

# METALLIC MINERAL EXPLORATION IN WISCONSIN

## Summary of 1984 Activity

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### HIGHLIGHTS OF 1984 ACTIVITY

The major highlight of 1984 metallic mineral exploration was the high level of exploration performed outside of the Proterozoic metavolcanic belt of northern Wisconsin--the geologic environment most noted for exploration activity during the past ten years.<sup>1</sup>

The exploration for zinc and lead in two southwestern counties was the first serious attempt in six years to find new ore in the 165-year-old Upper Mississippi Valley Zinc-Lead Mining District. The District, last mined in 1979, is believed by experts to contain substantial zinc and lead resources. Mine closure was brought about by unfavorable economics, not by a lack of reserves.

Pierce County was the site of a drilling program featuring a series of closely-spaced, shallow holes drilled in search of unspecified metallic minerals. The drilling took place in an area noted for the reported occurrence of both gold and diamonds--occurrences which have not been completely substantiated.

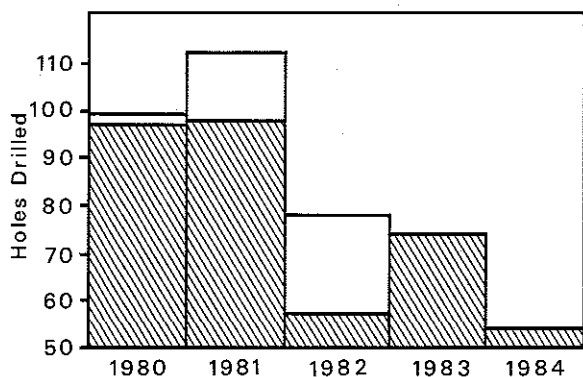


Fig.1 Number of Holes Drilled by Year.\*

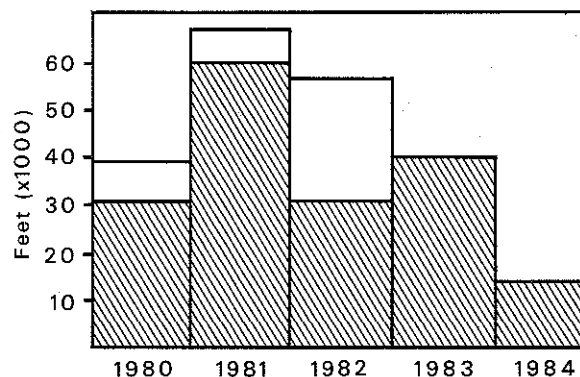


Fig. 2 Lineal Feet of Drilling in Bedrock.\*

\*The hachured portion represents true exploration drilling, unhachured portion represents developmental drilling.

<sup>1</sup> Exploration has a specific legal definition in Wisconsin that essentially is synonymous with drilling. Unless otherwise stated, this definition is followed in this report.

The geologic information statute, s. 107.15, Wis. Stats., is no longer in force. After five years of legal action, Dane County Circuit Court Judge Angela B. Bartell concluded that the statute was unconstitutional in its entirety, thereby eliminating the uncertainty created by the State's Supreme Court in 1983 when it found certain provisions of the statute were unconstitutional. Although the State Geologist no longer receives mandatory exploration reports and samples, the Sample Repository and the exploration records collection continue with support of voluntary geologic record contributions. Possible donors of records or samples, as well as persons interested in using the collections, are invited to contact the Survey.

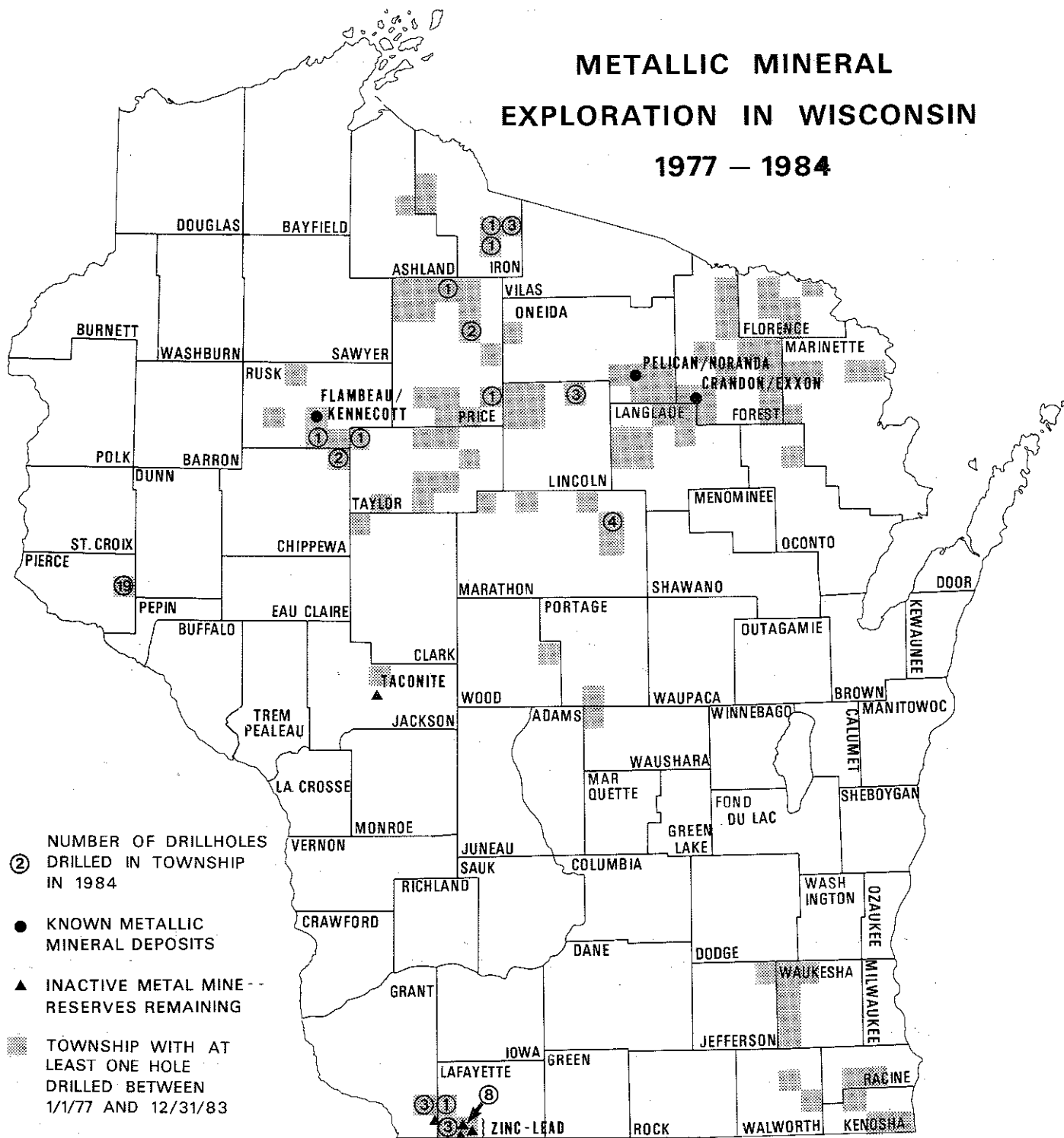
Nonmetallic minerals are the subject of two other highlights. Diamond exploration is occurring in Wisconsin and Michigan but details are limited. A body of rock associated with diamonds, a kimberlite pipe, was found in Michigan near the Wisconsin border in the early 1970s and announced in the spring of 1980. The number of companies looking for diamonds is unknown, but at least one is searching in Wisconsin.

Several oil companies are searching for oil and gas in northwestern Wisconsin. These companies have not yet explored in the legal sense of drilling holes, but they did continue to acquire leases on private and public lands and initiate seismic studies of subsurface strata in the area. The Department of Natural Resources has draft regulations for oil and gas exploration. The first exploration drillholes will probably be constructed in 1985.

Metallic mineral Exploration activity can be measured in various ways. The total number of holes drilled in 1984 was down 27 percent from the previous year. Total footage drilled and total footage drilled in bedrock were down 34 percent. Developmental drilling, that is, drilling performed on known and publicly announced mineral deposits did not take place in 1984. The number of companies licensed to drill for metallic minerals increased from 17 to 18. The number of companies actually drilling, usually less than the number that is legally entitled to drill, decreased from nine to eight companies. An average of nine companies have drilled each year since licensing began in 1978.

Drilling occurred in 10 counties in 1984. Three counties were added to the cumulative number of counties in which drilling has occurred since 1977, bringing that total to 27 counties, or 38 percent of Wisconsin's counties.

# METALLIC MINERAL EXPLORATION IN WISCONSIN 1977 - 1984



② NUMBER OF DRILLHOLES  
DRILLED IN TOWNSHIP  
IN 1984

● KNOWN METALLIC  
MINERAL DEPOSITS

▲ INACTIVE METAL MINE--  
RESERVES REMAINING

■ TOWNSHIP WITH AT  
LEAST ONE HOLE  
DRILLED BETWEEN  
1/1/77 AND 12/31/83

**WISCONSIN**  
**G&NS** 3/85

All drillhole data are from public records--drillhole abandonment reports submitted to the Wisconsin Department of Natural Resources.

# FIVE-YEAR METALLIC MINERAL EXPLORATION SUMMARY

	1980	1981	1982	1983	1984
Companies Licensed To Drill <sup>1</sup>	15	14	14	17	18
Newly Licensed Companies	1	1	2	3	3
Companies Conducting Drilling	9	10	8	9	8
Total Counties with Drilling	12	10	10	14	10
Total Holes Drilled	98 (96) <sup>2</sup>	111 (97)	77 (57)	74 (74)	54 (54)
Total Footage Drilled	49,562 (40,303)	77,999 (69,618)	66,580 (37,586)	48,594 (48,594)	16,664 (16,664)
Total Bedrock Footage	39,203 (31,520)	66,037 (60,096)	56,334 (31,481)	40,350 (40,350)	13,573 (13,573)

Source: DNR Drillhole Abandonment Reports and Metallic Mineral Exploration Licenses

- 1 An exploration license may be obtained during any month of the year, but expires on July 1. This total includes companies licensed to drill for all or part of the indicated year.
- 2 Numbers in parentheses indicate number of drillholes or total footage or total bedrock footage drilled for non-developmental exploration, that is for exploration performed at sites that are not known or publicly announced mineral deposits.

1984 METALLIC MINERAL EXPLORATION BY COMPANY AND COUNTY

<u>Company</u>	<u>Drillholes</u>	<u>Bedrock Footage</u>	<u>Total Footage</u>
AMAX Exploration, Inc.	2	666	890
American Copper and Nickel Co., Inc.	4	1,179	1,391
Inspiration Development Co.	2	881	1,136
Kerr-McGee Corporation	6	3,028	3,695
Ernest K. Lehmann & Associates of Wisconsin, Inc.	5	2,691	3,438
Mobil Mineral Resources, Inc.	15	2,842	3,130
Superior Mining Company	19	1,086	1,612
U.S. Borax & Chemical Corp.	1	1,200	1,372
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TOTAL	54	13,573	16,664
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<u>County</u>	<u>Drillholes</u>	<u>Bedrock Footage</u>	<u>Total Footage</u>
Chippewa	2	1,111	1,241
Grant	3	648	702
Iron	5	2,347	2,946
Lafayette	12	2,194	2,428
Lincoln	3	1,339	1,776
Marathon	4	1,179	1,391
Pierce	19	1,086	1,612
Price	4	2,233	2,798
Rusk	1	1,200	1,372
Taylor	1	236	398
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TOTAL	54	13,573	16,664
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# 1984 METALLIC MINERAL EXPLORATION LICENSEES<sup>1</sup>

## License

No.	Company
1	Exxon Minerals Company
3	Noranda Exploration, Inc.
5	Ernest K. Lehmann & Assoc. of Wisconsin, Inc.
6	Central Wisconsin Joint Venture (Getty Oil Co., Ernest K. Lehmann & Assoc. of Wisconsin, Inc.)
7	St. Joe American Corporation
9	American Copper & Nickel Co. Inc
10	AMAX Exploration, Inc.
11	UOP, Inc. - Mineral Exploration
12	Inspiration Development Co.

## License

No.	Company
17	Kerr-McGee Corporation
18	Amoco Minerals Company
19	Amselco Exploration, Inc.
21	Mineralco, Inc.
22	Mobil Oil Corporation
23	Molycorp, Inc.
24	U.S. Borax & Chemical Corp. <sup>2</sup>
25	Jump River Joint Venture (Chevron U.S.A., Inc., Getty Oil Co., Ernest K. Lehmann & Assoc., Inc.) <sup>2</sup>
26	Superior Mining Company <sup>2</sup>

<sup>1</sup> Companies listed were licensed to drill for all or part of 1984. License numbers not listed were issued previously to companies that did not renew their license for the period of July 1983 to July 1984.

<sup>2</sup> This company has not previously held a license to explore in Wisconsin.