

GEOLOGICAL SURVEY

OF

CHEVRON CANADA EXPLORATION

TWEED PROJECT

GRIDS 1, 4, 6, 7

RECEIVED

JUL - 7 1989

MINING LANDS SECTION

June 30, 1989.

By E. van Hees, M.Sc.

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TABLE OF CONTENTS

		<u>Page</u>
I	Introduction	1
II	Property 1. Location & Local Services 2. Topography 3. Status	1 1 2
III	History of Exploration	2
IV	Geology 1. Regional 2. Local	3 4
V	Recent Work	4
VI	Results	4
VII	Conclusions and Recommendations	4
	Certificate	6

I INTRODUCTION

E. H. van Hees Geological Services was commissioned by Mr. Peter Cashin of Chevron Canada Exploration in Toronto, Ontario to conduct a geological survey of the company's Tweed Project located south of Detour Lake, Ontario. More specifically, the areas to be surveyed were those parts of the property covered by cut grids 1, 4, 6, and 7.

Previous experience by this author with the Tweed project supervising diamond drilling in the later part of 1988, had indicated that metavolcanic, metasedimentary and granitic rocks were present in the general area. Experience with the diamond drilling program had also indicated that the area was covered by a thick varved clays or esker material. Outcrop exposure was not encountered during the spotting of the various drill holes on the Tweed Property.

II PROPERTY

1. Location & Local Services

Location of the Chevron Canada Exploration property is shown in Figure 1 and 2.

The Tweed property is located in Tweed and Blakelock Township. The property itself, in part, staddles the all weather Detour Lake Mine road (Hwy. 652) and is located some 75 kilometres southwest of the mine and some 90 kilometres northeast of the town of Cochrane.

Grids 1, 4, 7 are located in Tweed Township and grid 6 is in Blakelock Township.

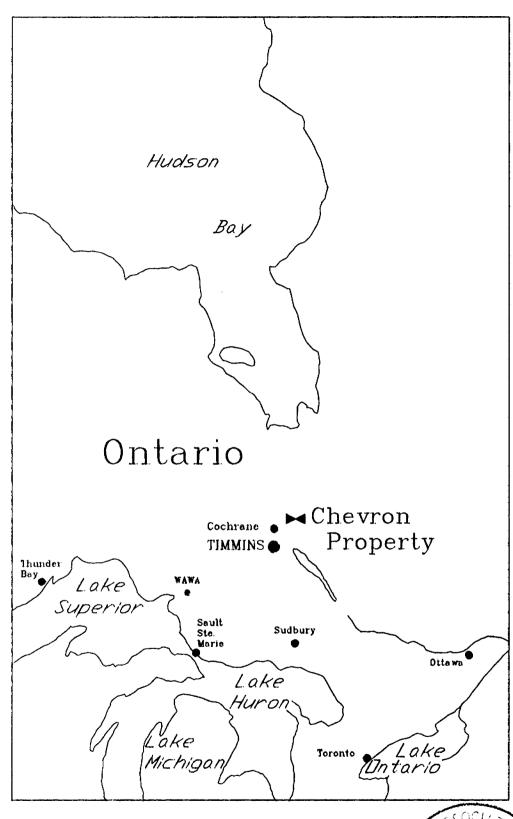
Labour and housing may be available in the town of Cochrane or the City of Timmins, a major mining center in northeast Ontario.

2. Topography

Topography of the property is moderate with a maximum variation in elevation of 30 metres at most. The bulk of the property is flat with elevation variations occurring near eskers, found throughout the area, as well as near the various large streams and rivers.

Rock Exposures are non-existent on the property due to the deep cover of glacial lake clays or esker deposits. Diamond drilling on the property, filed with the resident geologist, indicates that overburden depth range up to 70 metres.

A small portion of the terrain appears to be well drained near the eskers and major streams and rivers that traverse the property. The balance of the property is covered by muskeg swamp.



Regional Property Location

3. Status

The Chevron Canada Exploration property consists of 298 and 87 contiguous claims in Tweed and Blakelock Townships respectively as shown on Figure 2. They are located in the Larder Lake Mining Division, in the District of Cochrane. The claims occur in unsurveyed townships and there are therefore no lot. concession or township boundary lines.

The status of the individual claims has not been checked at the mining recorders office. The fact that these claims are Chevron claims is based solely on the word of Mr. Peter Cashin, the Chevron project geologist in charge of the Tweed project. The due date for the various claims has likewise not been checked.

III HISTORY OF EXPLORATION

Exploration of the Tweed and Blakelock claim blocks was first undertaken in 1967 by Texas Gulf Sulphur Company. The work filed for assessment indicates that 5 diamond drill holes were drilled by Texas Gulf. Three of these were in the area of claims L 860983 and 860984 and one on L 861017. These encountered disseminated chalcopyrite in various locations throughout the core.

Exploration work by Movado Mines followed in 1968. Movado completed magnetic and VLF surveys and followed up by drilling 2 - 500 foot holes. These encountered some low copper and zinc values on the claims located south of the area where the Floodwood River narrows.

Hudson Bay Exploration and Development Company Ltd. carried out work on the same area in Tweed as previously explored by Movado. An airborne survey was completed and followed up on with an EM17 survey. This delineated two conductors on the southern edge of their property.

Noranda Exploration Co. Ltd. commenced working in the area in 1975 on two small claim blocks located south of the area worked by Movado. Magnetic and VLF-EM surveys were run. These were interpreted as indicating the presence of numerous graphite and Banded Iron Formations. The maps filed for assessment do not appear to substantiate this conclusion.

Further work was filed by Hudson Bay in 1977 on ground in both Blakelock and Tweed Townships. EM-17 and Maxmin surveys were run on the claim blocks resulting in the location of one weak EM anomaly.

Utah Mines Ltd. began working a significant portion of the southeast corner of Tweed township in 1982. Magnetic, VLF and Maxmin surveys were run over much of the area. Anomalies that were encountered were attributed to diabase dikes or Banded Iron Formations.

Glen Auden Resources Ltd. were the next explorers in the area in 1986. They flew an airborne Geophysical survey, over the properties currently held by Chevron Canada Exploration, which included magnetic, VLF and resistivity surveys. The report filed described the results but did not discuss the cause of the anomalies.

Chevron Canada Exploration were the most recent group to explore in the area. A diamond drill program was completed on their properties located in the southeast corner of Tweed and Blakelock Township in late 1988. Metavolcanic nd Metasedimentary rocks were encountered along with granitic intrusions.

IV GEOLOGY

1. Regional Geology

The Tweed property is located in the north central part of the archean aged Abitibi Greenstone belt. This belt of rocks is part of the Superior Province of the Canadian Shield. Rocks consist primarily of metavolcanic and metasedimentary units which have in places been intruded by mafic, intermediate and /or felsic bodies. Greenschist facies metamorphism has affected most of the area with minor amphibolitic zones being present as contact aureoles around some intrusions.

Volcanic rocks vary from mafic to intermediate in composition and generally occur as massive or pillowed flows, or as pyroclastic breccias. Lesser amounts of intermediate to felsic metavolcanics are present and have generally been deposited as tuffs or breccias.

The metasedimentary rocks occur as interbedded greywacke, tuff, siltstone, argillite and conglomerate. Banded Iron Formations of sulphide or oxide facies occur as interbedded exhalative units between volcanic flows.

Intrusions of granitic, gabbroic, and dioritic dikes, stocks, and batholiths are common in the volcanic and sedimentary rocks of the region. All these rocks have been cut by later Precambrian diabase dikes.

Structurally, the area has been folded by at least two periods of deformation, resulting in steeply dipping east trending rocks units. Faulting by major northwesterly trending faults is found throughout the area.

The area is generally of low relief with sparse outcrops. Pleistocene activity has formed a number of features. Most noticeable is the presence of numerous and often large esker deposits that trend north-south throughout the area. The are commonly used to construct roads into an area that once was part of pleistocene lake Barlow-Ojibway. This lake deposited deep and extensive deposits of varved clays which are presently covered to a large degree by muskeg swamps.

Economically significant discoveries of gold have been made in the area by Newmont, Placer Dome and Inco. These discoveries occur in several rock types including iron formation, metavolcanic and metasedimentary units. Strong carbonate, sulphide and silica alteration of these rock types is associated with the introduction of gold.

2. Local Geology

Geology of the area immediately around the property has been described by B.C. Wilson in Open File Report 5231, titled "Geology of the Two Peak Lake Area, Cochrane District, Ontario". This 1977 report was followed closely by a published O.G.S. report with the same title. These reports indicated that the outcrop exposure in the area was minimal. Outcrops found were generally in river and stream beds and occurred infrequently. A notable exception was the area immediately around the two peaks "mountain" area where a substantial amount of outcrop is present. This particular area is located several kilometers southeast of the Chevron property.

The published geological map for Tweed and Blakelock Township indicates that the area is underlain by a combination of east trending mafic metavolcanic and metasedimentary rocks. Their presence appears to have been interpreted from airborne geophysical surveys as their is no detail to the geological map and no outcrops indicated on the map.

V RECENT WORK

The program completed in this study consisted of some 125 kilometres of geological mapping on four seperate parts of the Chevron property. Areas mapped included grids 1, 4, 6, and 7. The claims mapped are indicated on both the location and geological maps. Mapping was completed by Ken Stewart of Espanola and Johanne Gravel of Montreal under the supervision of Ed van Hees. All lines on the accompanying maps were walked and the vegetation type, soil type, size of trees, topography, bearing of the lines and claim line and post locations recorded. Soil and tree types were recorded every 25 metres, bearing of the lines every 300 metres, and claim lines and posts as they were found.

VI RESULTS

The geological survey of the property did not uncover any outcrops on the four grids surveyed even though careful examination was made of all stream banks and bottoms. The survey did indicate that the area is largely covered by muskeg swamp or eskers. Deep overburden associated with the latter is the probably cause of no outcrop being found.

VII CONCLUSIONS AND RECOMMENDATIONS

Geological mapping of Grids 1, 4, 6, and 7 did not uncover any

outcrops due to the deep overburden deposit by pleistocene rivers and lakes. It is recommended that alternative exploration methods be considered for exploration of the balance of the property as geological mapping may not uncover any significant amount of outcrop.

CERTIFICATE

- I, Edmond H. van Hees, do hereby certify:
 - 1) that I am a consulting geologist and reside at 165 Tamarack Street, Timmins, Ontario.
 - 2) that I am a graduate of the University of Waterloo, 1975, with the degree Honours Bachelor of Science (Earth Science)
 - 3) that I am a graduate from the University of Western Ontario, 1979, with the degree of Master of Science (Geology).
 - 4) that I have practiced my profession full time since 1977 and part time since 1972.
 - 5) that I am a fellow of the Geological Association of Canada.
 - 6) that this report is based on personal knowledge gained through on site involvement in various stages of the exploration of the property over the past 8 months as well as the supervision of this particular program. Information about the exploration history was gathered through a search of the ministry of Northern Development and Mines records in Kirkland Lake, Ontario.

Timmins, Ontario June 30, 1989

Edmond H. Van Hees, M. Sc., F.G.A.C.

E.H. YANTEE







Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

August 28, 1989

Mining Recorder
Ministry of Northern Development and Mines
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2

Mining Lands Section 880 Bay Street, 3rd Floor Toronto, Ontario M5S 1Z8

Telephone: (416) 965-4888

Your File: W8908-217 Our File: 2.12602

Dear Sir:

Re: Notice of Intent dated July 24, 1989 Geological Survey submitted

on Mining Claims L 780704 et al in Tweed and Blakelock Townships.

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan

Provincial Manager, Mining Lands

Mines & Minerals Division

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE

SEP 20 1989

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LS:eb Enclosure

cc: Mr. G.H. Ferguson
Mining and Lands Commissioner
Toronto, Ontario

Chevron Minerals Ltd. 1714-390 Bay Street Toronto, Ontario M5H 2Y2 Resident Geologist Kirkland Lake, Ontario



Technical Assessment Work Credits

July 24, 1989 W8908-217

Recorded Holder								
CHEVRON MINERALS LTD.								
TWEED AND BLAKELOCK TOWNSH	IIP							
Type of survey and number of Assessment days credit per claim	Mining Claims Assessed							
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to credits have been allowed for the following mining da	ims							
not sufficiently covered by the survey	Insufficient technical data filed							
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tification Verifying Benot of Work

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

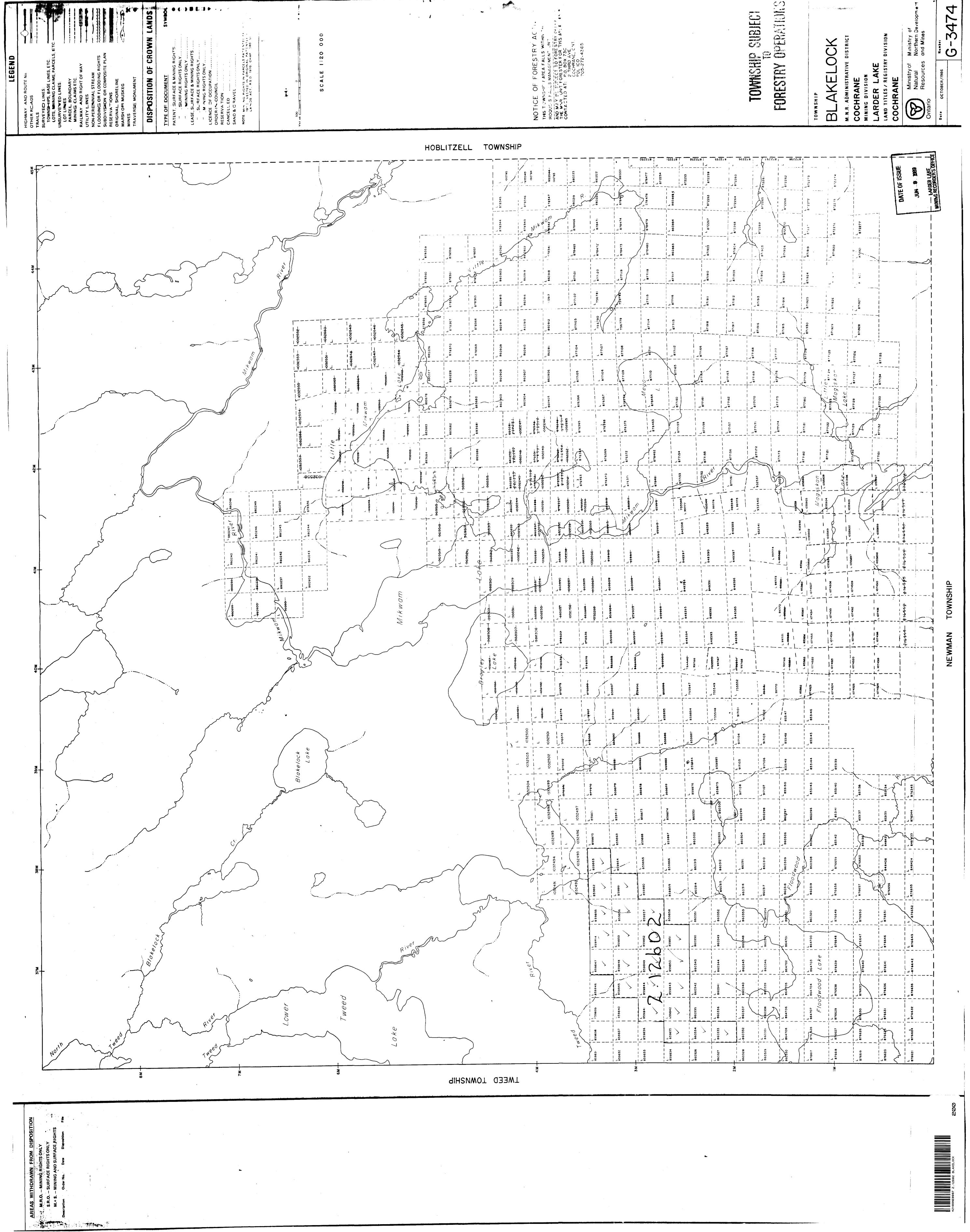
Name and Postal Address of Person Certifying

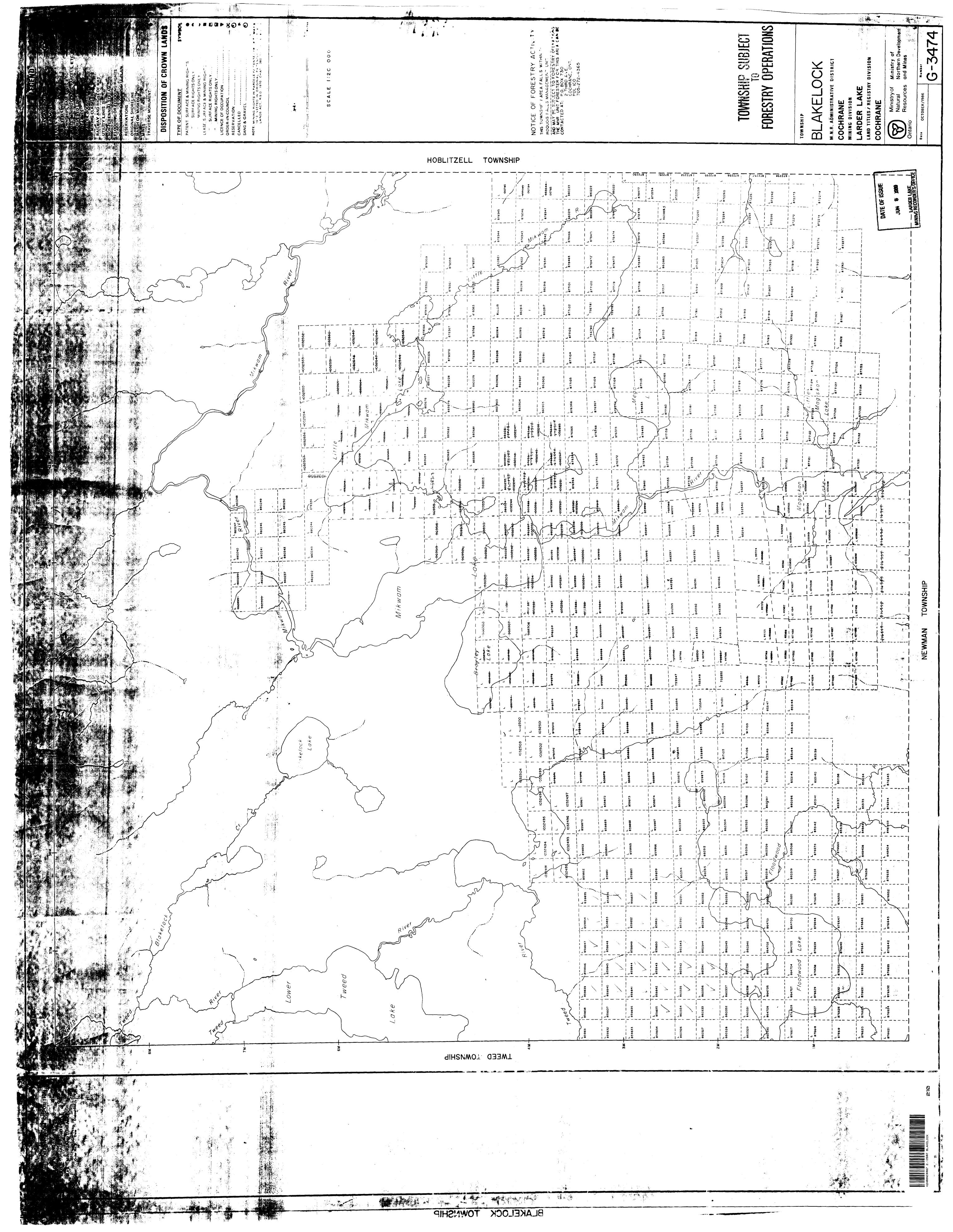
W.E. GLENN, #1714-390 BAY STREET, TORONTO, ONTARIO MSH 2Y2

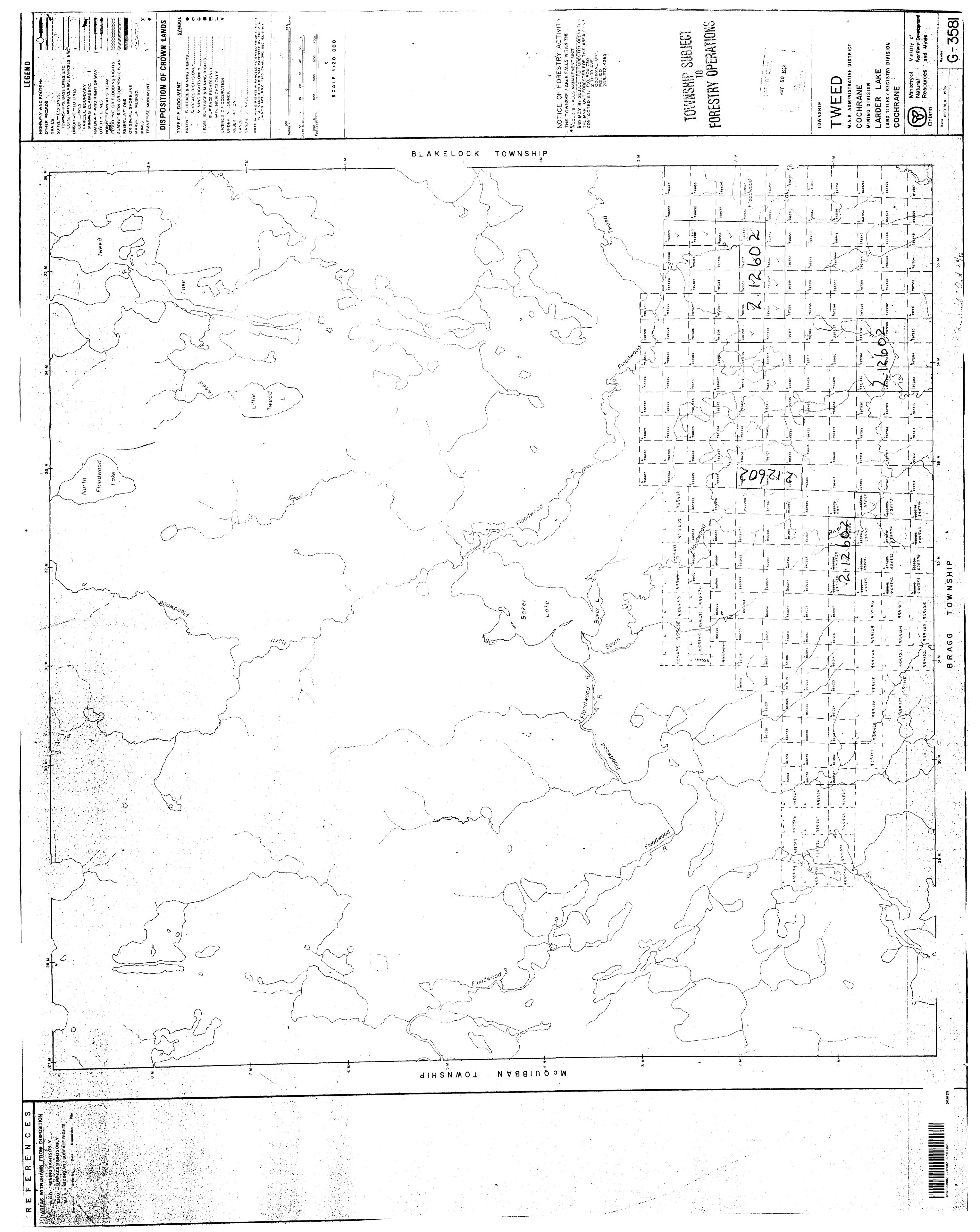
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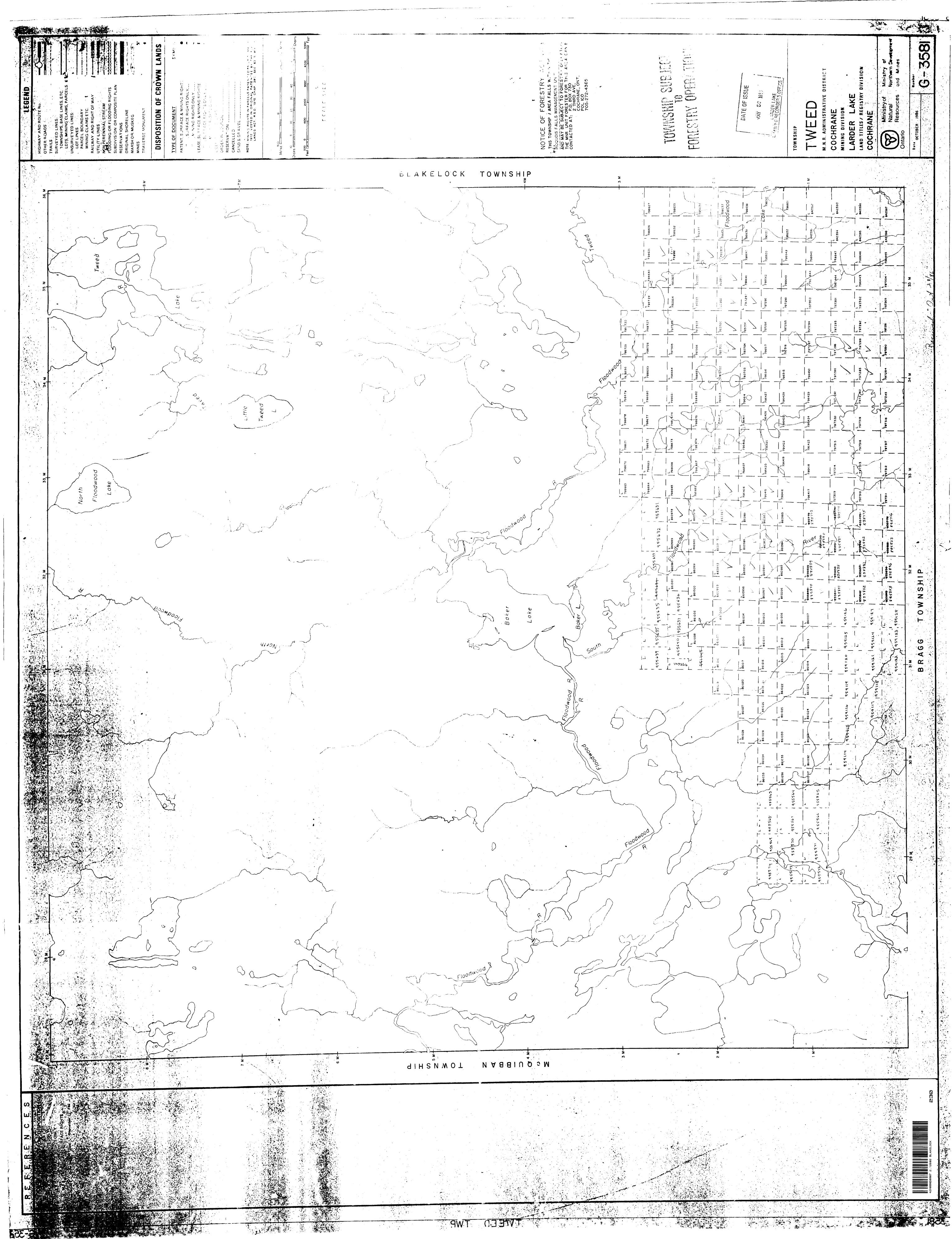
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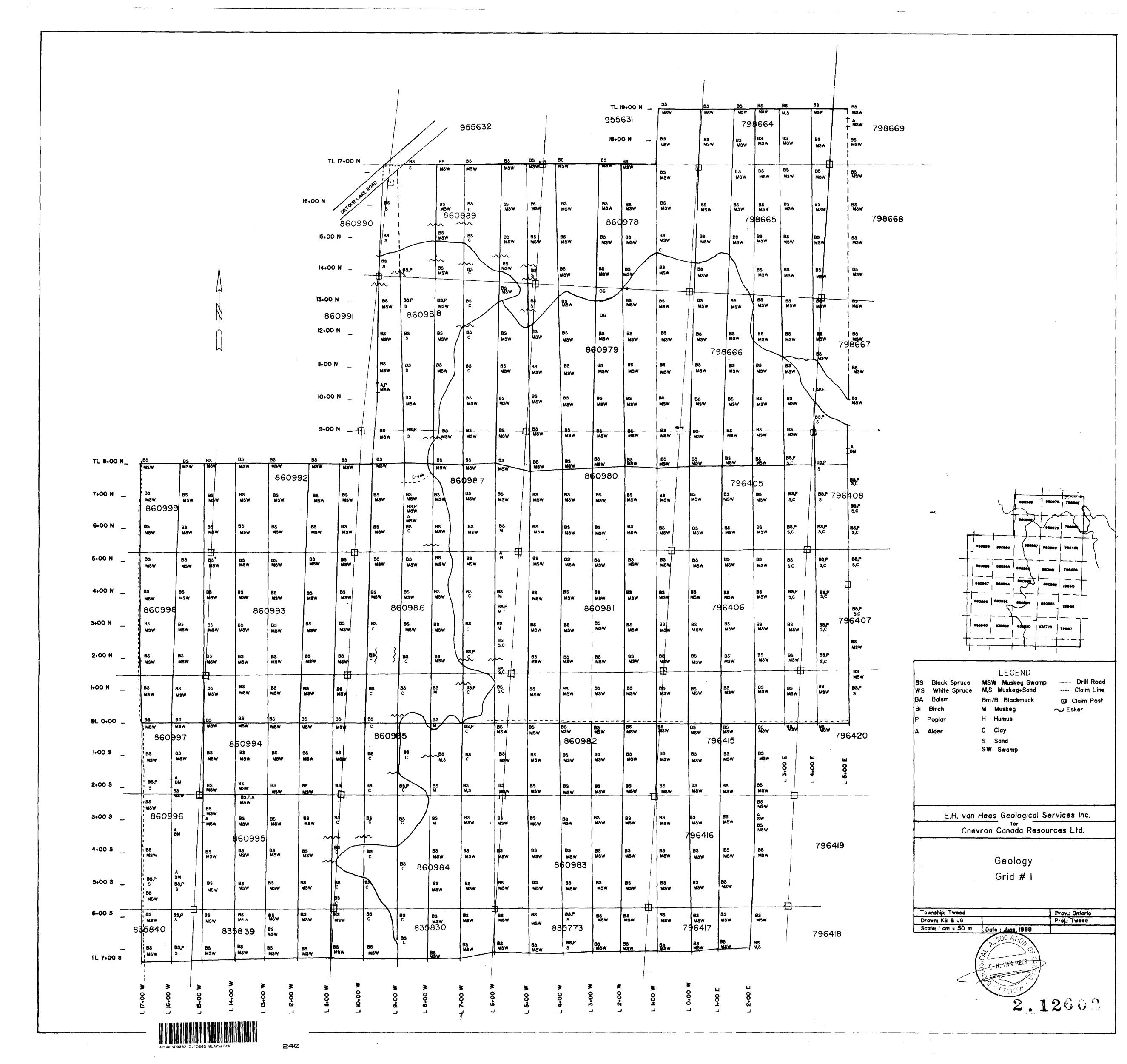
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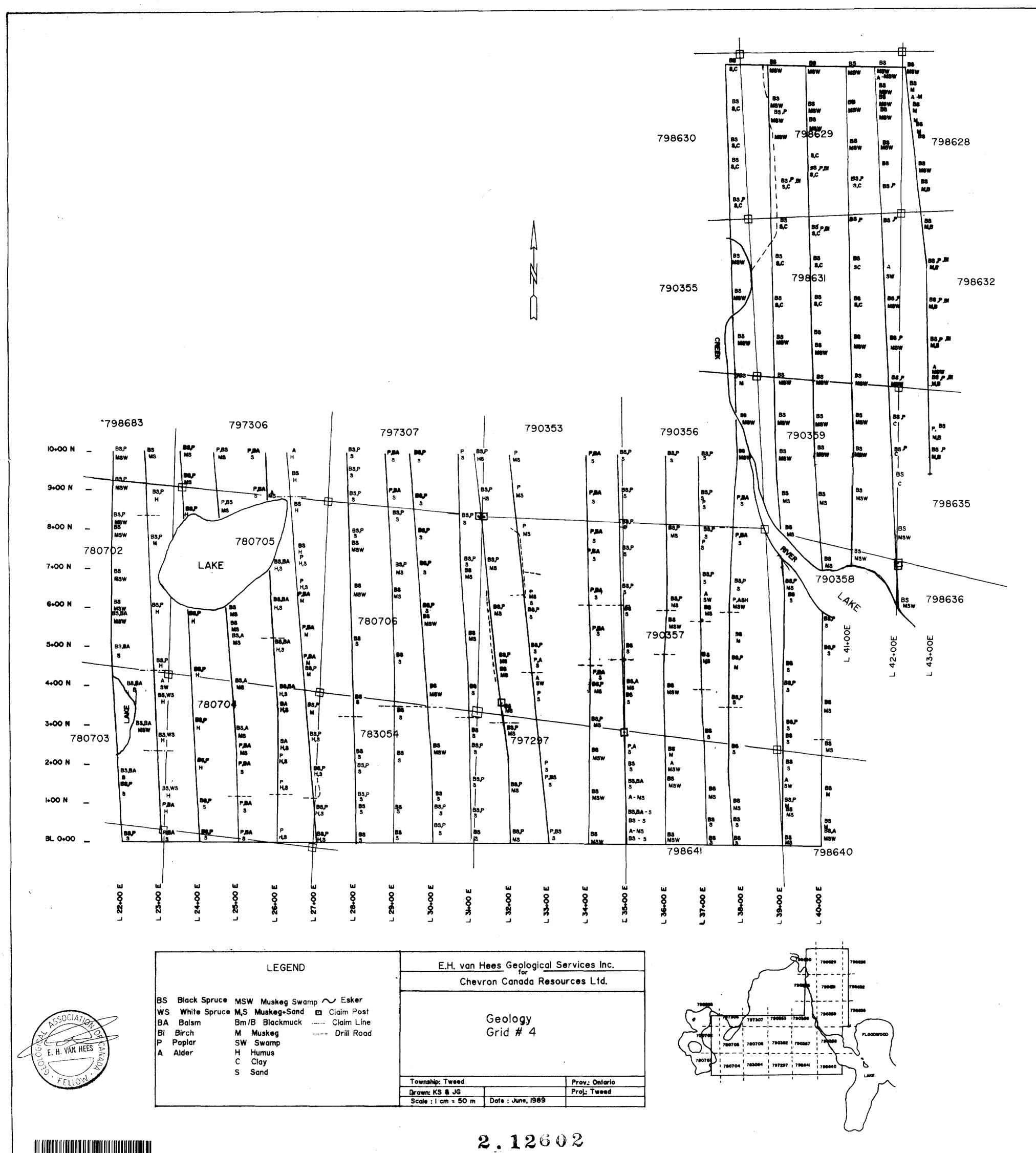


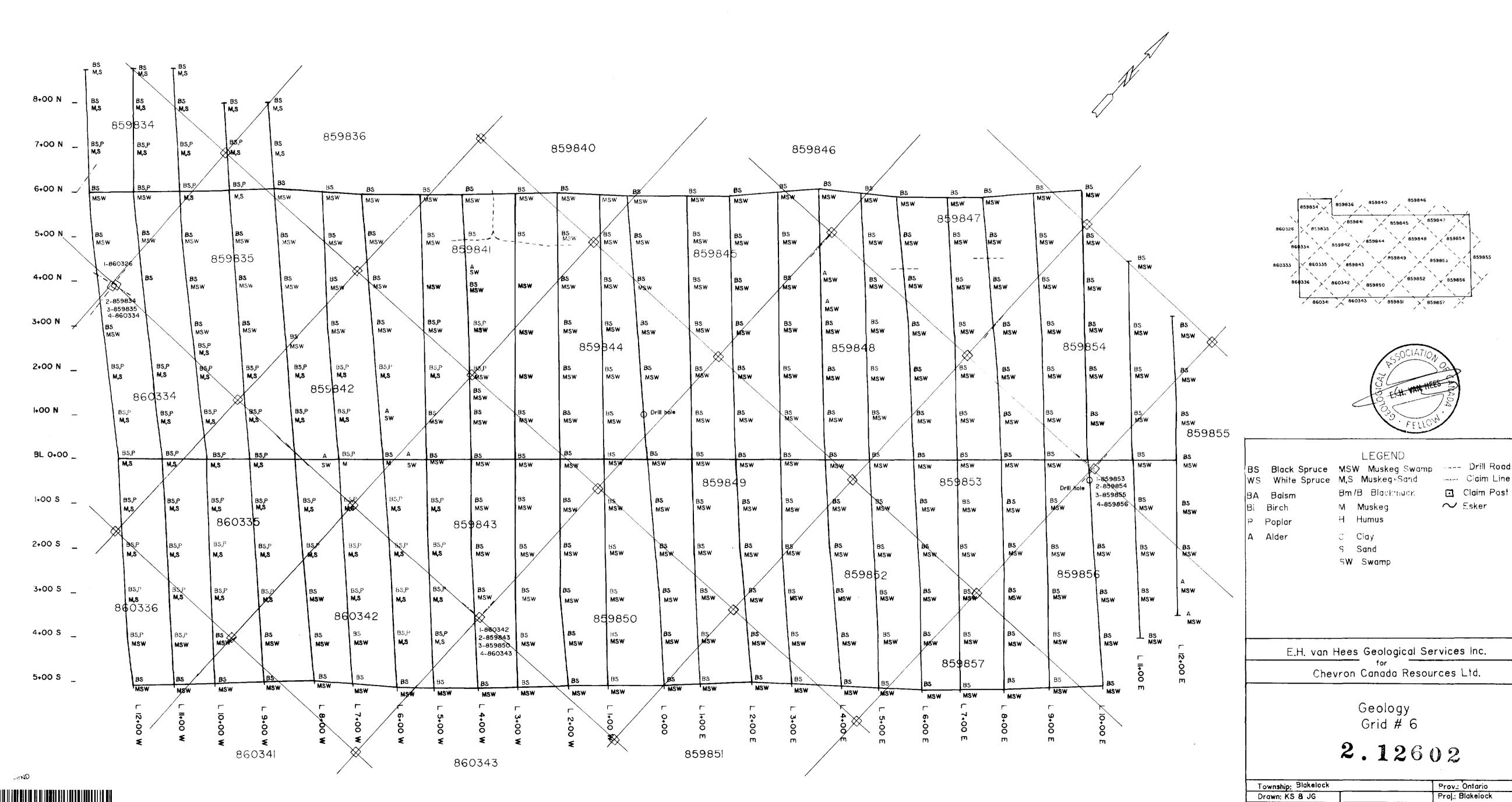






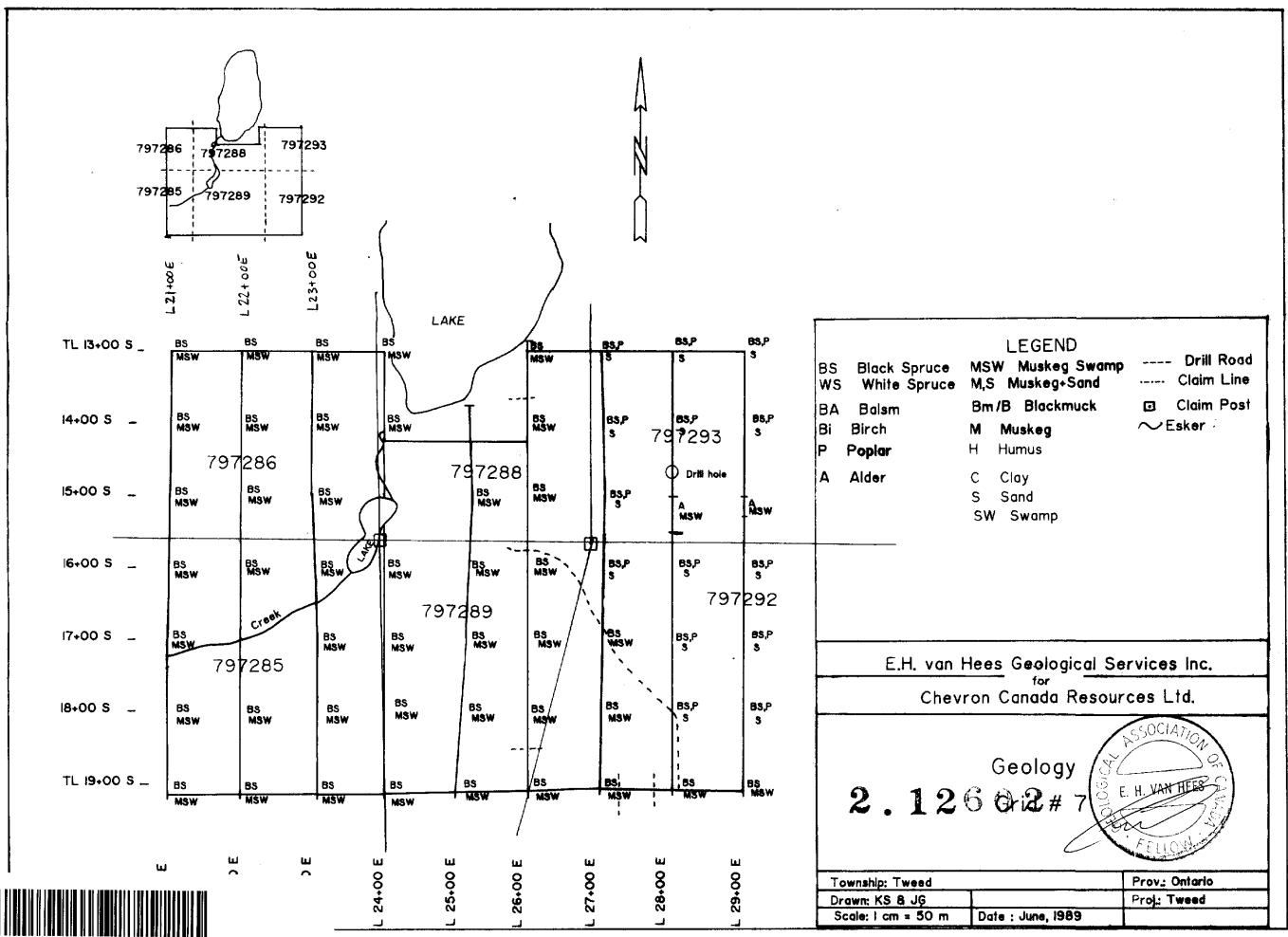






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