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UNITED  
COBALT  
MINES  
LIMITED



*PROSPECTUS*

# UNITED COBALT MINES LIMITED

(No Personal Liability)

## PROSPECTUS

Filed with the Ontario Securities Commission under the provisions of Part VII of The Securities Act (Ontario).

- A. The full name of the Company is UNITED COBALT MINES LIMITED (No Personal Liability), with Head Office at Cobalt, Ontario, and Executive Offices at 25 Adelaide Street West, Toronto, Ontario.
- B. Incorporated as Ausic Mining and Reduction Company Limited (No Personal Liability) under the provisions of The Companies Act (Ontario) and Part XI thereof by Letters Patent dated the 21st day of April, 1944 with an authorized capital of \$1,000,000.00 divided into 1,000,000 shares of \$1.00 each. By Supplementary Letters Patent dated the 19th day of February 1946, the authorized capital was increased from \$1,000,000.00 to \$2,000,000.00 by the creation of an additional 1,000,000 shares of \$1.00 each. By Supplementary Letters Patent dated the 1st day of March, 1948, the authorized capital was increased from \$2,000,000.00 to \$3,000,000.00 by the creation of an additional 1,000,000 shares of \$1.00 each. By Supplementary Letters Patent dated the 1st day of June, 1951, the authorized capital was decreased from the sum of \$3,000,000.00 to the sum of \$2,389,027.00 by the cancellation pro rata of 610,973 shares and the authorized capital was then increased to \$4,000,000.00 by the creation of an additional 1,610,973 shares of \$1.00 each, and the name of the Company was changed to UNITED COBALT MINES LIMITED (No Personal Liability.)
- C. The Officers and Directors of the Company are as follows:
- |   |                                  |  |
|---|----------------------------------|--|
| ARTHUR WALTER WHITE<br>Mining Executive and Financier | President and Director           | 61 Old Forest Hill Road,<br>Toronto, Ontario |
| HERBERT RODNEY HEARD<br>Chartered Accountant          | Secretary-Treasurer and Director | 464 Broadway Avenue,<br>Toronto, Ontario     |
| LAWRENCE WILLIAM McILMURRAY<br>Mining Executive       | Director                         | 300 Glenayr Road,<br>Toronto, Ontario        |
| WILLIAM ALEXANDER EDMOND<br>Accountant                | Director                         | 130 Yonge St. South,<br>Aurora, Ontario      |
| LOUIS VALENTINE BARBISAN<br>Chartered Accountant      | Director                         | 61 Floradale Drive,<br>Cooksville, Ontario   |
- Brewis and White Limited, 145 Yonge Street, Toronto, Ontario, is the Promoter of the Company.
- D. The Auditors of the Company are Ampleford, Broadhead & Co., Chartered Accountants, 80 King Street West, Toronto, Ontario.
- E. Crown Trust Company, 302 Bay Street, Toronto, Ontario, is Registrar and Transfer Agent of the Company.
- F. The Company has an authorized capital of 4,000,000 shares of the par value of \$1.00 each, whereof 2,882,873 shares are issued as fully paid and non-assessable.
- G. The redeemable Non-interest Bearing Debenture issued by the Company and dated June 27th, 1951 and maturing June 30th, 1961 originally in the principal amount of \$150,000.00 and subsequently reduced to the sum of \$72,190.00, was paid and satisfied in full by the issue and allotment to the holder thereof of 721,900 fully paid and non-assessable shares of the capital stock of the Company pursuant to an Agreement with the holder thereof dated February 5th, 1959. No bonds or other debentures are outstanding or proposed.

H. Crown Trust Company, 302 Bay Street, Toronto, Ontario, holds in escrow 288,000 shares of the Company, sub-  
ject to release pro rata on the written consent of the Ontario Securities Commission and subject to transfer or other  
alienation only on the consent of the Ontario Securities Commission.

I. 421,946 shares of the Company as originally constituted, now represented by 210,973 shares, have been sold for  
cash for a total consideration of \$359,326.63 as follows: 100,000 shares at 40.8737¢ a share; 50,000 shares at 50¢ a  
share; 98,306 shares at \$1.00 a share; 150,575 shares at \$1.066242 a share; and 23,065 shares at \$1.50 a share. In  
addition 150,000 shares of the Company, as presently constituted, have been sold at 10¢ a share and 1,150,000 shares  
of the Company have been sold at 15¢ a share for a total purchase price of \$187,500.00.

721,900 shares were issued at the rate of 10¢ per share in full settlement of the balance of \$72,190.00 secured by  
the Debenture issued by the Company and referred to in Paragraph G hereof.

J. No Commission was paid on the sale of the above shares.

K. The Company has not sold any securities other than the shares and the previously outstanding Debenture set out  
above for cash to date.

L. No shares have been issued or are to be issued and no cash has been paid or is to be paid to any promoter for pro-  
motional purposes.

M. Particulars of the Company's properties:

(1) GENESEE GROUP — 161 acres more or less (patented mining lands)

(a) Parcel 7626 South Section Temiskaming, being SE one-quarter of S half, Lot 9, Con. 2, Township of Bucke;

(b) Parcel 7633 South Section Temiskaming, being NE one-quarter of S one-half, Lot 9, Con. 1, Township of Bucke;

(c) Parcel 7505 South Section Temiskaming, being SW Pt. of S half Lot 9, Con. 1, Township of Bucke;

(d) Parcel 7634 South Section Temiskaming, being NW one quarter of S half Lot 9, Con. 1, Township of Bucke;

SILVER CLIFF GROUP — 34 acres more or less (patented mining lands)

(e) Parcel 5004 Nipissing North Division, being portion of Broken Lot 3, Con. 6, Township of Coleman;

(f) Parcel 1878 Nipissing North Division, being part of Lot 3, Con. 6, Township of Coleman;

BALDWIN GROUP — 328.25 acres more or less, in the Township of Baldwin, District of Sudbury, registered as  
patented mining lands, Sudbury West Section, Province of Ontario;

Parcel 14794 being NW¼ N½ Lot 11, Con. 4 (formerly S-9070)

Parcel 14795 being NW¼ N½ Lot 10, Con. 4 (formerly S-56121)

Parcel 14796 being SE¼ N½ Lot 12, Con. 4 (formerly S-14796)

Parcel 14797 being NE¼ N½ Lot 12, Con. 4 (formerly S-56124)

Parcel 14798 being SW¼ N½ Lot 11, Con. 4 (formerly S-56123)

Parcel 14244 being SW part of South part Lot 10, Con. 5 (formerly S-35734)

Parcel 14245 being NE¼ N½ Lot 11, Con. 4 (formerly S-35715)

Parcel 13990 being NW¼ S½ Lot 11, Con. 4 (mining rights only) (formerly Parcel 5104)

AIRGIOD CLAIM — Unpatented mining claim situate in the Township of Coleman, Province of Ontario, and recorded  
in the Office of the Mining Recorder at Haileybury, Ontario, as Number T-45331.

The Company has also acquired working options on the following Properties:

KING EDWARD AND VICTORIA GROUP — By Agreement dated the 20th day of January, 1959, between Temnor  
Realty Company Limited, 191 Main Street West, North Bay, Ontario as Optionor, and the company, as Optionee,  
Temnor granted an option to the Company to purchase Lots No. 2 and 3 in the 5th Concession of the Township  
of Coleman, in the District of Temiskaming, containing 109 acres more or less, being Parcel 8593 in the Register  
for South Section Temiskaming, exercisable on or before January 31st, 1961. The Company to date has paid the sum  
of \$13,000.00 on account of the option price (including \$5,000.00 paid in July 1960) and in order to keep the option  
in good standing the Company is required to pay the further sum of \$5,050.00 on January 31st, 1961, together with  
36,100 fully paid and non-assessable shares of the capital stock of the Company.

**WEBB CLAIM** — By Agreement dated the 5th day of February, 1959, Austin Benjamin Pilliner, Mining Engineer, Cobalt, Ontario granted the Company an option to purchase part of Broken Lot No. 3 in the Sixth Concession of Coleman in the district of Temiskaming, containing 20 acres more or less, being parcel 4199 in the Register for Nipissing North Division, exercisable on or before July 31st 1961. The Company to date has paid the sum of \$10,000.00 on account of the option price and in order to keep the option in good standing the Company is required to pay the sum of \$2,500.00 on January 31st, 1961, and the balance of the purchase price of \$2,500.00 on July 31st, 1961.

(2) The Company purchased from Austin Benjamin Pilliner and Associates, on or about June 7th, 1944, for a total consideration of \$430,000.00, the following itemized assets:

Genesee Group of Claims	\$345,000.00
Genesee Buildings and Equipment	25,000.00
Broken Ore	60,000.00
	<hr/>
	\$430,000.00

The said purchase price was satisfied by the issue and allotment of 400,000 shares of the original capital stock, now represented by 200,000 shares, and \$30,000.00, payment of which was waived by discharging a prior Debenture dated June 27th, 1949, to secure \$180,000.00 and replacing same with the Debenture dated June 27th, 1951, referred to in Paragraph G hereof, now discharged.

The Silver Cliff Group of claims including machinery, plant and equipment, were purchased from the said Austin Benjamin Pilliner and Associates on or about June 7th, 1944, in consideration of 400,000 shares of the original capital stock, now represented by 200,000 shares.

The Baldwin Group of Claims originally comprising 14 unpatented mining claims and the mining rights of Parcel 5104 Sudbury West Section whereof 7 mining claims were abandoned in 1957, were purchased from Mid-North Engineering Services Limited, 25 Adelaide Street West, Toronto, Ontario, on or about January 11th, 1956, for the consideration of \$7,000.00 and 250,000 shares of the capital stock of the Company as presently constituted, whereof 10% are free shares and 90% are held in pool or escrow by Crown Trust Company, Toronto, subject to release, pro rata, with the written consent of the Ontario Securities Commission.

The Airgiod Claim was purchased from Alexander Daniel Hellens, Suite 901, 159 Bay Street, Toronto, for \$4,253.75.

The Company obtained an option in September, 1946, to purchase the NW Part of Block 5, Con. 4, Township of Coleman, in consideration of \$30,000.00 whereof \$17,000.00 was paid. The option was allowed to lapse.

The Company in October, 1946, obtained a lease of properties in the Township of Coleman in consideration of the payment of a royalty of 25% on ore valued over \$30.00 per ton and 15% on ore valued less than \$30.00 per ton of ore milled. No work was carried on by the Company on these properties and the Agreement was permitted to lapse.

(3) The following are the only persons who received or are to receive a greater than 5% interest in the shares or other consideration issued for the Genesee and Silver Cliff Groups:

Austin Benjamin Pilliner, Cobalt, Ontario  
Leona May Pilliner, Cobalt, Ontario  
Gwendolyn Euphema Pilliner, Cobalt, Ontario

The following are the only persons or companies who have received or are to receive a greater than 5% interest in the shares or other consideration issued for the Baldwin Group;

Mid-North Engineering Services Limited, 25 Adelaide Street West, Toronto Ontario.  
Conrad Springer, McKerrow, Ontario  
Oscar Springer, McKerrow, Ontario  
Percy Jarvis, Espanola, Ontario  
Albert Edward Jerome, Westree, Ontario.

(4) By an Agreement dated the 14th day of June, 1960, as amended on June 27th, 1960, and August 17th, 1960, made between United Cobalt Mines Limited (herein called the "Company"), as Optionor, Rix Athabasca Uranium Mines Limited (herein called "Rix Athabasca"), as Optionee, and Brewis & White Limited, the Company granted Rix Athabasca the sole and exclusive working option exercisable on or before the 31st day of July, 1961, except in the event of default, to purchase the following mining lands in the Province of Ontario, (herein called the "Optioned Claims"), namely:

SCHEDULE

Parcel 1878 Nipissing North Division, being part of Lot 3, Concession 6, Township of Coleman and Parcel 5004 Nipissing North Division, being portion of Broken Lot 3, Con. 6, Township of Coleman, excluding the Mill and Manager's residence and the lands upon which they are situate with a right-of-way thereto, but including the mineral rights thereof; Mining Claim No. T-45331 (Airgiod Claim) recorded in the office of the Mining Recorder at Haileybury, Ontario, being the South-east quarter of the North half of Lot 3, Con. 5, in the Township of Coleman; King Edward and Victoria Group being Lots No. 2 and 3 in the 5th Concession in the Township of Coleman; (parcel 8593 SST); Webb Claim, being part of Broken Lot 3 in the 6th Concession of the Township of Coleman, (Parcel 4199 NND).

As consideration for the granting of the option, Rix Athabasca undertakes to dewater the winze on the King Edward and Victoria Group, to carry out such diamond drilling and other exploration work on the Optioned Claims as it deems advisable and to pay all current taxes and insurance on the optioned claims and buildings thereon, saving and excluding the Mill and Manager's residence, and in the event the option has not been terminated on or before March 31st, 1961, to perform one year's assessment work on Mining Claim No. T-45331.

As further consideration, Rix Athabasca is required to pay to Brewis & White Limited the sum of \$20,050.00 as follows: \$10,000.00 on the execution of the Agreement (said sum having been paid), \$7,550.00 on or before January 31st, 1961, and the balance of \$2,500.00 on or before July 31st, 1961, which monies when received by Brewis & White Limited shall be paid to the Company in exercise of outstanding Options on Treasury shares of the Company hereinafter referred to. Rix Athabasca shall be entitled to receive from Brewis & White Limited on payment of any portion of the said sum of \$20,050.00, shares of the capital stock of the Company equal to the amount so paid divided by 15 cents.

In the event the option hereby granted is exercised by Rix Athabasca, Rix Athabasca will use its best efforts to place the Optioned Claims on a producing basis and during the first 5 years after the exercise of the option or until the Optioned Claims are placed on a producing basis, whichever is the earlier, Rix Athabasca shall expend a minimum of \$5,000.00 per year on the Optioned Claims in order to place them on a producing basis and in default will pay to the Company the difference between the amount expended on the Optioned Claims in each year and the sum of \$5,000.00 and on default of such payment the Optioned Claims shall be forfeited and transferred back to the Company. If after the initial 5 year period and before the end of 21 years from the date on which the option may be exercised, the Optioned Claims have been placed on a producing basis, Rix Athabasca shall pay the Company annually the sum of \$5,000.00 until the Optioned Claims have been placed on a producing basis and such payment shall be in addition to and not in lieu of any payments expended by Rix Athabasca on the Optioned Claims for any such year. In default of any such payment by Rix Athabasca, the Optioned Claims shall be forfeited and transferred back to the Company.

Upon Rix Athabasca placing the Optioned Claims on a producing basis, there shall be paid to the Company out of the net proceeds derived from the Optioned Claims, calculated proportionally with repayment to Rix Athabasca of its pre-production expenses on the Optioned Claims, sums aggregating \$200,000.00 and thereafter the net proceeds shall be divided in the proportion of 25% to the Company and 75% to Rix Athabasca.

At any time after Rix Athabasca has exercised the option, it shall have the right to reconvey the Optioned Claims to the Company and thereafter Rix Athabasca shall have no obligation to the Company under the Agreement.

- M. For particulars of the Company's properties designated as the Genesee Group, Silver Cliff Group, King Edward and Victoria Group, Webb Claim, and Airgiod Claim including location and means of access thereto, the known history thereof, the character, extent and condition of underground exploration and development work, surface exploration and development work, and description of work done and improvements made by the present management, reference is made to the Report of James E. Armstrong, P.Eng., dated August 22nd, 1960, which accompanies and forms part of this prospectus. In addition to an adequate surface and underground plant and equipment on the Genesee Property, there is a modern mill located on the Silver Cliff Property capable of handling between 80 and 110 tons of ore, depending on the type and grade thereof, per 24 hours and for complete particulars thereof reference is made to the said Report of James E. Armstrong, P. Eng., dated August 22nd, 1960. No work has been done nor improvements made by the present management relative to the King Edward and Victoria Group, and the Webb Claim, but necessary assessment work has been done on the Airgiod Claim. For particulars of the Company's property designated as the Baldwin Group, including location and means of access thereto, the character, extent and condition of underground exploration and development, surface exploration and development, the known history thereof and the description of work done and improvements made by the present management, reference is made to the Report of George L. Holbrooke, P.Eng., dated August 29th, 1960, which accompanies and forms part of this prospectus.

N. By an Agreement dated the 18th day of October, 1960, made between the Company and Brewis & White Limited, 145 Yonge Street, Toronto, Ontario, as Underwriter/Optionee, the Underwriter/Optionee agreed to purchase on its own behalf 100,000 shares of the Company at 15¢ per share, the total purchase price of \$15,000.00 to be payable as follows: \$5,000.00 within three days of the date of acceptance for filing by the Ontario Securities Commission of this prospectus (hereinafter referred to as the "effective date"), and the balance of \$10,000.00 within sixty days of the effective date. In consideration of the foregoing purchase, the Company granted to the Underwriter/Optionee the sole and exclusive option of purchasing on its own behalf 400,000 additional shares of the Company exercisable at the prices and within the following times, namely: 200,000 shares at 20¢ per share within three months of the effective date; and 200,000 shares at 25¢ per share within six months of the effective date.

The Company understands that an amending statement must be filed within 20 days of default if the securities of the Company are still in the course of primary distribution. There are no sub-options, or sub-underwritings outstanding or proposed to be given. The only persons having more than a 5% interest in the Underwriter/Optionee are Arthur Walter White, 61 Old Forest Hill Road, Toronto, Ontario, and Lawrence William McIlmurray, 300 Glenayr Road, Toronto, Ontario.

O. Moneys paid into the treasury of the Company through the sale of shares as set out in Paragraph N will be expended by the Company in carrying out exploration and development work on its properties as recommended in the Report of James E. Armstrong, P. Eng., dated August 22nd, 1960. Such moneys will also be expended for the purchase of necessary equipment as required, for the payment of accounts payable and for operating expenses.

P. The Company has been incorporated for more than one year.

Q. There is no indebtedness to be created or assumed other than as shown on the Balance Sheet of the Company dated as at June 30th, 1960, which accompanies and forms part of this prospectus.

R. (1) The principal business in which each Director and Officer has been engaged during the past three years is as follows:

ARTHUR WALTER WHITE	President of Brewis & White Limited, 145 Yonge Street, Toronto, Ontario.
HERBERT RODNEY HEARD	Secretary, Mid-North Engineering Services Limited, 25 Adelaide Street West, Toronto, Ontario.
LAWRENCE WILLIAM McILMURRAY	Mining Executive with Brewis & White Limited
WILLIAM ALEXANDER EDMOND	Accountant with Brewis & White Limited, and Mid-North Engineering Services Limited.
LOUIS VALENTINE BARBISAN	Since January 1st, 1959, an Accountant with Mid-North Engineering Services Limited and prior thereto a Student- in-Accounts employed by McDonald Nicholson & Co., Char- tered Accountants, 55 York Street, Toronto, Ontario.

(2) No Officer or Director has had any interest either direct or indirect in any property acquired or to be acquired by the Company, save Arthur Walter White who controls Mid-North Engineering Services Limited, the Vendor of the Baldwin Group to the Company.

(3) No remuneration has been paid during the last financial year nor will be paid to the Officers and Directors as such in the current financial year. The Company estimates that it will pay \$250.00 per month for Head Office accommodation, secretarial and accounting services.

S. No dividends have been paid by the Company.

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- T. Brewis & White Limited is in a position to elect or cause to be elected a majority of the Directors of the Company.
- U. There are no arrangements for the sale of Vendors' shares. Previously issued free shares of the Company and such escrowed shares as may be released from time to time may be sold to the public by the holders thereof at prevailing market prices, but the proceeds will not accrue to the treasury of the Company.
- V. The foregoing constitutes full, true and plain disclosure of all material facts in respect to the offering of securities referred to above as required by Section 38 of The Securities Act (Ontario) and there is no further material information applicable other than in the financial statements or reports where required.

Dated this 28th day of October, 1960.

**DIRECTORS**

**PROMOTER  
BREWIS & WHITE LIMITED**  
By:

"A. W. White"

"L. W. McMurray"  
Vice-President

"H. R. Heard"

"L. W. McMurray"

"Jack White"  
Director

"W. A. Edmond"

"L. V. Barbisan"

W. To the best of our knowledge, information and belief, the foregoing constitutes full, true and plain disclosure of all material facts in respect of the offering of securities referred to above as required by Section 38 of The Securities Act (Ontario) and there is no further material information applicable other than in the financial statements or reports where required. In respect of matters which are not within our knowledge we have relied upon the accuracy and adequacy of the foregoing.

Dated this 28th day of October, 1960.

**BREWIS & WHITE LIMITED**  
By:

"L. W. McMurray"  
Vice-President

"Jack White"  
Director

**UNDERWRITER/OPTIONEE**

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# UNITED COBALT MINES LIMITED

## BALANCE SHEET

As At June 30, 1960

### ASSETS

<b>Current Assets</b>			
Cash on Deposit	\$ 4,554.17		
Deposit — Power Contract	621.00		
Mine and Mill Stores — at nominal value for record purposes	1.00		
Marketable Securities — at cost (Quoted Market Value \$280.00)	<u>2,081.32</u>	\$ 7,257.49	
<b>Mining Properties (including properties on which Options have been granted by the Company)</b>			
Claims acquired prior to re-organization of June 1, 1951, less sale of certain surface rights	\$ 83,201.65		
Interest in Outside Mining Properties, at cost	<u>66,753.75</u>	149,955.40	
Exploration and Development, at cost			
On Claims acquired prior to re-organization	\$508,125.50		
On outside Mining Properties	<u>26,590.41</u>	<u>534,715.91</u>	684,671.31
Buildings, Plant and Equipment, at cost		186,570.40	
Less: Accumulated Depreciation		<u>55,609.66</u>	130,960.74
<b>Other Assets</b>			
Shares in Other Mining Companies, at cost after deducting profits on sales		10,311.41	
Prepaid Expenses		73.08	
Incorporation and Organization Expenses		<u>6,846.56</u>	<u>17,231.05</u>
			<u>\$840,120.59</u>

Approved on behalf of the Board of Directors,

A. W. White  
DIRECTOR

H. R. Heard  
DIRECTOR

### LIABILITIES

<b>Current Liabilities</b>			
Accounts Payable and Accrued Charges		\$ 8,920.07	
Loans from Shareholders		<u>6,125.00</u>	\$ 15,045.07
<b>Capital Stock</b>			
Authorized:			
4,000,000 Common Shares of \$1.00 Par Value each		<u>\$4,000,000.00</u>	
Issued and Fully Paid:			
610,973 shares remaining in the hands of shareholders after cancellation of shares as provided in Supplementary Letters Patent dated June 1, 1951			\$610,973.00
1,300,000 shares issued for cash		\$1,300,000.00	
Less: Discount		<u>1,112,500.00</u>	187,500.00
721,900 shares issued in settlement of balance of Debentures payable \$72,190.00		\$ 721,900.00	
Less: Discount		<u>649,710.00</u>	72,190.00
250,000 shares issued for Mining Claims		\$ 250,000.00	
Less: Discount		<u>212,500.00</u>	<u>37,500.00</u>
<u>2,882,873</u> shares			\$908,163.00
Deficit as per statement attached		<u>83,087.48</u>	<u>825,075.52</u>
			<u>\$840,120.59</u>

The accompanying Notes are an integral part of this Balance Sheet and should be read in conjunction therewith.

### AUDITORS' REPORT TO THE SHAREHOLDERS

We have examined the Balance Sheet of United Cobalt Mines Limited as at June 30, 1960 and the Statement of Operations and Deficit for the period ended on that date. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances. We have not verified the titles to the Mining Claims and Properties. Subject to the foregoing we report that, in our opinion, the attached Balance Sheet and accompanying Statement of Operations and Deficit present fairly the financial position of the Company as at June 30, 1960 and the results of its operations for the period ended on that date.

Toronto, Canada  
October 18, 1960.

AMPLEFORD, BROADHEAD & CO.  
CHARTERED ACCOUNTANTS



NOTES TO THE FINANCIAL STATEMENTS AS AT JUNE 30, 1960

1. A Comparative Statement of Operations and Deficit for the years ended May 31, 1952 to May 31, 1960 inclusive, and for the month ended June 30, 1960, is attached hereto. There has been no change in the Deficit Account from June 1, 1959 to June 30, 1960; and expenditures for the same period have been charged to Exploration and Development. No depreciation or depletion allowance has been written in the books of the Company, except depreciation on Mill Buildings and Equipment for the period from June 1, 1951 to August 31, 1955, at the rate of 15% per annum.
2. The consideration for Mining Properties prior to reorganization of June 1, 1951, was 445,000 shares of the original Capital Stock of the Company (now represented by 222,500 shares) issued at par of \$1.00 per share. On re-organization the value of these Mining Properties was reduced by the full amount of the Surplus arising from the re-organization, \$330,630.65, and by a \$30,000.00 waived payment on a debenture dated June 27, 1949. Further reductions in the stated value of these Mining Properties have resulted from the sale of certain surface rights for \$1,167.70, leaving a value as at June 30, 1960 of \$83,201.65.
3. The consideration for Buildings, Plant and Equipment, totalling \$186,570.40 as at June 30, 1960, was (a) cash of \$79,293.38 and (b) 325,000 shares of the original Capital Stock of the Company (now represented by 162,500 shares) issued at a discount of \$217,722.98.
4. A Schedule of Exploration and Development, Mining, Milling and General Charges, after deducting Revenue from Mill Testing and Value of Concentrates Produced, from the inception of the Company, April 21, 1944 to June 30, 1960, is attached hereto.
5. The consideration for the Company's Interest in Outside Mining Properties was (a) cash of \$29,253.75 and (b) 250,000 shares of the Capital Stock of the Company issued at a discount of \$212,500.00.
6. Exploration and Development Expenditures on Outside Mining Properties are summarized as follows:

Diamond Drilling	\$18,213.90
Technical Services	4,836.25
Assaying	267.40
Travel	1,182.38
Patent Fees and Acreage Taxes	1,391.67
Sundry	698.81
	<u>\$26,590.41</u>
7. Under an agreement dated January 20, 1959, the Company was granted an option to purchase certain mining properties for a total of \$18,050.00 plus 36,100 fully-paid shares of the Capital Stock of the Company. \$8,000.00 has been paid, an additional \$5,000.00 having been paid since the date of the Balance Sheet, leaving a balance of \$5,050.00 to be paid, together with the delivery of 36,100 shares of the company, on January 31, 1961 if the option is exercised.
8. Under an agreement dated February 5, 1959, the Company was granted an option to purchase certain mining properties for a total of \$15,000.00. \$10,000.00 has been paid, with the balance of payments to be made over the period ended July 31, 1961 if the option is exercised.
9. On April 30, 1960 entries were made in the Company's books to record the issue of 133,333 shares of its Capital Stock pursuant to an Underwriting Agreement dated February 5, 1959 as amended; these shares are included in the Balance Sheet as Issued and Fully Paid. The Company's Transfer Agent issued the shares on July 14, 1960.
10. Pursuant to an Underwriting Agreement dated October 18th, 1960, the Underwriter agrees to purchase 100,000 shares of the Capital Stock of the Company at 15¢ per share, whereof \$5,000.00 is payable when the Ontario Securities Commission accepts the Prospectus of the Company for filing and the balance of \$10,000.00 is payable within 60 days thereafter. 400,000 shares of the Capital Stock of the Company are under option as follows:  
200,000 shares at 20¢ payable within 3 months from filing date,  
200,000 shares at 25¢ payable within 6 months from filing date.

Since the last Balance Sheet as at March 31, 1959, 400,000 shares of Capital Stock have been issued for cash at 15c each.

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12. Under an agreement dated June 14, 1960, as amended, the company granted an option, exercisable up to July 31, 1961, to Rix Athabasca, Uranium Mines Limited, as optionor, to purchase certain mining properties. Included in these properties are those referred to in Notes 7 and 8 above, in which the Company is required to retain its interests while this agreement is in force. The optionor is required to perform certain work on the optioned claims and to pay Brewis & White Limited the sum of \$20,050.00 to keep the option in good standing and is entitled to receive shares of the company, from Brewis & White Limited, at the rate of 15¢ per share, for all monies so paid. The said sum of \$20,050.00 when received by Brewis & White Limited shall be paid to the Company in the exercise of the options referred to in Note 10 above. If the above is exercised the company is entitled to receive \$200,000.00 out of net proceeds derived from the optioned claims concurrently with remuneration to the optionor of its pre-production expenses and thereafter net proceeds are divided 25% to the Company and 75% to the optionor.
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13. The optioned mining properties referred to in Note 12 above are valued in the books of the Company at \$40,842.75 and are included in the Balance Sheet in "Mining Properties — \$149,955.40."
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# UNITED COBALT

COMPARATIVE STATEMENT  
FOR THE YEARS ENDED MAY 31,  
AND FOR THE MONTH

	1952	1953	1954
			<u>STATEMENT OF</u>
<b>Revenue</b>			
Milling Charges	\$ 96,086.91	\$101,468.06	\$129,279.12
Mill Rental	—	—	—
Sundry Income	157.44	2,134.40	100.00
	<u>\$ 96,244.35</u>	<u>\$103,602.46</u>	<u>\$129,379.12</u>
<b>Expenditures</b>			
Exploration and Development	\$ 300.09	—	—
Milling Costs	64,771.96	\$ 71,917.36	\$ 94,377.75
Mine General	10,511.21	14,240.98	11,676.07
Head Office and Administration	8,019.10	5,500.19	4,944.27
Provision for Bad Debts	—	—	—
Mine Stores Written Off	—	—	—
Depreciation:			
Mill Buildings	5,699.36	5,699.36	5,699.36
Mill Equipment	11,382.30	11,432.53	11,417.53
	<u>\$100,684.02</u>	<u>\$108,790.42</u>	<u>\$128,114.98</u>
Net (Profit) or Loss for the Period	<u>\$ 4,439.67</u>	<u>\$ 5,187.96</u>	<u>(\$ 1,264.14)</u>
			<u>STATEMENT</u>
Balance at Debit, Beginning of Period	—	\$ 4,439.67	\$ 9,627.63
Add: Net (Profit) or Loss for the Period	\$ 4,439.67	5,187.96	( 1,264.14)
Accounts Written Off:			
Due from a former Director re house	—	—	—
Advance to Augener Mines Limited	—	—	—
Cost of and Expenditures — Savage Claims	—	—	—
	<u>\$ 4,439.67</u>	<u>\$ 9,627.63</u>	<u>\$ 8,363.49</u>
Deduct: Reduction of Debenture Payable	—	—	—
Balance at Debit, End of Period	<u>\$ 4,439.67</u>	<u>\$ 9,627.63</u>	<u>\$ 8,363.49</u>

# MINES LIMITED

OF OPERATIONS AND DEFICIT  
1952, TO MAY 31, 1960, INCLUSIVE  
ENDED JUNE 30, 1960

	1955	1956	1957	1958	1959
<b>OPERATIONS</b>					
	\$ 30,230.65	—	—	—	—
	—	—	\$ 10,941.25	—	—
	1,059.96	\$ 544.45	138.18	\$ 387.33	\$ 272.88
	<u>\$ 31,290.61</u>	<u>\$ 544.45</u>	<u>\$ 11,079.43</u>	<u>\$ 387.33</u>	<u>\$ 272.88</u>
	—	—	—	—	—
	\$ 19,152.74	—	—	—	—
	9,148.47	5,494.84	\$ 3,766.70	\$ 3,549.27	\$ 3,247.42
	8,891.87	3,617.18	2,057.23	1,451.07	2,163.19
	5,800.11	—	—	—	—
	9,836.04	—	—	—	—
	1,424.84	—	—	—	—
	2,854.38	—	—	—	—
	<u>\$ 57,108.45</u>	<u>\$ 9,112.02</u>	<u>\$ 5,823.93</u>	<u>\$ 5,000.34</u>	<u>\$ 5,410.61</u>
	<u>\$ 25,817.84</u>	<u>\$ 8,567.57</u>	<u>(\$ 5,255.50)</u>	<u>\$ 4,613.01</u>	<u>\$ 5,137.73</u>
<b>OF DEFICIT</b>					
	\$ 8,363.49	\$ 41,741.93	\$ 50,309.50	\$ 45,054.00	\$ 49,667.01
	25,817.84	8,567.57	( 5,255.50)	4,613.01	5,137.73
	9,560.55	—	—	—	—
	18,000.05	—	—	—	—
	—	—	—	—	28,282.74
	<u>\$ 61,741.93</u>	<u>\$ 50,309.50</u>	<u>\$ 45,054.00</u>	<u>\$ 49,667.01</u>	<u>\$ 83,087.48</u>
	<u>\$20,000.00</u>	—	—	—	—
	<u>\$ 41,741.93</u>	<u>\$ 50,309.50</u>	<u>\$ 45,054.00</u>	<u>\$ 49,667.01</u>	<u>\$ 83,087.48</u>

There has been no change in the Deficit Account from June 1, 1959 to June 30, 1960; and expenditures for the same period have been charged to Exploration and Development.

# UNITED COBALT MINES LIMITED

SCHEDULE OF EXPLORATION AND DEVELOPMENT, MINING, MILLING  
AND GENERAL CHARGES, AFTER DEDUCTING REVENUE FROM  
MILL TESTING AND VALUE OF CONCENTRATES PRODUCED

FROM THE INCEPTION OF THE COMPANY, APRIL 21, 1944 TO JUNE 30, 1960

## Exploration and Development

Crosscutting, Drifting and Slashing	\$ 29,327.31	
Raising and Hoisting	31,030.48	
Power	12,574.98	
Diamond Drilling	14,644.49	
Pumping	14,916.41	
General Surface Maintenance and Roads	6,414.19	
General Exploration and Development	<u>46,500.20</u>	\$155,408.06

## Mining

Timber and Tracks	\$ 9,450.05	
Power, Heat and Light	14,877.63	
Stoping	12,838.84	
Mucking	16,560.54	
General Mining Expense	5,287.04	
Supplies	5,724.03	
Mine Rehabilitation	<u>6,248.84</u>	70,986.97

## Milling

Assaying and Sampling	\$ 2,881.48	
Supplies	9,103.90	
Power, Heat and Light	31,588.74	
Crushing	25,619.44	
Flotation, Concentration and Drying	9,269.85	
Hauling Ore and Truck Operating	19,007.98	
Mill Rehabilitation	22,040.11	
General Milling Expense, Repairs, etc.	51,062.11	
Smelter Charges and Freight	6,622.33	
Broken Ore Charges	<u>60,000.00</u>	237,195.94

## General Charges

Office Salaries, Supplies, etc.	\$ 11,509.08	
Travelling Expenses	45,068.14	
Legal and Audit	13,430.04	
Unemployment Insurance and Medical	2,608.41	
Insurance	13,794.04	
Blacksmith Shop	1,263.30	
Workmen's Compensation Board	1,108.30	
Interest on Mortgage	2,136.00	
Taxes, Directors' Fees and General Administration Charges	<u>28,754.92</u>	119,672.23

Less: Sundry Revenue	14,944.98	
Concentrates	<u>60,192.72</u>	583,263.20
		<u>75,137.70</u>
		<u>\$508,125.50</u>

REPORT ON UNITED COBALT MINES LIMITED

COBALT

Dated at Cobalt, Ontario  
August 22nd, 1960

By James E. Armstrong BSc. P. Eng  
Mining Engineer

I N D E X

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## CERTIFICATE OF QUALIFICATIONS

Cobalt, Ontario,

August 22, 1960

United Cobalt Mines Ltd.,

145 Yonge St.,

TORONTO, Ontario

With reference to the Securities Act of Ontario and the Report made by me dated the 22nd of August, 1960, on your properties at Cobalt, Ontario, I hereby certify that:

- (a) My address is Box 197, Cobalt, Ontario.
- (b) I hold the degree of Bachelor of Science in Mining Engineering (1946) from Queen's University, Kingston, Ont.
- (c) I am a member of the Association of Professional Engineers of Ontario.
- (d) I have no personal interest, either directly or indirectly in the property of the Company, or in any of the securities of the said Company, nor do I expect to receive any.
- (e) This report is based upon the following information sources:
  - (i) Personal examinations of the underground workings at the Genesee Mine and the upper contact workings of the Silver Cliff Mine and King Edward Mines in 1947, 1954 and 1959.
  - (ii) Personal examination of the lower contact workings of the adjacent Colonial and relevant O'Brien and Violet Mines.
  - (iii) Plans and reports of Ausic Mining & Reduction Company.
  - (iv) Reports of Ontario Dept. of Mines, particularly 1922 Section 4, page 181.
  - (v) Personal operation of Silver Cliff Mill in 1947 and 1954.
  - (vi) Resistivity Survey reports by Lundberg Explorations Limited covering part of the Genesee Property, December, 1959.
  - (vii) Lifetime association and experience in the Cobalt area.

JAMES E. ARMSTRONG, B.Sc., P.Eng.

*Mining Engineer.*

INTRO

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## INTRODUCTION

The following report is based on information derived from personal examination of most of the underground workings, Ontario Department of Mines Reports and various maps, reports and records available relating to the properties. This report was requested by the directors of United Cobalt Mines Ltd. to present an up-to-date picture of the possibilities for developing commercial ore on its properties and roughly to estimate the cost of any recommended exploration program.

## SUMMARY AND CONCLUSIONS

1. The Company owns outright the Genesee property just north of the Town of Cobalt, the Silver Cliff, Webb and Airgiod properties one mile east of Cobalt. In addition to the above, United Cobalt holds an option agreement on the King Edward and Victoria properties.

2. Suitable geological and structural conditions, considered necessary as a prerequisite for the deposition of silver in this area are present in all properties.

3. The Genesee, Silver Cliff and King Edward are former producers of silver and all properties lie adjacent to major producers of silver.

4. On all properties there remain large areas of totally unexplored ground that could contain further quantities of silver ore.

5. The Company owns a complete modern mill capable of handling 100 tons per day and producing a good grade marketable concentrate with minimum tailing loss.

6. Recently a radiograph resistivity survey of an unexplored portion of the Genesee property outlined a number of conductive zones that are possibly indicative of vein structure in the underlying rocks.

7. The mineral rights of the Silver Cliff group are receiving exploration attention through an option agreement with Rix Athabasca Uranium Mines Limited.

## RECOMMENDATIONS

The Company is fully justified in carrying out an exploration program on its Genesee Property as follows:

1. Surface diamond drilling to test whether or not any or all the anomalies located indicate vein structure. Several of these holes should be continued to locate the keewatin-cobalt series contact.

2. Follow up diamond drilling to test located veins just above the keewatin-cobalt series contact.

3. Should silver values be located, the shaft could then be dewatered to a suitable horizon and development of these values carried out.

4. A program of 4000 feet of surface diamond drilling at a cost of \$14,000 should give this approach a fair test and have a reasonable chance for success.

Rehabilitation of the existing workings would cost an estimated \$20,000. Subsequent lateral work could be done at about \$30.00 per foot.

## PROPERTIES AND HOLDINGS

The Company owns the Genesee Mine, the Silver Cliff Mine, the Webb claim and the Airgiod property. It holds an option agreement on the King Edward and Victoria Mining properties.

The Genesee and Silver Cliff Groups differ in local geology and location and are described as separate units.

### (A) GENESEE PROPERTY

#### 1. Geographical

The Genesee property is situated in about one mile north of the Town of Cobalt and covers 161 acres, the south half of lot 9, concession 1, in Bucke Township. The main highway passes about 100 feet to the east of the property and is connected to the mine by a good road.

The Ontario Northland Railway runs about 50 feet from the south-east corner. The property is serviced by compressed air and electric power by the Ontario Hydro Electric Power Commission lines.

### 2. Buildings

Buildings on the property consist of a 40 foot headframe and bin house, dry and hoist house, caphouse, transformer, and caretaker's cottage in fair repair and sheated in.

### 3. Historical and Development

The Genesee Mine was opened up to explore the favourable area north of the Nipissing, Chambers Ferland and O'Brien properties, all of which were very heavy producers of silver and cobalt ore. Up to 1924 twelve veins had been located and eight hundred bags of highgrade silver ore recovered, reportedly mostly from No. 11 vein. Subsequently 13,941 tons of ore were mined from No. 12 vein by Ausie Mining and Reduction Company.

Mine development at the Genesee Mine consists of the following work:

- Two compartment shaft sunk to a depth of 572 feet.
- Three levels opened up at 350 feet, 450 feet and 550 feet below the collar.
- There are also two small sub-levels at 300 and 390 feet below the collar.

Total development work done is as follows:

Shaft sinking .....	572 feet
Drifting and X-cutting .....	4,625 "
Winze sinking .....	86 "
Raising .....	450 "
Sub level drifting .....	200 "

During 1946 the following additional work was carried out:

Drifting .....	388 feet (new 225 foot level)
Raising .....	48 "
Diamond drilling .....	3,200 "

②

*ins. 1959 work by ...*

### Local Geology and Structure

The area embracing the Genesee Mine is almost completely overlain by flat lying rocks of the cobalt series. Keewatin rocks underly the cobalt series for the most part, rising to near surface about 1,000 feet north of the shaft. The cobalt series attains a thickness of over 500 feet near the south boundary. The various layers of conglomerate appear more coarse, weathered and unconsolidated near surface. Down near the contact with the keewatin rocks, the pebbles appear smaller and are more consolidated in the matrix.

The cobalt series lies unconformably on the eroded keewatin contact. This eroded contact dips at about 30° to the south until it nears the south boundary where it appears to flatten out. The contact is "open" and in many cases is an underground watercourse. Movement on this contact, probably occurred during the intrusion of the diabase sill which originally overlaid the area.

The keewatin rocks, where exposed, are composed of steeply dipping cherty slates and iron formation, striking roughly east and west. There is a possibility these rocks may be Temiskaming in age, but sufficient evidence has not been found to classify them as such. *the cross-bed fault, a major tectonic feature.*

The mine is in a section of ground bounded on the S. E. by three major faults of the area. Fault "64" one of the major productive vein systems on the Nipissing property lies about 1,000 feet south of the boundary. It strikes roughly S 80° E and dips slightly to the south.

### Economics

With the present equipment on hand, the mine could be reequipped and dewatered for about \$20,000. Pumping is of prime consequence at the mine, the seepage being about 130 gals. per minute.

The most probable zone of enrichment in the veins on the property is between 20 and 150 feet above the keewatin, cobalt series contact, and exploration should be directed at this horizon.

### Recent Development

Since the Genesee claims are almost completely covered with glacial drift, some places to a depth of 30 feet, any approach to surface diamond drilling of the totally unexplored portion of these claims could well receive valuable direction from a geophysical survey.



A radiograph resistivity type of survey was carried out by Lundberg Explorations Limited late in 1959, on a portion of the claims immediately north of the existing workings.

Several strong conductive anomalies were obtained and a map showing an interpretation of these results is attached as an appendix to this report.

Surface diamond drilling is strongly indicated to check whether or not these anomalies indicate vein structures. Further drilling to test located veins in the cobalt series just above the keewatin-cobalt series contact would have a good chance for success.

This favourable ore horizon should not be too deep in the north part of the claim should the contact maintain its attitude as located in the present underground workings probably not greater than 300 feet below surface.

Success in this surface drilling could be readily developed from the existing shaft.

## (B) SILVER CLIFF GROUP

This group includes the Silver Cliff, King Edward and Victoria mining properties that were former producers of silver plus the Webb and Airgiod properties. ~~At present under a lease option agreement with Rix Athabasca Uranium Mines Limited, these holdings are being rehabilitated and dewatered preliminary to an exploration program.~~

### (a) SILVER CLIFF MINE

#### History and Development

The Silver Cliff Mine first produced ore in 1902. Up to 1922 the mine produced 404,080 troy ounces of silver. This amount does not include the silver mined by subsequent leasers. There were six veins stoped. The following development work was completed:

Drifting .....	7,548 feet
Raising .....	534 "
Shaft sinking .....	150 "
Winze sinking .....	114 "

During the season of 1946 the following work was carried out:

181 feet of drifting
75 " " raising
2,200 " " diamond drilling

#### Location

The Silver Cliff Mine is situated one mile east of the Town of Cobalt, Ont. The mine is on the west shore of Cross Lake and about one mile south of the main highway. A good road connects the mine with the highway. Air and electric power is supplied by the Ontario Hydro Electric Commission Line. Water supply is plentiful. The property description is as follows:

Mining Claim C.R. 1 -- a portion of Lot 3, Concession 6, in the Township of Coleman, containing 11.9 acres more or less and designated as Parcel Number 5004 in the Register for Nipissing North Division.

Part of Lot 3, Concession 6, Township of Coleman, containing 22 acres more or less, and called Parcel 1878 in the Register for Nipissing North Division.

#### Local Geology

The Silver Cliff mine property is covered by the Nipissing Diabase Sill which has been estimated to be about one thousand feet in thickness. In several places remnants or small areas of the elder keewatin lavas are still lying on the upper contact of the diabase sill. The keewatin formation also lies below the Diabase Sill. The pressure during the intrusion of the Diabase Sill caused shearing and crushing in the country rock (keewatin series) adjacent to it, while the cooling off of the sill caused shrinkage cracks in the areas of the upper and lower contacts between the two formations. Post intrusive faulting caused many slips, and in some cases there was considerable displacement, especially the major Cross Lake Fault cutting through the property.

The Silver Cliff workings are entirely within the Nipissing Diabase Sill, and the operation may be classed as an upper contact one. The veins have a strike from nearly north-south to north sixty west. The dips are all vertical. Practically all of the vein fillings are white calcite where silver values appear.

The old workings were extended from the adit level up to the upper contact between the Diabase and the Keewatin formation, a distance of one hundred and fifty feet and down from the adit level a distance of sixty feet on a winze level. Some exploration work has been carried out at an elevation of one hundred and fifty feet below the winze level, making a total distance between levels in the mine of three hundred and sixty feet, all in diabase just below the upper contact. The past history of the Cobalt Camp shows that the ore-bearing zones of economic veins were confined to the areas that extended about three hundred feet in a direction normal to the contact both into the diabase and into the intruded formation, whether or not it happened to be keewatin or cobalt series. There are several noteworthy exceptions to this empirical rule where ore was located up to 400 feet from this contact but even in these exceptions, the ore continued up to the contact.

(b) **KING EDWARD MINE**

*History and Development*

In 1905, the first silver ore was located in the King Edward and up to 1918 the property had produced a total of 653,713 ounces of silver. There is no record of the subsequent production by leasers but it is reported to be in the neighborhood of 200,000 ounces. All production came from the upper contact workings.

With the objective of picking up the extension of the O'Brien Colonial Violet lower contact vein systems, a winze was sunk 800 feet below the main adit level to within 200 feet of the lower diabase contact. As development was pushed north-west, the level reportedly entered the contact zone. Two veins were reportedly located with this work but only very limited work was done on them before funds ran out.

The upper contact workings are similar in nature and geology to the Silver Cliff. Six veins were developed and stoped above the adit level. The following is a summary of the development: *until 1918.*

Upper Contact—Cross cutting .....	1200 feet
Drifting .....	4000 "
Lower Contact—Cross cutting and drifting .....	1200 "
<hr/>	
Total lateral work .....	6400 feet
Shaft sinking—main winze .....	800 "
Surface shafts total .....	400 "
<hr/>	
	1200 feet

*Location*

The King Edward Mine and Victoria properties are grouped together in Parcel 8593 SST and together they contain 109 acres more or less. They are situated in Lots 2 and 3 in the Fifth Concession of the Township of Coleman. They adjoin the south boundaries of the Silver Cliff and Colonial properties.

(c) **VICTORIA**

*History and Development*

This property was explored from 1907 to 1909. Cobalt and some silver values were encountered but there is no report of commercial silver production. There are two shafts on the property both reportedly 150 feet deep. A winze was sunk 95 feet below the 150 foot level of the main or east shaft.

A total of 655 feet of lateral work has been reportedly carried out on this property.

The productive mines of Nova Scotia and Colonial adjoin the property south and north respectively.

(d) **WEBB**

This property, containing 28 acres more or less, adjoins the north boundary of the Silver Cliff property. This almost completely covered by the water of Cross Lake and mill tailings. Its lower contact has been considered geologically attractive but exploratory access to this zone has been economically prohibitive. The Colonial held an option on this property when it was exploring the Colonial lower contact zone but they only pushed an exploration cross cut 130 feet into the south-west corner of the Webb claim.

(e) **AIRGIOD PROPERTY**

*Location*

The Airgiod property is situated about 1½ miles east of the Town of Cobalt. It lies immediately south of and adjoining the King Edward Mine property and immediately east of and adjoining the Nova Scotia Mine property.

Access to the property is obtained by following the Township of Coleman, Brady Lake Road, to the Nova Scotia mine and thence by following a mine access road for ¼ mile right into the shaft site.

The claim lies in the Township of Coleman Lot 3, Con. 5, being the SE¼ of the N½. Its present claim number is T 45331 and contains 40 acres more or less.

The property may be easily serviced with hydraulically compressed air and hydro-electric power.

Status *Sufficient assessment work has been done to bring the claim to a lease*

*The claim was originally a patented claim, was opened for staking, staked and has been purchased by United Cobalt Mines Limited. It requires 160 days assessment work to again bring it to a patent.*

#### History and Development

There is very little recorded information about the property. From the size of the dump it would appear that about 300 feet of shaft sinking and 1,000 feet of lateral work had been carried out. This work was probably done between 1906 and 1911 when the adjacent Nova Scotia mine produced a total of 807,818 ounces of silver.

#### Local Geology

Essentially the Airgiod property is completely covered by the Nipissing diabase sill estimated in this area to be about 1,000 feet in thickness. The south-west corner of the claim is covered by a thin skin of keewatin rocks lying on the upper contact of the diabase. This patch of keewatin is probably not more than 100 feet thick. The main shaft was sunk through this keewatin capping and on into the underlying diabase.

On the eastern half of the claim there is a major north-south "break" or valley cutting into the diabase surface and extending north into the King Edward property. The floor of this valley is covered with overburden swamp talus and boulders. It is possible this break may be the surface manifestation of a strong fault but there has been no knowledgeable work done to confirm or reject this observation.

#### Veins

The main shaft was sunk on a strong calcite vein containing cobalt and chalcopyrite mineralization. This shaft is located about 260 feet east of and 170 feet north of the south-west corner of the Airgiod property. Judging from specimens on the dump, the vein varied in width from 2 to 6 inches. A character vein sample assayed silver 2.9 ounces, copper 0.9%, nickel—nil. Fibrous serpentine, fault gouge and slickenside specimens indicate faulting along the vein walls.

This vein has a strike of about N 50° E and has been located 300 feet further east on surface by test pits and rock trenches. Five calcite vein specimens apparently from those test pits are up to 8" wide and contain considerable cobalt mineralization.

The general trend of vein systems on adjacent properties is east-west on the Nova Scotia property adjoining to west and north-south on the King Edward property adjoining on the north.

The generally accepted loci for silver ore deposition in this particular structure and geology is that silver concentration in veins is most likely to occur within 300 feet of the contact of the diabase the intruded rocks. The surface of the property represents the upper contact locus and if ore exists here it should be near or at surface. This ore may be masked on the west portion of the claim by the keewatin capping and on the eastern half of the claim by overburden.

The lower contact locus of this claim is totally unknown and not practical to explore. Should the shaft of the adjacent King Edward property be dewatered down to this lower contact horizon, it is conceivable that worthwhile and rewarding exploration could be carried out at the Airgiod lower diabase contact.

#### (f) SILVER CLIFF GROUP ECONOMICS

There are fair possibilities of locating further ore adjacent to the present upper contact workings of the Silver Cliff, King Edward and Victoria claims. 3,000 feet of diamond drilling designed to further extend known productive veins and test undeveloped areas should give these possibilities a fair test. Drilling costs of this work would vary from \$2.50 to \$3.50 per foot depending on whether the holes were drilled from the old workings or from surface.

Probably the best possibility of locating a new ore body lies at the lower contact zone. By far the larger portion of the ore so far recovered in the Cobalt area has come from this lower contact. The King Edward winze provides access to this horizon.

There are two main productive veins systems and striking directly into this group that would require immediate attention. The first is the O'Brien Colonial vein system which has been developed at the lower contact right up to a point near

the north-west corner of the King Edward claim. This system has produced many ore shoots all very close to the diabase keewatin contact.

The second vein system is the O'Brien Violet. It has been developed adjacent to the west boundary of the Silver Cliff claim. Although the Violet system has no reported production from this immediate area, the veins are very strong where observed in the bottom level cross cut of the Colonial.

Both the vein systems strike generally south-east and their probable extensions are well within diamond drilling range of the present King Edward lower contact workings.

The King Edward winze was sunk on a vein which reportedly persisted right down to the bottom level. This and other located veins could be tested by diamond drilling at favourable horizons and have a fair chance of locating ore. In addition to the known possibilities there remains a vast area of unexplored and favourable ground at the lower contact of the Silver Cliff Group that could be advantageously drilled from the lower workings of the King Edward mine.

I do believe that \$50,000 should provide a fair test of this ground at the upper and lower contacts of this group by providing about 10,000 feet of relatively flat hole diamond drilling all in suitable ore potential horizons.

Rehabilitation and dewatering of the King Edward winze has reached a point just above the bottom or 800 feet winze level. This level should be clear in about a week and diamond drilling could get under way very shortly.

## **SILVER CLIFF MILL**

### **Location**

The mill is located on the Silver Cliff property, about one mile east of the Town of Cobalt on the west shore of Cross Lake. Tailings are discharged into Mill Creek at the north end of Cross Lake. The mill is serviced by 12,000 volt line and all equipment is 550 volt, 60 cycle.

### **Capacity**

The mill will handle between 80 and 110 tons per 24 hours, depending on the type and grade of ore handled. There is storage capacity for 400 tons of fine crushed ore. Diabase requires more time to crush, but a less fine grind is suitable for this type of ore.

### **Extraction**

The mill has a proven efficiency on silver ore of between 87% and 95% and from 80% to 90% on cobalt ore. This efficiency could be still further improved by additional equipment, but the mill in its present form is as efficient as any mill in the area.

### **General Description**

The primary crusher is a Jaw Blake type, Allis Chalmers (17¼ x 9½) driven by 30 H.P. motor and the secondary crushing is done by a 3 foot Symon Cone Crusher in closed circuit with a Denver screen classifier. The secondary crushed product is fed into the fine ore bin by belt conveyors.

The grinding unit is a modified tube mill, driven by 125 H.P. motor in closed circuit with a rake classifier, Denver unit cell and sometimes Denver duplex jig.

The heavy metallic particles immediately fall out of the circuit into the unit cell hutch and are fed continuously down through a spigot to a concentrating table. A concentrate is cut out from this product and the reject is returned with the coarse sand overflow of unit cell to the classifier.

The overflow from the classifier is fed down onto three slime tables and a concentrate cut out.

The tailings from the tables are fed into a 30 foot thickener and the thickened pulp is pumped into a flotation conditioner.

The pulp from the conditioner is then fed into a bank of 10 Denver sub "A" cells and the flotation concentrates so derived are filtered, piled and shipped in bulk.

The tailings from the flotation unit and thickener overflow go out into discard.

All table and jig concentrates are dried on three 6 x 6 steam heated drying plates and bagged for shipment.

### **Auxiliary Equipment**

Heating equipment consists of a smoke tube locomotive type boiler.

An efficient scale house and truck scales are situated near the office building.

Arc and acetylene welding equipment are part of the mill equipment.

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There is storage capacity for 400 tons of concentrates on the ground floor.

The main office building includes mine office equipment, partially equipped assay office, Manager's office and warehouse. This building is hot water heated by an oil furnace.

There is a concrete floored 40 x 30 combined garage and blacksmith shop also on the property.

Mill water feed is drawn from Cross Lake and is pumped up to a 10,000 gal. tank above the mill.

*General Condition*

The mill is generally in fair condition and could be put in operation in a short time. The following repairs and modifications would have to be carried out:

Substation conversion from 2200 volts to the present H.E.P.C. primary voltage of 12,500. The tailings launder and many windows, need repair.

Should exploration on the Genesee or Silver Cliff Groups meet with success, this mill could become a very valuable asset to either or both parties concerned.

Yours truly,

J. E. Armstrong, B.Sc., P.Eng.,  
Consulting Engineer

Dated at Cobalt, Ontario,  
August 22, 1960.

**UNITED COBALT MINES LIMITED**

Report On

**BALDWIN TOWNSHIP PROPERTY**

August 29, 1960 — HARPER and HOLBROOKE

**CONCLUSIONS and RECOMMENDATIONS**

Two strong zones of silicification and mineralization occur crossing the property for lengths in excess of 1,000 feet. The result of sampling of these zones by surface trenching and diamond drilling, while showing small lenses of ore grade material, are not sufficiently encouraging to warrant further exploration under present economic conditions.

It is therefore recommended that the property be retained and the claims kept in good standing but that no development be considered at this time.

## LOCATION and FACILITIES

The property is located in the northeastern part of Baldwin Township in the Sudbury Mining Division of Ontario. It consists of a group of 8 patented mining claims as follows:

CLAIM NO.	PARCEL	BALDWIN TOWNSHIP		
S-56121	— 14795 —	NW ¼ — N ½ — Lot 10	—	Con. iv
S-56123	— 14798 —	SW ¼ — N ½ — Lot 11	—	Con. iv
S-56124	— 14797 —	NE ¼ — N ½ — Lot 12	—	Con. iv
S-56125	— 14796 —	SE ¼ — N ½ — Lot 12	—	Con. iv
S-90707	— 14794 —	NW ¼ — N ½ — Lot 11	—	Con. iv
S-35715	— 14245 —	NE ¼ — N ½ — Lot 11	—	Con. iv
S-35734	— 14244 —	SW part — S part — Lot 10	—	Con. v
Min. Rights	— 13990 —	NW ¼ — S ½ — Lot 11	—	Con. iv

Access to the property is by five miles of good secondary road from the community of McKerrow, a village on the Soo branch of the Canadian Pacific Railway and Ontario Highway 17 some 45 miles southwest of Sudbury.

Electric power is available from the Ontario Hydro-Electric commission transmission line which passes 2¼ miles south of the claims. An ample water supply for all mining purposes is available from Agnew Lake, ¼ mile north of the property. There is no camp accommodation on the ground but crews for preliminary work could be quartered in nearby farm houses.

## GEOLOGY

The property is largely underlain by early pre-Cambrian basic intrusives, varying in composition from diorite to gabbro and carrying remnants of the invaded intermediate to basic lavas and fragmentals. These rocks have themselves been intruded across the southern claims of the group by irregular, lenticular bodies of granite which follow an indefinite N60°E trending zone across the township.

The early pre-Cambrian rocks are unconformably overlain by the conglomerates and quartzites forming the lower members of the flat-lying, late pre-Cambrian, Mississagi series of sediments which blankets large areas of this section of the country.

The sediments have a rough arcuate distribution across the northern and northeastern claims of the group which probably reflects an old folding of the early pre-Cambrian rocks. The axial plane of this folding trends N60°E with a 75° south dip across the southeastern part of the property and the plunge is indicated as being to the northeast. The axial plane of the folding also apparently forms the locus of the indefinite zone of small granite intrusives mentioned above.

As a result of the folding the basic intrusives and volcanics of the area have developed a regional weak fracture and flow cleavage parallel to the axial plane and later stresses have developed three zones of strong shearing, about 1,800 feet apart, whose attitudes have been controlled by the cleavage and thus strike N60°E and dip 75° south. These shearings, must be younger than the late pre-Cambrian sediments as they continue into, and through these rocks although with much diminished strength.

The northern shear zone can be traced for some 4,000 feet along its N60°E strike across claims 90707, 35715 and 35734 with the best development where it crosses the basic intrusives in the southeast part of claim 90707. The central zone is parallel and lies 1,750 feet to the south. It is found for 1,200 feet crossing the central part of the NW¼, S½, Lot 11 Con. iv: The parallel southern zone lies 1,800 feet farther to the southeast, beyond the property boundary and can be traced for approximately 1,000 feet along its strike.

## GEOLOGY — ECONOMIC

The economic possibilities of the property and surrounding area are apparently confined to the three zones of strong shearing described above. The southern zone has been injected with a strong quartz vein about 4 feet wide which can be traced for over 600 feet across the area about 900 feet southeast of the southeast corner of the property. The vein is weakly mineralized by pyrite and a little chalcopyrite but shows negligible values in gold. It is of no economic significance.

The central zone, which crosses the most southerly claim of the group, is the locus of a strong quartz vein which is accompanied by silicification of the basic intrusive wallrock. The width of the structure is from 4 to 19 feet and it is erratically mineralized by patches of strong chalcopyrite for a length of at least 1,200 feet.

The northern zone, where it lies in basic intrusives across claim 90707, has been silicified and mineralized by chalcopyrite, pyrrhotite and pyrite across widths of from 6 to 15 feet and for a length of at least 1,200 feet, open in both directions. Beyond this length, along the strike to the northeast the zone enters the overlying conglomerates and quartzites and weakens rapidly. However even here narrow, lenticular bodies of quartz carry weak patchy sulphides and thus help to date the mineralization.

#### DEVELOPMENT and RESULTS

Beyond a few shallow pits the southern zone is undeveloped and the lack of values in the sampling makes any additional work futile.

The central zone was cross-trenched and thoroughly channel sampled at approximately 75 feet intervals for a length of 1,100 feet by Eric Canadian Mines Limited in 1937. The results of this work were discouraging as the average grade was indicated to be 0.93% copper with 0.08 ounces per ton in gold. In 1954 this zone was checked by the Peter Rock Mining Company who drilled a few shallow diamond drill holes across the zone. The results of this work are not available but are reported to confirm the earlier surface sampling.

The northern zone, across claim 90707, has been opened up on surface by 12 pits at 100 foot intervals which are now largely filled with water. This surface work shows the zone to be about 10 feet wide at its western end and to gradually widen to 20 feet about 750 to the east at which point it splits into two zones, each about 10 feet wide and 40 feet apart, and continues so to the eastern end of the trenching. In the western section the pits show medium to strong patchy, sulphide mineralization across widths up to 10 feet. West of the trenched section the zone weakens both in width and mineralization. To the east of the split in the zone the southern section also carries strong patchy sulphides across about 10 feet but the northern member is considerably weaker.

On the basis of the trenching of the northern zone the property was purchased by United Cobalt Mines Limited early in 1956 and the zone was investigated by shallow diamond drilling. Between February 3rd and April 22nd, 1956, fourteen diamond holes were completed. These holes were spaced at 100 foot intervals for 1,300 feet along strike of the zone which was intersected at an approximate depth of 150 feet. A total of 3,923 feet were drilled and no further work has been done on the property.

The results of the drilling were not encouraging. Three holes, Nos. 7, 9 and 10 returned an average of 0.85% copper across 5.5 feet for a length of 300 feet between 3—50 and 6—50 east on the base line.

A second length of good mineralization occurs in old surface pits at 11—00 and 12—00 east on the base line and is confirmed by holes 15 and 16 at the 150 foot horizon. These holes returned 2.17% copper across 8.5 feet for a length of 200 feet. These results were checked by hole No. 21 which cut the zone beneath these holes at a depth of 400 feet and showed only very weak mineralization.

HARPER and HOLBROOKE  
G. L. Holbrooke

August 29th, 1960



### CERTIFICATE

I, G.L. Holbrooke of 160 Bay Street, in the City of Toronto, in the Province of Ontario, do hereby certify as follows:

1. That I am a consulting geologist and a member of the Association of Professional Engineers of Ontario.
2. That I am a graduate of McGill University with degrees of B. Sc. and M. Sc. in 1927 and 1928 and have been practising my profession continuously for thirty-two years.
3. That the above report is based on reports, maps and logs in the Company files and on several personal examinations of the property and the diamond drill cores while the drilling was in progress between February 3rd and April 22nd, 1956. I was also in charge of the Erie Canadian Mines Limited work on the property in 1937.
4. That I have no direct or indirect interest whatsoever in the properties or securities of the Company, nor do I expect to receive any such interest.

G. L. Holbrooke,  
Consulting Geologist.

**AMENDMENT TO PROSPECTUS OF  
UNITED COBALT MINES LIMITED**

Dated the 28th day of October, 1960

- A. United Cobalt Mines Limited (herein referred to as the "Company"), has an authorized capital of 4,000,000 shares of the par value of \$1.00 each, whereof 3,043,973 shares are issued as fully paid and non-assessable.
- B. 421,946 shares of the Company as originally constituted, now represented by 210,973 shares, have been sold for cash for a total consideration of \$359,326.63 as follows: 100,000 shares at 40.8737¢ a share; 50,000 shares at 50¢ a share; 98,306 shares at \$1.00 a share; 150,575 shares at \$1.066242 a share; and 23,065 shares at \$1.50 a share. In addition 150,000 shares of the Company, as presently constituted, have been sold at 10¢ a share; 1,250,000 shares have been sold at 15¢ a share and 25,000 shares have been sold at 20¢ a share, for a total purchase price of \$207,500.00. 721,900 shares were issued at the rate of 10¢ per share in full settlement of the balance of \$72,190.00 secured by the Debenture issued by the Company and referred to in paragraph G of the Prospectus dated October 28th, 1960. No commission was paid on the sale of the above shares.
- C. Pursuant to the Agreement dated October 18th, 1960, made between the Company and Brewis & White Limited, 145 Yonge Street, Toronto, Ontario, as Underwriter/Optionee, the Underwriter/Optionee purchased on its own behalf and paid for 100,000 shares of the Company at 15¢ per share. In consideration of the foregoing purchase, the Company granted to the Underwriter/Optionee the sole and exclusive option of purchasing on its own behalf 400,000 additional shares of the Company as follows: 200,000 shares at 20¢ per share within three months of the effective date (January 5th, 1961), and 200,000 shares at 25¢ per share within six months of the effective date. The Underwriter/Optionee exercised the option due April 5th, 1961 to the extent of taking down and paying for 25,000 shares at 20¢ per share. By Agreement dated April 5th, 1961 made between the Company and the said Underwriter/Optionee, the Underwriter/Optionee agreed to purchase firm on May 1st, 1961, a further 75,000 shares at 20¢ per share and in consideration therefor the Company granted the Underwriter/Optionee an extension of six months from April 5th, 1961 to exercise the balance of the option due April 5th, 1961 and the option due July 5th, 1961, which are now exercisable at the prices and within the times noted below:

No. of Shares All or any Part of	Price per Share	Time within which Exercisable from April 5th, 1961
100,000	20¢	6 months
200,000	25¢	9 months

- D. On January 27th, 1961, the Company paid \$5,050.00 and delivered 36,100 fully paid and non-assessable shares of its capital stock to Temnor Realty Company Limited, 191 Main Street West, North Bay, Ontario, being the balance of the purchase price of Lots No. 2 and 3 in the Fifth Concession of the Township of Coleman, in the District of Temiskaming, containing 109 acres more or less, being Parcel 8593 in the Register for SST., pursuant to an agreement dated January 20th, 1959 referred to in paragraph L (King Edward and Victoria Group) of the Prospectus dated October 28th, 1960. The Company is now the registered owner thereof free of all encumbrances.
- E. There are no other material facts not disclosed in the foregoing Amendment or in the Prospectus dated October 28th, 1960.
- F. The foregoing, together with the Prospectus dated October 28th, 1960, constitutes full and plain disclosure of all material facts in respect of the offering of securities referred to above or in the Prospectus dated October 28th, 1960, as required by Section 38 of The Securities Act (Ontario) and there is no further material information applicable other than in the financial statements or reports where required.

Dated this 25th day of April, 1961.

**DIRECTORS**

**PROMOTER**

.....  
A. W. White

.....  
**BREWIS & WHITE LIMITED**

By

.....  
L. W. McIlmurray

.....  
H. R. Heard

.....  
H. I. Miller

.....  
W. A. Edmond

.....  
L. W. McIlmurray

.....  
L. V. Barbisan

G. To the best of our knowledge, information and belief, the foregoing together with the Prospectus dated October 28th, 1960, constitutes full, true and plain disclosure of all material facts in respect of the offering of securities referred to above or in the Prospectus dated October 28th, 1960, as required by Section 38 of The Securities Act (Ontario) and there is no further material information applicable other than in the financial statements or reports where required. In respect of matters which are not within our knowledge, we have relied upon the accuracy and adequacy of the foregoing and the Prospectus dated October 28th, 1960.

Dated this 25th day of April, 1961.

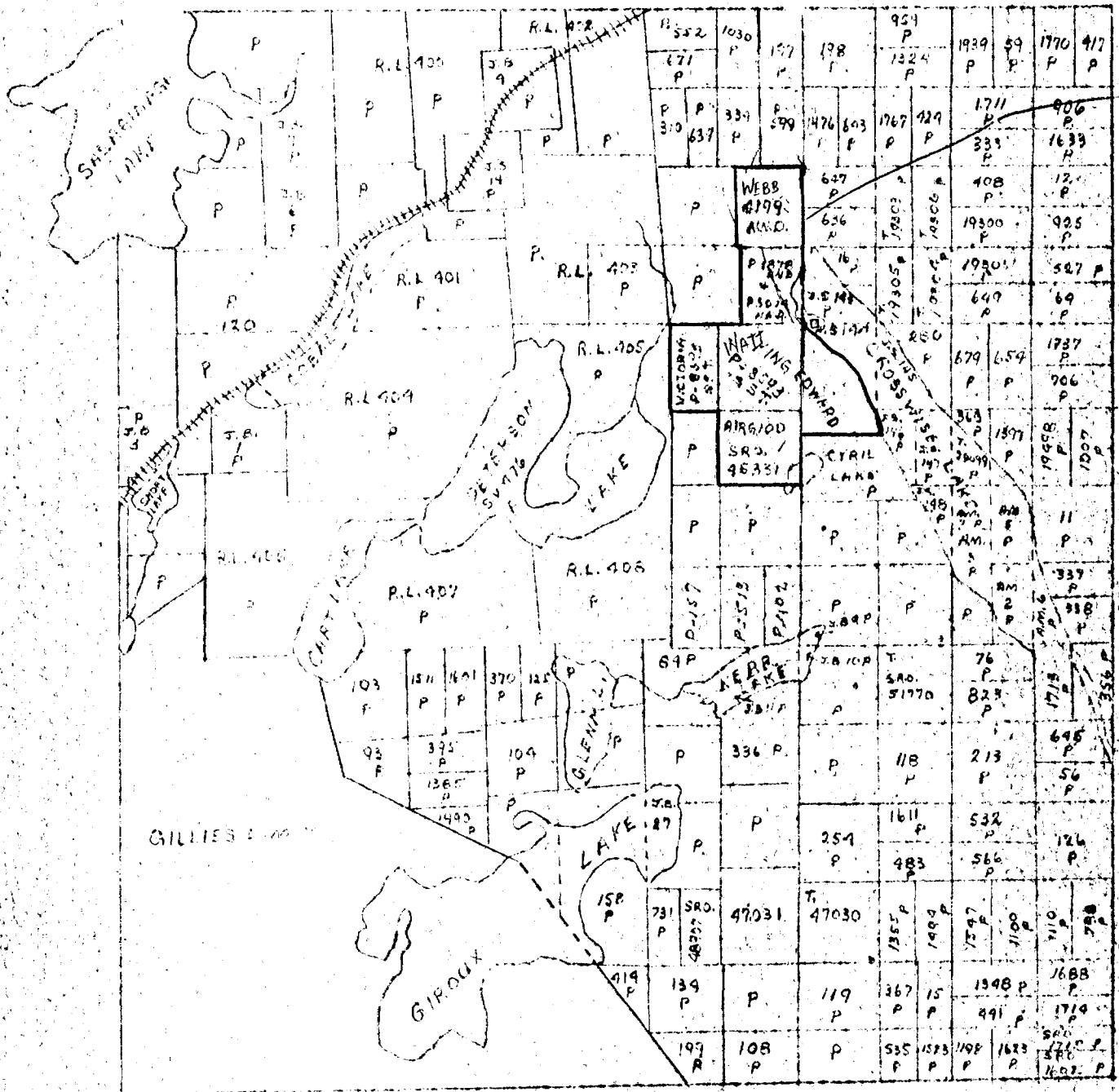
**BREWIS & WHITE LIMITED**

By:

.....  
**L. W. McIlmurray**

.....  
**H. I. Miller**  
Underwriter/Optionee

3 2 1



# UNITED COBALT MINES LTD.

Scale 1 inch = 1/2 mile

— Claims in Coleman Township - Timiskaming

Dec. 16, 1964



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REPORT ON  
UNITED COBALT MINES LIMITED  
"GENESEE" AND "SILVER CLIFF" GROUP

July 4, 1967.

REPORT ON  
UNITED COBALT MINES LIMITED  
"GENESEEE AND "SILVER CLIFF" GROUP

INTRODUCTION

The contents of this report are based on Ontario Department of Mines, Maps and Reports, on a report by James E. Armstrong, Mining Engineer, dated August 22, 1960, and on the writer's personal experience in the Cobalt area over the past 30 years which includes time on, or in the immediate vicinity of, the said properties.

PROPERTIES AND HOLDINGS

The Company owns the Genesee Mine, the Silver Cliff Mine, the Webb claim and the King Edward and Victoria Mining properties. These properties will be dealt with as separate units: The "Genesee" and "Silver Cliff" (Silver Cliff, Webb, King Edward, Victoria and Airgiod) because of different geological conditions and locations:-

(A) GENESEEE PROPERTY

1. Geographical

The Genesee property, in area 161 acres, covers the south half of lot 9, concession 1, in Bucke Township, Temiskaming Mining Division, approximately 1 mile north of the town of Cobalt.

A motor access road leads from Highway 11B, one half mile northwest to the headframe.

The Ontario Northland Railway passes within a few feet of the south east corner.

The property is serviced by Hydro Electric and Compressed Air power.

## 2. Buildings

A head-frame, Hoistroom and Dry have been erected recently by Silver Regent Mines.

## 3. Historical and Development

The Genesee Mine was opened up to explore the favourable area north of the Nipissing, Chambers Ferland, and O'Brien properties, all of which were very heavy producers of silver and cobalt ore. Up to 1924, twelve veins had been located and eight hundred bags of highgrade silver ore recovered, reportedly mostly from No. 11 vein. Subsequently, 13,941 tons of ore were mined from No. 12 vein by Ausic Mining and Reduction Company.

Mine development at the Genesee Mine consists of the following work:

Two compartment shaft sunk to a depth of 572 feet.

Three levels opened up at 350 feet, 450 feet and 550 feet below the collar.

There are also two small sub-levels at 300 and

390 feet below the collar.

Total development work done is as follows:

Shaft sinking	572 feet
Drifting and X-cutting	4,625 feet
Winze sinking	86 "
Raising	450 "
Sub level drifting	200 "

During 1946, the following additional work was carried out:

Drifting	388 feet (new 225 foot level)
Raising	48 "
Diamond drilling	3,200 "

In 1959, a resistivity geophysical survey was carried out by Hans Lundberg Ltd. 3,200 feet of diamond drilling was carried out to test results from this survey, but no silver values of significance were intersected.

In 1965, Silver Regent Mines obtained a working lease on the property, and at present is carrying out underground exploration and development.

#### 4. Local Geology and Structure

The area embracing the Genesee Mine is almost completely overlain by flat lying rocks of the cobalt series. Keewatin rocks underly the cobalt series for the most part,



rising to near surface about 1,000 feet north of the shaft. The cobalt series attains a thickness of over 500 feet near the south boundary. The various layers of conglomerate appear more coarse, weathered and unconsolidated near surface. Down near the contact with the keewatin rocks, the pebbles appear smaller and are more consolidated in the matrix.

The cobalt series lies unconformably on the eroded keewatin contact. This eroded contact dips at about  $30^{\circ}$  to the south until it nears the south boundary where it appears to flatten out. The contact is "open" and in many cases is an underground watercourse. Movement on this contact, probably occurred during the intrusion of the diabase sill which originally overlaid the area.

The keewatin rocks, where exposed, are composed of steeply dipping cherty slates and iron formation, striking roughly east and west. There is a possibility these rocks may be Temiskaming in age, but sufficient evidence has not been found to classify them as such.

The Cross Lake fault, a major topographical feature strike north west through the east part of the property.

(B) SILVER CLIFF GROUP

This group includes the Silver Cliff, King Edward and Victoria mining properties that were former producers of silver plus the Webb and Airgiod properties.

(a) SILVER CLIFF MINE

History and Development

The Silver Cliff Mine first produced ore in 1912. Up to 1922 the mine produced 404,080 troy ounces of silver. This amount does not include the silver mined by subsequent leasers. There were six veins stoped. The following development work was completed:

Drifting	7,548 feet
Raising	534 "
Shaft sinking	150 "
Winze sinking	114 "

During the season of 1946 the following work was carried out:

181 feet of drifting
75 " " raising
2,200 " " diamond drilling

Location

The Silver Cliff Mine is situated one mile east of the Town of Cobalt, Ont. The Mine is on the west shore of Cross Lake

and about one mile south of the main highway. A good road connects the mine with the highway. Air and electric power is supplied by the Ontario Hydro Electric Commission Line. Water supply is plentiful. The property description is as follows:

Mining Claim C.R.1 - a portion of Lot 3, Concession 6, in the Township of Coleman, containing 11.9 acres more or less and designated as Parcel Number 5004 in the Register for Nipissing North Division.

Part of Lot 3, Concession 6, Township of Coleman, containing 22 acres more or less, and called Parcel 1878 in the Register for Nipissing North Division.

#### Local Geology

The Silver Cliff Mine property is covered by the Nipissing Diabase Sill which has been estimated to be about one thousand feet in thickness. In several places remnants or small areas of the elder keewatin lavas are still lying on the upper contact of the diabase sill. The keewatin formation also lies below the Diabase Sill. The pressure during the intrusion of the Diabase Sill caused shearing and crushing in the country rock (keewatin series) adjacent to it, while the cooling off of the sill caused shrinkage cracks in the areas of the upper and lower contacts between the two formations. Post intrusive faulting caused many slips, and in some cases there was considerable

displacement, especially the major Cross Lake Fault cutting through the property.

The Silver Cliff workings are entirely within the Nipissing Diabase Sill, and the operation may be classed as an upper contact one. The veins have a strike from nearly north-south to north sixty west. The dips are all vertical. Practically all of the vein fillings are white calcite where silver values appear.

The old workings were extended from the adit level up to the upper contact between the Diabase and the Keewatin formation, a distance of one hundred and fifty feet and down from the adit level a distance of sixty feet on a winze level. Some exploration work has been carried out at an elevation of one hundred and fifty feet below the winze level, making a total distance between levels in the mine of three hundred and sixty feet, all in diabase just below the upper contact. The past history of the Cobalt Camp shows that the ore-bearing zones of economic veins were confined to the areas that extended about three hundred feet in a direction normal to the contact both into the diabase and into the intruded formation, whether or not it happened to be keewatin or cobalt series. There are several noteworthy exceptions to this empirical rule where ore was located up to 400 feet from this contact but even in these exceptions, the ore continued up to the contact.

(b) KING EDWARD MINE

History and Development

In 1905, the first silver ore was located in the King Edward and up to 1918 the property had produced a total of 653,713 ounces of silver. There is no record of the subsequent production by leasers but it is reported to be in the neighborhood of 200,000 ounces. All production came from the upper contact workings.

With the objective of picking up the extension of the O'Brien Colonial Violet lower contact vein systems, a winze was sunk 800 feet below the main adit level to within 200 feet of the lower diabase contact. As development was pushed, northwest, the level reportedly entered the contact zone. Two veins were reportedly located with this work but only very limited work was done on them before funds ran out.

The upper contact workings are similar in nature and geology to the Silver Cliff. Six veins were developed and stoped above the adit level. The following is a summary of the development until 1961:

Upper Contact-Cross cutting	1200 feet
Drifting	4000 "
Lower Contact-Cross cutting and	
drifting	1200 "
	<hr/>
Total lateral work	6400 feet

Shaft sinking - main winze	800 feet
Surface shafts total	400 "
	<hr/>
	1200 feet

In 1960, Rix Athabaska, on a working lease, rehabilitated the Winze Shaft and carried it down an additional 250 feet, to a depth of 1,050 feet. Two working levels were established at the 800' and 1050' horizons and the following exploration and development work was completed by the early part of 1964, at which time the lease was terminated.

Drifting - 1st level	876 feet
X-cutting " "	643 "
Drifting - 2nd "	1594 "
X-cutting " "	1092 "
Underground diamond drilling -	44,000 feet
Silver production amounted to	954,580 ounces.

Location

The King Edward Mine and Victoria properties are grouped together in Parcel 8593 SST and together they contain 109 acres more or less. They are situated in Lots 2 and 3 in the Fifth Concession of the Township of Coleman. They adjoin the south boundaries of the Silver Cliff and Colonial properties.

(c) VICTORIA

History and Development

This property was explored from 1907 to 1909. Cobalt and some silver values were encountered but there is no report of commercial silver production. There are two shafts on the property both reportedly 150 feet deep. A winze was sunk 95 feet below the 150 foot level of the main or east shaft.

A total of 655 feet of lateral work has been reportedly carried out on this property.

The productive mines of Nova Scotia and Colonial adjoin the property south and north respectively.

(d) WEBB

This property, containing 28 acres more or less, adjoins the north boundary of the Silver Cliff property. This almost completely covered by the water of Cross Lake and Mill tailings. Its lower contact has been considered geologically attractive but exploratory access to this zone has been economically prohibitive. The Colonial held an option on this property when it was exploring the Colonial lower contact zone but they only pushed an exploration cross cut 130 feet into the south-west corner of the Webb claim.

(e) AIRGIOD PROPERTY

The Airgiod property is situated about 1½ miles east of the Town of Cobalt. It lies immediately south of and adjoining

the King Edward Mine property and immediately east of and adjoining the Nova Scotia Mine property.

Access to the property is obtained by following the Township of Coleman, Brady Lake Road, to the Nova Scotia mine and thence by following a mine access road for  $\frac{1}{4}$  mile right into the shaft site.

The claim lies in the Township of Coleman Lot 3, Con. 5, being the SE $\frac{1}{2}$  of the N $\frac{1}{2}$ . Its present claim number is T 45331 and contains 40 acres more or less.

The property may be easily serviced with hydraulically compressed air and hydro-electric power.

#### Status

Sufficient assessment work has been done to bring the claim to a lease.

#### History and Development

There is very little recorded information about the property. From the size of the dump it would appear that about 300 feet of shaft sinking and 1,000 feet of lateral work had been carried out. This work was probably done between 1906 and 1911 when the adjacent Nova Scotia mine produced a total of 807,818 ounces of silver.



### Local Geology

Essentially the Airgiod property is completely covered by the Nipissing diabase sill estimated in this area to be about 1,000 feet in thickness. The south-west corner of the claim is covered by a thin skin of keewatin rocks lying on the upper contact of the diabase. This patch of keewatin is probably not more than 100 feet thick. The main shaft was sunk through this keewatin capping and on into the underlying diabase.

On the eastern half of the claim there is a major north-south "break" or valley cutting into the diabase surface and extending north into the King Edward property. The floor of this valley is covered with overburden swamp talus and boulders. It is possible this break may be the surface manifestation of a strong fault but there has been no knowledgable work done to confirm or reject this observation.

### Veins

The main shaft was sunk on a strong calcite vein containing cobalt and chalco pyrite mineralization. This shaft is located about 260 feet east of and 170 feet north of the south-west corner of the Airgiod property. Judging from specimens on the dump, the vein varied in width from 2 to 6 inches. A character vein sample assayed silver 2.9 ounces, copper 0.9%, nickel - nil.

Fibrous serpentine, fault gouge and slickenside specimens indicate faulting along the vein walls.

This vein has a strike of about  $N50^{\circ} E$  and has been located 300 feet further east on surface by test pits and rock trenches. Five calcite vein specimens apparently from those test pits are up to 8" wide and contain considerable cobalt mineralization.

The general trend of vein systems on adjacent properties is east-west on the Nova Scotia property adjoining to west and north-south on the King Edward property adjoining on the north.

The generally accepted loci for silver ore deposition in this particular structure and geology is that silver concentration in veins is most likely to occur within 300 feet of the contact of the diabase the intruded rocks. The surface of the property represents the upper contact locus and if ore exists here it should be near or at surface. This ore may be masked on the west portion of the claim by the keewatin capping and on the eastern half of the claim by overburden.

The lower contact locus of this claim is totally unknown and not practical to explore. Should the shaft of the adjacent King Edward property be dewatered down to this lower contact horizon, it is conceivable that worthwhile and rewarding exploration could be carried out at the Airgiod lower diabase contact.

(f) SILVER CLIFF GROUP ECONOMICS

The lower contact zone no doubt holds the best possibilities for the location of new silver ore-bodies. That section covered by the Rix Athabaska management was entirely on the King Edward property covering the extension of the O'Brien Colonial vein system. That section of the Silver Cliff lower contact on the extension of the O'Brien Violet vein system remains to be explored. This system has been developed to the west boundary of the Silver Cliff claim and although there is no record of production from this immediate area, the veins are very strong.

SILVER CLIFF MILL

Location.

The mill is located on the Silver Cliff property, about one mile east of the Town of Cobalt on the west shore of Cross Lake. Tailings are discharged into Mill Creek at the north end of Cross Lake. The mill is serviced by 12,000 volt line and all equipment is 550 volt, 60 cycle.

Capacity

The mill will handle between 80 and 110 tons per 24 hours, depending on the type and grade of ore handled. There is storage capacity for 400 tons of fine crushed ore. Diabase requires more time to crush, but a less fine grind is suitable for this type of ore.

Extraction

The mill has a proven efficiency on silver ore of between

87% and 95% and from 80% to 90% on cobalt ore. This efficiency could be still further improved by additional equipment, but the mill in its present form is as efficient as any mill in the area.

#### General Description

The primary crusher is a Jaw Blake type, Allis Chalmers (17½ x 9½) driven by 30 H.P. motor and the secondary crushing is done by a 3 foot Symon Cone Crusher in closed circuit with a Denver screen classifier. The secondary crushed product is fed into the fine ore bin by belt conveyors.

The grinding unit is a modified tube mill, driven by 125 H.P. motor in closed circuit with a rake classifier, Denver unit cell and sometimes Denver duplex jig.

The heavy metallic particles immediately fall out of the circuit into the unit cell hutch and are fed continuously down through a spigot to a concentrating table. A concentrate is cut out from this product and the reject is returned with the coarse sand overflow of unit cell to the classifier.

The overflow from the classifier is fed down onto three slime tables and a concentrate cut out.

The tailings from the tables are fed into a 30 foot thickener and the thickened pulp is pumped into a flotation conditioner.

The pulp from the conditioner is then fed into a bank of 10 Denver sub "A" cells and the flotation concentrates so derived are filtered, piled and shipped in bulk.

The tailings from the flotation unit and thickener overflow

go out into discard.

All table and jig concentrates are dried on three 6 x 6 steam heated drying plates and bagged for shipment.

#### Auxiliary Equipment

Heating equipment consists of a smoke tube locomotive type boiler.

An efficient scale house and truck scales are situated near the office building.

Arc and acetylene welding equipment are part of the mill equipment.

There is storage capacity for 400 tons of concentrates on the ground floor.

The main office building includes mine office equipment, partially equipped assay office, Manager's office and warehouse. This building is hot water heated by an oil furnace.

There is a concrete floored 40 x 30 combined garage and blacksmith shop also on the property.

Mill water feed is drawn from Cross Lake and is pumped up to a 10,000 gal. tank above the mill.

#### General Condition.

The mill is generally in fair condition and could be put in operation in a short time. The following repairs and modifications would have to be carried out:

A substation - 12,500 volts - is to be replaced. The tailings launder and many windows, need repair.

CONCLUSIONS.

The Genesee and Silver Cliff groups have unexplored areas geologically suitable for the occurrence of silver ore-bodies.

*Ralph I. Benner*  
Ralph I. Benner, B.Sc., P. Eng.,  
Geologist.

October 11, 1967.

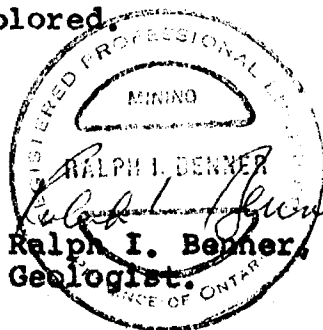
SUMMARY OF REPORT  
written by  
RALPH I. BENNER, B.Sc., P.Eng.,  
ON UNITED COBALT MINES LIMITED PROPERTY  
IN THE TEMISKAMING MINING DIVISION

My knowledge of the claims described in the following summary is based on my own extensive experience in the area over the past 30 years, and a report by J. E. Armstrong.

United Cobalt Mines Ltd. owns the Genesee property in Bucke Township, consisting of 161 acres, approximately one mile north of the Town of Cobalt and the Silver Cliff Group consisting of 142.9 acres in the Township of Coleman, approximately 1½ miles east of the Town of Cobalt. A good motor road leads to both properties from the main through highway. The Genesee property was explored from underground at various times over a period of years and some silver production was achieved from the Cobalt Series sediments. This property is at present under lease by a mining company currently carrying out underground exploration.

The Silver Cliff Group has extensive underground workings from which some silver was produced from both the upper and lower diabase contact areas. A 100-ton concentrator, which could be put in operation in a short time, is on the property. The property is not being worked at present although all favorable geological areas have not been explored.

October 12, 1967.



Ralph I. Benner, B.Sc., P.Eng.  
Geologist.

CERTIFICATE OF QUALIFICATION

I, Ralph I. Benner of the Town of Cobalt, in the Province of Ontario, do hereby certify as follows:

1. That I am a Consulting Geologist registered as a member in good standing of the Association of Professional Engineers of the Province of Ontario.
2. That I am a graduate of the Haileybury School of Mines (1932) and have obtained the Degree of Bachelor of Science in Geology (1946) from Queen's University, Kingston, Ontario.
3. That the information for this report was gathered from Ontario Department of Mines, Maps and Reports, from Company maps and files, and from a report by James E. Armstrong, dated August 22, 1960, and from personal observations in the field as disclosed in the introduction to this report.
4. That I have no direct or indirect interest in the property described in this report or in any of the shares or securities of United Cobalt Mines Limited, except what I have purchased on the open market.

July 4, 1967.



Ralph I. Benner, B.Sc. P. Eng.





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## UNITED COBALT MINES LTD

### EVALUATION REPORT

### COBALT AREA PROPERTIES

#### INTRODUCTION

This report states an opinion as to the fair dollar value of the Company's tangible and intangible assets. Both classes of assets are subject to wide and erratic fluctuation due to conditions beyond the Company's control such as exploration successes (or failures) on neighbouring properties, demand (or lack of demand) for used mining equipment, and government regulations.

The data which served as a basis for this report came from several sources including Engineering Reports from the Company files, air photographs, and discussions with residents of the area familiar with local conditions, and an examination of the properties on August 20th and 24th, 1974. Points considered in evaluating the properties but not necessarily detailed in the body of the report include,

production history, percentage of property explored relative to the favourable geological environment, nearby mining developments, accessibility by virtue of underground workings, known mineralization, plant and equipment, and outlook for silver prices.

Valuation figures were reached by considering each property under the following headings: Land Value, Plant and Equipment Value, Mine Workings Value, fourthly, Exploration Value and finally, Summation Value. A brief discussion of the frame of reference for each heading follows:

1. Land Values.

Much of the Company's holdings are patented Mining Claims for which Surface as well as Mining Rights are owned. Therefore the properties have a real estate value which is independent of any other value and which is the value most readily realizeable. However, the aggregate value of the Surface and Mining Rights is greater than the sum total of the two Rights whenever exploration value can be assigned to the property. Real Estate values are greatly affected by government regulations such as those now in effect in Coleman Township. Pending a new zoning by-law development is prohibited in Coleman Township and until the proposed by-law becomes law the real effect on the

Company's property is unknown. For a non producing property, taxes, both mining and land, are a continuing drain on corporate assets which can be offset only against future mineral production or ultimate sale of the asset. In summary, for land value the fair real estate value would seem the most realistic.

## 2. Plant and Equipment Value

The true value of Plant and Equipment must lie between the extremes of initial cost and salvage value. Replacement value is a measure of real value only if there is an immediate use for plant and equipment. Taxes represent a continuing decrease in value with less and less opportunity for ultimate return because of obsolescence and general deterioration.

Buildings and equipment can earn income through rental, and the usage under rental must be either that for which the unit was designed or some alternate form of usage.

It would seem that the value to be assigned to plant and equipment approaches its salvage value with value for rental and alternate use assigned at the Summation Value stage.

## 3. Mine Workings Value

The original cost is commonly of no import in

assessing the value of old mine workings. Current costs are frequently much higher than original costs and although old workings are usually small and therefore somewhat obsolescent they can be modernized and rehabilitated at a fraction of their replacement cost.

The value in old mine workings lies in the accessibility they give to bodies of mineralization that have ore-making potentiality and to geological environments of exploration merit. Needless to say, one may use mine workings on property A to gain access to property B for purposes of mining or exploring. Where opportunity for further exploration and development exists an arbitrary but appreciable value can be assigned to mine workings.

#### 4. Exploration Value

Of the several types of value that can be assigned to dormant mining properties their Exploration Value is the most ephemeral of all. It is also the value on which most attention is focussed for a new discovery can suddenly multiply the "known" or "generally acceptable" value of the property many thousands of times.

In assessing the Exploration Value one considers past production from the property and its immediate neighbours; mineralization in place, surface and underground drill hole showings of mineral; and geological environment. The Exploration Value assigned to a

property is reached by arbitration between a potential buyer and the seller. Therefore former agreements pertaining to the property tend to set a basic price.

#### 5. Summation Value

The inter-relationships between the land, plant and equipment, mine workings, and exploration values produce a Summation Value which is much greater or lesser than the sum total of the individual values. For example, an old mine may contain a body of mineralization which, through changing economic conditions, has become economic, but if the Surface Rights are owned by a second party then the cost of acquiring the Surface Rights may significantly reduce the profit potential of any proposed operation. Thus, Mining Rights owned in conjunction with Surface Rights frequently have a combined value greater than the sum of the individual values. Conversely, bodies of mineralization of economic grade and size may be unrecoverable and therefore without value if the adjacent stopes and drifts are badly caved. Thus the Summation Value seldom has any relationship to the sum total of the individual values.

Factors contributing to the Summation Value include, potential real estate development, rental of equipment, alternate use of buildings such as warehousing, access to other properties through old workings, etc.

### THE COMPANY

United Cobalt Mines Ltd owns two groups of claims in the Cobalt Area known as the Genesee Property and the Silver Cliff Group. They lie a short distance north and east of the town of Cobalt and are approximately 1 mile apart. Both properties are serviced by all weather roads. Electric power services are readily available to both properties as is a supply of compressed air.

### THE GENESEE PROPERTY

Claims 7626, 7633, 7634, 7505. - 146 acres approx:  
S  $\frac{1}{2}$  lot 9 Concession 1 Bucke Township. Surface  
and Mining Rights held.

#### 1. Land Value

The property lies immediately east of the town of Cobalt and is readily accesible from Highway 11B by an all weather gravel road. The Ontario Northland Railway tracks touch the southeast corner of the property.

The property is moderately hilly and rocky with a large swamp in the central section which is drained by a poorly developed creek. The location of the property is suitable for a commercial development such as small manufacturing, storage yards, shopping centres, etc. It seems likely that much of the land area of the Genesee Property will be used in this manner sometime

in the future. Therefore a value of \$150. per acre seems appropriate. 146 acres by \$150. equals \$21,900.

2. Plant and Equipment Value.

1. 40' head frame plus 25'x35' shaft house in excellent condition	\$ 5,000.
2. Ore bin. - exposed and weathered	500.
3. Pump house. - moveable	500.
4. Caretaker's Cottage. - inhabited	<u>1,500.</u>
	\$ <u>7,500.</u>

The shaft house and yard are being used in a small way for storage by a local building contractor.

3. Mine Workings Value.

The last underground work on the Genesee Property was done circa 1967 while the property was under option to Silver Regent Mines Ltd. Work done included drifting and cross-cutting on the Genesee claims and on the adjacent Silver Regent claims. The shaft and mine workings are in excellent condition with track and air-line services in place.

The following is a summary of the main underground workings.

Shaft - 2 compartment, 572 feet, 4 levels.	
Drifting and Cross-cutting,	5013 feet
Raising, sub-levels, winzes,	784 feet.
Estimated value of the Mine Workings -	\$ 25,000.

#### 4. Exploration Value

All production was won before full production records were kept. Prior to 1924 production amounted to 800 bags of high grade from the No.11 Vein. Subsequently 13941 tons were gained from the No.12 Vein.

All of the diabase is eroded from the claims and the production horizon is a thin layer of Cobalt Conglomerate lying above the Timiskaming sediments. The thin layer of favourable ground is thickest at the south end of the property and becomes negligible at the north end. The underground workings have tested about 25% of the claim area and have located 12 different veins. No doubt many more veins remain undiscovered. Judging by past production history, production potential cannot be great but it should be best towards the east side of the property where the Cross Lake Fault crosses the claims.

Exploration Value estimated at \$10,000.

#### 5. Summation Value - Genesee Property.

Land Value	\$ 21,900.
Plant and Equipment Value	7,500.
Mine Workings Value	25,000.
Exploration Value	<u>10,000.</u>
Total	\$ 64,400.

Factors contributing to a Summation Value for the Genesee property include alternate uses for land and



facilities, access offered to neighbouring properties, and a reasonable amount of unexplored favourable geological environment.

In my opinion a Summation Value of approximately 50% of the sum of the individual values is appropriate.

Summation Value	- \$ 32,600.
Total Value, Genesee Property	- \$ 97,000.

#### THE SILVER CLIFF GROUP

This group includes the Silver Cliff Mine, the King Edward Mine, The Victoria Mine, The Webb Claim and the Airgioid Property. All are contiguous and lie in lot 3 Concession 5 & 6, Coleman Township. They are described as parcels, 4199, 8593, 1878, 5004 and claim T45331. Total area approximate 170.9 acres.

#### 1. Land Value.

The terrain on the property is extremely rugged and rocky and is not suitable for development except possibly along the Cross Lake shoreline. The Company owns about a  $\frac{1}{2}$  mile length of shoreline on Cross Lake, all of which is rough and not easily adaptable to cottage development. However Cross Lake is an attractive lake and it seems likely that some sort of recreation development will someday occur on the shoreline owned by the Company. A fair value for the overall acreage is estimated

at \$50. per acre with the Cross Lake shoreline having assigned an additional value of about \$5.00 per linear foot.

170.9 acres at \$50.	‡	8,545.
2600 feet at \$5. per foot		<u>13,000.</u>
Total	‡	<u>21,545.</u>

## 2. Plant and Equipment Value

### (a) Mill Building.

This is a large building, very old, but in excellent condition. There are a few small holes which will permit the weather to enter and if not repaired the building will deteriorate rapidly. Though of ancient design for gravity feed, the building has housed a modern operating mill in recent years. Its replacement value would exceed \$100,000. Its salvage might net the company \$5,000.

Value ‡ 5,000.

### (b) Mill Equipment

The Company is gradually disposing of the mill equipment. What remains are a few flotation cells, filter, screens, thickeners, etc. and a number of very old electric motors, and considerable scrap.

Estimated Value ‡ 11,000.

### (c) Cottage

The caretaker's house is furnished and serviced by electricity and telephone. The water

supply is not potable.

Estimated Value \$ 8,000.

(d) Office Building and Dry

The office building should be scrapped if the company can net anything out of it. The dry is in good condition and was recently used by Dupont.

Value \$ 1,500.

Total Value \$ 25,500.

3. Mine Working Value

The following is a brief summary of main underground workings.

Silver Cliff Mines.

Shaft sinking	150 feet
Drifting	7729 feet
Raising	609 feet
Winze	114 feet

King Edward Mines

(a) Upper Contact Workings

Surface Shaft	400 feet
Drifting & Cross-cutting	1200 feet

(b) Lower Contact Workings

Main Winze (2 levels)	800 feet
Drifting & Cross-cutting	5405 feet

Victoria Mines

(These are very old workings and may be more extensive than is known to the present company.)

Victoria Mines (cont.)

2 shafts each 150' deep

Winze 95' sank from the east shaft.

Lateral development 655'

Webb Claim

Cross-cutting 130 feet from the  
Colonial Mine.

Airgiod Claim

(Estimated only)

Shaft - 300 feet

Lateral work - 1000 feet

The above demonstrates clearly that the mine workings are extensive. The last work was done by Rix Athabasca Uranium Mines Ltd. circa 1960. At that time Rix sank the Silver Cliff winze to the lower contact and did extensive exploration which resulted in some silver production. Therefore the mine workings are not only in good condition, they are modern. So far as is known all equipment has been removed from the mine workings.

The chief value in the mine workings is the access the winze gives to the lower contact not only to the Silver Cliff property but to neighbouring properties from which significant silver production has been gained. Therefore the value assigned to the mine workings result from this accessibility and is an arbitrary value.

Estimated Value \$ 100,000.

#### 4. Exploration Value

Known production from the Silver Cliff Groups is in excess of 1,000,000 ounces of silver with possibly an additional 200,000 ounces having been recovered by leasors over the many years since discovery. The most recent production was that gained in the early 1960's by Rix Athabasca Uranium Mines Ltd.

The Silver Cliff Group is extremely well located both as to geological environment and neighbouring properties with good histories of production. To the east, on the opposite side of the Cross Lake Fault, is the Deer Horn Mines Ltd. property from which substantial production has been won. Adjoining on the north and east is the Agnico property which has also produced substantial amounts of silver.

Geologically, the Silver Cliff Group is in an advantageous position in that it possesses both the Upper and Lower Contact of the diabase and both of these are known to be favourable environments for silver vein development. The Cross Lake Fault is also regarded as a good structure to be near as movement along this fault probably created subsidiary fractures which could subsequently be filled by silver bearing hydrothermal solutions. On the Silver Cliff Group silver has been won from both the Upper and Lower Contact environments.

It is true that on the Silver Cliff Group the Upper Contact has been both well explored and developed.

It is likely that if the price of silver continues to rise relative to other products that some mineable ore may develop as stope remnants and pillars. However only a small fraction of the Lower Contact environment has been developed or even explored. Because of its deep seated nature, the narrowness of the silver veins, and their propensity to be ground during diamond drilling, much of any future exploration is likely to be by underground workings. As stated in the previous section the underground workings leading to the Lower Contact environment are modern and in good condition.

The Exploration Value of the property is, in my opinion, approximately \$ 25,000.

5. Summation Value - Silver Cliff Group.

Land Value	-	\$	21,545.
Plant & Equipment Value	-		25,500.
Mine Workings Value	-		100,000.
Exploration Value	-		<u>25,000.</u>
Total		\$	<u>172,545.</u>

In considering a Summation Value for the Silver Cliff Group two factors stand out: first, the large number of underground openings and second, the large volume of favourable geological environment, particularly with respect to the Lower Contact. Those workings giving access to the Lower Contact are modern and in excellent condition thus giving relatively cheap access to a favourable but remote (due to depth) geological

environment.

The surface facilities (air supply, buildings, etc.) give added value. Alternate use value may be developed by using the mill building as a warehouse - a use for which it is well suited and located.

In my opinion a fair Summation Value for the Silver Cliff Group is \$200,000.

Total Value, Silver Cliff Group \$ 372,545.

SUMMARYGenesee Property

1.	Land Value	\$	21,900.	
2.	Plant & Equipment Value		7,500.	
3.	Mine Workings Value		25,000.	
4.	Exploration Value		10,000.	
	Summation Value		<u>32,600.</u>	\$ 97,000.

Silver Cliff Group

1.	Land Value	\$	21,545.	
2.	Plant & Equipment Value		25,500.	
3.	Mine Workings Value		100,000.	
4.	Exploration Value		25,000.	
	Summation Value		<u>200,000.</u>	\$ 372,545.

Total estimate Value of United Cobalt Property. \$ 469,545.

My report is respectfully submitted.

Willowdale, Ontario.  
August 30, 1974.

H. Grant Harper, F.G.A.C.†P.Eng.  
Consulting Engineer.  
Exploration Geologist.



CERTIFICATE

I, HUGH GRANT HARPER, of Metropolitan Toronto, in the Province of Ontario, certify as follows with respect to my report on the Coleman and Bucke Townships properties of United Cobalt Mines Ltd and dated August 30, 1974.

1. I am a Consulting Engineer and Exploration Geologist and have been engaged in private practice for over 15 years.
2. I graduated from the University of Toronto with the degree of B.A.Sc., 1950 and M.A.Sc., 1951 and have been engaged in my profession continuously since that time. I am a Fellow of the Geological Association of Canada. I am a member of the Ontario Association of Professional Engineers registered in the Mining Branch and I have been designated as a Consulting Engineer by the Association. I am a Member of the Canadian Institute of Mining and Metallurgy.
3. I have no direct or indirect interest in the properties or securities of United Cobalt Mines Ltd. and I do not expect to receive any interest.
4. I have been on the properties herein reported and have examined their surface plants. Because of the nature of this report the bulk of the information contained herein has been drawn from the Company's files and discussion with others who are familiar with the properties in the area.

Willowdale, Ontario.  
August 30, 1974

H. Grant Harper, F.G.A.C., P.Eng.  
Consulting Engineer.  
Exploration Geologist.

# H. GRANT HARPEL



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314 HENDON AVENUE  
WILLOWDALE, ONTARIO  
M2M 1B2  
(416) 225-7412

Associations: A.P.E.O.  
G.A.C.  
C.I.M.

Consulting Engineer  
Exploration Geologist

April 27, 1977

Officers and Directors  
United Cobalt Mines Ltd.  
1402 - 390 Bay Street  
Toronto, Ontario

Gentlemen:

This letter will serve to update my Evaluation Report on your Cobalt Area Properties, dated August 30th, 1974. It is my opinion that my 1974 Report is reasonably current except for the Silver Cliff Group where recent mineral discoveries have enhanced the assigned Exploration Value. This letter will briefly describe these discoveries and assess their importance relative to the Silver Cliff Evaluation and the Total Value of the United Cobalt Properties.

The new mineral discoveries are located approximately two miles south and east of the Silver Cliff Group on properties controlled by Agnico-Eagle Mines Ltd. Geologically the discoveries are located beneath the Nipissing Diabase Sill in Keewatin rocks. One discovery, located on the Cobalt Lode ground, has been diamond drilled for a length of 550 feet resulting in some very high grade assays. The second discovery is located on the old "Beaver Claim" and has been developed by drifting for a length of 85 feet. Exploration and development of these discoveries is continuing.

The effect of these discoveries is to increase the exploration value of the Silver Cliff Group for two reasons. First, the Silver Cliff Group contains a very large amount of unexplored "beneath the diabase" ground which is the geological environment of the new mineral discoveries. Second, the Silver Cliff Group contains a winze which penetrates to the favourable "beneath the diabase" or Lower Contact Horizon, thus has relatively cheap access to the favourable environment.

The Lower Contact Horizon on the Silver Cliff property was explored by Rix Athabasca Uranium Mines Ltd. circa 1960. Thus the underground workings are relatively modern. Also, during this period, some silver production was won from the Lower Contact environment proving that silver does occur on the property in this environment. A substantial amount of exploration of the Lower Contact was done by Rix but the amount done is a small percentage of the total area available. The new mineral discoveries of Agnico-Eagle Mines Ltd. makes an in-depth appraisal of the exploration potential of the Silver Cliff Group highly desirable.

My 1974 Report placed the following value on the Silver Cliff Group.

Land Value	\$ 21,545.
Plant & Equipment Value	25,500.
Mine Workings Value	100,000.
Exploration Value	<u>25,000.</u>
TOTAL	<u>\$ 172,545.</u>

In my opinion the Exploration Value should be raised to \$100,000., making the total \$247,545.

The 1974 Report placed a Summation Value of \$200,000. on the Silver Cliff Group. In my opinion a fair and currant Summation Value is \$250,000. Thus the Total Value for the Silver Cliff Group is \$497,545.

This in turn raises the Total Value for the United Cobalt Properties to \$594,545.

This report is respectfully submitted.

HGH:mb

H. G. Harper, P.Eng.  
Consulting Geologist

### CERTIFICATE

I, HUGH GRANT HARPER, of Metropolitan Toronto, in the Province of Ontario, certify as follows with respect to my Letter Report on the Silver Cliff Group of United Cobalt Mines Ltd. and dated April 27, 1977.

1. I am a Consulting Engineer and Exploration Geologist and have been engaged in private practice for over 15 years.
2. I graduated from the University of Toronto with the degree of B.A.Sc., 1950 and M.A.Sc., 1951 and have been engaged in my profession continuously since that time. I am a Fellow of the Geological Association of Canada. I am a member of the Ontario Association of Professional Engineers registered in the Mining Branch and I have been designated as a Consulting Engineer by the Association. I am a Member of the Canadian Institute of Mining and Metallurgy.
3. I have no direct or indirect interest in the properties or securities of United Cobalt Mines Ltd. and I do not expect to receive any interest.
4. I have been on the properties herein reported and have examined their surface plants. Because of the nature of this report the bulk of the information contained herein has been drawn from the Company's files and discussion with others who are familiar with the properties in the area.

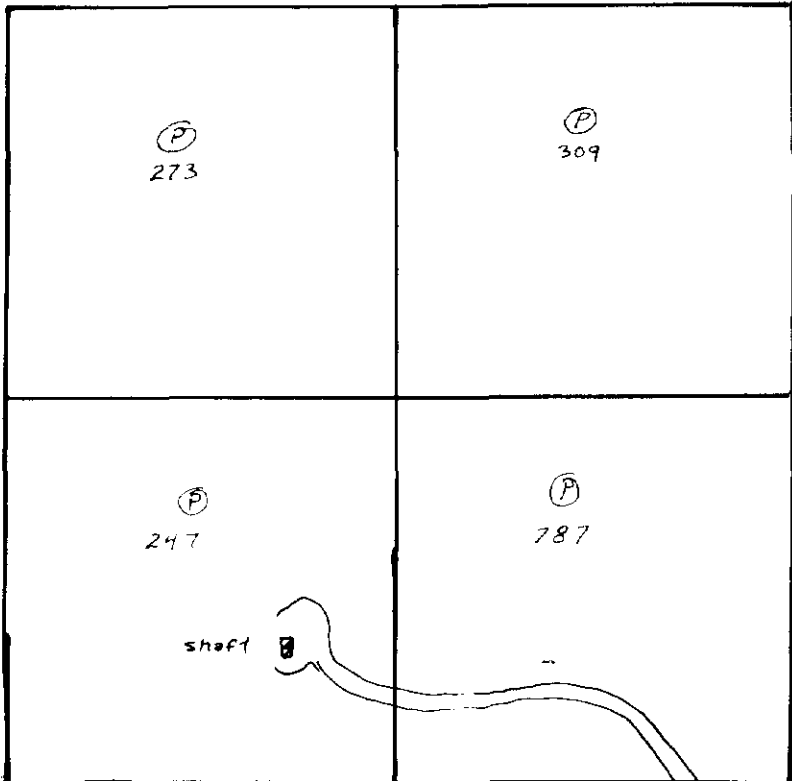
Willowdale, Ontario.  
April 27, 1977

H. Grant Harper, F.G.A.C., P.Eng.  
Consulting Engineer  
Exploration Geologist.





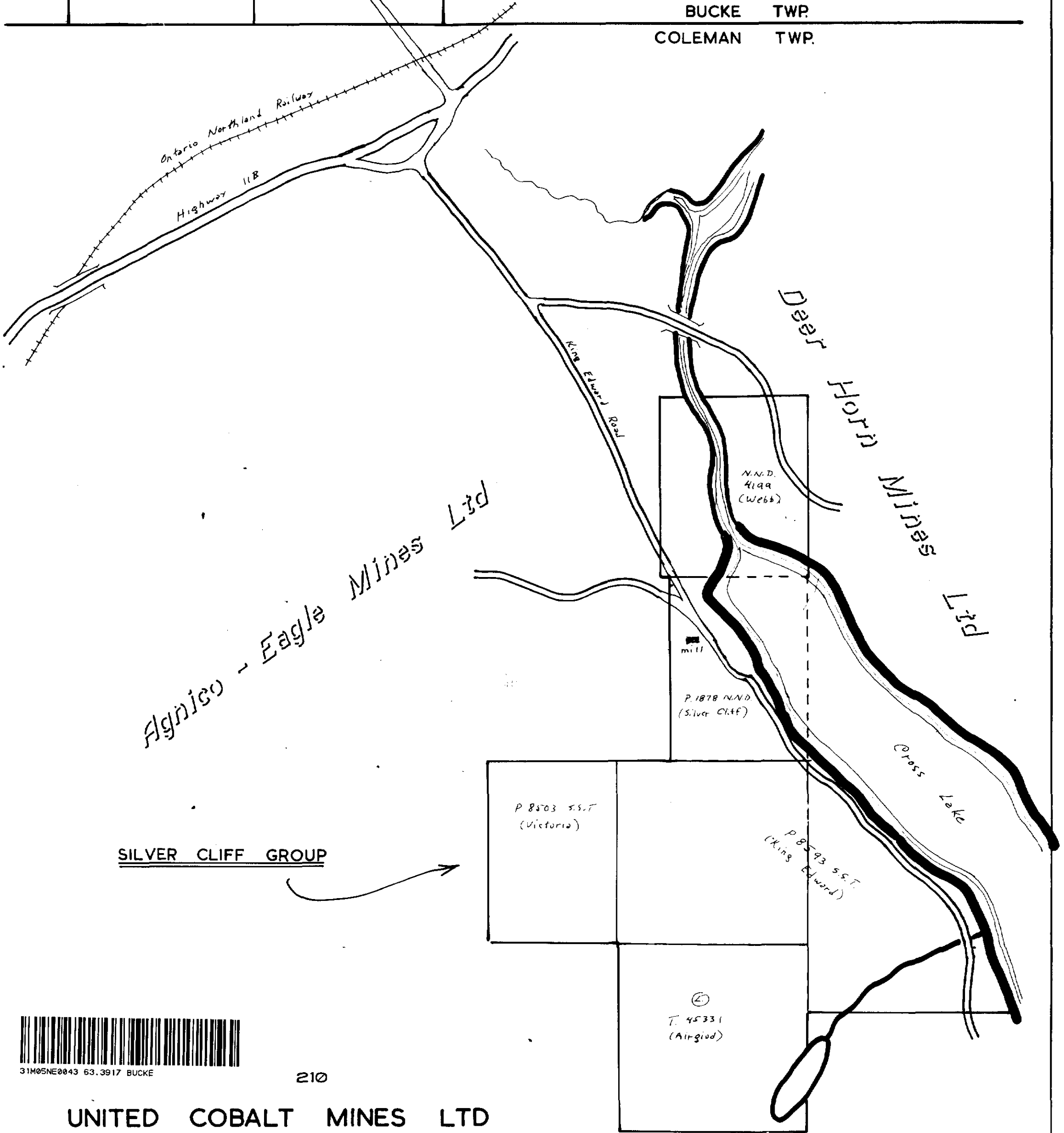




GENESEE PROPERTY



BUCKE TWP.  
COLEMAN TWP.



*Agnico - Eagle Mines Ltd*

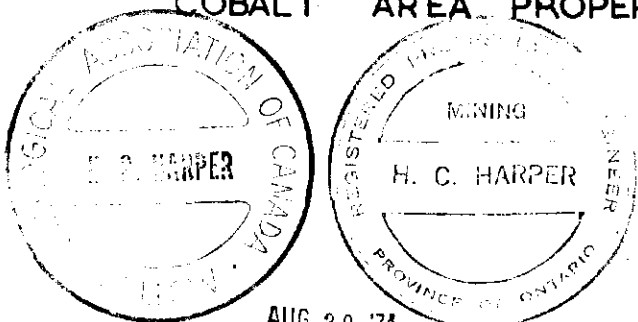
SILVER CLIFF GROUP



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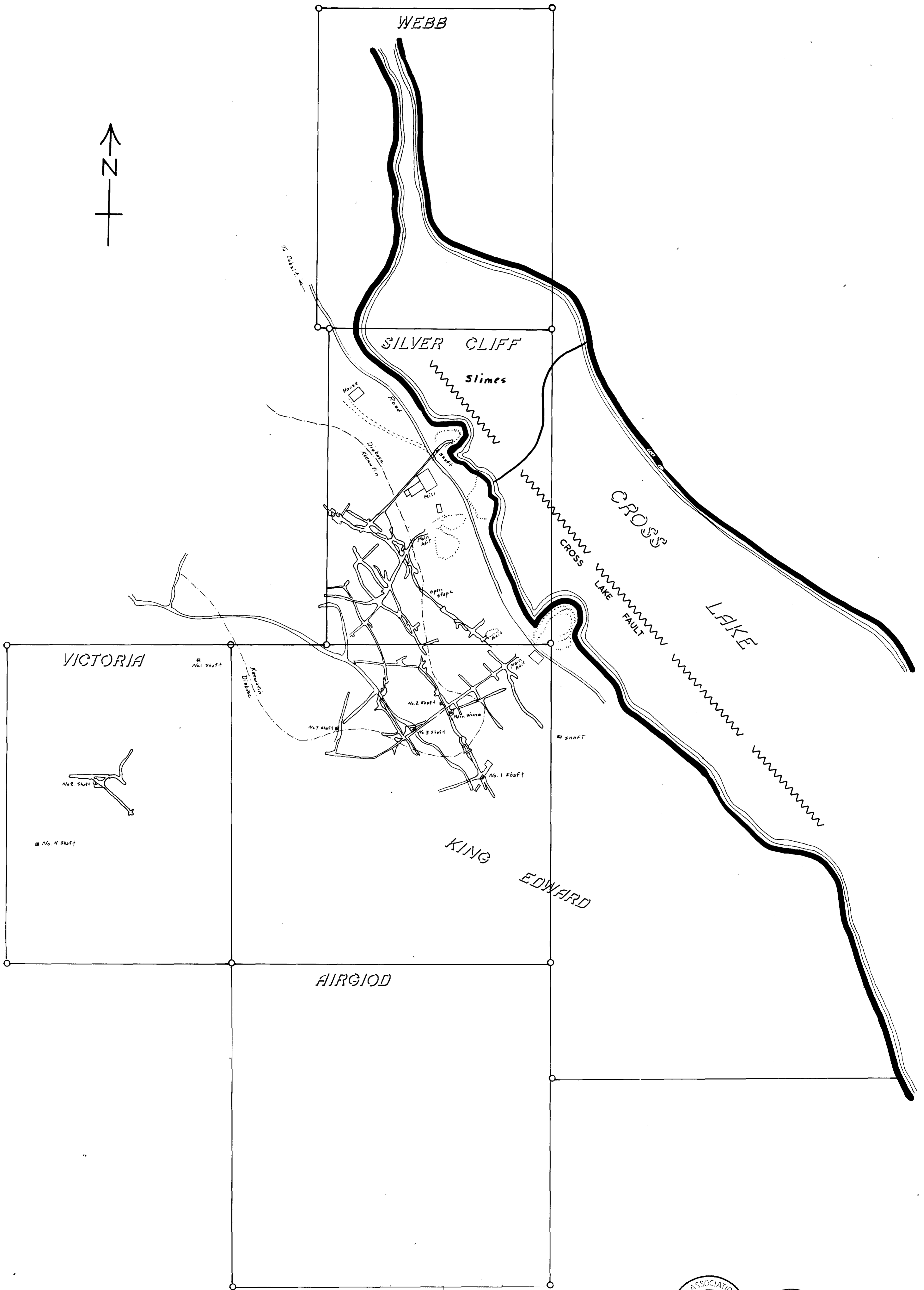
UNITED COBALT MINES LTD

COBALT AREA PROPERTIES



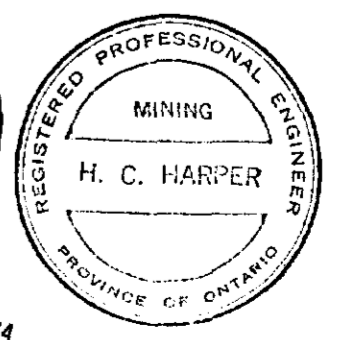
*H.C. Harper*





UNITED COBALT MINES LTD  
Silver Cliff Property

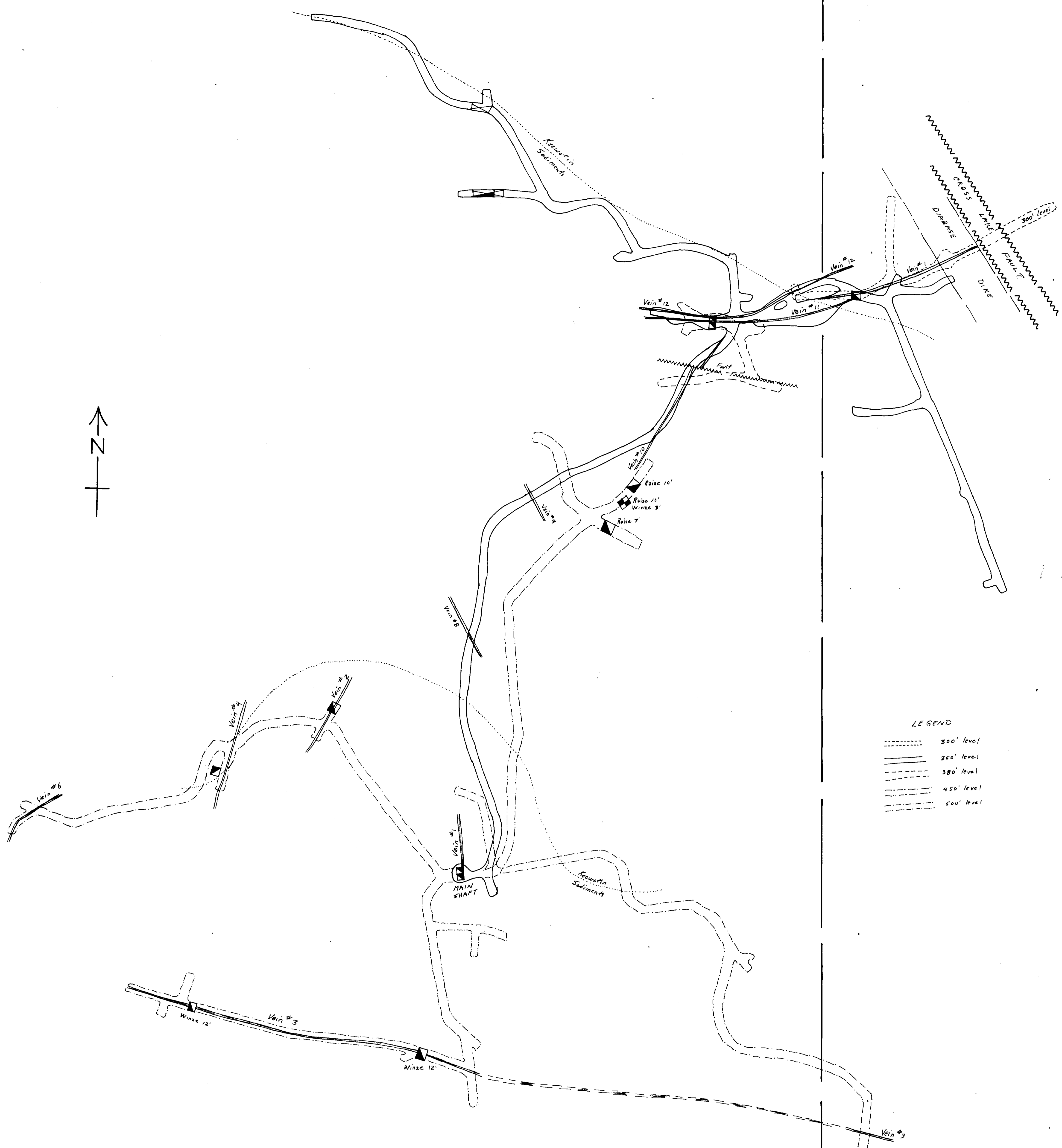
SHOWING: property areas covered by  
known underground workings.



AUG 30 74

H. G. Harper



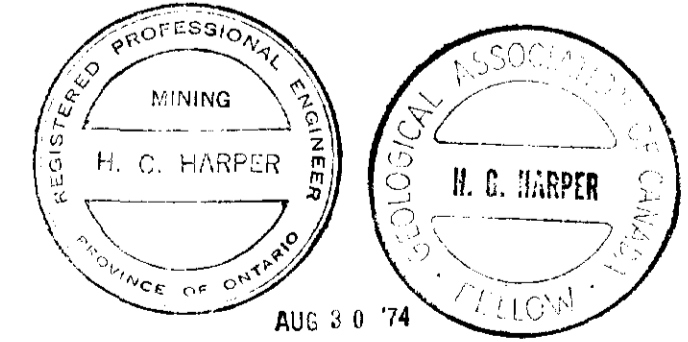


LEGEND

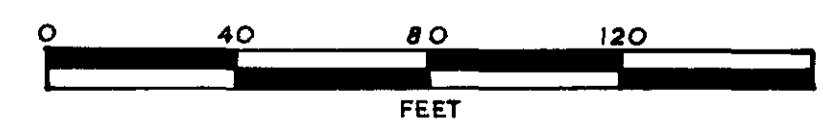
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UNITED COBALT MINES LTD

Genesee Mine



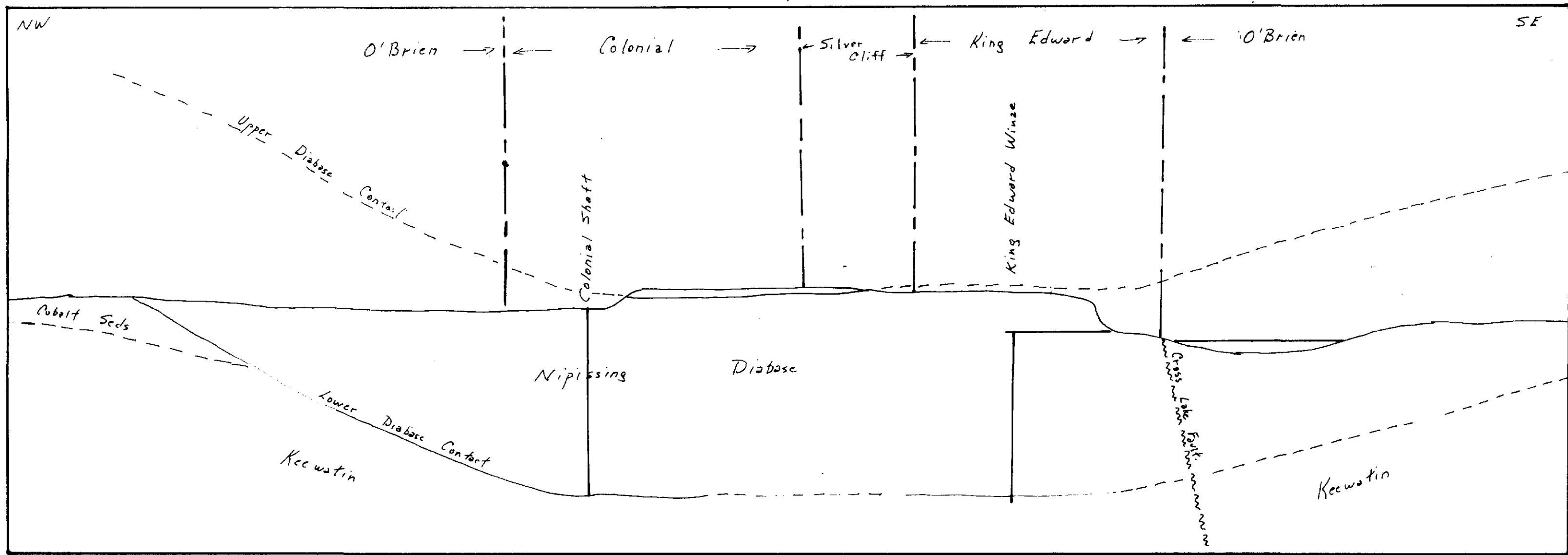
H. G. Harper.



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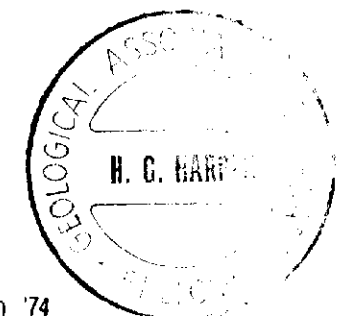
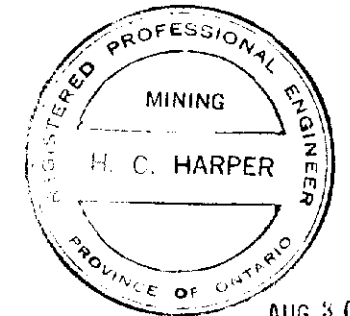






UNITED COBALT MINES LTD

Schematic Section

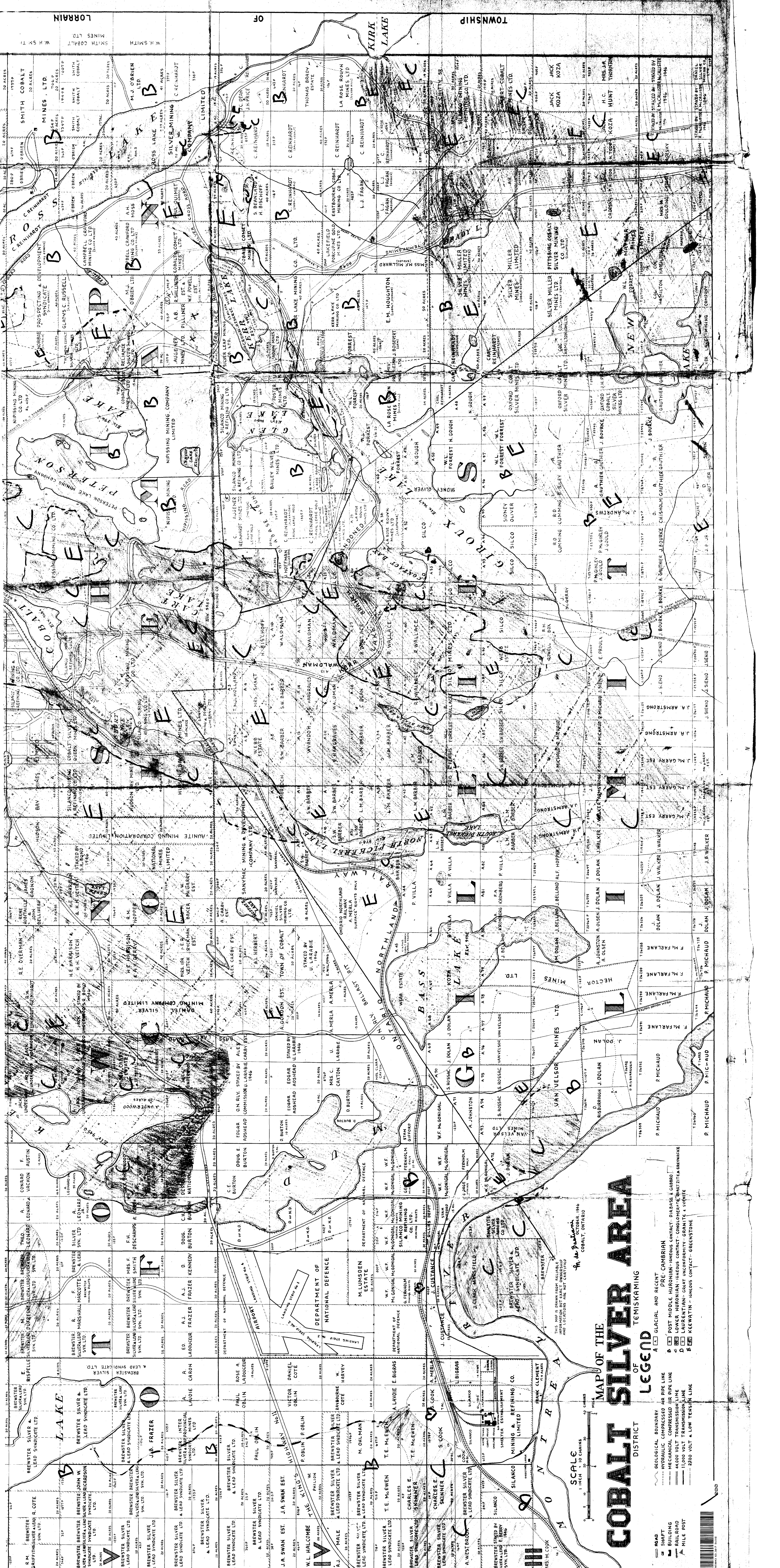


AUG 30 '74

H. C. Harper







**MAP OF THE  
COBALT SILVER AREA  
OF  
TEMISKAMING DISTRICT**

- LEGEND**
- GEOLOGICAL BOUNDARY
  - HYDRAULIC COMPRESS AIR PIPE LINE
  - MECHANICAL COMPRESS AIR PIPE LINE
  - POST MIDDLE HURONIAN-IGNEOUS CONTACT-GRANITE & GABBRO
  - PRE MIDDLE HURONIAN-IGNEOUS CONTACT-GRANITE & GABBRO
  - LAURENTIAN-IGNEOUS CONTACT-GRANITE & GABBRO
  - KEEWATIN-IGNEOUS CONTACT-GRANITE & GABBRO
  - 2200 VOLT TRANSMISSION LINE
  - 2200 VOLT A LOW TENSION LINE
  - ROAD
  - SHIPT
  - BUILDING
  - MILE POST

SCALE  
1 INCH = 20 CHAINS

As of October 1945  
COBALT, ONTARIO

