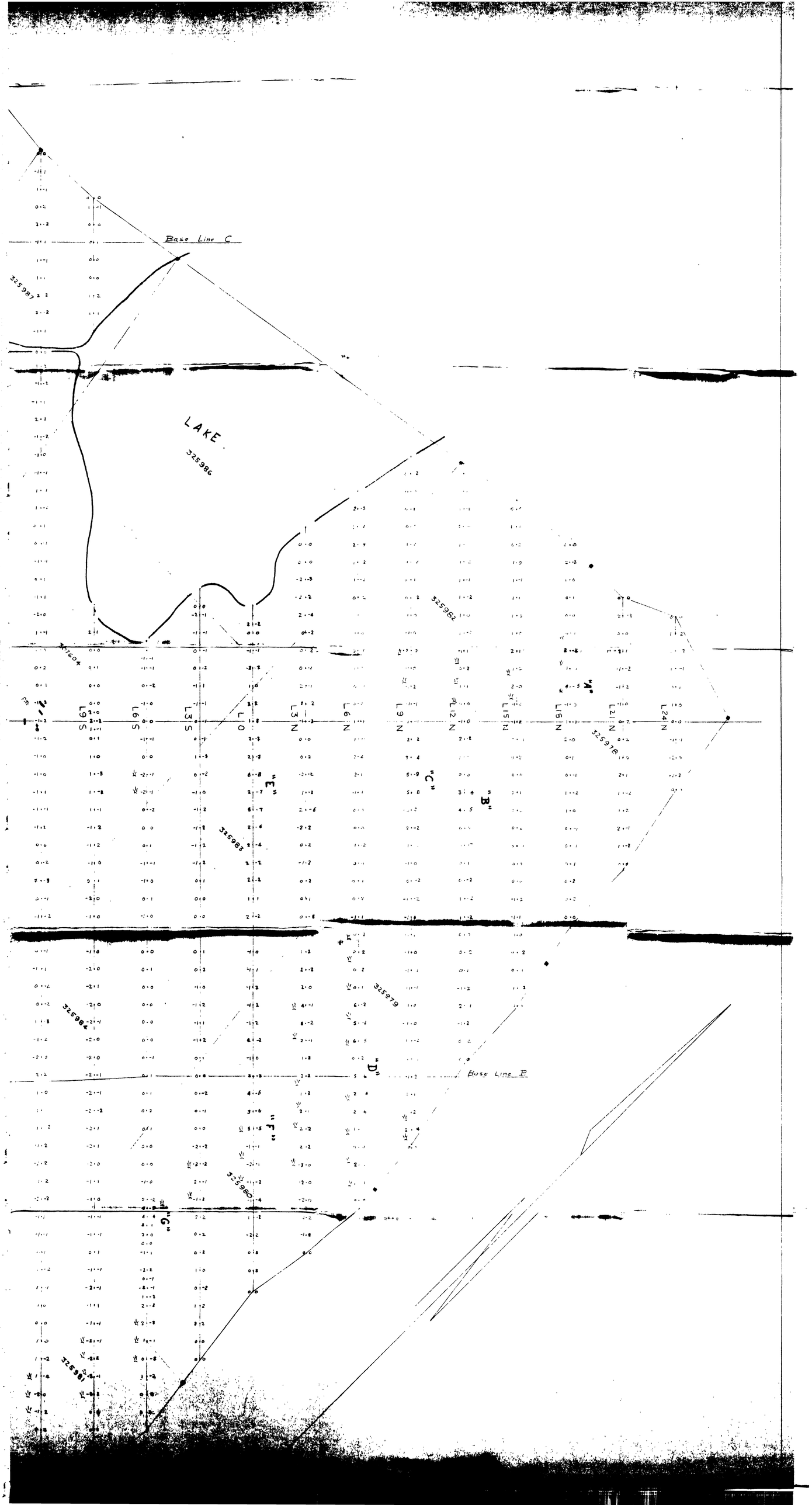
STANFORD MINES LIMITED

O'SULLIVAN LAKE AREA

[redacted]

E. W. BAZINET

220

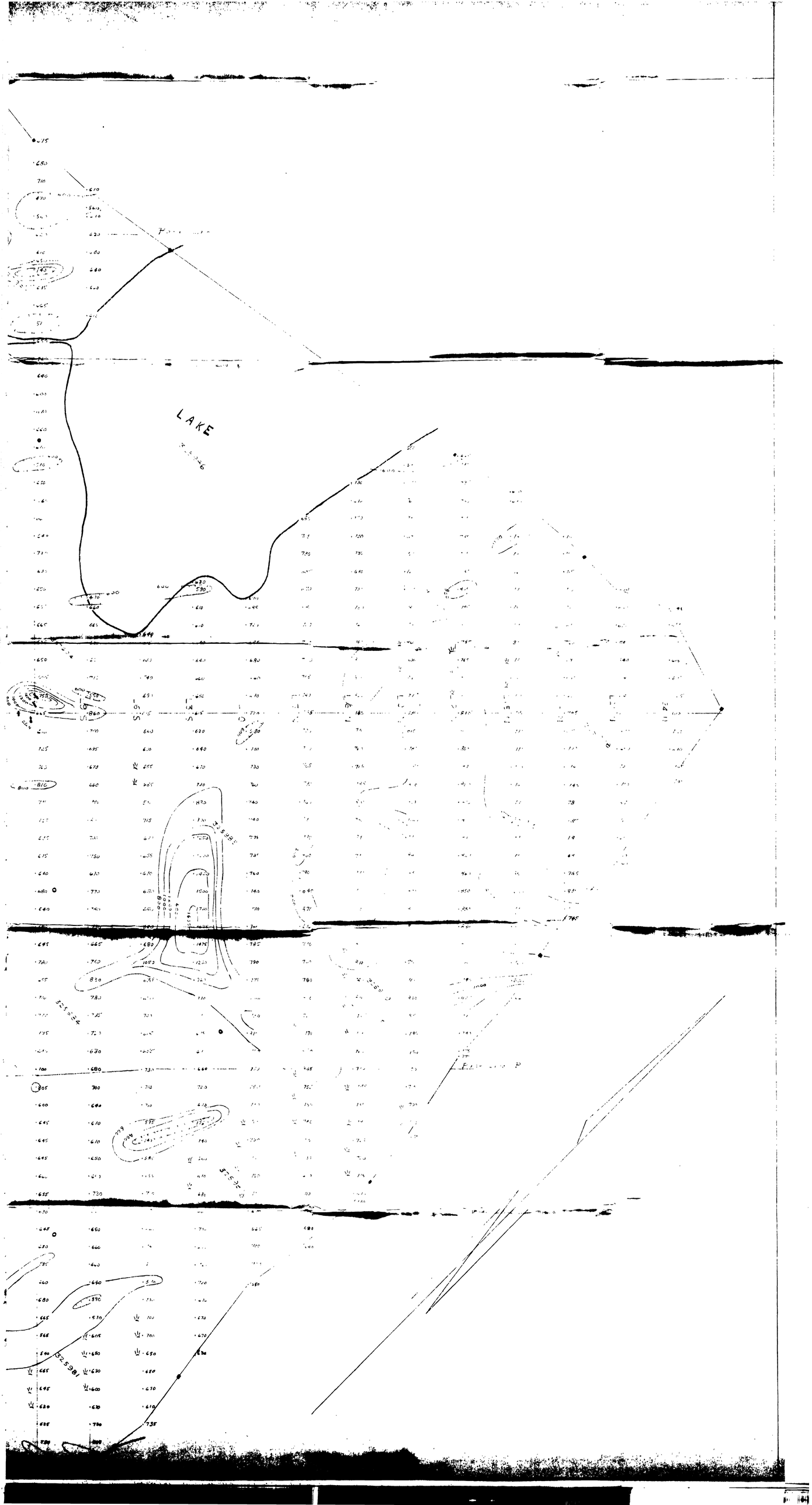

Base Line C
LAKE
325986
325987
325962
325984
325983
325979
325980
325981
"A"
"B"
"C"
"D"
"E"
"F"
"G"
L6S
L3S
L0
L3N
L6N
L9N
L12N
L15N
L18N
L21N
L24N
Base Line B

L15 S
L21 S
L24 S
L27 S
L30 S
L33 S
L36 S
L39 S
L42 S
L45 S
307402
307539
307600
Base Line A
LAKE
LAKE
LAKE

STANFORD MINES LIMITED

O'SULLIVAN LAKE AREA

[redacted]


LAKE