



42A15NW0005 2.12682 HANNA

010

COMSTATE RESOURCES LTD.

Geological Report

Hanna Township Property

Timmins Area

RECEIVED

AUG 18 1989

MINING LANDS SECTION

August, 1989

D.R. Pyke, Ph.D.

Final
2.3899

ONTARIO
DIVISION OF MINES

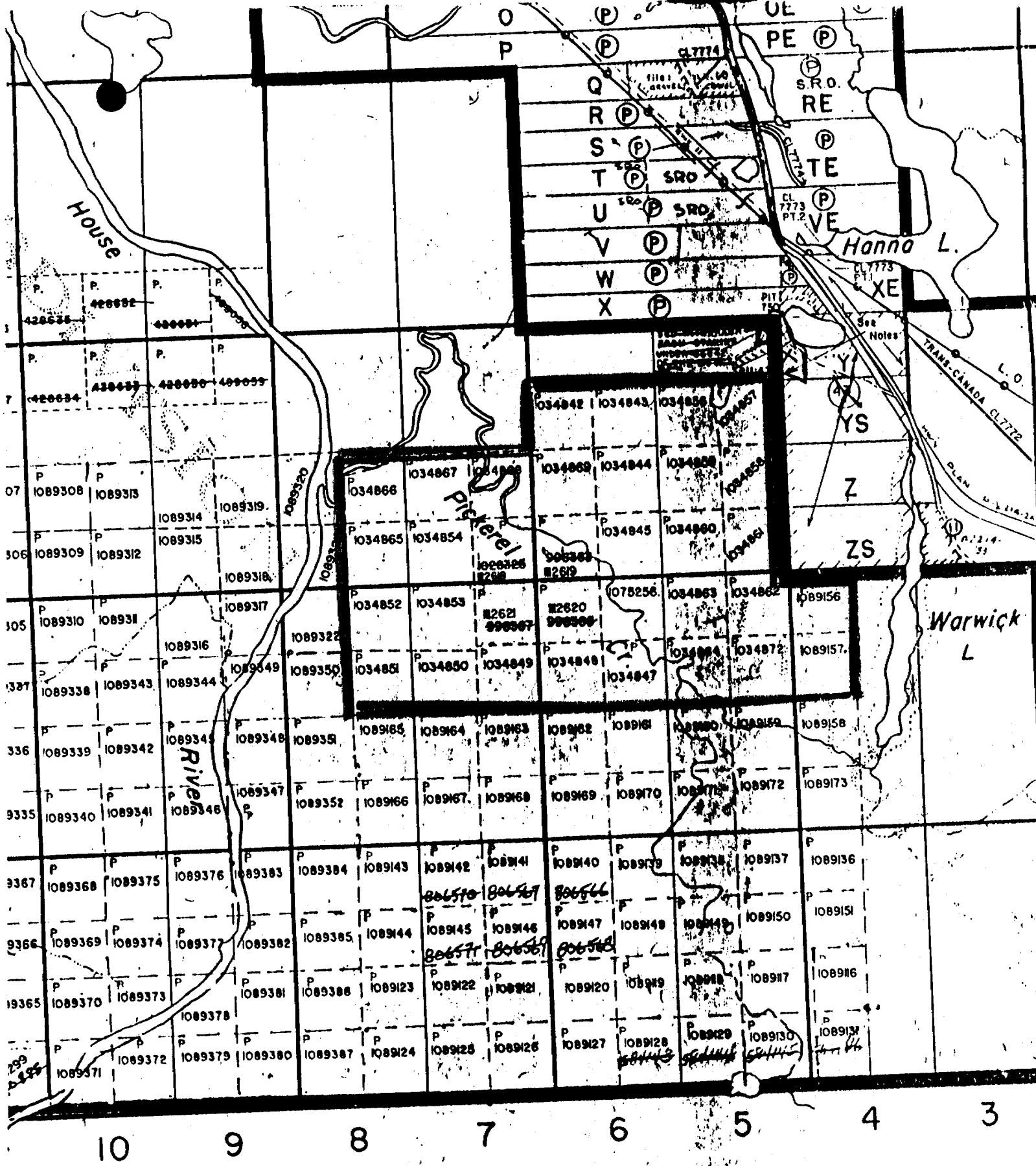
HONOURABLE LEO BERNIER, Minister of Natural Resources
W. Q. MACNEE, Deputy Minister of Natural Resources
C. A. Jewett, Executive Director, Division of Mines
E. G. Pye, Director, Geol.

Qb

Ra

Adjoins Map 2161 Corral





Mann Twp.



42A15NW0005 2.12682 HANNA

010C

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Comstate Resources Ltd.
Geological Report
Hanna Township Property

Introduction

This report covers the general geology of 34 claims in southeast Hanna Township, Porcupine Mining Division. The property is held by Comstate Resources Ltd., and includes the following claims:

P1034842 - 1034845 inclusive,
P1034847 - 1034854 inclusive,
P1034856 - 1034869 inclusive,
P1034872,
P1075256,
P1089156 - 1089157,
P1112618 - 111621 inclusive.

Access and Location

The claim group is approximately 35 miles northeast of Timmins and 11 miles south of Cochrane. Highway 11 passes within one-half mile of the northeast corner of the property, from which the eastern portion of the claims can be easily accessed.

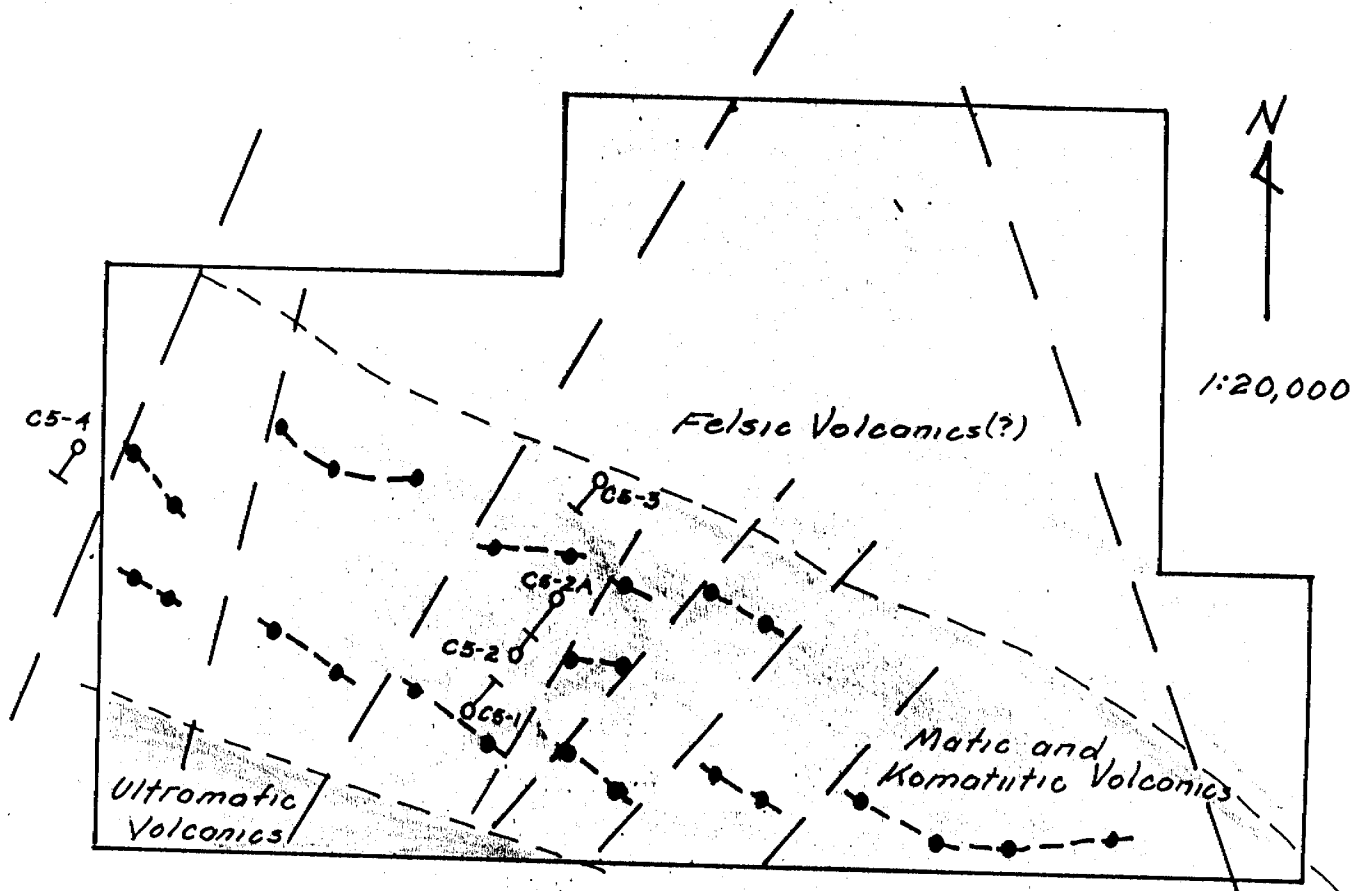
The Frederick House River logging road extends west from Highway 11 south of the Hanna - Mann Township boundary; a subsidiary logging road extends north from this to the southwest portion of the claim group.

Previous Work

Other than regional compilation maps, the only published geological map of Hanna Township is a preliminary map by Hunt and Richard (1980).

Previous recorded exploration work on the property is minimal, being solely confined to that of Cromarty Exploration Company Limited in 1965. At that time, Cromarty held 54 claims in Hanna Township, 19 of which covered a large portion of the ground currently held by Comstate. Five diamond drill holes totalling 2,670 feet were put down on what is now Comstate ground. Drill holes C5-3 and C5-2A intersected a 1000 - 1400 foot thick zone composed largely of carbonatized basaltic rocks. Minor chalcopyrite is reported in both ultramafic and basaltic rocks, the latter also locally containing minor sphalerite. Silicification and accompanying finely disseminated pyrite-pyrrhotite and chalcopyrite are reported in hole C5-1 over a width of 40 feet.

In 1975, Brascan Resources Ltd. flew an electromagnetic survey over much of the southern parts of Reaume and Hanna Townships; the survey covered the current property held by Comstate Resources Ltd.



Sketch showing airborne INPUT conductors (OGS-1988), Cromarty Exploration drill holes and interpreted bedrock lithologies and fault structures. Comstate property, Hanna Township.

Present Survey

The present survey was largely conducted intermittently during the period May 25 - June 21, 1989, by D.R. Pyke, B. Raine and H. Bent. For the eastern part of the property (east of Pickerel Creek) a baseline was established along the eastern boundary for mapping control. In the western portion of the property the logging road provided the necessary control for locating claim lines and traverse lines. All east-west claim lines and most north-south claim lines were traversed. In addition, east-west pace and compass lines were traversed at approximately 400 foot intervals between the claim lines. Areal photographs (1" = $\frac{1}{4}$ mile) assisted in traverse locations. Locally abundant windfalls necessitated deviations in some traverse lines. No outcrop was found on the claim group.

Property Geology

The lack of outcrop precludes any detailed interpretation of the geology. Nevertheless, previous diamond drilling by Cromarty Exploration and the recent airborne survey of the Timmins Area (O.G.S., 1988), provides an insight into the underlying bedrock and associated structures. The general strike is ENE as shown by airborne magnetics and Input conductors (O.G.S., 1988).

The northern edge of a large SE trending magnetic high (O.G.S., 1988) extends into the SW corner of the property (Claims 1034850 - 51) and is interpreted to consist largely

of ultramafic flows. Northeast of , and possibly overlying the komatiitic flows is a unit interpreted to consist mainly of basaltic volcanic rocks and ultramafic flows. The basalt is typically highly carbonatized in holes C5-3 and C5-2A. Minor chalcopyrite is reported in holes C5-1, 2, 2A and 3; the latter also containing possible sphalerite. A narrow (2 foot) dike of feldspar porphyry was reported in hole C5-2A. Virtually all the airborne conductors are confined to this basaltic-komatiitic unit. The limited diamond drilling on the property does not appear to have adequately explained the source of the conductors, even though the drill hole locations presented are only approximate. The NE portion of the property is characterized by lower magnetic susceptibility and may be underlain either by felsic volcanics or sediments. Near the west boundary of the property hole C5-4 was drilled entirely within meta-sediments.

A series of NE trending faults are interpreted from apparent offsets and/or terminations in the airborne INPUT conductors. A NNW trending fault near the east boundary of the property is readily interpreted from a linear magnetic low traversing Hanna Township.

Conclusions and Recommendations

The southwest portion of the property appears to be largely underlain by basaltic and komatiitic volcanic rocks; the northeast portion of the property by felsic volcanics or

sediments. A series of NE trending faults is interpreted from offsets and terminations of the INPUT conductors. Previous recorded drilling on the property does not appear to have adequately tested known INPUT conductors. It is recommended that ground magnetic and HLEM surveys be conducted on the property, with follow-up diamond drilling.

AR Lyke

References

Hunt, D.S. and Richard, J.A.

1980: Hanna Township; Ontario Geol. Survey, Prelim.
Map P.2307. Scale 1 inch to $\frac{1}{4}$ mile.

Ontario Geological Survey (O.G.S.)

1988: Airborne Electromagnetic and Total Intensity
Survey, Timmins Area, Hanna Township.
Map 81041. Scale 1 : 20,000.



GEOP1



42A15NW0005 2.12682 HANNA

900

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 HANNA
Claim Holder(s) D.R. Pyke
Survey Company COMSTATE RESOURCES LTD
Author of Report D.R. Pyke
Address of Author P.O. Box 1142 Timmins
Covering Dates of Survey MAY - AUG 89
Total Miles of Line Cut

Table with 2 columns: SPECIAL PROVISIONS CREDITS REQUESTED and DAYS per claim. Includes rows for Geophysical (Electromagnetic, Magnetometer, Radiometric, Other) and Geological (20), Geochemical.

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

Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: Aug 17/89 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. Qualifications

Table with 4 columns: File No., Type, Date, Claim Holder. Multiple empty rows for recording previous surveys.

MINING CLAIMS TRAVERSED
List numerically
D 1034842
1034843
1034844
1034845
1034847
1034848
1034849
1034850
1034851
1034852
1034853
1034854
1034856
1034857
1034858
1034859
1034860
1034861
1034862
1034863
1034864
TOTAL CLAIMS 34

OFFICE USE ONLY

If space insufficient, attach list

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 _____

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 _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

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 (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

CLAIMS HANNA TWP (CONT'D)

P1034865
1034866
1034867
1034868
1034869
1034872
1075256
1089156
1089157
1112618
1112619
1112620
1112621

Dalyke

Oct 5th

FROM: M.R. PORCUPINE MIN. DIV.

TO: 416 922 4188

AUG 22, 1989 9:43AM P.14



Report of Work (Geophysical, Geological, Geochemical and Expenditures)

W 8906-384

2.12682

Instructions: Please type in pencil. If number of mining claims traversed exceeds space on this form, attach a separate sheet. Note: Only days credits are entered on this form. Do not overstate days credits.

Type of Survey: Geological
 (See instructions)
 Address: COMSTATE Resources Ltd
P.O. Box 1142 Timmins Ont. P4N 7H9
 Survey Company: COMSTATE Resources Ltd
 Name and Address of Author (of Geo-Technical report): D. Pyke P.O. Box 1142 Timmins Ont
 Date of Survey (from & to): 25 Day | 85 Mo | 89 Yr. | 21 Day | 06 Mo | 89 Yr.
 Mining Act
 CLAIMS OF AREA: HANNA
 PROPERTY OF: T-1127
 Total Area of Claim (km²):

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic - Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric - Other	
	Geological	<u>20</u>
	Geochemical	
Man Days Complete reverse side and enter totals here	Geophysical - Electromagnetic - Magnetometer - Radiometric - Other	Days per Claim
	Geological	
	Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic Magnetometer Radiometric	Days per Claim

Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
<u>P</u>	<u>1089156</u>				
	<u>1089157</u>				

RECORDED
AUG 16 1989

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES OFFICE
OCT 17 1989
RECEIVED

MINING LANDS SECTION

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 column at right.

For Office Use Only

Total Days Cr. Recorded: 40
 Date Recorded: AUG. 16/89
 Date approved as Recorded: 16 Oct 89
 R.M.

Signature: [Signature]
 Title: allowa

2

Date: Aug 16/89 Name of Author or Agent: D. Pyke

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 approved herein, and that the same are true or witnessed same during and/or after its completion and the annual report is true

Name and Postal Address of Person Certifying: D. Pyke, P.O. Box 1142 Timmins Ont

Date Certified: Aug 16/89 Signature: [Signature]

MINING LANDS: PLEASE COMPLETE THIS FORM & RETURN IT WITH REPORT TO THE ASSESSMENT FILES OFFICE

DATE REMOVED: Oct. 10/89
(from AFO)

DATE RETURNED: _____
(to AFO')

REPORT # : 2.12682

FICHE NO. : _____ (where applicable)

REASON FOR REQUESTING REPORT (complete #1-4 below):

1. INFORMATION ADDED TO EXISTING PAGES OF REPORT:
IF YES, SPECIFY PAGES: 1 report of work x 384
: _____
: _____

2. a) PAGES/MAPS ADDED TO THIS REPORT: _____ TOTAL PAGES ADDED
: _____ TOTAL MAPS ADDED

b) TYPE OF PGS ADDED: _____ CORRESPONDENCE
: _____ WORK REPORTS (AMENDED)
: 1 WORK RPTS (NEW)
: _____ MISSING PAGES OF TEXT
: _____ OTHER (PLEASE SPECIFY)

3. a) REMOVAL OF PGS FROM REPORT: _____ TOTAL PGS REMOVED

b) TYPE OF PAGES REMOVED : _____ CORRESPONDENCE
: _____ WORK REPORTS
: _____ PGS OF TEXT
: _____ OTHER (PLEASE SPECIFY)

4. REPORT NEEDED FOR REFERENCE ONLY:
NO INFORMATION ALTERED :
NO INFORMATION ADDED :
NO INFORMATION DELETED :

*NOTE: ENTER "X" IN APPLICABLE BOXES

Aug 15



Ministry of Natural Resources

Report of Work (Geophysical, Geological, Geochemical and Expenditures)

DOCUMENT No. W 8906-346

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." column. - Do not use shaded areas below.

Mining Act

Form header containing: Type of Survey(s) Geological 2.12682, Township or Area HANNA, Claim Holder(s) D.R. Pyke, Address P.O. Box 1142 Timmins, Ont P4N 7H9, Survey Company Comstate Resources Ltd, Date of Survey (from & to) 25 05 89 - 21 06 89, Total Miles of line Cut, Name and Address of Author (of Geo-Technical report) D R Pyke 31 Delair Cres Thornhill Ont L3T 2H3

Special Provisions: For first survey: Enter 40 days. (This includes line cutting). For each additional survey: using the same grid: Enter 20 days (for each). Days per Claim: 20

Man Days: Complete reverse side and enter total(s) here. Days per Claim: (blank)

Airborne Credits: Note: Special provisions credits do not apply to Airborne Surveys. Days per Claim: (blank)

Expenditures (excludes power): Type of Work Performed, Performed on Claim(s) JUN 26 1989

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.

Date JUN 23 1989, Recorded Holder or Agent (Signature) D R Pyke

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: D R Pyke 31 Delair Cres Thornhill Ont L3T 2H3, Date Certified June 23/89, Certified by (Signature) D R Pyke

Table with columns: Mining Claim Prefix, Mining Claim Number, Expend. Days Cr., Mining Claim Prefix, Mining Claim Number, Expend. Days Cr. Lists claim numbers 1034842 through 1034866.

RECORDED

JUN 26 1989

MINING GEOLOGICAL SURVEY ASSESSMENT FILES OFFICE

SEP 08 1989

RECEIVED

RECEIVED

JUL 28 1989

MINING LANDS SECTION

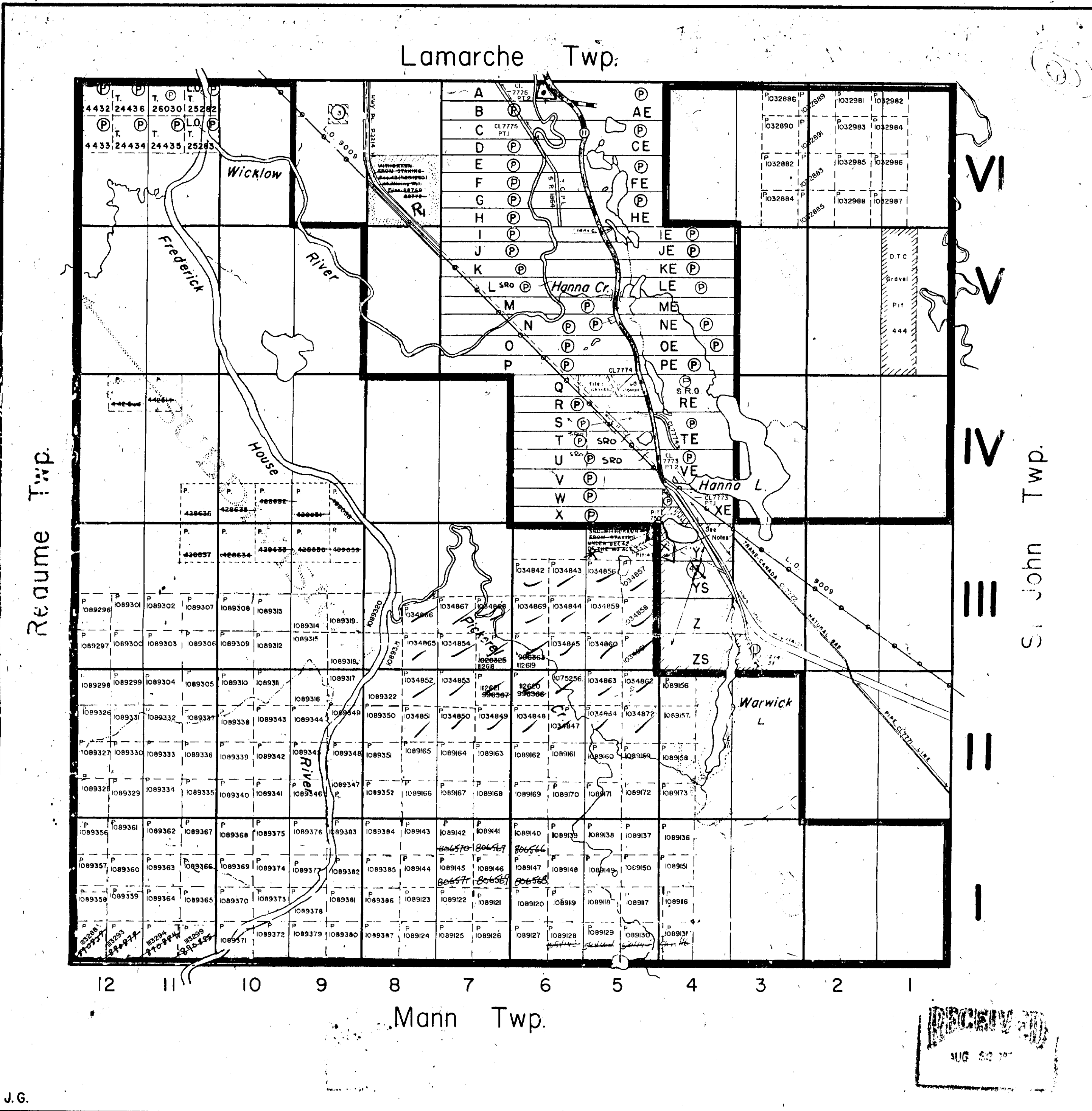
Total number of mining claims covered by this report of work. 32

For Office Use Only: Total Days Cr. Recorded 640, Date Recorded JUNE 26 1989, Date Approved as Recorded SEP 8 89, Mining Registrar (Signature), Branch Director (Signature)

M-430

HANNA TWP.

M-430



THE TOWNSHIP OF

HANNA

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

- PATENTED LAND Ⓟ
- CROWN LAND SALE C.S.
- LEASES Ⓛ
- LOCATED LAND Loc.
- LICENSE OF OCCUPATION L.O.
- ROADS —
- IMPROVED ROADS —
- RAILWAYS —
- POWER LINES —
- MARSH OR MUSKEG —
- KING'S HIGHWAY —

NOTES

400' Surface rights reservation around all lakes & rivers

REG. PLAN NO. M-57 COVERS LOTS "A" TO "S" IN CON. 3 TO CON. 6

Surface Rights Only reserved in Dept of Lands & Forests shown thus: File 88767

See L.B.F. File 96605-122598 Re Grave! Or Loc. XE & Loc. Y

Staking under Section 11 (S.O. 1970)

Date	Disposition
W. 04/73 (45) 86773	27/11/73 S.R.O.
W. 32/74 (45) 96605	12/16/74 S.R.O.
Y.N.R.O. V.85	01/14/85 S.R.O.

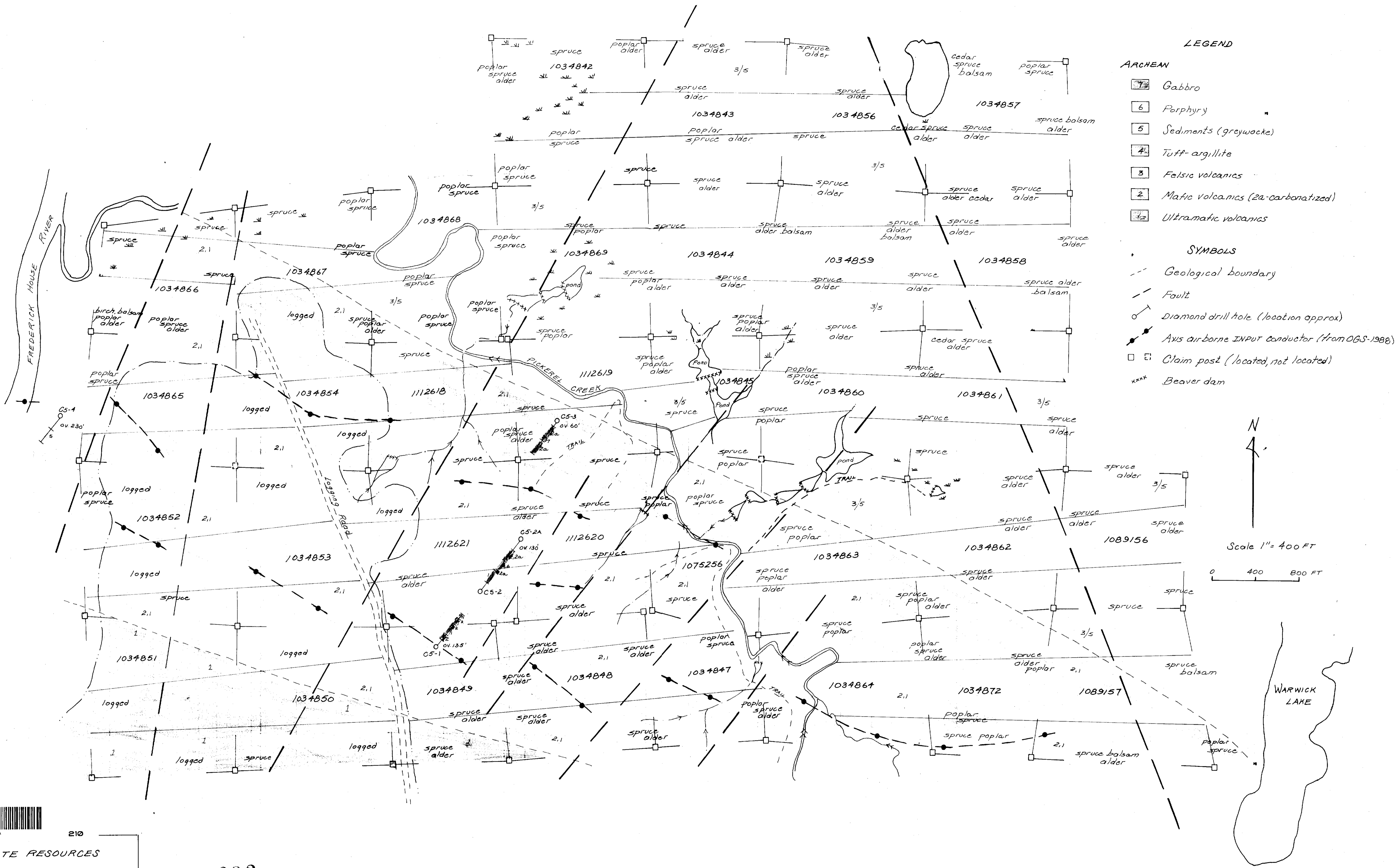
R1 - S.R. & M.R. REOPENED FOR STAKING
L.U.P. *
X.L.U.P. Reopened N.R.O. 7a/84
Received May 5/80

PLAN NO. - M 490

ONTARIO
MINISTRY OF NATURAL RESOURCES
LANDS AND MAPPING BRANCH

RECEIVED
AUG 20 1980





- LEGEND**
- ARCHEAN**
- 7 Gabbro
 - 6 Porphyry
 - 5 Sediments (greywacke)
 - 4 Tuff-argillite
 - 3 Felsic volcanics
 - 2 Mafic volcanics (2a-carbonatized)
 - 1 Ultramafic volcanics

- SYMBOLS**
- - - Geological boundary
 - Fault
 - o Diamond drill hole (location approx)
 - Axis airborne INPUT conductor (from OGS-1988)
 - Claim post (located, not located)
 - xxxx Beaver dam

Scale 1" = 400 FT

0 400 800 FT



210

COMSTATE RESOURCES
 Geological Map
 HANNA TOWNSHIP PROPERTY
 TIMMINS AREA
 MAY-JUNE/89 Scale 1"=400'
 D.R. PYKE & ASSOCIATES, INC.

2.12682

WRP