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Peregrine opens new diamond district in Canada's Far North

FAVOURABLE RESULTS SET STAGE FOR
AMBITIOUS 2010 EXPLORATION PROGRAM



PEREGRINE DIAMONDS

Maiko Sell, geophysicist at Peregrine Diamonds' Chidliak project, prospects at the property on Baffin Island, Nunavut.



BY ROB
ROBERTSON

SPECIAL TO THE NORTHERN MINER

If Canadian diamond exploration was an event at the Winter Olympics, **Peregrine Diamonds** (PGD-T, PGDIF-O) would

“own the podium.”

After only one season of drilling on the Chidliak project at the south end of Baffin Island in Nunavut, Peregrine has discovered 16 kimberlites, 15 of which are diamondiferous. The initial diamond results from three of the kimberlites, CH-1, CH-6 and CH-7, display very promising potential.

“The microdiamond results from CH-6 are some of the strongest I have seen in my 27-year career in diamond exploration, and to my knowledge, are the best publicly disclosed microdiamond results

from a Canadian kimberlite since the discovery of the A-154 pipe at Diavik in 1994,” Peregrine president Brooke Clements enthused during a presentation at the Mineral Exploration Roundup conference in Vancouver in January.

Clements is a geologist who has spent his entire career in the diamond exploration hunt, first with Exmin Corp., spending 15 years exploring for diamonds in the United States, and more recently with Ashton Mining of Canada. As Ashton's vice-president of exploration, Clements led the team that discovered

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PEREGRINE DIAMONDS

Peter Holmes, Peregrine Diamonds' vice president of exploration, tests a kimberlite boulder.

the Renard kimberlite cluster in Quebec in 2001.

"It is a great discovery, these are spectacular early results, and we've really just literally scratched the surface," Clements said in an interview with *The Northern Miner* in late February. "In a year and a half since we made the first discovery in 2008, we have identified three kimberlites that clearly have characteristics consistent with economic potential. And among those, the initial diamond results from CH-6 are unlike the industry has seen anywhere in the world since Diavik and Ekati."

Peregrine and joint-venture partner **BHP Billiton** (BHP-N) are gearing up to begin a \$13.5-million exploration program at Chidliak in 2010, which will include further drilling, mini-bulk sampling, airborne and ground geophysical surveying, and prospecting.

The 2010 program will focus primarily on identifying new kimberlites and evaluating their diamond potential, as well as further assessing the kimberlites

discovered in 2008 and 2009 that show economic potential.

While Peregrine continues to be the operator at Chidliak, BHP Billiton, the principal owner of Canada's Ekati diamond mine, is solely financing this year's program. After the 2010 program is wrapped up, BHP Billiton will have completely fulfilled its earn-in obligations by spending a total of \$22.3 million to gain a 51% share of the project.

Once vested, BHP Billiton will have a one-time option to acquire an additional 7% interest by completing a bankable feasibility study on the property. If this option is exercised, the resulting ownership in any potential mine would be held 58% by BHP Billiton and 42% by Peregrine. Should BHP Billiton elect not to exercise the additional earn-in option, BHP Billiton and Peregrine will advance the project maintaining their respective 51% and 49% interests.

Clements is quick to stress that Peregrine will retain the right to market its share of the diamonds. However, if

BHP Billiton completes the feasibility study, it will retain all marketing rights for all diamonds for the first three years of commercial production.

Covering 9,800 sq. km, the centre of the Chidliak project is 150 km northeast of the town of Iqaluit.

Clements explained that the discovery of diamond-bearing kimberlites at Chidliak in 2008 is an example of a successful grassroots exploration program using traditional diamond exploration techniques common to Canada's Far North.

In addition to diamonds, kimberlites contain diagnostic indicator minerals. Those most resistant to secondary weathering occur in much greater quantity than diamonds, and hence are more readily identifiable. The indicator minerals commonly include garnet, chromite and ilmenite, as well as clinopyroxene and olivine.

In 2005, BHP Billiton and Peregrine co-funded a reconnaissance till sampling program across southern Baffin Island. Samples were taken on a 15-km by 15-km grid. Five of the samples collected from what would become the Chidliak property tested positive for kimberlite indicator minerals. One of the early samples held a total of 21 indicator mineral grains. Peregrine completed a follow-up till sampling program in 2006, collecting another 230 samples, of which 30 contained kimberlite indicator minerals.

These positive results prompted Peregrine to acquire an initial 6,000 sq. km of ground. A further 869 till samples were taken in 2007, with 285 of the samples yielding positive indicator minerals. The project area was subsequently expanded to cover 9,800 sq. km.

Till sampling revealed three distinct clusters of kimberlite indicator minerals some 20 to 30 km apart. A highly anomalous area, 11 by 9 km in size, is in the south-central part of the property. Two other trains, measuring 13 by 2 km and 9 by 4 km, lie to the north and east of the

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main anomalous area. The indicator minerals were coarse and angular, with fresh surface textures suggesting they hadn't travelled far. Alteration rims on the ilmenite grains and kelyphite rims on the garnet grains pointed to a local source. One of the samples from the main anomaly held a total of 616 indicator mineral grains.

Of the 2,284 peridotitic pyrope garnets recovered from the till sampling, microprobe analysis classified 10% of these as G10s, having a high chromium/low calcium harzburgitic signature, many of which fell in the diamond stability field. "As a general rule, lower calcium, higher-chromium (G10) garnets are associated with higher diamond contents," stated Jennifer Pell, Peregrine's chief geoscientist, in a 2009 technical report. Diamond-inclusion-field eclogitic garnets and chromites were also recovered.

In July and August 2008, a total of 11,700 line km of helicopter-borne geophysical surveys were flown over priority areas. Ground prospecting of priority geophysical anomalies led to the discovery of three kimberlites — CH-1, CH-2 and CH-3 — in outcrop and subcrop.

CH-1 discovery

The CH-1 kimberlite was discovered just four days after the start of the airborne geophysical survey. In an area with high concentrations of indicator minerals, an outcrop of weathered kimberlite measuring 5 by 3 metres was uncovered while investigating a magnetic circular high feature. The anomaly measured 250 metres in diameter, with a coinciding electromagnetic response. Ground geophysics has further determined CH-1 has a surface expression covering 2 to 3 hectares.

Prospecting identified at least three different kimberlite types in the immediate area. The kimberlite from the outcrop is classified as CH-1A. A second style of kimberlite, CH-1B, occurs as cobbles in frost boils in a large area overlying the geophysical anomaly. Both CH-1A and 1B

'By no means does the latest news indicate that CH-1 is a dud. All that we can conclude is that CH-1 does not have standalone mine potential, but this we had pretty much concluded in 2009 when only two holes cut the kimberlite complex.'

— JOHN KAISER, PUBLISHER, KAISER BOTTOM FISH NEWSLETTER

are described as magmatic kimberlite containing abundant olivine macrocryst, pyrope garnet and chrome diopside, along with ilmenite and chromite. The material in CH-1B had a higher concentration of olivine.

The third phase of kimberlite, CH-1C, occurs as scattered boulders on the periphery of the geophysical anomaly. It is described as a volcanoclastic kimberlite containing clasts of limestone.

Magmatic is a term used to describe kimberlite containing less than 15% xenoliths, and is usually the parent source. Volcanoclastic kimberlite is explosive material having more exposure to air, with associated brecciation and lapilli.

Samples totalling 289 kg were collected by hand from the three phases of kimberlite. Caustic fusion analysis recovered an impressive 374 microdiamonds larger than the 0.075-mm sieve size, including 27 diamonds bigger than the 0.6-mm sieve size (See Table 1 on page 6). The size distribution of the microdiamonds suggested good potential for the recovery of larger commercial-size stones, and two additional 1-tonne samples were taken by hand from CH-1A and 1B.

A representative 1.2-tonne sample was collected from the CH-1A outcrop, while another 1.1 tonnes, representing CH-1B, was collected from kimberlite boulders and cobbles littered across roughly half the estimated surface area of CH-1.

The 1.2-tonne sample of CH-1A yielded 16 commercial-size diamonds greater than 0.85 mm in size weighing 2.55 carats,

for a preliminary diamond content of 2.17 carats per tonne. The largest diamond was a 2.01-carat gem-quality, white-colourless octahedron measuring 7.5 by 5.5 by 3.6 mm.

It is interesting that the initial samples from the CH-1A phase delivered three to four times fewer microdiamonds than the equivalent samples from either CH-1B or CH-1C (see Table 1). If the 2.01-carat diamond is treated as an irregularity or outlier and removed from the sample, the implied diamond content slips to 0.46 carat per tonne.

The 1.1-tonne sample of CH-1B delivered a 1-carat parcel comprised of 18 commercial-size stones larger than 0.85 mm, giving a diamond content of 0.9 carat per tonne. The two largest diamonds were a 0.33-carat off-white aggregate measuring 4.3 by 3.3 by 2 mm and a 0.14-carat white-colourless octahedron measuring 3.1 by 2.2 by 1.8 mm.

A second outcropping kimberlite, CH-2, was discovered 1.5 km northwest of CH-1. The outcropping area measuring 20 by 25 metres was found near the edge of a 200-metre-diameter circular airborne magnetic anomaly. Additional kimberlite was observed in frost boils 100 metres north of the main outcrop. The kimberlite material looks similar to CH-1 and consists predominantly of magmatic kimberlite, with lesser amounts of pyroclastic material containing limestone fragments. A 357-kg surface sample of CH-2 returned 372 microdiamonds, including three stones exceeding 0.6 mm.

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Near the end of the 2008 field season, the CH-3 kimberlite showing was found 12 km southeast from CH-1. It is represented by a collection of kimberlite cobbles and boulders discovered within the confines of semi-circular magnetic anomaly measuring 175 by 125 metres. The kimberlite material was described as magmatic, with abundant indicator minerals including pyrope garnet and olivine. A 254-kg surface sample from CH-3 yielded 189 microdiamonds.

“CH-2 and CH-3 have pretty good diamond size distributions and they are big, and they ultimately need to be drilled off,” explained Clements.

Based on these early but very promising results, BHP Billiton exercised its right to earn-in at Chidliak upon the conclusion of the 2008 program.

“There is the potential for the property to host one or more kimberlites that have a favourable combination of grade and tonnage to warrant economic evaluation,” Pell wrote in a 2008 year-end technical report.

CH-6 highlights 2009

The 2009 Chidliak exploration program was fully funded by BHP Billiton at a cost of \$9.2 million. It resulted in the discovery of 13 new kimberlites (CH-4 to CH-16), seven by drilling and six by prospecting. Another eight geophysical anomalies tested by drilling proved to be barren of kimberlite.

In addition, the partners collected a 50-tonne mini-bulk sample from surface trenching on the CH-1A outcrop, took a further 1,273 till samples during a comprehensive property wide sampling program, and completed 1,100 line km of ground geophysics.

The highlight of last year’s program was the discovery of kimberlite CH-6, 12 km northwest of CH-1. CH-6 was discovered under more than 16 metres of overburden by drilling five holes from the southwestern edge of a magnetic-low anomaly, with four of the holes intersect-

ing kimberlite. The magnetic low has a surface expression of 1 to 2 hectares. Two of the angle holes intersected kimberlite intervals of 64 and 136 metres in length. A vertical hole encountered 220 metres of kimberlite before terminating in kimberlite at a depth of 250 metres.

A 569-kg sample of drill core from CH-6 returned a staggering 4,737 diamonds, including a 4.58-carat parcel comprised of 63 commercial-size stones larger than 0.85 mm. Ten of the largest diamonds exceed 0.1 carat each, including 4 diamonds greater than 0.3 carat, with the largest being a 0.62-carat white, transparent aggregate.

“We believe these microdiamond counts from CH-6 are some of the best results in the history of Canadian diamond exploration and a testament to the outstanding potential of Chidliak,” stated Eric Friedland, chief executive officer of Peregrine.

‘The initial diamond results from CH-6 are unlike the industry has seen anywhere in the world since Diavik and Ekati.’

– BROOKE CLEMENTS, PRESIDENT,
PEREGRINE DIAMONDS

“The presence of 10 diamonds larger than 0.1 carat in size from such a small sample suggests that we should see a good population of large, commercial-size diamonds when larger samples are collected from CH-6,” said Clements.

CH-6 is interpreted by Peregrine’s geologists to be made up of three main kimberlite components or phases: an upper volcanoclastic unit that extends to a depth of 70 metres, a primary pyroclastic unit that extends from 70 to at least 250 metres depth, and a magmatic unit intersected in one drill hole that may represent a peripheral phase. All three lithologies contain abundant mantle xenoliths

(eclogite, garnet lherzolite and garnet harzburgite) and abundant mantle-derived garnets.

Just north of the CH-6 kimberlite, CH-10 was discovered by drilling one of four magnetic low anomalies that are aligned like a “string of pearls” for about 600 metres in length. CH-10 was tested by 2 holes, each cutting through the body and intersecting several intercepts of kimberlite ranging from 2 to 44 metres in length. A 111-kg sample of drill core from CH-10 yielded 152 diamonds, including 2 larger stones exceeding 0.6 mm in size. CH-10 and the remaining anomalies in the “string of pearls” will see further drilling work this year.

CH-1 kimberlite

The promising CH-1 kimberlite was tested in 2009 by three drill holes. The first was collared at an angle southwest of the geophysical anomaly and intersected

three separate kimberlite intervals of 55 metres (from 56 metres downhole), 12 metres (from 129 metres downhole) and 56 metres (from 152 metres downhole).

Two additional holes were drilled from the northwestern edge of the anomaly. An angle hole encountered two kimberlite sections, a 50-metre interval from 16 metres downhole, followed by a 25-metre section from 78 metres. A vertical hole drilled from the same setup failed to intersect any kimberlite.

Core samples from CH-1 were comprised of a previously unrecognized magmatic kimberlite phase. The 179-kg sample from CH-1D was collected between

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PEREGRINE DIAMONDS

Drilling at the CH-6 kimberlite, part of Peregrine Diamonds' Chidliak Project, Baffin Island, Nunavut.

the depths of 21 and 64 metres from one of the holes. This sample delivered 322 diamonds, including 5 stones greater than a 0.6-mm cut-off.

A mini-bulk sample of 49.6 tonnes was collected by hand from the easily accessible outcrop exposure of the CH-1A kimberlite in August 2009, and the results were announced at the end of January 2010. The sample was excavated from a 14-by-4-metre patch down to a depth of 0.6 metre.

The 49.6-tonne sample yielded a 20.26-carat parcel comprised of 214 diamonds larger than 0.85 mm, giving a preliminary diamond content of 0.41 carat per tonne. Fifteen diamonds exceed 0.3 carat in size and include a 1.35-carat brown octahedron, a 0.71-carat white, colourless aggregate and a gem-quality 0.47-carat white, colourless octahedron.

John Kaiser, publisher of the *Kaiser*

Bottom Fish newsletter, said initial market expectations were dashed by not only a lower-than-expected grade, but that the largest diamond recovered, a 1.35-carat brown octahedron, fell well short of the 2.01-carat gem quality diamond recovered in 2008 from a smaller 1.2-tonne sample.

"By no means does the latest news indicate that CH-1 is a dud," stated Kaiser. "All that we can conclude is that CH-1 does not have standalone mine potential, but this we had pretty much concluded in 2009 when only two holes cut the kimberlite complex."

Kaiser noted: "If we brush aside our disappointment that the parcel did not include any jaw-dropper sized stones, the news is in fact very encouraging about the diamond potential of Chidliak. Although the biggest stone is not what you would call photogenic, the photographs for four other white colourless octahedral ranging

in 0.19-0.47 carat are stunning."

Kaiser continues to recommend Peregrine as a speculative buy below \$2. "Our price target is the \$5-10 range as further evidence builds that a world class diamond field comparable to Ekati/Diavik is present on south Baffin Island," he wrote.

Howard Coopersmith, an independent consultant to Peregrine, examined the entire diamond parcel of 214 diamonds. He described the colours of 126 of the largest diamonds as being 55% white-colourless, 25% brown, 17% off-white and 3% grey. Of the 34 diamonds bigger than 2.36 mm, the crystal forms were 50% octahedron, 23% transitional octahedron, 13% irregular, 11% fragments and 3% macies.

"This is a pretty good mix," confirmed Kaiser.

"We are pleased that the first significant mini-bulk sample collected at

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**Table 1:
Microdiamond results**

CH-1A Sample Weight: 100kg		CH-3 Sample Weight: 253.7kg	
Sieve Size	Diamonds	Sieve Size	Diamonds
+3.35mm	0	+3.35mm	0
+2.36mm	0	+2.36mm	0
+1.70mm	0	+1.70mm	0
+1.18mm	0	+1.18mm	0
+0.850mm	0	+0.850mm	0
+0.600mm	2	+0.600mm	0
+0.425mm	2	+0.425mm	1
+0.300mm	2	+0.300mm	11
+0.212mm	9	+0.212mm	11
+0.150mm	9	+0.150mm	27
+0.106mm	11	+0.106mm	60
+0.075mm	9	+0.075mm	79
Total	44	Total	189
CH-1B Sample Weight: 94.9kg		CH-6 Sample Weight: 569.1kg	
Sieve Size	Diamonds	Sieve Size	Diamonds
+3.35mm	0	+3.35mm	1
+2.36mm	0	+2.36mm	4
+1.70mm	2	+1.70mm	13
+1.18mm	2	+1.18mm	28
+0.850mm	2	+0.850mm	63
+0.600mm	4	+0.600mm	113
+0.425mm	5	+0.425mm	161
+0.300mm	13	+0.300mm	313
+0.212mm	19	+0.212mm	463
+0.150mm	28	+0.150mm	709
+0.106mm	37	+0.106mm	1242
+0.075mm	34	+0.075mm	1627
Total	146	Total	4737
CH-1C Sample Weight: 94.0kg		CH-7 Sample Weight: 220.9kg	
Sieve Size	Diamonds	Sieve Size	Diamonds
+3.35mm	0	+3.35mm	1
+2.36mm	0	+2.36mm	0
+1.70mm	0	+1.70mm	0
+1.18mm	2	+1.18mm	1
+0.850mm	5	+0.850mm	0
+0.600mm	8	+0.600mm	9
+0.425mm	15	+0.425mm	13
+0.300mm	11	+0.300mm	48
+0.212mm	27	+0.212mm	78
+0.150mm	33	+0.150mm	115
+0.106mm	32	+0.106mm	201
+0.075mm	51	+0.075mm	198
Total	184	Total	664
CH-1D Sample Weight: 178.8kg		CH-10 Sample Weight: 111.4kg	
Sieve Size	Diamonds	Sieve Size	Diamonds
+3.35mm	0	+3.35mm	0
+2.36mm	0	+2.36mm	0
+1.70mm	0	+1.70mm	0
+1.18mm	1	+1.18mm	0
+0.850mm	0	+0.850mm	0
+0.600mm	4	+0.600mm	2
+0.425mm	13	+0.425mm	5
+0.300mm	25	+0.300mm	9
+0.212mm	47	+0.212mm	11
+0.150mm	51	+0.150mm	28
+0.106mm	90	+0.106mm	33
+0.075mm	91	+0.075mm	64
Total	322	Total	152
CH-2 Sample Weight: 356.6kg		CH-12 Sample Weight: 251.7kg	
Sieve Size	Diamonds	Sieve Size	Diamonds
+3.35mm	0	+3.35mm	0
+2.36mm	0	+2.36mm	0
+1.70mm	0	+1.70mm	0
+1.18mm	1	+1.18mm	0
+0.850mm	0	+0.850mm	0
+0.600mm	2	+0.600mm	3
+0.425mm	0	+0.425mm	9
+0.300mm	1	+0.300mm	19
+0.212mm	3	+0.212mm	26
+0.150mm	15	+0.150mm	45
+0.106mm	101	+0.106mm	83
+0.075mm	249	+0.075mm	85
Total	372	Total	270

Chidliak produced a population of gem-quality stones,” Clements remarked. “The 49.6-tonne CH-1A sample was collected from a very small portion of the CH-1 kimberlite and our work indicates that other phases of the CH-1 kimberlite display better diamond size distribution characteristics. CH-1 is a significant diamondiferous kimberlite and we anticipate that further drilling and sampling of all its phases will confirm its economic potential.”

CH-1 is interpreted to be a complex body consisting of three or more kimberlite lobes. Each lobe can consist of multiple kimberlite phases, with each phase having different geological characteristics. Peregrine management believes that the results from the 49.6-tonne sample of the CH-1A phase is not representative of the entire CH-1 kimberlite and that further drilling and sampling is required to understand the geological and diamond content variability at CH-1.

Additional discoveries

CH-4 was discovered 1.5 km west of CH-1 while drill testing a magnetic high anomaly. Two angle holes were drilled across the anomaly, which has a 2-hectare surface expression. A 71-metre-long intercept of kimberlite was pulled from the first hole starting at a downhole depth of 11 metres, followed by a second 20-metre-long kimberlite intercept from 92 metres depth.

A 202-kg drill core sample of CH-4 held just 15 microdiamonds, including 1 stone bigger than 0.6 mm.

A field of diamondiferous kimberlite boulders and cobbles was discovered at CH-5 while investigating a second priority magnetic high geophysical anomaly, 8 km west of CH-4. Two different types of kimberlite were initially identified in the field.

“This discovery of kimberlite at a priority 2 anomaly that was not scheduled for drilling is a further illustration of the exploration potential at Chidliak,”

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reported Peregrine. A 424-kg surface sample of CH-5 returned a not very promising 49 microdiamonds.

The CH-7 kimberlite was discovered 2 km southwest of CH-1 while investigating an airborne magnetic anomaly. Outcropping kimberlite was found near the centre of the 1-hectare anomaly. The kimberlite is exposed across an area of 65 by 10 metres and is described as magmatic, with abundant olivine macrocrysts, mantle xenoliths and indicator minerals.

A 221-kg sample of surface material collected by hand from CH-7 returned an impressive 664 stones, including a parcel of 11 diamonds greater than 0.6 mm in size and weighing 0.7 carat. The largest diamond recovered from the sample was a 0.64-carat, off-white transparent octahedroid.

"The coarse diamond size distribution indicated at CH-7 is another example of the excellent diamond potential at Chidliak," Clements said. In addition, field crews discovered two other sites of kimberlite float fairly close to CH-7, 400 metres to the northwest and 400 metres to the north.

Boulders and cobbles of weathered kimberlite represent the CH-8 discovery, which was made by field crews at the southern edge of an airborne geophysical anomaly, 1.5 km west of CH-7. The airborne feature is 1 hectare in size. A 188-kg sample collected from surface delivered only 17 microdiamonds.

The CH-9 kimberlite was found 7 km west of CH-1 during ground geophysical surveying. CH-9 is exposed in outcrop and subcrop over an area of 25 by 5 metres. The kimberlite exposure lies just west of a 1-hectare circular magnetic anomaly. CH-9 proved to be weakly diamondiferous delivering only 2 microdiamonds from a 217-kg sample.

The CH-14 and CH-15 kimberlites are represented by magnetic high anomalies measuring 150 by 100 metres and 100 by 40 metres, respectively. A single hole into CH-14 cut 35 metres of kimberlite, while

two holes into CH-15 pulled 36 and 45 metres of kimberlite, respectively. A 170-kg sample of CH-15 held just 4 microdiamonds, while CH-14 contained no diamonds in 174 kg of sample.

Kimberlites CH-13 and CH-16 were discovered after drilling magnetic low anomalies measuring 150 by 50 metres and 200 by 150 metres, respectively. A single hole into CH-13 intersected 44 metres of kimberlite, while 2 holes into CH-16 cut 111 and 135 metres of kimberlite, respectively.

A 129-kg drill core sample of CH-13 returned only 6 microdiamonds, while 359 kg of drill core from CH-16 held 66 microdiamonds.

The CH-11 and CH-12 kimberlite discoveries were represented by magnetic high anomalies each measuring roughly 100 by 50 metres. At CH-11, outcropping and subcropping kimberlite was found over an area of 50 by 10 metres. A 210-kg sample from CH-11 yielded just a single microdiamond.

Kimberlite float, uncovered at CH-12, was spread over an area of 100 by 50 metres, with a small section of exposed outcrop. A 252-kg surface sample of CH-12 delivered 270 stones, including three diamonds larger than 0.6 mm. "CH-12 has really good diamond-size distribution and we may do some further drilling there," Clements said.

In addition to the 13 new kimberlite bodies discovered during the 2009 field season, prospecting teams turned up kimberlite float at four other sites. The most notable of these occurrences was found 2.8 km north of CH-3 and 10 km east-southeast of CH-1. Abundant kimberlite pebbles, cobbles and boulders were discovered over an area measuring 300 by 500 metres.

The 16 kimberlite bodies discovered so far at Chidliak lie in an area measuring 30 km east-west and 17 km north-south. Clements said the Chidliak kimberlites discovered so far are pipes, containing both magmatic and pyroclastic material. The presence of pyroclastic material sug-

gests the kimberlite pipes haven't been eroded too far down, so there is potential for some large systems.

"Everything we have discovered is a pipe, some of them may not be the biggest pipes but they are all pipes," Clements stressed.

"The presence of both kimberlite indicator minerals, with diamond inclusion chemistry, and untested high-priority kimberlite type geophysical anomalies both within and well outside of the area where kimberlites were discovered in 2008 and 2009 programs, indicates that there is excellent potential for the discovery of many more diamondiferous kimberlites at Chidliak," Clements said.

"In 2009, we discovered 13 kimberlites in just over eight weeks of drilling and prospecting, which equates to one new kimberlite discovery every five days," stated Friedland. "We have numerous excellent targets to drill starting in April 2010, many of which are associated with kimberlite float and kimberlite indicator minerals and we plan to collect mini-bulk samples from the CH-6 and CH-7 kimberlites this summer. We are confident that additional diamondiferous kimberlites will be discovered this year."

Last year, Peregrine completed a comprehensive heavy mineral sampling program across the Chidliak property, collecting almost 1,300 samples. The property has now been sampled by a grid of samples on at least a 2.5-by-2.5-km grid, or tighter in the main anomalous areas, Clements explained.

"We are few 100 samples away from getting all the final results in for Chidliak," he said. Those results will be available in March.

CH-7 mini-bulk sample

Having discovered 16 kimberlites to date, three of them highly promising (CH-1, CH-6 and CH-7) and four others showing good potential (CH-2, CH-3, CH-10 and CH-12) (See table), Peregrine has set the stage for 2010.

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This year's exploration program will have a two-pronged approach; the discovery of new kimberlites and further sampling of kimberlites that show promising economic potential.

Kaiser says this year's program will address the bigger question of whether or not the Chidliak field has the critical mass of diamond pipes needed to support a world-class diamond mine development on south Baffin Island.

The 2010 program will be done in two stages, a spring phase lasting from mid-March to the end of June, and a summer phase from the beginning of July to mid-September. The spring phase will include an expanded airborne geophysical survey, core drilling of at least 5 lake-based targets and a large ground geophysics program. The summer phase will consist of the core drilling of up to 30 high priority land-based targets using two rigs, the collection of mini-bulk samples from the CH-6 and CH-7 kimberlites, additional till sampling, ground geophysics and intensive ground prospecting.

The first two anomalies scheduled for spring drilling are 35 km north of the nearest known kimberlites CH-6 and CH-10. The two anomalies lie 200 metres apart and each have a surface expression greater than 1 hectare as defined by ground geophysics. Geochemistry studies of kimberlite indicator minerals recovered from beach sands at the edge of the lake covering these anomalies suggest promising diamond potential.

In an effort to recover an initial parcel of commercial-size diamonds of about 60 carats from CH-6 and CH-7, mini-bulk samples will be collected from each body. A representative sample of roughly 12 tonnes will be collected from CH-6 by drilling HQ-size (6.4-cm diameter) core. A sample of about 50 tonnes will be extracted from the exposed surface of CH-7.

"In 2008 and 2009, we highlighted the real possibility of Chidliak becoming a world class Canadian diamond mining

district by discovering 16 kimberlites with at least three of these displaying characteristics consistent with economic potential in Arctic settings," said Clements. "We are confident that the 2010 results will set the stage for moving Chidliak to the next level in the evaluation of diamond deposits, which is the bulk sampling of multiple kimberlites to obtain parcels of diamonds large enough for reliable valuations."

With just under 15% of the property flown by airborne geophysics, Clements notes that over 250 kimberlite-type geophysical anomalies are identified. A helicopter-borne geophysical survey starting in March is designed to target indicator mineral anomalies not covered by the 2008 survey. The ground geophysical surveys will further evaluate some 50 priority airborne anomalies.

"We need to discover as many new kimberlites as we can before we start systematically drilling them off," Clements said. "The main focus is to try to discover more CH-6's."

Qilaaq

Peregrine also holds a 100% interest in an additional 8,540 sq. km of ground, called Qilaaq, bordering the Chidliak project to the north, south and east. Other than a 1-km area around the outer perimeter of Chidliak, Qilaaq is not subject to any option or earn-in rights.

Peregrine carried out a comprehensive till and stream-sediment sampling program across Qilaaq in 2009, collecting 516 samples on a 5-by-5-km grid. Seven of the samples scattered within Qilaaq tested positive for kimberlite indicator mineral grains. Five of the samples contained one pyrope garnet each, one sample held two pyropes, one ilmenite and two chromites, and the best sample, some 50 km northwest of the latter, returned 405 indicator mineral grains.

All of the 405 indicator minerals have an angular shape, which indicates a nearby source, and consist of 370 ilmenites, 16

pyrope garnets, 4 eclogitic garnets and 15 chrome diopsides. One of the pyrope garnets was microprobed as a high-chromium, low-calcium G10 garnet.

In addition to the kimberlite indicator minerals, 213 of the reconnaissance samples contained at least one gold grain and 31 samples contained grains of sperrylite, a platinum-bearing mineral. The best sample turned up 350 gold grains, of which 80% were described as pristine, in an area where several gossans were noted. A duplicate sample from the same site yielded 146 grains.

Further infill sampling and prospecting, planned for this year, will not only target the anomalous kimberlite indicator mineral sample sites, but the metal anomalies as well.

Peregrine has also recently picked up 15,000 sq. km of new ground on the Cumberland peninsula, also in the southern part of Baffin Island. "Both Chidliak and Qilaaq started as grassroots exploration programs and we plan to apply the same methodology to efficiently evaluate the potential of Cumberland," Clements said.

Peregrine has acquired this new package of ground based on the premise that it may be underlain by an Archean basement, the same basement underlying Chidliak and Qilaaq. The area was previously interpreted as Proterozoic, but Clements said new interpretations suggest it may be Archean.

"It is a place that is screaming to be systematically evaluated by till sampling," he said.

The centre of the Cumberland project is 200 km north of Chidliak and east of the coastal community of Pangnirtung. Peregrine plans to conduct a till sampling program across Cumberland this summer following consultation with the native community of Pangnirtung.

NWT comparison

Clements believes the Chidliak camp compares favourably to the early days of

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Ekati and Diavik in the Northwest Territories. There are about 70 kimberlites known on the Diavik diamond mine property in the Northwest Territories, about half of which are diamond-bearing. Owned 60% by **Rio Tinto** (RTP-N, RIO-L) and 40% by **Harry Winston Diamond** (HW-T, HWD-N), Diavik went into production in 2003 based on a feasibility plan to mine a cluster of four kimberlite pipes, A-154 South, A-154 North, A-418 and A-21, over a 20-year life. The A-21 pipe has since been removed from the mine plan but is currently being re-evaluated for future mining.

All four pipes lie under the waters of Lac de Gras, just offshore of the 20-sq.-km East Island, 300 km northeast of Yellowknife. Today, in its eighth year of production, proven and probable reserves, as of Dec. 31, 2008, stood at 20.1 million tonnes grading 3.1 carats per tonne for a contained 63.2 million carats. The undeveloped A-21 pipe hosts an indicated resource of 4.1 million tonnes averaging 3.1 carats per tonne, equal to 12.7 million carats. The four pipes together hold an additional 3.9 million tonnes grading 3.2 carats per tonne, or 12.4 million carats, that is classified as inferred.

In 2009, Diavik processed 1.4 million

tonnes grading 4.09 carats per tonne to produce 5.6 million carats, which was down from the 9.2 million carats produced in 2008 in response to weaker market conditions.

Keeping in mind that microdiamond reporting was still very much an unknown science and disclosure was a bit different when the four Diavik pipes were discovered in 1994 and 1995, it is interesting to compare the initial diamond counts from their discovery holes.

The discovery hole into A-21 returned 154 diamonds from 155 kg of core, including 38 stones exceeding 0.5 mm in at least one dimension. Visible diamonds in the core highlighted the discovery of the A-154 bodies. A 751-kg sample from the discovery hole into A-154 delivered an impressive 1,296 diamonds, including 402 stones larger than 0.5 mm in one direction. Seven of the diamonds each exceeded 0.2 carat in weight, including a 1.75-carat colourless twinned diamond observed in the drill core.

The A-418 pipe was found in 1995. A 398-kg sample from the discovery hole held 722 diamonds, including 235 stones bigger than 0.5 mm. The largest diamond weighed in at 1.08 carats.

There are 156 kimberlites known on the Ekati mine property owned 80% by BHP

Billiton, with the remainder held privately. Ekati began production in the fall of 1998 based on a plan to mine five kimberlite pipes over a span of 17 years. That plan was amended early on to include three additional pipes.

For the calendar year 2009, Ekati processed 5.1 million tonnes grading 0.67 carat per tonne to produce 3.4 million carats. Reserves, as defined June 30, 2009, represent another eight years of mine life. Open-pittable proven and probable reserves stood at 31 million tonnes grading 0.4 carat, equivalent to 12.4 million carats. Underground reserves contain a further 7.3 million tonnes grading 0.8 carat, or 5.8 million carats.

Another 46.5 million carats are categorized as measured, indicated and inferred, while the outlying buffer zone around Ekati holds a 47-million-tonne resource averaging 2 carats per tonne, equal to 94 million carats.

Peregrine has about 85 million shares outstanding, or 100 million on a fully diluted basis, and sits with more than \$4 million in cash. The stock is currently trading around \$1.50-\$1.60 in 52-week range of 50¢-\$4.65.

— *The author is a working geologist and former Western Editor and Senior Staff Writer at The Northern Miner.*