Seventh Annual Report

# Falconbridge Nickel Mines

Limited

*For the Year Ending*
*December 31st, 1935*

# Falconbridge Nickel Mines Limited

## Falconbridge - Ontario

*PRESIDENT*
THAYER LINDSLEY

*VICE-PRESIDENTS*
HALSTEAD LINDSLEY J. GORDON HARDY

*SECRETARY and TREASURER*
NORMAN F. PARKINSON

*DIRECTORS*
THAYER LINDSLEY HALSTEAD LINDSLEY
J. GORDON HARDY W. S. MORLOCK
NORMAN F. PARKINSON

*GENERAL SUPERINTENDENT*
ERNEST CRAIG, Falconbridge, Ontario

*CONSULTING METALLURGIST*
ANTON GRONNINGSATER

*TRANSFER AGENTS and REGISTRARS*
TORONTO SHARE TRANSFER COMPANY, LIMITED
25 King St. West, Toronto

*AUDITORS*
CLARKSON, GORDON, DILWORTH & NASH
Toronto

# FALCONBRIDGE NICKEL MINES LIMITED

## *Report of Directors*

4th February, 1936.

To the Shareholders,
Falconbridge Nickel Mines Limited.

I submit herewith the Annual Report and the audited Balance Sheet for the year ending December 31st, 1935.

In 1935 your Company has had another successful year and continued progress has been made in all phases of its activities. The chief point of interest has been the establishment of a main operating shaft to a depth of 1,400 feet and the exploration of the ore zone laterally and in depth. The results from this development work to date have been satisfactory.

Looking to the future, your Company has added through purchase and by staking 633 claims to its holdings, at points of geological interest along the Norite rim. Although it may not be possible to point to actual tonnage in these new acquisitions, yet it is fair to say that the potential ore possibilities of your Company have been materially enhanced during the past year.

Summarizing once more the work of your Company since its inception, the following tabulation presents an interesting picture of the progress made:—

| Year | Tons Treated | Net Sales | Gross Profit After Taxes |
|---|---|---|---|
| 1930 | 71,626 | $ 68,726.89 | Loss |
| 1931 | 109,520 | 1,211,229.95 | $ 173,652.18 |
| 1932 | 123,306 | 2,787,917.78 | 1,014,378.90 |
| 1933 | 232,661 | 2,808,328.92 | 1,505,396.93 |
| 1934 | 272,923 | 4,001,551.55 | 1,924,251.00 |
| 1935 | 302,510 | 4,640,372.57 | 2,341,489.60 |

| Year | Net Profit after Taxes, Def. Development and Depreciation | Capital Expenditures | Net Current Assets, inc. Metal Inventories (at cost or lower) and Accts. Receivable; less Tax Reserve and not including Broken Ore |
|---|---|---|---|
| 1930 | $ Loss | $332,823.92 | $ 858,598.15 |
| 1931 | $ 10,530.69 | 100,557.43 | 1,114,484.64 |
| 1932 | 762,420.54 | 354,496.51 | 1,685,891.59 |
| 1933 | 1,122,999.28 | 642,383.03 | 1,826,058.38 |
| 1934 | 1,415,886.03 | 205,702.27 | 2,417,024.75 |
| 1935 | 1,768,558.15 | 705,617.50 | 2,860,895.65 |

With respect to the matter before the Supreme Court of Norway, mentioned in last year's Report, the case has now been decided in your favour.

Attention must also be directed to the increasing load of taxes which since 1930 have steadily increased from 0.15c per lb. of Nickel produced to as much as 2.39c per lb. of Nickel produced in 1935. Your Company is glad to be able to make such handsome contributions to the country's needs. It only hopes that the vast sums collected by taxation are being wisely expended.

The congratulations and grateful appreciation of the Directors to Mr. J. Gordon Hardy, Mr. Anton Gronningsater, Mr. Ernest Craig, Mr. S. B. Steen and to the entire staff and employees are clearly in order for the record year just concluded. They also recognize the good work of your Sales Agents in New York and London, Messrs. Brandeis, Goldschmidt & Company Limited.

On behalf of the Board,

T. Lindsley,
President.

Toronto, January 31st, 1936.

Mr. Thayer Lindsley, President,
and the Board of Directors,
Falconbridge Nickel Mines Limited.

Dear Sirs:

Supplementing the detailed reports of Mr. Craig and Mr. Gronningsater, I would make the following comments on our 1935 operations:

## MINE

This was a transition year in our ore-extraction methods. It had become apparent that shrinkage stoping involved ore-dilution from too much wall-rock sloughing, and that we would have to go to a cut-and-fill mining method. Stoppage of shrinking and the necessary delay in preparing cut-and-fill stopes meant that we had to draw heavily from broken-ore reserves, which accordingly furnished about one-third of the year's hoisting. Cut-and-fill ground was yielding about 25% of our drawings by the end of the year, and should keep the ore cleaner. With increased milling capacity, it was possible to cut down on expensive hand-sorting in the rock-house and hence the percentage of waste sorted out from the ore hoisted fell to 10.4 from 13.9 in 1934. Grade of ore paralleled closely that of the previous year, and that of the reserves. Mining costs were slightly higher, and will continue to be so under cut-and-fill methods.

Development suffered as usual from the insistent production demands, and further from the delays incident to the erection of the permanent steel headframe over our No. 5 Shaft, together with the hoisting equipment connected therewith. But nevertheless that shaft was taken down to 1,400 feet depth, and a main haulage level established at the 1,200 horizon. Prospecting of the ore-zone was meanwhile under way on the East Orebody on the 500 level, an additional thousand feet of ore-bearing ground being added to the east during the year. Also drilling beneath the 500 on the East Orebody was taken down to the 750-ft. horizon and better results noted there than on the 500. Then on the 1,200 the star development of the year was effected on the East Orebody, as the ore-horizon was there opened for a thousand feet in good ore which continues in the faces. The result has been that we have been able to take East Orebody areas into our Ore-Reserves without appreciably lowering the general average grade. Our experience with the Falconbridge ore shoots makes us feel justified in arriving at the tonnage figures presented, based on the work accomplished within the limits shown in the accompanying map. The No. 5 Shaft will continue sinking, and lateral development carried out on the different levels available. There is now over a mile opened up on the ore-contact, between the west and east faces of the 500 of which less than 20% is in pinches. Geophysical work and drilling show that eastward from the east face we still have extensive stretches in length that promise to be ore-productive.

## TREATMENT PLANT

During the year the concentrating plant was extended by an addition to grinding and flotation equipment. With this aid and the usual crowding of the rest of the units, a further 10% increase was accomplished in tonnage treated. This greater output was achieved at the expense of greater metallurgical losses, however, as will be noted from the following:

| | 1935 | | 1934 | |
|---|---|---|---|---|
| | Nickel % | Copper % | Nickel % | Copper % |
| Grade of Ore Treated | 2.048 | .985 | 2.050 | .995 |
| Recovered in Matte | 1.877 | .858 | 1.906 | .898 |
| Metallurgical Loss | .171 | .127 | .144 | .097 |

This means that 37.54 lbs. of nickel and 17.17 lbs. of copper per ton of ore treated, were recovered in the smelter in 1935, as against 38.12 lbs. nickel and 17.96 lbs. copper in 1934. An authorization has already been granted by the Board for construction in 1936 to remedy this condition by expanding the various existing bottlenecks in plant, as well as to add a still further modest increase in capacity.

## REFINERY

The Works at Kristiansand, Norway, were put to it to handle the matte increase from Sudbury, and were forced to add further refining equipment to keep in step. The high standard of

quality output was maintained in the refined metals produced, and further progress was made in preparing nickel for special purposes, such as plating-anodes and for coin blanks. Last year's departure into the field of isolating and refining our precious metals, each for separate marketing —instead of selling a mixed concentrate—began to yield marketable production. As yet this precious metal department shows a tie-up of values in process, as the normal flow has not yet reached the marketing stage.

## WELFARE

With the large amount of construction going on in 1935, our working force at Falconbridge averaged 567 men, with 363 more at Kristiansand. Again further housing accommodation had to be provided at the mine, as well as some long-deferred recreational facilities. Group insurance was also instituted at Falconbridge during the year, with all employees covered.

## MARKETING

This key factor in our business was favourable during the year and reached a peak in the third quarter. European exchange difficulties of course had their effect, as did the observance lately of "sanctions." At that, sales of nickel totalled 10,829,865 pounds and of copper 5,129,483 pounds, which closely parallels our year's production, and closed the year with little change in stocks. These continue to be lower than we would like to see, but should be reinforced by the steps now being taken to increase production by the end of 1936. Forward bookings for 1936 deliveries are again higher than in prior years.

Grateful acknowledgment goes to all employees, on whose efforts the year's results so much depend.

Yours very truly,

J. Gordon Hardy,

Consulting Engineer.

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## *Dividends Paid by Falconbridge Nickel Mines Limited*

| Dividend Number | Record Date | Dividend Per Share | Total |
|---|---|---|---|
| 1 to 7 inclusive prior to 1935 | | 52½c | $1,714,782.99 |
| 8 | Mar. 12, 1935 | 7½ | 249,136.05 |
| 9 | June 6, 1935 | 7½ | 249,136.25 |
| 10 | Sept. 12, 1935 | 7½ | 249,511.25 |
| 11 | Dec. 21, 1935 | 7½ | 249,886.22 |
| | | Total | $2,712,452.76 |

# FALCONBRIDGE N

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## FALCONBRIDGE NIKI

## Consolidated Balance S

## with Comparative Figu

| ASSETS | | 31st December 1935 | 31st December 1934 |
|---|---|---|---|
| Current Assets: | | | |
| Cash on hand and in banks in Canada, United States and Norway | | $ 931,646.41 | $ 605,594.10 |
| Accounts Receivable—Trade | | 40,982.52 | 111,742.78 |
| —Sundry | | 19,909.39 | 23,381.90 |
| —Ventures Limited | | | 86.19 |
| Securities at cost— | | | |
| Bonds—Dominion, Provincial and United States Government | $548,110.25 | | 399,438.00 |
| Railway, Power and Industrial | 107,661.50 | | 110,325.00 |
| (Market value $680,000) | | 655,771.75 | |
| Stocks—Mining Companies | $681,628.69 | | 573,387.35 |
| Railway, Industrial, etc. | 110,466.10 | | 77,344.34 |
| (Market value $1,211,000) | | 792,094.79 | |
| Investment in Associated Companies' shares | | 40,255.50 | 29,955.50 |
| | | $2,480,660.36 | $1,931,255.16 |
| Inventory—Refined Metals at cost | | $ 283,224.90 | $ 287,200.88 |
| Matte on hand and in process at cost | | 606,185.06 | 520,577.19 |
| | | $ 889,409.96 | $ 807,778.07 |
| Property Account— | | | |
| Mine, Smelter and Refinery Buildings, Machinery and Equipment | | $4,117,212.92 | $3,411,595.42 |
| Less: Depreciation written off | | 1,690,696.02 | 1,253,536.62 |
| | | $2,426,516.90 | $2,158,058.80 |
| Mining Properties and Claims | | 2,856,434.27 | 2,768,915.61 |
| | | $5,282,951.17 | $4,926,974.41 |
| Deferred Expenditures, Supplies, etc.— | | | |
| Mine Development Expenditures less amounts written off to Mining Operations | | $ 328,140.47 | $ 244,657.83 |
| Broken Ore in Stopes | | 152,475.99 | 200,000.00 |
| Mining and Refinery Supplies, etc. | | 188,435.57 | 149,864.16 |
| Prepaid Expenses and Deferred Charges | | 48,382.70 | 54,177.46 |
| | | $ 717,434.73 | $ 648,699.45 |
| Raffineringsverket Aktieselskap— | | | |
| Special Advance recoverable as a tonnage charge on custom metals as and when refined, less repayments | | $ 111,825.91 | $ 145,736.79 |
| Deposit with Municipality of Kristiansand re power supply | | 75,270.00 | 50,280.00 |
| | | $9,557,552.13 | $8,510,723.88 |

**AUDITORS REPORT**

We have audited the accounts of Falconbridge Nickel Mines Limited for the year Assets and Liabilities of its wholly owned subsidiary, Falconbridge Nikkelverk A above Consolidated Balance Sheet correctly sets forth the combined position of the

Toronto, 1st February, 1936.

# MINES LIMITED

ıed Subsidiary

/ERK AKTIESELSKAP

, 31st December, 1935

ɔr 31st December, 1934

| LIABILITIES | | 31st December 1935 | 31st December 1934 |
|---|---|---|---|
| Capital Stock: | | | |
| Authorized 5,000,000 shares No Par Value | | | |
| Issued at 31st December, 1934 | 3,321,757 shares | $6,956,008.44 | |
| Issued during 1935 for properties and Services | 15,250 shares | 78,312.50 | |
| | 3,337,007 shares | $7,034,320.94 | $6,956,008.44 |
| Current Liabilities— | | | |
| Accounts Payable | | $ 203,029.78 | $ 102,101.65 |
| Wages Payable | | 56,540.77 | 41,643.67 |
| Ventures Limited | | 1,898.68 | |
| Unclaimed Dividends | | 1,705.44 | 1,401.20 |
| Reserve for Taxes | | 246,000.00 | 176,861.96 |
| | | $ 509,174.67 | $ 322,008.48 |
| Interest not taken into Revenue | | $ 86,557.20 | $ 76,096.02 |
| Earned Surplus | | 1,927,499.32 | 1,156,610.94 |

On behalf of the Board:

T. Lindsley, Director.

J. Gordon Hardy, Director.

| | |
|---|---|
| $9,557,552.13 | $8,510,723.88 |

HE SHAREHOLDERS

31st December, 1935, and have incorporated in the above Consolidated Balance Sheet the
by their Auditor, A. LYNG. Subject thereto, we report that in our opinion the
mber, 1935, according to the best of our information and the explanations given us.

CLARKSON, GORDON, DILWORTH & NASH, Chartered Accountants.

# FALCONBRIDGE NICKEL MINES LIMITED

and its Wholly Owned Subsidiary

## FALCONBRIDGE NIKKELVERK AKTIESELSKAP

## Consolidated Earnings Statement
## Year 1935

| | | |
|---|---|---|
| Metal Sales (Gross) | $4,829,719.90 | |
| Less: Selling and Delivery Expense and Foreign Exchange Adjustment | 189,347.33 | $4,640,372.57 |
| Add: Increase in Metal Inventories | | 81,631.89 |
| | | $4,722,004.46 |
| Operating Costs—Mining, Smelting, Refining, & etc. | $2,337,040.20 | |
| Administrative and General Expense | 75,296.37 | 2,412,336.57 |
| Operating Profit before providing for Taxes, Deferred Development and Depreciation | | $2,309,667.89 |
| Non-Operating Revenue | | 94,268.37 |
| | | $2,403,936.26 |
| Provision for Taxes | | 246,819.19 |
| Profit for the Year before providing for Deferred Development and Depreciation | | $2,157,117.07 |
| Deferred Development written off | $ 135,772.05 | |
| Depreciation | 437,159.40 | 572,931.45 |
| | | $1,584,185.62 |
| Profit on Sale of Securities | | 184,372.53 |
| Net Profit for the year transferred to Consolidated Earned Surplus | | $1,768,558.15 |

## Consolidated Earned Surplus Account
## 31st December 1935

| | | |
|---|---|---|
| Balance 31st December, 1934 | | $1,156,610.94 |
| Net Profit for year 1935 as above | | 1,768,558.15 |
| | | $2,925,169.09 |
| Dividends paid— | | |
| No. 8 paid March 27th 7½c per share | $ 249,136.05 | |
| No. 9 paid June 27th 7½c per share | 249,136.25 | |
| No. 10 paid September 27th 7½c per share | 249,511.25 | |
| No. 11 paid December 21st 7½c per share | 249,886.22 | 997,669.77 |
| Balance 31st December 1935 carried to Balance Sheet | | $1,927,499.32 |

# FALCONBRIDGE NICKEL MINES LIMITED

## SEVENTH ANNUAL REPORT
## YEAR 1935

Falconbridge, Ontario,
January 22nd, 1936.

Mr. Thayer Lindsley, President,
and Directors,
Falconbridge Nickel Mines Limited.

Dear Sirs,

Covering plant operation for the fiscal year ended December 31st, 1935, I beg to submit the following.

As heretofore, interruptions to continuous operation were due entirely to necessary periodic repair campaigns in the single unit smelting plant.

### MINE DEVELOPMENT

Development footages attained during the year, and combined over all levels, distribute as tabulated below.

| | |
|---|---|
| Drifting and Cross-Cutting (Including Slashing) | 5,708 feet |
| Raising (Including Slashing) | 1,813 feet |
| Ore Passes (Including Slashing) | 869 feet |
| Fill Passes (Including Slashing) | 416 feet |
| Box Holes | 6 only |
| Diamond Drilling | 4,805 feet |
| Station Cutting | 47,389 cu. feet |
| Loading Station | 7,620 cu. feet |
| Shaft Sinking | 856 feet |

Practically all lateral work along the ore zone was confined to the 500 and 1,200-foot levels. On the former, an advance of 986 feet was made Easterly in ore averaging 15.1 feet in width, though of slightly below mine average grade. This drive continues in ore at 1,600 feet from No. 5 Shaft. On the 1,200-foot level, 153 feet and 807 feet were driven East and West respectively from No. 5 Shaft in ore of mine average grade, with a mean width of 12.5 feet. Both these faces continue in ore.

No. 5 Shaft was deepened 856 feet to a point slightly below the 1,400-foot level. Stations were established on the 200, 325, 1,200 and 1,400-foot levels, and a loading station commenced at 1,350 feet. Stations for three levels between the 500 and 1,200-foot horizons are yet to be taken out. As the 1,200-foot level is a main haulageway, considerable work was carried out in anticipation of the large tonnage to be handled. A pump sump of sufficient size to accommodate a large volume of water is being excavated.

Steps were taken during the year to abandon the shrinkage method of mining and adopt the cut and fill system, with the conversion of active shrinkage stopes to the new practice. In preparation for this, as well as to back-fill the old stopes as they are emptied, a fill pass system was established near No. 1 shaft and two further series of passes were commenced, one located

West of No. 1 shaft and the other East of No. 5 shaft. Ore passes were completed from the 350 to the 750-foot levels. At present, cut and fill stopes are yielding 25% of the ore hoisted, and this figure will be increased as the shrinkage reserves are drawn.

## ORE RESERVES

Ore reserves, computed as at December 31st, 1935, are tabulated hereunder.

| | |
|---|---|
| Ore Reserves as at December 31st, 1934 | 2,960,238 tons |
| Plus New Ore added 1935 | 1,436,780 tons |
| TOTAL | 4,397,018 tons |
| Less: Drawn during 1935 | 337,543 tons |
| Total Ore Reserves December 31st, 1935 | 4,059,475 tons |

(Averaging—1.93 Ni.—0.91 Cu.)

## MINING

Results of mining activities during the year are set out in the following table.

| | |
|---|---|
| **Broken Ore—In Stopes** | |
| Balance December 31st, 1934 | 509,742 tons |
| Broken During 1935 | 170,196 tons |
| TOTAL | 679,938 tons |
| Less: Hoisted from Stopes during 1935 | 292,601 tons |
| Broken Ore Reserves December 31st, 1935 | 387,337 tons |
| **Ore Hoisted** | |
| From Stopes, 1935 | 292,601 tons |
| From Development, 1935 | 25,781 tons |
| From Concentrating Dump, 1935 | 16,762 tons |
| From Development Dump, 1935 | 2,399 tons |
| Total Ore to Crushing Plant, 1935 | 337,543 tons |

## CRUSHING, SORTING AND TRANSPORTATION

From 337,543 tons of ore delivered to the crushing plant, 35,206 tons or 10.4% of waste was eliminated by sorting. The balance, amounting to 302,337 tons, was transported over the aerial tramway to the Treatment Plant bins.

## REDUCTION PLANT

The Reduction Plant was in operation 346.93 days or 95.3% of possible time. That the plant is being burdened beyond its limit is reflected in higher metallurgical losses as the result of slightly increased production.

Results of operation tabulate as below.

| | |
|---|---|
| Total Ore Treated | 302,510 short tons |
| Matte Produced | 10,029.50 short tons |
| Nickel in Matte Produced | 5,651.55 short tons |
| Copper in Matte Produced | 2,597.26 short tons |
| Metals per ton in Ore | 40.97 lbs. Ni.—19.71 lbs. Cu. |
| Metallurgical Losses per ton of Ore | 3.43 lbs. Ni.— 2.54 lbs. Cu. |

## CONSTRUCTION

An extensive construction program at No. 5 shaft embraced the erection of a steel head frame, power house with hoisting and compressor equipment, change house with office accommodation for the mine staff, carpenter shop, combined drill steel and repair shop, central heating plant and sub-station. All buildings are of steel and concrete block construction with fire-proof roofing. A sub-station was also erected at the property by the Hydro-Electric Power Commission, and 25-cycle power at 26,400 volts was being delivered before the end of the year. Standard gauge track to the extent of almost 1½ miles was laid during the year to tie in the future ore and back-fill handling system. Additional grinding, flotation and thickening equipment was added in the concentrator.

## GENERAL

Housing facilities were further increased by the erection of a number of dwellings. In addition, a spacious Community Hall was built for the use of employees and their families.

In conclusion, I am pleased to record the loyal and able assistance rendered by the staff and employees.

Respectfully submitted,

E. Craig,
General Superintendent.

Kristiansand, S.,
January 17th, 1936.

Mr. Thayer Lindsley, President,
and Board of Directors,
Falconbridge Nickel Mines Limited.

Dear Sirs:

I beg to submit the following report for the fiscal year ending December 31st, 1935.

## MILL AND SMELTER

The mill and smelter operated throughout the year with only the normal interruptions for repairs. The capacity of the mill was somewhat increased and is now very ample for the present production. The production was somewhat increased by crowding the smelter, but at some loss of efficiency.

## REFINERY

The Refinery operated very steadily throughout the year, keeping in step with the somewhat increased matte production.

A certain amount of additions and alterations took place, which raised the total capacity of the plant, including capacity for custom matte, to 7,000 short tons nickel annually, at which rate it occasionally operated.

Custom matte was received regularly at a rate of 1,000 long tons nickel annually.

The plant for separation of precious metals started delivery of gold, silver, platinum and palladium. The quality was found satisfactory, and the marketing took place without difficulty.

The quality of the nickel and copper was maintained to the satisfaction of the market at the high quality previously set.

For the year 1935, the amount of metals in matte received from the Smelter, the Refinery production, the metals in process and metals in matte on hand at the end of the year is set out in the following table:

| | Ni., Lbs. | Cu., Lbs. |
|---|---|---|
| Metals in Falconbridge Matte Received, less refining losses | 10,421,850 | 4,768,704 |
| Produced in marketable form during the year | 10,753,756 | 5,029,525 |
| Metals in process of refining at end of year | 2,260,586 | 427,043 |
| Metals in Matte on hand at end of year | 715,864 | 319,041 |

Respectfully submitted,

Anton Gronningsater,
Consulting Metallurgist.

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E

OVERBURDEN

NO.2 FILL HOLE

NO.2 SHAFT

NO.2 FILL PASS

NO.3 FILL HOLE

NO.1 SHAFT

NO.1 FILL PASS

NO.3 SHAFT

NO.2 FILL PASS

OVERBURDEN

BROKEN ORE

FILL

225 LEVEL

250 LEVEL

500 LEVEL

PROBABLE ORE

750 LEVEL

1000 LEVEL

ORE INDICATED
BY
DIAMOND DRILLING

200 LEVEL

325 LEVEL

500 LEVEL

1200 LEVEL

SUMP

1400 LEVEL

NO.1 SHAFT

NO.2 SHAFT

INTERNATIONAL NICKEL CO. LTD.

WESTERN BOUNDARY

5790 FT.

16325 FT

EASTERN BOUNDARY

INTERNATIONAL NICKEL CO. LTD.

KEY MAP SHOWING LATERAL EXTENT OF PROPERTY IN RELATION TO WORKINGS

# FALCONBRIDGE NICKEL MINES LIMITED

## LONGITUDINAL SECTION SHOWING MINE WORKINGS

o DIAMOND DRILL HOLE INTERSECTIONS

ORE ESTIMATE LIMITS

STOPES WITH BROKEN ORE

SCALE

50 0 100 200 300 FEET

DECEMBER 31st. 1935