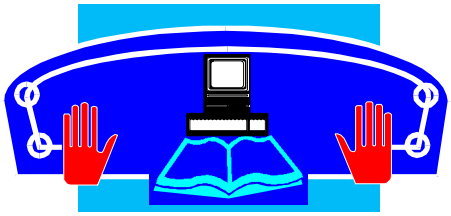

Guidelines For The Abondonment And Restoration Planning For Mines In The Northwest Territories

Type of Study: Policy Material/related Library Mining/oil/energy, Nwt Minerals General

Date of Report: 1990

Author: Canada - Indian And Northern Affairs

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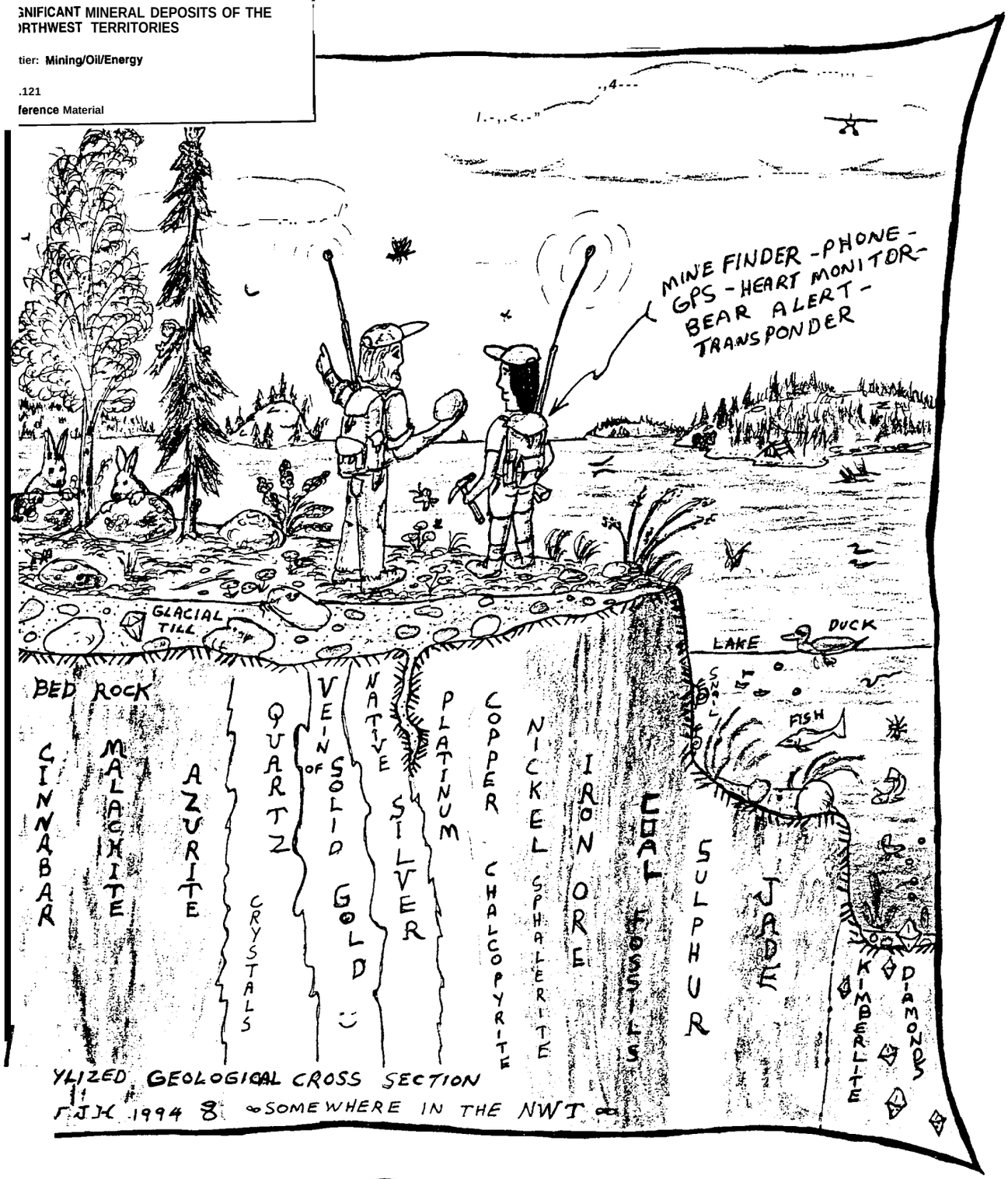
Significant Mineral Deposits
of
The Northwest Territories



Northwest Territories Energy, Mines & Petroleum Resources

Significant Mineral Deposits of The Northwest Territories

Energy, Mines & Petroleum Resources

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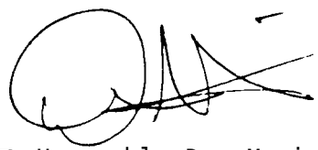
MINISTER'S INTRODUCTION

The Northwest Territories' (NWT) mineral potential is relatively untouched and unknown. The recent diamond discoveries in the NWT are an indication of just what might be lurking over the next hill, or just below the surface.

However, over the past 50 years, numerous mineral deposits have been identified. Many of them remain undeveloped, and are a sign of the great mineral wealth of the NWT.

The Department of Energy, Mines and Petroleum Resources has complied this collection of significant undeveloped mineral deposits of the NWT, as an indication of that potential. Some of these deposits require further exploration, some require imaginative solutions to transportation and infrastructure obstacles. However, all of them are major mineral deposits that could eventually be developed.

It is our intention that they be developed safely, and for the benefit of all residents of the NWT, bringing new jobs, new businesses, increase revenues and new infrastructure development to the NWT.



The Honorable Don Morin
Minister
Energy, Mines and Petroleum Resources

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INTRODUCTION

The Northwest Territories constitutes more than 1/3 of Canada's surface area. The Archean, Proterozoic, and Paleozoic rocks which underlie this vast domain host immense economic potential. An extremely diverse and rich variety of mineral deposits occur throughout the region. The majority of these deposits, however, remain undeveloped. It is estimated that only 25% of the N WT's land area has been geologically mapped and explored at a reconnaissance or more advanced level. This report details the major mineral deposits identified to date. It is certain that future exploration will lengthen this summary of the potential mineral wealth of Canada's Northwest Territories.

MINING IN THE NORTHWEST TERRITORIES

Base and precious metal mines have been a source of substantial economic prosperity for many years. Due to the abundance and richness of undeveloped mineral deposits in the NWT, there is excellent potential for the establishment of new mining operations.

Eldorado, the NWT'S first modern mining operation, opened in 1933. Since then, the exploration, mining and mine service industries of the NWT have expanded greatly. Infrastructure built to support mining in the North includes a barging company, a railway line, the townsites at Tungsten and Pine Point, the Taltson River and Bluefish power dams, numerous airstrips and a half dozen winter and/or all-weather roads. Yearly mine employment averaged 2124 fill-time positions during the past decade. Mines in the NWT operate under one of the most attractive taxation and royalty rates in Canada.

Zinc (Zn) accounted for 57.4%, gold (Au) for 25.8%, lead (Pb) for 13.7%, silver (Ag) for 1.3% and tungsten (WOJ for 1.0% of the value of metals produced by NWT mining operations between 1933 and 1992. The value of metallic minerals extracted from NWT mines in 1994 was $493.7 million. Zinc accounted for 49.1 % of this value (or 19% of Canada's total zinc production during the year). gold for 44.7% (or 9% of Canada's production), lead for 5.4%, and silver for 0.8%. The eight largest mining operations (Table 1) have produced mineral commodities worth a total estimated US$20 billion (at 1994 prices). Sixteen smaller mines (Table 2) have produced a total estimated US$600 million worth of mineral commodities. By-products also extracted at these sites include cadmium. iron, arsenic, bismuth, antimony, beryllium. rare earth elements, radium, lithium, mica and graphite.

Gold Mines	Products
Giant mine (u/g** and open pit) Con mine (u/g) Lupin mine (u/g) past producer Discovery mine (u/g)	450 tonnes Au >97 tonnes Ag
Lead-Zinc Mines	
past producer Pine Point mine (multi-open pit) Polaris mine (u/g) Nanisivik mine (u/g)	9,400.000 tonnes Zn 2,240,000 tomes Pb 380 tonnes Ag
Tungsten Mines	
past producer **Cantung** mine (open pit)	48,000 tonnes WO, 1.050 tonnes Cu

Table 1: Eight Largest Past And Present Mining Operations in the NWT*

*** 1992 Year-End Figures.** NWT **Mines** Info Database, DIAND, Yellowknife
* * underground

Gold Mines	Products
past producer **Salmita** mine **Colomac** mine (open pit)** past producer Tundra mine past producer **Cullaton** Lake/Shear Lake*** mine Ptarmigan/Tom mine past producer Thompson-Lundmark mine past producer **Camlaren** mine past producer **Bullmoose** mine past producer Fox mine* **	22.4 tonnes Au >1.3 tonnes Ag
Silver-Copper (Cu) Mines	
past producer Echo Bay mine	793 tonnes Ag 4,935 tonnes Cu
Silver-Uranium (U_3O_8) Mines	
past producer **Eldorado** mine past producer Contact Lake mine	272 tonnes Ag 6,226 tonnes U_3O_8
Silver Mines	
past producer Terra mine past producer Norex mine	456 tomes Ag
Uranium Mines	
past producer **Rayrock** mine	208 tonnes U_3O_8
Nickel-Copper Mines	
past producer North **Rankin** mine	9,760 tonnes Ni 2,634 tonnes Cu

Table 2: Sixteen Smaller Past and Present Mining Operations in the N WT*

* 1992 Year-End Figures, NWT Mines Info Database, DIAND. Yellowknife
* * Suspended gold operation with 31.000 kg+ reserve; reopened in 1994
* * * Proterozoic gold deposit
(All mines are underground operations unless otherwise noted.)

The next major phase of NWT mineral resource development is anticipated from one or more of the following targets:

(a) diamond-bearing kimberlite pipes at Lac de Gras,
(b) renewed interest in the base metal potential of the northern Slave Province and Cordillera, and
(c) sustained gold exploration throughout mainland NWT.

The search for diamonds has tremendously elevated levels of exploration throughout the NWT. The 1991 announcement of diamond-bearing kimberlite pipes of economic potential in the central Slave Province triggered a huge staking rush. As of July 1995, the land area staked as a result of this finding totalled 239,715 km^2.

MINERAL DEPOSIT TYPES IN THE NORTHWEST TERRITORIES

This report examines 49 sites of significant mineralization distributed throughout the NWT. The majority of the localities discussed host undeveloped mineral deposits with large tonnages and significant grades. Several sites that were once mined, but still contain abundant future reserves are also included. In addition, smaller deposits with high mineral potential in less explored regions of the NWT are presented. Table 3 provides a catalogue of the numerous mineral deposit types found in the NWT.

Archean Lode Gold**	Platinum Group Elements (PGEs)
Arsenide Vein **Silver, Uranium**	**Proterozoic** Lode Gold
Beryllium-Zirconium	Rapitan-type Iron Formation
-Rare Earth Elements (REEs)	Sedimentary Copper
Carbonate-Hosted Lead-Zinc	Sediment-hosted Lead-Zinc
Coal	**Skarn Tungsten**
Gold-in-Iron-Formation	Stratiform Mafic/Ultramafic-Hosted
Kimberlite-hosted Gem Diamonds	Chromite
Lake Superior-type Iron Formation	Unconformity-related Uranium
Ultramafic/Mafic Nickel-Copper	Vein Lead-Zinc-Silver
Olympic Dam-type Copper-Uranium	Volcanic-Redbed Copper
Placer Gold	Volcanogenic Massive Sulphide

Table 3: NWT Mineral Deposit Types*

• Modified in part from Eckstrand, O.R. (1984), GSC-Economic Geology Report 36
• *Highlighted mineral deposit types are present or past producers.

For the purposes of this report, the NWT has been subdivided into 4 geographical areas. namely, the Central Mainland, Eastern Mainland. Western **Mainland**. and **Arctic Islands** regions (Figure 1). A summary of the geology of each region is presented, and detailed descriptions of the significant mineral deposits located within the area are given.

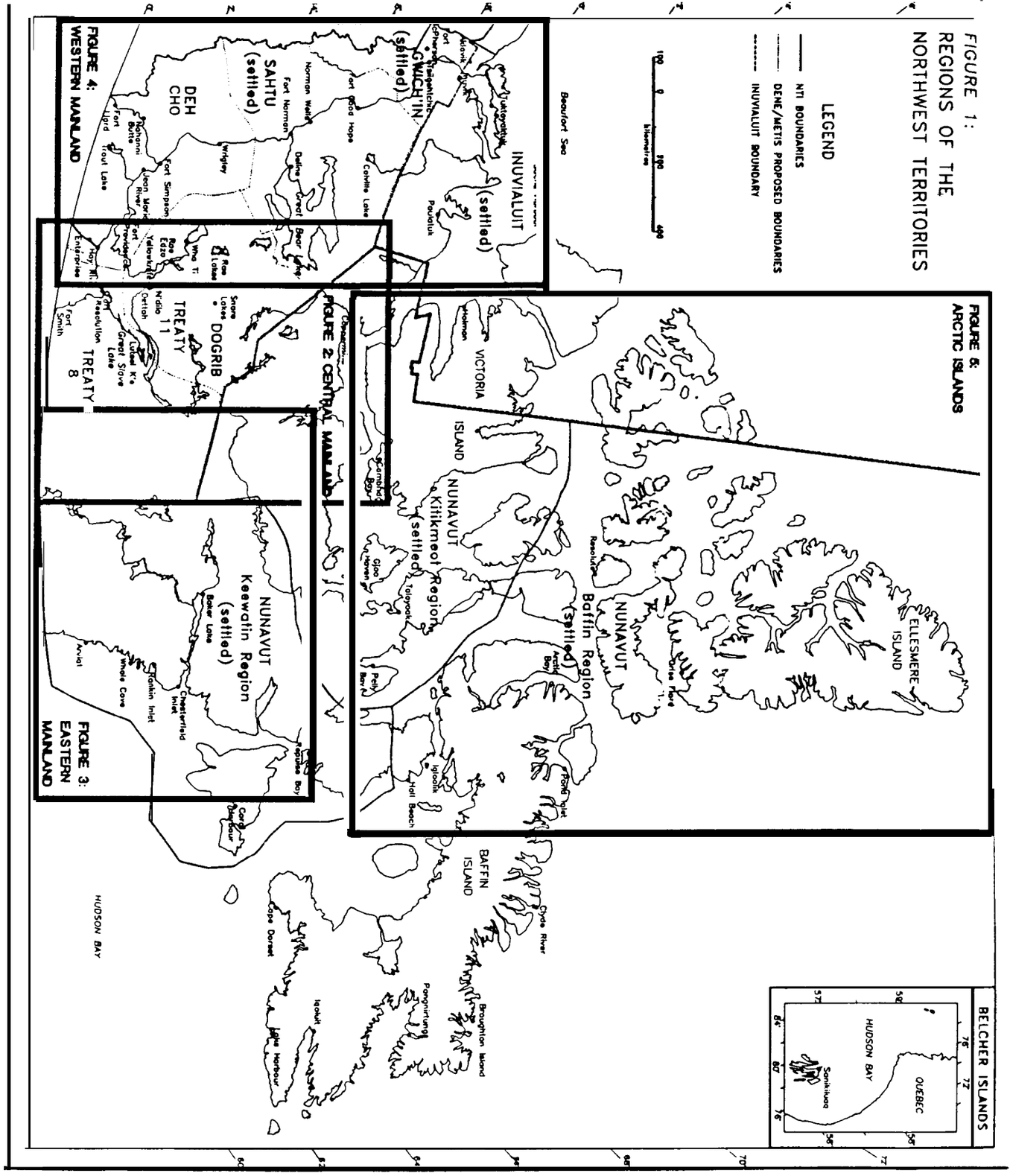

Figure 1: Regions of the Northwest Territories

FIGURE 1:

There may be several mineralized occurrences. zones or lenses at a deposit site. Deposits are listed in alphabetical order for each of the four regions. Locations are given by NTS, latitude and longitude, and claim settlement region. The distance and direction from the nearest full-service community or active minesite is given. The exploration and/or development history as well as the current principal owner of a specific deposit are provided. Each summary discusses the geology of the deposit and its ore zone parameters; significant results, tonnages and grades are also presented. Data is presented in metric units, unless otherwise specified.

All information is derived from sources that are available to the public. References include:

(1) annual Mineral Industry Reports and Exploration Overviews published by NWT Geological Mapping Division, Department of Indian Affairs and Northern Development, Canada;
(2) the National Mineral Inventory published by Energy, Mines and Resources. Canada;
(3) DIAND Assessment Reports
(4) Annual Reports ~~or press releases~~ from mining companies. and
(5) professional geological papers.

Corrections, updates or comments for the mineral deposits listed in this report are welcomed by the Mineral Resources Division of Energy, Mines and Petroleum Resources, Government of the Northwest Territories.

It should be noted that separate land claim negotiations in various stages of completion are underway for claim settlement regions of the NWT (Figure 1). Land claims clarify rights of ownership and use of land and resources within a settlement region. From the mineral industry's perspective, significant features of land claim agreements include the following: the subsurface rights for a portion of the settlement area are privately owned (resource royalties are determined and paid to the land owners); benefit agreements are required where surface lands are owned by claimants. but subsurface title is still held by the Crown: claimant participation in resource management decisions within the entire settlement area is guaranteed; the settlement of land claims clarifies rights of title to land; and. the claimant groups receive financial compensation under the land claim settlements, which may be used for investment and development purposes. Land claim agreements are reviewed within A Guide to Legislation Affecting Exploration and Mining in the Northwest Territories, published by Energy, Mines and Petroleum Resources.

The achievements of the N WT's mineral industry are highlighted annually at the Yellowknife Geoscience Forum, a conference held in late November at the Explorer Hotel in Yellowknife. Exploration companies. mining companies. the Energy, Mines and Petroleum Resources office of the territorial government. the Geological Survey Of Canada. and the hosting NWT Geological Mapping Division of the federal government present information about recent work in the NWT.

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Yellowknife NT XIA 2R1
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P.O. Box 1500
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Yellowknife NT XIA 2R3

NWT Geological Mapping Division
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Minerals and Metals Sector
10th Floor, 580 Booth Street
Ottawa ON K1 A 0E8
Telephone No.: (61 3) 996-1059
Fax No.: (613) 992-8581

SECTION 1: CENTRAL MAINLAND

Geological Summary

The Central Mainland of the NWT (Figure 2) includes the Slave, Bear and portions of the Churchill structural provinces. The oldest known rocks in the world, dated at 3.96 billion years old, occur in this portion of the Canadian Shield along the Acasta River, western Slave Province. Sedimentary assemblages of Proterozoic age flank these Archean rocks and outcrop along the East Arm of Great Slave Lake and at the Bathurst Inlet and Brock inliers. In addition, there are several such packages exposed from Great Bear Lake to Coppermine.

Approximately half of the Slave Province consists of supracrustal rocks of the Yellowknife Supergroup; granitoid intrusions constitute the remainder. These volcanic and sedimentary rocks (termed 'greenstones') occur as linear belts ranging from 10 to 130 km in length and are usually several kilometres wide. There are over twenty such greenstone belts found throughout the Slave Province. In general. these belts encircle extensive metasedimentary units and thus seperate these units from surrounding granitoid bodies.

Boundaries

The western boundary of the Central Mainland is a geological contact that extends from Fort Smith on the Alberta border, north through Great Slave and Great Bear lakes, to the Arctic coast near Paulatuk. This boundary is marked by the contact of rugged igneous and metamorphic rocks of the Precambrian shield to the east and flat-lying Paleozoic sedimentary rocks to the west. The northern boundary is the Arctic coastline from Darnley Bay to the Queen Maud Gulf. The eastern boundary is taken as 102° West longitude (the border between the districts of Mackenzie and Keewatin).

Population

The Central Mainland has one city, two hamlets and eight settlements for a total population of 19,047 people (Table 4). Yellowknife. the territorial capital. is the major population centre in the region, followed by the communities of Rae-Edzo and Coppermine.

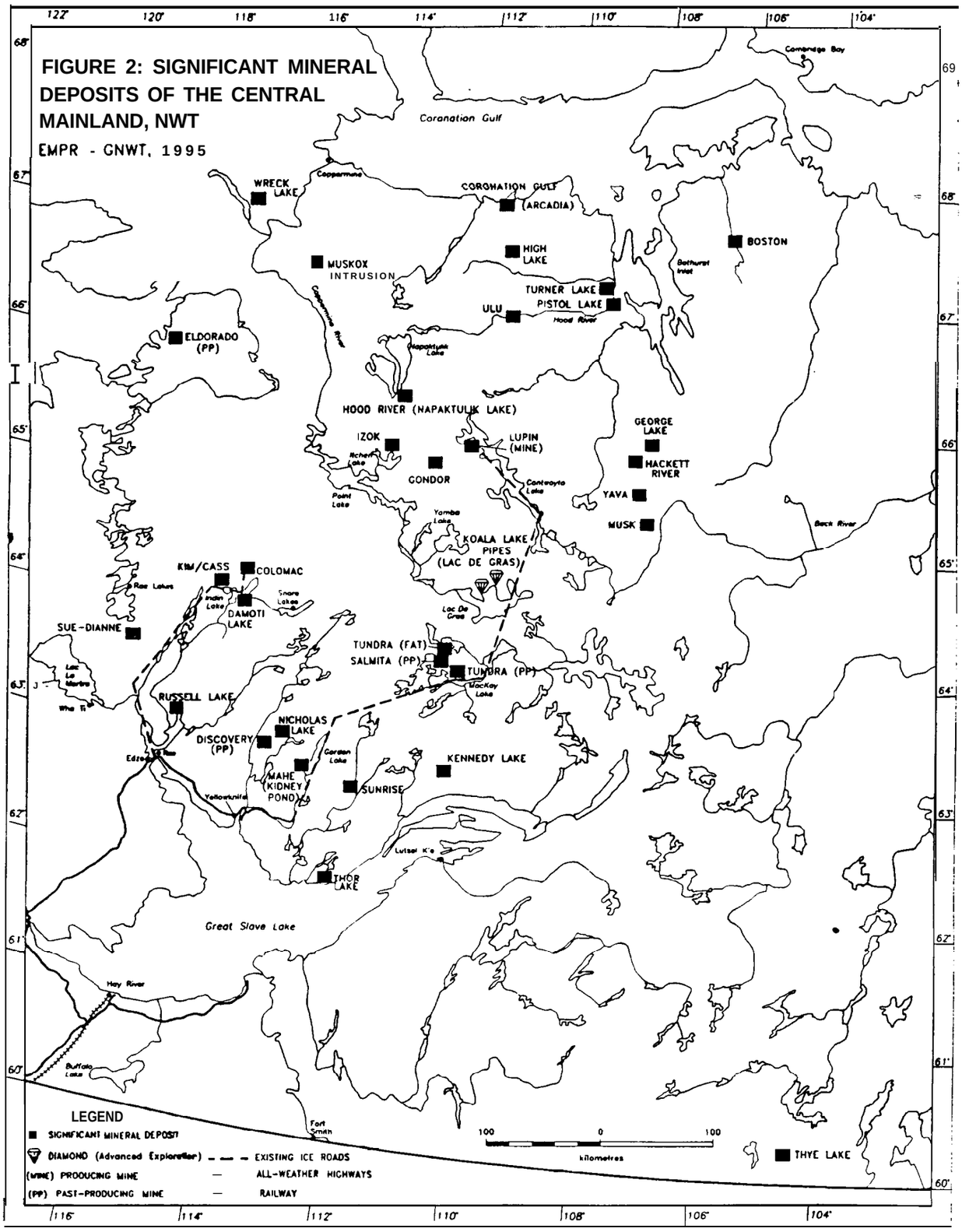

Figure 2: Significant Mineral Deposits of the Central Mainland

City of Yellowknife	15,179	Dettah	150
Hamlet of Rae-Edzo	1,521	Snare Lakes	127
Hamlet of Coppermine	1,059	Umingmaktok	53
Lutsel K'e	286	Bathurst Inlet	18
Rae Lakes	252	Reliance	10
Wha Ti	392		

Table 4: Central Mainland; Community Populations, 1991 Census

Access

The city of Yellowknife is the gateway to the Central Mainland. Access to Yellowknife includes an all-weather highway system leading to Alberta and British Columbia, a 2300 m paved runway and available air charter of float planes, helicopters and freighter planes.

Winter roads radiate northwards from Yellowknife and Rae-Edzo. The 580 km long, private winter road to the Lupin mine extends northward from an all-weather road, 60 km east of Yellowknife. The Lupin mine also has its own jet service connecting Yellowknife, Coppermine and Edmonton. The Discovery minesite, 95 km north of Yellowknife, is connected to a winter road which extended to the abandoned Tundra mine on MacKay Lake. The abandoned Echo Bay mine on Great Bear Lake was originally serviced by a 660 km long winter road from Hay River. Colomac, a 31,000 kg+ g gold deposit near Indin Lake, resumed production in 1994. The Colomac mine site is 245 km from Rae-Edzo via the present Lac La Martre - Rae Lakes - Snare Lakes winter road system. In addition. there is direct air service to Colomac from Hay River.

Mining

The uranium-silver vein deposits at Great Bear Lake were first mined in 1933, followed by the Con and Giant gold mines of the Yellowknife Greenstone Belt which opened in 1938 and 1948, respectively. Gold has since been mined from several deposits in the **Central Mainland, but** none of the many volcanogenic massive sulphide deposits in the region have been developed.

All the past and present gold operations in the NWT are within the Slave Structural Province (Table 5), except the abandoned Cullaton Lake/Shear Lake mine in the Keewatin and the abandoned FOX gold-tungsten mine on the Outpost Islands of Great Slave Lake.

Gold Mine	Production (kg Au)	Reserves (kg Au)	Period of Operation
Colomac	5,813	26,989	1990-1991, 1994-present
Con	160.098	35,674	1938-present
Discovery	31,836	n/a	1950-1969
Giant	206,774	26,114	1948-present
Lupin	73,094	28,406	1982-present
	477,615 (total)	117,183 (total)	

Table 5: Major Gold Mines of the Slave Province*

*** 1994 data; updated with** *Exploration Overview 1994, Northwest Territories* (DIAND)

Exploration

Discoveries of major deposits provided incentive and support for decades of exploration for precious and base metals within the Slave Province. Pre-development work and feasibility studies have been performed for the Tundra (Fat) gold deposit at Mackay Lake and the Izok base metal deposit in the northern Slave Province. Other projects in the advanced stages of exploration include: George Lake and Damoti Lake (gold-in-iron-formation deposits); Ulu, Boston, and Nicholas Lake (Archean lode gold deposits); and the Hackett River base metal deposit. Sites of significant mineralization in the Central Mainland are shown in Figure 2: Table 6 provides a summary of each deposit type.

Name	Deposit Type	Page(s)
Boston	Archean Lode Gold	14
Coronation Gulf (Arcadia)	Archean Lode Gold	16
Damoti Lake	Gold-in-Iron-Formation	18
George Lake	Gold-in-Iron-Formation	20
Gondor	Volcanogenic Massive Sulphide	22
Hackett River	Volcanogenic Massive Sulphide	23
High Lake	Volcanogenic Massive Sulphide	25

Hood River (Napaktulik Lake)	Volcanogenic Massive Sulphide	27
Izok	Volcanogenic Massive Sulphide	29
Kennedy Lake	Volcanogenic Massive Sulphide	31
Kim/Cass	Archean Lode Gold	33
Koala Lake Pipes (Lac de Gras)	Gem Diamonds	35
Mahe (Kidney Pond)	Archean Lode Gold	39
Musk	Volcanogenic Massive Sulphide	41
Muskox Intrusion	Stratiform Mafic/Ultramafic-hosted Chromite	42
Nicholas Lake	Archean Lode Gold	44
Pistol Lake	Gold-in-Iron-Formation	46
Russell Lake	Lode Gold in Various Settings	48
Sue-Dianne	Olympic Dam-type Copper-Uranium-Silver	50
Sunrise	Volcanogenic Massive Sulphide	51
Thor Lake	Beryllium-Zirconium-REEs	53
Thye Lake	Mafic/Ultramafic Nickel-Copper-Cobalt	55
Tundra (Fat)	Archean Lode Gold	57
Turner Lake	Archean Lode Gold	59
Ulu	Archean Lode Gold	61
Wreck Lake	Volcanic-hosted Copper	63
Yava	Volcanogenic Massive Sulphide	65

Table 6: Significant Deposits of the Central Mainland

BOSTON

GOLD

LOCATION: 170 km south-southeast of Cambridge Bay
760/9 67°37' N 106°21' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1970s:	prospecting
1988:	prospecting
1991:	discovery, staking
1991-93:	exploration, diamond drilling of-25,500 m in 101 holes [1,2,3]
1994:	25,315 m of diamond drilling[4]

OWNERS: BHP Minerals Canada Ltd. 100%
#1600, 1050 West Pender Street
Vancouver, BC V6E 3S7
Tel: 604-683-6921
Fax: 604-683-4125

SUMMARY

The Boston claims held by BHP are in the Archean Hope Bay Greenstone Belt. A large, mineralized, gold-bearing shear zone in mafic volcanic rocks was discovered in the southern Hope Bay belt in 1988.5 **Abermin** Corporation reported that a zone of intensely sheared, carbonatized schist measuring up to 1 km wide and 9 km along strike carried significant gold mineralization.

BHP staked the Boston claims and discovered a new showing in this area in 1991.3 During 1992 and 1993. BHP proceeded with a major exploration program on the Boston claims.' [2] This"program continued in 1994 with the completion of 1:10.000 scale mapping and an airborne VLF survey.[4]

SIGNIFICANT RESULTS

No information concerning the tenor of gold mineralization on the Boston claims has been released by BHP.

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CORONATION GULF (ARCADIA)

GOLD

LOCATION: Within 5 km of tidewater, 155 km east of Coppermine
76M/11 67°43' N 111°22' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1963-66:	discovery, diamond drilling
1973-77:	exploration, diamond drilling
1979-84:	bulk sampling, diamond drilling
1986-92:	exploration, diamond drilling

OWNERS: **Canuc** Resources Ltd. 72.5%
418 Hanlan Road, Unit 4
Woodbridge, ON 4L44Z1 Tel: 416-851-5726
Fax: 416-850-8276

Coronation Resources **7.5%**
New Arcadia Explorations Ltd. 20%
Lytton Minerals Ltd. Option to earn 65% interest

SUMMARY

Long, narrow shear zones are located within a 32 km^2 area immediately south of Arcadia Bay. The shear zones cut foliated tonalite and marginal mafic rocks of the Archean Anialik River Batholith. The shears. up to 5 km long and 4 m in width. contain closely spaced, *en echelon.* shear-type quartz veins with discontinuous gold-bearing sections. [1] Prospects include the Sidewalk, Fred, No. 3 or C. North Central and East Boundary Veins. The 2.4 km long North Central Vein is the most significant prospect. Sections of this vein average 10.3 g/t Au across 2.1 m for 122 m length and 28.8 g/t Au across 1.5 m for 98 m length.[2]

SIGNIFICANT RESULTS

A resource estimate for the Arcadia Bay property of 780,000 tonnes grading 7.5 g/t Au was released in 1988.1 In 1985, Echo Bay **Mines** Ltd. estimated proven. probable and possible reserves for the North Central Vein of 145,850 tonnes grading 12.0 g/t Au. However, consultants Watts, Griffith and **McOuat** provided an estimate for proven and probable reserves of the North Central Vein of 668.595 tonnes grading 7.2 g/t Au.[3]

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DAMOTI LAKE

GOLD

LOCATION: 190 km north of Yellowknife; 12 km southwest of the Colomac winter road
86B/6 64°10' N 115°05' W

SETTLEMENT REGION: North Slave Central Mainland NWT

HISTORY

1992:	discovery
1993:	diamond drilling of 23 holes (3,111 m)
1994:	85 holes totalling 9840 m diamond drilled, magnetic surveying'
1995:	winter drilling, 60-hole drill program and underground development planned[2,3]

OWNERS: Consolidated Ramrod Gold Corp. 100'%
#1440. 625 Howe Street
Vancouver. B.C. V6C 2T6
Tel: 604-682-6477
Fax: 604-683-5912

SUMMARY

A gold-in-iron-formation showing was found in 1992 on a small island (BIF Island) in Damoti Lake by geologists during a Canada-NWT Mineral Initiatives field program. Gold occurs in a sulphide-rich, silicate-facies iron formation unit within an Archean turbidite unit of the Indin Lake Supracrustal Belt. The BIF Island unit has a surface exposure of 10 m, but mineralized zones of more significant widths and grades have been delineated beneath Damoti Lake through extensive diamond drilling. In addition. a belt of mineralization has been traced by surficial mapping and aeromagnetic surveying along a 9 km strike length. Locally, individual bands range from 1 to 79 m thick and several zones of folding and thickening are indicated.[4]

In 1994, the northern and southern extensions of the iron formation were prospected. mapped. and sampled.' The Horseshoe zone, a major occurrence located approximately 1.6 km south of BIF Island, was discovered. Widely spaced drilling continues in order to identify new mineralized zones.[5] Plans for 1995 include a major drill program and inclined tunneling to bulk sample the Horseshoe zone at depth.[3]

SIGNIFICANT RESULTS

A grab sample from BIF Island in Damoti Lake assayed 26.8 ppm Au.[1] Hole D5 intersected 22.9 m grading 7.3 g/t Au, including a 10 m interval grading 16.25 g/t Au. The highest reported intersection in 1993 was 2.9 m grading 27.1 g/t Au.[5]

Drilling in 1994 continued to yield high gold values. most notably: 3.7 m grading 18.17 g/t Au, 5.5 m grading 17.31 g/t Au, and4mgrading21.53 g/t Au.[1] Results in 1995 include 14.6 m grading 68.6 g/t Au.[2] A preliminary drill-indicated resource of 18,700 kg Au in 4 separate zones is given, with an average grade of 9.95 g/t and within 91.5 m of surface.[4]

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GEORGE LAKE

GOLD

LOCATION: 175 km east of the Lupin mine, 100 km south of Bathurst Inlet
76G/13 63°56' N 107°26' W

SETTLEMENT REGION: Nunavut (Kitikmeot) **Central Mainland** NWT

HISTORY

1982: discovery, formation of Back River Joint Venture
1983-91: exploration and diamond drilling of> 105,000 m in 572 holes [1]

OWNERS: Homestake Canada Inc. 73.75?40
#l 000, 700 West Pender Street
Vancouver, BC V6C 1 G8
Tel: 604-684-2345
Fax: 604-684-3123

Kerr-McGee Corp. 26.25?4.

SUMMARY

An extensive amount of exploration has been performed on ground held by the George Lake Joint Venture, a division of the Back River Joint Venture which holds a number of properties in the Back River region. Archean Beechey Lake Group metasediments host numerous bands of complexly folded and faulted iron formation within a 75 by 25 km area in the George Lake area.

The George Lake site is the most advanced project of six areas of interest in the region. Three separate. mineralized belts of oxide-facies iron formation. ranging from 10 m to 100 m in thickness' [2] are known to contain 5 large gold deposits over a 6 km^2 area. [1] Three deposits. George Lake North. Occurrence Lake and Esker Pond. occur in a basal iron formation unit. The Slave and Lone Cow Pond deposits occur in iron formation units that are stratigraphically higher in the Beechey Lake turbidites. [1] Gold mineralization is found at or within 12 m of the stratigraphic footwalls of these iron formation units, and is associated with sulphide-bearing zones and quartz veining.

SIGNIFICANT RESULTS

Preliminary reserves to 300 m depth hosted by five deposits at George Lake total 3,080.000 tonnes grading 12 g/t Au. [1] A gold inventory of approximately 37,000 kg is indicated. Chip samples grading as high as 19.32 g/t Au across 6.26 m and drillhole intersections grading as high as 22.22 g/t Au across 6.02 m have been reported. [4,5]

REFERENCES

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5. Cooper, B. D., Haslinger, R.J. and Johnston, R.K. (1987), *'Back River Joint Venture, Exploration-1986, George Lake Area, Mackenzie Mining District, NWT', Unpublished Report submitted by Trigg, Woollett, Olson Consulting Ltd., Assessment Report #0821 17, Indian Affairs and Northern Development, Yellowknife, NWT.*

GONDOR

ZINC, SILVER, COPPER, LEAD

LOCATION: 34 km southwest of Lupin mine and its winter road
76E/12 65°34' N 111°48' W

SETTLEMENT REGION: North Slave Central Mainland NWT

HISTORY

1977:	staking of anomalies from airborne geophysical survey
1981-83:	discovery, diamond drilling of 5200 m in 24 holes
1993:	diamond drilling of 904 m in 2 holes[1]

OWNERS: Inukshuk Capital Ltd. 100'%0
540-220 Cambie St
North Vancouver. B.C. V6B 2M9 Tel:604-683-2622
Fax:604-683-2637

SUMMARY

Airborne surveys performed during the late 1970s delineated multiple geophysical anomalies over the Gondor deposit. A follow-up ground geophysical surveying and prospecting program discovered massive sulphide boulders in the vicinity. [1]

The Gondor massive sulphide deposit is a steeply-dipping, L-shaped. folded orebody that has been traced for 800 m along strike and is known to extend to a 350 m depth level.[2] Mineralization occurs in the fold hinge as a 40 m thick stratabound lens within felsic to intermediate volcanic rocks of the Archean Olga Lake Volcanic Belt. Drillcore samples containing medium-to coarse-grained sulphide minerals have been metallurgically tested for flotation characteristics.

SIGNIFICANT RESULTS

The Gondor deposit's drill-indicated reserves are 7.300.000 tonnes grading 4.8% Zn. 0.4% Pb, 0.2% Cu and 0.50 g/t Ag.[2,3] The orebody is open both down-dip and along strike.

REFERENCES

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2. Bubar. D.S. and Heslop, J.B. (1983) *'Geology of the Gondor Volcanogenic Massive Sulphide Deposit, Slave Province, Northwest Territories', Abstract, First District Five Meeting, CIM, 3p.*
3. Minnova Inc. (1992), *Annual Report to Shareholders, p. 18.*

HACKETT RIVER

ZINC, SILVER, COPPER, GOLD, LEAD

LOCATION: 125 km east of Lupin mine
76F/16 65°56' N 108°28' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1956:	prospecting, discovery of copper mineralization
1966-68:	staking, discovery of geophysical conductor
1969:	diamond drilling, discovery of mineralized belt
1970-76:	diamond drilling of more than 14,000 m[1]
1976:	preliminary economic study
1993:	diamond drilling

OWNERS: **Cominco Ltd.** 54%
#500, 200 Burrard Street
Vancouver, BC V6C 3L7 Tel: 604-682-0611
Fax: 604-685-3041

Hackett River Resources **Inc.**[2] 46%

SUMMARY

Hackett River is the largest. by tonnage, undeveloped base metal deposit in the NWT and is second in value only to the high-grade Izok deposit. The Hackett River deposit occurs at the top of an Archean felsic volcanic sequence which is part of the 100 km long Hackett River Volcanic Belt.[3] This volcanogenic massive sulphide deposit consists of a series of silver-and zinc-bearing zones which occur along the north limb of a major. regional sync line. .4 copper-enriched stringer zone in the vicinity has received little attention by explorationists, despite a single drillhole intersection of 28.7 m grading 2.77% Cu.[4]

An east-trending, 5 km long, cherty exhalative horizon hosts 3 large zones: the Main or 'A' Zone, the Boot Lake Zone and the East Cleaver Lake Zone. Other occurrences at this site include the Finger Lake. Cleaver Low Grade. Jo, South Jo and Knob Hill (discovered in 1993) zones. The Anchor Lake Zone is located 13 km to the southeast of these prospects.

Recently, a number of airborne geophysical anomalies have been detected. One target returned anomalous gold in till.

SIGNIFICANT RESULTS

The Hackett River deposit consists of six zones totalling 19,496,000 tonnes of ore with an averaged grade of 4.98%Zn,0.75V0Pb,0.41°A Cu, 149.8 g/t Ag and 0.45 g/t Au.[6] The *in situ* metal inventory for Hackett River stands at 971 kt zinc, 146 kt lead, 80 kt copper, 2,921 t silver and 8.8 t gold. Table 7 outlines reserve tonnages and grades for the most significant zones at the deposit site.

Zone	Tonnes	% Zn	% Pb	0/0 Cu	g/t Ag	g/t Au
Main[6]	4,000.000	12.76	1.38	0.30	231	0.46
Boot Lake[6]	4,540,000	4.97	0.99	0.29	201	0.48
E. Cleaver Lake'	4,600,000	6.84	0.09	n/a	160	0.34

Table 7: Reserve Figures, Hackett River Base Metal Deposit

A 1993 drillhole on the west limb of the Main Zone intersected 45 m of ore grade material from -137 m to -257 m, including 13.68 m grading 13.3% Zn, 2.32% Pb, 356 g/t Ag "and 0.51 g/t Au and 1.5 m grading 791 g/t Ag and 13.7 g/t Au. [7]

REFERENCES

1. Gibbins, W.A. (1982), *'Mining Developments, Mineral Inventory and Metallogenic Models: Arctic Regions, Northwest Territories, Canada', in Arctic Geology and Geophysics, Embry, A. F. and Balkwill, H. R.(eds.), Canadian Society of Petroleum Geologists, Memoir 8, p. 121.*
2. **George Cross Newsletter, (1994),** *'Etruscan Enterprises Ltd., Reorganization Completed', January 19, 1994 edition, Vancouver, BC, p. 4.*
3. Casselman, M.A. (1977), *'Petrology and Alteration of the Bathurst Norsemines Central Area Deposits, Northwest Territories", M.Sc. thesis, University of British Columbia, Vancouver, British Columbia, Canada, 217p.*
4. Padgham, W.A. et al. (1975), *'Hackett River Property', in Mineral Industry Report 19?1 and 1972, Northwest Territories, EGS 1975-8, Vol. 3 of 3, Indian Affairs and Northern Development, Yellowknife, NWT, p. 73-75,*
5. *George* Cross Newsletter (1993), *"Etruscan Enterprises Ltd., Hackett River l 993 Program Has Increased Reserves', September 15, 1993 edition, Vancouver, BC, p. i.*
6. Anonymous (1989), *Canadian Mineral Deposits Not Being Mined in [989, Mineral Bulletin A4R 223, National Mineral Inventory, Mineral Policy Sector, Ottawa, Canada.*
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. HIGH LAKE

COPPER, ZINC, SILVER, GOLD

LOCATION: 180 km east-southeast of Coppermine, 50 km south of Coronation Gulf
76M/7 67°23' N 110°51' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1956-59:	discovery, diamond drilling[1]
1973:	calculation of preliminary ore reserves'
1992-93:	diamond drilling of more than 7000 m

OWNERS: Kennecott Canada Inc. 80%
161 Bay Street. Ste 4700
P.O. Box 516 Canada Trust Tower
Toronto. Ontario M5J 2S 1 Tel: 416-364-2348
Fax: 416-364-2399

Aber Resources Ltd. 20%

SUMMARY

Massive sulphide mineralization occurs within an extensive alteration zone hosted by a felsic to intermediate. pyroclastic volcanic unit in the High Lake Volcanic Belt. A diabase dyke bisects the High Lake massive sulphide deposit into two large, distinct lenses which are about 600 m apart.

The AB Zone consists of stringer-type, copper-gold mineralization in a west-plunging lensoid body measuring 200 m long by 100 m wide and up to 250 m in depth.[2] The D Zone consists of zinc-rick exhalative mineralization that has been traced for 200 m along strike and to a depth of 325 m.[2]

Recent drilling programs have discovered 3 new pyritic, massive sulphide zones, but only the 1-4 m wide North Zone carries auriferous zinc mineralization. This zone has a strike extent of 100 m and a vertical depth of 150 m.[2]

SIGNIFICANT RESULTS

The AB Zone contains drill-indicated reserves of 3,230.()()0 tonnes grading 5.0%Cu,1.1% Zn, 18.2 g/t Ag and 2.3 g/t Au.A1992drillholeinthe AB Zone cut 71 m grading 6.9% Cu.[3] The D Zone contains drill-indicated reserves of 1,570,000 tonnes grading 2.1%Cu,4.9% Zn, 59.1 g/t Ag and 0.6 g/t Au.[4] The new North Zone does not contain significant tonnage because of its narrow width.

Additional reserves may exist at depth beneath all zones. Total estimated reserves are 5.3 million tonnes averaging 4.05% Cu, 2.36% Zn, 1.76 g/t Au, and 31.73 g/t Ag.[5]

REFERENCES

1. Anonymous (1989), *Canadian Mineral Deposits Not Being Mined in 1989, Mineral Bulletin MR 223, National Mineral inventory, Mineral Policy Sector, Ottawa, Canada.*
2. Covello, L. (1993), *'High Lake -An Update', Abstract, in Exploration Overview 1993, Northwest Territories, NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 26-27.*
3. Aber Resources Ltd. (1992), *'High Lake', Annual Report to Shareholders, p. 9.*
4. Thomas, D.G. (1994), *'High Lake', Progress Report released by Aber Resources Ltd., February 24.1994.*
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HOOD RIVER (NAPAKTULIK LAKE)

COPPER, ZINC, SILVER

LOCATION: 75 km northwest of Lupin mine, 210 km southeast of Coppermine
861/2 66°04′ N 112°45′ W

SETTLEMENT REGION: Nunavut (Kitikmeot) **Central Mainland** NWT

HISTORY

1972: discovery of Hood No. 10 Zone
1973-75: diamond drilling
1981-82: diamond drilling

OWNERS: **Inmet** Mining Corporation 1 00%
3rd Floor, 311 Waters St.
Vancouver, BC V6B 1 B8
Tel: 604-681-3771
Fax: 604-681-3360

Falconbridge Ltd. 3% NSR

SUMMARY

Several Archean volcanic belts in the northern Slave Province represent excellent potential for base metal resources. One such belt occurs southeast of Napaktulik Lake (formerly known as Takijuq Lake). A highly metamorphosed felsic volcanic pile. 1.6 km by 8 km in extent, contains several massive sulphide lenses.'

The Hood No. 10 Zone, near the centre of this felsic volcanic pile, extends along both limbs of a complex. plunging fold. It consists of stringer-type. sulphide mineralization hosted by a dacitic unit which is thought to be an altered amygdaloidal basalt. The No. 41 and No. 41 A Zones. other significant prospects, are 3.5 km to the southeast of the No. 10 Zone.

SIGNIFICANT RESULTS

Reserve estimates for individual zones are as follows:

No. 10 Zone: 453,500 tonnes at 5% Cu, 3.5% Zn and 34.3 g/t Ag *plus* 136,050 tonnes at >1%Cu and 4°/0 Zn.

No. 41 Zone: 272,100 tonnes grading 1.57% CU, 4. 12°/0 Zn and 17.8 g/t Ag.[2]. The estimated geological resource is 1.8 million tonnes averaging 2.6% Cu and 3.8% Zn.[3]

REFERENCES

1. Gebert, J.S. (1992), *'Preliminary Geology of the Hanikahimujuk (Amoogabooga) Lake Area, Part of NTS 86I/1, 2 and 85 H/15', EGS 1992-16, N WT Geology Division, Indian Affairs and Northern Development. Yellowknife, NWT, 1:50,000 scale map.*
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3. Giancola, D. (ed.) (1994), *'Canadian Mines Handbook 1994-95', Southam Magazine Group, Don Mills, Ontario, Canada.*

IZOK

ZINC, COPPER, SILVER, LEAD

LOCATION: 250 km southeast of Coppermine; 70 km west of Lupin mine
86H/10 65°38' N 112°48' W

sETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

early 1970s:	exploration
1974:	discovery
1975-76:	diamond drilling
1992-93:	diamond drilling, feasibility study, resource and reserve estimate based on 36,752 m in 307 holes,' construction of all-weather camp and gravel airstrip
1994:	further development plans suspended

OWNERS: **Inmet** Mining Corporation* 100%
3rd Floor. 311 Waters St.
Vancouver, BC V6B 1 B8
Tel: 604-681-3771
Fax: 604-681-3360

SUMMARY

Izok is one of the largest undeveloped zinc-copper deposits in North America.[2] This Archean-aged, volcanogenic massive sulphide deposit lies near the top of a thick sequence of pyroclastic, felsic metavolcanic rocks. A complexly- zoned cluster of composite massive sulphide lenses occur beneath Izok Lake.[3] The large subcropping Central zone measures 450 m by 110 m to a depth of 160 m. The 22 m thick Northwest zone measures 200 m by 280 m from -30 m to -130 m depth levels. In 1992. a fourth lens, the Inukshuk. was discovered at depth; it lies 250 m to the east of the Central zone. The Inukshuk zone has a strike length of approximately 300 m and an average thickness of 10 m. The lens remains open down dip at a variable depth of 60 to 400 m.[3]

A pre-feasibility study[4] indicated the possibility of an open pit operation with a minimum 13 year mine life. A workforce of 250 personnel would mine 3000 tonnes per day at a 4:1 waste to ore stripping ratio. On an annual basis, about 400,000 tonnes of concentrate would be transported to market via a winter road to the Arctic Ocean and ocean freighting in the summer months. Development of the Izok deposit would require construction of a deep-sea port near Coppermine plus new ice-strengthened bulk freighters.[4]

* formerly Metall Mining Corporation

Further development plans have been suspended.[5] Inmet cites low world metal prices and high transportation infrastructure costs as the main causes of delay. Exploration on the property continued in 1994, however, on targets other than the 2 main ore bodies. Drilling of 10 holes totalling 5343 m and 185 km of Deep EM surveying was completed.[5]

SIGNIFICANT RESULTS

Total minable reserves for the Izok deposit are currently estimated at 16.5 million tonnes grading 11 .4% Zn, 2.2% Cu, 1.1 % Pb, and 60 g/t Ag. This includes minable underground reserves in the Inukshuk Zone, estimated at 1.6 million tonnes grading 6.3% Zn and 2.3% Cu. [5]The *in situ* metal inventory stands at 1,881 kt zinc, 363 kt copper. 182 kt lead and 990 t silver.

REFERENCES

1. **Anonymous** (1994), *'Draft Summary Report', Feasibility study prepared by Strathcona Mineral Services Limited, p. 3-4.*
2. Morrison, I.R. and Balint, F. (1993), *'Geology of the Izok Massive Sulphide Deposits, Northwest Territories, Canada', International Symposium - World Zinc '93, p. 161- 170.*
3. Atkinson, D., Brophy, J.A. and Pen, J. (1993), *'Izok Lake Property, Contwoyto-Itchen-Point Lakes Area', in Exploration Overview 1992. Northwest Territories, Brophy J. A. (cd.), NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 8.*
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6. Hill, K.J. (1994), *Personal communication, July 18, 1994, 4 p.*

- KENNEDY LAKE

ZINC, SILVER, COPPER, LEAD

LOCATION: 180 km east-northeast of Yellowknife; 16 km north of the East Arm of Great Slave Lake

75M/2

63°02' N 110°57' W

SETTLEMENT REGION: North Slave

Central Mainland NWT

HISTORY

1948:	discovery
1948-67:	exploration, staking of BB Zone
1969:	diamond drilling, publishing of ore reserves
1975:	claims taken to lease
1989-90:	10.636 m of diamond drilling

OWNERS: Ego Resources Limited — 75?40
#908, 111 Richmond Street
Toronto, ON M5H 2G4 — Tel: 416-322-3035

Asquith Resources Inc. — 25%
Initiative Explorations Inc. — 1.5%NSR[1]

SUMMARY

The Kennedy Lake volcanogenic massive sulphide deposit occurs in an Archean felsic volcanic sequence. It consists of two stratiform lenses (the BB and Kennedy Lake zones) and a stringer zone (the Kennedy Lake West Copper Zone) within an extensive alteration package." The BB Zone lies within the nose of a plunging crescent-shaped fold: the stringer zone is up to 70 m thick.[4] "

SIGNIFICANT RESULTS

The BB Zone contains drill-indicated reserves of 880,000 tonnes grading 9.5% Zn, 0.7?40 Pb and 116.6 g/t Ag to 198 m depth.[2] A 1989 drillhole intersected 16 m grading 16.7% Zn and 170 g/t Ag at the -300 m level of the BB Zone.[4] The Kennedy Lake Zone contains 635.000 tonnes grading 6% Zn, 1% Pb and 171.4 g/t Ag to a depth of 76 m.[5] The Kennedy Lake Copper Zone contains 555.000 tonnes grading 1.12% Cu with silver values to 122 m depth.[2] Reserves are from the 1969 drilling program as new reserve calculations have not yet been released.

REFERENCES

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2. Johnson, W.L. (1974), *'Geology of Two Base Metal Deposits in the Slave Structural Province', Open File 239, Geological Survey of Canada, Ottawa, Ontario.*
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5. Atkinson, D. (1989), *'Indian Mountain Lake', in Exploration Overview 1990, Northwest Territories, NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 16.*

KIM/CASS

GOLD

LOCATION: 210 km northwest of Yellowknife; 12 km southwest of the Colomac Mine and within 5 km of the Colomac winter road

86B/6 64°20' N 115°16' W

SETTLEMENT REGION: North Slave Central **Mainland** NWT

HISTORY

1937:	minor diamond drilling and trenching of Kim #2 prospect
1981:	Kim claims restaked by **Comaplex** Minerals Corp.
1984:	Kim Main Zone upgraded to deposit status by geophysics and diamond drilling
1985:	discovery of Cass Gabbro by prospecting
1986-87:	diamond drilling and metallurgical testing of both deposits

OWNERS: Echo Bay Mines Ltd. 75%
#3300, 10180 101st Street
Edmonton, Alberta T5J 3S4
Tel: 403-429-5811
Fax: 403-429-5869

Comaplex Minerals Corp. 18.75%
Petromet Resources Ltd. 6.25%

Royal Oak Mines Ltd. Optioning

SUMMARY

The Kim Main Zone and the Cass Gabbro, located 3 km to the southwest of Kim, both occur within rocks of the Indin Lake Volcanic Belt. Both are stratibound. lode gold deposits with mineralization occurring in quartz-carbonate veining.'

The Kim Main Zone consists of gold-bearing veins within two parallel basalt flows that are fractured. sulphide-enriched and silicified. The north-trending, steeply dipping deposit has an overall strike length of 730 m.. Brittle faulting has broken the deposit into six discrete blocks. The Kim Main Zone grades 7.2 g/t Au across an average width of 4.5 m and has been drilled to a depth of366 m.[2]

The Cass Gabbro contains two sets of northwest-trending quartz veins with pyrrhotite. pyrite. arsenopyrite and visible gold surrounded by an arsenopyrite-rich alteration halo.[3] The deposit is 300 m long, averages 4.9 m wide and has been drilled to a depth of213 m.[2] The Cass deposit is open at depth and in one strike direction.

SIGNIFICANT RESULTS

Preliminary reserves are 2,720,000 tonnes grading 8.23 g/t Au for the Kim Main Zone and 2,450,000 tonnes grading 7.47 g/t Au for the Cass Gabbro.[3] A probable reserve estimate for one block within the Kim deposit is 112,566 tonnes grading 7.98 g/t Au; a reserve estimate for a portion of the Cass deposit is 336,292 tonnes grading 7.17 g/t Au.

REFERENCES

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2. Morgan, J. (1990), *'Deposits in the Indin Lake Supracrustal Belt', in Mineral Deposits of the Slave Province NWT', Padgham, W.A. and Atkinson, D. (cd), 8th IA GOD Symposium, Field Trip Guidebook 13, Geological Survey of Canada, Open File 2168, Ottawa, Canada, p. 68, 71-72, 76-79,*
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KOALA LAKE PIPES (LAC DE GRAS)

GEM DIAMONDS

LOCATION: 300 km northeast of Yellowknife; 40 km west of the Lupin winter road
76D/11 64"43' N 110°36' W

SETTLEMENT. **REGION:** North Slave Central Mainland NWT

HISTORY

1982:	discovery of kimberlite indicator minerals in the Franklin Mountains. Mackenzie River valley area
1982-90:	Charles Fipke traced indicator minerals 700 km back to the central Slave Province
Nov./1991:	the initial drillhole into the Point Lake pipe yielded 81 micro- and macro-diamonds
1992-94:	NWT diamond staking rush, total area of claims and permits in good standing goes from 3,000,000 ha to over 45,000,000 ha as of Jan./94
1992:	discovery of Koala Lake pipe by diamond drilling[1]
1992-95:	diamond drilling of 26 kimberlite pipes, reverse circulation drilling of 11 selected pipes
1993-95:	bulk sampling of Koala. Fox and Panda pipes
May/l 994:	feasibility study announcement
Nov./1994:	preliminary 20 year diamond mining proposal involving 5 pipes submitted, initiation of environmental review[2]
Jan./1995:	environmental assessment review panel (EARP) releases its operational procedures and draft guidelines for the preparation of an Environmental Impact Statement (EIS)[3]
May/1995	Guidelines for the EIS released by the EARP panel
July/1995:	BHP/Dia Met releases their Environmental Impact Statement
on-going:	release of underground bulk sampling results from Fox, Misery, Koala. Leslie and Panda pipes. exploration and development work continues. additional reverse circulation drilling on 5 pipes in order to further define shape and grade[4]

OWNERS: BHP **Minerals Canada Ltd.** 51%
NWT Diamonds
#1600, 1050 West Pender Street
Vancouver, BC V6E 3S7
Tel: 604-683-6921
Fax: 604-682-2667

Dia Met Minerals Ltd. **29%**
C.E. Fipke 10%
S.L. Blusson 10%

SUMMARY AND SIGNIFICANT RESULTS

Property evaluations are confirming that the kimberlite pipes in the Lac de Gras area, NWT are world-class diamond deposits comparable to the gem diamond pipe mines of Botswana, Yakutia (Siberian Russia), and South Africa. Grades, concentrations and diamond valuations indicate that several Lac de Gras pipes are well above economic thresholds.

More than 60 kimberlite pipes have been discovered in the central Slave Province since 1991.5 Most of the pipes contain diatreme-facies ore and several pipes contain crater-facies kimberlite. On the **BHP/Dia** Met Joint Venture property alone, 39 kimberlite pipes have been identified by drilling. At least 16 pipes are diamondiferous. Two of the pipes have been age-dated at 52 ± 1.2 million years.[1,5]

An intense sampling program by BHP's 170 person crew and a 10 tonne per hour processing plant continues. The reverse circulation drill samples weigh from 12 to 250 tonnes.[6,7] The diamonds recovered are submitted to three or more Antwerp diamond dealers for appraisal.

The Koala Lake pipe is the primary target of four diamond-bearing pipes with a total economic potential along a 9 km long trend. The Leslie pipe is five km southwest. the Fox pipe is 2.5 km further southwest. and the 3.03 ha Panda pipe is 1.2 km northeast of the Koala pipe. [1,6] Recent sampling results are given below.

BHP - **DIAMET** BULK SAMPLE RESULTS				
Pipe	Weight(t)	Carats	S/Carat	$/tonne
Fox (Pipe 3)	179.7	61.28	$81.00	$27.62
Fox (Raise 1)	434	147	"$123.00	$41.82
Fox (Raise 2)	417	160	$133.00	$50.54

BHP - DIAMET BULK SAMPLE RESULTS				
Fox (Decline)	6915	1766	$120.00	$31.20
Koala (Pipe 4)	49.8	62.1 I	$112.00	$139.69
Koala (Pipe 4)	11.41	11.06	?	?
Koala (A-Upper)	333	98	$88.00	$25.52
Koala (B-Middle)	364	468	$116.00	$149.64
Koala (C-Deep)	395	169	$121.00	$52.03
Koala (D-Deep)	101	158	$91.00	$141.96
Panda	230	2 7 0	$127.00	$149.09
Panda (Partial)	2835	2557	?	7
Leslie (Pipe 1)	151.5	65.37	$89.00	$38.40
Misery	132	437	$43.00	$142.36
Misery S	36	27	$37.00	$27.75

Table 8: BHP/Dia Met Bulk Sample Results

The surface areas for the larger Koala, Fox and Leslie pipes have not been published. The Koala and Fox pipes consist of multiple phases.[6] Four diamond-bearing phases in the Koala pipe vary in grade and valuation.'

The Misery pipe, located 44 km southeast by road from the Koala Lake camp, may be the very diamondiferous Pipe 93/J drilled in 1993.7 Its surface area has not been published. At 3.31 carats/tonne. the Misery pipe approaches the grades of Yakutian diamond mines. 1 n addition. a 4.2 carat diamond worth over $US6,000 was recovered from the pipe.

BHP anticipates mining 5 pipes over a 25 year span, initially using open-pit techniques and then reverting to underground methods on two of the pipes.[1,8] The open pits would measure up to 1 km wide and 300 m deep in final size. The workforce would number 650-850 people. Full production rates would be start at 9,000 tonnes per day (tpd) of kimberlite and, after 10 years increase to 18,000 tpd. Approximately 120,000,000 tonnes of tailings and 900,000,000 tonnes of waste rock would be produced.' The fly-in/fly-out operation, with hiring based in Yellowknife, would utilize an onsite, 1950 m long airstrip. The estimated yearly requirement of 70,000,000 litres of fuel oil would be supplied via the Lupin winter road.

Work continues on the Joint Venture property.[4] 250 to 1,000 tonnes will be recovered from the five pipes BHP plans to develop through reverse circulation drilling in order to better define their grade and size. Other diamondiferous pipes on the property will also be sampled.

Permits are expected in mid-1996, pending the results of the environmental review process, with construction of project facilities beginning in late-1996. Production is scheduled to start in December, 1997.4

REFERENCES

1. BHP Minerals Canada Ltd. (1994), *'NWT Diamonds, Project Description Report (Koala, Fox and LesliePipes)', Unpublished report submitted by BHP Minerals Canada Ltd. to Regional Environmental Review Committee, Yellowknife, NWT, January, 1994.*
2. Pell, J.A. (1995), *'Slave Structural Province and Surrounding Regions: Diamonds', in Exploration Overview 1994. Northwest Territories, Kusick, R. and Go&S. P. (cd), NWT Geological Mapping Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 11-12.*
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4. Kilburn, J. and Christie, B. (1995), *'BHP reports improvement in grade for Fox pipe on N. W. T. Diamonds play', FebruaW27, 1995 edition, The Northern Miner, Toronto, p. 6.*
5. Pell, J. (1994), *'Kimberlites and diamond exploration in the central Slave Province, N WT, EGS 1994-7. I :500,000 scale compilation geology map and marginal notes, NWT Geology Division, Yellowknife, NWT, Indian Affairs and Northern Development.*
6. Fipke, C. (1993), *'Dia Met -BHP Minerals Diamond Joint Venture', 4 April, 1994 News Release by Dia Met Minerals Ltd., 1p.*
7. Fipke, *C. (1993), 'Dia Met -BHP NWT Diamond Project Progress Report', 11 July, 1994 News Release by Dia* Met *Minerals Ltd., 3p.*
8. Kilburn, J. (1994), *'Northern diamond play loses some momentum', November 28, 1994 edition, The Northern Miner, p. B14.*

MAHE (KIDNEY POND)

GOLD

LOCATION: 80 km northeast of Yellowknife, winter road accessible
851114 62"57'N 113" 19' W

sETTLEMENT REGION: North Slave Central Mainland NWT

HISTORY

1937-44:	discovery, exploration, trenching and diamond drilling
1947:	claims lapsed
1978:	MAHE claim staked
1981:	diamond drilling
1983-84:	diamond drilling
1986:	underground development via a 490 m decline to 61 m depth

OWNER: Giant Bay Resources Ltd. 100?40
#750, 650 West Georgia Street
P.O. Box 11583
Vancouver, BC V6B 4N8
Tel: 604-685-8880
Fax: 604-685-9889

SUMMARY

The Mahe deposit consists of a gold-bearing, quartz breccia zones in folded, carbonaceous, sulphide-rich siltstone.[1] The host metasedimentary rocks are part of the Archean Yellowknife Supracrustal Belt. intensive surface and underground drilling outlined a deposit 305 m long, 6-30 m wide and at least 121 m deep.[2] The Mahe deposit is readily accessible from the Lupin winter road which runs along the west side of Gordon Lake.

SIGNIFICANT RESULTS

Preliminary reserves, suggested to be minable by open pit, are 500,000 tonnes grading 5 g/t Au.[1] Probable reserves of 156,842 tonnes grading 1 7.28 g/t Au have been delineated.[2] The deposit is open at depth and in one strike direction.

REFERENCES

1. Stokes, T., Zentilli, M. and Culshaw, N. (1988), *'Structure and lithological controls of gold bearing quartz-breccia bodies in metaturbidites, Gordon Lake', Abstract, Exploration Overview. 1988, Northwest Territories, NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 38-39.*
2. Atkinson, D. and Jackson, V. (1990), *'MAHE Property, Yellowknife Supracrustal Basin', Mineral Industry Report, 1986-87. Northwest Territories, Ellis, C. E. (cd), NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 235, 238.*

MUSK

ZINC, **COPPER,** SILVER, LEAD

LoCATION: 170 km east-southeast of Lupin mine
76G/5 65°19' N 107°37' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1974:	staked to cover two airborne EM conductors
1975-1978:	exploration
1979-80:	diamond drilling of 3331 m in 36 holes

OWNERS: Noranda Minerals Inc. 1 00%
#2700, 1 Adelaide Street East
Toronto, ON M5C 2Z6 Tel: 416-982-7211
Fax: 416-982-7021

Southern Africa Minerals Corp. Option to purchase 100%

SUMMARY

The Musk deposit contains the highest copper grade of all the known volcanogenic massive sulphide deposits in the Archean Hackett River Volcanic Belt. The deposit and overlying gossanous zone occur near the top of a predominantly felsic volcanic package.' The Musk deposit is 32 km southeast of the Yava deposit.

SIGNIFICANT RESULTS

The Musk deposit contains drill-indicated reserves of 340,000 tomes grading 10% Zn, 1.4% Pb. 1.2% Cu and 343 g/t Ag.[2] It is open along strike and to depth.

REFERENCES

1. Seaton, J.B. (1984), *'Musk Project, Hackett River Volcanic Belt, Slave Structural Province', in Mineral Industry Report, 1980/81, Northwest Territories, Brophy, J.A. and Ellis, C.E. (cd.), EGS-1 984-5, NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p, 349.*
2. Anonymous (1989), *Canadian Mineral Deposits Not Being Mined in 1989, Mineral Bulletin MR 223, National Mineral Inventory, Mineral Policy Sector, Ottawa, Canada,*

MUSKOX INTRUSION

CHROMIUM, PLATINUM GROUP ELEMENTS, COPPER, NICKEL, SILVER

LOCATION: 85 km south of Coppermine
860/3 67°03' N 115°12' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1956:	discovery by aerial sighting of marginal sulphide bands
1957-59:	diamond drilling, exploration for chromite
1963:	International Upper Mantle Project diamond drill program
late 1960s:	claims lapsed
1970s:	minor exploration
1986:	staking
1986-88:	diamond drilling, exploration for platinum
1994:	exploration of southern extension by BHP [1]

OWNERS: International Platinum Corporation 100'?40
(OX Mineral Claim Block)
#650, 144 Front Street West
Toronto, ON M5J 1 G2 Tel: 416-977-5240
Fax: 416-340-0770

Other companies with properties include:
1064775 Ontario Inc.
BHP Minerals Canada Ltd.

SUMMARY

The Muskox Intrusion is a layered ultramafic body of Mesoproterozoic age within the northwest portion of the Bear Structural Province. It is one of the world's best examples of igneous fractional crystallization processes,[2] and is exposed in full section from base to roof zone. Chromite-sulphide seams in the Muskox Intrusion are often compared to the Merensky Reef horizon of South Africa's Bushveld Complex.

The intrusion is consists of a 500 m wide feeder dyke that been traced for 55 km along a south-southeasterly trend from the Coppermine River and a layered, funnel-shaped complex exposed for more than 50 km northward from the Coppermine River. The complex attains a maximum width of 9 km. Aeromagnetic surveys indicate that the Muskox Intrusion continues north for at least 30 km and perhaps as much as 120 km beneath overlying Paleozoic cover rocks.

The central layered complex and its marginal sulphide zones have received the most attention from explorationists. These marginal zones contain more than 1% sulphides and are marked by two distinct 60 m to 350 m wide gossanous bands.[3] Layers and pods of massive pyrrhotite with minor pentlandite and chalcopyrite occur at the contact between these marginal sulphide zones and country rock.[4] A chromite seam has limited exposure near the centre of the Muskox Intrusion.[5,6]

SIGNIFICANT RESULTS

A selected chromite seam up to 38 cm thick within the centre of the intrusion layered series of the Muskox Intrusion is estimated to contain 4,500,000 tonnes grading 15.3% Cr, 0.25% Cu, 0. 15% Ni, plus minor Pt and Pd.[6]

Localized concentrations of platinum group elements (PGEs) have been returned from grab and drill sampling of marginal sulphide zone mineralization.[3] A grab sample from the marginal zone on the VAL 1 claim assayed 9.46 g/t Pt. 46.31 g/t Pd. 3.77 g/t Au. 32.6 g/t Ag and 6. 13% Cu. A drillhole intersection from the VAL 2 claim returned 2.23 g/t Pt, 16.04 g/t Pd. 22.9% Cu and 8.1 5% Ni across 1.71 m of silver-enriched sulphides.

REFERENCES

1. Ellis, C. (1995), *'Bear Structural Province', in Exploration Overview 1994, Northwest Territories, Kusick, R. and Goff, S P. (cd.), NWT Geological Mapping Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 16.*
2. Kerans, *C. (1983), 'Timing Emplacement of the Muskox Intrusion: Constraint From Coppermine Homocline Cover Strata', Canadian Journal of Earth Sciences, Volume 20, p. 673-683.*
3. Chamberlain, J.A. (1967], *'Sulfides in the Muskox Intrusion', Canadian Journal of Earth Sciences, Volume 4, p. 106-151.*
4. Page, J. W. and Cuhlbert, R.R. (1986], *'Geochemical, Geophysical and Drill Program Reports on the Muskox Property NWT', Unpublished Report submitted by Beaty Geological Ltd. on behalf of Equinox Resources Ltd., Assessment Report #082563, Indian Affairs and Northern Development, Yellowknife, NWT.*
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6. Seaton, J.B. (1990), *'Muskox Property, Bear Structural Province', in Mineral Industry Report 1986-87, Northwest Territories, Ellis, C.E. (cd.), NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 122-124.*
7. **Anonymous (1989],** *Canadian Mineral Deposits Not Being Mined in 1989, Mineral Bulletin MR 223, National Mineral Inventory, Mineral Policy Sector, Ottawa, Canada.*

NICHOLAS LAKE

GOLD

LOCATION: 90 km north-northeast of Yellowknife: 10 krn northeast of the Discovery minesite
85 P/4,5 63°15' N 113°46' W

SETTLEMENT REGION: North Slave Central Mainland NWT

HISTORY

1941-52:	discovery, staking, trenching, minor diamond drilling
1950s-70s:	staking and trenching by various prospectors
1986:	staking of current property
1988-92:	airborne geophysical surveying, diamond drilling
1994:	underground bulk sampling program - results similar to interpretation based on surface drilling, drilled 36 holes totalling 2225 m from underground to test more mineralized zones[1], recalculation of resource[2]
Mar./ 1995:	Athabaska Gold raises funds for underground development and completion of feasibility study, construction of a mill planned[3]
Sept./ 1995:	Royal Oak Mines Inc. purchases property[8]

OWNER: Royal Oak Mines Inc. 1 00%
2nd Floor, 1425 W. Pender St.
Vancouver, B.C. V6G 2S3 Tel:604-682-8320
Fax:604-682-4286

SUMMARY

The Nicholas Lake deposit consists of up to six elongated shear zones containing auriferous and sulphide-bearing quartz veins.[4] The deposit lies within an altered granodiorite plug which intrudes Archean metasediments. One exposed shear zone. called the Main Showing, is 5 m wide and 160 m long,[5] and has been tested to a depth of 475 m. The largest vein, A-6. does not outcrop at surface but is contained by a 16 m wide shear zone. The deposit is open at depth.

A new gold target, called the Teapot Zone, occurs 5 km southwest of the Nicholas Lake deposit. where a 10 m wide zone of quartz veining has been traced for a strike length of 500 m. The stratigraphic setting of the Teapot Zone is similar to that of the Discovery Mine deposit.[6]

Metallurgical testing of composite drill samples indicates 95% gold recovery from free-milling ore.[7] The deposit is accessible by winter road.

Plans for 1995 include, additional drilling to further delineate reserves. underground development work, test milling of bulk samples and a bankable feasibility study of this 10,600 kg Au/year operation.[3]

sIGNIFICANT RESULTS

Drill-indicated reserves of the Nicholas Lake deposit in 1993 were 505,300 t grading 13.03 g/t Au. In 1994, however, this figure was increased to 1,000,620 t grading 13.03 g/t Au as a result of continued diamond drilling.' The resource estimate is to be recalculated due to favorable results of an underground drilling program run in 1 994 (previous estimations include was 1 million tonnes grading 11.82 g/t Au).[2]

Drillhole intersections include 18 m grading 5.14 g/t with grades as high as 91.54 g/t over 1.1 m and 76.4 g/t Au across 1.1 m.[6] Grab samples from the Teapot Zone have assayed up to 15.8 g/t Au.'

REFERENCES

1. Ellis, C. and Strand, P. (1995), 'Slave *Structural Province: Base Metals and Gold', in Exploration Overview* 1994. *Northwest Territories, Kusick, R. and Goff, S.P. (cd), NWT Geological Mapping Division, Indian Affairs and Northern Development, Yellowknife, N WT, p. 8.*
2. *The* Northe

PISTOL LAKE

GOLD

LOCATION: 10 km west of Bathurst inlet; 140 km northeast of Lupin mine
76N/2 67°03' N 108°50' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1963-64:	discovery and staking
1967:	diamond drilling, trenching
1984-87:	diamond drilling of 840 m in 14 holes
1988:	Silver Hart Mines options Pistol and Turner lake deposits to Chevron Minerals; geochemical work and diamond drilling done
1989:	diamond drilling, trenching, and geological mapping
1991:	deposit restaked

OWNER: Pat **Hungle** 100?40
Sub P.O. Box #1
Yellowknife, NWT
XIA 2S9
Tel: 403-873-1512
Fax: 403-873-8368

SUMMARY

At the Pistol Lake gold-in-iron-formation deposit (located 25 km south of the Turner Lake deposit). Archean metasediments host 7 known mineralized zones. with the F and Farney Lake zones being the most significant. [1] The F zone traced for 153 m. while the Farney zone was exposed across 183 m; widths in both zones varied from 15 cm to 0.9 m.[2] In these areas, well-banded. silicate facies (and minor sulphide facies) iron formation in amphibolite grade. cordierite-bearing quartz biotite schist contains up to 10% sulphide mineralization. Mineralization in the zones consists of heavily disseminated pyrrhotite, pyrite, and arsenopyrite with pods of massive mineralization.' Visible gold is rare. but can be associated with arsenopyrite and quartz veins found throughout the horizon.' The deposit is thought to be similar to that of Lupin mine, except it is narrower.[2]

SIGNIFICANT RESULTS

In 1989, the Pistol Lake deposit was reported to have a total geological reserves of reserve of 1.4 million tonnes at 3.4 g/t Au.[2] Drill-indicated reserves for the F zone are 1.1 million tonnes at 3.43 g/t Au: Famey zone reserves total 139,700 tonnes at 1.37 g/t Au.'

REFERENCES

1. **National Mineral Inventory (1984),** *'NTS 76 N/2, Pistol Lake (NOEL) (FARN & KNUT) property, Reference Au I', Occurrence card published by Mineral Policy Sector. Department of Energy, Mines. and Resources, Ottawa, Canada.*
2. *Chevron Minerals Ltd. and Silver Hart Mines Ltd. (1989),* 'Pistol Lake Project: Overview Report', May 1989, p. 1-1.3-2. 3-3.

RUSSELL LAKE

GOLD

LOCATION: 105 km northwest of Yellowknife; 50 km north-northeast of Rae
850/4
63°11' N 115°49' W (Bugow)
63°05' N 115°27' W (Mos)
63°05' N 115°26' W (Gold Island)

SETTLEMENT REGION: North Slave — Central Mainland NWT

HISTORY

Bugow deposit[1]

1938: staking; 1946-71: trenching; 1985-88: diamond drilling

Mos deposit[2]

1944: discovery; 1947: diamond drilling of281 m in 16 holes: 1960, 1971: staking, trenching; 1974: diamond drilling of 1664 m in 18 holes

Gold Island showing[1,2]

1938: discovery; 1946-47: diamond drilling of 4274 m in 40 holes; 1950s-70s: staking, trenching; 1974: diamond drilling of 287 m in 3 holes; 1986: exploration

OWNERS: 1) Bugow. Gold Island deposits

Aber Resources Ltd. — 50%
#930, 355 Burrard Street
Vancouver. BC V6C 2G8
Tel: 604-682-8555
Fax: 604-685-8359

Highwood Resources Ltd. — 50%

2) Mos deposit

Roxwell Gold Mines Ltd. 100%
#1110, 625 Howe Street
Vancouver. BC V6C 2T6
Tel: 604-687-4450
Fax: 604-687-5100

SUMMARY

The Russell Lake area hosts several small gold deposits within 60 km of the all-weather highway between Rae and Yellowknife. Each deposit occurs in a different geological setting within Archean sedimentary and volcanic supracrustal rocks of the Slave Structural Province.

1. Aber Resources' Bugow deposit at Cabin Lake is the largest of several local gold-in-iron-formation occurrences within metasedimentary rocks. The deposit consists of an auriferous lens of sulphide-bearing, silicate facies iron formation which is 300 m long and up to 8 m wide.'

2. **Roxwell** Gold Mines' Mos deposit at Mosher Lake consists of widespread, low-grade gold mineralization within a ridge of intermediate to mafic volcanic rocks.[2] A steeply dipping, gold-bearing zone lies at the contact between a schist and a volcanic unit. The Main zone has been traced for 335 m along strike andis61 m in depth. A higher grade of 4.46 g/t Au across 3.7 m width, as well as a lower grade of 2.4 g/t Au across 17.4 m width is indicated for the Main Zone.

3. Aber Resources' Gold Island showing is a folded, bedding-conformable, gold-bearing quartz stockwork within a greywacke unit. The stockwork and its erratic gold mineralization have been traced for 229 m by diamond drilling.[2] The deposit maybe open at depth.

SIGNIFICANT RESULTS

1. The Bugow deposit contains drill-indicated reservesof91,000 tonnes grading 10.29 g/t Au.'
2. Reserves up to 3,191,000 tonnes grading 5.14 g/t Au have been inferred for the Mos deposit.' The Main Zone contains possible reserves of 501,000 tonnes grading 2.81 g/t Au.
3. No reserves have been published for the Gold Island showing. However, the most significant reported drillhole intersection is 6.51 g/t Au across 10.07 m, including 19.2 g/t Au across 3.05 m.'

REFERENCES

1. Jackson, V. (1990), *'Bugow Claims, Pharaoh Claims, Russell Lake - Slemon Lake Supracrustal Belt', in Mineral Industry Report 1986-87, Northwest Territories, Ellis. C. E. ('cd.), NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 210-211, 213-215 and 218.*
2. Seaton, J.B. (1977), *' MAG Claims, MOS Claims, Gold Exploration in the Slave Province', in Mineral Industry Report 1974. Northwest Territories, EGS 1977-5, Indian and Northern Affairs, Yellowknife, NWT, p. 122-123.*
3. National Mineral Inventory (1988), *'NTS 85O/4, Reference Au 1', Occurrence Card published by Mineral Policy Sector, Dept. of Energy, Mines and Resources, Ottawa, Canada, 2p.*

SUE-DIANNE

COPPER, URANIUM, SILVER

LOCATION: 5 km from Rae-Edzo, 185 km northwest of Yellowknife, 65 km north-northeast of Wha Ti

85N/15 63°46' W 116°55' W

SETTLEMENT REGION: North Slave Central Mainland NWT

HISTORY

1974: staking of radioactive anomaly
1975-77: diamond drilling

OWNERS: Noranda Minerals Inc. 100?AO
#2700, 1 Adelaide Street East
Toronto. ON M5C 2Z6 Tel: 416-982-7211
Fax: 416-982-7021

SUMMARY

The Sue-Dianne deposit is an Olympic Dam-type Cu-U-Au-Fe deposit that occurs at the eastern margin of the Bear Structural Province.' The deposit is an irregular, pipe-like, magnetite-cemented brecciated horizon within a thick unit of welded ash flows. Chalcopyrite, bornite, chalcocite and pitchblende (uraninite) are the ore minerals present.

The deposit. 5 km from the winter road from Rae-Edzo to the abandoned Echo Bay mine on Great Bear Lake, has been taken to lease by Noranda.

SIGNIFICANT RESULTS

The Sue-Dianne deposit contains a drill-indicated resource of 8.000,000 tonnes averaging 0.8'% Cu and 0.0 10/0 U_3O_8 to 300 m depth.' Drill intersections returned up to 3.06% Cu across 1.5 m. 61 g/t Ag across 1.5 m and 150 g/t U_3O_8 across 1.5 m. [2]

REFERENCES

1. Gandhi, S.H. (1990), *'Paragenesis of magnetite-dominated and arsenopyrite-dominated polymetallic deposits in the Southern Great Bear Magmatic Zone, Northwest Territories, Canada', Abstract, International Association on the Genesis of Ore Deposits, 8th IA GOD Symposium. Ottawa, Canada. August, 1990, 1 p.*
2. Seaton, J.B. and Hurdle, E.J. (1978), *'Sue-Dianne Claims, The Great Bear Batholith, Bear Structural Province, in Mineral Industry Report 1976, Northwest Territories, EGS 1978-1 I, Indian Affairs and Northern Development, Yellowknife, NWT, p. 68,*

SUNRISE

ZINC, SILVER, LEAD, GOLD, COPPER

LOCATION: 110 km east-northeast of Yellowknife
851116 62°54' N 112°23' W

SETTLEMENT REGION: North Slave Central Mainland NWT

HISTORY

Sunrise deposit

pre-1987:	exploration for gold in area
1987:	staking, discovery by diamond drilling a geophysical conductor
1987-89:	diamond drilling of 18,951 m in 65 holes

Bear deposit

1945-85:	exploration
1986:	discovery by prospecting
1988:	diamond drilling of4889 m in 29 holes

OWNERS: Aber Resources Ltd. 50%
(Sunrise deposit)
#930, 355 Burrard Street
Vancouver, BC V6C 2G8
Tel: 604-682-8555
Fax: 604-685-8359

Hemisphere Development Corp. 50%

SUMMARY

A number of Zn-Ag base metal occurrences are found in the Beaulieu River Volcanic Belt. The largest, the Sunrise deposit. is a conformable, banded, polymetallic massive sulphide lens confined within a slightly brecciated rhyolite tuff unit. [1,2] The lens has a 160 m strike length, a 3 to 3.5 m average width and has been tested to a depth of 700 m. The mineralized rhyolite unit is faulted into three blocks.

The Bear deposit, located 1km to the west, is believed to be an offset fault extension of the Sunrise deposit. [1] This deposit has been tested to 400 m depth. Ownership of the Bear deposit is 60°/0 by Landstar Properties Inc. and 40% by Silver Hart Mines Ltd.

SIGNIFICANT RESULTS

The discovery drillhole for the Sunrise deposit intersected 5.8 m of sulphide mineralization[1] grading 18% combined Zn-Pb and 926 ppm Ag. Probable reserves are 1,162,200 tonnes grading 8.35'% Zn, 4.05% Pb, 0.09% Cu, 356.61 g/t Ag and 0.99 g/t Au.[1] Drill-indicated reserves are 1.8 million tonnes grading 9% Zn, 4% Pb, 411 g/t Ag, and 1.03 g/t Au.[3]

The Bear deposit contains a drill-indicated resource of 753,000 tonnes grading 5.48% Zn, 2.07% Pb, 218 g/t Ag and 0.8 g/t Au.[1,4]

REFERENCES

1. Atkinson, D. (1990], *'Archean Polymetallic Volcanogenic Massive Sulphide Deposits within the Cameron and Beaulieu River Volcanic Belts', in Mineral Deposits of the Slave Province, NWT', Padgham, W. A. and Atkinson, D. (cd.), 8th [A GOD Symposium, Field Trip Guidebook 13, Geological Survey of Canada, Open File 2168, Ottawa, Canada, p. 99-108.*
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3. **G iancola, D. (cd.) (1994),** *'Canadian Mines Handbook 1994- 9.5 ', Southam Magazine Group, Don Mills, Ontario, Canada.*
4. **Dudek, D. (1988),** *'Bear Project, Sunrise Lake Area', Abstract, in Exploration Overview, 1988, Northwest Territories, NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 25.*

THOR LAKE

BERYLLIUM, ZIRCONIUM, RARE EARTH ELEMENTS

LOCATION: 105 km southeast of Yellowknife. winter road accessible
851/26 1°07' N, 112°36' W

settlement REGION: North Slave Central Mainland NWT

HISTORY

1970:	staking, first analysis of rare earth elements
971:	significant radioactive anomaly outlined by airborne survey
976:	staking of present property
977-79:	diamond drilling
980-81:	4.5 tonne bulk sample collected and tested for Ta and Nb, discovery of Be zones, diamond drilling
982-85:	diamond drilling
1985:	500 m decline driven into the northern T Zone to -80 m depth and 750 tonnes extracted
1987:	metallurgical test of 81.6 tonne bulk sample for Be
1986-89:	diamond drilling

OWNERS: Highwood Resources Ltd. 100%
12th Floor. 20 Toronto Street
Toronto, Ontario M5C 2B8 Tel: 416-869-0772
Fax: 416-367-3638

SUMMARY

The Thor Lake deposit is found at the altered core of the Blatchford Lake Plutonic Complex, a syenite-granite body of early Paleoproterozoic age. The deposit is enriched in Nb. Ta and rare earth elements (REEs), with high concentrations of Zr. Ga. Be. F and locally, Y, Th and U. [1] The deposit is geologically complex. but through systematic exploration techniques, a good understanding of the controls on mineralization has been achieved.

The T Zone and the Lake Zone offer the most potential of the five zones. The T Zone is thought to be the most significant beryllium deposit known in Canada. Its beryllium is amenable for recovery by flotation. The T Zone is 1 km long, up to 275 m wide and extends to a maximum 150 m depth.[2] It has been explored by diamond drilling, stripping and a decline.

An inferred minimum of 2.2 million tonnes of zirconium is contained by the Lake Zone, which is the equivalent to 4°/0 of the world's identified resources of zirconium.[3] The Lake Zone has a triangular shape in plan view with two km long sides.[2] The mineralization is hosted in three sub-horizontal layers from 10 m to 45 m thick that are within 100 m of surface.[4] Nepheline syenite has been found at depths greater than 150 m. [2]

A 12 km tote road has been constructed between the deposit and the Hearne Channel of Great Slave Lake.

SIGNIFICANT RESULTS

The T Zone contains probable reserves of 1,150,000 tonnes of 0.55% Nb_2O_5, and additional possible resources of 5,500,000 to 7,000.000 tonnes of similar grade.[4] Beryllium occurs in two blocks with combined drill-indicated reserves of 1,600,000 tonnes grading 0.75% BeO to 61 m depth. Drillhole intersections up to 1.28°/0 Y_2O_5 and 4. 75°/0 Nb_2O_5 over 3 m occur locally within beryllium mineralization zones.

The Lake Zone beneath Thor Lake, contains an inferred minimum of 64,000,000 tonnes of 0.03% Ta_2O_5, 0.4% Nb_2O_5, 3 .5% zirconium, 1.0% cerium, 0.6% lanthanum and 0.1 % samarium.[2]

Inferred tantalum resources of the Thor Lake deposit are 181,500,000 tonnes at an unspecified grade.[4]

REFERENCES

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THYE LAKE

NICKEL, COPPER, COBALT

LOCATION: 300 km east of Fort Smith; 25 km from the NWT-Saskatchewan border
75A/7 60°15' N 104°32' W

SETTLEMENT REGION: Treaty 8 **Central Mainland** NWT

HISTORY

1952-53:	diamond drilling of 2801 m in 13 holes on Main Zone
1975:	restaking of lapsed claims
1988:	exploration

OWNERS: William **Kizan**
6607-1 03rd Avenue
Edmonton, AB T6A 0T9 Tel: 403-466-6442

SUMMARY

The Thye Lake (formerly the Nickel King) deposit is located 25 km north of the N WT-Saskatchewan border within the Churchill Structural Province. Ultramafic to mafic sills of Proterozoic age containing disseminated nickel-copper-iron sulphides occur intermittently for a strike length of 8 km."2 The sills intrude a unit of paragneiss.

The Main Zone has received the most attention of the five sills present. It is a 50 m to 100 m wide gossanous, mineralized gabbro (varying from olivine pyroxenite to norite and anorthosite in composition) sill which is exposed for 800 m. Sulphide concentrations vary from 2% to 50%. Portions of the Main Zone are actinolized or talcose and may carry >3% Ni. This zone is found within the lower limb of an overturned, gently plunging syncline. This lower limb dips 30° to the south while the upper limb (containing the northern sill) dips 50° south. It is thought that mineralization intensifies towards the fold closure.

In addition to nickel and copper, the deposit contains minor cobalt and silver.[2] Little testing for PGE's has been conducted.[1,2]

SIGNIFICANT RESULTS

From widely spaced drilling of the Thye Lake deposit, Buhlmann (1989) calculated a resource of 13,600,000 tonnes grading 0.45% Ni and O. 12% Cu to 250 m depth. [1] Eighty per cent of the metal inventory is contained by the Main Zone which is open along strike and at depth. Selected portions amount to 4,445,000 tonnes grading 0.72% Ni and O. 19% Cu, and 1,360,000 tonnes grading 1.010% Ni and 0.32% Cu.

From five holes drilled across 122 m in the centre of the Main Zone, Thomas (1976) had earlier indicated a weighted average of 0.92°/0 Ni and 0.27% Cu across an average width of 8.23 m for a strike length of 488 m. [2]

REFERENCES

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2. Thomas, D.G. (1976), *'Engineering Evaluation, Nickel King Claims, Thye Lake, NWT', Unpublished Report submitted by Highwood Resources Ltd., Assessment Report #080543. Indian Affairs and Northern Development, Yellowknife, NWT.*

TUNDRA (FAT)

GOLD

LOCATION: 230 km northeast of Yellowknife, winter road accessible
76D/3 64°07' N 111°16' W

SETTLEMENT REGION: North Slave — Central Mainland NWT

HISTORY

1940s:	exploration, trenching[1]
1960s:	exploration
(1964-68):	Tundra mine produced 3252 kg Au from 170,285 tonnes)[2]
1976:	conductors delineated by airborne geophysical surveying
1977-78:	staking, exploration
1981-87:	exploration, diamond drilling
(1983-87):	Salmita mine produced 5624 kg Au from 217,000 tonnes)[2]
1988-89:	476 m two-compartment shaft. 2000 m of drifting on 425 m depth level, bulk sampling, diamond drilling

OWNERS: **Hemlo** Gold Mines, Inc. — 25.5%
#2902, 1 Adelaide Street East
Toronto, ON M5C 2Z9
Tel: 416-982-7116
Fax: 416-982-7388

Noranda Minerals Inc. — 25.5%
Total **Energold** Corporation — 49%

SUMMARY

The Tundra (Fat) deposit is the largest undeveloped gold deposit in the NWT. It is one of 14 prospects and two past producers (Salmita and Tundra mines) found along a 35 km long contact between felsic volcanics of the north-south trending Courageous Lake-Mackay Lake Volcanic Belt and metasediments.[3] Several small base metal deposits also occur in the southern portion of this Archean volcanic belt.[2]

The Tundra (Fat) deposit occurs at a 200 m wide mineralized, quartz-veined shear zone.[1] The shear zone has a strike length of 1 km and a vertical depth of at least that distance. A complex ore structure is indicated from more than 75,000 m of diamond drilling performed both from surface and underground. Metallurgical testing of a 5000 tonne bulk sample of the refractory ore indicated a 90% recovery rate.

Tundra (Fat) lies to the north of the 2 past gold producers, and hence much preexisting infrastructure is found in the vicinity. A 1350 m airstrip is located 5 km to the southeast and the Salmita mine's inactive 160 tonne per day mill lies 5 km to the south of the Tundra (Fat) deposit. Tote roads interconnect the airstrip, both past producers and the Tundra (Fat) deposit. A winter road to Mackay Lake initially serviced the abandoned Tundra mine. This access route eventually became the southern half of the winter road from Yellowknife to the Lupin gold mine.

SIGNIFICANT RESULTS

Following extensive drilling in 1988, the *in situ* mineral inventory for the Tundra (Fat) deposit [4] was estimated to be:

Cut-off Grade (g/t Au)	Tonnes (millions)	Grade (g/t Au)	Contained Au (kg)
4.11	29.5	6.86	202,000
6.17	14.5	8.91	129,388
7.89	7.7	10.97	84,600
9.94	3.6	13.7	49,765

Table 9: Mineral Inventory - Tundra (Fat) Deposit

One drillhole intercept returned 19.2 g/t Au across 6.1 mat the -365 m level of the Main Zone. [1] The Carbonate Zone, a gold deposit 400 m east of the Main Zone. contains 900,000 tonnes grading 12 g/t Au. [1]

REFERENCES

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3. Ransom, A.H. and Robb, M. IS. (1986), *'The Salmita Gold Deposit', in Gold in the Western Shield, Canadian Institute of Mining and Metallurgy, Special Volume 38, p. 285-305.*
4. National Mineral Inventory (1989), *'NTS 76D/3, Reference Au 7', Occurrence Card published by Mineral Policy Sector, Dept. of Energy, Mines and Resources, Ottawa, Canada, 3p.*

TURNER LAKE

GOLD

LOCATION: 10 km west of Bathurst Inlet; 140 km northeast of Lupin mine
76N/2 67°13' N 108°56' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1963-64:	discovery
1966-67:	diamond drilling, trenching
1984-87:	diamond drilling of 1.589 m in 17 holes
1988:	Silver Hart Mines options both Turner and Pistol Lake deposits to Chevron Minerals; geochemical work and diamond drilling
1989:	diamond drilling, trenching, and geological mapping

OWNER: Bear Creek Hills Estates Ltd. 10070
P.O. Box **820**
Yellowknife, NWT
XIA 2N6
Tel: 403-920-4330
Fax: 403-920-4263

SUMMARY

The Turner Lake Main Showing is an arsenopyrite-pyrrhotite-gold-bearing quartz stockwork that cuts an amphibolitized gabbro sill.' The quartz stockwork varies from 2 m to 15 m wide. The host gabbro sill intrudes Archean metasediments. Mineralization is best developed in a steeply dipping, open folded structure. Three gold-bearing zones have a total strike length of 500 m.

SIGNIFICANT RESULTS

A preliminary reserve of 1,180,000 tonnes grading 5.35 g/t Au is indicated for the Turner Lake deposit.[2] The three best drillhole intercepts are 28.0 g/t across 4.75 m, 12.86 g/t across 8.87 m and 4.08 g/t across 15.27 m.[3]

REFERENCES

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3. **Silver Hart Mines (1987),** *'Turner Lake Gold Property, Northwest Territories', Annual Report to Shareholders, Edmonton, Canada, p. 5.*

ULU

GOLD

LOCATION: 205 km east-southeast of Coppermine; 80 km south of Coronation Gulf
76L/14,15 66°55' N 110° 00'W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1988-89:	staking, exploration, diamond drilling of 2,500 m in 21 holes
1990:	diamond drilling of 18,500 m in 72 holes [1]
1991-93:	diamond drilling of 29,550 m in 94 holes, trenching, metallurgical testing[2,3]

OWNERS: BHP Minerals Canada Ltd. 100%
#1600, 1050 West Pender Street
Vancouver, BC V6E 3S7
Tel: 604-683-6921
Fax: 604-683-4125

SUMMARY

The Ulu property was staked to cover gold-bearing zones within a lobe of the Archean High Lake Volcanic Belt.[4] The host rock is an anticlinally-folded, 5 km long package of mafic volcanic rocks containing intercalated greywackes and gabbro sills.

The largest gold zone on the Ulu property is the Flood Zone, located near the core of the anticline.[4] The steeply dipping zone is 2 to 5 m thick and, locally, more than 10 m thick. The tabular-shaped body is 400 m long with drillhole mineralization intersections below a depth of 600 m. Gold is associated with minor acicular arsenopyrite and pyrrhotite in anastomosing silicified zones. Metallurgy indicates that the gold is free-milling.

SIGNIFICANT RESULTS

No information concerning the tonnage and grade of the gold mineralization in the Flood Zone has been released by BHP.

REFERENCES

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WRECK LAKE

COPPER, SILVER

LOCATION: 70 km southwest of Coppermine
86N/8 67°24' N 116°25' W

SETTLEMENT REGION: Nunavut (Kitikrneot) Central Mainland NWT

HISTORY

1967-68: exploration, diamond drilling, milling tests, airstrip and tote roads constructed at deposit'
1971-72: geochemical exploration

OWNERS: Coppermine River Ltd. 10070
#2000, 95 Wellington Street West
Toronto. ON M5J 2N7
Tel: 416-362-6721
Fax: 416-362-0069

SUMMARY

Wreck Lake (also called the Dot No. 47 deposit) is the largest known mafic volcanic-hosted copper deposit in the NWT. This deposit consists of fracture-filling chalcocite and bornite mineralization within a fault zone cutting basalt flows of the Mesoproterozoic Coppermine River Group. The tabular-shaped deposit is 460 m long, 11 m wide and has been tested to a 183 m depth.[2] Milling tests indicate a 60°/0 copper concentrate with 137 to 171 g/t silver and a 90% copper recovery.

In general, Mesoproterozoic flood basalts of the northern Bear Structural Province are considered to be a prime target for volcanic-redbed copper deposits. The overlying Rae Group shales are considered to have potential for sedimentary copper deposits.[1,3]

SIGNIFICANT RESULTS

Inferred reserves for the Wreck Lake deposit are 3,780,000 tonnes grading 2.96% Cu.[3] The deposit is open in one strike direction and at depth. In addition. a number of small. high-grade copper deposits have been found in the Coppermine River Group flood basalts. The Burnt Creek deposit. at 67° 18′ N. 116°03′ W contains 81.600 tonnes grading 8.78°/0 Cu. The mineralized fault breccia zone at Burnt Creek measures 335 m long by 3 m wide and 30 m deep.[3] Elsewhere, a drillhole testing 'Target 2′. near 67°17′ N, 116°50′ W. intersected 13 m grading 2.14% Cu and 10.8 g/t Ag.[4]

REFERENCES

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2. Kirkham, R.V. (1990), *in Sediment-hosted Stratiform Copper Deposits, Bo.vie, R. W. et al. (eds), Geological Association of Canada Special Paper 36.*
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4. **Caine, T. W. et al. (1978),** *'Jim, Sep and Susie Claims, Coppermine River Area', in Mineral Industry Report, 1969 and 1970, Northwest Territories, Padgham, W. A. (cd.), Vol. 3 of 3, Indian Affairs and Northern Development, Yellowknife, NWT, p. 50.*

YAVA

ZINC, SILVER, COPPER, GOLD, LEAD

LOCATION: 150 km east-southeast of Lupin mine
76G/12 65°36' N 107°56' W

SETTLEMENT REGION: Nunavut (Kitikmeot) Central Mainland NWT

HISTORY

1972-73: discovery by GSC via regional geochemical survey program'
1974-75: exploration, diamond drilling

OWNERS: Westmin Resources Ltd. 100'?40
#904, 1055 Dunsmuir Street
P.O. Box 49066
Vancouver. BC V7X 1 C4 Tel: 604-681-2253
Fax: 604-681-0357

SUMMARY

The Yava base metal deposit lies within the Hackett River Volcanic Belt.' This vertically dipping deposit is well-exposed, unlike similar prospects in the area, and has been used as an exploration model for the interpretation of proximal VMS occurrences.[2] At Yava, both massive and stringer mineralization occur within an exhalative, zinc-rich zone in a siliceous felsic volcanic unit. The zone is 152 m long, varies from 9 to 33.5 m in thickness and has been drill-tested to a 83 m depth level. It occurs 48 km to the southeast on the opposite limb of the same regional synclinal structure that hosts the Hackett River deposit.

SIGNIFICANT RESULTS

Yava contains a drill-indicated reserve of at least 1,000,000 tonnes grading 3% Zn, 0.5% Cu, 0.5% Pb, 102.8 g/t Ag and 2 g/t Au.[1] A high-grade band within the massive sulphide zone assayed 26% Zn and 10% Ag across widths of 0.46 m to 1.07 m.

REFERENCES

1. Anonymous (1989). *Canadian Mineral Deposits Not Being Mined in 1989, Mineral Bulletin MR 223, National Mineral Inventory, Mineral Policy Sector, Ottawa, Canada.*
2. Frith, R.A. and Roscoe, S.M. (1980), *'Tectonic setting and sulphides deposits of the Hackett River Belt, Slave Province', CIM Bulletin, March, 1980, p. 143-153.*

SECTION2: EASTERN MAINLAND

Geological Summary

The **Eastern Mainland** of the NWT (Figure 3) is underlain by rocks of the southern Churchill Structural Province. The Churchill Structural Province is composed of the Rae and Heame provinces, which are sutured together along the Snowbird Tectonic Zone. The gneissic. granitoid and supracrustal rocks of the Churchill Province are Archean to Proterozoic in age and constitute a major portion of the Canadian Shield.

The Churchill Province is geologically diverse and contains rocks of high mineral potential that are virtually unexplored. The Rankin-Ennadai Belt occurs west of Hudson Bay and is Canada's second largest Archean supracrustal sequence. It contains significant precious and base metal deposits and. as a result, the belt has been compared to the metal-rich Abitibi Belt of northern Ontario and Quebec. Further north and to the west of Wager Bay, an Archean supracrustal sequence composed of the Woodbum. Prince Albert. and Mary River groups forms an extensive northeast trending greenstone belt. This is one of the longest such belts known and it hosts the Meadowbank gold-in-iron-formation prospect, as well as many other extensive iron formations with gold potential and ultramafic rocks (komatiites) with nickel-copper-PGE potential. The Mesoproterozoic Thelon Formation, a sequence of conglomerates and redbed sandstones. infills the Thelon Basin. This basin has an areal extent of greater than 100,000 km² and hosts the Kiggavik (formerly Lone Gull) deposit, an unconformity-related uranium deposit similar to those found within the Athabasca Basin of Saskatchewan.

Population

The **Eastern Mainland** has 12 hamlets and total population of 8.809 people (Table 9). The largest communities are Rankin Inlet and Arviat on the west shore of Hudson Bay. and Baker Lake which is located approximately 200 km inland at the termination of Chesterfield Inlet.

Rankin Inlet	1,706	Sanikiluaq	526
Arviat	1,323	Hall Beach	526
Baker Lake	1,186	Repulse Bay	488
Igloolik	936	Pelly Bay	409
Taloyoak	580	Chesterfield Inlet	316
Coral Harbour	578	Whale Cove	235

Table 10: Eastern Mainland: Community Populations, 1991 Census

Access

The eastern NWT is accessible by both air and sea. Non-perishable supplies are barged to the hamlets along Hudson Bay and the Arctic Ocean during the summer shipping season. All communities have airstrips. The Eastern Mainland is north of the treeline. Temporary winter roads have been plowed by exploration companies from Baker Lake, Rankin Inlet and Arviat to mineral deposits in the interior. Winter road access to the eastern NWT from Churchill, Manitoba is a possibility. During early 1994, the first experimental winter road on sea ice in the NWT connected the communities of Rankin Inlet and Whale Cove.

Mining

Two mines once operated in the eastern NWT. The North Rankin Nickel mine produced nickel and copper from 1957 to 1962; its development resulted in the establishment of the tidewater community of Rankin Inlet. The Cullaton Lake/Shear Lake mine 230 km west of Arviat produced gold from 1981 to 1985.

Exploration

Gold in the Archean-Proterozoic supracrustal belts of the Churchill Province is associated with major, regional-scale faulting. Drilling programs at the Meliadine River, Meadowbank and Turquetil Lake deposits have returned wide intersections and encouraging lateral continuity of gold mineralization.

The Ferguson Lake nickel-copper deposit and the Heninga Lake volcanogenic massive sulphide deposit were discovered during the late 1940s. The volcanic rocks of the Rankin-Ennadai Belt have been explored for base metals only at a reconnaissance level since that time. Other supracrustal belts with base metal potential in the **Eastern Mainland** remain unexplored.

The Proterozoic rocks of the eastern NWT have received little attention for mineral commodities other than uranium. Exploration along the eastern portion of the Thelon Basin resulted in the discovery of the Kiggavik (formerly Lone Gull) deposit in 1974 and two other uranium deposits of comparable size in the late 1980s. The presence of Proterozoic lode gold is documented in the Shear Lake zone at Cullaton Lake. Sedimentary copper mineralization has been noted by both GSC and exploration industry geologists.

The **Eastern Mainland** has also experienced a diamond staking rush in recent years. A brecciated pipe of lamproitic affinity at Dubawnt Lake (the Outlet Bay pipe) and the Akluilak minette dyke in the Gibson Lake-Parker Lake area. 120 km northwest of Rankin Inlet, have attracted the attention of diamond explorers. Breccia pipes of kimberlitic affinities are being tested in the Angikuni Lake area. southeast of Dubawnt Lake.

Ten sites of significant mineralization in the region are shown below and illustrated in Figure 3.

Name	Deposit Type	Page(s)
Cache	Archean Lode Gold	70
Cullaton Lake/Shear Lake	Gold-in-Iron-Formation and Proterozoic Lode Gold	72
Fat Lake	Archean Lode Gold	74
Ferguson Lake	Ultramafic/Mafic Nickel-Copper	76
Heninga Lake	Volcanogenic Massive Sulphide	78
Kiggavik	Unconformity-related Uranium	80
Mac	Archean Lode Gold	82
Meadowbank	Gold-in-Iron-Formation	84
Meliadine River	Gold-in-Iron-Formation	86
Turquetil Lake	Archean Lode Gold	89

Table 11: Significant Deposits of the Eastern Mainland

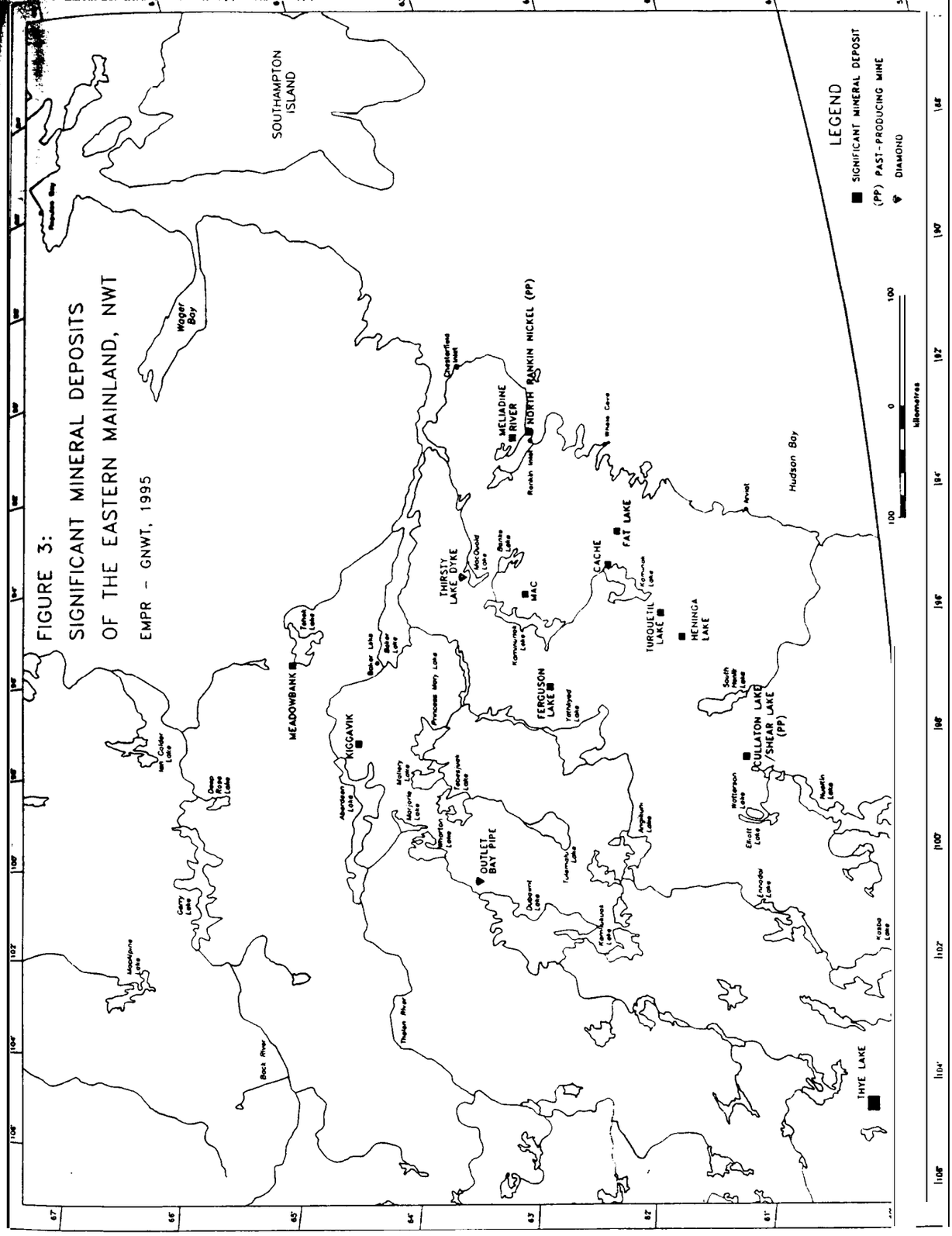

Figure 3: Significant Mineral Deposits of the Eastern Mainland

CACHE

GOLD

LOCATION: 130 km west-southwest of Rankin Inlet
55L/7 62°22' N 94°37' W

SETTLEMENT REGION: Nunavut (Keewatin) Eastern Mainland NWT

HISTORY

1988:	discovery by prospecting
1988-89:	13-hole diamond drilling program. estimation of reserves
1994:	Noble Peak options ground to Cyprus [1], exploration program includes the drilling of 4 holes totalling 1200 m and 1:500 scale mapping[2]

OWNERS: **Noble Peak** Resources Ltd. 100%
#906. 50 Burnhamthorpe Road West
Mississauga, ON L5B 3C2
Tel: 416-897-9406
Fax: 416-897-0669

Cyprus Canada Inc. Optioning 60%

SUMMARY

The stratabound Cache deposit (located in the Kaminak Lake-Quartzite Lake area) consists of narrow gold-bearing quartz veins hosted by a shear zone.[3] The shear zone lies immediately below a 3 km long stratigraphic contact between felsic volcanic rocks and overlying mafic volcanic rocks. The discovery channel sample assayed 58.6 g/t Au across 4 m of quartz stockwork.[4] Gold is associated with disseminated. euhedral pyrite. A mineralized block. 213 m long and 183 m in depth. has been outlined by preliminary diamond drilling.[4]

SIGNIFICANT RESULTS

A possible reserve of 364.000 tonnes grading 9.26 g/t Au is indicated by the 1988 drilling program.[1] Initial interpretation has outlined five discrete zones. Grades and widths increase in the deeper drillhole intersections. The deposit is open along strike and at depth.

Four holes were drilled in 1994 in order to outline the extension of the Cache zone 100 m below the 1988 holes.[2] It is now thought that the mineralized zone plunges to the west, has a strike length of 250 m and a depth of 300 m. The best intersections for the 1994 program were as follows: 6.36 g/t Au over 30.4 m (including 19.96 g/t Au over 6.7 m) and 8.53 g/t Au over 10.8 m.

REFERENCES

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3. Ali, A.A. et al. (1989). *'Report on the 1989 Field Program, Quartzite Luke Claims, Southwin Project', Unpublished Report prepared for Noble Peak Resources Ltd. by Geopro Management Inc., NWT Assessment Report #082888, Indian Affairs and Northern Development, Yellowknife, NWT.*
4. Noble Peak Resources (1992), *'Cache Project', Annual Report to Shareholders, Toronto, Canada.*

CULLATON LAKE/SHEAR LAKE

GOLD

LOCATION: 230 km west of Arviat
65G/8 61°16' N 98°30' W

SETTLEMENT REGION: Nunavut (Keewatin) Eastern Mainland NWT

HISTORY

1946:	discovery of Shear Lake prospect
1961:	discovery of Cullaton Lake deposit
1962-64:	diamond drilling of 6096 m in 39 holes yielding preliminary reserves of 907,000 tonnes grading 34.3 g/t Au
1973:	diamond drilling of3312 m in 29 holes for drill-indicated, (20% diluted) reserves of 160,600 tonnes grading 30.8 g/t Au
1976-77:	decline, underground drilling, bulk sampling for probable and possible reserves of 272,000 tonnes grading 38.7 g/t Au (74% cut and diluted) to 120 m depth
1980-81:	surface facilities, 272 tpd mill constructed
1981-84:	Cullaton Lake deposit mined via ramp to -200 m level
1984-85:	production from the Shear Lake deposit via ramp to -150 m level. mine closure

OWNERS: Homestake Canada Inc. 100?40
#1000, 700 West Pender Street
Vancouver. BC V6C 1 G8
Tel: 604-684-2345
Fax: 604-684-3123

SUMMARY

The Cullaton Lake (or B-Zone) mine recovered2419 kg gold from 227.900 tonnes' for anoperating grade of 10.6 g/t Au from 1981 to 1985.

The orebody is part of a discontinuous, steeply dipping iron formation unit which is traceable for 2460 m within Archean metasediments. [1,2,3] The deposit is a tightly folded, chert-magnetite- iron silicate iron formation. ranging from 75 to 125 m in thickness and 250 m in length. Gold is found in small, irregular. structurally controlled ore shoots of sulphide-bearing iron formation ranging from 0.6 m to 17 m in thickness. The sulphide minerals are pyrrhotite with lesser pyrite and arsenopyrite. Gold grade is inversely proportional to magnetite concentration. [1] Stopes ranged in size from 200 to 27.000 tonnes. The gold is free-milling.

,41500 m airstrip is located 7 km north of the B-Zone portal. The minesite is presently undergoing an abandonment and reclamation program.

The Shear Lake epithermal vein deposit is 5 km north of the Cullaton Lake minesite. It consists of three, 1 to 2 m wide shear zones that have been traced for 275 m along strike. These quartz-filled zones crosscut a Proterozoic orthoquartzite and contain oxidized pyrite mineralization and gold within 100 m of surface.[1,4] Shear Lake produced 830 kg gold from 169,000 tonnes for an operating grade of 4.91 g/t.[5]

SIGNIFICANT RESULTS

The Cullaton Lake deposit maybe essentially depleted with reserves of only 81.300 tonnes at 16.8 g/t Au remaining.' A moderate potential for gold is suggested for iron formation outside the existing mine workings.

The Shear Lake deposit is thought to be the first significant Proterozoic gold discovery in the Canadian Shield, north of 60 °.' It is estimated that the Shear Lake deposit contained possible reserves of 952,600 tonnes grading 7.2 g/t Au prior to partial mining.[6]

REFERENCES

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FAT LAKE

GOLD

LOCATION: 115 km southwest of Rankin Inlet
55K/4 62”07’ N 93°52’ W

SETTLEMENT REGION: Nunavut (Keewatin) Eastern **Mainland** NWT

HISTORY

1940s:	trenching
1950s-1 960s:	exploration
1970-73:	airborne geophysical survey, exploration
1985:	exploration
1986:	diamond drilling of 1586 m in 45 holes
1987:	diamond drilling of 1270 m in 25 holes. 100 tpd test mill. 70 m inclined shaft to -20 m level of #101 Vein
1988:	330 m long decline to -50 m level, diamond drilling

OWNERS: Borealis Exploration Limited 100’%
#40 1, 1300-8th Street S W
Calgary, AB T2R 1 B2
Tel: 403-245-4306
Fax: 403-245-4308

SUMMARY

An 80 m wide diorite sill hosts more than 40 narrow. *en echelon.* quartz-carbonate veins.[1,2] The Fat Lake Sill has a strike length of 2.5 km and intrudes Archean mafic volcanic rocks of the Kaminak Group.

Exploration has focused on four gold-bearing veins. Nos. 99 to 103. A total of 150 tons of ore was processed onsite by a 100 tpd test mill in 1988. The amount of gold recovered was not reported.

SIGNIFICANT RESULTS

Reserves for the No. 99 to 103 veins are 47.600 tonnes grading 11.14 g/t Au across 1.61 m proven to a depth of 67 m.[2] Additional reserves of 167,000 tonnes grading 10.53 g/t Au across 1.55 m are indicated to -200 m.[2] The best reported drillhole intersection is 1.10 m grading 490 ppm Au.[1]

REFERENCES

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2. Borealis Exploration Ltd. ({988), *'Fat Lake', Annual Report to Shareholders.*

FERGUSON LAKE

COPPER, NICKEL

LOCATION: 230kmwest of Rankin Inlet
651/15

62° 52' N 96° 51' W

SETTLEMENT REGION: Nunavut (Keewatin)

Eastern Mainland NWT

HISTORY

1950:	prospecting permits granted to Canadian Nickel Company Ltd.
1952-54:	diamond drilling of more than 90,000 m. bulk sampling
1954:	mineral inventory figure published
1957:	mineral claims staked in 1955 taken to lease
1978:	renewal of mining lease
1986-87:	exploration for PGEs
1990:	bulk sampling of 9100 kg

OWNERS: Crown Land; Mining Lease 3071 canceled June 17, 1992'

SUMMARY

The Ferguson Lake copper-nickel deposit is hosted by an Archean ultramafic to mafic intrusive body metamorphosed to amphibolite grade within a migmatitic terrain.[2] The unit ranges in thickness from <100 m to 1500 m and contains a 50-200 m wide and 9 km long zone with lenses of hornblendite. The sheared Main Zone hornblendite hosts the deposit. It consists of discrete and locally parallel gossans up to 10 m thick that contain continuous stringer-type, chalcopyrite-pyrite-pyrrhotite mineralization and pods of massive. brecciated pyrrhotite. INCO drill-tested the Main Zone to depths reaching 243 m along a strike length of 7.7 km.[2]

SIGNIFICANT RESULTS

The deposit at Ferguson Lake contains a mineral inventory of 6.350,400 tonnes grading 0.87% Cu and 0.75°/0 Ni.[2]

Homestake Canada Inc. investigated the zones of hornblendite-hosted gossans for their PGE content. Assays up to 3.7 g/t Pt and 15.2 g/t Pd in soil samples and up to 2.8 g/t Pt in grab samples were obtained.[2]

REFERENCES

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2. Hearn, K. (1990), *'Ferguson Lake Property'*, in *Mineral Industry Report 1986-8 7. Northwest Territories*, Ellis. C. E. (cd.), NWT Geology Division, *Indian Affairs and Northern Development, Yellowknife, NWT*, p. 83-84

HENINGA LAKE

ZINC, COPPER, GOLD, SILVER

LOCATION: 130 km northwest of Arviat
65H/16 61°46' N 96°12' W

SETTLEMENT REGION: Nunavut (Keewatin) Eastern Mainland NWT

HISTORY

1948:	diamond drilling of 1359 m in 15 holes
1974:	diamond drilling of 708 m in 7 holes
1975:	airborne geophysical survey
1975-77:	diamond drilling of 36 holes
1980-81:	diamond drilling of 3680 m in 15 holes
1982:	preliminary reserve estimate published

OWNERS: Breakwater Resources Ltd. 1 00%
#200 1,44 Victoria Street
Toronto, ON M5C 1 Y2
Tel: 416-363-4798
Fax: 416-363-9474

SUMMARY

The Rankin-Ennadai Greenstone Belt consists of 3 basinal structures infilled with Archean supracrustal sequences. The Heninga Lake volcanic massive sulphide deposit occurs within the southernmost of these basins. and is hosted by pyritic, pyroclastic felsic volcanic rocks of the Kaminak Group.]

The deposit consists of 3 concordant, medium- to coarse-grained sulphide zones which strike over a length of 850 m and are enclosed in an extensive alteration package.[1,2] The western zone is a single 3 to 4 m wide lens which is approximately 400 m in length: the central and eastern zones consist of several concordant, 3 m thick lenses having 90 m long c-axes. A facies change occurs across these zones in that sulphide mineralization varies from copper-rich exhalative facies overlying stringer type mineralization in the western zone to zinc-rich exhalative facies in the eastern zone.

SIGNIFICANT RESULTS

The Heninga Lake deposit contains drill-indicated reserves of 4,990,000 tonnes grading 9% Zn, 1.3% Cu, 67 g/t Ag and 1 g/t Au.[2] Local concentrations of up to 15.4 g/t Au across 1.52 m also occur.

REFERENCES

1. Leggett, S.R. *(1980), 'The South Heninga Copper-Zinc Deposit, District of Keewatin, N. W. T. ', unpublished M.Sc. Thesis, University of Manitoba, Winnipeg, Manitoba.*
2. Laporte, P.J. (1983), *'Heninga Lake Project, Ennadai Lake-Rankin Inlet Area. Keewatin Region', in Mineral Industry Report 1979, Northwest Territories, Brophy, J.A. (cd.), EGS-1 983-9, Indian Affairs and Northern Development, Yellowknife, NWT, p. 89-93.*

KIGGAVIK

URANIUM

LOCATION: 75 km west of Baker Lake
66A/5 64°17' N 97°36' W

SETTLEMENT REGION: Nunavut (Keewatin) Eastern **Mainland** NWT

HISTORY

1974-75:	airborne radiometric survey leading to mineral showings
1977:	initial drillhole intersected 35 m grading 1% U_3O_8
1977-87:	diamond drilling of 36,501 m in 264 holes
1986-90:	feasibility study

OWNERS: **Urangesellschaft** Canada Ltd 79%
(70% owned by **Cogema** Group)
P.O. Box 9204
#81 7, 825-45th Street West
Saskatoon, SK S7K 3X5 Tel: 306-244-2554
Fax: 306-664-3186

CEGB Exploration (Canada) Ltd. 20%
Daiwoo Corporation (of Korea) 1%

SUMMARY

The Kiggavik deposit (formerly the Lone Gull deposit) consists of two adjacent zones of unconformity-related uranium mineralization in the northeastern portion of the Thelon Basin. The uraniferous zones are structurally controlled in that mineralization is associated with a graben structure in Archean metasediments, an Archean-Proterozoic orthoquartzite and a Proterozoic fluorite-rich, rapakivi granite. [1,2] The principal uranium mineral of the deposit is coffinite, a uranium silicate. [1]

A 1990 feasibility study proposed a 340,000 tonne per year open pit operation producing 1600 tonnes of U_3O_8 annually.[3] The predicted overall waste-to-ore ratio would be 18:1. The final pit dimensions would measure 40 hectares in area for the 207 m deep Main Zone pit and 22 hectares in area for the 100 m deep Centre Zone pit. The mine would be supplied via winter road from a docksite eight km east of Baker Lake.

Diamond drilling of airborne resistivity anomalies during the late 1980s resulted in the discovery of two new deposits within 15 km of the Kiggavik deposit.[3]

SIGNIFICANT RESULTS

The Kiggavik deposit contains minable ore reserves of 3,700,000 tonnes grading 0.48% U_3O_8 for a total inventory of 17,800 tonnes U_3O_8.[3]

An inventory of approximately 36,000 tonnes of U_3O_8 from mineralization grading 0.5'% U_3O_8 is contained by the two other deposits.[4] One drillhole intersection averaged 0.9% U_3O_8 over 158 m. Numerous, additional geophysical anomalies in the area await drill-testing.

REFERENCES

1. Fuchs, H., Hilger, W. and Presser, E. (1986), *'Geology and Exploration History of the Lone Gull Property', in Uranium Deposits of Canada, Evans, E. D. (cd.), CIMM Special Volume 33, Montreal, Canada, p. 286-292.*
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3. Urangesellschaft Canada Limited (1990), *'Kiggavik Project Environmental Assessment Report, Summary Report', Project proposal submitted to the EARP (Environmental Assessment and Review Panel) established by FEARO (Federal Environment Assessment Review Office) for Kiggavik Uranium Project, Toronto, Canada, 33p.*
4. Wollenburg, P. (1991), *'Application and Results of Geophysical Surveys for Unconformity-Type Uranium Deposits in the Thelon Basin, District of Keewatin, NWT (NTS 66A/5) ', Abstract, in Exploration Overview 1991, NWT, NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 40.*

MAC

GOLD

LOCATION: 140 km west of Rankin Inlet
55L/7 62°18' N 94°52' W

SETTLEMENT REGION: Nunavut (Keewatin) Eastern Mainland NWT

HISTORY

1988:	discovery by prospecting
1989:	diamond drilling of 500 m in 3 holes. exploration
1992:	exploration
1994:	7 holes totalling 1028 m drilled of main target zone[1]

OWNERS: Noble **Peak Resources Ltd.** 100!%
#906. **50** Burnhamthorpe Road West
Mississauga, ON L5B 3C2 Tel: 416-897-9406
Fax: 416-897-0669

Cyprus Canada Inc. Optioning 60%

SUMMARY

Exploration in the Kaminak Lake area led to the discovery of the new Mac gold prospect in 1988. The deposit (which lies 10 km west of the Cache deposit) occurs in carbonatized, pyritized and quartz-veined mafic volcanic rocks. The area of interest is a zone of strati form mineralization which is 300 m long, up to 100 m wide and open along strike.[2] Gold is associated with disseminated pyrite that can be easily detected with 1P surveying techniques. A nearby contact between mafic volcanic rocks and a quartz sericite schist is also auriferous. The Contact zone. located to the north of the Mac zone. has similar characteristics but occurs in a stratigraphically higher unit.

Several drill targets have been identified by geophysical surveying and sampling along a 1.6 km section of favorable stratigraphy.[3]

SIGNIFICANT RESULTS

A number of grab samples on Mac Island assayed >34.3 g/t Au.[1] Channel sampling of the Mac zone returned values up to 14.74 g/t Au across 7.01 m and 23.2 g/t Au across 3.0 m.[3,4] At the Contact zone, the discovery drillhole intersected 2.64 g/t Au across 13.72 m. including a 2.61 m interval that graded 8.57 g/t Au.[5]

Drilling in 1994 defined another area of anomalous gold mineralization. Best intersections include: 9.26 g/t Au over 12.1 m and 7.3 g/t Au over 1.89 m.[1]

REFERENCES

1. Goff, S.P. (1995), *'Keewatin Region and Melville Pennisula', in Exploration Overview 1994, Northwest Territories, Kusick, R. and Goff, S. P. (cd), NWT Geological Mapping Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 20.*
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MEADOWBANK

GOLD

LOCATION: 80 km north of Baker Lake
66 H/1 65°06' N 96°17' W

SETTLEMENT REGION: Nunavut (Keewatin) Eastern Mainland NWT

HISTORY

1987:	discovery by diamond drilling
1989-91:	diamond drilling of Goose Island Zone
1994:	geophysical surveying, 2 more targets outlined (SGI and Y zones)[1]
April/1 995:	a 15-hole, 1983 m diamond drilling program planned for 3 zones[2]

OWNERS: **Cumberland** Resources Ltd. 60%
#11 06.750 West Pender Street
Vancouver. BC V6C 2T8 Tel: 604-681-1774
Fax: 604-681-1339

Comaplex Minerals Corp. 40%

SUMMARY

In 1983. an arsenopyrite occurrence 95 km north of Baker Lake was re-examined. A find of gold in both felsic volcanics and sulphide-enriched iron formation prompted staking. Subsequent regional exploration located numerous. narrow. gold-bearing quartz veins associated with sulphide facies iron formation within turbidites.[3] The current 440 km^2 area of interest is extensively overburdened and is located to the south of the Meadowbank River and north of Tehek Lake.

In the Third Portage Lake area (which is underlain by the property's 5 km long gold trend), widely spaced drilling of a 2750 m long geophysical conductor intersected a significant gold-bearing. sulphide facies iron formation unit.[4] The gold occurs in two settings:

(1) pyrrhotite-bearing replacement zones within magnetite-chert-iron formation. and
(2) silicified pyrite-quartz zones flanking this main iron formation.

Goose Island. 1 km to the south. is part of the strike extension of the Third Portage Lake zone. Drilling of the Goose island prospect has returned the most significant results from the Meadowbank project. However. ground magnetometer and HLEM surveying in 1994 has identified 2 additional targets in the same iron formation horizon. The SGI target has the same geophysical signature as Goose Island (over a strike length of 600 m) and the Y target appears as a series of anomalies over a distance of 153 m.[1,2]

SIGNIFICANT RESULTS

A mineral inventory of 907,200 tonnes averaging 6.51 g/t Au has been calculated for the Third Portage Lake deposits.[5] Twenty-one out of 40 holes returned grades> 10.3 g/t Au across 3 m.' One drillhole intersected 13.7 m grading 15.9 g/t Au. The deposit is open in all directions.

The initial drillhole at Goose Island intersected 8.2 m grading 12.3 g/t Au in an upper iron formation unit and 17.4 m grading 13.0 g/t Au in a lower iron formation unit.[4] A step-out hole 100 m to the south intersected spectacular 318.5 g/t Au across 2.90 m in the upper iron formation unit and 11.66 g/t Au across 2.99 m in the lower iron formation unit.[5] A step-out hole 125 m to the north of the initial hole intersected 7.92 m grading 5.48 g/t Au. Grades of 73.72 g/t Au over 3 m have also been reported.[6]

REFERENCES

1. Goff, S.P. (1995), *'Keewatin Region and Melville Pennisula', in Exploration Overview 1994, Northwest Territories, Kusick, R. and Goff, S. P. (eds.), NWT Geological Mapping Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 20.*
2. The Northern Miner (1995), *'Cumberland, Comaplex focus on three Meadowbank targets', April 24, 1995 edition, The Northern Miner, Toronto, p. 3.*
3. Mudry, P. *(1990), 'Meadowbank River Property, Baker Lake Area, N WT (66H/1)', Abstract, in Exploration Overview 1990, Northwest Territories, N WT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 35-36.*
4. Comaplex Resources (1992), *Annual Report to Shareholders.*
5. Cumberland Resources Ltd. (1993), *Annual Report to Shareholders, p. 4.*
6. The Northern Miner (1995), *'Meadowbank results prove promising', May 22, 1995 edition, The Northern Miner, Toronto, p. 6.*

MELIADINE RIVER

GOLD

LOCATION: 20 km north to northeast of Rankin Inlet
55J/13 62°58' N 91°57' W

SETTLEMENT REGION: Nunavut (Keewatin) Eastern **Mainland** NWT

HISTORY

1986:	gold panned from Meliadine River sediments
1989:	Discovery deposit found by prospecting of geophysical anomalies
1991-92:	airborne geophysical surveying
1990-93:	diamond drilling and exploration of Pyke Fault
1994:	68 holes totalling 5545 m drilled using 2 diamond drills on the Wes Meg and Musket Bay gold prospects. an additional31 drill holes (2520 m) were drilled on geophysical targets in both areas [1]
Mar./1995:	9150 m of diamond drilling planned[2]
June/1995:	optioning of western portion of property to WMC, a minimum of 6100 m of diamond drilling planned[3]; Joint Venture partners retain Meliadine east, 4880 m of diamond drilling with two rigs planned in order to expand resources and proximal reserves at the Discovery deposit[4]

OWNERS:

Comaplex Minerals Corp. (operator) 901-1015 4th St. S.W. Calgary, AB T2R1J4	50% Tel: 403-265-2846 Fax: 403-265-7488
Cumberland Resources Ltd.	5 00/0
Asamera Minerals Inc.	2% NSR on **Cumberland**'s interest
WMC International Ltd.	Option to earn 56% of the western portion of the property

SUMMARY

A major gold-bearing structure is being explored to the north of Rankin Inlet. The Pyke Fault is a 50 km long, 3 to 5 km wide shear zone within Archean Kaminak Group supracrustal rocks.[5] The Pyke Fault parallels a 65 km long linear aeromagnetic anomaly informally named the Meliadine Gold Trend.[6] Significant propects include the Discovery deposit as well as the Wes Meg, Snow Goose and Musket Bay occurrences.

The Discovery deposit consists of pyrrhotite-arsenopyrite-gold mineralization within banded. oxide-facies iron formation.' Gold mineralization is associated with quartz vein concentrations at the hinges of Z-folds. The deposit has been drill-tested along its 250 m strike length to a depth of 466 m.[5] Drilling in 1995 will focus on expanding resources and outlining proximal reserves at the Discovery site; scout holes will test the high potential of the Pisces and Sinnuk targets.[4]

The WesMeg prospect, 13 km to the west of the Discovery zone. occurs in magnetite-poor, cherty iron formation.[2] The gold-arsenopyrite-py rite-minor chalcopyrite mineralization is associated with quartz veining in high strain zones. Over 1,000 auriferous boulders found along several trains occur in the vicinity and down-ice from a thick horizon of intensely folded. overburden-covered iron formation in this area.[8] Twelve percent of the boulder grab samples assayed >34.29 g/t Au. while 3% assayed >68.57 g/t Au.

Drilling in 1994 in the Wes Meg area identified two mineralized zones in the Pump Grid. In addition. an east trending, EM and magnetic anomaly drilled on the 'F' Grid was determined to be a series of five subparallel. steeply dipping, *en enchelon* lenses of gold mineralization (the largest of which is 50 m by 15 m and is open laterally and to depth).[1] These lenses occur along a 1280 m strike length. The Wes Meg and Musket Bay deposits lie in WMC'S newly optioned area of the property.[3]

SIGNIFICANT RESULTS

The Discovery deposit contains a mineral inventory of 671,180 tonnes grading 9.94 g/t Au.[4] One drillhole intersected 12.12 m grading 12.40 g/t Au. The deposit is open along strike and to depth.

Reserves have not yet been published for the WesMeg prospect. One drillhole intersected 27.6 m grading 7.89 g/t Au. including 4.05 m grading 14.40 g/t Au.[5] Drilling on the Pump Grid yielded a best result of 9.6 g/t over 11 m.[1]

The best intersections from the 'F' Grid in 1994 include: 13.4 g/t over 22.3 m. 7.2 g/t over 28.7.7 m grading 16.8 g/t, and 9.6 g/t over 11 m.[1] A grab sample from felsenmeer on an adjacent claim assayed 79 g/t Au.

REFERENCES

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3. The George Cross Newsletter (1995), *'Major Agreement signed on Meliadine Property', June 12, 1995 edition, Vancouver, B. C,, p. 1.*
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6. Miller, A.R. et al. (1995), *'Oxide iron-formation-hosted lode gold, Meliadine Trend, Rankin Inlet Group, Churchill Province, Northwest Territories', in Current Research 1995-C, Geological Survey of Canada, p. 163-174.*
7. Miller, A.R. et al. (1994), *'Contrasting oxide iron formation hosted lode gold deposit-types in the Meliadine Trend, Rankin Inlet Group, Churchill Province, with emphasis on alteration assemblages', Abstract in Exploration Overview 1993, Northwest Territories, Goff, S. P. (cd.), NWT Geology Division, Indian and Northern Affairs, Yellowknife, NWT, p. 41-42.*
8. Comaplex Resources International Ltd. (1992), *'Meliadine River Project, Northwest Territories', Annual Report to Shareholders, p, IO-11.*

TURQUETIL LAKE

GOLD

LOCATION: 140 km northwest of Arviat
55E/13 **61° 58 N 95° 56' W**

SETTLEMENT REGION: Nunavut (Keewatin) **Eastern Mainland** NWT

HISTORY

1961-62:	trenching, exploration
1969, 1971:	airborne geophysical surveys
1976:	significant intersection from drillhole undercutting showing
1984, 1987:	staking of present property
1988:	diamond drilling of 10,503 m in 64 holes, airborne geophysics
1989-92:	exploration
1993:	diamond drilling of 1000 m in 8 holes
1994:	prospecting by MH Resources Inc. [1]

OWNERS: Noble **Peak Resources Ltd.** 40%
(owns 40% interest in MH Resources Inc.)
#906, 50 Burnhamthorpe Road West
Mississauga, ON L5B 3C2
Tel: 416-897-9406
Fax: 416-897-0669

Dejour Mines Limited **40%**
MH Syndicate 20%

SUMMARY

The Turquetil Lake deposit is a gold-bearing shear zone which extends for 11.6 km in a carbonate-rich, mafic to intermediate volcanic unit within the Archean Rankin-Ennadai Greenstone Belt.[2] It is considered to be similar to the carbonate-hosted gold deposits along the Larder Lake Break in northeastern Ontario.

Continuous gold mineralization over a strike length of 940 m has been delineated.[3] The deposit occurs within an intensely altered. up to 100 m wide. iron carbonate and quartz horizon that is bisected by the Turquetil River. A significant zone west of the river occurs in the hanging wall of a fault that has been traced for 1.2 km. Gold occurs as small (5 to 15 microns in diameter) discrete grains associated with arsenopyrite and pyrite.

SIGNIFICANT RESULTS

The 1976 drillhole intersected 13.1 m grading 7.27 g/t Au at the Turquetil Lake showing. The deposit contains drill-indicated reserves of 499.000 tonnes grading 6.31 g/t gold.[2] Drill results include 8.5 m grading 9.21 g/t Au at 198 m depth and 38.2 m grading 4.32 g/t Au. The deposit is open along strike and at depth. About 14°/0 of the Turquetil Lake shear zone had been drill-tested as of 1988.

REFERENCES

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3. Thompson. 1.S. et al. (1988), 'The *Turquetil Gold Discovery, Keewatin District', Abstract, in Exploration Overview 1988, Northwest Territories, N WT Geology Division, Indian Affairs and Northern Development, Yellowknife, N WT, p. 40-41.*

SECTION 3: WESTERN MAINLAND

Geological Summary

The Western Mainland of the NWT (Figure 4) consists of Paleozoic rocks from south of Great Slave Lake to the Arctic coast, the Mackenzie River Valley in its entirety and the Mackenzie Mountains. The Mackenzie Mountains are cored by Proterozoic rocks. The Mackenzie Mountain Supergroup and the younger Windermere Supergroup host large sedimentary copper deposits and carbonate-hosted, lead-zinc-silver deposits. The lower Paleozoic to Devonian Mackenzie Platform, the laterally strata of the Selwyn Basin, and the Prairie Creek Embayment host significant base metal and skarn tungsten deposits.

Boundaries

The eastern boundary of the **Western Mainland** is the geological contact between rocks of the Precambrian Shield (including the Proterozoic rocks at Coppermine and the Brock Inlier) and flat-lying sedimentary rocks of the Paleozoic Interior Platform. The 1100 km long contact extends from Fort Smith on the Alberta border to near Paulatuk on the Arctic Ocean. The western boundary is the 1870 km long border between the Yukon Territory and the Northwest Territories. The sub-parallel geological contact and the NWT-Yukon border are roughly 600 km apart.

Population

The Western Mainland has four towns. one village, eight hamlets, two charter communities, two settlement corporations and nine settlements for a total population of 17,509 persons (Table 11). The centres of population are located on the Mackenzie Delta area as well as at Hay River and Fort Smith south of Great Slave Lake.

Town of Inuvik	3,206	Fort Norman	375
Town of Hay River	3,206	Paulatuk	255
Town of Fort Smith	2,480	Hay River Reserve	216
Village of Fort Simpson	1,142	Wrigley	174
Tuktoyaktuk	918	Tsiigehtchic	14
Aklavik	801	Nahanni Butte	85
Fort McPherson	759	Colville Lake	69

Fort Providence	645	Trout Lake	66
Town of Norman Wells	627	Jean Marie River	49
Fort Good Hope	602	Enterprise	49
Déline	551	Paradise Gardens	47
Fort Resolution	515	Kakiska	39
Fort Liard	485	Salt Plains	4

Table 12: Western Mainland; Community Populations, 1991 Census

Access

The western NWT has the best ground accessibility of the four regions discussed. The Mackenzie-Liard Highway system has been extended to Wrigley, 220 km north of Fort Simpson. A winter road proceeds from Wrigley to Fort Good Hope some 500 km further north. During the summer, a barging company ships freight from the railhead at Hay River to the communities strung along the full length of the Mackenzie River. Most communities are accessible by air.

Road access into the rugged Mackenzie Mountains occurs at three places. Firstly, the Liard Highway continues into northeastern British Columbia at 60° North latitude. Between 62° and 63° North latitude, the NWT/Yukon border is cut by roadways through the Cantung minesite, Howards Pass and Macmillan Pass; the Canol Pipeline/Heritage Trail, constructed during World War II, is an abandoned link between Norman Wells and Macmillan Pass. And lastly, the Dempster Highway transects the border at 67° North latitude. linking the communities of Fort McPherson and Arctic Red River (Tsiigehtchic) and terminating at Inuvik.

Mining

Two major mines operated in the Western Mainland in the past. At Pine Point, south of Great Slave Lake, zinc and lead were extracted from multiple open pits from 1964 to 1988. The Pine Point townsite and mine facilities were removed in 1991 as part of an abandonment and reclamation program. The Cantung mine, on the NWT-Yukon border in the Mackenzie Mountains, produced tungsten and copper from 1962 to 1986. Operations were then suspended due to the entry of low-priced Chinese tungsten onto world markets. It is estimated that approximately five years of reserves remain: the mineral potential of the deposit is still significant. The mine has a care and maintenance program while Cantung's townsite, Tungsten. remains unoccupied.

Further information on the Pine Point and Canting operations can be found under the deposit summaries for the Great Slave Reef and Cantung projects, respectively.

Exploration

A substantial amount of exploration has been carried out for copper, base metals, tungsten and iron ore in the Proterozoic rocks of the Mackenzie Mountains and for base metals in the Paleozoic rocks south of Great Slave Lake. Significant sedimentary copper deposits occur in the Redstone Copper Belt (Coates Lake area) and deposits of sediment-hosted, lead-zinc mineralization have been discovered in the Macmillan Pass and Howard's Pass regions. Macmillan Pass also hosts the large, border-straddling Mactung skarn tungsten deposit.

The Prairie Creek deposit contains significant vein and stratiform zinc-lead-silver mineralization. Prairie Creek is in the southwestern comer of the NWT, 20 km northeast of Nahanni National Park. The minesite was developed nearly to the point of production in 1982, but low silver prices prevented the advancement of the project. However, the aggressive diamond drilling campaign of the past three years has resulted in the addition of considerable new reserves and resources. A feasibility study is underway and production is planned for 1996.

The Mountain diatreme, located 160 km west of Norman Wells, is being reevaluated for its diamond potential. There has also been interest in other areas of the **Western Mainland** including the Lac la Martre area, the Horn Plateau and the Fort Smith region.

Other deposit types, particularly epithermal gold and placer gold, have undergone little exploration, despite potentially favorable geological environments. Occurrences of industrial minerals, such as barite, have been documented. In addition. coal seams in Paleozoic strata are known to occur at Fort Liard, Great Bear Lake, the Mackenzie Delta and the Arctic coast.

Seven locales of significant mineralization are summarized below and shown in Figure 4.

Name	Deposit Type	Page(s)
Cantung	Skarn Tungsten	96
Coates Lake	Sedimentary Copper	98
Crest	Rapitan-type Iron Formation	100
Gayna River	Carbonate-hosted Lead-Zinc	102
Great Slave Reef	Carbonate-hosted Lead-Zinc	104
Howard's Pass (XY Deposit)	Sediment-hosted Lead-Zinc	106
Mactung	Skarn Tungsten	108
Prairie Creek	Vein and Stratiform Lead-Zinc-Silver	110

Table 13: Significant Deposits of the Western Mainland

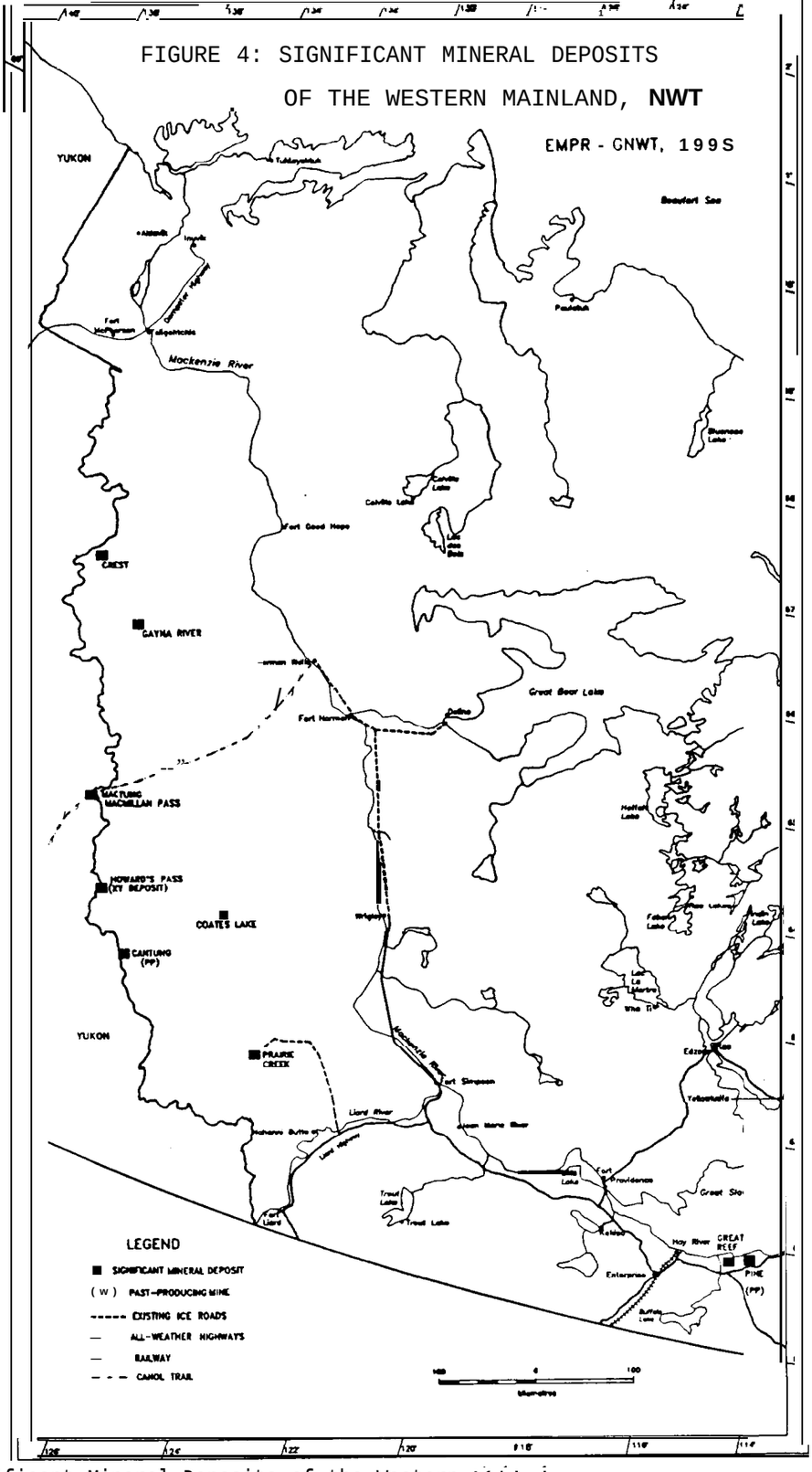

Figure 4: Significant Mineral Deposits of the Western Mainland

CANTUNG

TUNGSTEN

LOCATION: Tungsten townsite; 645 km west of Yellowknife; 3 km east of the NWT-Yukon border

105HI16 61°58′ N 128°15′ W

SETTLEMENT REGION: Sahtu Western Mainland NWT

HISTORY

1954:	discovery by aerial reconnaissance
1962:	commencement of open pit operation; road to Watson Lake, YT completed
1970:	exploratory drilling; identification of new ore zone (E-zone)
1974:	underground mining of E-zone
1986:	decrease in reserve estimate; mine production suspended

OWNERS: Canada Tungsten Inc. 100%
#1600, 1066 West Hastings Street
P.O. Box 12525, Oceanic Plaza
Vancouver, BC V6E 3X1
Tel: 604-689-0046
Fax: 604-688-8370

SUMMARY

The Cantung mine is a past producer of tungsten (WO_3) located 170 km southeast of the Mactung deposit. Access is via the Yukon's Nahanni Range Road to the Tungsten townsite in the NWT. The deposit was discovered in 1954 and mining commenced in 1962. Mineralization occurs within a northwest trending syncline in a Cambrian limestone package intruded during the Cretaceus by a quartz monzonite stockwork system.] Operations were never resumed. however, following a labour strike in 1986 due to the flooding of western markets with low-priced Chinese tungsten. Cantung's mine and mill remain under care and maintenance. as it is estimated that about five years of reserves remain. Canada Tungsten Inc. state that full production may be possible within three months of a start-up decision.[2]

SIGNIFICANT RESULTS

Cantung contains proven and probable reserves of 1,270,000 tonnes grading 1.2'% WO_3 and is open along strike to the west.[2]

REFERENCES

1. Ellis, C. and Hearne, K. (1990), *'Cantung Mine' in Mineral Industry Report 1986-87. Northwest Territories, Ellis, C. (cd), NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 28-30.*
2. Canada Tungsten Inc. (1992), *'Tungsten Sector, Review of Operations and Projects', Annual Report to Shareholders, p. 30.*

COATES LAKE

COPPER

LOCATION: 280 km west-northwest of Fort Simpson
95LI1O 62°42' N 126°38' W

SETTLEMENT REGION: Deh Cho Western **Mainland** NWT

HISTORY

1960-62:	discovery and exploration
1963-64:	diamond drilling of 6888 m in 45 holes
1971:	diamond drilling of four deeper holes to 610 m depth, claims taken to lease
1970s:	exploration
1990:	exploration and development program

OWNERS: Redstone Resources Inc. 100?40
#1900, 20 Eglinton Avenue West
P.O. Box 2005
Toronto, ON M4R 1K8
Tel: 416-480-6497
Fax: 416-488-6598

SUMMARY

Significant copper resources occur in the Mackenzie Mountains as stratiforrn sedimentary copper deposits within several embayments of Neoproterozoic rocks. An area 300 km long and up to 15 km wide is known as the Redstone Copper Belt.' Disseminated copper sulphides are hosted within the transition zone between underlying elastic rocks and overlying shallow marine sediments (the Coppercap Formation).[2] Coppercap Formation beds are gently dipping, tabular and laterally continuous in the Coates Lake embayment. Here. the transition zone has a maximum thickness of 110 m over a strike length of 30 km.

Copper sulphide mineralization at Coates Lake occurs within eight limestone beds separated from each other by intervening layers of red mudstone.[1,2] The basal (B-1) limestone bed is only 1 m thick but contains the highest copper grades and hosts all of the measured reserves listed below. Minerals in this and the second bed include bornite. digenite. chalcocite and chalcopyrite; the third bed contains chalcopyrite and pyrite. Pyrite and minor chalcopyrite are found within the overlying beds. In addition, traces of sphalerite and galena are found at the top of the transition zone.

SIGNIFICANT RESULTS

Drill-indicated reserves for the B-1 bed are 22,600,000 tonnes grading 3.9% Cu and 11.31 ppm Ag across an average width of 1 m. [3]

Work upon two zones of interest at Coates Lake during the early 1960s was also reported.[4] The north zone, having a strike length of 2.8 km, grades 2.3% Cu across an average thickness of 2 m. The south zone, 1.9 km long, has a thickness averaging 1.7 m grading 3.74% Cu. The widest section is 15.8 m grading 1.67% Cu; the highest grade section is 5 .27 °/0 Cu across 2.9 m. The best intersection from 4 deep drillholes was 1.46 m grading 5 .6% Cu. [4]

Results of substantial exploration work on deposits within the Redstone Copper Belt by major mining companies during the 1970s were never submitted for assessment purposes.

The most recent drill-indicated reserve estimate is 33.6 million tonnes grading 3.9% Cu in 1 of 5 zones outlined by 15,250 m of drilling. A major exploration and development program was initiated in 1990. Four additional land leases have been acquired for proximal mineralized showings.[5]

REFERENCES

1. Jefferson, C. W. and Ruelle, J.C. (1984), *'The Late Proterozoic Redstone Copper Belt, Mackenzie Mountains, Northwest Territories', in Mineral Deposits of the Northern Cordillera, Morin, J.A. (cd.), Proceedings of the Mineral Deposits of the Northern Cordillera Symposium, December, 1983', Special Volume 37, Canadian Institute of Mining and Metallurgy, Montreal, p. 154-168.*
2. Jefferson, C. W. (1994), *Personal communication, 13 July, 1994 E-mail, 6p.*
3. Anonymous (1989), *Canadian Mineral Deposits Not Being Mined in 1989, Mineral Bulletin MR 223, National Mineral Inventory, Mineral Policy Sector, Ottawa, Canada.*
4. Padgham, W.A. et al. (1975), *'Coates Lake Property, Cordillera', in Mineral Industry Report 197 [and 1972, Northwest Territories, EGS 1975-8, Vol. 3 of 3, Indian Affairs and Northern Development, Yellowknife, NWT, p. 169-172.*
5. Giancola D. (cd.) (1994), *'Canadian Mines Handbook 1994-95', Southam Magazine Group, Don Mills, Ontario, Canada.*

CREST

IRON

LOCATION: 300 km west of Norman Wells, 340 km south of Inuvik
106FI2 65°15' N 133° 02'W

SETTLEMENT REGION: Gwich'in Western Mainland NWT

HISTORY

1961:	discovery of iron formation deposit in Snake River basin[1]
1963:	diamond drilling of 3048 m in 25 holes, channel sampling, bulk sampling, construction of gravel airstrip
1964:	feasibility study

OWNERS: Crest Exploration Limited 100?40
500-5th Avenue SW
Calgary, AB T2P 0L7 Tel: 403-234-5000

SUMMARY

Crest's Mineral Lease 2517 is part of a large iron resource extending from just east of the NWT-Yukon border into the Yukon. Hematite float or 'iron boulders' have been found in the gravels of the Peel River since the days of the Klondike gold rush. The source deposit was discovered in 1961 in the Iron Creek area of the Yukon's Snake River Basin, where iron formation, up to 150 m thick, is exposed for a strike length of 52 km eastward into the Redstone River Basin of the N WT.'

The Neoproterozoic-type iron formation occurs in flat-lying or shallow dipping beds near the base of the Rapitan Group (an arcuate glacial-marine elastic sequence which extends for 630 km).[2] The mineralization consists of alternating layers of blue hematite and jasper interbedded with sediments.

The Crest deposit is the third largest iron resource in North America. after the iron formation deposits located in the Labrador Trough and the Lake Superior region. However, difficulties with beneficiation, transportation and marketing of the ore must be eliminated before exploitation is possible.

SIGNIFICANT RESULTS

A mineral resource in excess of 18.6 billion tonnes of Rapitan-type iron formation occurs in the Snake River and Redstone River basins.[2] Drill-indicated reserves are 5.6 billion tonnes grading 47.2% Fe within an area of 16 km^2. The iron formation consists of 40-45% iron, 20-30% silica and 0.7-0 .8% phosphorus. Reserves are amenable to open pit mining with very low stripping ratios.

REFERENCES

1. National Mineral Inventory (1980), *'NTS 106F/2, Reference Fe 1 ', Occurrence Curd published by Mineral Policy Sector, Dept. of Energy, Mines and Resources, Ottawa, Canada, 3p.*
2. Yeo, *G. (1984), 'Iron Formation in the Late Proterozoic Rapitan Group, Yukon and Northwest Territories', in Mineral Deposits of (he Northern Cordillera, Morin, J. A. fed.), Proceedings of the Mineral Deposits of the Northern Cordillera Symposium, December, 1983, Special Volume 37, Canadian Institute of Mining and Metallurgy, Montreal, p. 142-153.*

GAYNA RIVER

ZINC, LEAD

LOCATION: 180 km west of Norman Wells
106BI15 64°56' N 130°41' W

SETTLEMENT REGION: Gwich'in Western Mainland NWT

HISTORY

1974:	discovery
1974-77:	diamond drilling of 27,249 m in 169 holes
1978:	exploration
1979:	diamond drilling; claims lapse

OWNERS: Crown Land

SUMMARY

Mississippi Valley-type (MVT) lead-zinc mineralization is hosted by the Neoproterozoic Little Dal Group, a 3 km thick sequence of carbonate rocks, shales and evaporates which is exposed over a distance of 130 km in the Mackenzie Mountains. [1,2] Over 100 occurrences of such mineralization in the Gayna River area lie within a 160 m thick and 30 km long unit of dolomite, termed 'the grainstone'. These deposits of sphalerite and lesser galena are widely distributed along the srike length of this unit , and are generally associated with discontinuous cemented breccias (disaggregated stromatolite reefs). The lead-zinc deposits are tabular to columnar in shape over an areal extent of 0.2 km^2 and a thickness of 3 m.]

A substantial amount of diamond drilling has been performed on an unspecified number of deposits. Access is via a short gravel airstrip.

SIGNIFICANT RESULTS

Drill-indicated reserves for individual deposits range from 56.300 tonnes grading 14.52% combined Zn-Pb (Zn >> Pb) to 1,066.800 tonnes grading 4.51 % Zn-Pb.[3] The best intersection is 6 m grading 20% Zn-Pb.[1] A geological reserve of 50,000,000 tonnes grading 4.7% Zn and 0.3% Pb has been suggested for the Gayna River deposit. [1,3]

REFERENCES

1. Hardy, J. L. (1979), *'Stratigraphy, Brecciation and Mineralization, Gayna River, Northwest Territories', Unpublished MSc thesis, University of Toronto, Ontario, Canada, 476p.*
2. **Jefferson, C. W. (1994),** *Personal communication, July 13, 1994 E-mail, 6p.*
3. Anonymous (1989), *Canadian Mineral Deposits Not Being Mined in 1989, Mineral Bulletin MR 223, National Mineral Inventory, Mineral Policy Sector, Ottawa, Canada.*

GREAT SLAVE REEF

ZINC, LEAD

LOCATION: 40 km east-southeast of Hay River
85B111 60°44'N 115° 03' W

SETTLEMENT REGION: Treaty 8 Western Mainland NWT

HISTORY

1965-67:	staking
1975:	discovery by diamond drilling
1975-81:	124,606 m of diamond drilling, geophysical surveys, geochemical sampling
1980:	geological reserve calculation
1983:	diamond drilling

OWNERS: Westmin Resources Limited 40%
#904, 1055 Dunsmuir St.
P.O. Box 49066
Vancouver, BC V7X 1C4 Tel: 604-681-2253
Fax: 604-681-0357

Du Pent of Canada Exploration Limited 50%
Philipp Bros. (Canada) Limited 10?40

SUMMARY

The Great Slave Reef (the western extension to the Pine Point Lead Zinc District) was explored during the 1970s. Seven lead-zinc deposits were outlined by 1P surveys, geochemical sampling, and grid diamond drilling at depths ranging from 150 m to 300 m below surface.' This deposit is geologically similar to that of the Pine Point site; it is a MVT ore deposit hosted by dolomite of the Mid-Devonian Presqu`ile Group (Pine Point Formation).[1]

The Pine Point base metal mine was the largest mining operation in the NWT. It processed 72,000,000 tonnes of ore grading 5.8% Zn and 2.2% Pb between 1964 and 1988.1 Within a 65 km by 20 km area, 48 out of 93 deposits were mined by open pit. Deposits ranged in size from 100,000 tonnes to 14.000,000 tonnes. Reserves have not been published for the 45 undeveloped deposits left by the Pine Point mining operation, but they maybe substantial. Infrastructure for the 10,000 tpd operation included a railway line, a hydropower dam, a diesel-powered generating station. a 1370 m gravel airstrip, and an all-weather road. By 1991, all townsite and mine facilities were removed as part of an abandonment and reclamation process.

SIGNIFICANT RESULTS

The Great Slave Reef project area contains a geological reserve of 7,260,000 tonnes grading 10.3% combined Pb-Zn.[1] Some of the 7 zones are not fully delineated, but additional new mineralization is indicated by drilling. The X-25 deposit contains drill-indicated reserves of 2,343,000 tonnes grading 10.3% Zn and 2.73% Pb; the R-190 deposit contains 1,119,000 tomes grading 11.587. Zn and 6.42% Pb.[2]

REFERENCES

1. Anonymous (1989>, *Canadian Mineral Deposits Not Being Mined in 1989, Mineral Bulletin MR 223, National Mineral Inventory, Mineral Policy Sector, Ottawa, Canada.*
2. *Gibbins, W.A. (1984), 'Great Slave Reef and West Reef Projects, Great Slave Plain, Southeast Mackenzie District', in Mineral Industw Report 1980/81, Northwest Territories, Brophy, J.A. and Ellis, C. E., (cd), EGS-1984-5, NWT Geology Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 254-255.*

HOWARD'S PASS (XY DEPOSIT)

ZINC, LEAD

LOCATION: 400 km west-northwest of Fort Simpson. on the N WT-Yukon border
1051/7 62°27' N 129°11' W

SETTLEMENT REGION: Sahtu Western Mainland NWT

HISTORY

1968:	discovery of high-grade showings
1968-77:	exploration, diamond drilling, all-weather road construction
1977-79:	diamond drilling
1980-84:	underground bulk sampling, metallurgical testing

OWNERS: **Cominco** Ltd. 100'%0
(X Mineral Claim Block)
#500, 200 Burrard Street
Vancouver. BC V6C 3L7
Tel: 604-682-0611
Fax: 604-685-3041

Placer Dome Inc. 100?40
(Y Mineral Claim Block)
#1600, Bentall IV, 1055 Dunsmuir Street
P.O. Box 49330
Vancouver, BC V7X 1P 1
Tel: 604-682-7082
Fax: 604-682-7092

SUMMARY

The Howard's Pass area contains major base metal deposits hosted in Paleozoic sedimentary rocks of the Selwyn Basin.' Exhalative zinc-lead mineralization occurs in a series of Early Silurian. limey to carbonaceous, cherty mudstones and chert beds. The XY deposit is situated at the NWT-Yukon border with the majority of its mineralization in the Yukon. The XY deposit is up to 50 m thick and several km in areal extent. It consists of well-bedded. finely laminated sediments containing fine-grained sphalerite, pyrite, and galena. .430 km wide area in the Yukon hosts the large Anniversary and OP deposits.

Infrastructure at the site includes a now-abandoned. 64 km long, all-weather road connecting Howard's Pass to the Yukon's Nahanni Range Road. and a short gravel airstrip.

SIGNIFICANT RESULTS

The Howard's Pass area contains drill-indicated reserves of 113,400.000 tonnes grading 5% Zn and 2% Pb plus additional inferred reserves of 362,900,000 tonnes at similar grades.[2] The XY deposit contains drill-indicated reserves of 59,000,000 tonnes grading 5.4% Zn and 2.1 % Pb, including 8,200.000 tonnes grading 10.6% Zn and 5.5% Pb.

REFERENCES

1. Good fellow, W.D. and Jonasson, I. A. (1983), *'Environment of Formation of the Howard's Pass (XY) Zn-Pb Deposit, Selwyn Basin, Yukon', in Mineral Deposits of the Northern Cordillera, Morin, J. A. (cd,), Special Volume 37, The Canadian Institute of Mining and Metallurgy, Montreal, p. 19-50.*
2. Anonymous (1989), *Canadian Mineral Deposits Not Being Mined in 1989, Mineral Bulletin MR 223, National Mineral Inventory, Mineral Policy Sector, Ottawa, Canada.*

MACTUNG

TUNGSTEN

LOCATION: 270 km southwest of Norman Wells, on the NWT-Yukon border at Macmillan Pass

1050/8 63”17’ N 130°09’ W

SETTLEMENT REGION: Sahtu Western **Mainland** NWT

HISTORY

1962:	discovery by aerial reconnaissance
1962-68:	exploration, surface diamond drilling of 14,000 m in 90 holes’
1973:	800 m of underground development. underground diamond drilling of 2300 m in 51 holes, metallurgical testing
1974-77:	environmental and feasibility studies
1979-80:	underground bulk sampling, ecological studies

OWNERS: Canada Tungsten Inc. 100%
#1600. 1066 West Hastings Street
P.O. Box 12525, Oceanic Plaza
Vancouver. BC V6E 3X1
Tel: 604-689-0046
Fax: 604-688-8370

SUMMARY

Comprising approximately 9% of the world’s reserves. Mactung is the largest known tungsten deposit in North America.[2] This skarn tungsten deposit occurs in shaley carbonate rocks of Cambrian age that were subsequently intruded and altered by quartz monzonite stocks during the Cretaceus period. Mactung straddles the territorial border with approximately 80% of the deposit in the Yukon and 20°/0 in the NWT.[3]

Preliminary plans for the development of the Mactung deposit included an airstrip, underground access. plant facilities and a tailings disposal area in the NWT.[3] Present access is via the Yukon/NWT Canol Heritage Trail. Mactung has an estimated minelife of approximately 50 years.

SIGNIFICANT RESULTS

Mactung’s extractable reserves are 6.100,000 tonnes grading 1.2’% WO_3 in an underground portion. plus 17,200.000 tonnes grading 0.8% WO_3 which could be extracted in an open pit operation.[4] The deposit is open at depth and along strike.’

REFERENCES

1. Atkinson, D. and Baker, D.J. (1983), *'Recent Developments in the Geologic Understanding of Mactung', in Mineral Deposits of the Northern Cordillera, Morin, J.A. (cd), Special Volume 37, The Canadian Institute of Mining and Metallurgy, Montreal, p. 234-243.*
2. Crowson, P. (1992), *'Tungsten' in Minerals Handbook, 1992-93: Statistics and Analyses of the World's Minerals Industry, Stockton Press, New York, p. 279-286.*
3. **Energy,** Mines and Petroleum Resources (1990), *'Status of the Mactung Tungsten Deposit, Macmillan Pass Area on the NWT- Yukon Border', Information Brief of meeting between J. Devitt, Canada Tungsten Mining Corp. 'and representatives, Energy, Mines and Petroleum Resources, Government of Northwest Territories, January 10, 1990 Meeting, 3p.*
4. Canada Tungsten Inc. (1992], *'Tungsten Sector, Review of Operations and Projects', Annual Report to Shareholders, p. 3.*

PRAIRIE CREEK

ZINC, LEAD, SILVER

LOCATION: 170 km west of Fort Simpson. 20 km north of Nahanni National Park
95FI1O 61°34' N 124° 48'W

SETTLEMENT REGION: Deh Cho Western Mainland NWT

HISTORY

1928:	discovery
1959-60:	staking, trenching
1966-69:	diamond drilling, airstrip, 180 km winter road
1970-75:	underground development, diamond drilling, metallurgical testing (> 11,000 m of diamond drilling, >3600 m of underground drifting by 1972)1
1981-82:	mine and 1200 tpd mill constructed, $64 million development plan suspended due to poor silver prices
1983-1991:	care and maintenance
1992-93:	discovery of stratiforrn mineralization, diamond drilling of 6,488 m in 22 holes[2]
1993:	metallurgical testing, diamond drilling of 5,461 m in 23 holes[2]
1994:	diamond drilling of 38 holes totalling 12,200 m^3, new zone intersected, feasibility study underway
Feb./95:	infill drilling program planned to confirm reserves'
May/95:	change in management: exploratory drill program planned

OWNERS: San Andreas Resources Corporation 100?'0
#900, 595 Howe Street
Vancouver, BC V6C 2T5
Tel: 604-688-2001
Fax: 604-688-2043

SUMMARY

The presence of galena-rich veins in the Prairie Creek area was first brought to the attention of the mining industry by aboriginal trappers in 1928.' Fifteen occurrences of mineralized veins, pods and boulders were known by 1980.5 Thirteen sulphide-rich vein showings, 5 zinc showings consisting of cavity-filling mineralization and 2 drill-indicated stratiform mineralized zones were documented in 1993.[6] The showings occur within a package of Silurian-Ordovician carbonate rocks along a 36 km trend.

This zinc-lead-silver vein system has a total length of 15 km. The significant No. 3 Zone varies from 0.6 m to 6.1 m wide (averaging 4.5 m) and is >1 km long.[5,6] The 1992 drilling program intersected stratiform mineralization while testing the No. 3 Zone at depth. The discovery drillhole cut 22.3 m grading 12.7% zinc, 6.7% lead, and 54.8 g/t silver.[6] The Zone 3 stratiform deposit has been traced for 320 m by 70 m and is 9.5 m thick.[6]

There is a high potential for large sediment-hosted, lead-zinc deposits in the Prairie Creek area.[7,8] Formerly referred to as the Cadillac deposit, Prairie Creek occurs as an embayment at a facies change between platformal carbonate rocks and basinal calcareous shales of the Selwyn Basin. The carbonate rocks contain numerous, small, MVT lead-zinc showings. Some areas of the Selwyn Basin, particularly in the Meilleur River area where there is precipitation of lead and zinc sulphides from hydrothermal springs, are marked by intense geochemical anomalies.

Drilling continued in 1994 in order to expand the geological reserves. The company applied for government permits and continued with environmental impact studies.[4] In addition. a feasibility study has been proposed. The study will examine increasing the mill capacity to 2000 tpd as well as upgrading the winter road to an all-weather road. A 12,000 m exploratory drill program has been planned for the summer of 1995 in order to identify additional in situ resources with potential for high conversion to reserves by subsequent infill drilling.[10,11]

Senior personnel changes in management at San Andreas have occurred.'0 The new objectives regarding the development of the Prairie Creek deposit have not yet been decided. It is anticipated that development will either proceed as soon as possible or that the company will wait for the results of the summer drill program.

SIGNIFICANT RESULTS

The Prairie Creek deposit contains reserves of 3,856.000 tonnes grading 14.66% Zn.13.01% Pb and 202.3 g/t Ag.[4,9] The *in situ* metal inventory stands at 565 kt zinc, 502 kt lead and 780 t silver. The No. 3 Zone. with 65% of reserves, is open at depth. The Zone 3 stratiform and vein deposit. with <30% of reserves, is open in three directions. An additional stratiform mineralized zone has been discovered at Zone 6. The vein showings at Zones 7 and 8 have potential for additional reserves as well as for zones of stratiform mineralization.

A new horizon of stratiform mineralization measuring 24.8 m in width and grading 10.28% Zn. 4.56% Pb, and 53.45 g/t Ag was discovered in 1994.[3] In addition. the *in situ* geological resources of the deposit were increased to 6.2 million tonnes grading 12. 18°/0 Pb. 12.86°/0 Zn. and 179.9 g/t Ag.[4]

REFERENCES

1. Padgham, W.A. et al. (1975), *'Prairie Creek Property', in Mineral Industry Report 1971 and 1972. Northwest Territories, EGS 1975-8, Vol. 3 of 3, Indian Affairs and Northern Development, Yellowknife, NWT, p. 162-165.*
2. McAleenan, C. (1994), *Personal Communication, San Andreas Resources Corporation, May 30, 1994 Fax, 2p.*
3. Ellis, C. (1995), *'Cordilleran Structural Province', in Exploration Overview 1994, NWT, Kusick, R. and Goff, S. P. (cd.), NWT Geological Mapping Division, Indian Affairs and Northern Development, Yellowknife, NWT, p. 18.*
4. San Andreas Resources Corp. (1995), News *Release, February 3, 1995, 1p.*
5. Lord, C.C. (1984), *'Prairie Creek Property', in Mineral Industry Report 1980/81. Northwest Territories, Brophy, J.A. and Ellis, C. E. (cd.), EGS 1984-5, Indian Affairs and Northern Development, Ottawa, Canada, p. 427-428.*
6. San Andreas Resources Corp. (1993), *'Prairie Creek Property', Annual Report to Shareholders, p. I-5,*
7. Spirito, W. A., Jefferson, C. W. and Pare, D. (1988), *'Comparison of Gold, Tungsten and Zinc in Stream Silts and Heavy Mineral Concentrates, South Nahanni Resource Assessment Area, District of Mackenzie', in Current Research, Part E, Geological Survey of Canada, Paper 88-1E, p. 117-126.*
8. Hamilton, S. M., Michel, F.A. and Jefferson, C. W. (1988), *'Groundwater Geochemistry, South Nahanni Resource Assessment Area, District of Mackenzie', in Current Research, Part 1E, Geological Survey of Canada, Paper 88-1E, p. 127-136.*
9. The Northern Miner (1994), *'San Andreas drill program at Prairie Creek mine project', October 24, 1994 edition, The Northern Miner, Toronto, p. 15.*
10. Energy, Mines and Petroleum Resources (1995), *'San Andreas Resources (Prairie Creek Mine) update', Information Brief, May 17, 1995, 2p.*
11. *San* Andreas Resources Corp. (1995), News *Release, June 1, 1995, I p.*

SECTION 4: ARCTIC ISLANDS

Geological Summary

The Arctic Islands region (Figure 5) encompasses an extensive area that measures 2500 km from east to west (Baffin Island to Banks Island) and 2000 km from Ellesmere Island in the north to the mainland in the south.

The diverse geology of the Arctic Islands consists of:

(1) the Innuitian Structural Province to the north/northwest,
(2) the Arctic Platform to the south/southwest,
(3) Archean-Paleoproterozoic granitic and supracrustal rocks of the Churchill Province on Baffin, eastern Devon and Ellesmere islands plus the Melville and Boothia peninsulas.
(4) the early Neoproterozoic Bylot Supergroup on northwestern Baffin Island. host to the Nanisivik lead-zinc mine. and
(5) the late Neoproterozoic Shaler Supergroup exposed at the Minto and Duke of York inliers of the Bear Province on Victoria Island.

The Innuitian Orogen is North America's most northerly and least studied mountain belt, extending from the Queen Elizabeth Islands to northern Greenland. Rugged, northern Ellesmere Island is underlain by Proterozoic and Paleozoic rocks which were deposited in a deep basinal environment. The western portion of Ellesmere Island is underlain by rocks of the Sverdrup Basin, as are many of the larger islands further west. This basin is infilled with a thick package of Paleozoic to Cenozoic sedimentary rocks, the majority of which have been intensely folded and thrust-faulted.

The Arctic Platform consists of relatively undisturbed Phanerozoic sedimentary successions. Locally. however, inliers of Archean to Proterozoic igneous rocks are exposed as a result of uplift or arching of these cover rocks.

Population

The **Arctic Islands** region includes one town, thirteen hamlets and the Nanisivik minesite for a total population of 11.536 persons (Table 14). Four of the five largest communities are on Baffin island.

Town of Iqaluit	3,552	Broughton Island	461
Pangnirtung	1,135	Lake Harbour	365
Cambridge Bay	1,116	Holman	361
Pond Inlet	974	Nanisivik	294
Cape Dorset	961	Resolute	171
Gjoa Haven	783	Grise Fiord	130
Clyde River	565	Sachs Harbour	125
Arctic Bay	543		

Table 14: Arctic Islands; Community Populations. 1991 Census

Access

Sea and air transportation are the only means of access into the Arctic. All communities are on tidewater. Non-perishable supplies for the communities and two minesites are hauled by sea freighters with ice-breaking capability during the brief summer shipping season. Zinc and lead concentrates from the two base metal mines (Polaris and Nanisivik) as well as high-grade petroleum crude from the Bent Horn Field (on Cameron Island. 320 km northwest of Resolute) are shipped by sea to market.

Mining

Mineral activity in the Arctic began long before Europeans arrived in Canada's North. Soapstone and native copper were recovered by the Inuit and earlier Thule cultures. made into artifacts. and traded to other native peoples further south. Today, Inuit carvers across the Arctic still recover soapstone as raw material for their art.

During their search for the Northwest Passage, the gold-seeking crew of the English explorer. Martin Frobisher, mined 1800 tonnes of "blacke stone" or worthless iron pyrite near Baffin Island in 1577. In addition, coal was recovered from seams in a number of locations by native peoples. explorers and whalers.

Today, zinc and minor lead concentrates from the modern mines in Canada's North are shipped to European smelters and sold on world markets. The Polaris mine on Little Cornwallis Island and the Nanisivik mine on northwestern Baffin Island are both situated within 3 km of tidewater and produce some of the lowest-cost zinc in the world. The Nanisivik mine began production in 1976; Polaris opened in 1981. In 1992, these two mines produced $289 million or 60.6% of the total value of metal shipments from the NWT. In the same year, each operation mined their ten millionth tonne of ore. Reserve figures for both mines are given below.

Mine	Tonnes	Zn	Pb	Ag	No. of Employees
Polaris*	8,600,000	13.4%	3.7%	---	227 (year-end)
Nanisivik**	2,321,000	8.5%	0.2%	40 g/t	200 (average)

Table 15: Ore Reserves for Polaris and Nanisivik Mines

*Cominco Limited 1993 Annual Report
**Conwest Exploration Co. Ltd. 1993 Annual Report

Exploration

Large deposits of high-grade iron ore and a sizable resource of coal exist in the Arctic Islands region. There are direct mill-feed iron formation deposits at Eqe Bay and Mary River on Baffin Island. The best known coal measures are found on western Ellesmere Island and eastern Axel Heiberg Island. Discussion will focus on the 4 selected significant deposits given below and shown on Figure 5.

Name	Deposit type	Page(s)
Eclipse	Carbonate-hosted Lead-Zinc	118
Eqe Bay	Lake Superior-type Iron Formation	119
Fosheim Peninsula	Coal	121
Mary River	Lake Superior-type Iron Formation	124

Table 16: Significant Deposits of the Arctic Islands

Much of the Arctic **Islands region** has not yet been explored. The high costs of transportation and logistical support essential for exploration in the remote Arctic coupled with the short summer field season have hindered the efforts of the mining industry. When mineral exploration does occur. however, base metal deposits are often primary targets. But only a few areas, such as in the vicinities of the two active mines. have experienced ongoing base metal exploration.

Elsewhere, the Shaler Supergroup on Victoria island is being explored because of its newly recognized potential for nickel. copper. and PGEs. Virtually all of Victoria Island that has not been staked for nickel-copper-PGEs has now been staked or permitted for diamond exploration. Kimberlite pipes discovered during the 1970s on Somerset Island and the Brodeur Peninsula are being reexamined for their diamond potential. Small kimberlitic pipes on Bathurst Island are also being reevaluated. Sedimentary copper and lead-zinc potential on Melville Island has been indicated because the island is underlain by rocks of the same age and geological setting as the Selwyn Basin in the Cordillera. An occurrence of lapis lazuli at Soper River, Baffin Island. has been excluded from a territorial park for future quarrying by Inuit carvers. The mineral potential is high and extremely diverse in the **Arctic Islands.** as shown in Table 16.

Rock Type	Significant Potential For
Precambrian Rocks of Churchill Province (Baffin Island)	Archean Lode Gold Volcanogenic Massive Sulphide Sediment-hosted Lead-Zinc Lake Superior-type Iron Formation
Sverdrup Basin	Sediment-hosted Lead-Zinc Sedimentary Copper
Arctic Platform	Carbonate-hosted Lead-Zinc Sedimentary Copper Kimberlite-hosted Diamonds
Proterozoic Mafic/Ultramafic Rocks of Bear Province (Victoria Island)	Norils'k-type Nickel-Copper-PGEs Volcanic-Redbed Copper

Table 17: Exploration Potential of the Arctic Islands

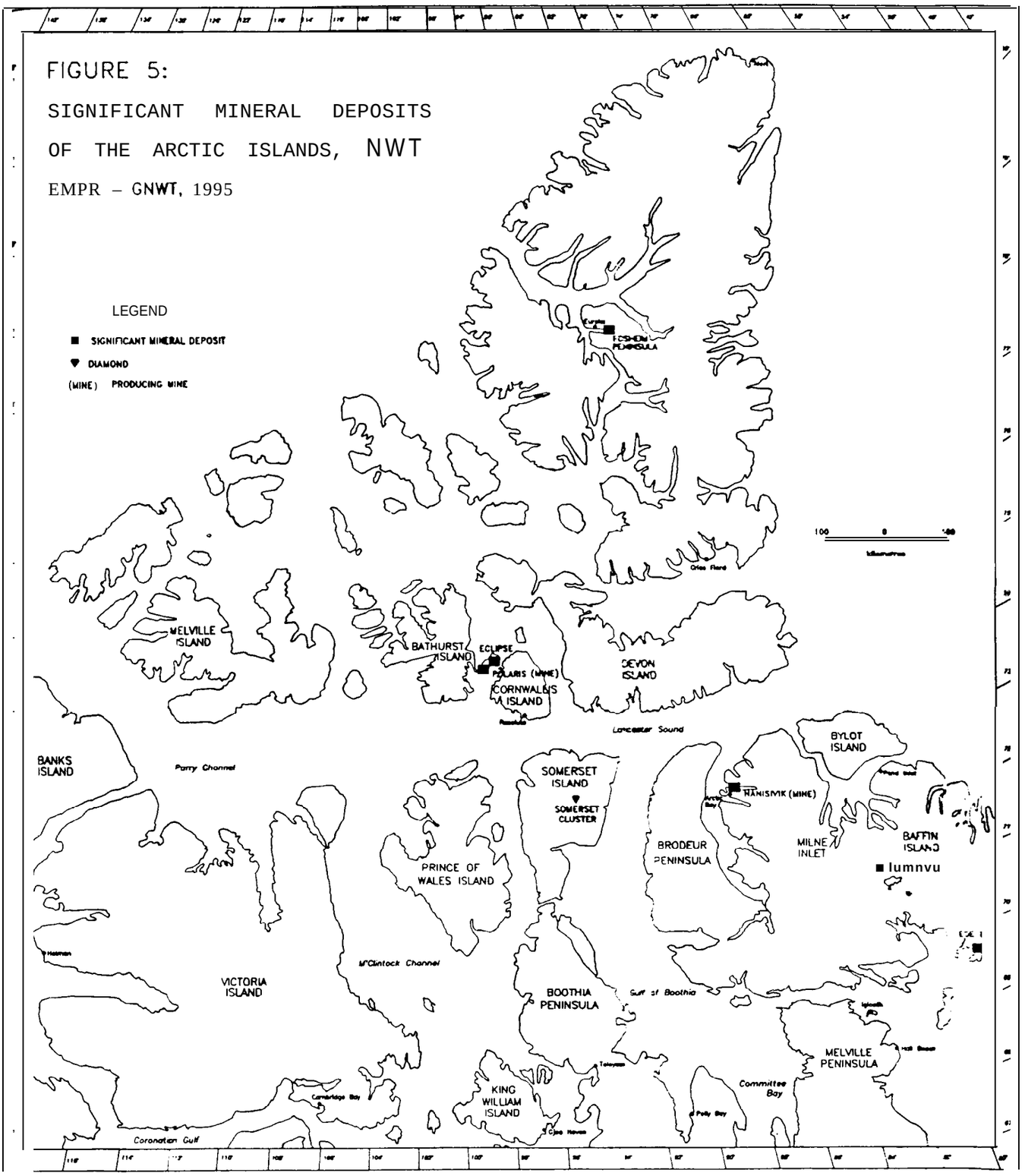

Figure 5: Significant Mineral Deposits of the Arctic Islands

ECLIPSE

ZINC, LEAD

LOCATION: **100 km** north-northwest of Resolute, 30 km northeast of Polaris Mine on the eastern lobe of Little Cornwallis Island

68H/9 75°33' N 96°09' W

SETTLEMENT REGION: Nunavut (Baffin) Arctic Islands

HISTORY

1960:	discovery
1965:	diamond drilling of 704 m in 37 holes'
1984:	exploration, geophysical surveys[2]

OWNERS: Cominco Ltd. 1009'0
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Vancouver, BC V6C 3L7
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SUMMARY

Eclipse is the largest reported deposit of more than 12 lead-zinc occurrences found in the vicinity of the Polaris base metal mine. MVT mineralization occurs in brecciated zones of Ordovician carbonate rocks of the Thumb Mountain Formation. Eclipse consists of 3 zones (the largest being the West Breccia Zone) along a 2.4 km long trend. Minor exploration work on the Eclipse deposit was performed during the mid- 1960s. [1] With the discovery of the high-grade Polaris deposit. exploration resumed in this portion of the Cornwallis Lead-Zinc District in 1984.[2]

SIGNIFICANT RESULTS

The West Breccia Zone contains 907,000 tonnes grading 12.43% Zn and 2. 18% Pb of drill-indicated reserves. Four of the six delineated holes drilled intersected lead-zinc mineralization. The two smaller zones of the Eclipse deposit contain 246.000 tonnes grading 3.60°/0 Zn and 0.05°/0 Pb and 240,000 tonnes grading 3 .45% Zn and 2. 19% Pb. respectively. [1]

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1. Laporte, P.J. (1974), *'Little Cornwallis Island Project, Arctic Islands', in Mineral Industry Report 1969 and 1970, Northwest Territories, Volume 2, Indian Affairs and Northern Development, Yellowknife, NWT,* p. 166.
2. Gibbins, WA. (1987), *'Central Arctic: Cornwallis Lead-Zinc District Islands', in Mineral Industry Report. 1984-85, Northwest Territories, Indian Affairs and Northern Development, Yellowknife, NWT,* p. 66.

EQE BAY

IRON

LOCATION: 200 km east of Igloolik, 3 km from tidewater on Baffin Island
37C/9 69°42' N 76°46' W

SETTLEMENT REGION: Nunavut (Baffin) Arctic Islands

HISTORY

1958:	first reported
1968:	GSC aeromagnetic survey, staking
1969:	exploration, channel sampling, metallurgical testing, diamond drilling of 278 m in 20 holes
1995:	GSC mapping indicates an extension of the main iron formation occurrence'

OWNERS: Crown Land

SUMMARY

Significant deposits of high-grade, silicate and oxide facies iron formation occur in a 2900 m thick sequence of intensely folded, intermediate volcanic rocks belonging to the Mary River Group within the Eqe Bay Greenstone Belt. A 10 km by 6 km area between Eqe Bay and Grant-Suttie Bay contains at least 9 major occurrences and 6 showings.[2] Recent mapping suggests that this thick band of iron formation extends further along strike to the northeast than previously indicated.'

Zones 1 to 4 consist of steeply dipping, banded magnetite-hematite iron formation ranging from 30 m to 120 m in width.[3,4] Zone 1 outcrops over a distance of 2 km. Other zones are exposed for up to 800 m with strike extensions indicated by magnetic surveys. Open pit stripping ratios are predicted to be 1:1. Grinding to -325 mesh of the fine-grained iron formation improves iron recovery from 90°/0 to ≥ 96°/0.

SIGNIFICANT RESULTS

A preliminary ore reserve of 329,000.000 tonnes grading 67% iron and <1% impurities is indicated for Zones 1 to 4 at Eqe Bay.[2,3] Zone 1 is estimated to contain 142.()()().000 tonnes to 183 m depth.

REFERENCES

1. Scammel 1. R.J. and Bethune, K.M. (1995), *'Archean and Proterozoic lithology, structure, and metamorphism in the vicinity of Eqe Bay, Baffin Island, Northwest Territories ,' in Current Research 1995-C, Geological Survey of Canada, p. 53-66.*

2. National Mineral Inventory (1975), 'N7S37C/9 , *Reference Fe 1 ', Occurrence Card published by Mineral Policy Sector, Department of Energy, Mines and Resources, Ottawa, Canada, 3p,*

3. Laporte, P.J. (1974), *'Eqe Bay Iron Deposits, Baffin Island', in Mineral Industry Report 1969 and 1970, Northwest Territories, Volume 2, Indian Affairs and Northern Development, Yellowknife, NWT, p. 139-143.*

4. Crawford, W.J.P. (1973), *'Metamorphic iron Formations of Eqe Bay and Adjacent Parts of Northern Baffin Island', PhD thesis, University of Washington, Seattle, USA, 101p.*

FOSHEIM PENINSULA

COAL

LOCATION: Fosheim Coal Seam, one of many widespread seams. is 20 km southeast of the Eureka weather station on Ellesmere Island

49G/15 79° 55'N 85°15' W

SETTLEMENT REGION: Nunavut (Sverdrup) Arctic Islands

HISTORY

1875-1876: first known mining of northeastern Ellesmere Island coal by Nares polar expedition

1981-83: more than $2.25 million worth of exploration performed on 155 coal licences on Ellesmere and Axel Heiberg islands

OWNERS: **Nunavut** Tunngavik Inc. (in part)
Surface rights excluding mineralization per Article 19.2.1 b, Nunavut Settlement Region Agreement

Crown Land (in part)

SUMMARY

The Late Cretaceus and Tertiary Eureka Sound Formation hosts an inferred coal resource of more than 44 billion tonnes in the west-central Ellesmere Island and eastern Axel Hieberg Island areas. [1,2,3] Bustin and Miall (1991) have inferred a total coal resource in excess of51 billion tonnes for the Banks. Axel Heiberg, Ellesmere and Baffin islands - the equivalent of 20% of the total inferred coal resources of Canada.[4]

The coal-bearing Eureka Sound Formation attains a maximum thickness of 3300 m at Fosheim Peninsula and outcrops over an area of 2500 km^2. The regional structure is that of a open synclinorium. The coal grade varies systematically from the base to the top of the formation. ranging from high volatile bituminous coal (0 m to 600 m), to sub-bituminous coal (600 m to 1625 m) and lignite (1625 m to 3300 m). The basal seams are of better quality. thicker. and continuous along a 15 km strike length.

In the Remus Creek area. a partially exposed section of the Eureka Sound Formation contains 86 coal seams. One seam is 10 m thick and 28 of the seams are greater than 1 m thick. East of Slidre Fiord. a 5.1 m thick seam outcrops for a distance of 850 m above the base of the Eureka Sound Formation. and is informally named the Fosheim Coal Zone.[2] Multiple seams up to 15 m thick are found near the top of the formation elsewhere on Fosheim Peninsula.[3]

The regional structure of eastern Axel Heiburg Island is slightly more complex.[1] Coal ranking here is non-systematic and the coal quality is, in general, poorer than that found on the Fosheim Peninsula. At Mokka Fiord, a 1500 m thick, 70°A exposed section of Eureka Sound Formation contains 40 seams. Eighteen of these seams are greater than 1 m thick, with the widest seam being approximately 6 m thick and having a high clay content.

The coal resources of the High Arctic are of favorable grade and quality.[4] Known reserves consist of high-grade thermal deposits with low concentrations of lower ranking metallurgical coal. Sulphur content is also low, averaging 0.5?40. The ash content can vary greatly, but a number of clean coal seams containing less than 10% ash have been noted.

Given the huge surplus of coal reserves in the world, the sizable remote coal measures of the High Arctic may never be developed. However, given the cyclic nature of mining, further exploration of the coal resources of the High Arctic may be realized.

SIGNIFICANT RESULTS

Inferred coal resources of this region are given in Table 18.

Ellesmere Island
Fosheim Peninsula [1,4] 4 billion tonnes high volatile bituminous 7 billion tonnes sub-bituminous 10 billion tonnes lignite 21 billion tonnes (total)
Vesle Fiord [3] 4 billion tonnes (total)
Strathcona Sound [3] 10 billion tonnes (total)
Stenkul Fiord [3] Tonnage not published for multiple seams up to 25 m thick
Axel Heiberg Island
Mokka Fiord [1] 4 billion tonnes sub-bituminous 5 billion tonnes lignite 9 billion tonnes (total)

May Point [2]
Tonnage not published for basal 7 m thick seam exposed for 16 km

Table 18: Inferred Coal Resources of the High Arctic

REFERENCES

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MARY RIVER

IRON

LOCATION: 150 km south-southwest of Pond Inlet on northwest Baffin Island
37G/5 **71°19' N 79°14' W**

SETTLEMENT REGION: Nunavut (Baffin) **Arctic Islands**

HISTORY

1962:	**discovery** and staking
1963-64:	exploration, channel sampling, bulk sampling, diamond drilling of> 1500 m
1965:	105 km tote road to Milne Inlet, two airstrips constructed
1982:	outlining of tonnage by drilling for open-pit mining]

OWNERS: Baffinland Iron Mines Limited (Consortium) 100?40

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Toronto Dominion Building
Winnipeg, MB R3B 3K6 **Tel: 204-949-4261**
Fax: 204-942-8 177

SUMMARY

Iron formation in the Mary River area was discovered in 1962, when Murray Watts recognized that a summit ridge of the Nuluujaak Mountains. a landmark of the Fifth Thule Expedition of 1921, was composed of massive iron ore. The deposit consists of large and smaller occurrences of high-grade. low silica and phosphorous. direct mill-feed. banded hematite-magnetite iron formation within a belt of complexly folded Archean metasedimentary rocks in the Mary River area of northwest "Baffin Island.'"

The most significant deposit is a 60 m thick. steeply dipping zone of hard. blue hematite and dense magnetite that extends over a distance of 2.7 km. [1] The high grade portions of the smaller deposits vary from 7 m to 30 m in width. ranging up to an inferred width of 120 m at one site.[3,4]

SIGNIFICANT RESULTS

The Mary River No. 1 deposit contains 127.000.000 tonnes' of iron ore grading 68% Fe[1,3,4] and constitutes 94°/0 of the total iron resource indicated for the Mary River area deposits.

REFERENCES

1. Gibbins, W.A. *(1982), 'Mining Developments, Mineral Inventory and Metallogenic Models: Arctic Regions, Northwest Territories, Canada', in Arctic Geology and Geophysics, Embry, A. F. and Balkwill, H. R. (eds.), Canadian Society of Petroleum Geologists, Memoir 8, p. 113-133.*
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3. Schiller, E.A. (1964), *'Baffinland Iron Mines Limited, Franklin District', Paper 65-11, Geological Survey of Canada, p. 54-58.*
4. **National Mineral** Inventory **(1980),** *'Ni"S37G/5 , Reference Fe 1 ', Occurrence Card published by Mineral Policy Sector, Dept. of Energy, Mines and Resources, Ottawa, Canada, 3p.*