

Geological
Wilson Opti
Hollinger Mines Limited



42E10NW0156 2.668 ASHMORE

010

Introduction:

During the period August 16-23, 1971, a geological survey was carried out on part of the Wilson Option #1 property in Ashmore Township. Since two claims are almost entirely submerged, only twelve claims numbered

TB.139350-352 incl.; TB.229616-618 incl;
TB.230337-339 incl.; TB.238726, 727 and
TB.239955 were surveyed.

Location and Access:

The claim group is located approximately five miles southeast of Geraldton in southeastern Ashmore Township. The town of Geraldton is situated on the western township boundary. The property is readily accessible via Highway 11, which passes through the central portion of the group.

Topography:

The main portion of the group is covered by spruce and open alder swamps, the higher sand ridges supporting growths of spruce and poplar. The northeast and southeast portions of the group are water covered by the Kenogamis and Eldee Lakes respectively. The overburden consists mainly of sand and gravel, with depths normally less than fifty feet.

Previous Work:

The most comprehensive mapping and compilation of Ashmore Township was undertaken by H. C. Horwood and E. G. Pye for the Ontario Department of Mines⁽¹⁾. A complete summary of

NOV 1971

(1) Sixtieth Annual Report of the Ontario Department of Mines Vol. 60 Part 5, "Ashmore Township" H.C. Horwood, E.G. Pye 1951.

previous work appears in this publication.

Most of the early work in the area consisted of reconnaissance surveys performed by the Ontario Department of Mines and the Geological Survey of Canada. Horwood and Pye⁽¹⁾ amalgamated most of this work in their 1951 publication, acknowledging Coleman (1903), Burrows (1916), Tanton (1920), Burwash (1933), Bruce (1934) and Brant (1939).

A great deal of work was later undertaken by the Ontario Department of Mines in the western portion of the township. These publications are generally in relation to the geology of the local gold mines, and are of less significance to the eastern volcanic zone.

The Walterson claims, a sixteen claim group in southeastern Ashmore and southwestern Croll Townships, was prospected for gold in 1946. The property is underlain by andesitic lavas intruded by diorites. The lavas are highly altered with only vestiges of pillows remaining, apparently related to a granitic intrusion further east. Trenching and stripping revealed two mineral occurrences in Croll Township. The first zone is a vein containing quartz and chalcopyrite, associated with a shear in the lavas which can be traced for 550 feet. A second shear, 500 feet long, cuts the lavas and then parallels a sill of diorite. This shear contains quartz, some coarse chalcopyrite and pyrite, with minor galena and sphalerite.

In 1962, New Bidlamaque Gold Mines Limited explored the area of the Walterson claims with particular interest in two trenches in the western portion of the group. The area is underlain by diorite and quartz diorite with some feldspar porphyry. A magnetic survey was conducted in the vicinity of the trenches, locating the north zone in a magnetic low and the south zone in a magnetic high. A northerly trending diabase dyke is outlined just east of these two zones. Five holes were drilled into the north zone with little results. The south zone contained up to fifteen percent sulphides with the best assay of 1.78 percent copper over 1.7 feet. Since the two zones were of a very limited extent, no further work was recommended.

The southern portion of the old Walterson claims is presently held by Hilda Holm. Extensive stripping and sinking of pits and trenches has been done over the property. Two holes have also been drilled, one just south of Highway 11 and a second hole further south and east near the Ashmore-Croll Township line. The first hole encountered rhyolite and andesite with some gabbro dykes. A minor amount of sulphides was also found, including pyrite, chalcopyrite and sphalerite. The southern hole intersected greywacke, diorite and rhyolite with minor pyrite and chalcopyrite.

Just east of Crabtree Lake, Langmuir Long Lac Gold Mines did some exploration in the andesites and diorites. Stripping and trenching uncovered a 400 foot long quartz vein in the andesitic lavas. The vein contained minor chalcopyrite, pyrite, native copper and gold. No further work was indicated.

In 1950, Hard Rock Gold Mines held nine claims occupying the present northeast corner of the Hollinger property. One drill hole was emplaced, encountering diorite and andesite with some pyrite, pyrrhotite and chalcopyrite. Since the property was acquired as a gold prospect, no further work was recommended.

To the west of the present Hollinger group, the Lac Development Company did some exploration in 1934. The two easternmost claims were later acquired by Hard Rock Mines and presently by Hollinger Mines Limited. The four western claims were later acquired by Wods Mac Holdings Limited. The northern portion of the group is underlain by andesitic volcanics with conglomerates, greywacks and iron formation to the south. Both groups are intruded by diorites and feldspar porphyries. A few quartz-carbonate veins associated with an east-west shearing in the andesites have been stripped. The veins contain pyrrhotite, chalcopyrite, pyrite and magnetite. Lac Development drilled three holes to explore these zones; however, results were poor.

Wods Mac Holdings Limited later did further stripping on outcropping gold bearing veins. Since no appreciable values in gold were encountered over any distance, no further work was performed.

In 1945, Draco Mines Limited acquired fifty-seven claims in southeastern Ashmore Township. The northern part of this group

was optioned from P.J. Roche, part of which comprises the southern portion of the Hollinger group. Previously, Roche Long Lac Gold Mines had explored two shear zones with some gold values associated with the feldspar porphyry intrusions. In 1934, a shaft was sunk in that area; however, lack of finances warranted a temporary suspension of the operations. Later, in 1936, six holes were drilled in the eastern portion of Eldee Lake to cross section the area. Only low gold values were found in quartz stringers along dykes of diorite porphyry, so operations were again suspended. The original veins near the shaft area contained some visible gold as well as pyrite, arsenopyrite, sphalerite, chalcopyrite and galena.

Draco Mines Limited concentrated their interests further south to the sedimentary formations. Magnetic and electromagnetic surveys were conducted although results were not released. Eleven holes were drilled in 1946 revealing low gold values at the contacts between the sediments and the albite porphyry. On the basis of these results, no further work was recommended.

The Cash Group, which is the northwest part of the old Draco group has no other work recorded specifically on those claims. Previous work by Draco and Roche, however, has roughly outlined the volcanic-sedimentary contact which crosses the northeastern portion of the property.

In 1934, Oklend Gold Mines began exploration on fifty-five claims that extend over five miles across southern Ashmore Township. Oklend was mainly interested in exploring the ore-bearing arkose horizon of the Little Long Lac Mine which could be traced further east. Through dip needle surveys to outline the iron formations across water claims, two major, northerly trending faults were recognized which displace the central zone in a northerly direction. The easternmost fault shows a displacement (in plan) of approximately 1200 feet and by projection along strike, the fault passes through the north-central portion of the Hollinger property. A total of fifty-nine holes were drilled, mainly on the basis of favourable structures indicated by the dip needle surveys. A few appreciable gold values were obtained from quartz-carbonate stringers, although they were of a very limited extent. Other minerals reported in the

stringers include pyrite, arsenopyrite, pyrrhotite, chalcopyrite and galena. Due to lack of results, work ceased in 1947.

In 1970, Hollinger Mines Limited drilled two holes on the western portion of the property. These holes encountered andesitic volcanics, both flows and pyroclastics with minor sulphide mineralization. Magnetic and electromagnetic surveys have only been partially completed.

Personnel:

The field survey was performed by D.R. Alexander and R.E. Kirkbride. Final drafting of the plans was done by W.B. Caughell and interpretation by the author. All are employed with Hollinger Mines Limited.

General Geology:

The surface geology is expressed in three major formations:

3. Feldspar (Albite) Porphyry of possible Late Algomian Age
2. Hornblende gabbro (or diorite) of possible Early Algomian Age
1. Andesitic volcanics of probable Keewatin Age.

There are no surface exposures of the Timiskaming sediments within the property boundaries.

The andesitic volcanics are the oldest rocks on the property, presumably Keewatin in age. The flows are generally fine grained and chloritic, exhibiting a massive character that makes structural determinations difficult. On the northern part of the property (along the shore of the Kenogamisis), there is a zone of volcanics consisting of interbedded mafic-rich and mafic-poor layers of andesite, trending nearly east-west. Conformable thin rusty layers throughout the outcrop contain some disseminated pyrrhotite and pyrite, although this sulphide mineralization is not found in the non-rusty layers. There are also occasional fragments in this outcrop approximately two inches in size. The small number of fragments would not suggest a tuffaceous classification. The breccia horizons mapped are best described as flow breccias and do not appear to have any tectonic connotations.

These horizons contain subrounded fragments from two inches to a foot in size, in a fine grained andesitic matrix. The breccia weathers slightly rusty in places due to the presence of finely disseminated pyrrhotite.

The hornblende gabbro is represented as a series of dykes (or sills) which intrude the andesitic volcanics and elsewhere the sediments. Generally the gabbro is chilled to some extent near the contact with the andesite, where the gabbro becomes distinctly finer grained and often more highly altered. The chill margin may become a fine grained, chloritic, black zone where individual crystals are nearly impossible to depict. The coarser gabbro is much easier to distinguish. It is characterized by dark green to black, blocky hornblende crystals with a finer grained mafic ground mass. Often the large hornblende crystals are altered to chlorite, although the distinctive crystal habit remains. In the finer grained portions of the dykes further away from the contacts, the hornblende appears to alter to amphibole, yielding numerous blade-like black crystals (uralite). Other alteration products noted include epidote, chlorite and some greenish carbonate. Locally leucoxene can be found, occurring as numerous white flecks throughout the rock. A few of the gabbro outcrops show two distinct directions of jointing; however, joints are not generally found in most of the surface exposures.

Since most of the old trenches on the property have at least been partially filled in, only two exposures of the feldspar porphyry are presently visible. The outcrop near the shaft on claim TB.139350 has several narrow dykes of the porphyry intruding the gabbro. Here the porphyry is rather fine grained and dark grey but much harder than the surrounding gabbro. Although the contacts are difficult to distinguish, the fresh surface shows a marked difference between the two rock types. Further north, in the more central part of the group the feldspar porphyry is much coarser grained, with individual crystals around 1/8 inches in size. The porphyry in this exposure is lighter in colour and weathers whitish. The feldspar porphyry is presumed to be late Algonian in age since it intrudes both the andesitic volcanics and the hornblende gabbro.

Structure:

Structurally, the property lies on an anticline which extends west-northwest across the township. The folding mechanism must approach an isoclinal configuration, since all bedding and schistosity measurements show a very steep dip.

A magnetic survey has been partially completed on the property, and the fault, outlined by Oklend Mines to the south, can be traced across the property by the magnetics. The offset, however, appears to be only nine hundred feet (in plan), displacing the west block to the north with respect to the east block.

The intrusives (both the gabbro and the feldspar porphyry) are disconformable with the volcanics and the sediments. They pre-date the faulting regime and appear to postdate the phase of folding. The lack of an asymmetrical relationship with the inferred axial plane, and the small amount of variation in joint determinations tends to suggest that the intrusives postdate the folding phase. The intrusives may be related to the granitic mass eastward in Croll Township.

The structural and depositional history of the property thus becomes:

Pleistocene Glaciation
- - - Large Unconformity - - -
Phase of Faulting
Keweenaw Diabase (not on the property)
- - - Unconformity - - -
Late Algoman Feldspar Porphyry)
Early Algoman Gabbros and Diorites), Granitic
Phase of Folding), magma to east?
Timiskaming Sediments (north and south of property)
- - - Unconformity - - -
Keewatin Lavas - Andesitic

Economic Geology:

The previous exploration of the area would tend to suggest that the prospects for gold would not be economically feasible. The

more recent interests in base metals, however, may prompt further exploration in the area.

The occurrences of base metals in small amounts along quartz-carbonate stringers and intrusive contacts may indicate the presence of a source in the area with some base metal content. Drilling has also revealed the existence of minor amounts of base metals in the andesitic volcanics.

Results to date, including previous work filed, warrants further exploration before any final conclusions may be drawn.

Conclusions:

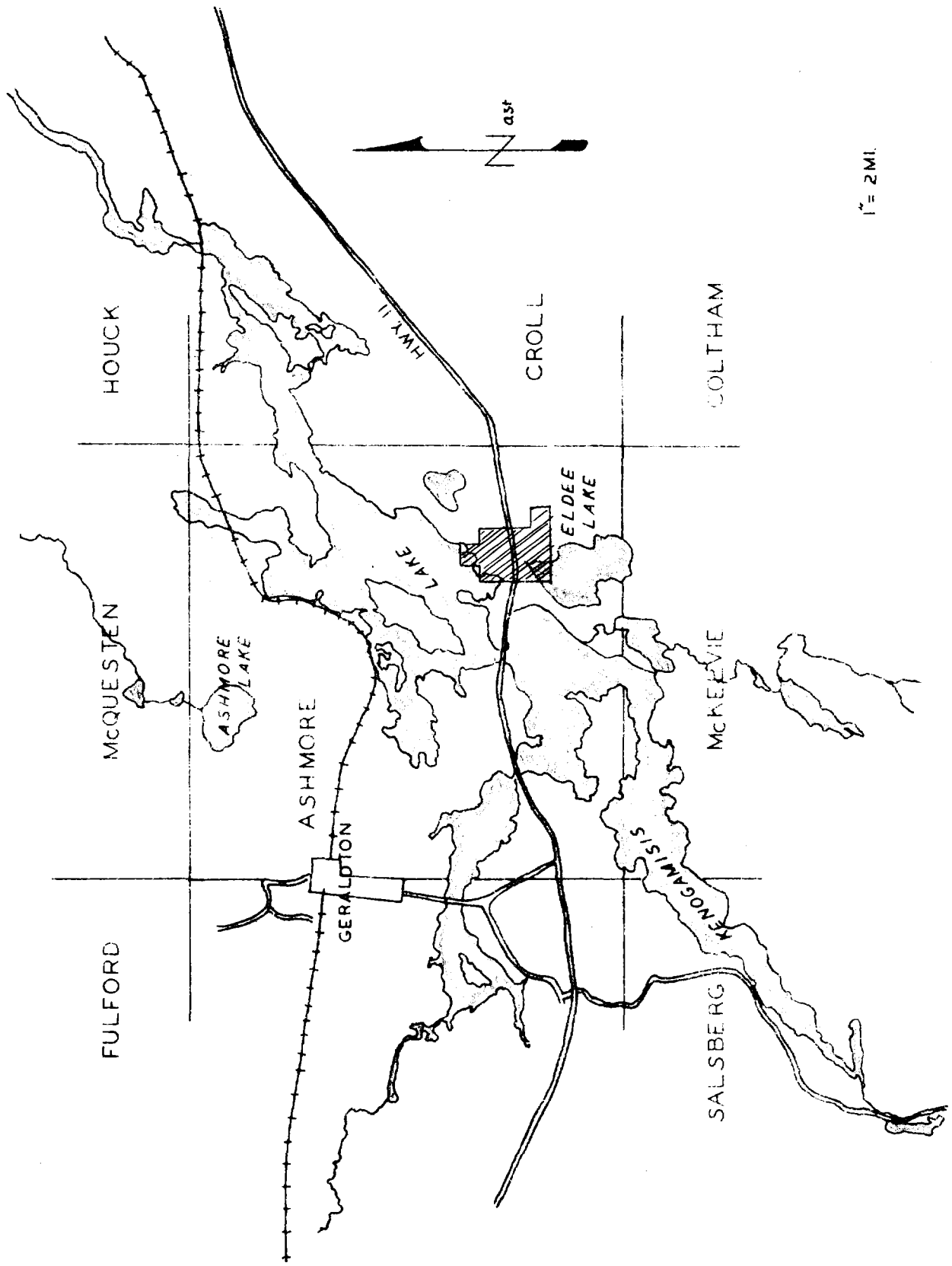
Since the area was previously examined as a gold prospect, exploration was concentrated on the sedimentary horizons to the south and little attention was paid to the volcanic zone. Intersections of sulphides were mentioned in many of the drill logs, but no assays were recorded. These zones would definitely be anomalous geochemically, but whether ore grade values could be obtained is difficult to assess.

The present state of the property indicates that magnetic and electromagnetic surveys should be completed before any final assessment. At that stage, a follow-up drilling programme would be organized to test geophysically anomalous zones.

Bibliography:

1. Sixtieth Annual Report of the Ontario Department of Mines, Volume 60, part 5; "Ashmore Township", 1951
...H.C.Horwood, E.G.Pye.
2. Forty-fourth Annual Report of the Ontario Department of Mines, Volume 44, part 3; "Little Long Lac Gold Area", 1935
...E.L.Bruce.
3. Assessment files - Resident Geologist.

Dale R. Alexander
HOLLINGER MINES LIMITED
TIMMINS, ONTARIO



KEY MAP



42E10NW0156 2.668 ASHMORE

900

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.

ASSESSMENT WORK DETAILS

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

Township or Area Ashmore Township

Chief Line Cutter Ben Nelson and A. Wilson
Name

Box 694, Geraldton, Ontario
Address

Party Chief D. R. Alexander
Name

c/o Hollinger Mine, Timmins, Ont.
Address

Consultant _____
Name

Address

Geological field mapping by D.R. Alexander & R.E. Kirkbride
Name

c/o Hollinger Mines Limited,
Timmins, Ontario.
Address

COVERING DATES

Line Cutting June 10-30, 1970 and July 5-20, 1971

Field August ¹⁸ 16-23, 1971
Instrument work, geological mapping, sampling etc.

Office November 1-10, 1971

INSTRUMENT DATA

Make, Model and Type _____

Scale Constant or Sensitivity _____
Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count _____

Number of Stations Within Claim Group _____

Number of Readings Within Claim Group _____

Number of Miles of Line cut Within Claim Group 13.7

Number of Samples Collected Within Claim Group _____

CREDITS REQUESTED

20 DAYS
per claim

40 DAYS
per claim

----- Includes
(Line cutting)

Geological Survey

Geophysical Survey

Show
 Check ✓

Geochemical Survey

DATE Nov. 11, 1971 SIGNED _____

W. Hansen

HOLLINGER MINES LIMITED

Performance and coverage credits do not apply to airborne surveys

TIMMINS, ONTARIO

SPECIAL PROVISION CREDITS
 for
 PERFORMANCE & COVERAGE

MINING CLAIMS TRAVERSED
 List numerically

~~TB. 139350 - 20 days~~

~~139351 - 20 "~~

~~139352 - 20 "~~

229616 - 40 " ✓

229617 - 40 " ✓

229618 - 40 " ✓

230337 - 40 " ✓ OK

230338 - 40 " ✓

230339 - 40 " ✓

238726 - 40 " ✓

238727 - 40 " ✓

~~238728 - 40 "~~

239955 - 40 " ✓

TOTAL CLAIMS 10
~~12~~

Send in Duplicate to:

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

RECEIVED

NOV 12 1971

PROJECTS SECTION

If space insufficient, attach list

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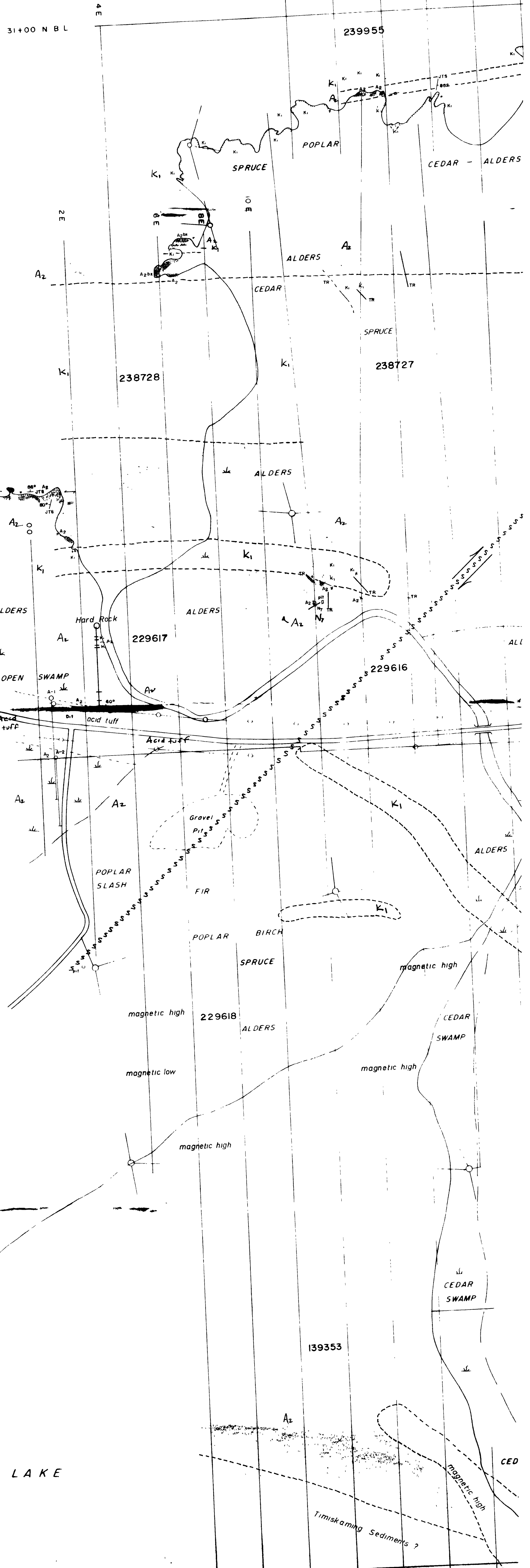
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If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

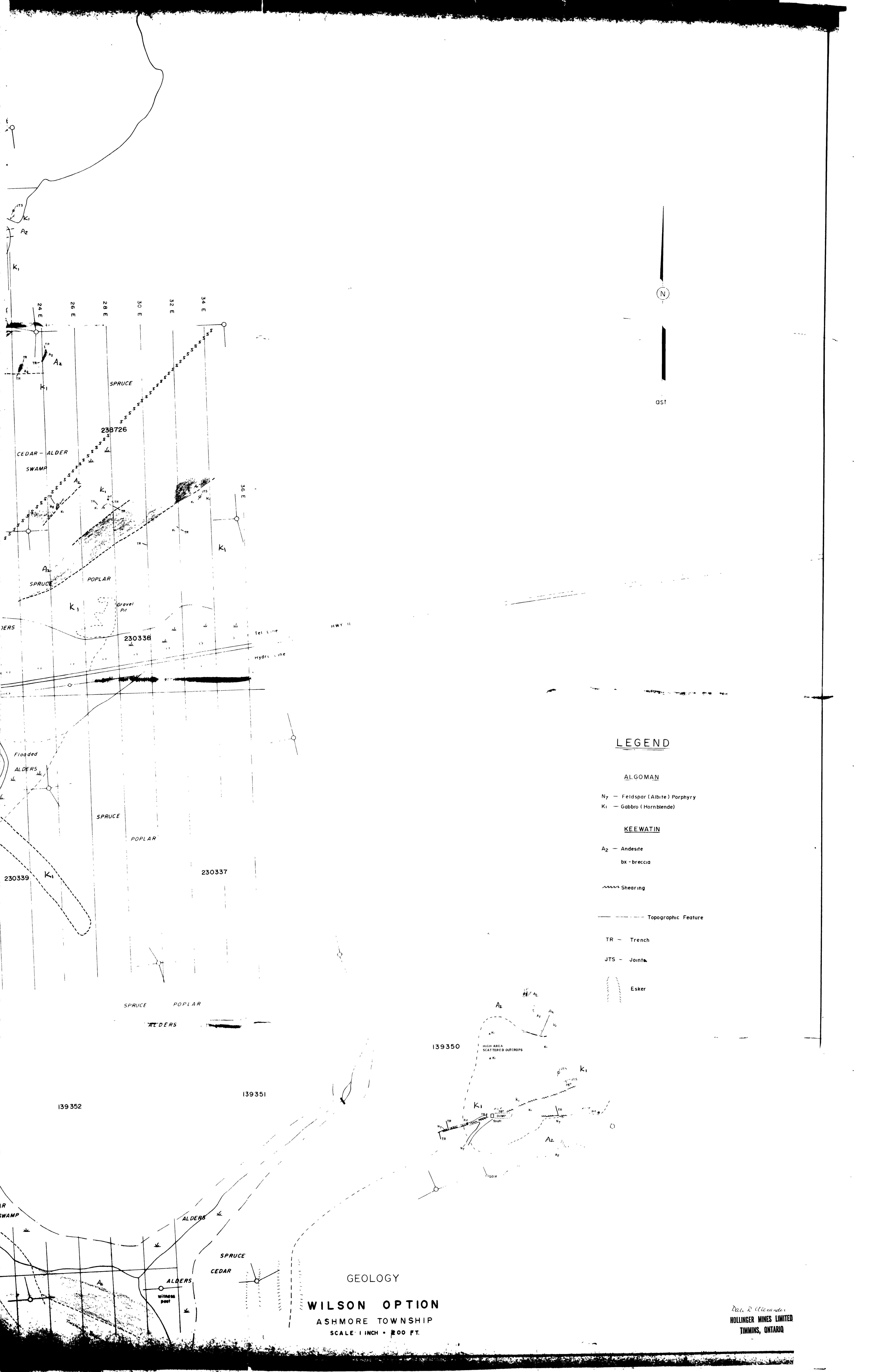
KENOGAMISIS LAKE

12 E 14 E 16 E 18 E 20 E 22 E



KENOGAMISIS LAKE

ELDEE LAKE



LEGEND

ALGOMAN

- N₇ - Feldspar (Albite) Porphyry
- K₁ - Gabbro (Hornblende)

KEEWATIN

- A₂ - Andesite
- bx - breccia

~~~~~ Shearing

----- Topographic Feature

TR - Trench

JTS - Joint

~~~~~ Esker

GEOLOGY

WILSON OPTION
 ASHMORE TOWNSHIP
 SCALE 1 INCH = 200 FT.

Don R. Alexander
HOLLINGER MINES LIMITED
 TIMMINS, ONTARIO

KENOGAMISIS LAKE

12 E 14 E 16 E 18 E 20 E 22 E

31+00 N B L

239955

K₁ CEDAR - ALDER:

POPLAR

SPRUCE

ALDERS

CEDAR

SPRUCE

238728

238727

229617

229616

0+00 B L

Gravel Pit

POPLAR SLASH

FIR

POPLAR

BIRCH

SPRUCE

229618

ALDERS

magnetic high

magnetic high

magnetic low

magnetic high

CEDAR SWAMP

CEDAR SWAMP

CEDAR SWAMP

Timiakaming Sediments?

CED

magnetic high

139353

A₂

CED

magnetic high

CED

magnetic high

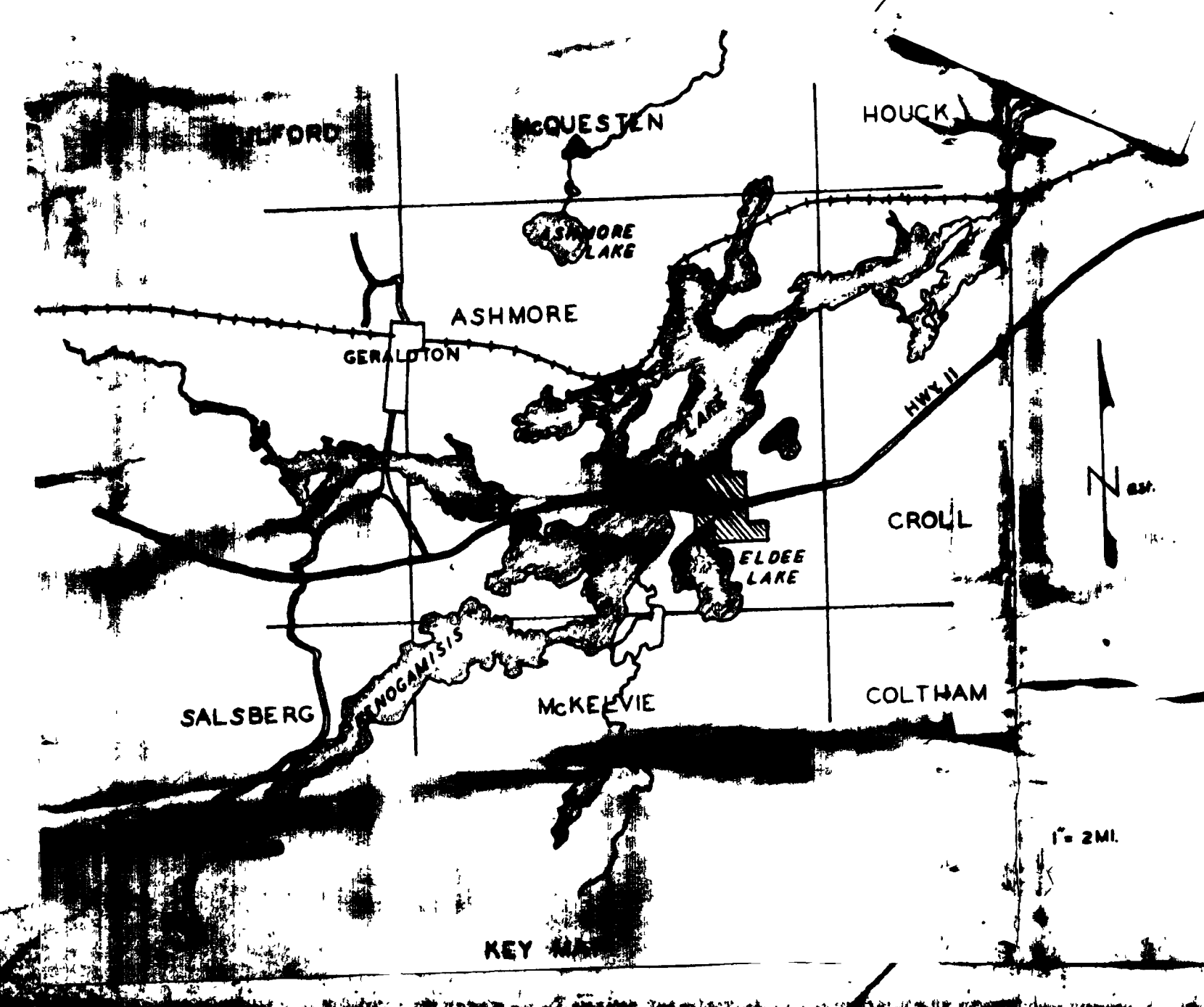
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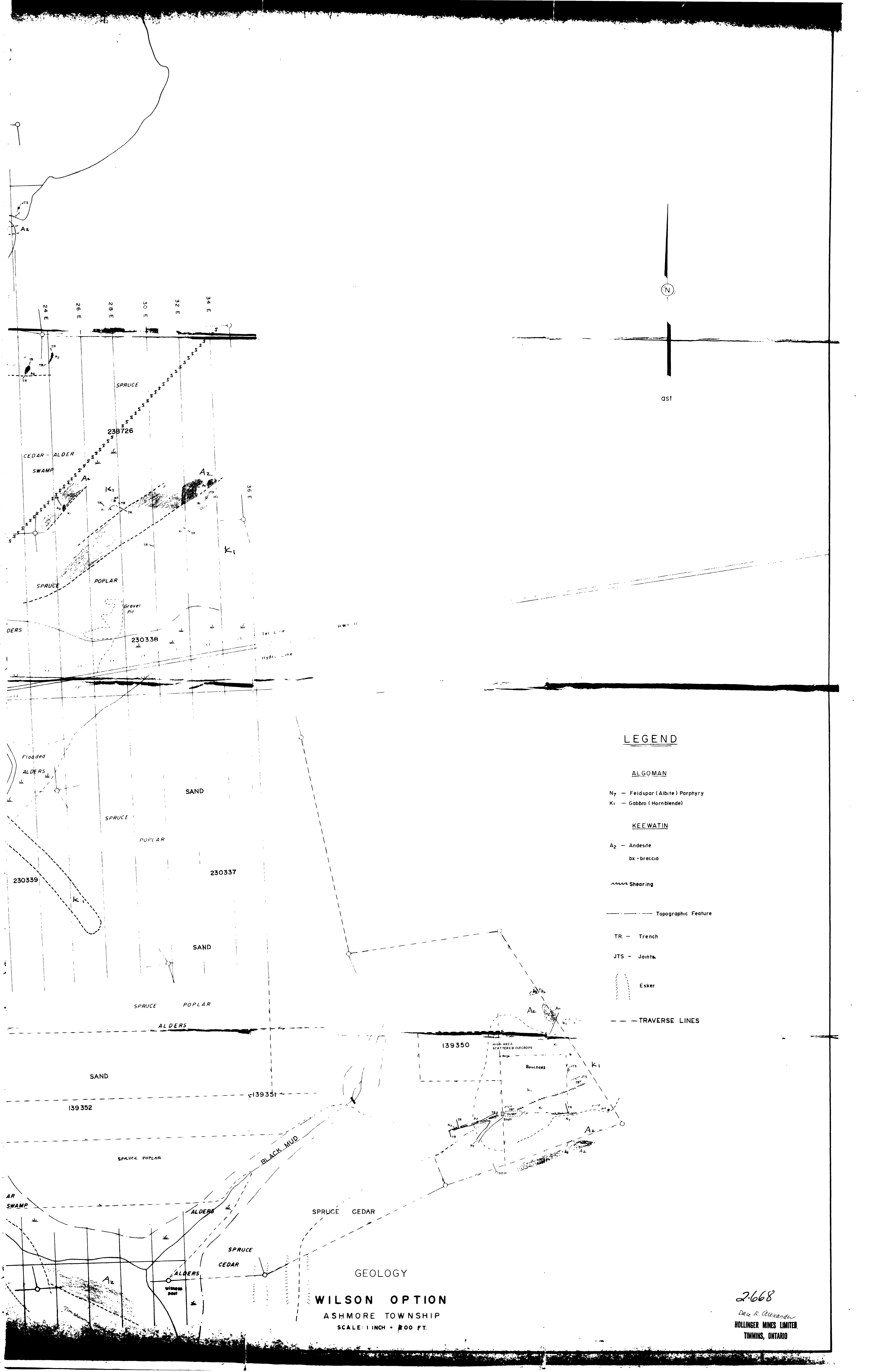
magnetic high

38+00 S. B.L.

KENOGAMISIS LAKE

ELDEE LAKE





N

051

LEGEND

ALGOMAN

- N₇ - Feldspar (Albite) Porphyry
- K₁ - Gabbro (Hornblende)

KEEWATIN

- A₂ - Andesite
- bx - breccia

- Shearing
- Topographic Feature
- Trench
- Joints
- Esker
- TRAVERSE LINES

GEOLOGY
WILSON OPTION
 ASHMORE TOWNSHIP
 SCALE: 1 INCH = 200 FT.

2-668
 Don R. Alexander
 HOLLINGER MINES LIMITED
 TIMMINS, ONTARIO