GOLD FIELDS CANADIAN MINING, LTD.

GEOLOGICAL, BIOLOGICAL SURVEY REPORT

MIMINISKA LAKE PROJECT

TANCO GRID

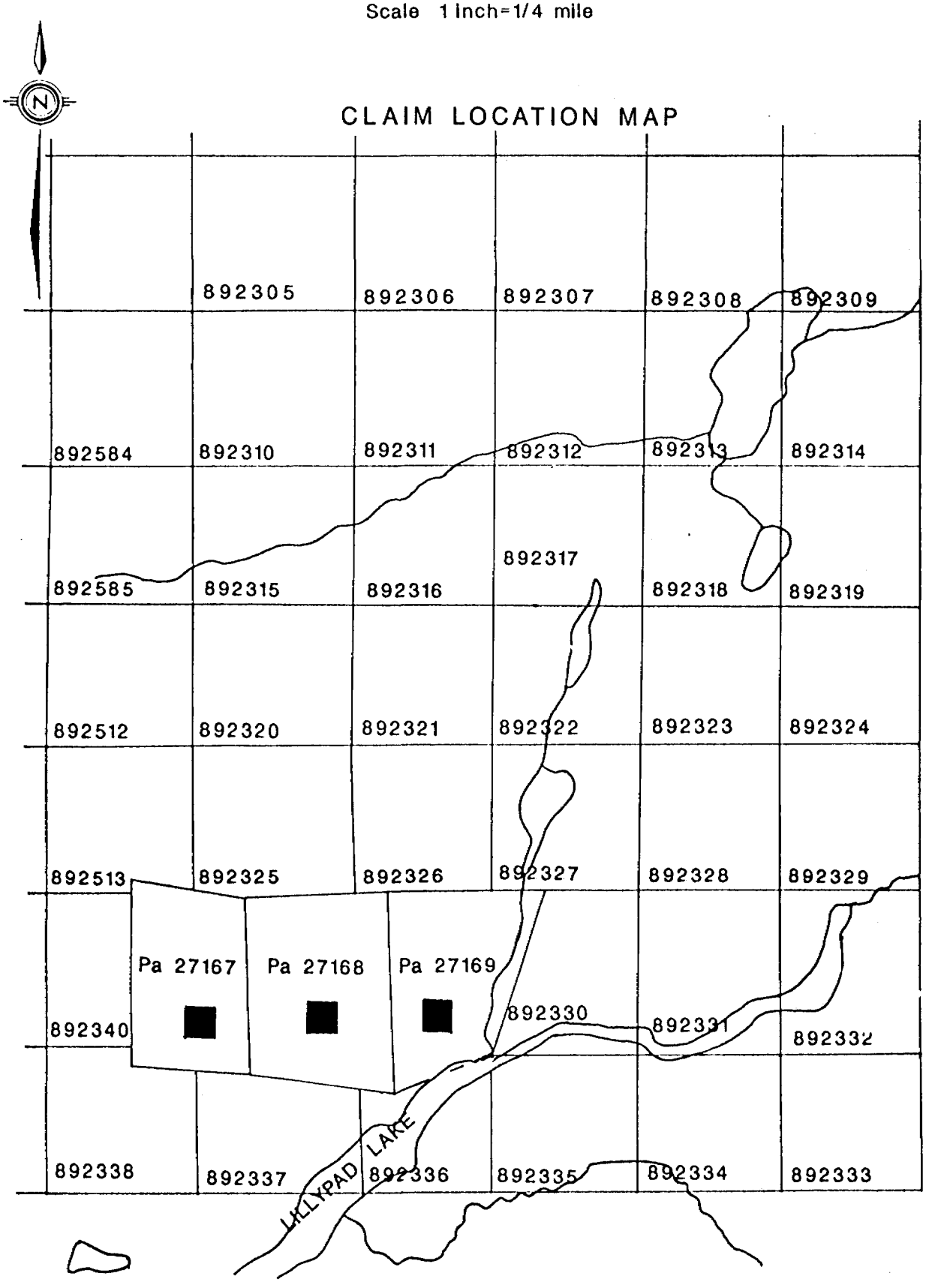
Ian Cunningham-Dunlop

Ian Cunningham-Dunlop

GOLD FIELDS CANADIAN MINING LTD.

FERGUSON LAKE AREA G-249

Scale 1 inch=1/4 mile



MIMINISKA PROJECT - MIMINISKA GROUP
TANCO CLAIMS, LILYPAD LAKES AREA
GELOLGICAL/GEOPHYSICAL/GEOCHEMICAL COMPILATION

LINECUTTING

No grid has been established on these claims by Gold Fields. However, two grids were cut by Tanco during the early 1980's and can easily be rehabilitated if necessary. Baseline for the main grid is oriented east-west; lines are turned off at 400-foot intervals. Because Tanco's primary exploration target was a swarm of north-south trending pegmatite dykes, a second grid was cut with a north-south baseline.

PREVIOUS WORK

Tanco (Tantalum Mining Corp.) explored the Lilypad Lakes area for its lithium potential since 1980. Magnetometer and Max Min 11 surveys were carried out on the east-west grid. Lithogeochemical sampling was also done to delineate lithium anomalies in bedrock. Thirty-seven holes totalling 13,500 feet were drilled during 1980 and 1981. By 1985 Tanco had allowed all the claims to lapse.

1986 WORK PROGRAMME

Work consisted of surface prospecting and channel sampling of anomalous geophysical zones, geological mapping, and biogeochemical sampling over areas of known gold mineralization.

GEOLOGY

Unlike most of the Miminiska Project area, there is a significant amount of bedrock exposed on the Tanco claims, consisting mostly of mafic flow and fragmental units with intercalated intermediate and felsic lithologies. All have been intruded by concordant lenses and sills of quartz-and quartz-feldspar porphyries and later pegmatite dykes. This package is bounded to the north and south by sequences of clastic metasediments, primarily argillaceous wackes and quartz-feldspar-biotite schists. In general, the rocks have an ESE-WSW strike, except between TAN/800W and TAN/200W where strike is NW-SE and are vertical to steeply south dipping. Metamorphic grade is lower amphibolite facies.

SUMMARY - TANCO - GEOLOGY

Ian Cunningham-Dunlop

The geology of the Tanco/Lilypad region consists predominantly of mafic flow and fragmental units with intercalated intermediate and felsic units. These units have been intruded by lenses and dikes of quartz-and quartz-feldspar porphyry and late-stage pegmatite dikes.

This package is bounded to the north and south by a sequence of metasediments which consist primarily of argillaceous wackes and quartz-feldspar-biotite schists.

a) Fg massive mafic volcanic and mafic tuff.
   - massive, pillowed, and tuffaceous phases
   - locally chloritic and amphibolitized
   - local tourmaline alt'n
   - pillows are moderately deformed but one examination revealed tops to the northwest.

b) Intermediate/Felsic tuff
   - tuffaceous phases are the most common
   - typically display small, rounded quartz grains
   - local biotite and sericite alt'n
   - several exposures of felsic tuff may actually represent volcaniclastic sediments or possibly sheared quartz-porphyries.

c) Quartz- and Quartz- feldspar porphyries
   - sills, lenses and dikes which are found both parallel to stratigraphy and cross-cutting.

d) Pegmatite
   - small dikes - 6" to 20' in width - which generally run at right angles to stratigraphy

e) Metasediments
   - interbedded sequence of argillaceous wackes and mudstone and quartz-feldspar-biotite-sericite schist
   - local tour. alt'n

Structure

a) - a major shear zone has been identified in the northern region of the property in the vicinity of the E-zone and F-zone

   - approximate dimensions

     4000 feet long by 1500 feet wide

     (36W to 4E and BLO to 15 N)

   - north and south boundaries are inferred while the east and west boundaries are still open.

- characteristics

  - strong shear fabric 095 to 115 degrees strike and dip that varies from 80N in the north to 75S in the south.
  - mylonitic fabric and the development of a protomylonitic fabric in the adjacent units.
  - small scale folding - plunge typically to the east.
  - boudinage zones
  - sigmoidal quartz- and quartz-tourmaline veins
  - autoclastic breccia zones
  - left-stepping veins and dikes
  - cataclastic grains
  - rotated clasts with presssure shadows

  - all these features indicate a right-lateral sense of shear

b) - late stage quartz- and quartz-tourmaline veins
   - parallel to foliation and cross-cutting (050degrees - 060 degrees/90 degree dip)

c) - pegmatite dikes
   - 340 degrees - 030 degrees/90 degree dip
   - occasionally offset

BIOGEOCHEMISTRY

Arsenic values were very low, in the range of 2-9 ppm As with a background of less than 1 ppm.

In general, the biogeochemical sampling results show no significant line-to-line trends. In the vicinity of the E and F Zones, As from biogeochemical sampling responded weakly to the presence of arsenopyrite mineralization in bedrock.

CERTIFICATE

I, Ian R. Cunningham-Dunlop, of the City of Toronto, Province of Ontario, do hereby certify that:

1. I am a professional geologist residing at 40 Gerrard Street East, Apt. 509, Toronto, Ontario, M5B 2E8.

2. I hold a B.Sc. (Eng)(1984) from Queen's University at Kingston, Ontario.

3. I am a member of the Association of Professional Engineers of Ontario, the Canadian Institute of Mining and Metallurgy, and the Prospectors and Developers Association of Canada.

4. I have been engaged in mineral exploration since 1981 and am presently employed by Gold Fields Canadian Mining, Ltd. with office located at:

   123 Front Street West, Suite 909
   Toronto, Ontario
   M5J 2M2
   416/865-0945

5. I have examined all data obtained by Gold Fields Canadian Mining, Ltd. during the course of explortion activities in this area and this report is based on that examination.

6. I have no direct or indirect interest in the property covered by this report.

DATED at Toronto, Ontario
this 28th **day of** January **,1988.**

Ian R. Cunningham-Dunlop
Ian R. Cunningham-Dunlop, P. Eng.

Prel 63.1053

900

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Ontario

Ministry of Northern Affairs and Mines

Geophysical-Geological-Geochemical Technical Data Statement

File _____

2.10839

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(s) GEOLOGICAL

Township or Area Ferguson Lake Area

Claim Holder(s) Gold Fields Canadian Mining, Ltd.

Survey Company Gold Fields Canadian Mining, Ltd.

Author of Report J. R. Foster

Address of Author 123 Front Street West, 909
Toronto, Ontario M5J 2M2

Covering Dates of Survey June 20, 1986 (linecutting to office) Sept. 1, 1986

Total Miles of Line Cut _____

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: Nov. 28/86 SIGNATURE: J R Foster
Author of Report or Agent

Res. Geol. _____ Qualifications 63.1053

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

See Attached List
(prefix) (number)

RECEIVED
FEB 16 1988
MINING LANDS SECTION

RECEIVED
'88 FEB 3 AM 11 33
THUNDER BAY
MINING DIVISION

If space insufficient, attach list

TOTAL CLAIMS 31

OFFICE USE ONLY

837 (85/9)

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy – Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

_____

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 _____

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time _____ Frequency _____

– Off time _____ Range _____

– Delay time _____

– Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

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SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

_____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken 31

Total Number of Samples

Type of Sample Leaves, Needles, Humus
(Nature of Material)

Average Sample Weight 10g

Method of Collection Pruning

Soil Horizon Sampled N/A

Horizon Development N/A

Sample Depth N/A

Terrain Low - moderate relief

Drainage Development nil

Estimated Range of Overburden Thickness +10m

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis

General

ANALYTICAL METHODS

Values expressed in: per cent ☐
p. p. m. ☐
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, (As),-(circle)

Others

Field Analysis (N/A tests)
Extraction Method
Analytical Method
Reagents Used

Field Laboratory Analysis
No. (N/A tests)
Extraction Method
Analytical Method
Reagents Used

Commercial Laboratory (tests)
Name of Laboratory T.S.L. Mississauga, Ont.
Extraction Method
Analytical Method Neutron Activation
Reagents Used

General

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

Mining Act

DOCUMENT No. W8804· 97

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s): Geological **2.10839**

Township or Area: Ferguson Lake Area G-249

Claim Holder(s): Gold Fields Canadian Mining Ltd.

Prospector's Licence No.: T-1195

Address: 123 Front St. W. Suite 909, University Place, Toronto, Ontario M5J 2M2

Survey Company: Gold Fields Can. Mining Ltd.

Date of Survey (from & to): 20 06 86 01 09 86 (Day / Mo. / Yr. / Day / Mo. / Yr.)

Total Miles of Line Cut:

Name and Address of Author (of Geo-Technical report): J. R. Foster c/o 123 Front St. W. Suite 909, Toronto, Ontario M5J 2M2

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical - Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	20
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

RECEIVED
FEB 16 1988
MINING LANDS SECTION

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Expend. Days Cr.
See Attached List		

Mining Claim Prefix	Number	Expend. Days Cr.

RECEIVED
THUNDER BAY
MINING DIVISION
'88 FEB 3 AM 11 33

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
MAR 15 1988
RECEIVED

Total number of mining claims covered by this report of work: 31

Expenditures (excludes power stripping)

Type of Work Performed:

Performed on Claim(s):

Calculation of Expenditure Days Credits

Total Expenditures: $ ÷ 15 = Total Days Credits

Instructions: Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

For Office Use Only

Total Days Cr. Recorded: 620

Date Recorded: February 3, 1988

Mining Recorder: Catherine J. Allsop

Date Approved as Recorded:

Branch Director:

See several work Statements

Date: Jan. 6, 1987

Recorded Holder or Agent (Signature): J R Foster

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: J. R. Foster c/o 123 Front St. W. Suite 909, Toronto, Ontario M5J 2M2

Date Certified: Jan. 6, 1987

Certified By (Signature): J R Foster

1362 (85/12)

[redacted]

METASEDIMENTS

NORTH LIMIT OF SHEAR ZONE

METAVOLCANICS

SOUTH LIMIT OF SHEAR ZONE

892305 892306 892307 892308 892309

892310 892311 892312 892313 892314

892315 892316 892317 892318 892319

892320 892321 892322 892323 892324

892325 892326 892227 892328 892329

892330 892331 892332 892333 892334 892335

E-ZONE

F-ZONE

B-ZONE

SD-ZONE

H-ZONE

CONDUCTOR A

CONDUCTOR B

CONDUCTOR C

CONDUCTOR D

CONDUCTOR E

CONDUCTOR F

CONDUCTOR G

LILYPAD LAKE

DRILL ROAD

LEGEND

LATE MAFIC-INTERMEDIATE INTRUSIONS

10.3 Diabase

MAFIC INTRUSIONS

6.2

FELSIC INTRUSIONS

7.37 Quartz Feldspar Porphyry Dike
7.35 Massive Quartz Feldspar Porphyry
7.34 Foliated Quartz Feldspar Porphyry
7.3 Quartz Feldspar Porphyry
7.25 Massive Quartz Porphyry
7.24 Foliated Quartz Porphyry
7.14 Foliated Feldspar Porphyry

CLASTIC METASEDIMENTS

4.5 Volcaniclastic
4.34 Argillite, Argillaceous Wacke (Turbidite Deposit)
4.22 Graywacke

FELSIC METAVOLCANIC ROCKS

3.31 Tuff
3.13 Porphyritic Flow

INTERMEDIATE METAVOLCANIC ROCKS

2.4 Volcaniclastic (Reworked Tuff)
2.32 Lapilli Tuff
2.31 Tuff

MAFIC METAVOLCANIC ROCKS

1.32 Lapilli Tuff
1.31 Tuff
1.16 Porphyroblastic Flow
1.12 Pillowed Flow
1.11 Massive Flow

py Pyrite
po Pyrrhotite
Aspy Arsenopyrite
mt Magnetite
qtz Quartz
qt Quartz Vein
vn'g Veining
Epid Epidote
Scrn. Sericitization
Siln Silicification
Az Azimuth
proto(my) Protomylonitic
Dissem Disseminated
Fol Foliation

Outcrop
Bedding; Vertical, Inclined
Foliation; Vertical, Inclined
Fracture Cleavage; Vertical, Inclined
Mineral Lineation
Shearing
Diamond Drill Hole
Claim Post, Line
Trench

E.M. CONDUCTOR
MAG. TREND

0 200 400 600 ft.

N

2.10839

Revision	GOLD FIELDS CANADIAN MINING, LTD.
	LILYPAD LAKES GEOLOGICAL, GEOPHYSICAL COMPILATION
	SCALE: 1in.=200ft. / MAP No.
	DATE: Dec.1986
	MAPPED: I.C.D., W.D.B., B.D.
	DRAWN: / N.T.S.

KEZHIK LAKE G-288

VESTING LAKE G-342

ODE'GAN LAKE G-339

FROND LAKE G-252

Hyland L.

Bresnahan L.

Ivan L.

Lake

Ferguson Cr.

Seagreen L.

Ferguson

Ferguson

Keezhik Lake

Keezhik Lake

South Bay

Lilypad

REFERENCES

LEGEND

HIGHWAY AND ROUTE No.	
OTHER ROADS	
TRAILS	
SURVEYED LINES:	
TOWNSHIPS, BASE LINES, ETC.	
LOTS, MINING CLAIMS, PARCELS, ETC.	
UNSURVEYED LINES:	
LOT LINES	
PARCEL BOUNDARY	
MINING CLAIMS ETC.	
RAILWAY AND RIGHT OF WAY	
UTILITY LINES	
NON-PERENNIAL STREAM	
FLOODING OR FLOODING RIGHTS	
SUBDIVISION OR COMPOSITE PLAN	
RESERVATIONS	
ORIGINAL SHORELINE	
MARSH OR MUSKEG	
MINES	
TRAVERSE MONUMENT	

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" , SURFACE RIGHTS ONLY	
" , MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" , SURFACE RIGHTS ONLY	
" , MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER-IN-COUNCIL	
RESERVATION	
CANCELLED	
SAND & GRAVEL	

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

SCALE: 1 INCH = 40 CHAINS

FEET
0 1000 2000 4000 6000 8000

METRES
0 500 1000 2000 3000
0 1 2 3 4 5 KM

AREA
2.10839
FERGUSON LAKE

M.N.R. ADMINISTRATIVE DISTRICT
GERALDTON

MINING DIVISION
THUNDER BAY

LAND TITLES / REGISTRY DIVISION
KENORA/PATRICIA

Ministry of Natural Resources
Land Management Branch
Ontario

Date: JULY 1981
August 15, 1986

Number
G-249