Report on Electromagnetic
and Magnetic Surveys

Bartlett Twp.

1990

PROPERTY CLAIMS LIST

The property consists of 4 contiguous mining claims in Bartlett Township, numbered 256349 to 256352 inclusive.

LOCATION AND ACCESSIBILITY

The property is situated in the north-east corner of Bartlett Township, Porcupine Mining Division of Ontario, a distance of 20.5 air miles south-east from Timmins.

Best access to the property is by motor vehicle south from Timmins on the Matachewan Road (which is a good gravel road under improvement) for 23 miles to the Texmont Mine road-head, then 4 miles east to the mine site (now in pre-production stage) and 1 mile walk north up the common north-south boundary between Bartlett and Geikie Townships and 1 mile west to the claim groups over bush trail.

GEOLOGY

The area (as per Map 2046, Timmins-Kirkland Lake Sheet, and by inferred ground geophysics, plus prospecting traverses) is underlain by Proterozoic and Archean Rocks of the Precambrian Era as follows:

The south-west corner of the claim group is granite followed by dacitic lavas grading to rhyolite to the north-east up to a band of iron formation in the north-east corner of the property, followed by basic lavas north-east of the iron formation.

A 100 foot wide Keewanawn Diabase dyke traverses the south central part of the property from SE to NW intruding the acid lavas. The iron formation also trends north-west south-east and dips steeply north-east to vertical.

A number of pits were put down on the iron formation, probably by gold prospectors, quite some years ago.

SUMMARY OF THE ELECTROMAGNETIC SURVEY

The property was gridded with cut, chained and picketed N 45° E striking survey lines spaced at 300 foot intervals and at 150 foot intervals in areas of more detailed survey.

The survey was carried out using the Crone J.E.M. Dual Frequency 480/1,800 c.p.s. Electromagnetic Unit employing the "in-line shoot-back" method with readings taken at 100 foot station intervals and at 50 foot intervals in conductive areas.

Three conductors were detected and are described as follows:

Conductor "A"

A weak conductor caused by iron formation and associated magnetite and possibly sulphides. No further interest.

Conductor "B"

A very weak conductor of questionable validity, the north-west part of which plots on the diabase dyke. Soil sampling recommended, plus prospecting.

Conductor "C"

Two very weak conductors also of questionable validity which plot near and over a diabase dyke. Prospecting and soil sampling recommended.

SUMMARY OF THE MAGNETOMETRIC SURVEY

The Mag. Survey was conducted over the same line grid as the E.M. Survey and readings were taken at 50 foot station intervals for main coverage with 25 foot station readings taken over anomalous areas.

Magnetic control stations were established along the base line and on the two additional tie lines which were required because of the extensive flooding caused by beavers throughout the centre of the property.

Instrument used was a McPhar Model M700 Magnetometer with a sensitivity of 20 gammas per scale division on the lowest scale.

Two major highly magnetic areas were detected and are described as follows:

Anomaly Area "A"

High magnetic anomaly caused by banded tuff and iron formation. An additional tuff probably lies parallel and south of the major high. Another local high occurs to the north-east, probably also caused by tuff.

Anomaly Area "B"

High magnetic anomaly caused by Diabase Dyke.

Respectfully submitted,
TEXMONT MINES LIMITED

C.F. DESSON

APPENDIX "A"

CRONE J.E.M. UNIT

THE ELECTROMAGNETIC METHOD

The method involves the transmission of an alternating electromagnetic wave of a given frequency, which penetrates the ground in the vicinity of a transmitting coil. This wave or field induces an electric current in any conductor on which it is incident. The flow of an alternating current in a conductor sets up on its own, or secondary, radiating electromagnetic field. These two fields form a resultant whose configuration depends on the following characteristics of the sub-surface conductors: (i) size, (ii) shape, (iii) electrical conductivity, and (iv) magnetic permeability, and (v) frequency of the transmitted wave. To a lesser extent, the resultant is also dependent on material adjacent to the conductor, topography and surface conductivity. The direction of the resultant vector is measured by a small receiving coil timed to the frequency of the transmitted wave.

The electromagnetic survey over this group of claims employed the Crone dual frequency (1800/480 cps) junior unit. This is a two-man operated unit; and each man has a transmitting and receiving unit. The men are usually spaced 200 feet apart. Each man transmits and receives; and the dip angles are added together algebraically. Readings greater than 3 are considered significant, unless working along the extension of a conductor, in which case lower readings may be of value.

If a conductor is present, both positive and negative dip angles are obtained. When both men are on one side of the conductor, the reading is minus; when they straddle the conductor, the reading is plus. The coil giving the angle is the coil nearest the conductor. The distance between the cross-overs should equal, approximately, the interval between the two men (200 feet). Positive angles are important as they frequently indicate vertical conductors close to surface.

The purpose of the "shoot-back" method is to eliminate elevation effects. The main advantages of the method:

1. The men traverse perpendicular to the strike.
2. It is sensitive to both vertical and horizontal conductors.
3. It has good penetration.

The magnitude of the angles depends on the conductivity of the body. The shape of the curve depends upon the shape of the conductor. Note that as the conductor becomes wider and deeper, the positive angles decrease or become non-existent. With banded, multiple conductors, the negative readings from one conductor may interfere with the positive readings from another, making accurate interpretation difficult.

Noisy readings are most frequent over broad, clay conductors (e.g. on lake bottom). However, they may occur, in certain locations, with the best of sulphide conductors.

McPHAR M.700 MAGNETOMETER

The McPhar M.700 Magnetometer is a vertical field fluxgate magnetometer. The self-levelling feature of this electronic magnetometer eliminates the need for bulky tripods and time consuming fine levelling procedures. Further, the instrument is relatively insensitive to orientation. Since the instrument can be adjusted electronically to cancel vertical magnetic fields from plus 100,000 gammas to minus 100,000 gammas there is no need for auxiliary magnets or complicated latitude adjustments.

The operation of the M.700 Magnetometer is very simple. The reading on the meter is set to zero at the chosen base station. This can be done to an accuracy of 5 gammas. As successive stations are occupied, the instrument is held roughly level, and the increase or decrease in the vertical component of the earth's magnetic field is read directly from the meter. Five ranges are available and on the most sensitive range the accuracy is $\pm$ 5 gammas.

PERFORMANCE & CO

42A03NE0087 2.260 BARTLETT

900

ASSESSMENT WORK DETAILS

Township or Area: BARTLETT

Type of Survey: Magnetometer
A separate form is required for each type of survey

Chief Line Cutter or Contractor: M. Dysart
Name
South Porcupine, Ontario
Address

Party Chief: M. Dysart
Name
South Porcupine, Ontario
Address

Consultant: C.F. DESSON
Name
Winona, Ontario
Address

P256349
P256350
P256351
P256352

If space insufficient, attach list

COVERING DATES

Line Cutting: November 10 - 21, 1970

Field: November 12 - 21, 1970
Instrument work, geological mapping, sampling etc.

Office: November 26, 1970

INSTRUMENT DATA

Make, Model and Type: McPhar M.700 Fluxgate

Scale Constant or Sensitivity: See Appendix "B" of Report
Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count: ____

Number of Stations Within Claim Group: 807

Number of Readings Within Claim Group: 897

Number of Miles of Line cut Within Claim Group: 7.2

Number of Samples Collected Within Claim Group: ____

TOTAL: 4

CREDITS REQUESTED	20 DAYS per claim	40 DAYS per claim (Includes Line cutting)
Geological Survey	☐	☐
Geophysical Survey	☐	☑ Show Check ✓
Geochemical Survey	☐	☐

DATE: December 11, 1970

SIGNED: W. K. Murphy

Send in duplicate to:
FRED W. MATTHEWS
SUPERVISOR-PROJECTS SECTION
DEPARTMENT OF MINES &
NORTHERN AFFAIRS
WHITNEY BLOCK
QUEEN'S PARK
TORONTO, ONTARIO

Performance and coverage credits do not apply to airborne surveys

SUBMISSION OF GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL SURVEYS

AS ASSESSMENT WORK

In order to simplify the filing of geological, geochemical and ground geophysical surveys for assessment work, the Minister has approved the following procedure under Section 84 (8a) of the Ontario Mining Act. This special provision does not apply to airborne geophysical surveys.

If, in the opinion of the Minister, a ground geophysical survey meets the requirements prescribed for such a survey, including:

(a) substantial and systematic coverage of each claim
(b) line spacing not exceeding 400 foot intervals
(c) stations not exceeding 100 foot intervals or
(d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

Similarly, a geochemical survey using the same grid system with the average number of collected samples per claim being not less than 40 samples, and meeting the requirements for the submission of geochemical surveys for maximum credits, will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geochemical survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

PERFORMANCE & COVERAGE CREDITS

ASSESSMENT WORK DETAILS

Township or Area: BARTLETT

Type of Survey: ELECTROMAGNETIC
A separate form is required for each type of survey

Chief Line Cutter or Contractor: _____
Name
_____
Address

Party Chief: M. Dysart
Name
South Porcupine, Ontario
Address

Consultant: C.F. Desson
Name
Winona, Ontario
Address

COVERING DATES

Line Cutting: _____

Field: November 16 - 21, 1970
Instrument work, geological mapping, sampling etc.

Office: November 26, 1970

INSTRUMENT DATA

Make, Model and Type: Crone J.E.M. Unit

Scale Constant or Sensitivity: 480/1,800 c.p.s.
Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count: _____

Number of Stations Within Claim Group: 365

Number of Readings Within Claim Group: 365

Number of Miles of Line cut Within Claim Group: 7.2

Number of Samples Collected Within Claim Group: _____

MINING CLAIMS TRAVERSED
List numerically

P256349
P256350
P256351
P256352

If space insufficient, attach list

TOTAL 4

CREDITS REQUESTED	20 DAYS per claim	40 DAYS per claim	Includes (Line cutting)
Geological Survey	☐	☐	
Geophysical Survey	☑	☐	Show Check ✓
Geochemical Survey	☐	☐	

DATE: December 11, 1970

SIGNED: W. R. Murphy

Send in duplicate to:

FRED W. MATTHEWS
SUPERVISOR-PROJECTS SECTION
DEPARTMENT OF MINES &
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WHITNEY BLOCK
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Performance and coverage credits do not apply to airborne surveys

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If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

2.260

THE TOWNSHIP OF Claim Map BARTLETT

DISTRICT OF TIMISKAMING

PORCUPINE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

McArthur Twp. - M. 298

Musgrove Twp. - M. 304

Geikie Twp. - M. 320

English Twp. - M. 787

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	
CANCELLED	C.

NOTES

This township lies within the TIMAGAMI PROVINCIAL FOREST

400' Surface Rights Reservation around all Lakes and Rivers.

DATE OF ISSUE
JAN 22 1971
ONT. DEPT. OF MINES AND NORTHERN AFFAIRS

PLAN NO. M-262

ONTARIO
DEPARTMENT OF MINES
AND NORTHERN AFFAIRS

TEXMONT MINES LTD.

MAGNETOMETER SURVEY

ON A PORTION OF

BARTLETT TOWNSHIP

PORCUPINE MINING DIV.

OF ONTARIO

SCALE 1" = 200'

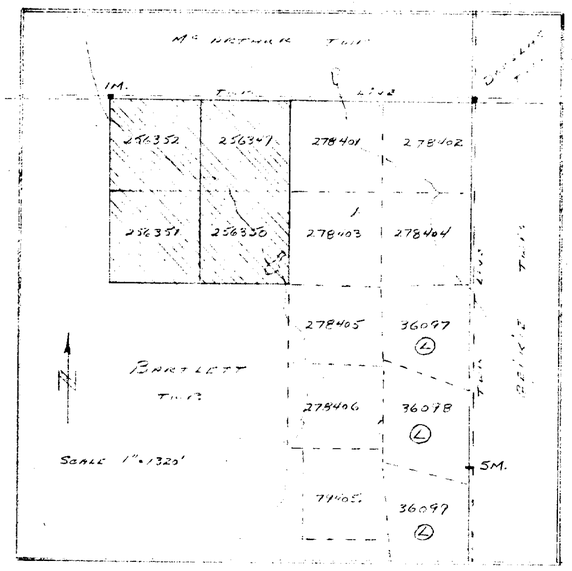
Nov. 20/70.

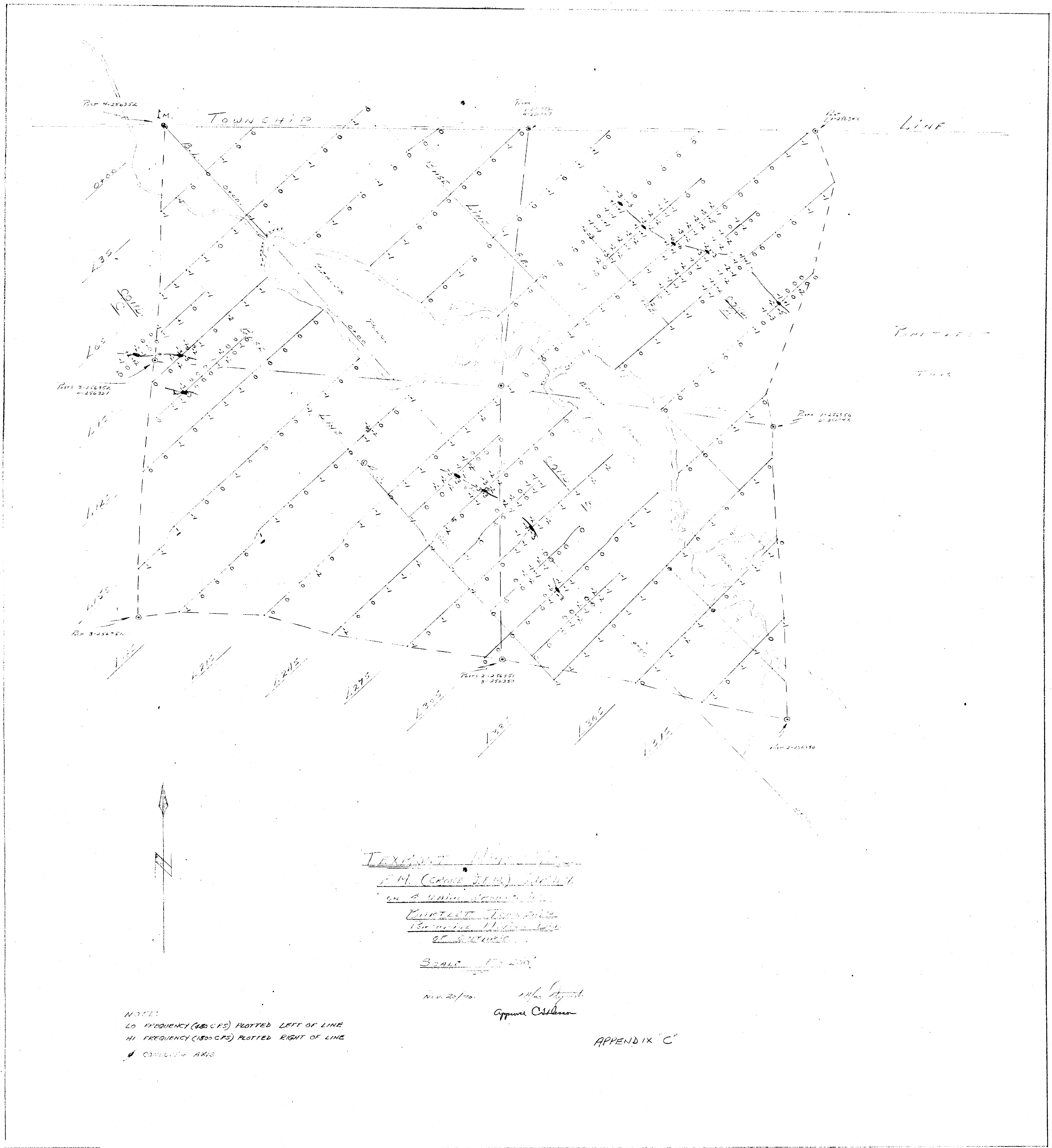
Wm. Lyon.

Approved C.H. Anderson

APPENDIX "D"

▲ BASE & CONTROL STATIONS
⊙ CLAIM POSTS.
(1) (2) (3) OUTLINE No.
■ PITS AND SHAFTS
TRENCHS.
SUMMITS.




TOWNSHIP
LINE
Post 4-256352
Posts 3-256352 4-256361
Post 3-256351
Posts 2-256351 3-256350
Post 1-256354 2-256346
L35
L115
L155
L215
L245
L275
L305
L335
L365
L395
F.M. (CROWE J.E.M.) SURVEY
BARTLETT TOWNSHIP
SCALE 1" = 200'
Nov. 20/70.
NOTE:
LO FREQUENCY (480 C.P.S) PLOTTED LEFT OF LINE
HI FREQUENCY (1800 C.P.S) PLOTTED RIGHT OF LINE
AXIS
APPENDIX "C"