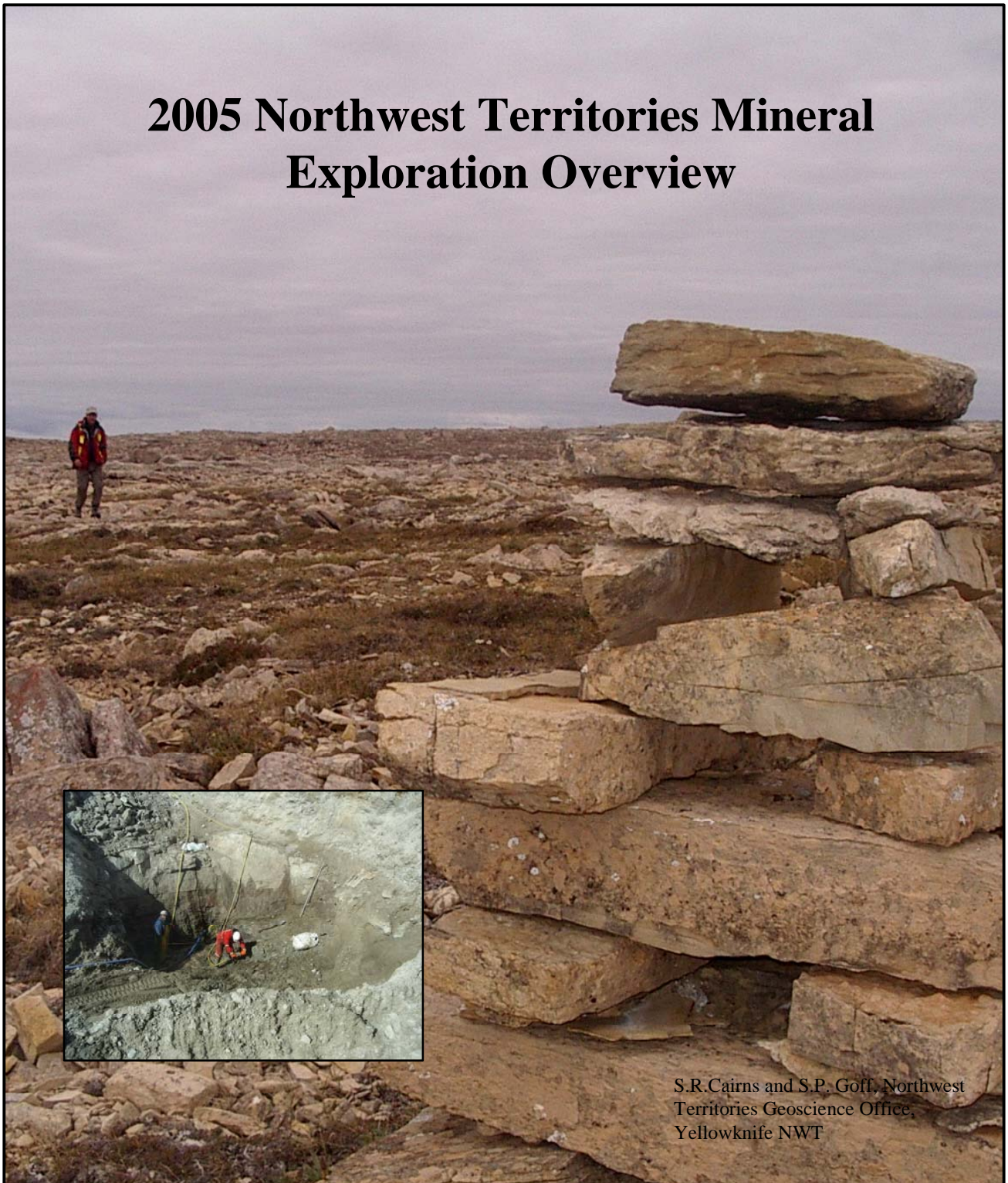


# 2005 Northwest Territories Mineral Exploration Overview



S.R.Cairns and S.P. Goff, Northwest  
Territories Geoscience Office,  
Yellowknife NWT

NORTHWEST TERRITORIES  
**GEOSCIENCE  
OFFICE**

RESEARCH • ANALYSIS • INFORMATION

## Table of Contents

Introduction.....	1
Mining.....	1
Diamond Exploration.....	2
<i>Slave Craton</i> .....	2
<i>Diamond Exploration off of the Slave Craton</i> .....	11
Exploration for Metals.....	15
<i>Gold</i> .....	15
<i>PGE and Base Metals</i> .....	19
Further Information.....	23
Tables	
Table 1: Doyle Lake Bulk Sample Results.....	5
Table 2: DO-27 Bulk Sample Results.....	7
Table 3: Summary of Slave Province NWT Diamond Exploration.....	8
Table 4: DO-27 Kimberlite Facies by Caustic Fusion Sample.....	10
Table 5: Summary of Diamond Exploration projects off of the Slave Craton.....	13
Table 6: Summary of NWT Gold Exploration.....	17
Table 7: Courageous Lake Gold Resources at 0.83 g/t cut-off Grade.....	18
Table 8: Ormsby Zone Gold Resources at 1.0 g/t cut-off Grade.....	18
Table 9: Summary of NWT Base Metal and Polymetallic Exploration.....	20
Figures	
Figure 1: 2005 Slave Province Diamond Exploration Projects.....	4
Figure 2: Microdiamonds Recovered From Caustic Fusion, Doyle Lake Sill.....	5
Figure 3: Microdiamonds Recovered From Caustic Fusion, Jack Pine Kimberlite.....	6
Figure 4: Microdiamonds Recovered from Caustic Fusion, DO-27 Kimberlite....	10
Figure 5: 2005 Diamond Exploration Projects off of the Slave Province.....	12
Figure 6: 2005 Precious and Base Metal Exploration Projects.....	16

*Recommended Citation: Cairns, S.R. and Goff, S.P., 2006. 2005 Northwest Territories Mineral Exploration Overview, Northwest Territories Geoscience Office. 25 p.*

*Cover: An Inukshuk on the Teck-Cominco / Diamonds North Resources Blue Ice property. (Inset) A bulk sample pit on the Doyle Lake Sill, GGL Diamonds.*

## Introduction

Exploration in the NWT was fast-paced in 2005 and diamond drills, expeditors, and charter aircraft were once again in short supply. Diamonds dominated mining and exploration efforts during 2005; however, tungsten production has resumed and underground development near a former gold producer is continuing. Strong (and for some commodities unprecedented) metal prices have revived exploration interest in uranium, gold and polymetallic prospects throughout the NWT.

## Mining

At the **Diavik Diamond Mine, Aber Diamond Corporation** ([www.aber.ca](http://www.aber.ca)) (40%) and **Diavik Diamond Mines** ([www.diavik.ca](http://www.diavik.ca)) (60%) produced 8.3 million carats of diamond from the A154 South and North kimberlites during 2005. Definition drilling of these pipes as well as the A418 kimberlite have increased mine reserves, particularly from the deeper levels of the A154 north pipe. The proven reserves for A154 North and South, and A418 now total 16.2 Mt grading 3.5 ct/t. A decline is being driven to support feasibility studies to optimize the underground mining of these kimberlites. The A21 pipe was reclassified from reserve to resource status, however, a new decline is being built to allow further bulk sampling of A21. A new crushing facility has been commissioned to process waste rock for the construction of the 1.3 kilometer-long retaining dyke required to allow draining and stripping of the A418 kimberlite in advance of open pit production.

The **Ekati Diamond Mine** ([www.ekati.bhpbilliton.com](http://www.ekati.bhpbilliton.com)) **BHP Billiton Diamonds** (80%), **Stewart Blusson** (10%) and **Chuck Fipke** (10%) produced 3.3 million carats in the first nine months of 2005 compared to 4.7 million carats for the same period of 2004. The mine is currently processing lower grade material from a number of open pits. Koala and Misery open pits were exhausted in 2005, however stockpiled mill feed from these pipes continues to be processed. The Beartooth kimberlite is being mined, the Fox kimberlite is being stripped, and the Panda underground project has commenced production. The Panda underground project is expected to reach full production in early 2006 and produce 4.7 million carats over six years.

Underground mine construction began in May at the **Snap Lake Diamond Project** of **De Beers Canada Mining Inc.** (100%) ([www.debeerscanada.com](http://www.debeerscanada.com)). The work includes construction of a crusher station, conveyor drifts and a ventilation system. Production is scheduled to begin late 2007. The project's proven and probable resources are estimated at 22.8 million tonnes grading 1.46 carats per tonne at US\$76/carat.

**North American Tungsten Corp.Ltd.** (100%) ([www.northamericantungsten.com](http://www.northamericantungsten.com)) is back in production, milling ore from the **Cantung Mine** underground E zone and open pit. Cantung, inactive since December 2003, has a refurbished mill and commenced shipping tungsten concentrate in October 2005. Soaring tungsten prices, well in excess of 20 US\$/kg have helped the start-up.



## Diamond Exploration

### *Slave Craton*

Property locations for diamond exploration projects located on the Slave Craton can be found in Figure 1; Table 1 summarizes the work completed on these properties.

**Arctic Star Diamond Corp.** ([www.arcticstardiamond.com](http://www.arcticstardiamond.com)) (100%), with **Kennecott Canada Exploration Inc.** ([www.kennecottexploration.com](http://www.kennecottexploration.com)) retaining back-in rights, performed ground geophysics and drilled 13 holes at the **Credit Lake property**, targeting geophysical anomalies. No kimberlite was intersected. Subsequent to the drilling program, 590 till samples for KIM analysis were collected to better resolve known indicator mineral trains. The property is located 32 km southwest of the Ekati Mine.

**BHP Billiton Diamonds Inc.** (58.8%) in joint venture with **Archon Minerals Ltd.** (31.2%) and **Charles Fipke** (10%) continued exploration on the **Buffer Zone** mineral leases of the Ekati Diamond Mine project area. Two 17.5" (44.5 mm) diameter reverse circulation drill holes were completed on two pipes situated in the Buffer Zone. A total of 78 tonnes of kimberlite from the Glory pipe yielded 24.1 carats of diamonds for an indicated grade of 0.3 ct/tonne. An October 2005 valuation, at the BHP Billiton sorting and valuation facility in Yellowknife, valued these at <10/ct with a high proportion of fibrous stones. No further work is planned on the Glory Pipe. More encouraging results were obtained from the Cardinal Pipe, where a 68 tonne bulk sample yielded 68.3 carats of diamond for an average grade of 1.0 ct/tonne, and an average stone size of 0.13 ct. The upper 150m of the hole averaged 1.5 ct/t. An October 2005 valuation at the BHP Billiton facility in Yellowknife estimates this parcel's value at US\$68/ct. A limited core-drilling program was completed and consisted of five NQ (48 mm diameter) diamond drill holes totaling 1505 m. One of the drill holes tested a geophysical target (kimberlite was not intersected), the remaining holes obtained additional information on the Jay and Wombat kimberlites. Drilling increased the surface area of the Jay pipe from 7.7 ha to 12.4 ha, and the pipe is slated for bulk sampling by reverse circulation drill in 2006. Ground magnetic and horizontal loop electromagnetic grids were also completed to better characterize the geometry of several known pipes.

**BHP Billiton Diamonds Inc.** (80%) in joint venture with **Charles Fipke** (10%) and **Stewart Blusson** (10%) continued exploration on the **Core Zone** mineral leases of the Ekati Diamond Mine project area. A single, 286 m deep, 17.5" (44.5 mm) diameter reverse circulation drill hole was completed on the LS-1 kimberlite pipe situated within Lac du Sauvage. Approximately 60 ct were recovered from 73 dry tonnes of kimberlite yielding an average grade of 0.8 ct/t. Eight NQ (48 mm diameter) diamond drill holes were completed totaling 1795 m. Four of the drill holes tested potential kimberlite targets, the remaining drill holes obtaining additional information on known pipes. Two new kimberlite bodies were discovered (Rat East and Eagle) and microdiamond analysis from caustic fusion of the drill cores is pending. A total of 154 kimberlite occurrences have now been confirmed on the Ekati Diamond Mine property (Core Zone and Buffer Zone Joint Ventures).

**De Beers Canada Inc.** (51%), in joint venture with **Mountain Province Diamonds Inc.** ([www.mountainprovince.com](http://www.mountainprovince.com)) (44.1%) and **Camphor Ventures Inc.** ([www.camphor.com](http://www.camphor.com)) (4.9%), announced that C\$38.5 million will be spent on the **Gahcho Kué Property**. The money will be used to finance the environmental assessment and permitting processes, consultation and stakeholder engagement, as well as large diameter drilling on the 5034 and Tuzo kimberlite bodies. De Beers has applied to the Mackenzie Valley Land and Water Board for permits to build an open-pit mine with an estimated resource of 31 million tonne which will produce approximately 3 million ct/year for 15 years.

**Diamondex Resources Ltd.** ([www.diamondex.net](http://www.diamondex.net)) completed a 1592 line-km helicopter-borne RESOLVE magnetic and electromagnetic survey, two ground magnetic surveys over airborne geophysical anomalies, and took 136 till samples from their wholly-owned **Kingfish Property**, located ca. 260 km northeast of Yellowknife. Approximately 1000 m of diamond drilling is planned for early 2006.

**Diamondex Resources Ltd.** completed gravity surveys, 58 line-km of ground magnetic and electromagnetic surveys, and took 104 till samples from the SW area of their wholly-owned **Bear Head Property**, located ca. 220 km northeast of Yellowknife.

**Diamondex Resources Ltd.** ground checked 16 geophysical anomalies and collected 114 till samples from their wholly-owned **Hilltop Property**, ca. 185 km north of Yellowknife.

**Diamondex Resources Ltd.** ground checked 5 airborne-geophysical anomalies and collected 102 till samples from their wholly-owned **King Property**, ca. 225 km north of Yellowknife.

**Diamondex Resources Ltd.** (67.34%) in joint venture with Majescor Resources Inc. ([www.majescor.com](http://www.majescor.com)) (32.66%) ground checked 13 airborne-geophysical anomalies, completed ground magnetic surveys over 8 of them, and completed geochemical survey grids over 5 geophysical anomalies at the **Kelsey Property**, located ca. 300 km northeast of Yellowknife. A total of 98 till samples were collected.

**Diamondex Resources Ltd.** (70%) in joint venture with **Majescor Resources Inc.** (30%) drilled five geophysical and/or soil-gas geochemical targets on the **Carat Property**, 350 km northeast of Yellowknife. A total of 740 m were drilled but no kimberlite was intersected.

**Diamonds North Resources** ([www.diamondsnorthresources.com](http://www.diamondsnorthresources.com)) collected ca. 1000 till samples on their wholly-owned **Hepburn** project, located 300 km north of Yellowknife. Preliminary results indicate an up-ice cut off to background KIM counts from the Lac de Gras kimberlite field, as well as delicate surface features being preserved on KIM grains. Both features point towards a local source for the KIM grains collected from the work.

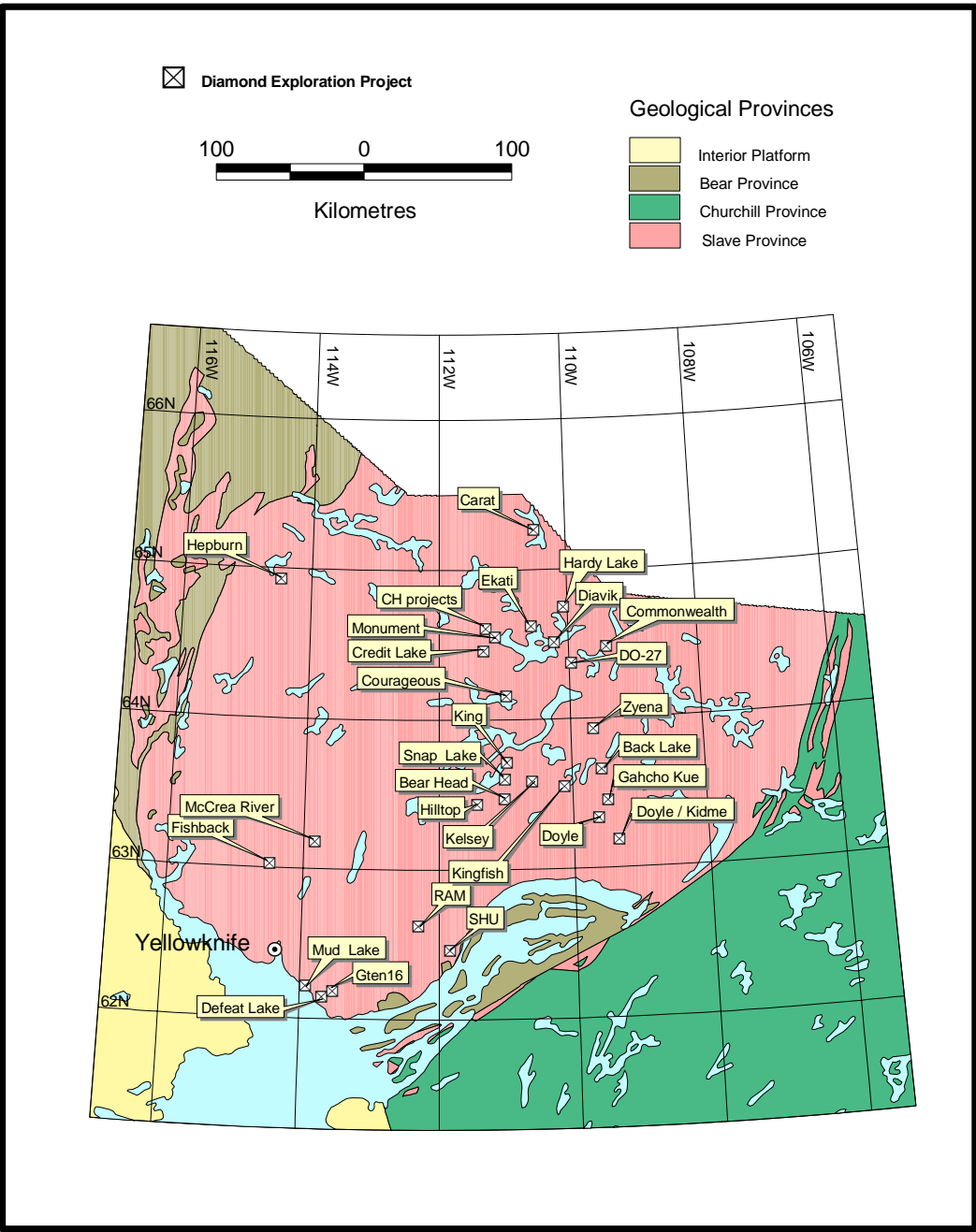


Figure 1: 2005 Slave Province Diamond Exploration

**Diavik Diamond Mines Inc.** carried out a 3000 line-km airborne gradiometer-magnetic and 1500 line-km airborne electromagnetic surveys near the Diavik Mine. Additionally, they completed several detailed ground magnetic, horizontal loop electromagnetic and gravity surveys. One thousand five hundred metres of drilling was completed on kimberlite targets near the Diavik Mine.

**GGL Diamond Corp.** ([www.ggldiamond.com](http://www.ggldiamond.com)) (100%) collected a 45 t bulk sample from a surface pit on the gently northwesterly dipping *Doyle Lake* kimberlite sill. The samples were processed at Ashton Mining’s dense media separation laboratory in Vancouver. The bulk sample returned a grade of 13.52 carat/hundred tonnes, with a distribution shown in Table 1. Four vertical diamond drill holes have extended the known extent of the dyke 820 m down dip to vertical depths of 200 m. Early in 2005 GGL performed caustic fusion on archived samples from 1996 **Mountain Province** drilling on the sill. Nine kimberlite samples from holes DO-96-168, 171, 173 – 175 provided 37.95 kg of kimberlite for caustic fusion. Forty stones were recovered including two macrodiamonds from holes DO-96-174 and 175 (Figure 2).

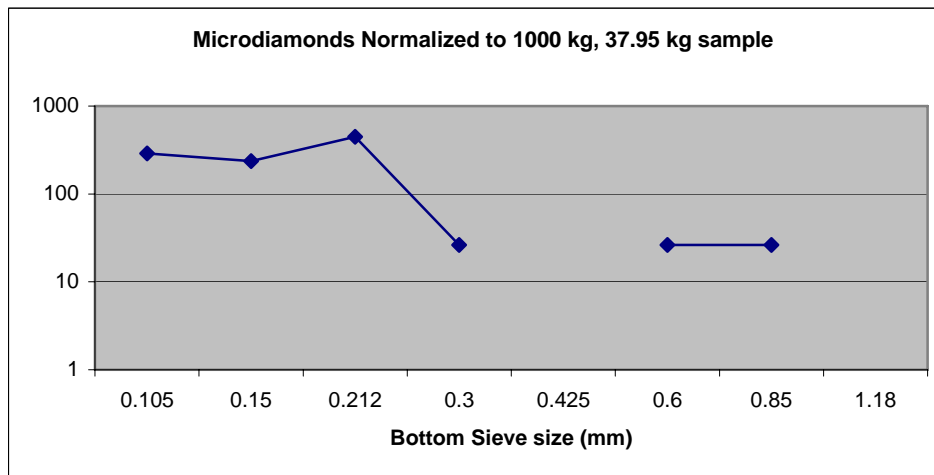


Figure 2: Microdiamonds Recovered by Caustic Fusion, Doyle Lake Sill, 1996 Mountain Province Diamonds Holes DO-96-168, 171, 173, 174 and 175.

Sample	Weight (kg)	Number of Diamonds by size class (millimetres)					Number of Diamonds	Total Carat Wt.	Est. Diamond Content (cpht*)
		0.85-1.18	1.18-1.7	1.7-2.36	2.36-3.35	3.35-4.75			
<b>11104</b>	16142.5	6	19	6	0	1	26	2.355	14.59
<b>11105</b>	15740.5	2	14	9	0	1	24	2.02	12.83
<b>11106</b>	13643.5	3	20	7	2	0	29	1.78	13.05
<b>TOTAL</b>	45526.5	11	53	22	2	2	79	6.155	13.52

Table 1: Diamond content recovered by dense media separation from Doyle Lake Sill bulk sample. (\* carats per hundred tonnes)

On their wholly-owned *Fishback property* 65 km NW of Yellowknife, **GGL Diamonds** drilled four NQ holes totaling 691 m. The holes did not intersect kimberlite, however the three drill holes intersected zones of highly brecciated, carbonate-altered granite. The core was sampled for kimberlite indicator minerals and geochemical analysis, and G9 and G10 pyrope garnets were recovered.

**GGL Diamond Corp.** carried out ground geophysics on their wholly-owned *Courageous* and *Seahorse* properties in the *CH* area, approximately 250 km northeast of Yellowknife. They also ground checked 84 airborne geophysical anomalies on the *Seahorse, Courageous, Winter Lake North, BP, Winter Lake South, and Zip Properties*, and collected 134 till samples for KIM analysis. One target was drilled at Starfish and four at Zip, no kimberlite was intersected.

**Consolidated Gold Win Ventures** ([www.v-cgw.com](http://www.v-cgw.com)) earning-in to 49% on **New Shoshoni Development Corporation's** ([www.newshoshoni.com](http://www.newshoshoni.com)) *Gten16* claim drilled two holes on a geophysical anomaly. The first hole intersected non-magnetic granite and the geophysical anomaly remains unexplained. A second hole into the anomaly was started but aborted prior to target depth due to deteriorating ice conditions. The property is located 60 km east-southeast of Yellowknife.

On the **DeBeers Canada Hardy Lake** property, 350 km northeast of Yellowknife, **Majescor Resources Ltd.** ([www.majescor.com](http://www.majescor.com)), under an option to purchase, completed two holes totaling 764 m. Both holes intersected an olivine macrocrystic kimberlite facies to extend the Jack Pine kimberlite to 500 m length along a N-S axis. Kimberlitic core was submitted for microdiamond recovery by caustic fusion. Results from the two holes are reported in Figure 3.

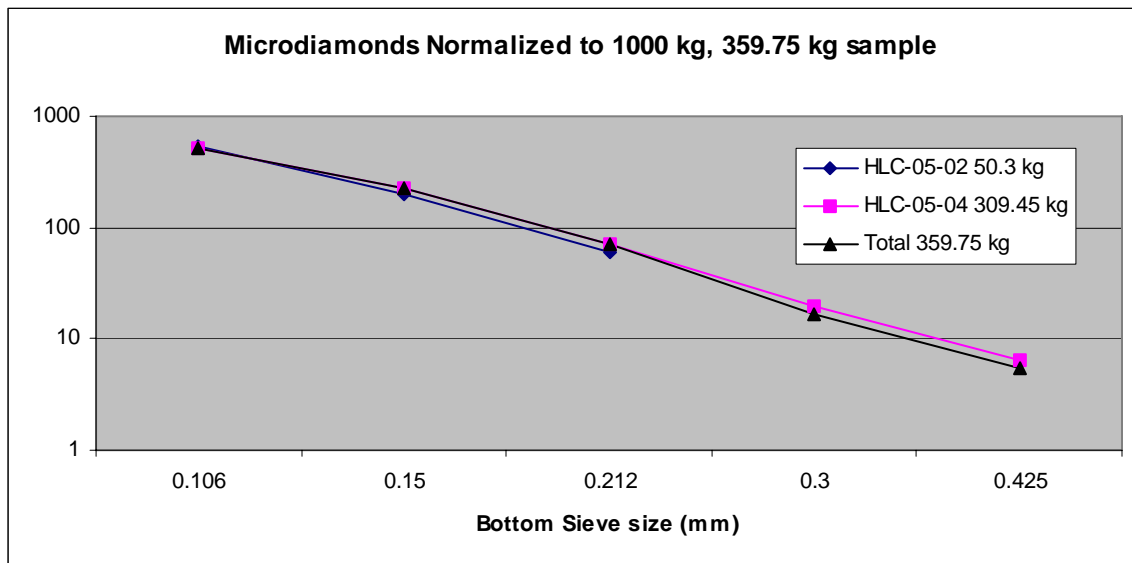


Figure 3: Microdiamonds Recovered by Caustic Fusion, Jack Pine Kimberlite, Majescor Resources Ltd. Holes HLC-05-02 and HLC-05-04, Hardy Lake.



On the **DeBeers Canada Thetis Lake and McCrea River properties**, 150 km north of Yellowknife, **Majescor Resources Ltd.** under an option to purchase, completed ground geophysical surveys over the heads of two KIM trains. Weather conditions precluded drilling the two targets and this work was deferred to 2006.

**New Nadina Explorations Ltd.** ([www.nadina.com](http://www.nadina.com)) (57%), in partnership with **SouthernEra Diamonds Inc.** ([www.southernera.com](http://www.southernera.com)) (22%), and **Archon Minerals Ltd.** (20%) explored their **Monument property**, 40 km north of the Ekati Mine. The partners completed five ground geophysical grids that included 117 line-km of magnetic and 97 line-km of horizontal loop electromagnetic surveys. Six diamond drill holes totaling 513.6 m, spotted near the DD-42 kimberlite pipe resulted in the discovery of a 0.65 to 3 m (true width) steeply dipping kimberlite dyke, with a strike length of at least 250 m.

**New Shoshoni Ventures Ltd.** (75%), in joint venture with **Snowfield Development Corp.** (15%) ([www.snowfield.com](http://www.snowfield.com)) and **Consolidated Gold Win Ventures Inc.** (10%) drilled a 138 m hole into a magnetic anomaly in Defeat Lake on the **Defeat Lake property**. They intersected an altered granite breccia with a sandstone or tuffaceous matrix. The matrix has been submitted for kimberlite indicator mineral analysis.

**Peregrine Diamonds Ltd.** ([www.pdiam.com](http://www.pdiam.com)) (54%), in partnership with **Archon Minerals Ltd.** (13%), **Aber Diamond Corp.** (7%), **DHK Diamonds Inc.** (20%) and **SouthernEra Diamonds Inc.** (4.9%), extracted a 151 t bulk sample from the central lobe of the **DO-27 kimberlite**. The sample yielded an average grade of 0.89 ct/t, with 21 stones greater than 0.5 ct. The mini-bulk sample was divided into two packages based on the petrography of the kimberlite. The diamond parcel extracted from the pyrope and chrome diopside-rich facies averaged a grade of 0.98 ct/t and includes ca. 78% of the total diamonds recovered by weight. The second parcel, collected from an olivine-rich facies of the kimberlite returned an average grade of 0.70 ct/t, and returned 22% of the total diamonds by weight. The first parcel was valued at between \$58-78 US/ct, and the second at \$32-35 US/ct.

<b>DO-27 - Pyrope, Chrome Diopside-rich Facies</b>						
Reverse Circ. Hole	Depth (m)	Sample Weight dry (t)	Total carats	Grade (ct/t)	Stones > 0.5 ct	Largest Stones (ct)
RC 1	209	45.74	47.32	1.03	4	2.93, 1.62
RC 2	124	28.96	27.66	0.96	5	1.85, 0.96, 0.94
RC 4	93.5	12.02	11.99	1	1	2.66
RC 5	83	12.2	11.66	0.96	3	0.76
RC 6	77	9.54	7.4	0.78	1	0.5
Total		108.47	106.03	0.98	14	
<b>DO-27 Fresh Olivine-rich Facies</b>						
RC 3	190.5	42.8	29.93	0.70	7	0.98
<b>Total</b>		<b>151.27</b>	<b>135.96</b>	<b>.89</b>	<b>21</b>	

Table 2: DO-27 Bulk Sample Diamond Recovery Results.

**Table 3: Summary of Slave Province NWT Diamond Exploration**

<b>Operator / Partners</b>	<b>Property</b>	<b>Drilling</b>	<b>Airborne Geophysics</b>	<b>Ground Geophysics</b>	<b>Sampling and Other Work</b>
Arctic Star Diamond Corp.	Credit Lake	13 holes		Yes	590 till HM samples
BHP Billiton Diamonds / C. Fipke / Archon Minerals	Buffer Zone Leases	2-17.5" RC holes, 1505 m NQ in 5 holes		Mag and HLEM	2 bulk samples, Glory and Cardinal Kimberlites
BHP Billiton Diamonds/ S. Blusson / C. Fipke	Core Zone Leases	286 m in 1 - 17.5" RC hole, 1795 m NQ in 8 holes.			Mini-bulk sample grade determination on reverse circulation chips, caustic fusion microdiamond recovery of core
De Beers Canada / Mountain Province Diamonds / Camphor Ventures	Gahcho Kué				Permitting, environmental assessment, consultation
Diamondex Resources	Kingfish		1592 line-km helicopter Resolve EM and Mag	2 grids, magnetic	136 till HM samples
Diamondex Resources	Bear Head			58 line-km mag and em, gravity	104 till HM samples
Diamondex Resources	Hilltop				Ground checked 16 geophysical anomalies, 114 till HM samples
Diamondex Resources	King				Ground checked 5 geophysical anomalies, 102 till HM samples
Diamondex Resources / Majescor Resources	Kelsey			8 grids mag	5 geochemical survey grids, 98 till HMC samples, ground checked 13 geophysical anomalies
Diamondex Resources / Majescor Resources	Carat	740 m in 5 holes			
Diavik Diamond mines	Diavik Claims / Leases	1500 m core drilling	1500 line-km Mag gradiometry and EM	Mag, gravity and HLEM	
Diamonds North Resources	Hepburn				Ca. 1000 till samples
GGL Diamond	Doyle Lake	4 holes			45 t bulk sample, caustic fusion microdiamond recovery of this year and archived core
GGL Diamond	Fishback	691 m in 4 holes NQ			
GGL Diamond	CH projects	5 holes		yes	134 till HM samples, ground checks on 84 geophysical anomalies
Consolidated Gold Win / New Shoshoni Development	Gten 16	2 holes			

RC - reverse circulation, Mag - magnetic, EM - electromagnetic, HLEM - horizontal loop electromagnetic, HM - heavy mineral

**Table 3 (continued) Summary of Slave Province NWT Diamond Exploration**

<b>Operator / Partners</b>	<b>Property</b>	<b>Drilling</b>	<b>Airborne Geophysics</b>	<b>Ground Geophysics</b>	<b>Sampling and Other Work</b>
De Beers Canada / Majescor Resources	Hardy Lake	764 m in two holes			Caustic fusion microdiamond recovery from core
De Beers Canada / Majescor Resources	McCrea River / Thetis lake			2 grids	
New Nadina Explorations / SouthernEra Diamonds / Archon Minerals	Monument	513.6 m in 6 holes		117 line-km Mag, 97 line-km HLEM in 5 grids	Caustic fusion microdiamond recovery from core
New Shoshoni / Snowfield Development / Consolidated Gold Win	Defeat Lake	138 m in 1 hole			
Peregrine Diamonds / Archon Minerals / Aber Diamond / DHK Diamonds / SouthernEra Diamonds	DO-27	151 t RC sample in 6 holes, 2045 m core in 11 holes			Heavy media separation for macrodiamond recovery on RC chips, caustic fusion on core
Pure Gold Minerals / De Beers Canada Exploration	Courageous Lake	3 holes			till HM sampling
Snowfield Development / David Smith	Mud Lake	32 holes			Caustic fusion microdiamond recovery from core
SouthernEra Diamonds / Kalahari Resources / Island Arc Mining	Back Lake	1 hole			
Trigon Exploration / Contact Diamond	RAM	13 small diameter RC holes			204 till HM samples, surficial mapping
Trigon Exploration / Contact Diamond	SHU				114 till HM samples, surficial mapping
Trigon Exploration	Zyena				52 till HM samples, surficial mapping

RC - reverse circulation, Mag - magnetic, EM - electromagnetic, HLEM - horizontal loop electromagnetic, HM - heavy mineral

Both parcel sizes are deemed to small to be used for feasibility work. Two thousand forty-five metres of NQ core drilling in 11 holes were completed on the main vent (4 holes) and the subsidiary lobe (7 holes) of DO-27. Approximately 1000m of drilling is planned for nearby DO-18. Caustic fusion analysis is complete on three of the holes from the main vent, microdiamond results from these holes are provided in Figure 4.

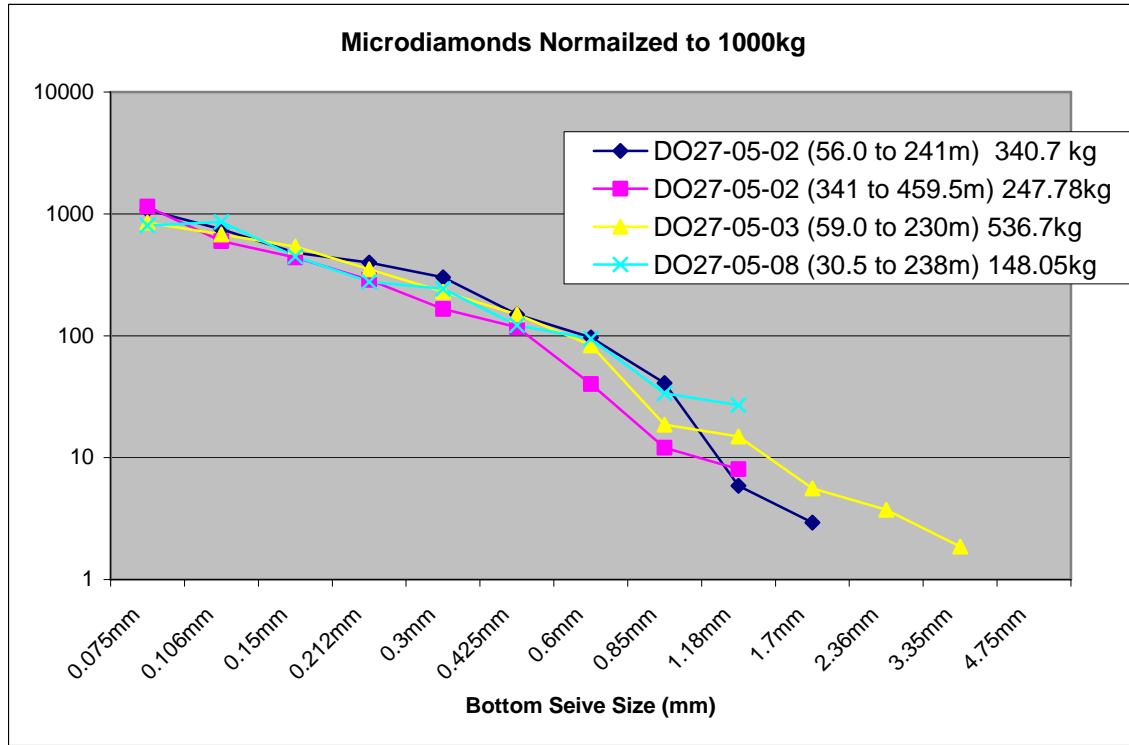


Figure 4: Microdiamonds Recovered by caustic fusion, DO-27 Kimberlite.

The caustic fusion analysis was completed on cores, and these results are reported by facies:

Sample	Facies
DO27-05-02 (56.0 to 241m)	layered pyroclastic kimberlite
DO27-05-02 (341 to 459.5m)	olivine macrocrystic pyroclastic kimberlite
DO27-05-03 (59.0 to 230m)	pyroclastic kimberlite
DO27-05-08 (30.5 to 238m)	pyroclastic kimberlite

Table 4: DO-27 kimberlite facies by caustic fusion sample.

Samples DO27-05-02 and DO27-05-03 were cores drilled adjacent to reverse circulation bulk samples RC 2 and RC 3 respectively.

**Pure Gold Minerals Inc.** ([www.puregold.ca](http://www.puregold.ca)), is earning in up to 85% in an option agreement with **DeBeers Canada Exploration Inc.** on the **Courageous Lake** property located 240 km NE of Yellowknife. The partners prospected and collected till samples on a number of geophysical anomalies coincident with the heads of KIM trains on the

property. A review of existing data, coupled with this year's exploration, led to the drilling of three targets. None of these holes intersected kimberlite.

Near Drybones Bay, 50 km east-southeast of Yellowknife, **Snowfield Development Corp.** is earning-in to 80% under an option agreement with David Smith on the **Mud Lake** kimberlite. Snowfield drilled 28 holes to test the strike length of the gently dipping Mud Lake kimberlite sill and reported kimberlite intersections up to 3.56 m thick in 13 holes. Four holes were drilled on separate magnetic anomalies. Snowfield plans to extract a 500 t bulk sample from the Mud Lake sill this winter.

**SouthernEra Diamonds Inc.**, in joint venture with **Kalahari Resources Inc.** ([www.kalahari-resources.com](http://www.kalahari-resources.com)) and **Island Arc Mining Corp.** drilled one hole on their **Back Lake** joint venture.

**Trigon Exploration Canada Ltd.** ([www.trigonexploration.com](http://www.trigonexploration.com)) (47%) in joint venture with **Contact Diamond Corp.** (53%) drilled 13 small diameter reverse circulation holes into 10 separate geophysical targets on their **RAM** property, ca. 140 km northeast of Yellowknife. No kimberlite was intersected. Two hundred and four till samples were also collected in order to refine the source areas of the KIM trains. The exploration work also entailed drift mapping and ice-flow direction studies.

**Trigon Exploration Canada Ltd.** (47%) in joint venture with **Contact Diamond Corp.** (53%) collected 114 till samples to refine the source areas of KIM trains on their **SHU** property joint venture, located ca. 120 km east of Yellowknife.

On their wholly-owned **Zyena** property, ca. 220 km northeast of Yellowknife, **Trigon** collected 52 samples for KIM analysis, and completed some targeted drift mapping.

### ***Diamond Exploration off of the Slave Craton***

Property locations for diamond exploration projects off of the Slave Craton can be found in Figure 4; Table 3 summarizes the work completed on these properties.

**Arctic Star Diamond Inc.** collected 272 till and esker samples on a nominal 3 km square grid pattern over high-potential portions of their wholly-owned **Dymond Lake** permits. The two million acre property is located ca. 360 km north of Fort Smith.

On the Parry Peninsula near Paulatuk, **Diadem Resources Ltd.** ([www.diademresources.com](http://www.diademresources.com)), in joint venture with **Darnley Bay Resources Ltd.** ([www.darnleybay.com](http://www.darnleybay.com)) explored their **Franklin Diamond** project. The property is composed of a group of permits and claims under various joint venture and earn-in arrangements. This year, the partners flew a



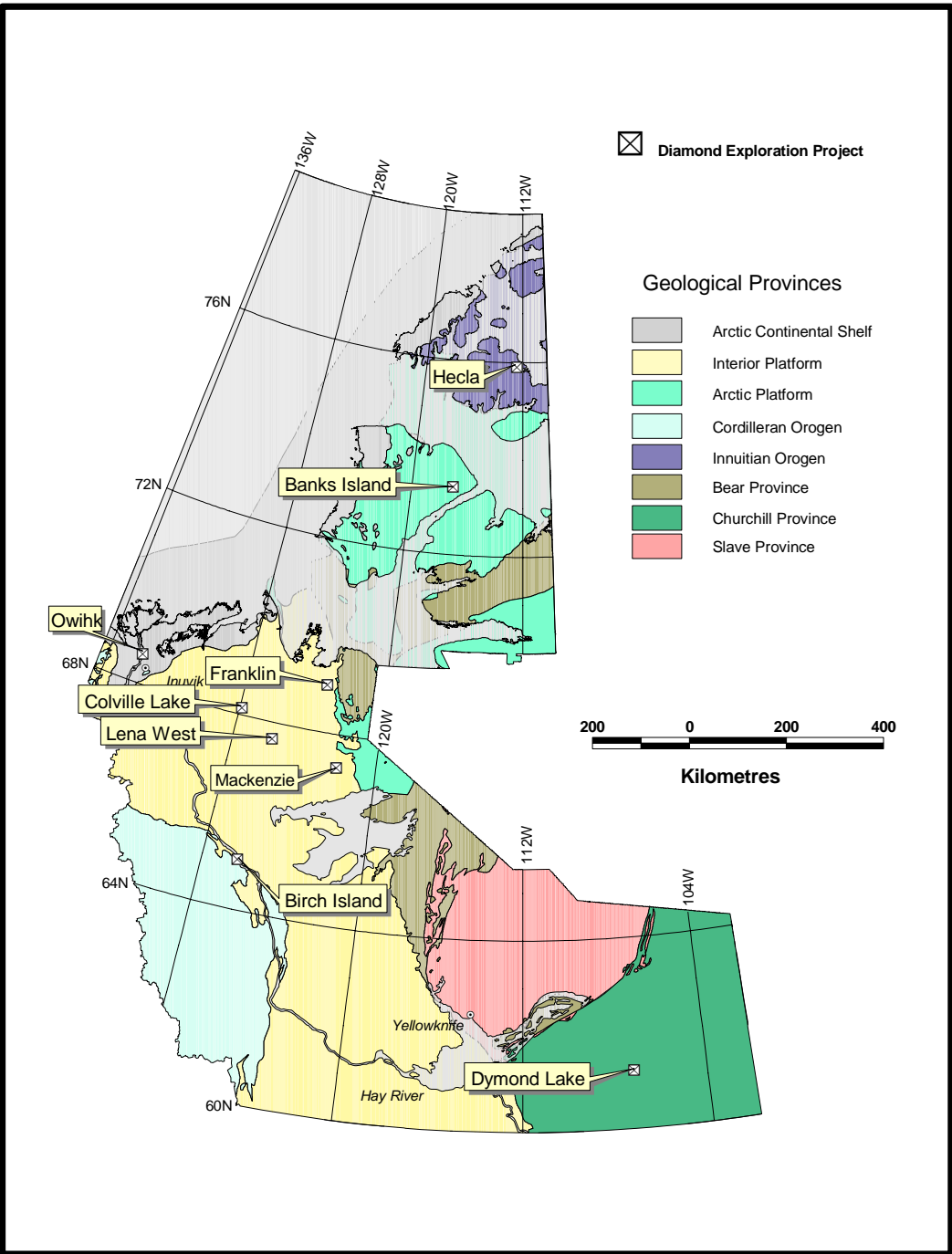


Figure 5: Diamond Exploration Projects off of the Slave Craton.

**Table 5: Summary of Diamond Exploration off of the Slave Craton**

<b>Operator / Partners</b>	<b>Property</b>	<b>Drilling</b>	<b>Airborne Geophysics</b>	<b>Ground Geophysics</b>	<b>Sampling and Other Work</b>
Artic Star Diamond	Dymond Lake				272 till and esker HM samples
Diadem Resources / Darnley Bay Resources	Franklin		52,836 line-km Mag gradiometer		223 till HM samples, soil gas hydrocarbon sampling
Diamondex Resources	Lena West	3 holes for 524 m	6759 line-km GEOTEM	4 grids transient electromagnetic, seismic reflection / refraction	1724 stream and till HM samples
Diamondex Resources	Birch Island			Mag surveys	Geochemical sampling
Diamondex Resources / Stornoway Diamonds	Owihk			66 line-km in 10 grids	1080 till geochemistry samples, 13 stream sediment HM samples
Diamonds north resources / Majescor Resources	Banks Island				130 stream sediment HM samples
Sanatana Diamonds	Mackenzie Diamond		>160,000 line-km gradient Mag at 400m line spacing		2114 till HM samples
Shear Minerals	Hecla				Prospecting, sampling
Pure Gold Minerals / De Beers Canada Exploration	Colville Lake		30,300 line-km Mag, 8000 line-km EM		994 Till HM samples, 114 soil samples for soil gas hydrocarbons ground checking geophysical anomalies

RC - reverse circulation, Mag - magnetic, EM - electromagnetic, HLEM - horizontal loop electromagnetic, HM - heavy mineral

52,836 line-km airborne magnetic gradiometer survey over portions of the property and collected an additional 223 till samples over geophysical anomalies and poorly resolved indicator mineral trains. Uncertainty over the kimberlite indicator mineral grain “background” hampers the interpretation of drift sample picking results in this area. A soil sample line across the known “105” kimberlite was completed and analyzed using the Soil Gas Hydrocarbons technique. The soil gas profile successfully delineated the kimberlite.

In the Interior Plains, **Diamondex Resources Ltd.** explored the 6.17 million acre *Lena West* project area, north of Norman Wells. Exploration work focused on four target areas defined by previous heavy mineral sampling. Four geophysical anomalies were studied by transient electromagnetic (TEM) and reflective /refractive seismic surveys, and a 6759 line-km of 100 m line spacing GEOTEM survey was flown over several high priority targets. Poor ground conditions and core recoveries hampered spring drilling of 3 holes for 524m on two anomalies, no kimberlite was intersected. The geophysical anomalies remain unexplained. The program also included stream sampling and the collection of 1724 till samples.

**Diamondex** collected geochemical samples over magnetic anomalies, and conducted ground magnetic surveys over their wholly owned *Birch Island* permits, between Norman Wells and Tulita.

**Diamondex Resources Ltd.** (50%) and **Stornoway Diamonds Corp.** ([www.stornowaydiamonds.com](http://www.stornowaydiamonds.com)) (50%) completed 66 line-km of ground magnetic surveys over 10 grids, selecting targets from a 2004 airborne geophysical survey, and took 1080 geochemistry samples and 13 stream sediment samples from the *Owihk* prospecting permits, east and west of Inuvik.

**Diamonds North Resources Ltd.** (50%) and **Majescor Resources Inc.** took 130 stream sediment samples from four drainage catchments on northeast Banks Island. These contained kimberlite indicator minerals with preserving delicate primary surface features and G10 pyrope garnets.

**Sanatana Diamonds Inc.** ([sanatanadiamonds.com](http://sanatanadiamonds.com)) conducted an extensive program on their *Mackenzie Diamond Project*. The project comprises diamond and other mineral rights, excluding Uranium, on ca. 20 million acres of permits and claims of the Jaeger Joint Venture, located north of Great Bear Lake. The Jaeger Joint venture retains a 10% carried interest and other production interests in the property. In 2004 helicopter supported sampling teams collected 1310 till samples for KIM analysis across the property. The 2005 exploration program included airborne magnetic coverage of much of the property >160,000 line-km at 400 metre line spacing, and the collection of an additional ca. 2114 till samples. Drilling is planned for 2006.

**Shear Minerals Ltd.** ([www.shearminerals.com](http://www.shearminerals.com)) prospected, sampled, and mapped their wholly-owned *Hecla Permits*, on northern Melville Island. The work targeted several

circular structures within platformal sedimentary cover, visible in aerial photographs of the area.

**Pure Gold Minerals Inc.** is earning in to 85% on **DeBeers Canada's Colville Lake** permits, north of Norman Wells. During 2005 they flew a 30,300 line-km airborne magnetic gradiometer survey over the northwest area of the main permit block, identifying 19 anomalies. Newly defined airborne magnetic anomalies were ground checked. A 1796 line-km airborne electromagnetic survey was flown in the north permit block to further resolve an area with a cluster of magnetic anomalies. Nine electromagnetic anomalies were defined, 6 of which are coincident with 2004 magnetic targets. The partners continued with till sampling throughout the permit area collecting 994 samples in 2005. Additionally, 114 soil samples were collected over two airborne magnetic anomalies for Soil Gas Hydrocarbon analysis. Winter drilling in 2006 is planned.

## Exploration for Metals

Locations for metal exploration properties mentioned in the text can be found in Figure 5; Table 4 summarizes the work done on gold projects, and Table 7 summarizes work completed on base metal and polymetallic properties.

### Gold

**Anaconda Gold Corporation** ([www.anacondagold.com](http://www.anacondagold.com)) completed 1470 m of drilling in 13 holes on the **Damoti** property located 200 km north of Yellowknife. Anaconda is earning in to 55% from Doublestar Resources on the Damoti property by completing \$2.5 million in exploration expenditures over a four-year period. The drilling was designed to extend the Horseshoe Zone, and test other exploration targets on the property, including the Lookout Zone, approximately 200 m north of the Horseshoe Zone. A hole confirming mineralization in the Horseshoe Zone returned an intersection of 33.88 g/t Au over 3.61m. The best intersection from 12 holes on the Lookout Zone was 11.68 g/t Au over 2.50 m.

**Boxxer Gold Corp.** ([www.boxxergold.com](http://www.boxxergold.com)) drilled 522 metres in eleven holes to test geophysical anomalies between the Main, South and Union mineralized zones on their **Gordon Lake Property** located 110 km northeast of Yellowknife. The company is earning-in to 90% on the property from **397405 Alberta**. The gold mineralization is hosted in quartz veins within a sheared and silicified argillite. Highlights from the drill program include 1.45 m grading 4.12 g/t Au, 2.71 m grading 20.35 g/t Au, and 5.37 m grading 8.8 g/t Au from the Main, South and Union zones, respectively.

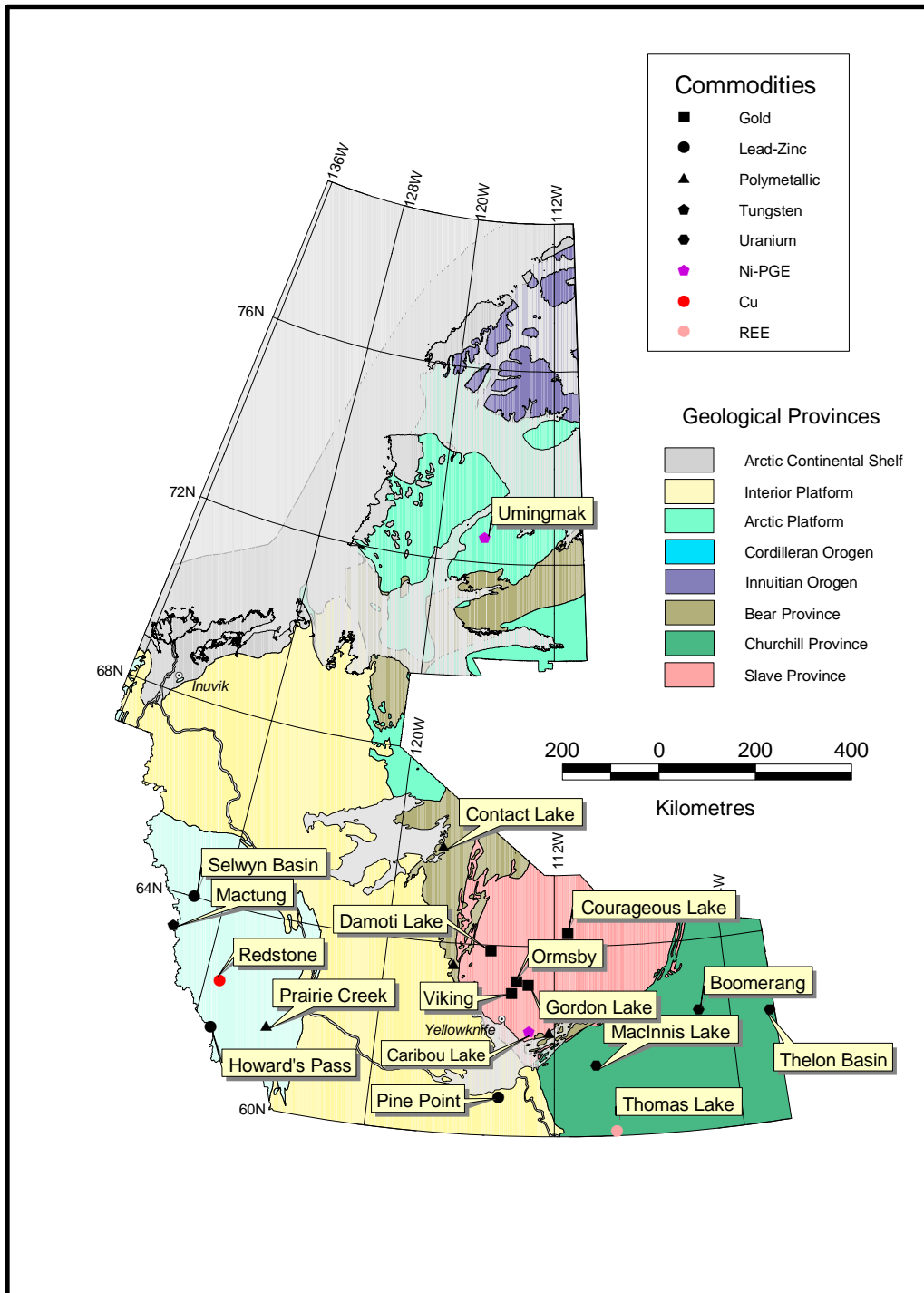


Figure 6: 2005 Precious and Base Metal Exploration Projects.



**Table 6: Summary of NWT Gold Exploration**

<b>Operator / Partners</b>	<b>Property</b>	<b>Drilling</b>	<b>Airborne Geophysics</b>	<b>Ground Geophysics</b>	<b>Sampling and Other Work</b>
Anaconda Gold	Damoti Lake	1470 m in 13 holes			
Boxxer Gold / 397405 Alberta	Gordon Lake	522 m in 11 holes			
Seabridge Gold	Courageous Lake	12 holes			Resource modeling
Tyhee Development	Yellowknife Gold	4832 m in 15 holes surface, 4543 m in 57 holes underground	Helicopter Mag and EM		Underground development, 700m drifting and ramping, 80 m raising, 6,800 t bulk sample stockpiled, Metallurgical studies, pre-feasibility studies
Viking Gold / Lakota Resources	Viking	300m in 18 holes			Core re-logging and resampling, soil geochemistry survey.

Mag - magnetic, EM - electromagnetic

**Seabridge Gold Inc.** ([www.seabridgegold.net](http://www.seabridgegold.net)) drilled four holes on the *FAT deposit* of their wholly-owned *Courageous Lake* property (located north of the former Salmita gold mine). They intersected three zones of mineralization extending 400 m north of previous drilling within quartz-sericite altered structures hosted in felsic ash tuffs. An additional five of eight holes drilled to test the southern extension of the deposit, intersected mineralization assaying up to 3.65 g/t Au over 3.0 m. A preliminary assessment, incorporating inferred mineral resources, is given in Table 7.

Measured			Indicated			Inferred		
Tonnes (000's)	Grade (g/T)	Ounces (000's)	Tonnes (000's)	Grade (g/T)	Ounces (000's)	Tonnes (000's)	Grade (g/T)	Ounces (000's)
3,378	2.55	277	47,002	2.28	3,445	77,442	2.10	5,229

Table 7: Courageous Lake Gold Resources at 0.83 g/t cut-off Grade.

**Tyhee Development Corp.** ([www.tyhee.com](http://www.tyhee.com)) carried out extensive exploration work on the *Ormsby Zone* of their wholly-owned *Yellowknife Gold* project area, located 88 km north of Yellowknife. Fifteen surface drill holes totaling 4832 m tested deeper portions of the Ormsby zone. Drilling found ore grade intersections well below the previous limits of drilling from the underground workings. The Ormsby Zone was also extended on surface, where a 350 m by 150 m zone of silicified sulphide-bearing hydrothermal breccia was documented. A helicopter-borne electromagnetic and magnetic survey was flown over much of the property.

Underground exploration and development included 700 m of ramping, drifting and crosscutting, as well as the completion of 80 m of raise development. Approximately 6800 tonne of mineralized rock has been stockpiled at surface from the development work. Underground drilling comprised 4543 m in 57 holes, and focused on the “30” and “60” zones, with centering on 12.5 m fences to characterize the geometry of these ore bodies. Prior to this years exploration the resources for the Yellowknife gold project had been estimated using a 1g/t cut-off (Table 6).

Measured			Indicated			Inferred		
Tonnes (000's)	Grade (g/T)	Ounces (000's)	Tonnes (000's)	Grade (g/T)	Ounces (000's)	Tonnes (000's)	Grade (g/T)	Ounces (000's)
1692	8.82	480	1314	9.03	382	1223	7.57	298

Table 8: Ormsby Zone Gold Resources at 1.0 g/t cut-off Grade

The resource description is currently being recalculated to reflect this year’s data. Metallurgical tests indicated over 95% gold recovery from the ore. Permitting and preparation of a pre-feasibility study is ongoing.

**Viking Gold Corporation** ([www.vikinggold.com](http://www.vikinggold.com)) has a right to earn in to 60% from **Lakota Resources Inc.** ([www.lakotaresources.ca](http://www.lakotaresources.ca)) on the past-producing Morris Lake gold

property. Dubbed the *Viking Gold project*, 2005 work included ca. 3000 m of diamond drilling in 18 holes, re-logging of selected 1988 Canmax core stored on site, surface mapping of outcrops on the property and a soil geochemistry survey along the mineralized trend in covered areas. Encouraging results from diamond drilling and sampling have led the company to stake additional claims south of the existing property, as well as to option two mining leases from **Aur Resources**.

### *PGE and Base Metals*

**Alberta Star Development Corp.** ([www.alberta-star.com](http://www.alberta-star.com)), in an option agreement with **MAX Resource Corp.** ([www.maxresource.com](http://www.maxresource.com)), explored for unconformity-related uranium by flying a 951 line-km, 200 m line spacing, deep penetrating MEGATEM, and GEOTEM airborne electromagnetic and magnetic survey over the *MacInnis Lake* claims. Located in the Nonacho Basin 150 km northeast of Fort Smith, the MEGATEM survey covered the southern 40% of the property. Known mineralization from previous drilling appears to correspond with conductors identified by the geophysical surveys.

**Alberta Star Development Corp.** flew a 770 line-km MEGATEM surveyed, mapped and performed ground magnetics in a search for iron oxide-copper-gold deposits at *Contact Lake*, five km southeast of the former Port Radium mine on the east side of Great Bear Lake.

**Cameco Corporation** ([www.cameco.com](http://www.cameco.com)) is earning in to 60% on **Uravan Minerals Inc.** ([www.uravanminerals.com](http://www.uravanminerals.com)) wholly-owned *Boomerang project* comprised of 5 mining leases and 153 mineral claims, 480 km east of Yellowknife. The partners flew 7600 line-km of MEGATEM II survey on a 250 m line-spacing and identified six favorable EM and structural trends. Based on preliminary results from this survey, Uravan staked additional claims to protect favorable electromagnetic anomalies adjacent to the core property. Further mapping and airborne geophysics, plus ground electromagnetic surveys on priority anomalies are planned.

**Canadian Zinc Corporation** ([www.canadianzinc.com](http://www.canadianzinc.com)) continued work at their wholly-owned *Prairie Creek* Zn-Pb-Ag mine, 150 km west of Fort Simpson. Metallurgical bench testing of ore samples collected in 2004 yielded encouraging results: different ore types can be co-mingled without affecting recovery, and acceptable recoveries can be obtained through floatation without cyanidation. The Company also worked on mine planning studies, permitting activities, engineering studies and installing a water treatment plant and a water polishing pond.

**Eagle Plains Resources Ltd.** ([www.eagleplains.ca](http://www.eagleplains.ca)) carried out sampling and inspections on several known Zn-Pb showings on their wholly-owned *Selwyn Basin* permits and claims. The property is centered 190 km west of Norman Wells. The work was aimed to provide primary geological characteristics of the mineralizing systems in the area.

**Table 9: Summary of NWT Base Metal and Polymetallic Exploration**

<b>Operator / Partners</b>	<b>Property</b>	<b>Commodity (ies)</b>	<b>Drilling</b>	<b>Airborne Geophysics</b>	<b>Ground Geophysics</b>	<b>Sampling and Other Work</b>
Alberta Star Development / Max Resource	MacInnis Lake	U		951 line-km MEGATEM and GEOTEM Mag and EM		
Alberta Star Development	Contact Lake	U		MEGATEM Mag and EM	Mag	Mapping, sampling
Cameco / Uruvan Minerals	Boomerang	U		7600 line-km MEGATEM on 250 m spacing		
Canadian Zinc	Prairie Creek	Pb-Zn-Ag				Metallurgical testing, mine-planning, permitting
Eagle Plains Resources	Selwyn	Pb-Zn				Sampling, mapping, showing inspections
Great Northern Mining and Exploration	Umingmak	NI-PGE		17,000 line-km MEGATEM Mag and EM		3400 till samples for MMI analysis, 600 conventional soil geochemistry samples
Kodiak Exploration				2000 line-km Mag and EM		Trenching
Lumina Resource	Redstone	Cu			IP and siesmic	
North American Tungsten	Mactung	W	6000 m in 25 holes			100 t bulk sample, rehabilitation of underground workings, channel sampling
Pathfinder Resources / Diamonds North Resources	Thelon Basin	U		Mag and radiometric surveys		Regional till geochemistry, radioactive boulder prospecting, soil and rock geochemistry
Robin Day	Thomas Lake	REE				Soil and rock geochemistry, till HM sampling
Tamerlane Ventures	Pine Point	Pb-Zn	22 holes			Geochemical Sampling, environmental studies
Uravan mineral / Cameco	Boomerang	U		7600 line-km MEGATEM II Mag and EM		
Wyn Developments	Hearne Channel	Co-Ni			Gravity	Gridding, re-assaying,

Mag - magnetic, EM - electromagnetic, IP - induced polarization, MMI - mobile metal ion leach, HM - heavy mineral

**Great Northern Mining and Exploration** explored their wholly-owned Victoria Island *Umingmak Project* for Nickel and PGE's. Exploration this year included a 17,000 line-km MEGATEM survey concurrent with the collection of approximately 3400 till samples for MMI analyses and an additional 600 conventional soil samples.

**Kodiak Exploration Ltd.** ([www.kodiakexp.com](http://www.kodiakexp.com)) discovered a nine-km long zone that locally containing net-textured and massive sulphides-bearing areas. The mineralization occurs within a differentiated gabbro at its *Caribou Lake* Ni-Cu-PGE project, 100 km east of Yellowknife. The zone is up to 70 m thick and locally contains up to 0.97% Cu, 0.62% Ni, 198 ppb Pt, 94 ppb Pd and 266 ppb Au. Kodiak also flew a ca. 2000 line-km magnetic and electromagnetic survey over the gabbro, preliminary results suggest the presence of several bodies of similar geophysical character to the known showings, over a four km strike length.

**Lumina Resource Corporation** ([www.luminaresources.com](http://www.luminaresources.com)) is currently completing an induced polarization and seismic survey over their wholly-owned *Redstone* Cu property ca. 290 kilometres south of Norman Wells.

**North American Tungsten Corp.** ([www.northamericantungsten.com/](http://www.northamericantungsten.com/)) drilled 6000 m in 25 holes to upgrade and extend the resources of their wholly-owned *Mactung* tungsten deposit. Assay results from the first 11 holes of the program have been received and are encouraging. The drilling is designed to firm resource estimates from inferred, to indicated in open pit and underground mineralized horizons. In conjunction with the surface drilling, an underground program entailed rehabilitation of the 1973 adit, collection of 27 channel samples, and the collection of a 100 t bulk sample for metallurgical testing. The work will form the basis for a new resource estimate and feasibility study in the coming year. Exploration drilling also took place on claims at Rifle Range Creek, six kilometres from Cantung mine.

**Pacifica Resources** ([www.pacifica-resources.com](http://www.pacifica-resources.com)) completed 8317 m of drilling in 53 holes on the Yukon Territory side of their wholly-owned *Howard's Pass* property. The XY deposit, the largest of the Howards Pass project, straddles the NWT / Yukon border. The company has calculated a 43-101 compliant resource estimate of 33.50 million tonnes grading 5.5 % Zn and 2.10% Pb of indicated, and 112.91 million tonnes grading 5.4% Zn and 2.14% Pb of inferred resource.

**Pathfinder Resources Ltd.** ([www.pathfinderresources.com](http://www.pathfinderresources.com)), in an option agreement with **Diamonds North Resources Ltd.**, can earn in to 80% on the uranium rights for the 2.5 million acre *Thelon Basin* property, located 500 km east of Yellowknife. The partners flew airborne magnetic and radiometric surveys, performed regional till sampling and closely-spaced geochemical soil and rock sampling in areas with known radioactive sandstone boulders in order to evaluate both the uranium and diamond potential of the property.

**Robin Day** prospected and sampled on his wholly-owned *Thomas Lake* permit. The results of geochemical sampling for rare earth minerals were disappointing. Heavy



minerals sampling from eskers returned low counts of potential KIM's. Mineral chemistry results are pending.

**Tamerlane Ventures** is earning in to 60% from Kent Burns Group LLC on the *Pine Point* property, located 75 km east of Hay River. Tamerlane drilled 22 holes both confirming and expanding known mineralization. Drilling tested the W-85, GO-3 and R190 targets. The new drilling met or exceeded the historical exploration results and they have has commenced environmental studies to support the project.

**Wyn Developments** ([www.wyndevelopments.ca](http://www.wyndevelopments.ca)) re-assayed several high grade samples collected from its *Hearne Channel* nickel-cobalt property, located 135 kilometres east-southeast of Yellowknife. The company also established a detailed grid in and completed 15 line-kilometres of tightly spaced gravity survey. Wyn Developments is earning in to 100% in an option agreement with **Impala Resource Services**.

## Further Information

Further information on mining and mineral exploration can be obtained from the following persons:

**Scott Cairns**, *District Geologist, Indian & Northern Affairs Canada, Northwest Territories Geoscience Office, P.O. Box 1500, 4601-B 52nd Avenue, Yellowknife NT, X1A 2R3*  
867-669-2479  
[scott\\_cairns@gov.nt.ca](mailto:scott_cairns@gov.nt.ca)

**Stephen Goff**, *District Geologist, Indian & Northern Affairs Canada, Northwest Territories Geoscience Office, P.O. Box 1500, 4601-B 52nd Avenue, Yellowknife NT, X1A 2R3*  
867-669-2638  
[steve\\_goff@gov.nt.ca](mailto:steve_goff@gov.nt.ca)

**Karen Gochnauer**, (On assignment) *District Geologist, Indian & Northern Affairs Canada, Northwest Territories Geoscience Office, P.O. Box 1500, 4601-B 52nd Avenue, Yellowknife NT, X1A 2R3*  
867-669-2637  
[karen\\_gochnauer@gov.nt.ca](mailto:karen_gochnauer@gov.nt.ca)

**Hamish Sandeman**, *Diamond Geologist, Northwest Territories Geoscience Office, P.O. Box 1500, 4601-B 52nd Avenue, Yellowknife NT, X1A 2R3*  
867-669-2644  
[hamish\\_sandeman@gov.nt.ca](mailto:hamish_sandeman@gov.nt.ca)

**Rose Greening**, *NWT Mining Recorder, Indian & Northern Affairs Canada, P.O. Box 1500, 4914 - 50th Street, Yellowknife, NT, X1A 2R3*

867-669-2634

[greeningr@inac-ainc.gc.ca](mailto:greeningr@inac-ainc.gc.ca)

### **On Line Resources for more Information**

Information on the location and status of mineral claims can be obtained from the SID Viewer Online, DIAND-NWT's Spatially Integrated Dataset:

[http://nwt-tno.inac-ainc.gc.ca/ism-sid/sidinfo\\_e.asp](http://nwt-tno.inac-ainc.gc.ca/ism-sid/sidinfo_e.asp)

A guide to the regulatory framework for mineral development in the Northwest Territories can be viewed at:

<http://nwtmineralspathfinder.com/>

Mineral exploration data can be found online through NORMIN.DB the mineral showings database for the Northwest Territories:

<http://www.nwtgeoscience.ca/normin/>

Mineral exploration data from assessment reports can now be downloaded free of charge through the Northwest Territories Geoscience office Gateway System:

<http://www.nwtgeoscience.ca/gateway/browseA.php>