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**PART 1**  
**EXPLORATION SUMMARY 2000**

**Mining and Mineral Exploration Summary**

**Introduction:**

Diamonds continue to take the lead in mining and mineral exploration in the Northwest Territories. With permitting completed, *Diavik* is expected to be the next diamond mine, coming on stream in 2003. Mine construction will commence in 2001. Thirty diamond projects and twenty-four metal exploration projects (Table 1.1) have been

reported this year. The diamond projects have greater ground coverage and larger geochemical and geophysical programs. Other than drill programs on the *NICO*, *Howard's Pass* and *Hart* properties, many of the gold and base metal projects were small scale programs, often grass roots exploration. The more advanced active projects are presented in Table 1.2.

**Table 1.2: Advanced Exploration Project Resources**

<b>Project</b>	<b>Operator</b>	<b>Commodity</b>	<b>Resources</b>
Diavik	Diavik	diamonds	25.7 million tonnes proven and probable @ 4.2 ct/t
Snap Lake NW Dyke	De Beers Canada Mining Inc.	diamonds	21.6 million tonnes indicated @ 1.9 ct/t and 24.0 million tonnes inferred @ 1.98 ct/t
Kennady Lake Tuzo Pipe	Mountain Province Diamonds Inc.	diamonds	10.2 (including 4.1 inferred) @ 1.22 ct/t wt. avg.
Kennady Lake Hearne Pipe	Mountain Province Diamonds Inc.	diamonds	6.86 (including 0.31 inferred) @ 1.71 ct/t wt. avg.
NICO Bowl Zone	Fortune Minerals Ltd.	gold-cobalt-bismuth	5 million tonnes (indicated) @ 0.7 g/t Au, 0.2% Co, and 0.260% Bi
Prairie Creek*	Canadian Zinc Corp.	zinc-lead-silver	11.8 million tonnes @ 12.5% Zn, 10.1% Pb, 161 g/t Ag
Howard's Pass	Copper Ridge Explorations Inc.	zinc-lead-silver-cadmium	113.4 million tonnes (calculated by Placer Dome) @ 5.4% Zn, 2.1% Pb
Hart Property "M" Zone	Solid Resources Ltd.	zinc-lead-silver-gold	1.2 million tonnes @ 5.10% Zn, 2.2% Pb, 337 g/t Ag, 0.6 g/t Au
Thor Lake, T- Zone**	Rare Metal Alloys Inc.	beryllium	0.5 (proven) @ 1.11% BeO

\* Currently waiting permitting; reconnaissance exploration only

\*\* Testing and market evaluation

## Exploration:

Twenty-five kimberlite bodies were discovered this year (Table 1.1). Eleven of these were drill tested by **BHP Diamonds Inc.** bringing the total to 136 on the *NWT Diamonds* property, Lac De Gras area. Mini bulk samples were taken from **Ashton Mining of Canada's** Cygnus kimberlite on the *Roundrock* property; and **BHP Minerals'** Wolverine, Zach, Cougar, and the Lynx kimberlite pipes on the *NWT Diamonds* property. **De Beers Canada Mining Inc.** acquired 100% of the *Snap Lake Project* by an unsolicited takeover of **Winspear Resources'** 60% interest followed by a purchase of **Aber Resources Ltd.'s** 40% interest. **De Beers** continued with the underground bulk sample program from Snap Lake's NW dyke, initiated by **Winspear**. A 1,015 m decline was driven to access the NW dyke under Snap Lake. MRDI completed a mineral resource estimate of the NW dyke for **Winspear** (Table 1.2). **SouthernEra Resources Ltd.** intersected kimberlite on the *Mackay Lake* property, believed to be the downdip extension of the NW Dyke at Snap Lake, and discovered another kimberlite when drilling the *Yamba Lake* property.

A study conducted by **De Beers** on **Mountain Province Diamonds Inc. AK** property at **Kennady Lake** indicated that conventional open pit mining of the 5034 and Hearne pipes, and the top of the Tuzo pipe was below an agreed upon rate of return. Resource calculations are listed in Table 1.2. A final decision will be based on results of a \$10 million bulk sampling program announced by **De Beers** and **Mountain Province** for 2001. Exploration drilling resulted in the discovery of two new pipes on the **AK** property.

**Diamondex Resources Ltd.**, explored six diamond projects, formerly operated by **Winspear. GGL Diamond Corp.** explored 5 of their diamond projects including a seismic survey on the *Fishback* property. A total of eight geophysical targets were drill tested, by operators **De Beers Canada Exploration** on **GMD Resources' Royce Group** of claims; no kimberlite was intersected.

**Darnley Bay Resources** located nine kimberlites on their property, three of which are diamondiferous. **Shear Minerals** recovered a total of 1,180 diamonds from the *Nicholas Bay* kimberlite.

Eight airborne surveys were flown for diamond projects; none were reported for metals.

Five metals projects were drill-tested in comparison with 16 drill-tested diamond projects. A new resource was calculated for **Fortune Minerals NICO** cobalt-gold-bismuth project in the Bear Province (Table 1.2), based on an additional 6,000 m drilling and open pit design. A 5073 m (13-hole) drill program by **Solid Resources Ltd.** on their *Hart* volcanogenic massive sulphide and gold property in the Slave Province resulted in intersecting the down-plunge extension of the M-Zone. In the Cordilleran Orogen, **Copper Ridge Explorations Inc.** drilled 2,000 m on the *Howard's Pass* zinc-lead-silver-cadmium deposit to test the open pit mining potential and to update resource calculations. **Copper Ridge** was not able to make the initial payment for the property after partners, **Billiton Metals Canada** terminated their agreement in November. **Canadian Zinc** evaluated known mineral occurrences on the previously advanced zinc-lead *Prairie Creek* property, also in the Cordilleran, and completed a reconnaissance geochemical program on the adjacent *Gate* claims. A comprehensive scoping study including mill upgrades is planned to be completed by the end of January 2001. Other studies in planning are a pilot plant to test the metallurgy, as well as a drill program. Applications for permits have been submitted.

**Dave Smith** re-directed the *Drybones Bay* project from diamonds to gold this year when a large, mineralized shear was drill-intersected.

Reconnaissance gold exploration was conducted by a number of companies including **Kansai Corporation, Navigator Exploration Corp., Tyhee Development Corp.**, and a number of prospectors on their properties in the *Slave* and *Bear* Provinces.

No new exploration was conducted at *Thor Lake* Be-Zr-Ta-REE-Nb-Ga deposit, 100 km southeast of Yellowknife. However, **Rare Metal Alloys Inc.**, a wholly-owned subsidiary of **Highwood Resources**, reported to spend \$300K on a study of mining beryllium from the deposit. **Highwood Resources** received a land use permit this year to conduct work at Thor Lake, excluding bulk sampling. **Dave Nickerson** processed a bulk sample of tantalum-bearing pegmatite located near Yellowknife.

## Mining:

The Northwest Territories has three operating Mines: the *Ekati* diamond mine, owned by BHP Diamonds (51%) - DiaMet (29%); and *Con* and *Giant* gold mines owned by Miramar Mining Corporation. Production summaries are presented in Table 3.

*Ekati* produced close to 2 million carats of diamonds in the first three-quarters of 2000 and sold almost an equal amount at an average price of \$US169/ct, for the same period. A total of 5 million carats have been recovered to date. A 10.22 carat, pear-shaped gem, cut from a 25-carat stone is valued at \$763,000 and the largest diamond found to date is a 186.2-carat stone of low quality.

Miramar Mining Corporation's *Con* and *Giant* mines produced over 3700 kg (121,874 ounces) of gold in 2000. *Con* delivered 47,206 tonnes of ore grading 16.5 g/t compared to *Giant*'s delivery of 16,993 tonnes @ 15.4 g/t for the fourth quarter. More selective mining methods, and

reduced dilution contributed to an 18% improvement in mill grade at *Con*, with an average of 14 g/t gold. Disappointing grades and production for *Giant* resulted in a mine overhaul plan implemented late in the third quarter. The plan focussed largely on pillar extraction of ore from historically mined areas with a reserve of 69,846 tonnes grading 13 g/t to supplement refractory ore mined at *Con*. Since the plan was implemented, 17,235 tonnes grading 15.4 g/t have been mined from *Giant* and processed at *Con*. Most of this was in addition to the planned tonnage and was of higher grade which should help defer the closure of *Giant* past the expected September 2001 date. Cost savings and increased refractory ore recoveries were achieved through improved control over dilution, decreased operation costs, and optimising ore handling. Reduction in operations resulted in a staff reduction by 20%.

An exploration drilling program completed below the 5900 level at the *Con* Mine failed to intersect significant mineralization. Drilling on a target south of the mine was postponed until gold prices improve.

**Table 1.3: Mine Production**

Mine	Production	Production Costs	Production to Date
Ekati	1,977,000 carats of diamonds in 9 months 1,937,000 carats sold at an average price of \$US169/ct	Not Available	> 5 million carats
Con and Giant	3790.675 kg of gold in 2000 (121,874 ounces)	\$US 264/oz	>350,000 kg Au

**PART II**  
**DETAILS OF EXPLORATION ACTIVITY IN 2000**

**Diamond Exploration**

(See Fig. 2.1)

**Ashton Mining of Canada Inc.** carried out heavy mineral sampling programs on the following Northwest Territories properties throughout the summer: *Star*, *Roundrock* (86A/3), and *Cross* (85P).

**Ashton Mining of Canada Inc.** drilled two magnetic anomalies on the *Star* property. Kimberlite was not intersected and the magnetic anomalies are sourced from pyroxenite bodies. Joint venture partners for the *Star* property include **Ashton** (56%), **Pure Gold Minerals** (24%), and **Tenajon Resources Corp.** (20%).

**Ashton Mining of Canada Inc.** drilled two diamond drill holes on the *Cross* property. The drill holes tested two small lakes and were designed to confirm the source of geophysical and till sample anomalies. No kimberlite was intersected. Joint venture partners include **Pure Gold Minerals** and **Tenajon Resources**.

**Ashton Minerals of Canada Inc.** discovered the Cygnus kimberlite on the *Roundrock* property. The Cygnus kimberlite is approximately 125 metres east of the Aquila kimberlite discovered in 1996. Two exploratory holes were drilled into the Cygnus body, intersecting approximately 20 metres of kimberlite. The body is interpreted to be flat-lying. A total of 87.8 kilograms of hypabyssal kimberlite were tested and returned eight microdiamonds. In addition to the Aquila and Cygnus bodies, the property is known to host a number of kimberlite dykes. Joint venture partners in the *Roundrock* property include, **Ashton**, **Tahera Corporation**, **Pure Gold Minerals Inc.**, **Paramount Ventures and Finance Inc.**, and **Silverarrow Explorations Inc.**

**BHP Minerals** continued exploration on the *NWT Diamonds* property (76C/12, 76D/9-11,14-16). Exploration drilling resulted in the discovery of 11 additional pipes, nine of the new pipes are within the *Core Zone* and two are within the *Buffer Zone*. This brings the number of confirmed kimberlites on the NWT Diamonds property to 136. BHP Minerals utilised their proprietary airborne gravity gradiometer technology (Falcon) on the NWT Diamonds Project group of claims. Two out of five Falcon gravity targets tested on the property (*Core Zone* claims) proved to be kimberlite bodies.

Four kimberlite pipes were bulk sampled during 2000, by large diameter (35cm) reverse circulation drilling. The sampled pipes are the Wolverine, Zach, Cougar, and the Lynx (Table 2.1). The Lynx diamond parcel (140.6 carats) has been assessed at average value of US\$139 per carat. The Lynx pipe lies approximately 3 kilometres southwest of the Misery pit and covers roughly 0.6 ha in area. A 150 tonne sample will be extracted from the Lynx pipe in early 2001.

Microdiamond results were released for the Pegasus and Wildebeest kimberlites located in the *Buffer Zone* and the Kodiak pipe within the *Core zone*.

A reverse circulation drilling program to prove the Panda underground reserves was completed with approximately 300 tonnes of kimberlite being recovered. Preliminary results from the RC program and deep core drilling are confirming that the volume of kimberlite present at depth is consistent with the original pipe model.

**Table 2.1 BHP Bulk Sample Results**

Pipe Name	Number of Holes	Kimberlite Intersected	Dry Tonnes Sampled	Carats Recovered >1mm	Average Grade carats/tonne
Wolverine	3	628 metres	130.8	8.59	0.07
Zach	1	252 metres	63.3	11.3	0.18
Cougar	2	408.5 metres	74.3	0.72	0.01
Lynx	5	849 metres	168.5	140.74	0.83

**Table 2.2 BHP Microdiamonds**

Pipe Name	Drill Hole	Length (m)	Sample (kgs)	# stones < 1mm	# stones > 1mm	Total wt. Carats
Kodiak	36907	205.1	300.8	74	17	0.087
Pegasus	36915	194.2	295.3	291	62	0.33
Wilbeest	36916	71	35	41	11	0.032

**Darnley Bay Resources Ltd.** Fig 2.2) reported kimberlite exploration on *Parry Peninsula* (97 C/9), west of Paulatuk. Two microdiamonds were returned from till samples taken in late 1999. As a result, **De Beers Canada Exploration Inc.** conducted due diligence sampling on the property; their till sampling program (~100 samples) is currently being assessed. Darnley Bay Resources also conducted a till sampling program and collected 495 samples. A 17,000 line kilometre airborne survey was completed in August 2000. From the survey, 39 new discrete magnetic anomalies were identified in addition to the 55 identified in 1997, for a total of 94 targets. Twenty-three drill targets were selected from forty-one ground geophysical surveys. Nine of the ten targets drilled (21 holes; 2377 m) intersected kimberlite. Three of these are diamondiferous. A 1.8 tonne mini-bulk sample was collected from holes MT-101-03 to MT-101-08 of the MT-101 kimberlite. The sample was concentrated by De Beers and sent to South Africa for indicator mineral analysis and micro/macro diamond counts. Kimberlite intersected to date is comprised of hypabyssal and diatreme facies. According to Darnley Bay some of the kimberlites are overlain by thin overburden veneers. Darnley Bay has applied for a Land Use Permit from the Inuvialuit Land Administration to enable removal of two 100 tonne samples for testing by De Beers.

**Dentonia Resources Ltd., Horseshoe Gold Mining Inc., and Kettle River Resources Ltd. (DHK)** announced that **Kennecott Canada Exploration Inc.** has conveyed its 40% interest in the DHK properties (*WO, DHK, and WI* blocks; 76C/4,5) and 100% interest of the *Pellat Lake* claims to DHK. DHK will hold a 75% interest in the DHK properties and 100% of the *Pellat Lake* property. This agreement is subject to a variety of terms and conditions. Additionally, DHK has modified its farm-out agreement with **Archon Minerals Ltd.** and has entered into an agreement with **BHP Minerals**. BHP will fly its Falcon airborne gravity survey over part of the *DHK* claim block and all of the *WI* claims. This survey was to commence in late August, 2000. The agreement with BHP is subject to a series of conditions concerning monetary contributions and eventual participatory interests.

**DiaMet Minerals** (see BHP Minerals) has announced that its 29% share of the EKATI project is up for sale.

**Diamondex Resources Ltd.** explored the *Kelsey Property* (75N/7,10,15). Diamondex completed an option agreement with **Tyler Resources Ltd.** to acquire up to a 70% interest in the project in February, 2000. An 8,570 line-kilometer, high resolution, airborne geophysical survey of the property (electromagnetic, resistivity, magnetic) was also completed in February, and in August, **Diamondex Resources Ltd.** crews collected 709 till samples over the entire claim group. The Quaternary geology of the property and 1:25,000 scale geology of the northern half of the claim group were mapped by contractors.

**Diamondex Resources Ltd.** explored the *Carat* property (76 D/15,16, E/1, and E2). A total of 40.8 line-kilometers of ground geophysics (magnetics, ReScan, GPR) were conducted over 3 airborne anomalies in March. A single diamond drill hole, testing one of the targets to a total of 208 metres, was completed in May.

**Diamondex Resources Ltd.** carried out exploration on the *Hilltop* property (75M/2,3,4,5,6). An 18-day sonic drilling program was conducted in February and March on the Wolverine Grid area. This work was followed up with 9 diamond drill tests totalling 1,593 metres. Three airborne GP anomalies were followed up with ground geophysical surveys (magnetics, ReScan, and GPR) comprising 145 line-kilometres. A total of 249 till samples were collected on the property in July and August.

**Diamondex Resources Ltd.** explored the *Athenia* property (75M/6). One airborne geophysical anomaly was followed-up with 15 line-kilometres of ground geophysics (magnetics, ReScan, and GPR). Two drill holes tested the anomaly for a total of 141 metres.

**Diamondex Resources Ltd.** explored the *Aylmer West* property (76 C/2,3,6, and 7). A total of 75 till samples were collected over the 7 claim group in July. An attempt was made to locate an indicator mineral train shed from the Nicholas Bay pipe (76 C/2). Diamond drill cores from intersections through the Nicholas Bay pipe were re-logged and sampled for micro diamond analysis (see **Shear Minerals Ltd.**).

**Diamondex Resources Ltd.** also explored the *King* property (75M/10,11,14,15), staking an additional 79,851 contiguous acres in July and August and collecting seventy-five till samples in August.

**GGL Diamond Corporation** carried out a seismic survey on a lake within the 100% owned *Fishback Lake* property less than 100 kilometres northwest of Yellowknife. Survey results indicate a series of deep, circular lake bottom features, coincident with previously identified magnetic anomalies.

**GGL Diamond Corp.** carried out an indicator mineral sampling program and geophysical surveys on their wholly owned *Lac De Gras* claims, staked in March 2000. The summer's work prompted the staking of an additional 80,000 acres adjoining the above claims, in an area west and south of Lac de Gras.

**GGL Diamond Corp.** conducted a till sampling program on their wholly owned *TCG* group of claims located south of the *Doyle Lake* property. Results identified new anomalies in an area previously delineated, and an additional till sampling program was completed.

**GGL Diamond Corp.** conducted a till sampling program on the *Murray* claims located north of GMD's *Royce* group (85O).

**GGL Diamond Corp.** (40%) reported that **De Beers Canada Exploration Inc.** (60%) carried out 12 ground geophysical surveys over selected targets on the *Doyle Lake* property (75N/2-6). In addition, approximately 300 till samples were planned, focussing on areas identified as the result of previous till sampling programs.

**GMD Resources** reported on exploration of the *Royce* group of claims (85O/2,3,5-7,10-14) by operator **De Beers Canada Exploration Inc.** An additional 18,700 acres were staked contiguous to the claim block in the spring. A total of eight geophysical targets were drilled; no kimberlite was intersected. A helicopter-borne magnetic and EM survey was flown, with a line spacing of 100 metres, for 3, 448 line-kilometres. Several areas were flown with a line spacing of 50 metres. A total of 1,509 till samples were taken on the

property during the summer.

**Intertech Minerals Corp.** announced that **Kennecott Canada Exploration Inc.** conducted a helicopter-borne magnetic and electromagnetic survey with a line spacing of 100 metres on the *Aylmer Lake* property (40% Intertech, 60% Kennecott). One diamond drill hole tested a geophysical target; the geophysical anomaly was explained, but no kimberlite intersected. A fall program was to be carried out by Kennecott on this claim block.

**Intertech Minerals Corp.** reported that **Kennecott Canada Exploration Inc.** conducted ground geophysical surveys over 12 targets on the *Afridi Lake East* property (40% Intertech, 60% Kennecott). In addition, one diamond drill hole tested a geophysical anomaly. The anomaly was explained but no kimberlite intersected. A fall program was to be conducted on this claim group.

**Intertech Minerals Corp.** announced that it had revised a deal with **Kennecott Canada Exploration Inc.** concerning the original *Afridi Lake* property (76C/3,6). This property was divided into the *Exhibit A* (3135 hectares) and *Exhibit B* (48,924 hectares) groups of claims. The *Exhibit A* claims consist of ground upon which the previously known DA1, DA2, DA3 and Jordan kimberlites occur. The *Exhibit A* claims are subject to the terms and conditions outlined in a 1998 agreement between Intertech and Kennecott. Kennecott has the right to earn a 60% interest in any of the *Exhibit B* claims by meeting certain terms and conditions. A fall program of till sampling and prospecting was planned for the *Afridi Lake* property. A diamond drill program, designed to test previously identified geophysical targets commenced in late October, 2000.

**Mountain Province Diamonds Inc.** reported on exploration activities conducted by **De Beers Canada Exploration Inc.** on the *AK* property at Kennedy Lake. A "desk top study" conducted by De Beers indicated that a modelled rate of return for mining of three kimberlites at Kennady Lake was below an agreed upon rate for a production decision. The study encompassed conventional open pit mining of the 5034 and Hearne pipes, and conventional open pit mining of the top 140 metres of the Tuzo pipe. A \$Cdn 10 million bulk sampling program is planned for the 2001 season. The program will incorporate 24 holes and recover 1000 - 1250 carats from both the Hearne and 5034 kimberlite bodies.

Bulk sampling of the Tuzo pipe returned 540 carats from 523 tonnes of kimberlite. The Tuzo pipe has been separated into 4 zones on the basis of internal geology. The top 80 metres of the pipe is comprised of Zone A and B kimberlite with an indicated resource of 2.6 million tonnes. From 100 metres

to 200 metres (indicated resource of 3.5 million tonnes) the pipe is comprised of Zone Bg kimberlite (> 40% granite inclusions), with some Zone B and Zone C kimberlite. The interval from 200 to 300 metres (inferred resource of 4.1 million tonnes) is comprised primarily of Zone C kimberlite with some Zone B and Bg.

Bulk sampling of the Hearne pipe returned 856 carats from 469 tonnes of kimberlite. The Hearne pipe has been separated, on the basis of internal geology, into two parts: a southern and northern lobe. With the exception of the south lobe Phase E between 200 and 300 metres (Phase E1), all portions of the Hearne pipe have been classified in the Indicated Resource category. Phase E1 is an inferred resource.

**Table 2.3 Mountain Province/De Beers Canada Exploration Inc. Model for Tuzo Pipe**

\*>40% granite inclusions in Bg

Zone	Resource (million tonnes)	Grade (carats/tonne)	Revenue (US\$/ct)	Revenue Per Tonne US\$
A	1	2.7	47	127
B	2.4	0.94	33	31
Bg*	2.4	0.62	33	20
C	4.4	1.35	47	63

In addition to bulk sample results and resource calculations, exploration continued on the AK claims. Diamond drilling identified the Kelvin kimberlite located 9 kilometres northeast of Kennady Lake and 3 kilometres southwest of the diamondiferous Faraday kimberlite. Twenty kilometres west of Kennady Lake, a series of kimberlite dykes and sill-like bodies have been intersected in drill holes at MZ Lake, 300 metres northwest of previously drilled kimberlite dyke intersections. Till sampling was also carried out over the claim block during the summer field season.

**Navigator Exploration Corp.** entered into an option agreement with **De Beers Canada Exploration Inc.** to explore Navigator's 100% owned **Thor Project**, located 30 kilometres south of the **Ekati Mine** and 12 kilometres south of the **Diavik Project**. De Beers reviewed data from a detailed Mag and EM survey flown by Navigator and collected 1,000 till samples. Several areas identified on the basis of the airborne survey were followed up with detailed sampling.

**Table 2.4 Mountain Province/De Beers Canada Exploration Inc. Model for Hearne Pipe**

Zone	Resource (million tonnes)	Grade (carats/tonne)	Revenue (US\$/ct)	Revenue Per Tonne US\$
N Lobe Phase A	3.08	2.05	65	133
N Lobe Phase B	1.61	0.06	65	39
N Lobe Phase C	0.072	2.05	65	133
S Lobe Phase D	1.14	2.05	65	133
S Lobe Ph. E1	0.31	2.05	65	133
wtd avg all Phases	6.86	1.71	65	111

**Navigator Exploration Corp.** carried out ground geophysical surveys over 5 grids on the **Crystal** property, under an option agreement with **Tyler Resources**. Ground geophysical surveys of a further 9 grids are planned for the fall field season.

**Navigator Exploration Corp.** conducted a program of target-specific ground checking and till sampling on specific claims within the **CBA**, **NVR**, and **Whitewolf** groups of claims.

**Shear Minerals**, in joint venture with **Diamondex Resources Ltd.** (76C/7) re-logged and sampled drill core from the **Nicholas Bay** kimberlite, 120 km southeast of the Ekati Mine. A total of 127.7 kg of kimberlite from 6 drill holes were processed by caustic fusion. The holes were drilled by a previous operator. A total of 1,180 diamonds were recovered from the Nicholas Bay kimberlite. Of the 1,180 diamonds, 6 are classified as macrodiamonds. Two distinct phases of kimberlite have been identified: a tuffisitic kimberlite breccia and an olivine macrocrystic hyababysal phase. Further work is planned for the property.

**SouthernEra Resources Ltd.** and joint venture partner **Kalhari Resources Inc.** initiated a diamond drill program to test for the down dip projection of the NW Dyke (Snap Lake Dyke) on the **Mackay Lake Project**. The first hole, drilled to a depth of 1,600 metres, intercepted two narrow intersections of kimberlite, with an aggregate width of 20 centimetres, at a depth of 1,316 metres. SouthernEra geologists believe this intercept to represent the down dip extension of NW Dyke at Snap Lake. A second drill hole, located 800 metres east of

the first, will test the thickness of the dyke.

**SouthernEra Resources Ltd.** (60.40%), **Kalahari Resources Inc.** (26.82%), and **Island-Arc Resources Corporation** (12.78%) conducted a variety of activities on the **Back Lake** project (75M,N). A detailed till sampling program was carried out to further define the up-ice terminus of the North Margaret Lake indicator train. A total of 149 till samples were collected. During the winter program, a total of 962 metres were drilled, testing for the source of the Margaret Lake indicator train, and for further kimberlites under Munn Lake. No kimberlite was intersected. Two ground geophysical surveys were conducted over the North Margaret Lake indicator train.

**SouthernEra Resources Ltd.** collected 49 till samples on the **Yamba Lake** property (76E/2,3). Approximately 35 ground geophysical surveys tested a variety of airborne targets during the winter. In addition, 7 targets were tested by diamond drilling. Kimberlite was intersected in one area, and a second hole into the body confirmed the presence of small kimberlite dykes. SouthernEra may earn a 51% interest with **Tanqueray Resources Ltd.**, **Mill City International Inc.**, and **Techsite Strategies** (19.5%, 19.5%, and 10% respectively).

**Winspear Resources** was subject to an unsolicited takeover by **De Beers Canada Corporation** which was completed in August 2000. As a result De Beers became majority owner and operator of the **Snap Lake Diamond Project** and the **Camsell** property with joint venture partner **Aber Resources Ltd.** De Beers now have 100% ownership, having purchased Aber's interest. Prior to the takeover, Winspear had initiated an underground bulk sampling program of the NW Dyke, which has continued since the takeover. A 1,015 metre decline has been driven to access the NW Dyke under Snap Lake. Three 2,000 tonne samples will be taken for the purpose of advancing ore reserve calculations and information on the quality and distribution of extractable diamonds. Processing of the bulk samples will take place on site. Winspear announced that MRDI had completed a mineral resource estimate for the NW Dyke, comprised of an indicated resource of 21,600,000 tonnes at 1.9 ct/tonne (41.1 million carats) and an inferred resource of 24 million tonnes at 1.89 ct/tonne (45.3million carats).

Additional diamond drilling and microdiamond analyses have been conducted on the northwesterly-dipping SE Dyke system. Drilling suggests the presence of at least three separate kimberlite dykes in this area that may be related to the NW Dyke. A detailed helicopter-borne Mag/EM airborne survey was flown over the **Lac Capot Blanc** area of the **Camsell** property.

## Metals Exploration

(See Fig. 2.2)

**Canadian Zinc Corp.** carried out a helicopter-supported reconnaissance program for zinc and lead worth \$250,000, including stream silt geochemistry, on the *GATE* claims and areas near the *Prairie Creek* deposit (95 F/10). A number of anomalies were identified for follow-up work in 2001. Following the field season, preparations were made for a scoping study budgeted at \$400,000 to be completed by the end of January 2001. The study will look at the re-development of the 1982-built mine and mill on the *Prairie Creek* property. Canadian Zinc has applied for permits for surface drilling, underground decline development and underground diamond drilling to further define the mineral resource calculated in 1998 by MRDI (Table 1.2).

**Copper Ridge Explorations Inc.** reached an agreement with **Placer Dome Canada** and **US Steel** to purchase a 100% interest in the *Howard's Pass* zinc-lead-silver-cadmium deposit (105 I/6), for \$10 million over four years, plus a \$5 million bonus on a production decision. Copper Ridge subsequently reached an agreement with **Billiton Metals Canada**, whereby Billiton would assist Copper Ridge with the evaluation of the deposit and have the right to earn a 70% interest in the project by placing it into production. Copper Ridge was not able to make the initial payment in December, 2000 after Billiton decided not to proceed with the agreement in November.

**Copper Ridge Explorations Inc.** carried out 2,000 m of infill drilling, using two rigs, on the Anniv and Don Valley areas of the *Howard's Pass* deposit. Drilling tested the potential for open pit bulk mining, updated resource calculations and assisted a due diligence program and concept study of the deposit. *Howard's Pass* has a published resource of 100 Mt grading of 7.7% combined Zn and Pb (approximately 5.4% Zn and 2.3% Pb) at a 4% combined cut-off. The mineralized Active Member (Ordovician to Silurian mudstone, limestone and chert) had previously been traced over a strike length in excess of 8 km at the Anniv deposit. However, the pre-existing drill holes were spaced at least 500 m apart. The Don Valley area, 3 km southeast of the Anniv deposit, displays near-surface and relatively flat-lying mineralization in the Active Member.

**Darnley Bay Resources Ltd.**, explored for nickel and PGE within the regionally extensive coincident gravity and magnetic anomaly south of *Paulatuk* (97 C/1). Infill ground geophysical surveys were carried out to help locate a deep drill hole to test the most favourable of six sub-zones within the regional anomaly. Hole DB-001 was drilled in the centre of the *Thrasher Zone* magnetic and gravity anomaly, and abandoned at a depth of 1,812 m. Recent, Cretaceous and Cambrian sedimentary rocks were intersected. The upper contact of the anticipated mafic to ultramafic intrusion,

expected at 1,500 m depth, was not indicated or believed even proximal to the hole. The casing has been left in the hole for possible future deepening.

**Lane Dewar** prospected for gold at *Goodwin Lake* (NAK 1, 2 and 4 claims; 85 O/1), where grab samples yielded up to 25.1 g/t Au from a folded rhyolite at the Log showing, and up to 22.8 g/t Au from a contact between gabbro and sedimentary rocks.

**Lane Dewar** prospected at *Sophia Lake* (NAK 3 and 5 claims; 85 J/16), where a silicified shear zone with sulphide bands and acicular arsenopyrite in adjacent tuff is exposed. Grab samples yielded up to 29.6 g/t Au. Lane Dewar also prospected on the *BLUE* claims (85 J/9), where grab samples yielding up to 19.2 g/t Au were obtained from an arsenopyrite-bearing shear zone, one kilometer in length, bounded by volcanic rocks.

**Falconbridge Ltd.** prospected for nickel on permits in the *Snowbird Lake* area (65D/15).

**Fortune Minerals Ltd.** drilled 35 holes (6,000 m) on the *NICO* cobalt-gold-bismuth deposit (85N/10). The program included the following targets: in-fill drilling, testing for a high-grade root feeder system beneath the central core of the deposit, and testing the up-dip projection at the east end of the deposit. The drill collars were surveyed for inclination, azimuth and GPS location. The *NICO* Bowl zone deposit was calculated to contain a measured and indicated mineral resource of 27.1 Mt of 0.097 % Co, 0.037 % Cu, 0.110 % Bi and 0.506 g/t Au in 1999. Strathcona Mineral Services Limited, who targeted most of the drill holes, looked at increasing grade rather than tonnage for open pit mining. They calculated an indicated resource of 5 million tonnes (diluted) @ 0.7 g/t Au, 0.2% Co, and 0.260% Bi based on a stripping ratio of 8.6-to-1 and a cobalt price of US\$12.50 per lb. A second pit, based on a cobalt price of US\$17.50 per lb and a stripping ratio of 2.5-to-1, has a resource of 35.2 million tonnes grading 0.11% Co, 0.13% Bi and 0.6 g/t Au.

Most of the holes intersected multiple lenses of mineralization. For example, hole NICO-00-251, which intersected 0.14%, 0.08% and 0.12 % Co over true widths of 11.2m, 40.4m and 35.7m within the "Upper", "Middle" and "Lower" lenses, respectively. Narrow intervals within these zones may show much higher metal concentrations, eg. the Middle lens of hole NICO-00-228 yielded 4.9 g/t Au and 0.05% Co over an intersection of 36.4 m, but contained higher-grade sections averaging 11.7 g/t Au and 0.19% Co over a 4.7 m true width, and 8.8 g/t Au over a 7.4 m true width. Similarly, the Lower lens of hole NICO-00-231 yielded 0.17% Co, 1.0g/t A and 0.10% Bi over a 7.4 m intercept, but included a higher-grade

section averaging 0.30% Co, 1.1g/t Au and .27% Bi over 17.3 m. Chip sampling was also carried out concurrent with the drilling, in order to extrapolate shallow intersections to surface where applicable.

A hole was also drilled to test a geophysical anomaly on the opposite (northwest) side of Lou Lake from the NICO deposit, but did not intersect significant mineralization.

**Hudson Bay Exploration and Development Co. Ltd.**, in an option agreement with **Alberta Star** conducted reconnaissance gravity surveys over polymetallic breccia zones along lake shores at the **Longtom** project area (86 F/4), and **Nod** (85 N/10 & 11). Hudson Bay completed a similar survey on the new **JOJO** claims southeast of the site of the former Terra mine (86 F/5 & 12).

**Kansai Mining Corp.** explored for gold on the **Kan** prospect (85 O/1), a lease and claim area at Goodwin Lake, 20 km south of the site of the former Discovery Gold Mine. Phase 1 of the program focussed exploration on five zones, and included prospecting, geological mapping, trenching, soil geochemical, litho-geochemical and geophysical surveys. Two zones contained significant gold concentrations: the G zone (8.91 g/t Au), and W zone (161.83 g/t Au, which yielded 0.23 g/t Au on a repeat assay). Well defined magnetic trends correlated with areas of known gold mineralization in the A and H zones. Winkie drilling (240 metres) was started to test the strike and depth extension of the A, G, H, and W zones in October.

**Navigator Exploration Corp.**, in joint venture with **Falconbridge Ltd.**, mapped and carried out litho-geochemical sampling for nickel and PGE on the **ANKI** claims at Thy Lake (75 A/7). Ground geophysics will be conducted after freeze up. **Falconbridge** staked 19 new claims in the **Selwyn Lake** area (75 A/1 & 2) just to the south.

**Navigator Exploration Corp.**, in joint venture with **Tyler Resources**, sampled fluvio-glacial overburden for Mobile Metal Ion (MMI) analysis for gold and base metals, on grids within the **GEM** claims at Aylmer Lake (75N/16).

**Navigator Exploration Corp.**, in an option agreement with **Trevor Teed**, mapped and took litho-geochemical samples for PGE from gabbros underlying the **HEA** claims (85 I/2), west of Thor Lake.

**Dave Nickerson** conducted geochemical surveys on Cretaceous shales underlying the **POOF** claim (85 C/2), and further delineated a bismuth anomaly with local high concentrations of silver and copper. Dave Nickerson also collected litho-geochemical samples from gold-bearing IF at **Bell Lake** (85 J/16), and took a two-ton bulk sample for tantalum analysis from the **Riber** pegmatite (85 I/12).

**Phelps Dodge's** geological crew prospected for nickel and PGE's on their **Snowbird Lake** Property. They sampled a known showing, and discovered a number of previously unreported mafic-ultramafic bodies.

**Dave Smith**, while drilling for kimberlite, intersected an 8.5 m-wide shear zone on the **DRYBONES 4** claim (85 I/4). Drill hole SIP-2 intersected the pyrite-chlorite-calcite-siderite-silica zone at a drill depth of 60 metres. Assay results have not been reported to date.

**Solid Resources Ltd.**, now in an option agreement with **Tri-Star Syndicate**, carried out spring drilling on the "M" zone of the volcanogenic massive sulphide **Hart** property (85 I/16), west of the Sunrise VMS deposit. A 5073 m (13 - hole) drill program, consisting of a spring and fall program, was completed. The first 8 holes (2606 m) concentrated on the M-zone, and were followed up by a 3 line-kilometer downhole UTEM geophysical survey. The first hole intersected an averaged 8.62% Zn, 2.35% Pb and 231.43 g/t Ag over a drill core length of 22 m. Grades were improved from previously drilled core by re-analysis for metallics. Prior to the 2000 drilling, the "M" zone was calculated to contain 1.2 million tons of drill-indicated resources averaging 5.10 % Zn, 2.22% Pb, 336 g/t Ag, and 0.6 g/t Au. Two holes were drilled on the "C" zone, a target west of the "M" zone, where BIF and an arsenopyrite-bearing silicified zone were intersected. Two deep holes of the fall 2467 meters 5-hole drill program intersected the plunge of the M-Zone, to the north.

**Tyhee Development Corp.** cut a 4 kilometer baseline and established a grid, collecting 22 grab and 42 chip samples for assay on the **COBALT** claims, south of Cameron Bay (86 F/13,- K/4). Chalcopyrite, arsenopyrite, native copper, and glaucodot-bearing altered andesites lie adjacent to the Contact Lake monzonite in this area. Assays of surface samples indicate Co values of up to 0.62 wt %, Cu values up to 1.75 wt % and Au values up to 4.7g/t. Continuous chip samples have returned values up to 23 meters of 0.11% Co, 0.26% Cu, and 0.14 g/t Au.

**Tyhee Development Corp.** ground-truthed 1999 geophysical targets with an EM-16 and prospected for base metal mineralization associated with volcanic rocks (at **Russell Lake** (85 N/1). Minor base metal mineralization was associated with the anomalies. The intensity and extent of the anomaly remains unexplained. Prospecting and ground geophysics of the gold-rich Isthmus Zone extended it another 50 m north, albeit of limited extent and potential.