MONPRE IRON MINES LIMITED

(Incorporated under the laws of Ontario)

OFFERING OF 180,000 SHARES
without par value
of which 100,000 are underwritten and 80,000 are under option.

The shares offered hereunder are new shares resulting from the re-organization of the Company. See caption INCORPORATION.

No. of Shares Firmly Underwritten	Under Option	Price per Share	Net Proceeds to the Company*	Maximum Offering Price per Share
100,000		25 cents	$ 25,000.00	50 cents
	80,000	30 cents	$ 24,000.00	60 cents
100,000	80,000		$ 49,000.00	

*There is no obligation upon the Underwriter and there is no assurance that any of the optioned shares will be purchased.

Shares of the Company purchased by the Underwriter will be offered for sale from time to time at the prevailing market price not exceeding the maximum offering price per share shown above. These shares will be sold by the Underwriter, or through the registered dealers who may be granted sub-underwritings or sub-options. (See caption PLAN OF DISTRIBUTION.)

PURPOSE OF ISSUE:

To provide funds for the payment of the Company's debts and general working capital. (See caption USE OF PROCEEDS.) No work is contemplated or to be carried out at this time.

Registrar and Transfer Agent
THE PREMIER TRUST COMPANY
19 Richmond Street West
Toronto 1, Ontario

THERE IS NO MARKET.

THESE SECURITIES ARE SPECULATIVE.

No Securities Commission or similar authority in Canada has in any way passed upon the merits of the securities offered hereunder and any representation to the contrary is an offence.

This Prospectus is not and under no circumstances shall be construed as a public offering of shares for sale in the United States of America or in the territories or possessions thereof.

Underwriter
THE CUMCO CORPORATION LIMITED
330 Bay Street
Toronto 1, Ontario

August 7th, 1971

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THE COMPANY

INCORPORATION:

Monpre Iron Mines Limited (hereinafter called the "Company") was incorporated under Part XI of The Ontario Companies Act by Letters Patent dated June 10, 1953, as Monpre Uranium Exploration Limited with an authorized capital of 3,000,000 shares of the par value of $1.00 each. By Supplementary Letters Patent dated November 30, 1956, the name of the Company was changed to Monpre Mining Company Limited and the authorized capital was increased to 5,000,000 shares of the par value of $1.00 each. By Supplementary Letters Patent dated December 11, 1962 the authorized capital of the Company was further increased to 6,000,000 shares of the par value of $1.00 each. By Supplementary Letters Patent dated July 28, 1967 the authorized capital was reorganized by the cancellation pro rata of four of every five issued shares and thereafter increasing the capital to 3,000,000 shares of the par value of $1.00 each. The name of the Company was also then changed to Monpre Iron Mines Limited. As a result of the reorganization of the Company's affairs, for every 5 shares previously held by the shareholders they received 1 share equal in every respect and by Amendment to the Articles of Incorporation dated August 9th , 1971, the issued and unissued shares were changed into shares without par value.

The Head Office of the Company is located at Suite 113, 2 College Street, Toronto 101, Ontario.

HISTORY AND BUSINESS:

The Company was formed in 1953 for the purpose of acquiring, exploring and developing mining properties. Since incorporation, the Company has acquired by purchase, option and staking numerous and various mining properties in the Provinces of Ontario, Quebec and New Brunswick, in the Yellowknife Mining Division of the Northwest Territories, and overseas in Ireland. The total cost to the Company of these properties to date is $190,665.53. The sum of $847,260.00 has been spent on these properties in exploration and development. The Company now holds those properties listed below, the rest of the mining properties having been dropped on the advice of the Company's engineer. During the same period of time the Company has raised the sum of One Million, One Hundred & Sixty-One Thousand, Seven Hundred & Forty-Three Dollars ($1,161,743.00) through the sale of its shares.

The Company has established the existence of at least 100 million tons of material containing approximately 29% iron which can be mined by open pit method (see next heading MATAWIN IRON RANGE). During the past year the Company has been directing its efforts primarily to the economics thereof. In so doing it is negotiating with major companies and potential buyers whereby these persons would finance further tests including feasibility studies.

This offering is being made in order to liquidate normal operating accounts which have accrued during this period and for general corporate purposes. (See caption USE OF PROCEEDS.)

PROPERTIES

MATAWIN IRON RANGE:

The Company holds 133 patented mining claims totalling 3,649 acres which form a continuous strip having an east-west length of nine miles with an average width of 5/8 mile. Of these, 64 claims are situated in Duckworth Township and 69 claims are situated in Laurie Township, both in the District of Thunder Bay, Province of Ontario, and in the Matawin Iron Range. In November 1968 the Company acquired six contiguous unpatented mining claims in Duckworth Township at a cost of $300.00.

This property lies about 4½ miles south of the C.N.R. southern main line and Ontario Highway No. 11 at Shebandowan, a station approximately 60 miles west of Thunder Bay, Ontario.

Present access to the property is by bush roads. A major electric power transmission line runs parallel to the highway and railway in this area, and the Trans-Canada Highway, Trans-Canada Gas pipeline and main line of the Canadian Pacific are all within a few miles of the property.

The titles to these claims, which are in the Thunder Bay Mining Division, Ontario, cover mineral rights only and are registered at the Office of Land Titles for the District of Thunder Bay. 64 of these are registered as Claims Nos. T.B. 77648 to T.B. 77653, both inclusive; T.B. 77655 to T.B. 77678, both inclusive; T.B. 77976 to T.B. 78004, both inclusive; T.B. 78329 to T.B. 78333, both inclusive; Township of Duckworth; 69 of these are registered as Claims Nos. T.B. 77679 to T.B. 77694, both inclusive; T.B. 77697 to T.B. 77712, both inclusive; T.B. 76883 to T.B. 76889, both inclusive; T.B. 76985 to T.B. 76993, both inclusive; T.B. 78302 to T.B. 78307, both inclusive; T.B. 78309 to T.B. 78314, both inclusive; T.B. 78317 to T.B. 78325, both inclusive, in the Township of Laurie. The unpatented mining claims in Duckworth Township are recorded as claims nos. T.B. 132163 to T.B. 132166, both inclusive, and T.B. 132217 and T.B. 132218.

The Company, while known as Monpre Uranium Exploration Limited, became interested in the Matawin Iron Range and early in 1956 staked 408 claims in a strip 4 claims wide and 25 miles long extending from the centre of Horne Township to Greenwater Lake. At the same time the Company purchased seven (7) claims in Laurie Township from William Brayshaw and Joseph Minoletti, both of the City of Thunder Bay, Ontario, for the sum of $5,000.00. During 1956 and 1957 geological mapping and diamond drilling established the fact that the most promising iron deposits held by the Company were on a three-mile strip in the eastern part of Duckworth Township. The presently held claims in Duckworth and Laurie Townships were surveyed and brought to patent in 1957 at a cost of $21,299.42, and 282 of the original block of 408 claims were dropped. The patents of the properties are for renewable 21-year periods with annual rentals of 10¢ per acre. The 408 claims were staked at a cost of $14,839.78.

A total of $447,421.64 has been expended by the Company to date on the exploration and development of these claims.

Diamond Drilling has established the existence of at least 100 million tons of material containing approximately 29% iron which can be mined by open pit methods. Railway and electric power connections are less than ten miles from the deposit.

The deposit has not been developed because it has not been possible until now to develop an economical process to remove the silica gangue from the iron minerals in the "ore" and produce a concentrate acceptable to the iron and steel industry. Research work during the past year has shown that a high grade concentrate can be produced by standard methods but more investigation of marketing and processing is required to establish the economic factors.

It was soon discovered that the iron bearing material was not amenable to beneficiation by the standard methods of magnetic concentration and metallurgical research became the principal area of activity of the Company.

The laboratory-scale experimental work has shown that a marketable produce (68% solidible iron) can be obtained from raw materials containing 29% soluble iron, with a recovery of 63% of the original iron. 3.57 tons of raw material are required to produce one ton of concentrate.

It is not possible to estimate accurately the results of a full scale plant on the basis of laboratory scale tests. Two carloads of ore have been shipped from the property to Lakefield as material for further tests on a larger scale to permit a more accurate estimate of capital and operating costs. At this time, however, management is giving priority to finding markets for the potential production of iron ore pellets. As part of its negotiations any potential buyer will be asked to defray the cost of further tests on this large scale, including the testing of the two carloads of ore shipped to Lakefield.

The Company is following the recommendations of R. A. Halet, Ph.D., P.Eng., Consulting Engineer, as set forth in his report dated the 13th day of February, 1970, a copy of which may be inspected during normal business hours of the offices of the Ontario Securities Commission.

McGREGOR TOWNSHIP:

The Company in 1956 acquired a portion of Mining Location 11z, containing 135 acres more or less, from the Municipality of Shuniah, for the sum of $8,100.00. This property is located in McGregor Township, District of Thunder Bay, Province of Ontario, and was acquired for a future plant site because of its proximity to transportation by water.

GREAT SLAVE LAKE AREA:

The Company owns 22 mining claims situated on the north shore of Lac Duhamel in the Great Slave Lake Area of the Northwest Territories, more particularly described as CO-GO Nos. 1 to 4 inclusive, Grant Nos. 64208 to 11

MONPRE IRON MINES LIMITED

STATEMENT OF DEFERRED EXPENSES

FOR THE FIVE YEARS ENDED JUNE 30, 1966 TO 1970 INCLUSIVE

AND THE TEN MONTHS ENDED APRIL 30, 1971

	Year Ended June 30, 1966	Year Ended June 30, 1967	Year Ended June 30, 1968	Year Ended June 30, 1969	Year Ended June 30, 1970	Ten Months Ended April 30, 1971
Balance, beginning of period	$ 681,545.95	$ 660,060.49	$ 669,240.82	$ 708,665.69	$ 754,857.83	$ 761,066.74
Incorporation and Organization Expenses	-	-	-	985.82	-	-
Exploration and Development:						
Engineering and property reports	1,347.60	-	14,482.10	28,031.40	849.70	933.87
Exploration and test material	100.00	220.43	7,008.27	7,111.62	(29.80)	781.50
Diamond drilling	227.85	-	-	5,055.00	-	-
Technical services and expenses	611.93	1,522.00	-	-	-	-
Employee travelling	-	-	-	408.01	-	-
Licenses and fees	18.00	353.50	-	187.39	-	-
Assays and testing	204.50	850.00	-	-	-	-
Property taxes	690.75	649.13	593.61	1,970.14	2,048.65	1,969.11
	3,200.63	3,595.06	22,083.98	42,763.56	2,868.55	3,684.48
Administrative and General:						
Rent, clerical services and supplies	2,451.80	2,592.57	2,657.50	(955.28)	2,023.29	1,175.00
Telephone and telegraph	32.40	-	-	78.56	20.48	-
Research studies	-	-	-	-	2,292.74	35.00
Share certificates and qualifying capital	100.00	100.00	2,319.75	115.82	3,987.04	269.11
Government fees and licenses	-	100.00	100.00	100.00	100.00	100.00
Provincial taxes	126.67	50.00	30.00	41.00	30.00	100.00
Transfer agents' fees and expenses	542.06	1,020.37	4,848.42	1,411.45	101.87	965.10
Legal and audit	849.48	915.92	5,561.50	1,474.20	325.00	-
Directors' fees	-	-	375.00	-	775.00	-
Directors' expenses	-	-	86.00	-	75.00	-
Shareholders' meetings and reports	600.29	1,029.13	1,534.48	1,138.32	2,416.19	5.88
Drafting, reproduction, maps, etc.	1.03	24.28	402.55	75.45	-	4.77
Bank charges	435.74	50.78	24.75	168.77	137.09	145.99
Sundry	38.83	39.72	39.72	39.72	(29.73)	45.61
Interest earned	-	-	-	(436.10)	-	-
	5,178.30	5,922.77	17,979.67	3,251.91	12,253.97	2,846.46
	689,924.88	669,578.32	709,304.47	755,666.98	769,980.35	767,597.68
Deduct:						
Expenses on abandoned and forfeited mining claims	29,864.39	337.50	100.00	-	8,913.61	200.00
Reduction in prior years' exploration expenses	-	-	538.78	809.15	-	-
	29,864.39	337.50	638.78	809.15	8,913.61	200.00
Balance, end of period	$ 660,060.49	$ 669,240.82	$ 708,665.69	$ 754,857.83	$ 761,066.74	$ 767,397.68

MONPRE IRON MINES LIMITED

STATEMENT OF SOURCE AND USE OF FUNDS

FOR THE FIVE YEARS ENDED JUNE 30, 1966 TO 1970 INCLUSIVE

AND THE TEN MONTHS ENDED APRIL 30, 1971

	Year Ended June 30, 1966	Year Ended June 30, 1967	Year Ended June 30, 1968	Year Ended June 30, 1969	Year Ended June 30, 1970	Ten Months Ended April 30, 1971
Source of Funds:						
Sale of capital stock	$ -	$ -	$ 91,712.50	$ 29,855.00	$ 15,000.00	$ -
Sale of equipment	-	515.00	-	-	-	-
Reduction of prior years' exploration expenses	-	-	538.78	809.15	-	-
	-	515.00	92,251.28	30,664.15	15,000.00	-
Use of Funds:						
Advances to other mining companies	2,314.69	15.00	-	-	-	-
Purchase of mining claims	-	-	-	300.00	-	-
Incorporation and organization expenses	-	-	-	985.82	-	-
Exploration and development expenses	3,200.63	3,595.06	22,083.98	42,763.56	2,868.55	3,684.48
Administrative and general expenses	5,178.30	5,922.77	17,979.67	3,251.91	12,253.97	2,846.46
	10,693.62	9,532.83	40,063.65	47,301.29	15,122.52	6,530.94
Increase (decrease) in working capital	(10,693.62)	(9,017.83)	52,187.63	(16,637.14)	(122.52)	(6,530.94)
Working capital, (deficit) beginning of period	(23,490.95)	(34,184.57)	(43,202.40)	8,985.23	(7,651.91)	(7,774.43)
Working capital, (deficit) end of period	$(34,184.57)	$(43,202.40)	$ 8,985.23	$ (7,651.91)	$ (7,774.43)	$(14,305.37)

Schedule I

MONPRE IRON MINES LIMITED

EXPLORATION AND DEVELOPMENT EXPENSES BY PROPERTIES

FOR THE FIVE YEARS ENDED JUNE 30, 1966 TO 1970 INCLUSIVE

AND THE TEN MONTHS ENDED APRIL 30, 1971

	Year Ended June 30, 1966	Year Ended June 30, 1967	Year Ended June 30, 1968	Year Ended June 30, 1969	Year Ended June 30, 1970	Ten Months Ended April 30, 1971
Matawin Iron Range	$ 1,583.50	$ 3,539.54	$ 22,101.98	$ 42,576.17	$ 2,732.60	$ 3,684.48
McGregor Township	39.65	37.52	-	176.89	135.95	-
Walker Township	-	3.00	(3.00)	3.00	-	-
Sothman Township	1,477.48	15.00	(15.00)	7.50	-	-
Prospecting and general	100.00	-	-	-	-	-
Total, Statement IV	$ 3,200.63	$ 3,595.06	$ 22,083.98	$ 42,763.56	$ 2,868.55	$ 3,684.48

MONPRE MINING COMPANY LIMITED

GEOLOGIC REPORT

on the

MATAWIN IRON PROPERTY

by

M. E. Morrison and Michael Ogden

Toronto, Ontario.
January 23rd, 1958.

MONPRE MINING COMPANY LIMITED

Matawin Iron Property

INTRODUCTION:

During the summer of 1957, a geologic mapping program was conducted on the eastern half of the ground held by Monpre Mining Company Limited in the Matawin Iron Range of Ontario. This program was begun in late May and terminated in early December. It covered 157 claims extending from the Shebandowan River on the eastern end of the property to patented claims held by other interests two miles west of Gold Brook. The area is approximately 11 miles in length and averages 4 claims in width.

The purpose of the investigation was to obtain information on the geology and structure, with emphasis on the search for structural situations favourable to concentration or emplacement of hematite orebodies.

Geologists employed on the survey were M. E. Morrison, W. A. Curle, and R. D. Lawrence. Geological assistants employed at various times were C. E. Anderson, D. Arnold, P. Broadhurst, P. Campbell, A. McDevitt, S. Reed, and R. Trahan.

LOCATION AND ACCESS:

The Matawin iron property is located west of Fort William, Ontario, in the Shebandowan-Greenwater Lake area. The property consists of 410 claims extending from the Shebandowan River, near its confluence with the Matawin River, to Greenwater Lake which is approximately 25 miles to the west.

Access to the property is gained by travelling west from Fort William on Highway 17 for 35 miles to Makinen's Store,

then travelling south for approximately 2½ miles on a secondary road to Shabaqua, a small town located on the C.N. Railroad. From Shabaqua the road continues for approximately 3 miles to the south, ending at Sam Young's farm on the Matawin River, where the eastern end of the main, contiguous group of claims is located.

Access to the 14 claims near the confluence of the Matawin and Shebandowan Rivers may be gained by following the railroad for 3 miles to the south-east from Shabaqua.

Another means of access to the property is by bush road from the town of Shebandowan, located on the Atikokan highway. This road begins at the southern end of the dam across Lower Shebandowan Lake and continues south for 7 miles, crossing the property along the northern branch of Gold Brook.

CLAIMS MAPPED:

During the course of the project 157 claims were mapped whose numbers are as follows:

Patented			Unpatented	
✓TB 77643 - 77678 incl.	36		✓TB 76883 - 76889 incl.	7
✓TB 77976 - 78000 incl.	25		✓TB 76985 - 76993 incl.	9
✓TB 78329 - 78333 incl.	5		✓TB 77679 - 77718 incl.	30
	66		✓TB 77720 - 77726 incl.	7
			✓TB 78001 - 78004 incl. *	4
			✓TB 78302 - 78325 incl.	24
				91

* Surveyed but as yet unpatented.

HISTORY:

Since the occurrence of iron first became known in the Matawin Range, it has been subject to scrutiny by many different groups. The area was examined by A. P. Coleman in 1894 for the

Ontario Department of Mines, by F. Hille in 1906 for the Mines Branch, Ottawa, and by T. L. Tanton about 1924 for the Geological Survey of Canada. Both public and private companies have explored parts of it during and since that time.

Because of its low-grade and siliceous nature, no extensive efforts toward exploration or development were made up until the time the property was acquired through staking by Monpre Mining Company Limited in 1956. Since that time, a base line has been cut and a dip needle survey carried out at thousand-foot intervals across the strike of the formations under the direction of Bartley, Greer and Associates, consulting geologists of Port Arthur. During 1956 and 1957 Bartley, Greer and Associates supervised a program of 23,400 feet of diamond drilling. Also during 1957 metallurgical tests on the iron were carried out by H. U. Ross.

METHOD OF OPERATION:

Geological Traverses: Geological traverses were run across the property at right angles to the strike of the formations. These traverses varied from 100-foot intervals, where greater detail was desired, to 600-foot or 700-foot intervals in some areas. For the most part, however, the interval was from 400 to 500 feet, and the average for the entire mapped area was approximately 400 feet. These traverses are plotted on the maps.

Aerial photos having a scale of 1,320 feet to the inch were used in traversing. All traverses were paced and distinctive check points noted on the photos as a means of determining the pace interval accurately. The geology plotted on the air photos was then transferred to a 1320 scale base map compiled by the

Department of Lands and Forests.

In the western half of the mapped area the claims had been surveyed for patenting, and there the traverses were based on a 1320 scale base map made from that survey. All traverses falling between the N-S claim lines were tied in with the claim corners whenever a cut line was crossed. A 1000-foot grid was superimposed on the 1320 scale map, and it was photostated and enlarged to 400 scale. Grids of 1000 feet were then drawn on 400 scale plans and tracings were made from the enlarged photostats. In this manner, each 1000-foot grid on the photostat was adjusted beneath the corresponding 1000-foot grid of the 400 scale map and any errors due to distortion on the photostat were corrected during the tracing of information. A numbered and lettered grid system was placed on the final maps to facilitate reference to particular areas having significant lithologic or structural features.

Dip Needle Traverses: Because of the excessive amount of overburden in much of the mapped area, a dip needle survey was made along each of the geological traverses to assist in plotting the location of the magnetic iron bands. An assistant was assigned to each geologist and his duties were the taking of dip needle readings at regular intervals. In areas known to be remote from the iron formations, readings were taken every hundred feet where outcrops were plentiful and there was little or no risk of missing a covered band. In areas where the occurrence of iron was suspected or known, readings were commonly taken at 50 and 25 foot intervals. The intensity of the readings gave useful indications as to the

degree of concentration of magnetite. Where it was desirable to trace out an iron band to determine its extent and whether or not it was pinching out or had been faulted off, traverses were run at 100-foot intervals and readings taken every 25 feet.

The Sharpe dip needles used were set to give a reading of 85 to 95 degrees when traversing over barren greywacke. All the anomalous readings have been plotted on the geologic maps with symbols S, M, or W, as shown in the legend. S (strong) indicates a strongly anomalous area, the figure as read on the dip needle being 120 degrees and greater. (Readings ranged upward to 175 degrees in areas of strongest intensity.) The symbol M (medium) indicates readings of 110 to 120 degrees, or 75 to 65 degrees in the case of negative readings. The symbol W (weak) indicates a reading of 97 to 110 degrees or, with negative readings, 75 to 80 degrees.

As all but a few of the traverses included dip needle surveys, it can be assumed that no major magnetic iron bands exist other than those indicated on the geologic map by outcrop or anomalous symbols.

It will be noted that the dip needle information has been used to assist in plotting the location of the magnetic iron bands on the geologic map in locations where little or no outcrops exist. Traverses over well exposed iron bands showed that this could be done with a very reasonable degree of accuracy, provided the readings were taken at 25-foot intervals. This was the usual practice when crossing a magnetic band.

Weakly anomalous areas were found usually to be due to an interfingering or interbedding of the magnetic black slate with

greywacke or green slate, primarily resulting in a diminution in the amount of iron formation present rather than a marked decrease in the magnetite content of the black slate itself. Therefore, the weakly anomalous zones indicated on the map without outcrops have been shown in dashed brown lines, the colour used to represent the black slate (iron formation).

REGIONAL GEOLOGY:

The mapped area falls almost entirely within a steeply dipping sedimentary belt mapped as the Windigokan series by T. L. Tanton. These sediments are surrounded by the older Keewatin volcanic series, and all rock types are considered to be Archean (Early Pre-Cambrian) in age. Tanton's map shows Post-Windigokan granitic and basic rocks intruding all other rock types in the area.

LOCAL GEOLOGY:

Four sedimentary rock types have been recognized in the mapped area. These are black slate, green slate, grey slate, and greywacke. The iron is contained within the black slate. These rocks are thought to lie over an older quartz-sericite schist which outcrops in the area shown by map sheets 2 and 3; this relationship is discussed below under that rock type.

Intrusive into the sedimentary series are minor small dykes of granite, diabase, gabbro, and aplite.

Heavy overburden obscures much of the easternmost block of claims along the Shebandowan River, making any structural interpretations there very difficult if not impossible. Much overburden also occurs locally along the main claims group, but for the most

part the iron formation forms the backbone of the ridges and can be seen at least in part. Where it is obscured by overburden, little difficulty was experienced in tracing out the magnetic bands with a dip needle.

The mapped area has been subjected to only the mildest of metamorphic conditions which have produced slaty cleavage in part, hardening of the greywackes and other sediments, and some light shearing locally. Temperatures did not reach the epizonal range during this light metamorphism.

Sedimentary Rock Types

Greywacke: This rock is light greyish to medium green in colour. It is fine to medium grained and is intensely indurated. Most of its clastic textural features have been obliterated by extreme compaction. Its sedimentary nature can best be determined by noting the graded bedding which has been preserved at random throughout the area. In part the rock contains brownish-red chert fragments of sand size which usually retain their clastic textures.

The greywackes occur in low, rounded, usually massive outcrops. Good bedding is displayed infrequently and often large areas must be scrutinized closely before bedding can be recognized. Bedding is more easily seen in diamond drill cores, however.

Chlorite schist formed from greywacke through light shearing and metamorphism has been indicated on the maps by means of a strike symbol indicating schistosity. The greywackes grade from a massive nature into a very weakly sheared condition and finally into a chlorite schist. No abrupt changes from greywacke to schist were seen.

Also included under this rock type is the lighter coloured arkose which occurs only in very minor amounts in the area. Most of it contains sufficient mafic minerals such that it cannot be considered a true arkose and is therefore best included under the term greywacke.

Green Slate: This rock type is pale green in colour and usually very thinly bedded. Occasionally the beds are massive, and here the rock would more accurately be termed an argillite. It is frequently interbedded with greywacke and often occurs close to or adjacent with the black slate, sometimes being thinly interbedded with the margins of the black slate. In other cases, at distances of 1000 feet or more from the main iron-bearing bands, thin beds of magnetic and hematitic black slate are interbedded with the green slate bands, thus imparting a weak to medium anomalous character to the local area.

In part, the green slates exhibit facies changes into the grey slates.

Grey Slate: The grey slates vary somewhat in character, and the name has been used largely as a field term. As they exhibit little in the way of slaty cleavage, they would better be termed argillite. They are light to medium grey in colour and display both a thinly bedded and a massive character. In some areas this rock is highly siliceous in its massive form and may have developed from an argillaceous fine-grained quartzite. No sand size textures can be seen, however.

As stated above, the grey slates exhibit a facies change into green slates in part.

Black Slate: The black slate has a colour ranging from brown through brownish black to black. Where hematitic, it assumes a dull reddish colour. It is thinly bedded and commonly has fine grained interbeds of greywacke averaging 1/8 inch or less in thickness. Thin cherty beds are also commonly included. The black slate is somewhat siliceous and, although fairly well indurated, has not developed a slaty cleavage to a total extent. It commonly splits along the bedding planes where preserved. Extremely fine grained magnetite is disseminated throughout the black slate bands, and only very rarely can outcrops be found which are completely lacking in magnetism.

The black slate occurs for the most part as well defined bands with widths ranging from 100 to 600 feet, averaging about 300 feet in width. Depositional contacts with the greywacke and other rock types are usually quite sharp. At a distance from the major black slate formations, thin bands ranging from less than an inch to a few feet in width occur in the greywacke. These thin beds were found as much as 2000 feet south of the major bands in the western end of the mapped area shown on map sheet 1. They always demonstrate a degree of magnetism, however narrow or isolated the band may be. They frequently contain minor drag folds with a vertical to near-vertical plunge. These minor black slate bands are also commonly found enclosed in narrow green slate bands at some distance from the major occurrences.

Igneous Rock Types

Quartz Sericite Schist, Quartz Porphyry: Quartz sericite schist outcrops near the southern boundary of the property in the area shown on map sheets 2 and 3. It is light grey to greenish grey in colour and of fine to medium grain size. It ranges from strongly to weakly schistose on the property and grades into a non-schistose quartz porphyry at a distance of 1000 to 2000 feet south of the southern boundary. Some quartz phenocrysts have been preserved in the more strongly schistose parts, increasing in number as the less schistose areas are approached. This schist is shown on the G.S.C. map by Tanton as being intrusive into the sediments.

Although an actual contact was not found, outcrops of the schist were found within a few feet of the black slate band in square F-2 of map sheet 2. As the black slate at this point exhibits no sign of even the weakest metamorphism or schistosity, it is assumed that the schist is older than the slate and that the slate has been deposited immediately upon it.

In the case of the greywackes, some outcrops are sheared or changed to chlorite schist in the proximity of the quartz sericite schist while other outcrops are completely unsheared. Apparently the local schistosity of the greywacke is younger and unrelated to that which is ever present in the quartz sericite schist. Although no conclusive evidence was found, it appears more likely that the quartz sericite schist and porphyry represents an older rock mass upon which the sediments were deposited.

Dykes: A few dykes of small size were observed in the mapped area. The largest of these is a granite dyke 80 feet in width shown near the center of map sheet 3. It is medium grained and light grey in colour, with an equigranular texture. Another similar granite dyke was found in the south-west corner of the mapped area, shown on map sheet 1.

An aplite dyke of undetermined width was cut by the deepest portion of diamond drill hole L-10 in Laurie Township. It is light yellow to pink in colour and of fine grain size. A chilled narrow border was noted. The dyke contains sparsely disseminated galena.

A diabase dyke was mapped in the approximate position as shown on the G.S.C. map by Tanton. This appears on map sheet 2 in square F-24 and 25. It is dark green in colour and of fine grain size. Near this same location Tanton shows a narrow intrusive tongue of granite striking N.E. along an apparent fault. Detailed work in this area showed that the iron formations extend unfaulted across this area, and no evidence of granitic dyke was found.

A small gabbro dyke was also observed along the north boundary of claim TB 78000. Because of its relatively small size, it has not been shown on the map.

Structure

The general regional strike of the formations in the mapped area varies from N75W to N85W. Locally the major strike of the black slate bands swings to an east-west direction. Minor changes in strike up to N45W exist in some areas of minor folding. Dips are predominantly vertical, although 75 to 85 degrees north

are not infrequent. In a few cases dips of 65 degrees north were noted. One such dip occurs a short distance east of diamond drill hole L-7, in square I-49 of map sheet 4. A few southerly dips of 80 degrees were noted near the southern boundary of that part of the property shown on map sheet 1, and in the chlorite and quartz sericite schist along the southern boundary on map sheet 3.

Minor drag folds occur in various portions of the black slate bands. These folds commonly have an amplitude of a few inches to a few feet and a wave length of ½ to 1 foot. For the most part, they have a vertical plunge, indicating that the movements which produced them were strike slip (horizontal) in direction. Such drag folds are also common in the lesser black slate bands occurring in the greywacke. A well formed series of drag folds having an amplitude of 2 to 3 feet and wave length of 1 foot occurs in the southwest corner of square G-38 on map sheet 3. In this case, the plunge is 40 degrees to the east.

A few areas of drag folding were noted in which the folds plunged in opposite directions in the same outcrop, and no conclusions as to regional structure can be drawn from them.

Except for the drag fold plunging 40 degrees to the east mentioned above, no other folds of similar or flatter plunges were noted. Such flat plunges might be expected if the sediments are strongly folded along a major synclinal axis as suggested by Tanton.

A folded structure has been suggested in squares H-10 and 11 on map sheet 1. Here the slate forms narrow bands ranging from less than 1 inch to 3 feet or more in width in the greywacke. The bands are usually of short length and overburden obscures much of the picture. Strikes over the area vary greatly, and the

folding may be somewhat more complex than suggested.

The thickness of black slate in squares F-49 and 50 of map sheet 4 may be the result of complex folding or faulting, but evidence of such action could not be found in the field. It is thought more likely that this is a normal depositional sequence because of the manner in which the slate tends to pinch out into the surrounding greywacke without evidence of any strong disturbance.

Three probable faults have been placed on map sheet 3. The branch fault in square F-32 has been drawn in to account for the apparent displacement of slate bands (east end moving south) as indicated by outcrops and dip needle anomalies. The other cross-trending fault in this area has been drawn in to account for the sudden termination of the two slate bands which appear on the western side of a north-south creek valley but do not reappear on the east side of the valley. A dip needle traverse run along the east side of this valley failed to disclose even the slightest magnetic attraction.

Another N-S probable fault has been placed on map sheet 3 in squares F and G-38. This again is a case of an abruptly terminating black slate band having considerable width on the west side of the hypothesized fault, with greywacke appearing on strike to the east. Overburden obscures the western end of the more northern slate band in square G-39, but it would appear this band is the offset counterpart of the band to the west.

Very minor faulting was observed in a few local areas. One such case occurs in the NW corner of square G-25, where a series of closely spaced minor faults having an E-W strike offset a distinctive sedimentary band progressively to the east.

(Relative displacement is north side to the west, south side to the east.) This example substantiates the theory of east-west strike-slip movements as evidenced by the vertically plunging drag folds.

Most of the black slate bands can be seen to pinch or feather out into greywacke and, other than those cases stated above, no major faulting is believed to have taken place. It is doubtful that there has been much duplication of black slate bands by folding or faulting. Rather, they appear as normal depositional sequences formed in a series of restricted basins.

ECONOMIC GEOLOGY:

The iron of the Matawin Range occurs as magnetite with minor associated hematite. The magnetite is extremely fine grained and is disseminated throughout the black slate. The hematite occurs in well defined bands of black slate, but always with an associated magnetite content. In fact, the more hematitic bands usually display the strongest magnetism in their locality.

Wherever the black slate exists, it is usually found to be magnetic to a greater or lesser extent, and only in a very few instances was it impossible to detect even the weakest magnetism with a magnet. This is equally true of the smallest and most isolated thin bands in greywacke as well as of the major black slate bands. In the case of the Matawin iron range, then, the terms of iron formation and black slate can be considered to represent one and the same thing.

As one of the major purposes of the investigation was the search for structures favourable to hematite enrichment, out-

crops were closely scrutinized for evidence of enrichment processes. In all the many iron-bearing outcrops observed, nowhere was there any evidence of the leaching out of silica. Nor, in the case of the hematitic zones, which are sharply defined, were there any vague gradational areas as might be expected with hydrothermal introduction.

Respectfully submitted,

Michael Ogden

Michael Ogden
for M. E. Morrison.

CONCLUSIONS:

1. The origin of most if not all of the iron-bearing formations in the area surveyed is by sedimentary processes.* None of the iron zones are apparently related to intrusive activity. The magnetite of the Matawin iron range is disseminated throughout the black slate facies which is a part of the broad sedimentary formation of greywacke, green slate and grey slate. Hematite occurs in individual, sharply defined, sedimentary beds always in association with magnetite within the black slate facies.

* H. L. James "Sedimentary Facies of Iron-Formation", Economic Geology, Vol. 49, No. 3, May, 1954.

2. No major concentrations of hematite were found. There was no evidence of post-depositional processes such as the leaching of silica or hydrothermal addition of iron.

Thus the probability of a hematite orebody existing within the surveyed area is rather low, although three areas covered by swamp are characterized by structural complexities which could be favourable to hematite enrichment.

3. Faulting is not as abundant as originally supposed. The iron formation black slate usually peters out along strike rather than be offset by faulting. Three probable faults were found. However the faults shown by T. L. Tanton on the Shebandowan geological map could not be substantiated.

RECOMMENDATIONS:

The three swamp covered areas with underlying structural complexities should be further explored for the possible presence of hematite concentrations. Diamond drilling is of course the most conclusive method of investigation but it is also the most expensive. An alternate approach would be to survey the areas by gravity meter in the search for a buried mass of exceptionally high gravity rock which would then be interpreted as iron-bearing.

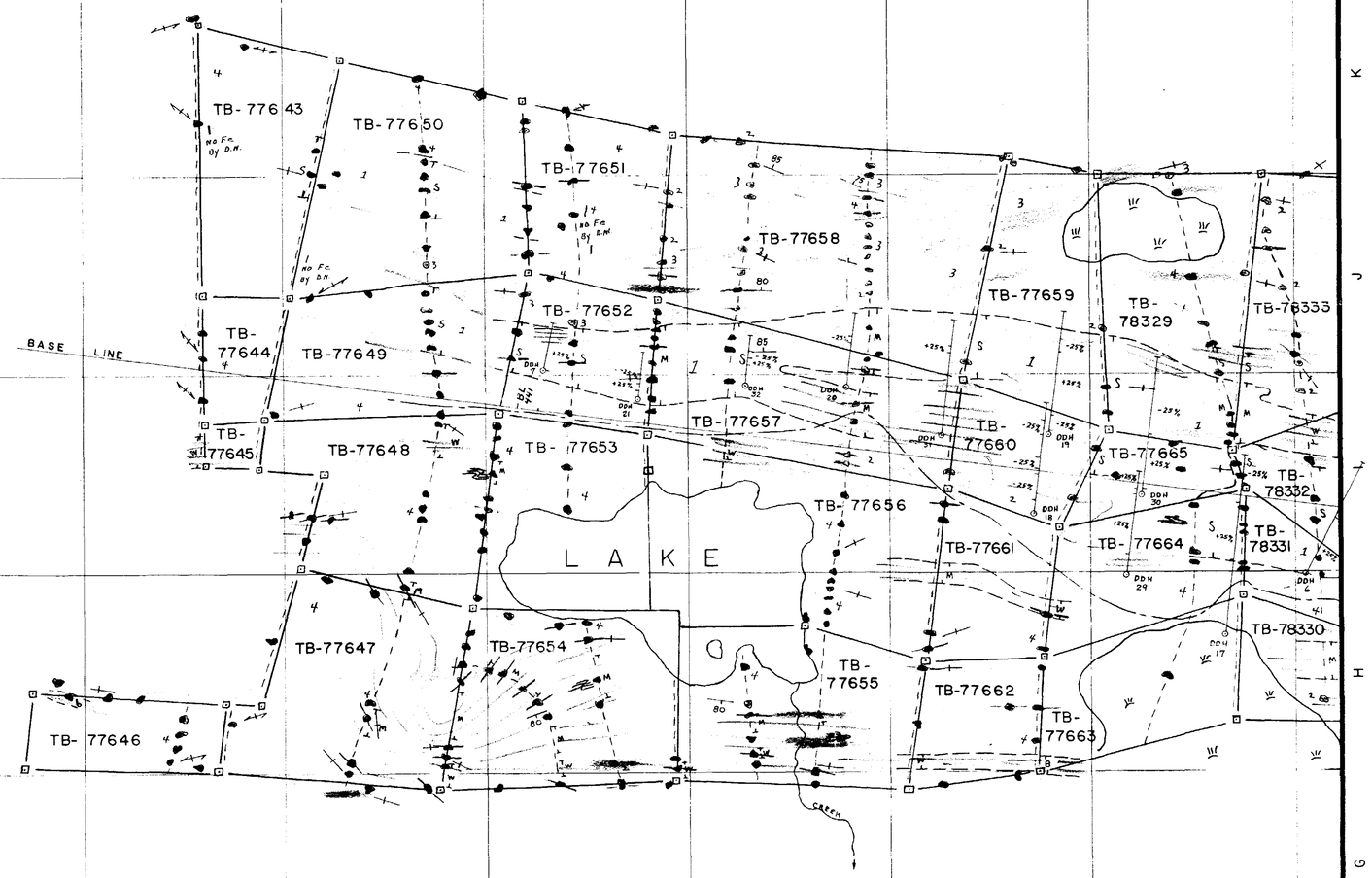
The three areas worth further exploration can be described as follows by reference to the maps.

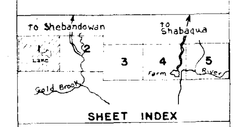
1. The swamp covered area shown on map sheet 3 in squares E and F of 32 and 33, (parts of claims TB 78317, 78318, 78323 and 78324).
2. The overburden and swamp covered area shown on map sheet 3 in squares G-37, G-38 and F-38, (parts of claims TB 78307, 78320 and 78321).
3. The swamp covered area shown on map sheet 4 in squares F and G of 48 and 49, (claim TB 76885).

Respectfully submitted,

Michael Ogden.

R. A. Halet.





LEGEND:

- 1 BLACK SLATE (IRON FORMATION)
- 2 GREEN SLATE
- 3 GREY SLATE
- 4 GREYWACKE; LOCALLY ALTERED TO CHLORITE SCHIST
- 5 QUARTZ SERICITE SCHIST; QUARTZ PORHYRY
- 6 GRANITE DYKE

- OUTCROP
- STRIKE AND DIP OF SEDIMENTS
- STRIKE AND DIP OF SCHISTOSITY
- CONTACT
- PROBABLE FAULT
- IRON FORMATION INDICATED BY DIP NEEDLE (S-STRONG, M-MEDIUM, W-WEAK ANOMALY)

- TRAVERSE
- SURVEYED CLAIM POST
- UNSURVEYED CLAIM POST
- APPROXIMATE POST LOCATION (UNOBSERVED)
- SWAMP

TOPOGRAPHY AND TRAVERSES BASED ON AIR PHOTOS OF SCALE: 1320' TO 1"

HALET BROADHURST AND OGDEN
FOR
MONPRE MINING CO. LTD.
MATAWIN IRON PROPERTY
GEOLOGICAL SURVEY
SHEET 1

SCALE: 1" = 400'
DRAWN BY: M.E. MORRISON
DATE: DEC. 1957
APPROVED:

200

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

M L K J I H G F E D

TB-77669 TB-77670 TB-77976 TB- 77977 TB-77984

TB-77668 TB-77671 TB- 77676 TB-77978 TB- 77985 TB-77992 TB- 77993

TB-77672 TB-77675 TB-77983 TB-77991 TB-78000

TB-77667 TB-77674 TB- 77986 TB-77994

TB-77666 TB- 77673 TB-77979 TB- 77987 TB-77990

TB-77677 TB-77678 TB-77999

TB-77995 TB-77998

TB- 77980 TB-77982 TB 78001

TB-77981 TB-77988 TB- 77989 TB-77996 TB 78002

TB-78003

TB-77997

TB-78004

BASE LINE

Bush Road

Creek

L A K E S

SHEET INDEX

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HALET BROADHURST AND OGDEN FOR

MONPRE MINING CO. LTD.

MATAWIN IRON PROPERTY

GEOLOGICAL SURVEY

SHEET 2

SCALE: 1" = 400' DATE: DEC. 1957

DRAWN BY: M.E. MORRISON APPROVED: M. Ogden

BB

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43

J I H G F E D C B A

N

LAKE

BASE LINE

TB 78322 TB 78316 TB 78315 TB 78308 TB 78307 TB 78320 TB 77712 TB 77705 TB 77704 TB 77697 TB 77683

TB 78323 TB 78317 TB 78314 TB 78309 TB 78306 TB 78321 TB 77711 TB 77706 TB 77703 TB 77698 TB 77684

TB 78324 TB 78310 TB 78305 TB 78302 TB 77710 TB 77707 TB 77702 TB 77699 TB 77691

TB 78325 TB 78318 TB 78313 TB 78303 TB 77709 TB 77708 TB 77701 TB 77700 TB 77692

TB 78319 TB 78312 TB 78311 TB 78304

Bush Road

DUCKWORTH TWP.
LAURIE TWP.
TWP. LINE

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43

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63A 347

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FOR
MONPRE MINING CO. LTD.
MATAWIN IRON PROPERTY
GEOLOGICAL SURVEY
SHEET 3

SCALE: 1" = 400'
DRAWN BY: M.E. MORRISON
DATE: DEC. 1957
APPROVED: W. Ogden

220

CC

44 45 46 47 48 49 50 51 52 53 54 55 56 57 58

J I H G F E D C B A

N

BASE LINE

TB 77680 TB 77679

TB 77682 TB 77681 TB 77687

TB 76885 TB 76884 TB 76883

TB 77686 TB 76886

TB 77685

TB 76889 TB 76888

TB 77690 TB 77689 TB 77688

TB 76887 TB 76986 TB 76988

TB 76985 TB 76989 TB 76990

ROAD TO SHABAQUA

Bush Road

Base Line

MATAWIN RIVER

CREEK

DAM

TB 77694 TB 76993 TB 76992 TB 76991

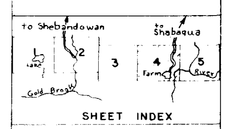
TB 76987

FARM

TB 77695 TB 77696

Bush Road

CREEK



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63A 347

HALET BROADHURST AND OGDEN FOR

MONPRE MINING CO. LTD.

MATAWIN IRON PROPERTY

GEOLOGICAL SURVEY

SHEET 4

SCALE: 1" = 400'

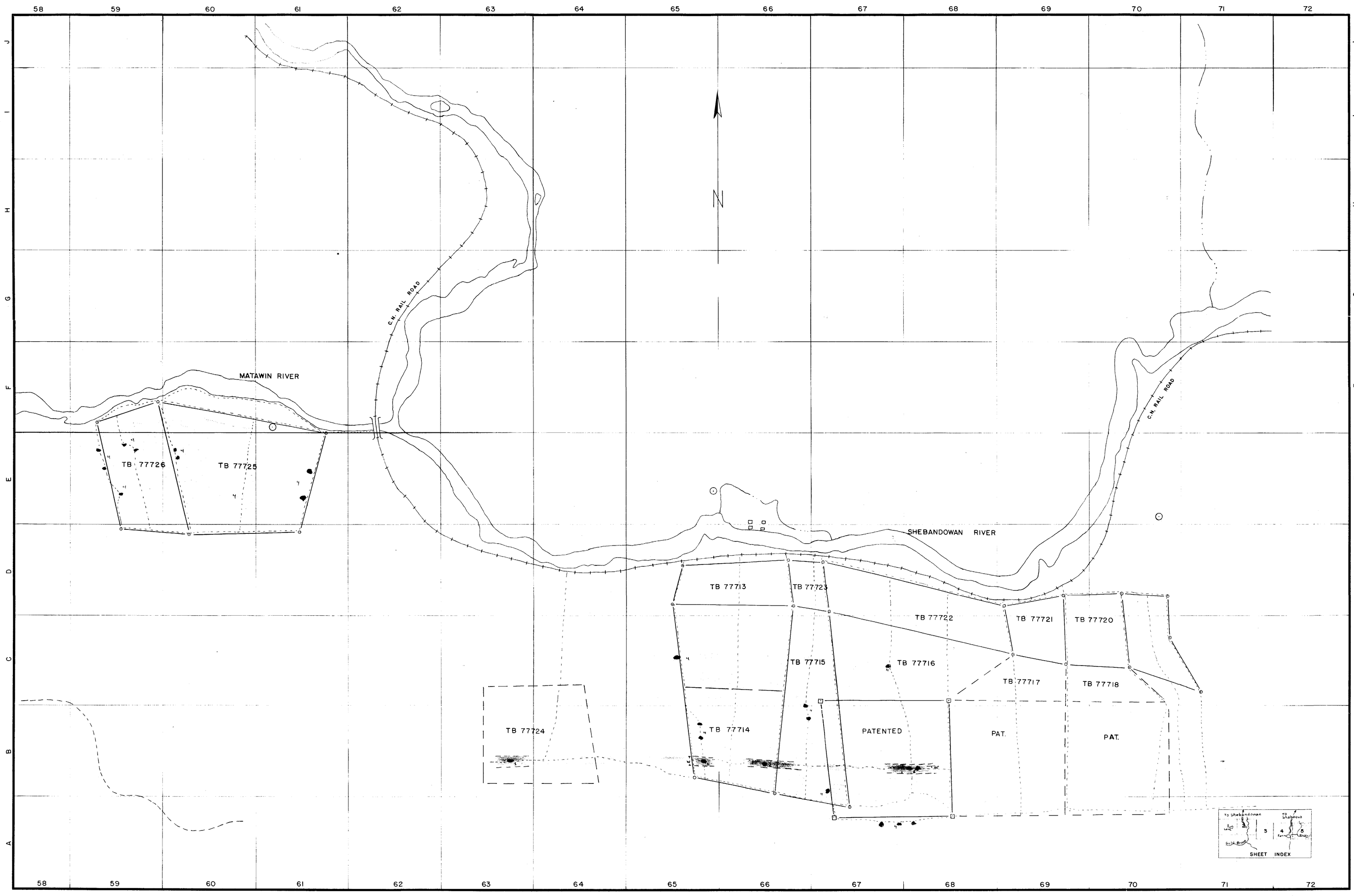
DRAWN BY: M.E. MORRISON

DATE: DEC. 1957

APPROVED:

230

AA



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63A·347

HALET BROADHURST AND OGDEN FOR

MONPRE MINING CO. LTD.

MATAWIN IRON PROPERTY

GEOLOGICAL SURVEY

SHEET 5

SCALE: 1" = 400' DATE: DEC. 1957

DRAWN BY: M.E. MORRISON APPROVED: M. Ogden