FORM 6-K
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Report of Foreign Private Issuer

Pursuant to Rule 13a-16 or 15d-16
of the Securities Exchange Act of 1934

For the month of: June , 2003

Commission File Number 0-27322

Mountain Province Diamonds Inc.
(Translation of registrant's name into English)

Suite 212, 525 Seymour Street, Vancouver, British Columbia, Canada V6B 3H7
(Address of principal executive offices)

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Form 20-F X Form 40-F

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Gahcho Kué, Northwest Territories, Canada

Independent Qualified Person's Review and Technical Report



Prepared for:
Mountain Province Diamonds Inc.
by:
Malcolm L. Thurston, PhD, MAusImm

Effective Date: 16 June 2003

Project No.: 141010

Distribution List:

MPD: 2 copies

AMEC: 3 copies

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1.0 SUMMARY

Mountain Province Diamonds Inc. (MPD) engaged AMEC E&C Services Ltd. (AMEC) to provide an independent Qualified Persons' review of the 2003 Mineral Resource estimate and Preliminary Assessment of the Gahcho Kué project, as reported by MPD in the news release dated 15 April 2003. Located in the Northwest Territories of Canada, Gahcho Kué is a joint venture of De Beers Canada Exploration Inc. (DBCEI – formerly Monopros Ltd.), the wholly owned exploration arm of De Beers Consolidated Mines Limited (De Beers), Mountain Province Diamonds Inc., and Camphor Ventures Inc. The work entailed the preparation of a Technical Report as defined in National Instrument 43-101, *Standards of Disclosure for Mineral Projects*, and in compliance with Form 43-101F1 (the "Technical Reports"). Dr. Malcolm Thurston, an employee of AMEC, served as the Qualified Person responsible for preparing this Technical Report. Dr. Thurston visited the project site between 10 and 16 February 1999.

The Gahcho Kué project consists of four main diamondiferous kimberlite pipes: 5034, Hearne, Tuzo, and Tesla. Only the first three pipes contain sufficient diamond content to allow the estimation of mineral resources. The project is located at Kennady Lake, approximately 300 km east-northeast of Yellowknife in the District of Mackenzie, Northwest Territories, Canada. The property is 150 km south-southeast of the main Dia Met Minerals Ltd. and BHP Diamonds Inc. discoveries at Lac de Gras and 80 km east-southeast of the Snap Lake deposit. The Gahcho Kué project falls within the AK group (AK Property) of 21-year mining leases and mineral claims (all remaining mineral claims are pending conversion to 21-year mining leases). The total area under tenure is 30,528 ha (74,128 acres). Except for the northernmost part of 5034, the main kimberlite pipes lie beneath Kennady Lake. Interest in the project is governed by the updated and expanded JV Agreement signed 24th October 2002 where DBCEI agreed to fund all ongoing exploration, development, and other project costs, and would earn a 51% interest upon completion of a desktop study. On 4 August 2000, the initial desktop study was presented to MPD, and DBCEI was deemed to earn a 51% interest in the AK Property. Consequently, MPD was left with a 44.1% interest and Camphor Ventures Inc. with a 4.9% interest.

The Gahcho Kué project kimberlite cluster occurs in the southeast Slave Craton, a small Archean nucleus within the North American Craton. Granite is the dominant lithology in the region. The project area is interpreted as being characterized by a granite-gneiss terrain intruded by a series of dykes. Along the eastern edge of the area, a clear geological boundary is interpreted to represent contact with meta-sediments that extend eastwards. The central portion is a structurally complex zone of folding and possible shears. The 5034, Hearne, Tuzo, and Tesla kimberlites all occur at the eastern edge of an interpreted south-closing fold-nose that has developed a radial fold-nose cleavage. The apparent south-closing fold is interpreted to open to the north-northeast; the dip direction is not known. The core of the fold is composed of granite and minor granodiorite. Northeast-trending axial-planar foliation associated with the fold is developed in gneiss.

The Gahcho Kué kimberlite pipes are characterized by contrasting external pipe shapes and infill. The external shapes and internal geology of each body were modelled in three dimensions using commercial mine planning software (Gemcom). The variations in textures within the Gahcho Kué kimberlite pipe infills are important and thus are used to describe the rocks. The different textures result from different processes during the emplacement of the kimberlite magmas. The contrasting physical properties of the rocks correlate with the different textures and are reflected in various aspects of the project, ranging from DMS concentrates weights to clay content to country rock dilution. It is important to note that the textures can vary both within a single phase of kimberlite as well as between different phases of kimberlite.

Two textural end members dominate the pipe infills: hypabyssal kimberlite (HK) and tuffisitic kimberlite breccia (TKB). Each of the pipes also contains a significant amount of kimberlite displaying textures that are gradational between the end members. The textural gradation has been subdivided into four types: TKB, TKtB, HKt, and HK (t = transitional). The kimberlites grade from TKB to HK with increasing depth, within single phases of kimberlite.

The three main pipes at Gahcho Kué, 5034, Hearne and Tuzo, have contrasting pipe shapes. Tuzo has a circular plan view shape and a surface area of about 1.4 ha. The body is characterized by smooth, steep-sided pipe walls and is dominantly infilled with tuffisitic kimberlite breccia. Hearne consists of two bodies. Hearne South is a roughly circular pipe and is smaller than Hearne North, which is a narrow elongate pipe. The total surface area for the two bodies is about 1.5 ha. Both pipes have steep, smooth sidewalls. Hearne South is dominantly infilled with TKB and Hearne North with approximately equal amounts of hypabyssal kimberlite (HK) and TKB. The 5034 kimberlite has a very complex plan view shape and sub-surface structure with irregular pipe walls. Three lobes are exposed at the present surface, and the fourth, northern lobe is overlain by approximately 80 m of in situ country rock. The total surface area of 5034 is about 1.95 ha. The 5034 pipe is dominantly infilled with HK.

The composite geological model of the Gahcho Kué kimberlite pipes, as well as the shape and infill of the individual kimberlite pipes, is similar to that of the kimberlites in the Kimberley area of South Africa, but extremely different from many other Canadian kimberlites such as those found at Fort à la Corne, Attawapiskat, and Lac de Gras. The

Gahcho Kué pipes are considered to be root-to-diatreme transition zones and therefore must have undergone significant erosion.

Drilling at Gahcho Kué served two purposes: kimberlite delineation and bulk sampling. Delineation work consisted of core drilling, generally NQ to HQ size, whereas bulk sampling was conducted by large-diameter reverse circulation drilling.

Since 1997, a total of 24 core holes have been drilled to delineate the Hearne kimberlite: 17 in Hearne North, six in Hearne South, and one that intersected both pipes. Two of these holes did not intersect kimberlite. In 1998, 19 reverse circulation (RC) test holes (140 mm diameter) were drilled into Hearne to collect a mini-bulk sample. Of these, 16 were located in Hearne North, one in Hearne South, and two holes intersected only granite. In 1999, another eight large-diameter (311 mm) holes were drilled into Hearne North and two into Hearne South. In 2001, three large-diameter (610 mm) holes were drilled into the northern half of Hearne North, and five more 610 mm holes tested Hearne North in 2002.

In 1995 and 1996, Canamera Geological Ltd. drilled 69 core holes and 43 PQ holes into 5034. A further 11 core holes and 17 RC holes were drilled by DBCEI between 1997 and 2002. Bulk sampling, using large diameter drilling, was carried out by DBCEI between 1998 and 2002. In 1998, seventeen holes (140 mm diameter) were drilled. Pipe coverage for these holes was good over the Centre Lobe only. In 1999, another thirteen holes (311 mm diameter) were drilled to a maximum depth of 300 m. These holes were drilled in a narrow corridor over the main part of the pipe. In 2001, three large-diameter holes (610 mm) were drilled in the East Lobe and one in the west neck of the Centre Lobe. In 2002, another six large-diameter holes were drilled located very close to 1999 holes.

Eight core holes were drilled between 1997 and 1999 at Tuzo. All of these were angled holes that were collared outside the kimberlite body. In 2002, seven vertical core holes were drilled into the pipe. Bulk sampling drilling took place in 1998 and 1999. Seventeen RC holes were drilled in 1998 to a maximum depth of 166 m and 11 large-diameter holes were drilled in 1999 to a maximum depth of 300 m. Since 1999, holes were surveyed by geophysical methods (calliper, magnetic susceptibility, and natural gamma). Confirmatory surveys of selected core and large-diameter drill holes of select boreholes were done by "Wellnav" gyroscopic surveying in 2002.

Diamond deposit grade and value are evaluated by their microdiamond and macrodiamond data. Microdiamond samples are collected from core drilling. Macrodiamond data are recovered from bulk samples from large-diameter drilling (LDD). The macrodiamond data are more critical. Key quality assurance and control steps implemented during the LDD work (1999, 2001, and 2002) consisted of caliper surveyed drill holes (for volume determination), geological reference samples taken at 1 m intervals, head feed granulometry samples collected and processed on site, underflow samples collected at regular intervals, and LDDH locations preceded by NQ core holes (2002 program only). A reverse-flood, airlift-assist drilling method employing nominal 610 mm diameter tricones was used in the 2001 and 2002 bulk sampling evaluation programs. This process greatly reduced diamond breakage during sample recovery in the LDD programs.

In creating the resource model, diamond drilling is used to outline the 3-D shape of the kimberlites, and large-diameter drilling (LDD) is used to assess grade and diamond value. Where insufficient or no LDD has been carried out, the grade is estimated globally by rock type using microdiamond results from diamond drilling. Grade is estimated in carats per cubic metre (ct/m^3) and then converted to cpht by applying a density value. For the West, Centre, and East lobes of 5034, local block estimates were created within the 3-D block model using the results of the LDD. A single estimate, based on microdiamond sampling, was made for the North Lobe, North Pipe, and South Pipe. Large-diameter drilling was used at Hearne. For Tuzo, an average grade per rock type was created using the results from microdiamond sampling. Diamond value is estimated by combining a diamond value distribution and a diamond size distribution. The diamond value distribution is estimated using diamonds recovered from the LDD. The diamond size distribution is obtained by modelling the micro and macrodiamonds from the pipes. This approach for resource estimation is consistent with accepted industry practice and is appropriate for the purposes of declaring a resource and reserve at Gahcho Kué.

The mineral resource at Gahcho Kué is classified according to the CIM definitions referred to in National Instrument 43-101 and conforms to the guidelines for "Reporting of Diamond Exploration Results, Identified Mineral Resources and Ore Reserves," published by the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories (NAPEGG). In classifying the resource, qualitative levels of confidence in volume estimation, sample quality, sample representivity, estimation technique, and average dollar per value were considered.

The mineralization of the Gahcho Kué project as of March 2003 is classified as Indicated and Inferred mineral resources. The resources are shown by pipe in Table 1-1. The Gahcho Kué resources are summarized to an elevation of 110 masl. The resource grades and revenues are based on a 1.5 mm bottom cutoff. The revenue estimates are in US$ on the January 2003 Diamond Trading Company price book.

Table 1-1: Gahcho Kué Project Mineral Resource Summary[1] – March 2003

Pipe	Resource Category	Volume	Tonnes	Carats	Revenue (M US$)	Grade (cpht)	Average Diamond Value (US$/ct)
5034	Indicated	3,280,000	8,570,000	13,770,000	833	160	61
	Inferred	1,710,000	4,530,000	8,120,000	536	180	66
Hearne	Indicated	2,170,000	5,470,000	9,320,000	466	170	50
	Inferred	620,000	1,630,000	2,560,000	128	160	50
Tuzo	Inferred	4,320,000	10,520,000	12,370,000	521	120	42
Summary	Indicated	5,450,000	14,040,000	23,090,000	1,299	170	56
	Inferred	6,650,000	16,680,000	23,040,000	1,185	140	51

1 The current mine plan will remove 65% of these resources

AMEC evaluated the impact of the 2003 resource estimate (2002 Desktop Study, issued in April 2003) on the economics of the Gahcho Kué project. Although the desktop study incorporates "inferred mineral resources that are considered too speculative geologically" to be categorized as mineral reserves, AMEC's assessment supports the financial model for the project developed by DBCEI. The capital and operating cost estimates are considered to be at a scoping level, with an expected range of accuracy of ±30%.

The current development plan is based on open pit mining using conventional truck and shovel equipment. The kimberlite will be hauled to a stockpile near the plant site, and most waste rock will be deposited around the south sides of the Hearne and the 5034 pits. Because of the remote site location, substantial infrastructure will be required to support the operation and to provide transportation links. Site infrastructure will include equipment maintenance facilities, offices, workforce accommodations, and water supply. The operation will consume a significant amount of electrical power; the study assumes that the power will be generated on site.

The kimberlite pipes lie beneath approximately 10 m to 15 m of water in Kennady Lake. Before mining can take place, the area around the pipes must be contained and dewatered by constructing a series of dikes around the pit positions and pumping out the water. A minimum distance of 100 m will be maintained between each final pit boundary and dike position. Dikes for 5034 and Hearne will be constructed at the start of the project and those for Tuzo two years prior to the start of Tuzo mining.

The production schedule incorporates a plant build-up period for the first two years of operation. Production is scheduled to commence in 4th quarter 2010, with plant commissioning incrementally building up to full production by the end of the 2nd quarter

2011. The maximum production rate of 2 Mt/a will be maintained from 2012 through 2019. The current forecast assumes that the open pits will be completed in 2020. At that time, approximately 65% of the known resources from Hearne, 5034, and Tuzo will have been removed. Should the economics of the project improve (e.g., a higher average diamond value), the potential exists for either pit expansion or the development of underground options to recover further resources.

A preliminary ore processing system has been designed for the Gahcho Kué project. The objective of the system is to achieve an overall diamond recovery efficiency of not less than 98% by weight of diamonds larger than the bottom cutoff size that can be economically liberated. A high-security recovery facility will efficiently recover diamonds from diamondiferous concentrates in accordance with established De Beers' diamond value management principles. The recovery facility will achieve a recovery of 99% by weight of all free diamonds larger than the bottom cutoff size of 1.5 mm that are economically recoverable. The combined (overall) recovery will be a product of these two efficiencies, or 97%. The treatment plant design and costing is based on a capacity of 6,000 t/d. Based on the limited data available, and AMEC's experience in the design and operation of similar diamond processing facilities, AMEC considers the processing strategy and flowsheet selected for the Gahcho Kué treatment plant to be appropriate.

The total estimated cost to design, construct, and commission the 6,000 t/d facilities described in the Desktop Study is $608 million. The estimate comprises the direct field costs of executing the project, plus the indirect costs associated with the design, construction, and commissioning of the new facilities. AMEC has reviewed the capital estimate in detail and agrees that it is appropriate for a project of this magnitude.

Sustaining capital includes the cost of replacing mining equipment and dike construction. The total estimated sustaining capital cost from years 2010 to 2019 is $74 million. AMEC believes that the cost allowance is sufficient to support project operations.

Operating cost estimates were developed for three areas: mining, processing, and general and administration (G&A). The life-of-mine average operating costs by area are ($/t processed) $17.33 for mining, $5.88 for processing, and $32.78 for G&A. AMEC believes these estimates reflect a scoping level study, with a range of accuracy of ±30%. A contingency of 10% has been applied.

The financial evaluation was performed using the "escalate/de-escalate" methodology, whereby all cash inflows and outflows are escalated by Canadian inflation of 2% annually (Consumer Price Index is used as a proxy for inflation), then subsequently de-escalated at the same rate to determine net present value (NPV) and internal rate of return (IRR). This allows for appropriate application of tax pools, which must be applied against escalated profits. Based on the above assumptions, the after-tax IRR for the both cases is positive, but does not yet reach the joint venture hurdle rate. A sensitivity analysis was completed for both the NPV and the IRR against capital, operating costs, and revenue. The project was found to be most sensitive to changes in revenue. AMEC believes that the financial model fairly represents the state of the project at this time.

The environmental assessment and permit application process is a critical path issue in the project development timeline and reflects the technical and political complexities associated with permitting mining projects in the Northwest Territories. The main issues for Gahcho Kué are loss of fish habitat and socioeconomic considerations. Both should be discussed with the regulators at an early stage of the project.

2.0 INTRODUCTION AND TERMS OF REFERENCE

Mountain Province Diamonds Inc. (MPD) engaged AMEC E&C Services Ltd. (AMEC) to provide an independent Qualified Person's review of the 2003 Mineral Resource estimate and Preliminary Assessment of the Gahcho Kué project, as reported by MPD in the news release dated 15 April 2003. Located in the Northwest Territories of Canada, Gahcho Kué is a joint venture of De Beers Canada Exploration Inc. (DBCEI – formerly Monopros Ltd.), the wholly owned exploration arm of De Beers Consolidated Mines Limited (De Beers), Mountain Province Diamonds Inc., and Camphor Ventures Inc. The work entailed the preparation of a Technical Report as defined in National Instrument 43-101, *Standards of Disclosure for Mineral Projects*, and in compliance with Form 43-101F1 (the "Technical Reports"). Dr. Malcolm Thurston, an employee of AMEC, served as the Qualified Person responsible for preparing this Technical Report.

The project contains four main kimberlite pipes: 5034, Hearne, Tuzo, and Tesla. Information and data for this review and report were obtained chiefly from a recently completed study update entitled, "Gahcho Kué Diamond Project 2002 Desktop Study – April 2003." Additional information was obtained from MPD.

Pertinent geological data were reviewed in sufficient detail for the preparation of this document. Dr. Thurston also conducted and supervised the review of the geological data and mineral resource estimate. The following AMEC employees provided additional Qualified Person assistance:

- John Lindsay, P.Eng., who investigated and reviewed matters pertaining to metallurgy and mineral processing (Section 16)
- Mark Pearson, P.Eng., who reviewed mining, project cost estimates, and other matters relevant to requirements on production and development properties (Section 19).

Dr. Thurston visited the project site once between 10 and 16 February 1999.

All units of measure given in this report are in the metric system. Unless otherwise stated, all costs are expressed in 4th quarter 2002 Canadian dollars.

It should be noted that the elevational reference point for the Gahcho Kué kimberlites is expressed as height above ellipsoid (hae), a grid system based on standard geodetic height used in satellite imaging in the immediate vicinity of Kennady Lake. The larger topographic map used to define the elevations of regional features is based on metres above sea level (masl). The two systems can be matched within ±2 m by subtracting 11.4 m from the masl elevation to derive hae.

3.0 DISCLAIMER

AMEC's review of the Gahcho Kué project relied on the following reports, which were prepared by engineering consultants:

- Bruce Geotechnical Consultants (1997), Assessment of Airstrip Options, Mountain Province Mining Inc, AK5034 Diamond Project.
- J. Jakubec, C. Eng., SRK (Canada) Inc. (2002), G*ahcho Kué – Summary of Geotechnical Conclusions (Draft)*.
- HCI Hydrologic Consultants, Inc. (2002), *Predicted Hydrologic Consequences of Developing Gahcho Kué Diamond Project*.
- Mineral Resource Management Department, De Beers (March 2003), *Gahcho Kué Mineral Resource – Update to the Desktop Study.*
- AMEC (July 1999) *MRDI–Kennady Lake Project, Review of Procedures*, Report prepared for Monopros, Reference Number L341C.

AMEC used information from these reports under the assumption that they were prepared by Qualified Persons.

4.0 PROPERTY DESCRIPTION AND LOCATION

The Gahcho Kué project is located at Kennady Lake, approximately 300 km east-northeast of Yellowknife in the District of Mackenzie, Northwest Territories, Canada (see Figures 4-1 and 4-2). The property is 150 km south-southeast of the main Dia Met Minerals Ltd. and BHP Diamonds Inc. discoveries at Lac de Gras and 80 km east-southeast of the Snap Lake deposit. Surrounding waterbodies including Fletcher Lake and Walmsley Lake to the east, Kirk Lake to the north, and Margaret Lake to the west. Except for the northernmost part of 5034, the main kimberlite pipes (Tuzo, Hearne, 5034, and Tesla) all lie beneath Kennady Lake (Figure 4-3).

4.1 Mineral Tenure

The Gahcho Kué project falls within the AK group of mining leases and mineral claims (AK Property), centred near 63°30' north and 109°30' west. The AK Property consists of three 21-year mining leases and 27 mineral claims, although the remaining claims are in process of being converted to mining leases (Table 4-1). The total area under tenure is 30,528 ha (74,128 acres). Annual lease payments are payable to the Department of Indian Affairs and Northern Development (DIAND) at the rate of $1 per acre for the first 21-year term of the lease. The payment will increase to $2 per acre per year for the second 21-year term of the lease. All mining leases and claims awaiting conversion to leases have been legally surveyed and the 2003 payments submitted.

Table 4-1: Gahcho Kué Mineral Tenure

Name	Claim_numb	Owner_name	Percentage	Nts_sheet_	Nts_sheet2	Anniversary	Acres	Hectares	Lease_numb
AK 90	F28440	DBCEI	51	075N06	-	07/15/2023	2607	1055.02	4199
AK 91	F28441	DBCEI	51	075N06	-	07/15/2023	2579	1043.68	4200
AK 92	F28442	DBCEI	51	075N06	-	07/15/2023	2590	1048.14	4201
AK 22	F28372	DBCEI	51	075N11	-	-	2566	1045.10	Pending
AK 23	F28373	DBCEI	51	075N11	-	-	2543	1045.10	Pending
AK 72	F28422	DBCEI	51	075N05	075N12	-	2486	1045.10	Pending
AK 73	F28423	DBCEI	51	075N05	075N12	-	2573	1045.10	Pending
AK 74	F28424	DBCEI	51	075N05	075N12	-	2537	1045.10	Pending
AK 75	F28425	DBCEI	51	075N05	075N12	-	1405	627.06	Pending
AK 76	F28426	DBCEI	51	075N06	075N11	-	2402	1045.10	Pending
AK 77	F28427	DBCEI	51	075N06	075N11	-	2399	1045.10	Pending
AK 78	F28428	DBCEI	51	075N06	075N11	-	2573	1045.10	Pending
AK 79	F28429	DBCEI	51	075N06	075N11	-	2498	1045.10	Pending
AK 80	F28430	DBCEI	51	075N06	075N11	-	2588	1045.10	Pending
AK 81	F28431	DBCEI	51	075N06	075N11	-	2531	1045.10	Pending
AK 82	F28432	DBCEI	51	075N06	075N11	-	2565	1045.10	Pending
AK 83	F28433	DBCEI	51	075N06	075N11	-	2515	1045.10	Pending
AK 84	F28434	DBCEI	51	075N06	075N11	-	2513	1045.10	Pending
AK 85	F28435	DBCEI	51	075N06	075N11	-	2545	1045.10	Pending
AK 86	F28436	DBCEI	51	075N06	075N11	-	2555	1045.10	Pending
AK 89	F28439	DBCEI	51	075N06	-	-	2577	1045.10	Pending
AK 93	F28443	DBCEI	51	075N06	-	-	2611	1045.10	Pending
AK 94	F28444	DBCEI	51	075N06	-	-	2671	1045.10	Pending
AK 95	F28445	DBCEI	51	075N06	-	-	2572	1045.10	Pending
AK 96	F28446	DBCEI	51	075N06	-	-	2534	1045.10	Pending
AK 97	F28447	DBCEI	51	075N06	-	-	2358	1045.10	Pending
AK 98	F28448	DBCEI	51	075N05	-	-	1437	627.06	Pending
AK 99	F28449	DBCEI	51	075N05	-	-	2584	1045.10	Pending
AK 100	F28450	DBCEI	51	075N05	-	-	2587	1045.10	Pending
AK 101	F28451	DBCEI	51	075N05		-	2627	1045.10	Pending

Figure 4-1: Location of Gahcho Kué Project Area

Figure 4-2: AK Claim/Lease Group Boundary Map

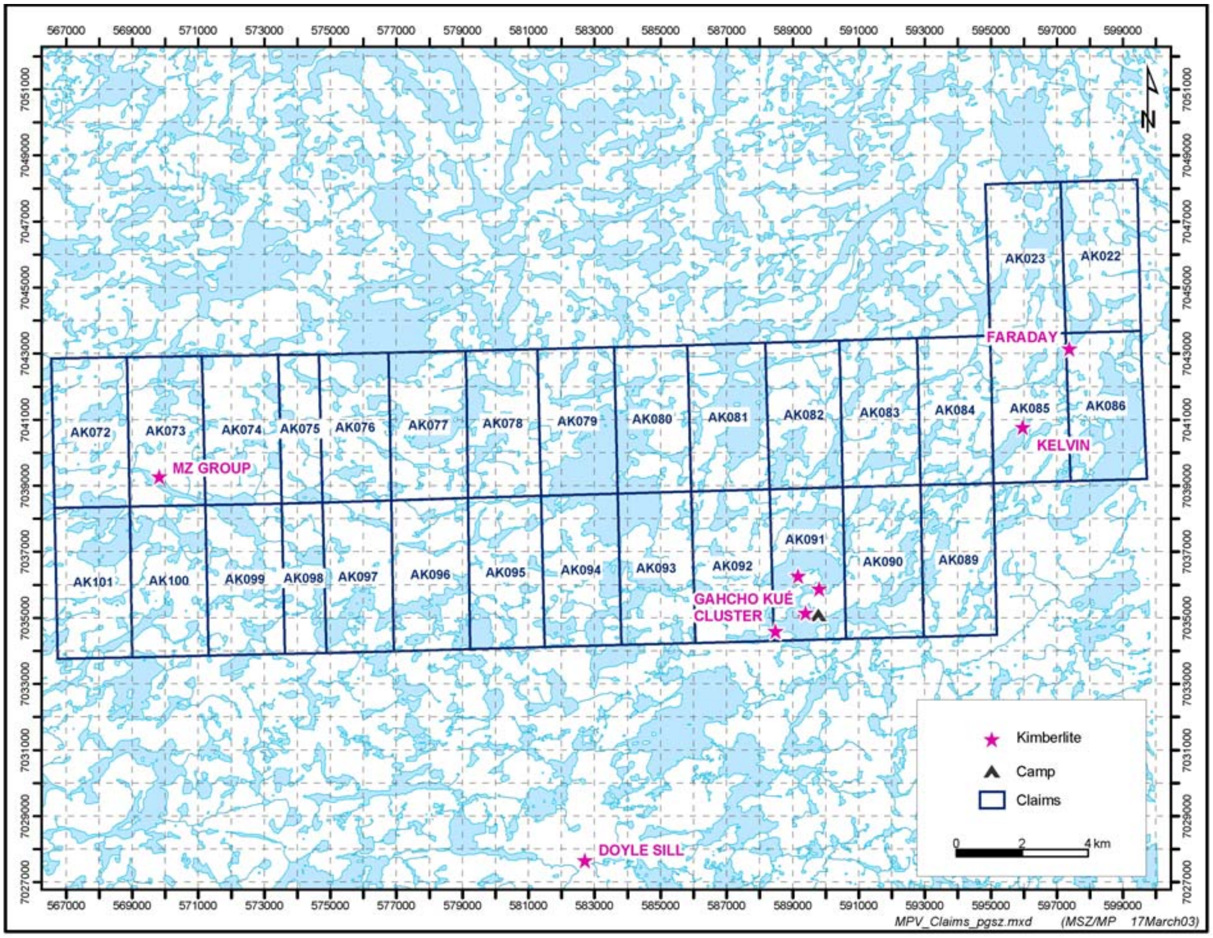
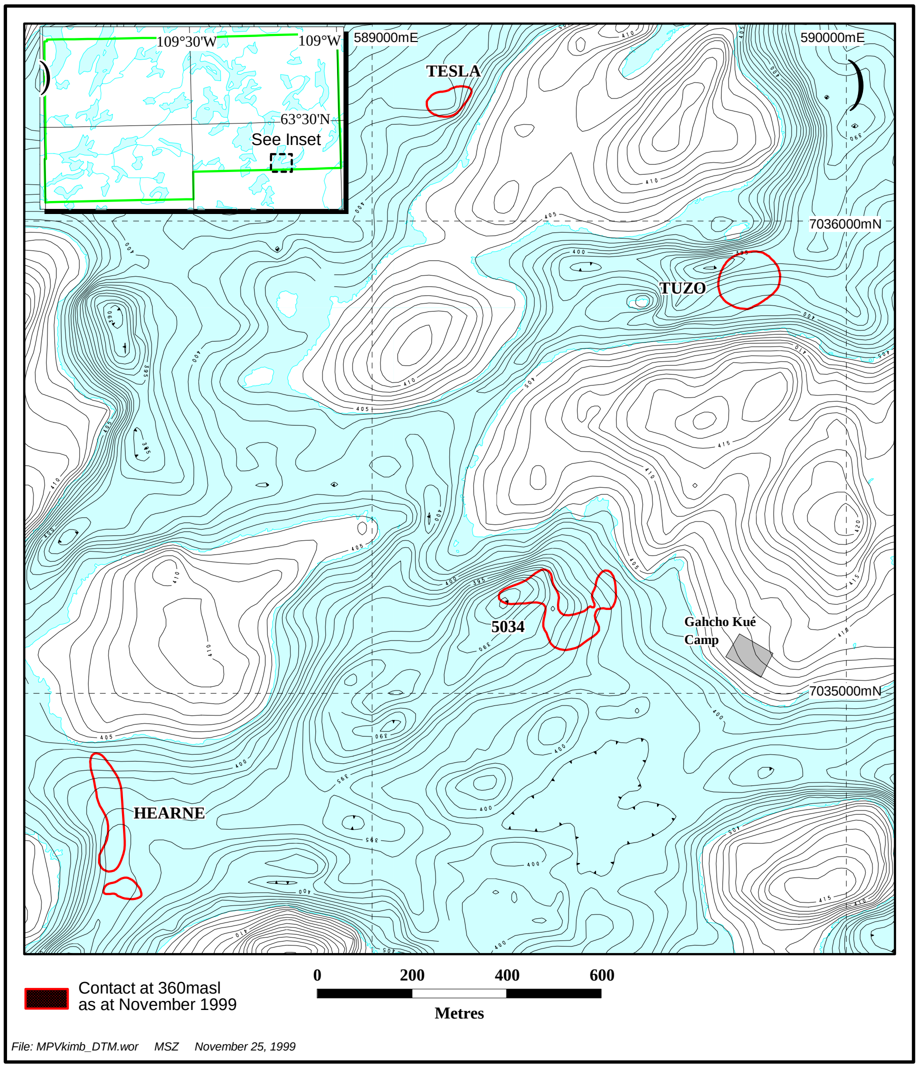


Figure 4-3: Relative Positions of Kimberlite Bodies in Kennady Lake



4.2 Agreements

Until 3 August 2000, the AK Property was held by MPD, as to 90%, and by Camphor Ventures Inc., as to 10%. Pursuant to the Monopros Joint Venture Agreement, dated 6 March 1997, Monopros (now DBCEI) was entitled to earn a 60% interest in the AK Property in exchange for conducting an exploration program on the property and a bulk sampling program on one or more new kimberlites; completing a feasibility study on one or more kimberlites; and funding the development and construction of a commercial mine. On completion of a bulk sampling program, and if DBCEI committed to proceed with a full feasibility study, DBCEI would earn an initial 51% interest, increasing to a 56% or 60% interest (depending on alternative arrangements on financing the feasibility study) on the commencement of commercial production. If on completion of the full bulk sampling program DBCEI did not commit to proceeding with a feasibility study, DBCEI would earn only a 30% interest and MPD and Camphor Ventures Inc. would continue to control the AK Property.

Pursuant to an agreement reached at a meeting on 8 March 2000, the parties agreed to amend the Monopros Joint Venture Agreement to clarify their funding obligations and enable the feasibility study decision date to be deferred, thereby giving DBCEI time to investigate several conventional and alternative mining scenarios as the subject of a desktop study. As a result, DBCEI agreed to fund all ongoing exploration, development, and other project costs, effective immediately, and would earn a 51% interest upon completion of the desktop study. On 4 August 2000, the desktop study was presented to MPD, and DBCEI was deemed to earn a 51% interest in the AK Property. Consequently, MPD was left with a 44.1% interest and Camphor Ventures Inc. with a 4.9% interest. An updated and expanded JV Agreement was signed 24th October 2002.

4.3 Permits

Table 4-2 lists the current land and water use permits and licences required to conduct exploration activities at the Gahcho Kué project.

Table 4-2: Summary of Existing Permits for the Gahcho Kué Project

Type	Permit Number	Issuing / Administering Authority	Expiry Date	Comments
Class A Land-Use Permit	MV2001C0065	Mackenzie Valley Land and Water Board	28 Oct. 2006	
Type B Water Licence	N1L2-1725	Mackenzie Valley Land and Water Board	30 Nov. 2003	
Drilling Authorization	-	Mine Health & Safety – NWT Worker's Compensation Board	31 Dec. 2003	Renewable upon application
Quarry Permit	2003QP0009	Department of Indian Affairs and Northern Development	13 Feb. 2003	Permit unused
Bulk Fuel Storage	-	Department of Indian Affairs and Northern Development	none	Permit remains in good standing as long as the storage tanks on site remain in good standing
Extended-Hours Permit	-	GNWT – Labour standards	01 May 2003	Expired and no longer valid
Environmental Research Permits	-	Prince of Wales Northern Heritage Centre Arctic Research Institute	pending for summer 2003	For archaeological and limnological work, respectively

4.4 Environmental and Socioeconomic Issues

Although the Gahcho Kué project is at a preliminary stage, environmental information is available from the nearby Snap Lake project and other diamond mines in the NWT, particularly the Diavik Diamonds project. The experience gained at other operations has been used to develop a greater understanding of project environmental impacts and risks, as well as to estimate costs related to the environmental regulatory process and ongoing compliance and monitoring. The environmental assessment and permit application process is a critical path issue in the project development timeline and reflects the technical and political complexities associated with permitting mining projects in the Northwest Territories.

The main issues for Gahcho Kué are loss of fish habitat and socioeconomic considerations. In the proposed site design, a portion of Kennady Lake would be permanently lost to tailings disposal. In addition, the area of the lake overlying the pits would be lost for the duration of the mining operations and possibly after closure. The Department of Fisheries and Oceans (DFO) "No Net Loss" policy discourages any habitat loss and requires habitat compensation for any unavoidable loss. As such, a fundamentally different tailings management plan, such as disposal in a land-based impoundment, may be necessary in order to reach a mutually satisfactory compensation formula. This should be discussed with the regulators at an early stage of the project.

Socioeconomic concerns include the cumulative effects of an additional mine in the NWT. Regulators and the community may be reluctant to accept a new mine in a region that already has a high rate of employment among available, skilled workers. The Gahcho Kué project would need to conduct a very detailed socioeconomic study during the pre-permitting phase to assess the cumulative project impacts.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHISIOGRAPHY

A multitude of lakes provides access for float planes (summer) and ski- or wheel-equipped aircraft (winter). During winter, larger aircraft such as the Dash-7 and Super Hercules L100 Transport can operate from an artificially thickened ice landing strip on Kennady Lake.

A winter road connects Yellowknife to the Lupin, Ekati, and Diavik mines during February and March each year (Figure 4-1). The road is operated under a Licence of Occupation by the Joint Venture Partners who operate the Ekati, Diavik, and Lupin mines. The road passes within 70 km of the Gahcho Kué camp, at Mackay Lake. In 1999, a winter road spur was constructed from Mackay Lake to the project site for the first time.

The property lies in the treeless tundra of the "barren lands," some 290 km south of the Arctic Circle; much of the area is covered with lakes and muskeg. The climate is extreme, with temperatures ranging from -45°C to +25°C. Winter winds can create lethal wind chill factors and extensive drifting snow. However, average annual snowfall rarely exceeds 1 m, most of which falls during autumn and spring storms. Ice-up and break-up occupy most of September and June, respectively, during which time access to the property is via the esker runway at Kirk Lake camp. The ice-free season generally lasts 2½ months from early July to mid-September.

Local relief is generally extremely flat. The elevation of rolling hills varies between 400 masl and 550 masl.

6.0 HISTORY

Historically, mineral exploration in the southeastern Slave Craton focused on gold and, later, base metals within the Yellowknife Supergroup metavolcanic and metasedimentary rocks in the Walmsley Lake area. However, no previous exploration for base or precious metals within what is now the AK Property is recorded in the assessment files of DIAND. Furthermore, there is no record of diamond exploration in the AK Property area prior to its staking in 1992.

This section summarizes all work done on the Gahcho Kué project prior to 2002. The 2002 work is described in Section 10, Exploration.

6.1 Canamera Geological Activities, 1992 - 1996

The AK mineral claims were staked by Inukshuk Capital Corp. and recorded on 17 August 1992. The property was then optioned in October 1992 to Mountain Province Mining Inc. and the joint venture partners at that time. The property consisted of 102 contiguous claims comprising 125,528 ha.

Canamera Geological, as operator, originally investigated the Mountain Province Mining property. A reconnaissance sampling program commenced in 1992, and some 600 till samples were collected at a density of about one sample every 5 km^2. A series of east- to west-, or west- to southwest-trending kimberlitic indicator mineral dispersion trains were obtained. In 1994 a 250 m spaced Dighem survey was flown at 45 m to 60 m sensor height. In January 1995 the AK5034 kimberlite was discovered at the head of a kimberlitic garnet heavy-mineral dispersion train.

Thirty-nine holes of delineation NQ wireline core drilling were completed in 1995 (AK holes: 7,315 m). A core drilling mini-bulk sampling program was carried out in 1996. In addition, Canamera Geological and Bruce Geotechnical Consultants Inc. conducted geotechnical investigations of the 5034 kimberlite and country rock between 1995 and 1996.

6.2 Monopros Ltd. Activities, 1997

In April-May 1997 a low-level airborne magnetic and 5-frequency EM survey was flown at 20 m height and 50 m line spacing over the southern part of the AK Property. Exploration core drilling of geophysical anomalies was carried out immediately after on-site target selection. Tesla was discovered in May 1997 (EM target). The Tuzo and Hearne kimberlites were discovered in August 1997. Tuzo has a good EM response but is non-magnetic and has no indicator mineral dispersion. Hearne has a good EM response, occurs as a magnetic break along a magnetic dyke feature, and has a garnet and spinel heavy mineral train.

Delineation core drilling completed in 1997 encompassed:

- one due diligence NQ core hole at 5034, 224.0 m total drilled
- three NQ core holes at Hearne, 950.5 m total drilled
- three NQ core holes at Tuzo, 706.0 m total drilled
- three NQ core holes at Tesla, 691.3 m total drilled.

6.3 Monopros Ltd. Activities, 1998

Delineation core drilling completed in 1998 comprised:

- seven NQ core holes at Hearne, 920.5 m total drilled
- two NQ core holes at Tuzo, 430.6 m total drilled
- two NQ core holes at Tesla, 272.0 m total drilled.

The purpose of the 1998 program was to confirm the diamond grades of the 5034, Hearne, Tuzo, and Tesla kimberlites by mini-bulk sampling, as predicted from the microdiamond results obtained from core drilling, and those produced from 5034 by the previous operator.

In addition, a scoping study for a mine at Kennady Lake was completed by MRDI Canada (now AMEC) in October 1998 for Monopros Ltd., providing justification to take the project to the bulk sampling stage.

6.4 Monopros Ltd. Activities, 1999

The focus of the 1999 Gahcho Kué program was to conduct an evaluation bulk sampling exercise to define a global resource and partially delineate the pipes to 250 m depth. The drilling objectives were to maximize sample recovery and therefore diamond recovery, and to minimize diamond breakage by maximizing drill chip size.

Drilling was carried out over the January-February 1999 winter period. The lake ice was artificially thickened to support the drill rigs brought to site and permit the drilling period to be extended from 2 to 3.5 months. An airstrip suitable for Hercules aircraft was constructed. The Hercules was used to airlift in two drill rigs and equipment before the Gahcho Kué camp had vehicular access to Yellowknife (via a commissioned 122.5 km long winter ice road linking to the main Tibbitt-to-Contwoyto winter road).

The drilling method employed for the bulk sampling was reverse-flood using 324 mm to 343 mm diameter tricone bits; one 371 mm tricone bit was also used in the 5034 kimberlite (Grenon et al., 1999). The bulk sampling and results are summarized in Section 12 and Appendix A.

Delineation drilling using a 76 mm diameter tricone bit and 47 mm NQ core drilling was also done. The 18 drill holes (4,680 m) helped to determine the average dip of the kimberlite contacts at the 100 m level and the 250 m to 300 m level, representing optimum positioning of the large-diameter bulk sample drill holes. These holes were also used to acquire geotechnical information.

6.5 Monopros Ltd. Activities, 2000

Detailed horizontal loop electromagnetic (HLEM) surveys at 40 m line spacing and 20 m station spacing were conducted at Kennady Lake in the vicinity of 5034, Hearne, Tuzo, and Tesla, and 12 km to the northeast over the Kelvin kimberlite intrusion. The HLEM data collected during this survey completed full coverage of Kennady Lake south of Tesla. The 2000 survey mapped the full extent of the Dunn dyke.

Four NQ core holes were drilled at the Gahcho Kué kimberlite cluster:

- one inclined hole in the Hearne South kimberlite for delineation purposes (101 m)
- three inclined core holes testing along the Dunn anomaly (total 442 m).

The Dunn anomaly is an approximately 850 m long x 50 m wide northeast- to north-northeast-trending conductive linear feature located about 250 m west of the 5034 and Tuzo kimberlites. The three inclined core holes were drilled over a strike distance of about 425 m. A zone of kimberlite sheets and stringers intruded among diabase and altered granite up to about 35 m wide was intersected. Individual kimberlite sheets were up to about 1.7 m thick, and the diabase ranged in thickness from about 1.7 m to 21 m.

6.6 DBCM Ltd. Desktop Study of the Gahcho Kué Resource, 2000

De Beers Consolidated Mines Ltd., at Corporate Headquarters, Johannesburg, Republic of South Africa, carried out a desktop study of the Gahcho Kué resource in 2000. The study was completed on 10 July 2000. It considered an 18 Mt mineable resource open pit option for the 5034, Hearne, and Tuzo kimberlites.

6.7 DBCEI Activities, 2001

The De Beers Mineral Resources Management (MRM) department in Johannesburg, South Africa, suggested further drilling of the Hearne and 5034 kimberlites in 2001 to improve the 2000 Desktop Study grade and revenue estimates.

A reverse-flood airlift drilling method employing nominal 610 mm diameter tricone bits was used. Ice platforms were constructed over the 5034 and Hearne kimberlites to support the drill rigs and equipment. During the 2001 evaluation program, the Gahcho Kué camp had vehicular access to Yellowknife via a commissioned 122.5 km long winter ice road linking to the main Tibbitt-to-Contwoyto ice road. A Hercules ice airstrip was also constructed when the drilling was extended beyond the projected closure date of the winter road.

The initial estimate of the total number of carats that needed to be recovered to provide a more robust and statistically representative diamond parcel was between 2,000 and 2,500 carats, requiring the sampling of between 1,400 and 1,700 tonnes of kimberlite. The east and centre lobes of the 5034 kimberlite and the northern portion of the Hearne North kimberlite were bulk sampled in 2001. The bulk sampling and results are summarized in Section 12 and Appendix A. The results were incorporated in the updated Desktop Study issued in 2003.

7.0 GEOLOGICAL SETTING

7.1 Regional Geology

The Gahcho Kué kimberlite cluster occurs in the southeast Slave Craton. Griffin et al. (1999) summarized recent investigations of the geological setting of the Slave Structural Province (cf. Slave Craton) (Padgham and Fyson, 1992), which is a small Archean nucleus within the North American Craton.

The Province is bounded on the east by the Thelon Orogen (ca. 2.2 Ga) and on the west by the Wopmay Orogen (1.9 to 2.1 Ga), a series of magmatic arcs and accreted terrains. The overlapping Proterozoic and younger supracrustals of the Bear Province and the Arctic Platform define its northern and northeast boundary. The southern boundary of the Province is the Great Slave Lake Shear Zone (1.8 to 2.0 Ga), which has juxtaposed the Archean rocks of the Slave Province against Proterozoic rocks of the Churchill Province. The oldest rocks of the Slave Province are small remnants of felsic granites and gneisses (2.8 to 3.2 Ga; Beals, 1994) and the Acasta Gneisses (3.6 to 4.0 Ga; Bowring et al., 1989) in the western part of the craton. Most of the outcrop in the central and eastern parts is made up of several supracrustal series (metasedimentary rocks with less common metavolcanic rocks), recognized as the Yellowknife Supergroup (ca 2.7 Ga), which is intruded by an extensive series of pre- to post-deformational (2.69 to 2.60 Ga) felsic plutons (Van Breeman et al., 1992).

Several swarms of Early-Mid Proterozoic (2.0 to 2.3 Ga; LeCheminant et al., 1995) basaltic dykes occur in the Lac de Gras area. A source for the Lac de Gras dyke swarm beneath the Kilohigok Basin has been suggested. The north-northwest-trending Mackenzie dyke swarm (1.27 Ga; LeCheminant and Heaman, 1989) extends over 2,300 km from a focus, interpreted as a plume head (Fahrig, 1987), west of Victoria Island.

7.1.1 Quaternary Deposits within AK Claim Block Area

Hardy (1997) stated that the Quaternary geology of the AK claim block area appears to be related to the last glacial event, the Wisconsinan glaciation. There is no stratigraphic evidence that represents deposits from previous glaciations. According to Fulton and Prest (1987) the area was glaciated repeatedly during the Pleistocene, most recently by the Laurentide ice sheet. The Laurentide ice sheet began to recede 18,000 years ago, and the ice front retreated past the Gahcho Kué project area between 9,000 and 9,500 years ago (Dyke and Prest, 1987).

Aylsworth and Shilts (1991) stated that all of the Mackenzie area of the Northwest Territories was under the influence of the Keewatin Ice Divide of the Laurentide Ice Sheet, which is divided into four zones. The AK claim block occurs within the inner part of Zone 3, characterized by extensive drift cover comprising mainly hummocky till and till blanket. Hardy (1997) identified two major types of quaternary glacial deposits within the AK claim block area:

Ice deposited sediments:

- regional tills – matrix supported clasts diamict
- till veneer (<2 m thick) – around 70% of the AK claim area
- till blanket (2-5 m thick) – restricted discontinuous patches
- reworked till – localized
- ablation till – localized.

Waterlain sediments (glaciofluvial and glaciolacustrine environments):

- eskers – widespread
- outwash fans – up to a few kilometres long associated with some eskers
- glaciofluvial deltas – identified at the down-ice end of some eskers
- fluvial sediments – deposited along drainages between glacial and actual lakes; in most cases, the fluvial sediments are covered by swamps and sparsely spread organic material.

The quaternary deposits over the AK claim block area are generally quite thin. Only scarce patches of till blanket and large fluvioglacial outwash fans have important thickness (Hardy, 1997). The stratigraphic record overlying the till is younger than the last glaciation and is mainly composed of proglacial sediments (glaciofluvial and glaciolacustrine deposits). As the AK claim blocks occur over a relatively flat area, many areas of swamps, ponds, and peat are present (Hardy, 1997).

7.2 Geology of the Gahcho Kué Project Area

7.2.1 Basement Rocks

Granite is the dominant lithology in the region. Over metres scale, the granite varies between medium-coarse grained, equigranular granite to highly foliated granitic gneiss. Along the western shore of Kennady Lake the granite has complex, convoluted vein contacts with diorite, which suggests that the granite intruded semi-lithified diorite. Granitic pegmatite dykes were observed throughout the area.

Two sets of diabase dykes occur in the mapped area. The first set is interpreted from magnetic survey data. There are two distinct northwest- to north-northwest-trending linear magnetic highs in the eastern quadrant that are considered to represent the Mackenzie diabase dyke swarm. These linear magnetic highs have not been observed cropping out. The second set of diabase dykes is interpreted from aerial photography. Two east-northeast-trending diabase dykes have been identified from linear aerial photo-features occurring south of Kennady Lake and proximal to the Tesla kimberlite. These dykes can be traced in outcrop but do not have strong magnetic expression. They are considered to belong to the Mallay dyke swarm and to predate the interpreted Mackenzie dykes.

7.2.2 Quaternary Deposits

Till veneer, till blanket, and outwash sediments characterize the Quaternary deposits in the Gahcho Kué area. The areas of till blanket contained abundant mud boils and no bedrock exposure. Areas of level sands and reworked till were classified as outwash sediments. Till veneer and till blanket cover most of the area except for small areas to the east of the campsite; outwash sediments occur west of Kennady Lake. Outwash sediments and a large esker that extends along a portion of the southern edge of the mapped area dominate the area south of Kennady Lake.

7.2.3 Structural Setting

In 1998, Monopros conducted a study of magnetic lineaments and the internal structure of magnetic units covering a 328 km^2 area centred over the Gahcho Kué kimberlite cluster. The Gahcho Kué area is interpreted as being characterized by a granite-gneiss terrain, intruded by a series of dykes. There are several granitic intrusions surrounded predominantly by gneisses that have a clear structural pattern of being metamorphosed by granite intrusions. Along the eastern edge of the area, a clear geological boundary is interpreted to represent contact with meta-sediments that extend eastwards. The central portion is a structurally complex zone of folding and possible shears.

There are several groups of demagnetized lineaments with weak, negative magnetic expression; these demagnetized lineaments could be dykes or demagnetized country rock resulting from dyke intrusion or faulting:

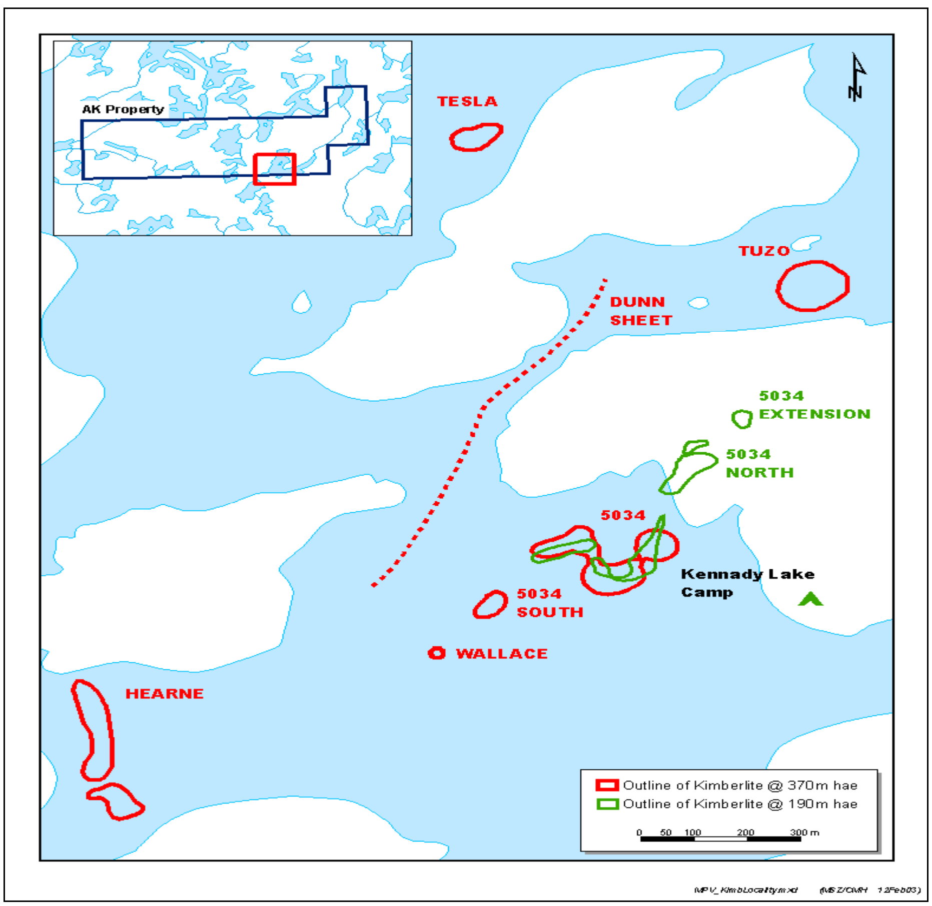
- a regular, pervasive northeast-trending set
- a regular, pervasive northwest-trending set
- an east-west-trending set in the south of the area of interest.

The 5034, Hearne, Tuzo, and Tesla kimberlites all occur at the eastern edge of an interpreted south-closing fold-nose that has developed a radial fold-nose cleavage. The apparent south-closing fold is interpreted to open to the north-northeast; the dip direction is not known. The core of the fold is composed of granite and minor granodiorite. Northeast-trending axial-planar foliation associated with the fold is developed in gneiss.

7.3 Geology of the Gahcho Kué Kimberlites

The four main pipes, 5034, Hearne, Tuzo, and Tesla (Figure 7-1), are characterized by contrasting external pipe shapes and infill. At present, Tesla is not included in the Gahcho Kué resource because of its small size and low grade and is not discussed further in this section.

Figure 7-1: Location of the Gahcho Kué Kimberlites



(height above ellipsoid = MSL-13.6 masl)

The shapes and internal geology of each kimberlite pipe have been developed based on the logging for the available drill core. The external shapes and internal geology of each body were modelled in three dimensions using commercial mine planning software (Gemcom).

7.3.1 Textural Types of Kimberlite and Pipe Shapes

The variations in textures within the Gahcho Kué kimberlite pipe infills are important and thus are used to describe the rocks. The different textures result from different processes during the emplacement of the kimberlite magmas. The contrasting physical properties of the rocks correlate with the different textures and are reflected in various aspects of the project ranging from DMS concentrates weights to clay content to country rock dilution. It is important to note that the textures can vary both within a single phase of kimberlite as well as between different phases of kimberlite.

Two textural end members dominate the pipe infills: hypabyssal kimberlite (HK) and tuffisitic kimberlite breccia (TKB) (Clement and Skinner, 1995; Field and Scott Smith, 1999). Each of the pipes also contains a significant amount of kimberlite displaying textures that are gradational between the end members. The textural gradation has been subdivided into four types: TKB, TKtB, HKt, and HK (t = transitional). The kimberlites grade from TKB to HK with increasing depth, within single phases of kimberlite. The main features of these gradational textural types are summarized in Table 7-1. In Table 7-1 it can be seen that as the textures grade from TKB through TKtB and HKt to HK the colour of the kimberlite changes, the proportion of clay minerals decreases, the proportion and size of xenoliths decrease, the olivines become fresher, the kimberlite textures grade from magmaclastic to magmatic (Field and Scott Smith, 1999), the degree of crystallization of the kimberlite magma increases, and microlitic textures become less common.

It is important to note that the above textural varieties of kimberlite may all be present within the same phase or pulse of kimberlite. Sharp internal contacts between phases of kimberlite are rarely observed, and the different phases of kimberlite within a pipe are not always distinguishable.

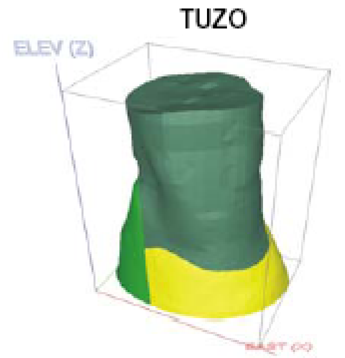
Table 7-1: Summary of the Key Macroscopic & Microscopic Features of Kimberlites

Feature	TKB	TKtB	HKt	HK
Colour	Olive green	Green-brown	Brown	Black-dark green
Clay Minerals	Common	Less common	Low	Absent
Xenolith Abundance	30% to 95%	10% to 40%	5% to 25%	<10%
Xenolith Size	0.5 cm to >500 cm	0.5 cm to 200 cm	0.5 cm to 50 cm	< 25 cm
Xenolith Reaction	Minor	Slight	Intermediate	Significant
Olivine Replacement	No fresh grains	No fresh grains	Minor fresh grains	Common fresh grains
Kimberlite Texture	Magmaclastic	Magmaclastic>magmatic	Magmatic>magmaclastic	Magmatic
Pelletal Lapilli	Common	Present	Rare	Absent
Autoliths	Present	Present	Common	Rare
Microlitic Textures	Common and fine	Variable and coarse	Rare and coarse	Absent
Primary Carbonate	Absent	Absent	Rare	Present

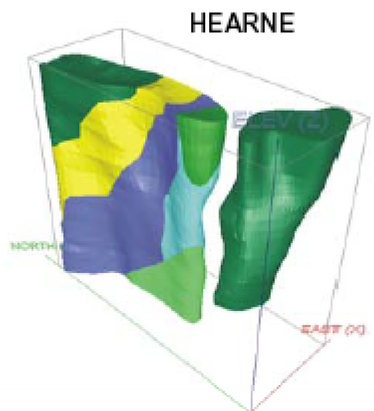
As shown in Figures 7-2a to 7-2c, the three main pipes at Gahcho Kué have contrasting pipe shapes. Tuzo has a circular plan view shape and a surface area of about 1.4 ha. The body is characterized by smooth, steep-sided pipe walls and is dominantly infilled with tuffisitic kimberlite breccia (TKB, Figure 7-2a). Hearne (Figure 7-2b) consists of two bodies. Hearne South is a roughly circular pipe and smaller than Hearne North, which is a narrow elongate pipe. The total surface area for the two bodies is about 1.5 ha. Both pipes have steep, smooth sidewalls. Hearne South is dominantly infilled with TKB and Hearne North with approximately equal amounts of hypabyssal kimberlite (HK) and TKB. The 5034 kimberlite has a very complex plan view shape and sub-surface structure with irregular pipe walls (Figure 7-2c). Three lobes are exposed at the present surface, and the fourth, northern lobe is overlain by approximately 80 m of in situ country rock. The total surface area of 5034 is about 1.95 ha. The 5034 pipe is dominantly infilled with HK.

There is a correlation between the pipe shape and the texture of the kimberlite infill. TKB occurs in the circular, smooth-sided pipes, Tuzo and Hearne South, while HK dominates the complex irregular pipe at 5034. Hearne North, an intermediate shaped pipe, contains both TKB and HK. There is also a correlation between pipe shape and internal geology, ranging from simple to complex from Tuzo through Hearne to 5034. The correlation of pipe morphologies and pipe infill is summarized in the composite geological model illustrated in Figure 8-1 in Section 8.0.

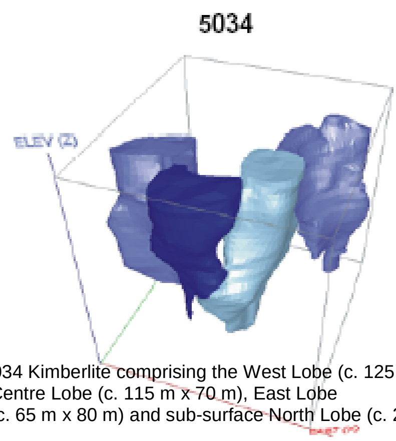
Figure 7-2: 3D Geological Models



7-2a: Tuzo Kimberlite (c. 130 m x 120 m)



7-2b: Hearne North (c. 245 m x 50 m) and Hearne South (c. 50 m x 85 m) Kimberlites



7-2c: 5034 Kimberlite comprising the West Lobe (c. 125 m x 42 m), Centre Lobe (c. 115 m x 70 m), East Lobe (c. 65 m x 80 m) and sub-surface North Lobe (c. 200 m x 40 m)

LEGEND: blues / grey = HK
yellow = gradational textures HKt and TKtB
green = TKB (Transitional = t)

7.3.2 Tuffisitic Kimberlite Breccia (TKB)

The TKB rocks are olive green to light brown in colour. These rocks are relatively soft and can swell on contact with water because of the presence of common clay minerals. The TKB drill cores are characterized by matrix-supported magmaclastic textures. Common fresh, typically pink coloured, granitoid xenoliths vary in abundance from 30% to 95% and range in size up to 5 m. Xenocrysts of country rock are common and are often shard-like in shape. The kimberlite contains two generations of olivine: macrocrysts and phenocrysts. All olivine phases are completely pseudomorphed by serpentine. Pelletal lapilli are common; these typically consist of thin selvages of kimberlite that rim the olivines, xenoliths, and xenocrysts. Altered groundmass minerals can be identified within the selvages. The matrix between the pelletal lapilli consists of serpentine and clays. Primary carbonate is not present. In thin section, microlites, which include clinopyroxene, are common. Any mantle xenoliths are extremely difficult to identify within the core owing to alteration.

7.3.3 Transitional Tuffisitic Kimberlite Breccia (TKtB)

Rocks classified as TKtB are broadly similar to TKB but are more competent and darker in colour. The TKtB rocks have a uniform olivine distribution, but the matrix displays inhomogeneous textures dominated by magmaclastic textures or pelletal lapilli. In thin section clinopyroxene microlites are present, though they are notably coarser grained than those within the TKB rocks. These TKB-like areas are closely intermixed with less common small patches that possess magmatic textures. Relative to the TKB, country rock xenoliths are less common and show greater reaction to the host kimberlite. The xenoliths often have a green colour and are more difficult to distinguish within the kimberlite matrix. Olivine macrocrysts and phenocrysts are completely altered.

7.3.4 Transitional Hypabyssal Kimberlite (HKt)

The rocks classified as HKt are broadly similar to the HK rocks but are characterized by inhomogeneous textures dominated by a magmatic groundmass with less-common patches of magmaclastic kimberlite. These rocks are dark in colour and competent. The granitoid xenoliths show a degree of reaction with the host kimberlite that is intermediate between HK and TKtB and are typically dark green to black in colour. Olivine macrocrysts and phenocrysts are completely pseudomorphed by serpentine. Groundmass minerals include phlogopite, spinel, carbonate, serpentine, and perovskite. In thin section, clinopyroxene is observed as a common groundmass phase and is much coarser grained than the microlites present within TKB and TKtB rocks.

7.3.5 Hypabyssal Kimberlite (HK)

Rocks classified as HK at Gahcho Kué are mainly fresh, competent, black to dark green, and characterized by uniform macrocrystic textures. The rocks are composed of two generations of olivine consisting of anhedral, medium-grained, often fresh, olivine macrocrysts and smaller subhedral to euhedral olivine phenocrysts. The well-crystallized groundmass consists of monticellite, phlogopite, spinel, primary carbonate, serpentine, and perovskite. Mantle xenocrysts, in addition to olivine macrocrysts, include rare garnet and clinopyroxene. Ilmenite is not present. Rare mantle xenoliths consist of garnet lherzolites and eclogites. Country rock xenoliths are dominated by granitoids, which show extensive reaction to the host kimberlite and range in colour from black to white. In areas where significant digestion of granitic country rock xenoliths has occurred, the groundmass is characterized by common phlogopite and/or clinopyroxene reflected in a patchy colouration of the rocks.

7.3.6 Country Rock Xenoliths

Country rock xenoliths within the Gahcho Kué pipes are dominated by a variety of granitoid xenoliths with lesser diabase, gneiss, and rare volcanics. No sedimentary xenoliths are present. Xenolith contents of the kimberlites are variable, particularly in the TK. For logging purposes the following terms were used to indicate xenolith abundance:

K	<15% (not a breccia)
KB	15% to 50% (breccia)
KBB	50% to 75% (breccia)
KBBB	>75% (breccia)
KmB	>15% xenoliths 5 mm to 10 mm (microbreccia)

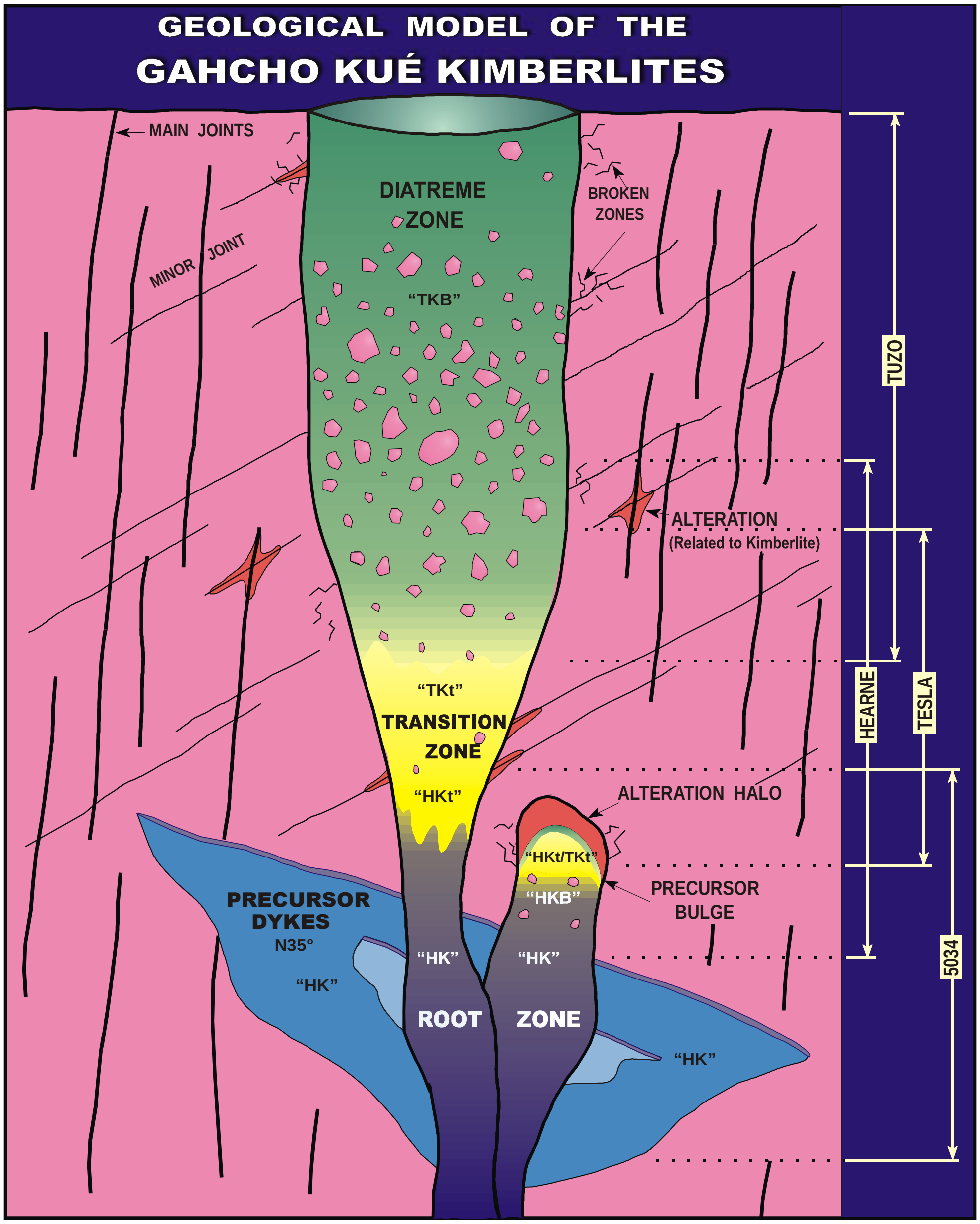
8.0 DEPOSIT TYPES

The composite geological model of the Gahcho Kué kimberlite pipes (Figure 8-1), as well as the shape and infill of the individual kimberlite pipes, is similar to that of the kimberlites in the Kimberley area of South Africa, but extremely different from many other Canadian kimberlites such as those found at Fort à la Corne, Attawapiskat, and Lac de Gras (Field and Scott Smith, 1999). The Gahcho Kué pipes are considered to be similar root-to-diatreme transition zones as those described by Clement (1982) and Clement and Reid (1989). The Gahcho Kué pipes, therefore, must have undergone significant erosion.

The variations in pipe morphologies and infill displayed by the Gahcho Kué kimberlites reflect varying depths of diatreme development and are not a function of different depths of erosion for each of the pipes.

With respect to emplacement, the observed gradational TK to HK textures at Gahcho Kué are consistent with the interpretation by Clement (1982) and Clement and Reid (1989) in which the degassing of an intrusive magma column produces the diatreme zone, with the underlying transition diatreme root zone representing a “frozen” degassing front, as discussed by Field and Scott Smith (1999).

Figure 8-1: Composite Geological Model of Eroded Gahcho Kué Kimberlites



9.0 MINERALIZATION

9.1 Hearne Kimberlite

Five different phases of TK have been recognized within the Hearne kimberlite. Each TK can be distinguished geologically using features such as varying proportions of garnets, magmaclasts, autolith-like bodies, xenoliths, and clay minerals. The names of the different TK units are based primarily on their location within Hearne North and Hearne South (Figure 9-1). The brown, partly altered TKs are easily distinguished from the fresh black hypabyssal kimberlite (HK) in both core and RC chips by logging as well as other parameters such as geophysical or drilling measurements. Different phases of kimberlite within the black HKs are very difficult to distinguish from one another in core and not possible to distinguish in the reverse circulation chips.

The total HK has been subdivided into three units based primarily on macrodiamond grade, with some support from geological differences and spatial positions in the pipe.

9.2 5034 Kimberlite

Most of the 5034 kimberlite appears to be typical hypabyssal kimberlite (HK), with some areas displaying textures that are slightly transitional to TK. The proportion and type of country rock xenoliths is the only other macroscopic variation noted in the core. Contact breccias are not common. Based on the xenolith content, five possible subtypes of kimberlite have been noted, as follows:

- HK with some white to light green xenoliths, usually less than 5 cm, not a breccia
- HK with common to abundant white xenoliths, frequently over 5 cm, often >15% (breccia)
- HK with common, often large (20 to 30 cm) dark red and orange coloured xenoliths with fresh cores and green alteration rims
- HK with abundant <4 mm dark green kimberlitized xenoliths with white rims and occasional larger red-orange xenoliths (microbreccia)
- HK with few xenoliths.

Although the above variations were noted, no internal contacts were observed between the subtypes. Many of the holes logged include all the above varieties.

Although much of the HK present within 5034 consists of similar fresh dark hypabyssal kimberlite, different phases of kimberlite are present within each of the lobes drilled and can be identified by logging. Lesser amounts of TKB, including gradational textures between TKB and HK, are also present within the North Lobe below the granite cap of 5034. The presence of multiple phases of kimberlite is supported by the variable microdiamond and macrodiamond results within the individual lobes sampled. However, internal geological models cannot yet be produced based on the existing drill cores. The present geological model of the 5034 kimberlite consists of four distinct lobes, but no internal geology has currently been modelled (Figure 9-2).

9.3 Tuzo Kimberlite

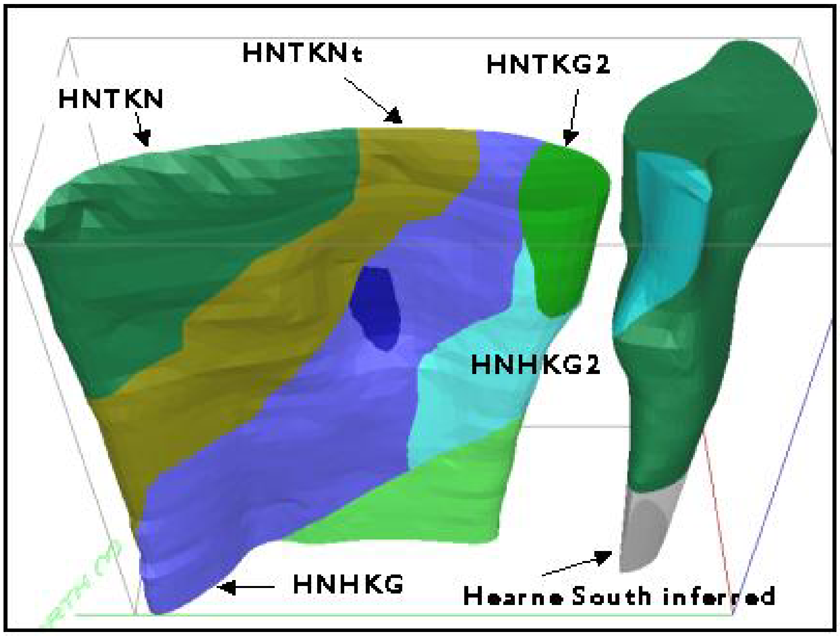
The Tuzo pipe is infilled with diatreme facies, tuffisitic kimberlite breccia (TKB) that has varying degrees of granite dilution. The main TK has been called TZTKBM (Tuzo TKB Main). Deeper in the pipe this unit begins to display transitional textures presumably relating to an underlying hypabyssal facies root zone. The top of this transitional unit (TZTKBtM) is first observed on average at approximately 220 m depth, although it is much shallower on the north side (150 m). A central sub-horizontal zone of high granite dilution (TZTKBMg, Tuzo TKB Main granite) is found within the main TKB. For the purposes of modelling, the drill geologists' estimate of granite percent was used with an arbitrary cutoff of 40% granite. This granite-rich zone appears approximately between 70 m and 140 m from surface on the southwest and between 160 m and 210 m on the northeast.

Based on macrograde and geology, one area of the upper part of the pipe appears to be a separate phase of kimberlite. A variation in the geology of the kimberlite was originally apparent in core holes. The relevant intersections are described as transitional TK with some HK zones. This high-grade kimberlite is much darker than the main TK, and country rock xenoliths show greater reaction to the host. Unlike the rest of Tuzo, this kimberlite generally contains less than 15% granite xenoliths, although some short intervals contained up to 25% country rock. This unit, TZTKtH (Tuzo TK transitional High grade), occupies slightly less than the northeast half of the pipe at surface and pinches out at the edge of the pipe at approximately 150 m depth.

The Tuzo kimberlite is shown in Figure 9-3.

Figure 9-1: Gemcom Model of the Hearne Kimberlite

Looking East



Looking West

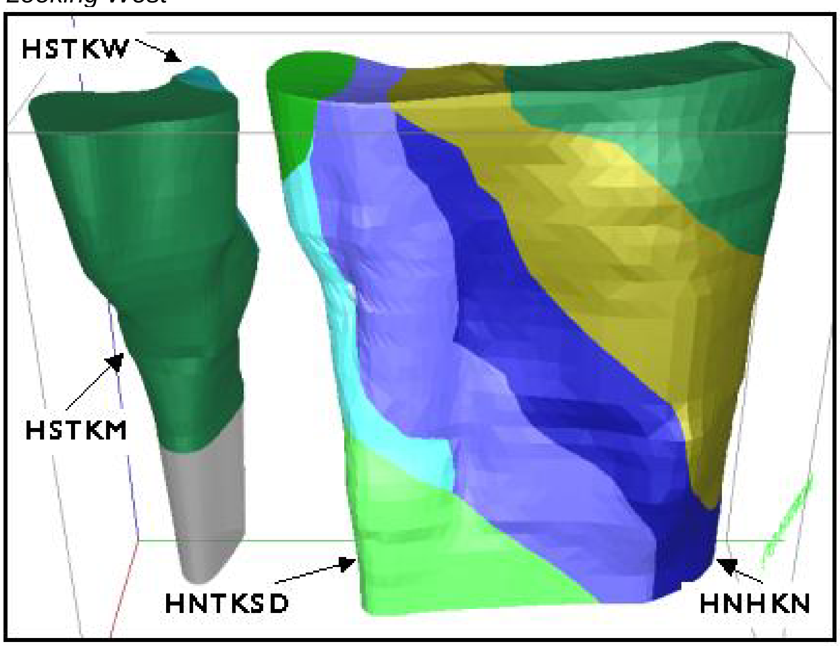
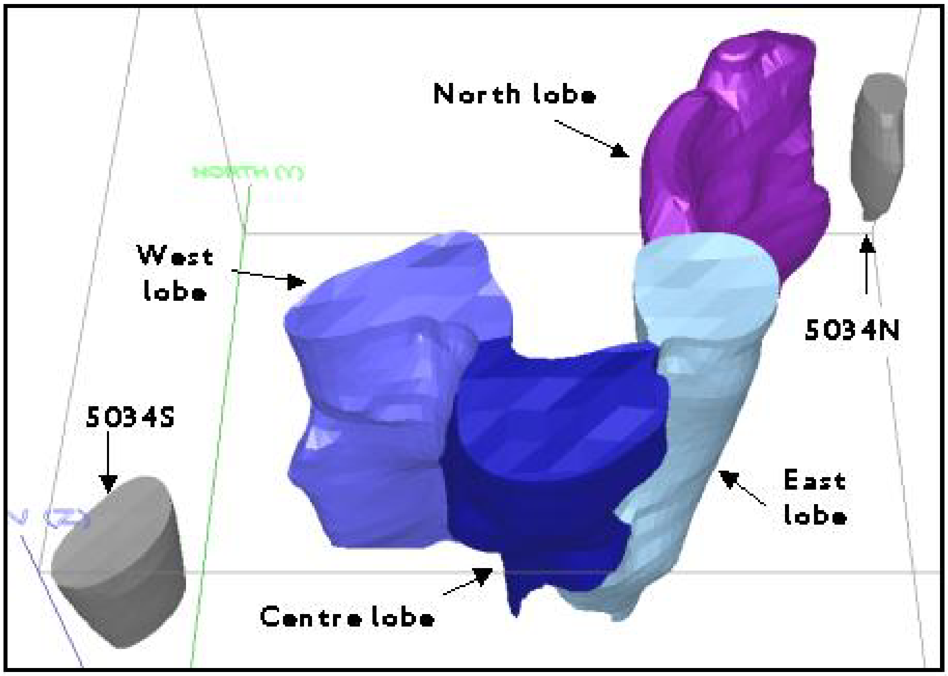


Figure 9-2: Gemcom Model of the 5034 Kimberlite

Looking North



Looking West

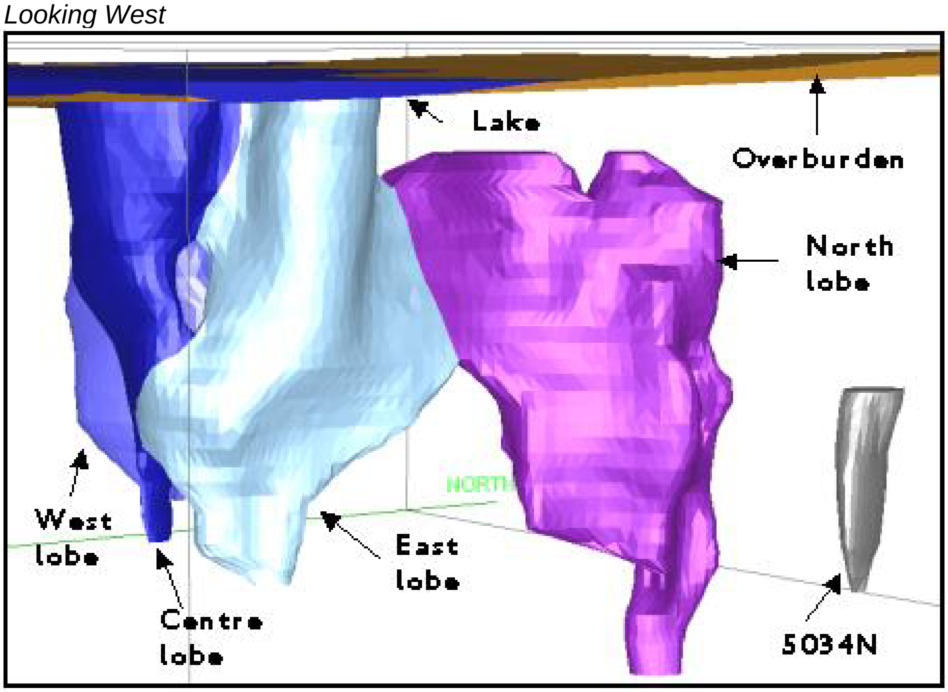
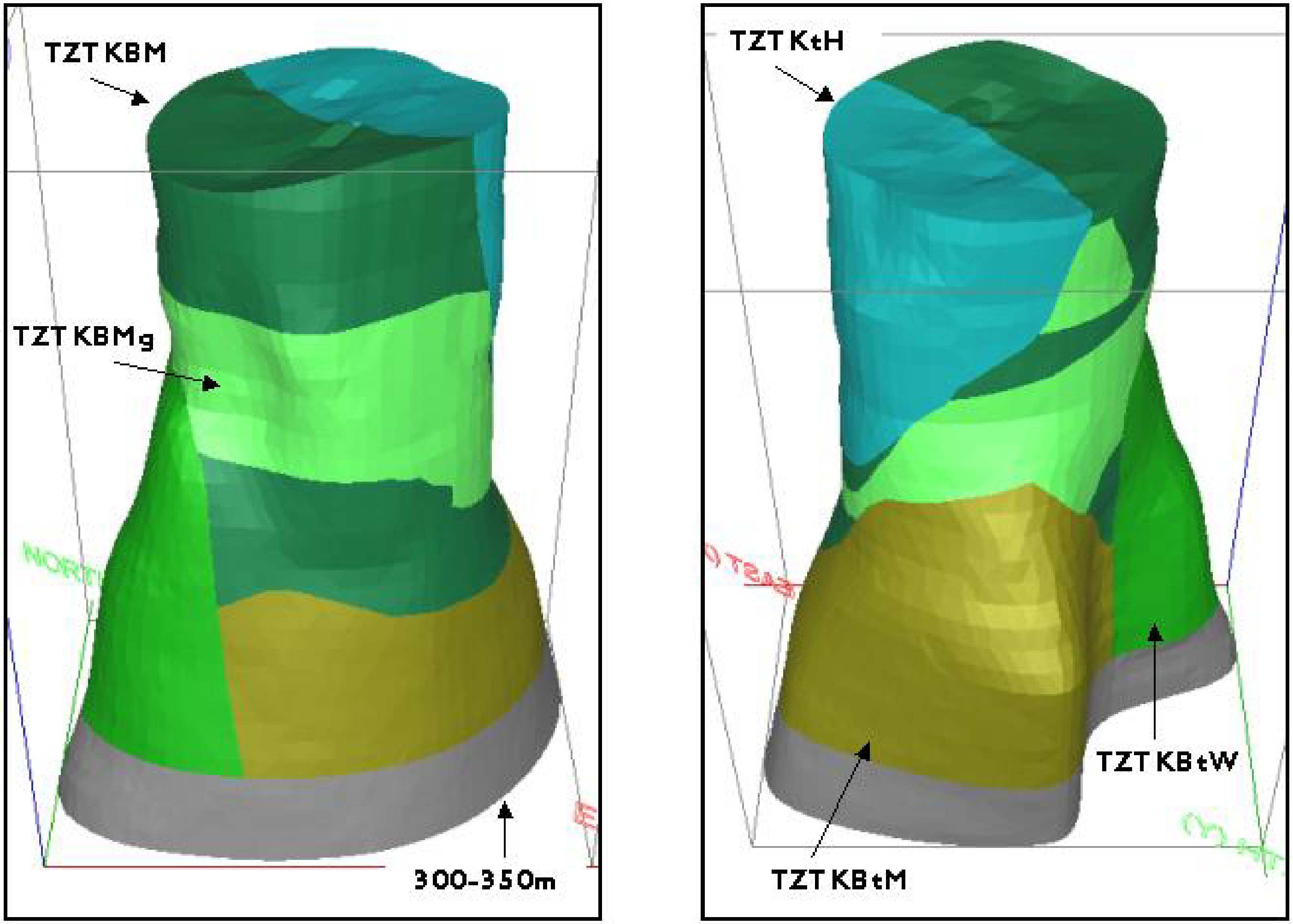


Figure 9-3: Gemcom Model of the Tuzo Kimberlite

Looking North *Looking South*



10.0 EXPLORATION

The recovery of a large, high-value 9.9 ct stone from the 2001 large-diameter drill hole (LDDH) program, coupled with the recognition that a sub-population of high-quality stones exists within the diamonds recovered to date from Gahcho Kué, provided encouragement to continue the drilling programs, curtailed in 2001, at the 5034 and Hearne kimberlite pipes during 2002. Increased support for the 9.9 ct diamond and further recovery of more diamonds of similar quality in the carater/grainer size range was recommended for further analysis. Furthermore, verification that a coarser diamond size frequency could occur in other areas of the 5034 and Hearne kimberlites, compared to that obtained in 1999, was considered important to firm up revenue estimates.

As required in the 1999 and 2001 evaluation programs, ice platforms were constructed over the 5034 and Hearne kimberlites to support the drill rigs and equipment. An ice airstrip capable of accommodating Hercules aircraft was constructed prior to construction of an ice road linking to the main Tibbitt-to-Contwoyto winter road, and appropriate equipment was brought to site to ensure an earlier start to production drilling by casing holes in advance of production drilling. The bulk sampling and results are summarized in Section 12 and Appendix A.

A pilot core drilling program, in conjunction with the on-site 3-D geological model, was used to plan the LDDH locations and hole depths. The kimberlites drilled during the pilot core hole program were 5034 North, Centre, and West Lobes, and Hearne North. Core drilling activities took place between 24 January and 5 March 2002, when nine core holes totalling 2,189 m were completed. Selected core was sampled for microdiamond analysis and ore dressing studies (ODS) after being logged in detail.

The Tuzo kimberlite was also core drilled late in the program in 2002 in order to obtain geological and microdiamond information in the unsampled south and west portions of the pipe, and to confirm geology and microdiamond information in the upper portions of the moderate-grade and high-grade units. Seven HQ core holes totalling 1,242 m were drilled after the completion of the 5034 and Hearne LDDH program.

The final objectives of all the core drilling and logging in 2002 were to:

- determine any changes in kimberlite geology and potential for contrasting grades
- map kimberlites in 3-D for resource calculations
- calculate tonnages from geology models using Gemcom
- obtain relevant geotechnical information.

These objectives were met.

11.0 DRILLING

Drilling at Gahcho Kué served three purposes: kimberlite discovery, delineation and bulk sampling. Delineation work consisted of core drilling, generally NQ to HQ size, whereas bulk sampling was conducted by large-diameter reverse circulation drilling. Drill campaigns are described by the work done on each main pipe.

11.1 Hearne Kimberlite

Since 1997, a total of 24 core holes have been drilled to delineate the Hearne kimberlite: 17 in Hearne North, six in Hearne South, and one that intersected both pipes (Figure 11-1). Two of these holes did not intersect kimberlite. Prior to 2002, no deep vertical core holes for geological purposes had been drilled into Hearne. In 2002, three vertical core holes were completed in Hearne North in advance of large-diameter drilling. No vertical core holes have been drilled in Hearne South.

Various bulk sampling programs have been carried out since 1998 (Figure 11-2). In 1998, 19 reverse circulation (RC) test holes (140 mm diameter) were drilled into Hearne to collect a mini-bulk sample. Of these, 16 were located in Hearne North, one in Hearne South, and two holes intersected only granite. The RC holes were drilled to a maximum depth of 171 m. Lateral coverage was reasonably good over Hearne North, as it was known at the time. In 1999, another eight large-diameter (311 mm) holes were drilled into Hearne North and two into Hearne South. The depth of the holes varied from 150 m to 300 m. In 2001, three large-diameter (610 mm) holes were drilled into the northern half of Hearne North, and five more 610 mm holes tested Hearne North in 2002. Four were drilled at the same locations as the vertical core hole mentioned above to allow correlation of geology and grade. One location was not drilled because of the large amount of granite that was intersected. Three of these holes were clustered around one core hole in the centre of the body. One of the large-diameter holes does not have a corresponding core hole.

No further large-diameter drilling has been completed on Hearne South since 1999.

Figure 11-1: Core Holes on Hearne Kimberlite

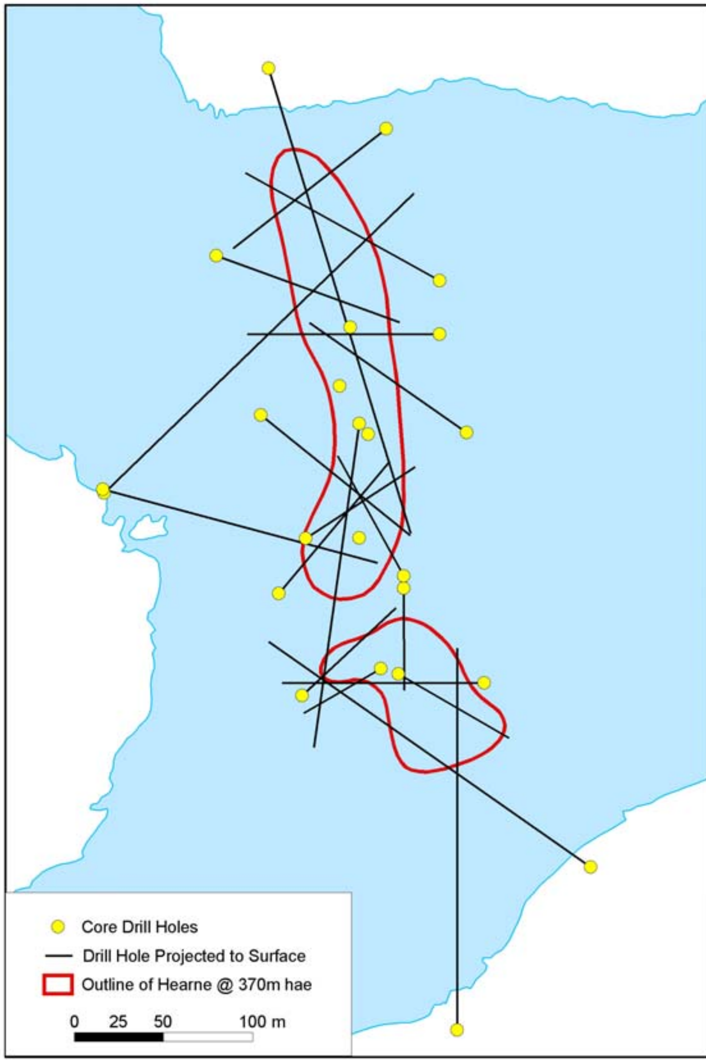
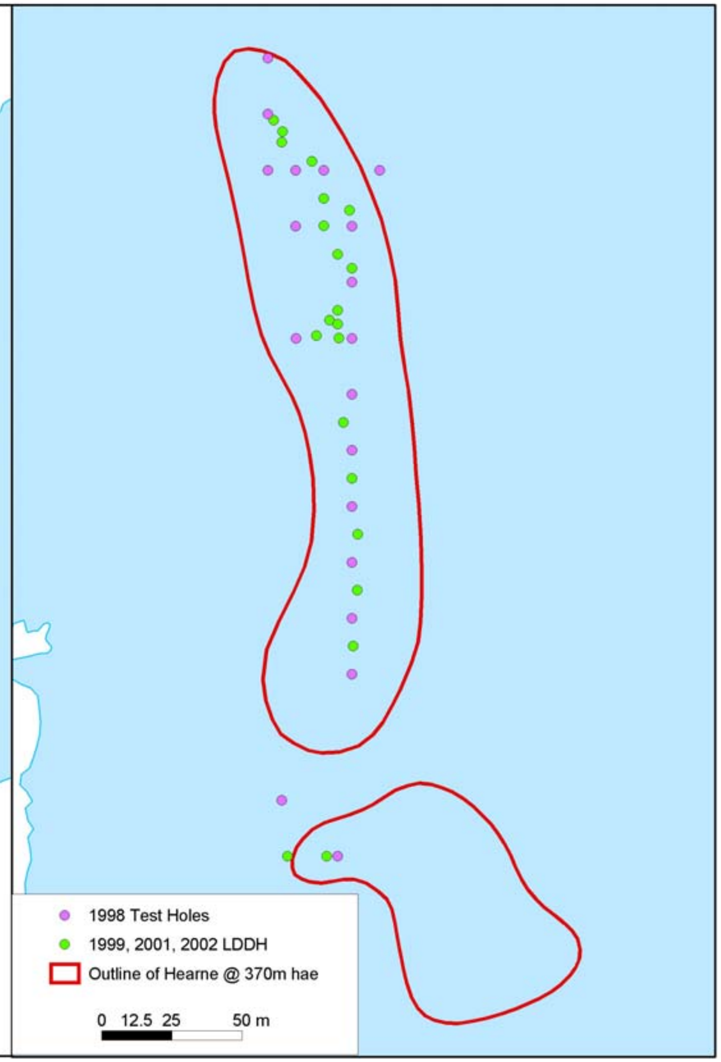


Figure 11-2: Reverse Circulation Holes on Hearne Kimberlite



11.2 5034 Kimberlite

Core drilling programs at 5034 were completed mainly by Canamera Geological Ltd. in 1995-1996 (Figure 11-4); drill logs are available for the Canamera core holes drilled prior to 1997. The surviving core from the Canamera drill holes has been reviewed with limited sampling by DBCEI, but detailed investigations have not been undertaken. Monopros Ltd. (now DBCEI) drilled a single verification core hole into the 5034 centre lobe in March 1997 to obtain microdiamond data for the purposes of comparison with microdiamonds collected from earlier drilling. In 1998, Monopros drilled four core holes into the body, one of which missed the kimberlite. Three intersected what is now known as 5034 North ("5034N," Figure 11-2).

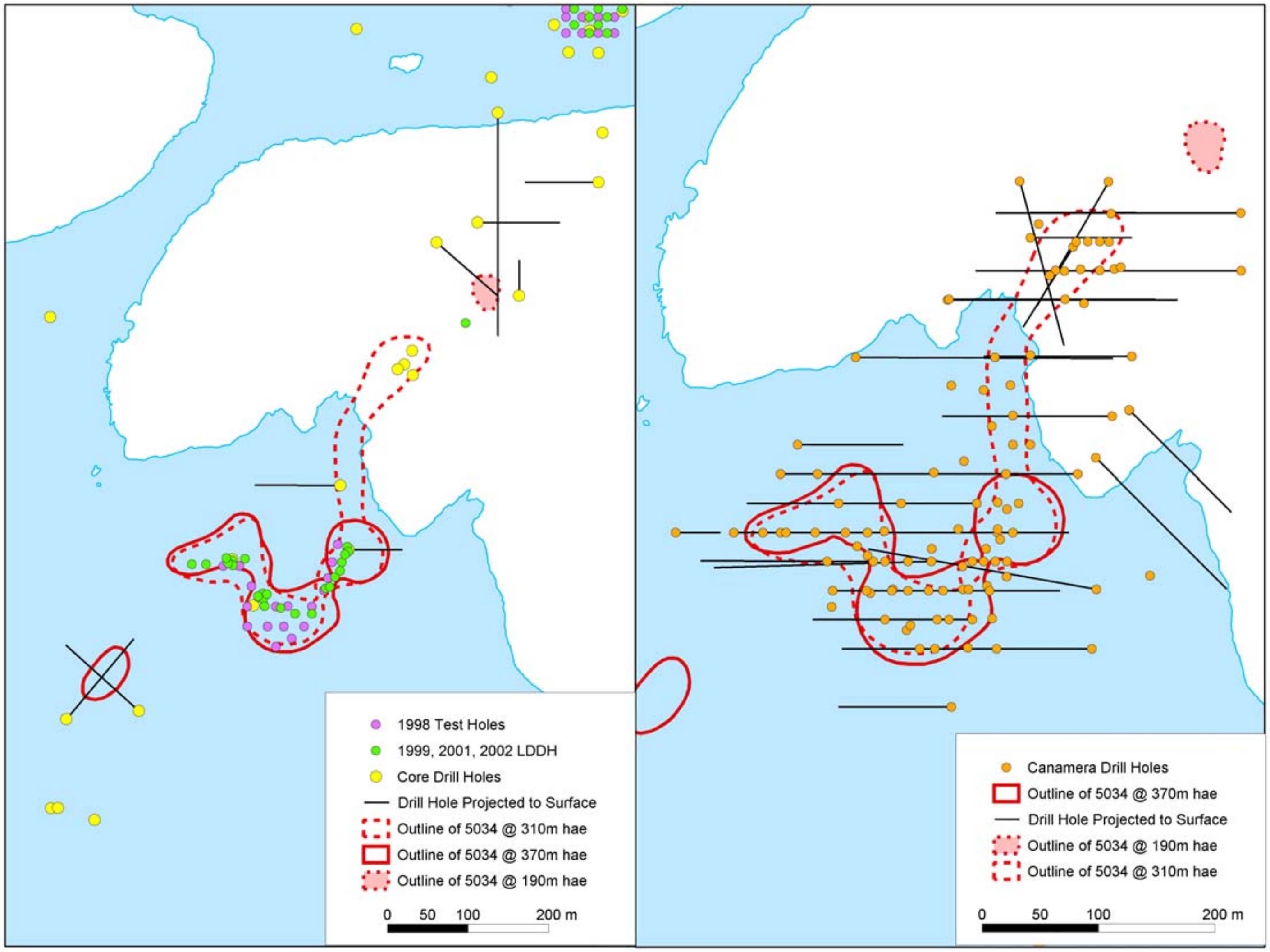
In 2002, six vertical core holes were drilled into 5034 (Figure 11-3). Four of these were in the North Lobe. Two were deep holes (>300 m) and two stopped shortly after kimberlite was intersected to test the depth of overlying granite. One hole each was drilled into the West and Centre Lobes in order to pilot a cluster of large-diameter holes in the same location.

DBCEI conducted a bulk sampling program between 1998 and 2002. In 1998, 17 RC holes were drilled to a maximum depth of 137 m (Figure 11-3). One of these holes missed the pipe. Pipe coverage with these holes was good over the Centre Lobe only. Thirteen large-diameter (311 mm) RC holes were drilled in 1999 to a maximum depth of 300 m. These were all drilled in a narrow corridor over the main part of the pipe.

In 2001 three large-diameter holes (610 mm) were drilled in the East Lobe and one in the west neck of the Centre Lobe. These were drilled to a maximum depth of 248 m and along the same corridor as the 1999 holes. In 2002, six large-diameter holes were drilled in the 5034 kimberlite (Figure 11-3). Three of the holes were clustered around the core hole in the West Lobe and three around the core hole in the Centre Lobe. Again, these are located very close to 1999 holes.

Figure 11-3: Holes Completed by DBCEI on 5034 Kimberlite

Figure 11-4: Holes Completed by Canamera on 5034 Kimberlite



11.3 Tuzo Kimberlite

Eight core holes were drilled between 1997 and 1999 at Tuzo (Figure 11-5). All of these were angled holes that were collared outside the kimberlite body. In 2002, seven vertical core holes were drilled into the pipe. Two of these continued to 300 m, four were terminated at 130 m, and one ended at 120 m. The primary purpose of these holes was to collect more representative microdiamond samples, to examine the nature of the areas not drilled, and to assess the possibility of expanding the area of the high-grade kimberlite in parts of the pipe that had never been sampled.

Bulk sampling drilling took place in 1998 and 1999 (Figure 11-6). Seventeen RC holes were drilled in 1998 to a maximum depth of 166 m. In 1999, eleven large-diameter holes were drilled to a maximum depth of 300 m. The RC holes tend to concentrate towards the centre of the body, leaving the outer parts of the pipe unsampled. No further large-diameter drilling has been completed since 1999.

11.4 Surveys and Logging

All borehole collars were surveyed. Prior to 2001, the collars were initially located by GPS and then resurveyed relative to the permanent coordinate grid. 2001 and 2002 collars were located by Real-Time Kinematic GPS tied to a local base receiver.

Downhole surveys were initially done by Pajari instrument. Since 1999, holes were surveyed by geophysical methods (calliper, magnetic susceptibility, and natural gamma). Confirmatory surveys of selected core and large-diameter drill holes of select boreholes were done by "Wellnav" gyroscopic surveying in 2002.

Core hole information was captured on field logs and core hole logs. Data on the field logs consisted of major lithologic intervals, various geotechnical measurements, core recovery, and nature of infill material. The core hole logs contained notes on lithology, rock code, dilution, and xenoliths from core observations, and petrographic descriptions, microdiamond data, heavy mineral analysis from work done on the core.

Bulk sample logs were also maintained. Information recorded included details of all samples collected, drill bits used (bit type, degree of wear and gauge before and after use, metres drilled), rate of penetration, and basic geology (rock type, clay, and inclusion content).

Figure 11-5: Core Holes Completed on Tuzo Kimberlite

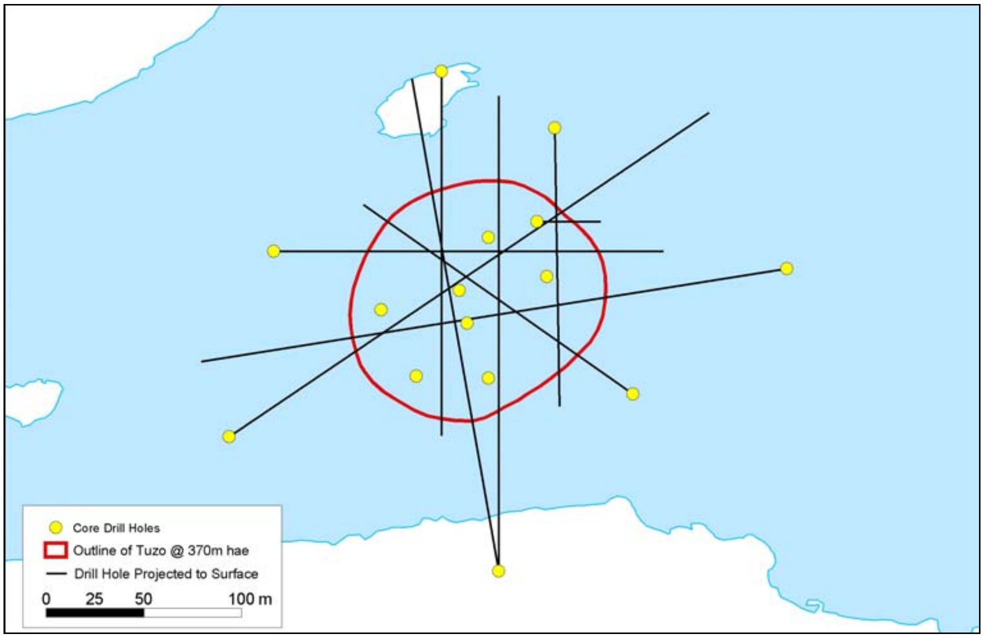
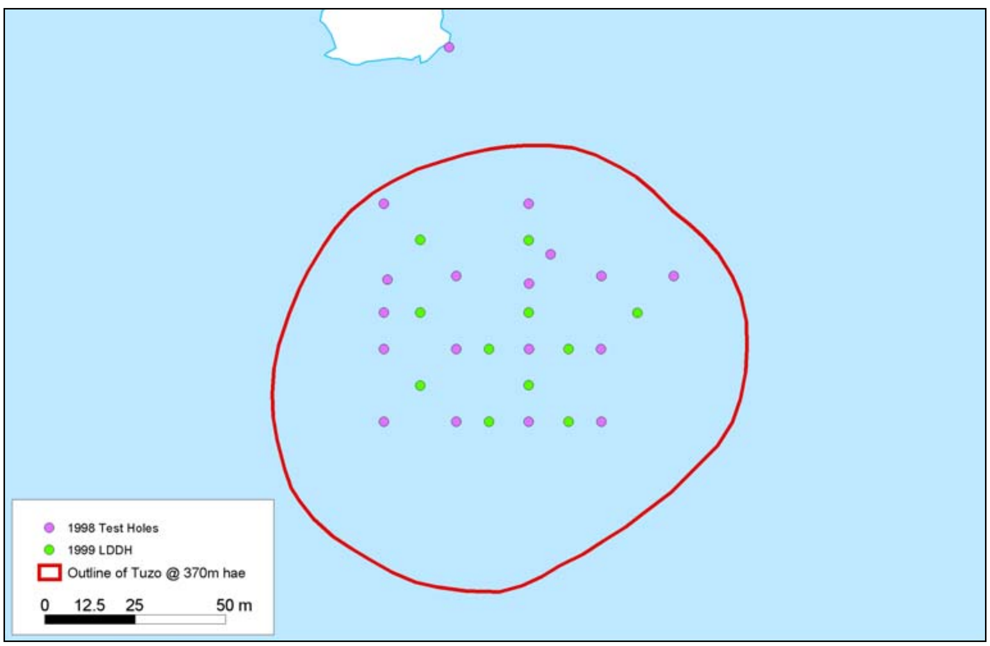


Figure 11-6: Reverse Circulation Holes Completed on Tuzo Kimberlite



11.5 Density Determinations

11.5.1 Monopros Ltd. 1999 Large-Diameter Density Borehole Logging

A comprehensive multi-parameter borehole geophysical logging program was undertaken as part of the 1999 LDD bulk sampling program. Two of the most important physical properties collected were the calipered borehole diameter and the gamma density information. From these two parameters it was possible to calculate the mass of the sample extracted.

During the borehole physical rock property survey, density information was collected in each of the bulk sample holes at a 5.0 cm sample spacing. The density probe contained a source of gamma radiation (Cesium 137) and a gamma ray detector. Physical density measurements were completed for comparison to the geophysical measurements to aid in quality control. Representative core samples ranging 5 cm to 10 cm in size were taken every 2.5 m. The tools used in the procedure were an electronic scale (1.0 g accuracy), water, and two graduated cylinders: a 1,000 mL plastic cylinder (for core displacement) and a 100 mL small glass cylinder (for accurate addition of water). Measurements were done on non-coded core.

The following average density values were calculated:

- 5034 kimberlite, 2.62 g/cm^3
- Hearne kimberlite, 2.55 g/cm^3
- Tuzo kimberlite, 2.43 g/cm^3.

11.5.2 Monopros Ltd. 1999 Large-Diameter Drill Chip Density Measurements

Drill chip density measurements were carried out at the Monopros Ltd. processing facility in Grande Prairie, Alberta. The material selected for density measurement was collected from DMS tailings grab samples, which were also used to determine granulometric screening analyses, percent kimberlite content, and moisture content. Material from the 5034, Hearne, and Tuzo pipes was investigated.

Chip density measurements were undertaken on -12.5 mm, 8.0 mm, and 6.3 mm screened fractions. A random selection of chips from each fraction were sprayed with a quick-drying lacquer sealant. A known weight of chips was placed into a known volume of water in a 100 mL measuring cylinder (accuracy of ± 0.5 mL), and the volume of displaced water was measured. The sample weight was then divided by the volume of water displaced.

The following average chip sample densities were obtained:

- 5034 kimberlite, 2.59 g/cm^3
- Hearne kimberlite, 2.58 g/cm^3
- Tuzo kimberlite, 2.39 g/cm^3.

Overall, these density measurements varied by 2% to 3% relative to those obtained by geophysical methods when examined per kimberlite body. The geophysical measurements include an entire rock type with inclusions and different kimberlite textures. The chip density measurements, on the other hand, ignored the inclusion content of the sample. In addition, only coarse chips were measured, thus biasing the results toward that part of the kimberlite that produced a coarser product.

11.5.3 DBCEI 2002 Core Density

Density measurements on selected granite and kimberlite core from the 2002 holes drilled at the 5034 North, Centre, and West lobes, the Hearne pipe, and the Tuzo pipe were carried out on site at Gahcho Kué in 2002. The density values determined from the 2002 core specimens from the 5034 and Hearne kimberlites were used for mass calculations of the 2002 LDD evaluation samples.

Density was determined by measuring the mass of the core with a digital scale accurate to 0.1 g. This weight was divided by the volume of core as measured with a Vernier caliper (diameter) and tape (length). The ends of the core section were first cut flush with a rock saw, taking care to ensure that there was no chipping. The core diameter was measured three times (ends and middle), and the average of the three measurements was used for calculation of the volume. The core was weighed "wet" (the density specimens were not dried in an oven although the surface was wiped dry). Determinations were completed within two to three days of the core being drilled.

The following average density values were obtained, including the kimberlite and country rock granite samples that were measured:

- 5034 kimberlite, 2.52 g/cm^3
- Hearne kimberlite, 2.60 g/cm^3
- Tuzo kimberlite, 2.43 g/cm^3.

The differences between these and the 1999 data may be due to the sample type and amount. For the 1999 investigations, the sample set was larger and more representative, and the analysis of apparent density comparing Gemcom unit subdivisions was more detailed. Also, country rock granite measurements are pervasive in the 1999 data set, while fewer country rock granite xenoliths were measured in 2002.

Global density estimates were used in all the Gahcho Kué deposits. These estimates were based on the measurements on core samples from all the pipes.

12.0 SAMPLING METHODS AND APPROACH

Grade and value determination for diamond deposits is primarily reliant on bulk sample (macrodiamond) data. The procedures followed for the various bulk sampling campaigns at Gahcho Kué since 1999 are described below.

The microdiamond and macrodiamond data used for the Mineral Resource estimate are listed in Appendix A for the 5034, Hearne, and Tuzo deposits.

12.1 1999 Large-Diameter Drill Hole Bulk Sampling

Summary sample collection parameters:

- 18 m to 24 m sample interval relative to a 29 m sample datum below lake level
- 1.33 mm to 1.52 mm wire square-mesh vibrating screen cloth at drill site (quoted tolerances)
- wet sample weighed at drill scale
- security tags attached at drill site.

Data collection included recording categorized real-time drill rig operations time-and-motion activities; geological logging; geophysical logging; and geotechnical logging. In addition, the core was logged on site, and core logs were entered into the Gemcom database. The objective of the geological logging was to obtain information for comparison of the recovered drill product and results against drill rig operating parameters.

12.2 2001 Large-Diameter Drill Hole Bulk Sampling

Summary sample collection parameters:

- 6 m to 12 m sample interval relative to a 29 m sample datum below lake level
- 1.58 mm wire square-mesh vibrating screen cloth
- wet sample weighed at drill scale
- security tags attached at drill site.

Data collection included recording categorized real-time drill-rig operations time-and-motion activities; geological logging; and geophysical logging.

12.3 2002 Large-Diameter Drill Hole Bulk Sampling

Summary sample collection parameters:

- 12 m sample interval relative to a 29 m sample datum below lake level
- 1.58 mm wire square-mesh vibrating screen cloth
- wet sample weighed at drill scale
- security tags attached at drill site.

Data collection included recording categorized real-time drill-rig operations time-and-motion activities; geological logging; and geophysical logging.

13.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

Diamond deposit grade and value are evaluated by their microdiamond and macrodiamond data. Microdiamond samples are collected from core drilling. Macrodiamond data are recovered from bulk samples from large-diameter drilling (LDD). The macrodiamond data are more critical.

The following key quality assurance and control steps were implemented during the LDD work (1999, 2001, and 2002):

- caliper surveyed drill holes (for volume determination)
- geological reference samples taken at 1 m intervals
- head feed granulometry samples collected and processed on site
- underflow samples collected at regular intervals
- LDDH locations preceded by NQ core holes (2002 program only).

MRDI (now AMEC) audited the drilling, sampling and treatment procedures during the 1999 LDD drilling campaign. This entailed a six-day visit to the Gahcho Kué site to observe the LDD drilling in progress, a visit to the Grande Prairie treatment facility to review sample treatment, and a visit to Geological Sample Processing Services (GSPS) in Johannesburg for final diamond recovery. During these reviews MRDI witnessed various quality assurance and quality control measures designed to maintain the integrity of the sample. Some important general conclusions were drawn from these audits:

- In general, all drilling and sampling procedures met or exceeded industry standards.
- Sample treatment was adequate.
- Security during all phases of the sample drilling and treatment was adequate and met or exceeded industry standards.

A number of recommendations were made to improve existing procedures in the field and during sample treatment; the most important of these was to implement better data entry and verification procedures. The 2002 De Beers Desktop Study notes that recommendations for improvements were implemented.

In 1999 a nominal 1.4 mm screen aperture size (tolerance 1.35 mm to 1.52 mm) was employed drill-side, while the lower process plant cutoff of 1.6 mm was used for square apertures. For the 2001 and 2002 campaigns, the bottom screen cutoff was 1.6 mm at the drill rig and 1.5 mm during sample processing.

The bulk samples were sent to the Grande Prairie plant, where the chips were washed in a scrubber and the larger pieces crushed to smaller sizes and recombined with the sample, which was subsequently fed through the dense medium separation (DMS) plant. The resulting concentrate was collected in a tamper-proof cage and the concentrate containers sealed prior to shipment to the GSPS in South Africa for final diamond recovery.

Diamond breakage was of concern during the LDD sampling in 1999, as diamonds are believed to have been broken during drilling as well as following their rapid ascent up the steel drill string and into the recovery dropout box. Significant diamond breakage is defined where >5% of the original diamond is lost due to fresh breakage. Significant diamond breakage was variably reported for the different kimberlite varieties recognized in 1999:

- 5034: from about 17% to 64%, average 43%
- Hearne: from about 22% to 47%, average 41% in HK and 27% in TK
- Tuzo: from about 17% to 28%, average 24%.

A reverse-flood, airlift-assist drilling method employing nominal 610 mm diameter tricones was used in the 2001 bulk sampling evaluation program. For 5034, the diamond breakage levels ranged between 5% and 12%, for an average of 7%. The breakage results for Hearne diamonds displayed low levels between 4% and 9%, for an average of 6%. The diamond breakage levels from both kimberlites in 2001 were significantly lower than those obtained from the 1999 investigation. The extremely low percentage of minor particles is also an indication that no stone shattering took place during the recovery process. This therefore clearly indicates that the reverse-flood, airlift-assist drilling system used in 2001 was an excellent sample recovery method compared to the drilling method used in 1999. This recovery method was used in the 2002 work.

14.0 DATA VERIFICATION

Continual DBCEI database integrity checks are embedded in:

- prospecting samples database – project allocation, sample number, location, visual results, probe results
- sample consignments database – country of origin, consignment number, sample listing, sample location, laboratory, project allocation, sample type, number of samples, sample size, weight, shipment date, processing required, waybill number.

Manual data reviews are carried out for external results received for:

- microdiamond samples (in database entry) – consignment number and sample listing, sample location, sample type
- macrodiamond samples (in Gemcom entry) – consignment number and sample listing, sample location, sample type, sieve class totals for number of stones and carats.

No independent external audit has been carried out on the DBCEI 1997-2002 Gahcho Kué evaluation databases. However, AMEC believes that the internal data checking protocols followed by DBCEI ensures a database that is sufficiently free of errors to support the mineral resource estimates.

15.0 ADJACENT PROPERTIES

Adjacent properties are not relevant for the review of the Gahcho Kué project.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

16.1 Basis of Design

AMEC evaluated the preliminary process design system described in the Updated Desktop Study for the Gahcho Kué project. The objective of the system is to achieve an overall diamond recovery efficiency of not less than 98% by weight of diamonds larger than the bottom cutoff size that can be economically liberated. A high-security recovery facility will efficiently recover diamonds from diamondiferous concentrates in accordance with established De Beers' diamond value management principles. The recovery facility will achieve a recovery of 99% by weight of all free diamonds larger than the bottom cutoff size of 1.5 mm that are economically recoverable. The combined (overall) recovery will be a product of these two efficiencies, or 97%.

The treatment plant design and costing is based on a capacity of 6,000 t/d.

The process design includes the following facilities:

- primary crushing and conveying
- primary scrubbing and screening
- secondary crushing, scrubbing, and screening
- high pressure rolls crushing (HPRC)
- dense medium separation (DMS)
- fines thickening
- water systems
- recovery plant
- security systems.

Overall, the process plant design is intended to minimize the potential for human/diamond contact and maximize the auditability of high-concentrate diamond streams. A simplified process flowsheet and a process plant layout plan view for both the main and recovery facilities are provided in Appendix B.

16.1.1 Ore Characteristics

Ore characteristics were evaluated from the 2002 ore dressing studies (ODS) results and suitable information from the treatment of the LDD chips at the DBCEI Grand Prairie facility during the 1999 and 2001 Gahcho Kué evaluation programs. This included DMS and granulometry data. This information is summarized in Tables 16-1 and 16-2.

Table 16-1: Ore Characteristics 1999 (Summary)

Pipe	Density g/cm^3	Total (-1.0 mm) %	DMS Concentrate % of DMS Feed	X-ray Yield %
5034	2.59	49.8	0.40	3.10
Hearne	2.58	49.8	0.38	2.61
Tuzo	2.40	65.7	0.31	4.05
Average	2.49	55.2	0.36	3.0

Table 16-2: Ore Characteristics 2001 and 2002 (Summary)

		DMS Concentrate % of DMS Feed	
Pipe	Total % (-1.0 mm)	2001 Grand Prairie	2002 ODS (theoretical yield EP=0.08)
5034	42.5	0.42	0.03
Hearne	54.7	0.28	0.09
Average	46.7	0.37	0.06

Note: EP = ecart probable

16.1.2 Diamond Characteristics

Information relating to the x-ray properties of diamonds was obtained from the evaluation programs and from the 2002 ODS. The ODS included magnetic susceptibility testing of the diamonds and gangue and the development of a luminescent profile of the gangue material. The recoverability of diamonds by x-ray sorting, based on stones recovered during the evaluation programs, is summarized in Table 16-3. The number of stones larger than diamond sieve #12 was small, and the results were therefore biased toward the luminescence intensity (LI) values of the small stones. Generally, the large stones (>#12) showed good luminescence, while the smaller ones were more problematic. It is clear that the recovery of small sizes will require very sensitive diamond sorting equipment.

Table 16-3: Diamond Recovery Characteristics (Evaluation Programs)

Kimberlite Pipe	% Recovery at 0.25 V
5034	90.8
Hearne	94.3
Tuzo	90.3

The x-ray recovery characteristics of diamonds and gangue from the 2002 ODS are summarized in Tables 16-4 and 16-5.

Table 16-4: Diamond Recovery Characteristics (2002 Conceptual ODS)

Kimberlite	% Recovery at 0.25 V
5034	95.3
Hearne	95.1

Table 16-5: Gangue Recovery Characteristics (2002 Conceptual ODS)

	Luminescent Particles /t @ 0.25 V	
Size	Minimum	Maximum
-4 +2 mm	77.5	8,125.0
-8 +4 mm	2,631.6	67,924.5
-16 +8 mm	3,653.8	22,388.1

The luminescence data obtained for the gangue material show that high yields can be expected when x-ray recovery technology is used to process DMS concentrate. Yields for the finer size fractions are estimated to be in the order of 0.3%. Significantly higher yields can be expected for the coarser size fractions (+8 mm material.) The data also showed that a yield in excess of 44% could be expected when processing material from certain areas of the mine.

Magnetic susceptibility results showed that of the diamonds tested, 13% were diamagnetic, with all the diamonds having a magnetic susceptibility less than 20 x 10^{-6} cm^3. Previous work has shown that 4% of the diamonds from the Gahcho Kué orebody have susceptibilities above this value. With the use of a NdFeB magnet, gangue mass reductions of up to 81.95% were measured.

16.2 Process Description

The treatment facility will be situated in the vicinity of the mining operations and will be fed by mining trucks, which will normally tip directly into the primary crusher feed pocket. An appropriately sized ROM stockpile will be provided to allow flexibility in operations.

The treatment facility will operate 365 days a year, 24 hours a day, with annual shutdowns of 3 and 5 days for major maintenance, and will be fully enclosed and heated. The plant will be highly automated in order to limit the size of the workforce.

The treatment plant flowsheet comprises three stages of crushing, followed by DMS and x-ray sorting. X-ray sorter concentrates will be transported by air to the nearby Snap Lake facility where the diamonds will be recovered using laser-based sorting machines. Final diamond concentrates will be exported to the off-site acidizing and evaluation facility, located in Yellowknife.

A flowsheet of the primary crushing section and a block flow diagram of the proposed treatment plant are attached in Appendix B. The flowsheet is based largely on Snap Lake experience and is designed for simplicity and compactness.

Based on the limited data available, and AMEC's experience in the design and operation of similar diamond processing facilities, AMEC considers the processing strategy and flowsheet selected for the Gahcho Kué treatment plant to be appropriate for the projected diamond recoveries.

16.3 Security

Provision has been made for a comprehensive, integrated, security management and diamond control system as a standard feature to provide complete security coverage for the Gahcho Kué diamond mining operation and processing facility. The general philosophy is that no compromise will be made with regard to product security within ergonomically correct human resource and safety constraints. Security will operate under established De Beers three-tiered principles, comprising:

- operational surveillance
- focused surveillance
- systems audit and management.

The security and diamond control systems planned for the facility will be managed remotely from a centralized location, with corporate strategic management direction provided from De Beers' Toronto office. Security aspects that require on-site intervention, i.e., removal of product, physical searches, and apprehension, will be provided by a skeleton site staff under instruction from the centre.

The access management system will provide for a multi-tiered structure and will include electronic locking, movement pattern recognition, alarm management, rules-based access management, and single-entry booths into all high-risk areas. Separate entrances to the different areas of the process facility (DMS, recovery, and sorthouse), as well as separate rules-based sections within these areas, will restrict personnel to specific locations at specific times. These procedures will be auditable and monitored.

All equipment and processes in the treatment plant will be designed to enclose diamond concentrate where practicably possible.

Security measures described above are common in the diamond industry, and are considered appropriate for the proposed Gahcho Kué operation.

16.4 Further Work

AMEC recommends that further work be conducted in the following areas as part of the next phase of study (prefeasibility):

- waste rock sorting
- laser and x-ray sorting
- high pressure rolls crushing
- jigging
- dewatering / thickening
- slurry / paste rheology
- material handling
- scrubbing
- autogenous milling
- mineral identification.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 Overview of Resource Estimation Process

In creating the resource model, diamond drilling is used to outline the 3-D shape of the kimberlites, and large-diameter drilling (LDD) is used to assess grade and diamond value. Where insufficient or no LDD has been carried out, the grade is estimated globally by rock type using microdiamond results from diamond drilling.

The external shapes and internal geology of the kimberlite pipes were modelled in three dimensions, using Gemcom, based on logs from available drill core. The pipes were modelled on 10 m plan sections named by their elevation to the maximum depth for which information is available. In some cases, where insufficient data were available to model to 300 m depth, a separate solid was constructed to extrapolate the data to this level. The internal granite xenoliths have not been modelled separately.

The estimation variable is grade measured in carats per hundred tonnes (cpht). Grade is estimated in carats per cubic metre (ct/m^3) and then converted to cpht by applying a density value. For the West, Centre, and East lobes of 5034, local block estimates were created within the 3-D block model using the results of the LDD. A single estimate, based on microdiamond sampling, was made for the North Lobe, North Pipe, and South Pipe. Large-diameter drilling was used at Hearne, where estimates were constructed for 12 m benches across the entire pipe. For Tuzo, an average grade per rock type was created using the results from microdiamond sampling. Density is estimated by kriging in the West lobe of 5034. For the remaining pipes and lobes, an average density is estimated per rock type.

A diamond value is estimated by combining a diamond value distribution and a diamond size distribution. The diamond value distribution is estimated using diamonds recovered from the large-diameter drilling. The diamond size distribution is obtained by modelling the micro and macrodiamonds from the pipes. The diamond value distributions were adjusted during this process for sample size.

In AMEC's opinion, the approach described above is consistent with accepted industry practice and is appropriate for the purposes of declaring a resource and reserve at Gahcho Kué.

The mineral resource estimates for Gahcho Kué were calculated under the direction of the Mineral Resource Management Department (MRM) of De Beers in Johannesburg, South Africa, and are documented in the De Beers March 2003 report, "Gahcho Kué Mineral

Resource – Update to the Desktop Study." Mineral resource estimates were made for the 5034, Hearne, and Tuzo pipes. The work incorporated data from the 2002 sampling program and updated revenue-per-carat estimates reflecting the current Diamond Trading Company (DTC) price book from January 2003.

The following subsections describe the geological frameworks used to create the resource models, the grade models for each pipe, the determination of average diamond value for each pipe, the classification of the resource according to NI 43-101, and the resource summary.

17.2 Diamond Evaluation Terms

Micro and Macrodiamonds

Traditionally, stones retained on a 0.5 mm square-mesh screen after sieving are referred to as macrodiamonds, while stones that pass through the sieve are referred to as microdiamonds. In the text below, microdiamond results refer to stones recovered from diamond drill core subjected to acid digestion or caustic fusion. Strictly speaking, these results may contain both micro and macrodiamonds. The microdiamond treatment process involves dissolving the kimberlite and recovering any diamonds released above a specified bottom cutoff around 100 µm. The microdiamond results can be used to estimate the grade (in cpht) of a kimberlite above a given cutoff. Estimates of grade using microdiamonds usually have wide confidence limits (i.e., the grade estimate is not well known), must be adjusted to reflect a realistic bottom cutoff (e.g., 1.5 mm), and may need adjustment to reflect differences in liberation between crushing and screening and the microdiamond treatment process.

In the text below, macrodiamonds are those stones recovered from the LDD sampling and a treatment process that involves crushing and screening.

Diamond Sizing

The LDD diamonds recovered during drilling campaigns are discussed in terms of diamond sieve sizes. The sieve numbers are 23, 21, 19, 17, 15, 13, 12, 11, 9, 7, 5, 3, 2, and 1. Each sieve represents a punched metal plate with round holes of a set diameter. The lowest number represents the smallest opening and the largest number the widest opening. The diameter of the holes for diamond sieve 1 is approximately 1 mm and the diameter of the holes for diamond sieve 23 is approximately 10.3 mm. De Beers typically uses these sieves for sizing the production from its mines and for revenue analysis.

Diamond Size Distribution

Characterization of the size distribution of diamonds in a pipe is an essential tool in assessing the impact of bottom cutoff on grade and diamond revenue. A diamond size distribution is "traditionally" displayed using a cumulative log probability plot. In such a plot, the stone size, in carats per stone, is plotted along the X-axis (using a log scale) and the cumulative percent carats on the Y-axis.

Grade-Size Plots

One way to view microdiamond data (and estimate a grade) is to plot the microdiamond results for a given kimberlite facies on a grade-size graph. In such a graph, the average size of the microdiamonds in a particular sieve size is plotted on the X-axis, and the "grade" of the sieve class in stones per tonne is plotted on the Y-axis. If the data are plotted using a log-log scale, a polynomial can be fitted to the data points and the grade of the kimberlite above a bottom cutoff calculated by measuring the area under the fitted curve.

The relative position of the fitted curve on the plot is indicative of kimberlite grade, while the curvature of the fitted line reflects the diamond size distribution.

Diamond Value Distribution

Assessing the average diamond value per carat for a kimberlite requires knowledge of the diamond size distribution and the diamond value distribution. The diamond size distribution is a measure of the carat weight per size class. The diamond value distribution is the average value per carat in each sieve class and requires knowledge of the diamond assortment. The assortment distribution is more complex, requiring the carats in a given sieve size to be sorted and valued according to the current Diamond Trading Company (DTC) price book. Diamond value is a combination of four parameters: size (diamond sieve), model (shape of stone), colour, and quality.

Confidence in the Average Diamond Value per Carat

De Beers estimated confidence limits around the average dollar-per-carat value by drawing a stone value at random from the diamond parcel. The stone is replaced and the process repeated until the number of stones in the parcel is matched. At this point, an average dollar per carat is calculated. This process is repeated 10,000 times resulting in 10,000 simulated dollar per carat values. The results are ranked, and the 10^{th} and 90^{th} percentiles are chosen to estimate the lower and upper 90% confidence limits. Due to the lognormal nature of the diamond size distribution, these confidence limits are not symmetrical.

Statistically, the dollar per carat value can be expected to lie between the lower and upper 90% confidence limits 9 out 10 times.

Kriging

Kriging is used to estimate block values in the 3-D models of the 5034 West, Centre, and East lobes and the Hearne pipe. The kriged estimate for each block is a weighted average of the surrounding samples, where the weights assigned are dependant on the correlation between samples at a given distance, the size and shape of the samples, the size and shape of the block to be estimated, and the relationship between the samples and the block.

There are several ways to validate the kriged model, including visual inspection of plans and sections, and comparison of kriged statistics with sample or composite statistics. This can be done globally over the entire mineralization or locally in "cuts" across the pipe.

For 5034 and Hearne, figures are presented comparing the kriged estimates in 12 m horizontal slices through the pipes. For each slice the average of the kriged estimate and the average of the composite data used to create the estimate are calculated and plotted against the elevation of the slice. Ideally, the kriged estimates for each slice should follow the trend of the sample data and show a smoother profile.

Confidence in the kriged estimates is assigned qualitatively by assigning the resource a Measured, Indicated, or Inferred classification. In addition, it is good practice to estimate risk quantitatively. De Beers used geostatistical simulation techniques to quantify the risk in grade.

17.3 Geologic Models

5034

The 5034 lobes and pipes are a series of small pipes that slightly coalesce. The original geological model comprised six zones of hypabyssal kimberlite (HK1 to HK5 and HK1g) that were differentiated largely on grade, pipe morphology, and xenolith content. These were simplified for the purposes of resource modelling into four lobes (West, Centre, East and North) and two satellite pipes (North and South) on the basis of the morphology of the external pipe contacts. This simplification was considered necessary for two reasons:

- The previously defined internal sub-divisions transgress individual lobe and or pipe boundaries, which was considered extremely unlikely.

- The previous model was based largely on grade differences, which are not considered geological boundaries.

AMEC believes that this simplification is appropriate for the purposes of declaring a resource and reserve.

Hearne

The Hearne resource consists of two pipes, North and South, and comprises a mix of hypabyssal (HK) and tuffisitic (TK) kimberlites. Each TK kimberlite can be distinguished geologically on the basis of garnet content, magmaclasts, autolith-like bodies, xenoliths, and clay minerals. The names of the different TK units are based primarily on their location within the two pipes. The HK kimberlites represent the transition from diatreme to root zone and are differentiated largely on garnet content and grade.

Tuzo

The Tuzo pipe comprises diatreme facies tuffisitic kimberlite breccia (TKB) with varying degrees of granite dilution. The predominant TKB, Main (TKBM), displays transitional textures at depth (TKBtM), probably relating to an underlying hypabyssal root zone. The main TKB contains a sub-horizontal zone of high granite dilution (TKBMg). A separate kimberlite phase occurs in the upper eastern portion of the pipe (TKtH) and is described as transitional tuffisitic kimberlite with some hypabyssal zones. A fifth kimberlite unit (TKBtW) occurs in the lower western portion of the pipe. Dilution content and grade are significant components of the internal geology model for the Tuzo pipe.

17.4 Grade Models

Grade estimates were made using the LDD results (Hearne pipe and the West, Centre, and East lobes of 5034) and microdiamond results (Tuzo and the North pipe, North lobe, and South pipe of 5034).

For grade estimation using the LDD results, the MRM department of De Beers addressed a number of estimation issues:

- A higher percentage of smaller stones were recovered from the 1999 LDD than from the 2000 and 2001 drilling campaigns.
- The macrodiamond sampling data are affected by different sample support sizes (different hole diameters).
- Different sample lifts (lengths of sample) were taken during different LDD sampling campaigns.

- Clustering of LDD samples is evident (see Figures 11-2, 11-3, and 11-6 in Section 11.0).

These issues are discussed below.

5034 Pipe

The majority of the sampling over 5034 is concentrated on the West, Centre, and East lobes (see Figure 11-2). The LDD sampling is summarized by year in Table 17-1, which shows that the 1999 sample grades are higher for all lobes when compared to the 2001/2 sampling campaigns. This is understandable for the Centre lobe, where a lower-grade area (estimated from the 1999 data) was drilled in the 2001/2 campaigns. In the East lobe, however, the two programs (1999 vs. 2001) are spatially equally representative. At a strict cutoff of 1.5 mm, the grade difference between the two campaigns is less pronounced, particularly in the East lobe.

Table 17-1: 5034 – Sample Grades

	Sample Grade (cpht)			1.5 mm Sample Grade (cpht)		
Lobe	**1999**	**2001**	**2002**	**1999**	**2001**	**2002**
East	187	142	-	148	127	-
Centre	123	-	98	106	-	89
West	197	-	192	169	-	177

AMEC examined diamond size frequency plots for the three lobes prepared by MRM. The plots confirm the finer 1999 diamond size distribution relative to the 2000/1 drilling campaigns.

The finer diamond size distribution reflects a proportionally higher percentage of finer-sized material recovered in the 1999 program. MRM suggests two reasons to explain the increased proportion of smaller stones: first, that the different drill bit configurations used in the drilling campaigns affected the liberation of diamonds (as supported by chip size measurements taken at the drill rig), and second, that the de-watering screen used in for the 1999 program was finer than in the 2001/2 campaigns (1.4 mm vs. 1.58 mm). AMEC agrees that these explanations most likely account for the differences observed. Greater diamond damage during the 1999 drilling campaign may be another reason for the finer distribution.

A number of other issues were considered prior to the grade estimation of 5034:

- the different sample support sizes of the two LDD campaigns

- the different sample lifts, namely 6 m, 12 m, and 18 m
- the clustering of the 2002 drill holes.

Different sample support sizes (in this case 311 mm and 610 mm diameter drill holes) tend to result in similar grade means but different grade variances, with the larger support size having a smaller variance. MRM considered various ways to adjust for the different support sizes. One method was to adjust the grade of small LDD samples so that collectively they matched the histogram of the large LDD samples. The reverse was also tried. Kriging was carried out with both these data transforms and with no transform. Based on a comparison of results, the MRM department elected not to carry out any transform of the data. Based on the information at hand, AMEC considers this choice reasonable.

The issue of different sample lifts was resolved by regularization, a process that calculates the grade per mining bench height. For Gahcho Kué a bench height of 12 m is planned and grade values are weighted by drill hole length according to the drill hole intersection per bench.

To test the effect of the clustered LDDs on the resource estimates, MRM considered de-clustering the LDD data. Although a de-clustering method was tested, it was not applied for two reasons: MRM compared the global grades using de-clustered data with clustered data and found only small differences, and the semi-variograms indicate that the correlation between sample points is preferentially orientated in a vertical rather than horizontal direction.

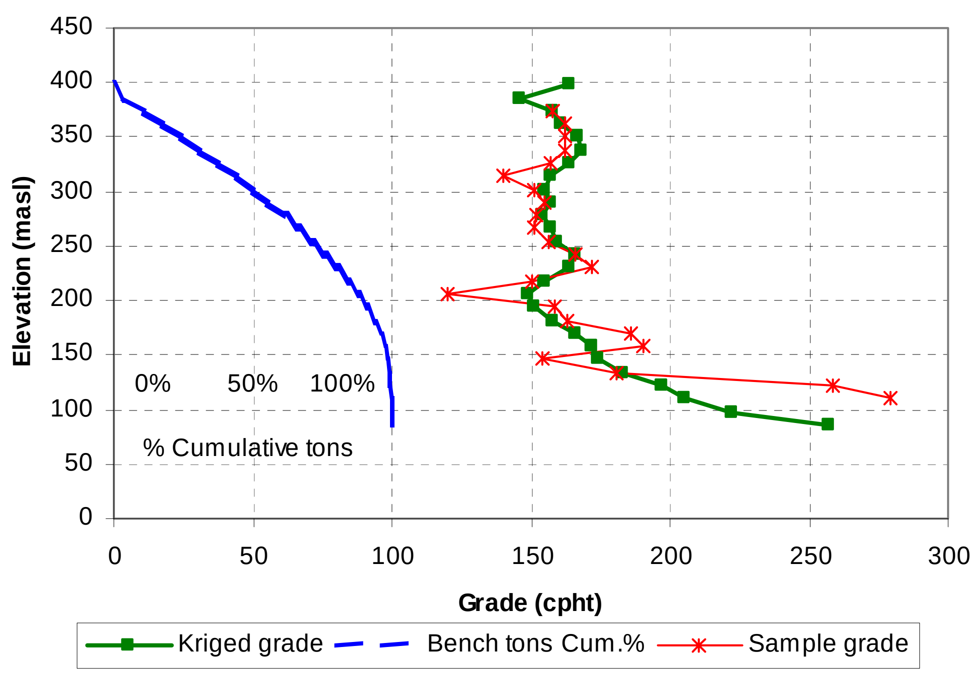
For the West, Centre, and East lobes of the 5034 pipe, estimates of grade were made in 25 m by 25 m by 12 m blocks using a search ellipsoid measuring 75 m by 75 m by 50 m in the X, Y and Z directions respectively. The X, Y and Z axes are not rotated. Local estimation was conducted per lobe using hard boundaries (sample grades from one lobe were not used in the estimation of an adjoining lobe). AMEC considers this kriging plan to be reasonable.

MRM validated the kriged models by visual inspection of plans and by comparing the sample grade per bench with the averaged kriged grade per bench. The global estimated grades per lobe are summarized in Table 17-2 and shown graphically per bench in Figure 17-1.

Table 17-2: 5034 – Mean Kriged Grades for West, Centre, and East Lobes

Lobe	Mean Kriged Grade (cpht) 1.5 mm Bottom Cutoff
West	200
Centre	113
East	170

Figure 17-1: 5034 – Mean Kriged Grade with Depth



Global grades for the North lobe and the North and South pipes of 5034 are estimated using microdiamond data only. MRM used grade-size plots (see Section 17.2) to make global grade estimates for the North lobe, North and South pipes of 5034. These global grade estimates are summarized in Table 17-3.

Table 17-3: 5034 – Mean Kriged Grades for North Lobe, North Pipe, and South Pipe

Lobe / Pipe	Global Grade (cpht) 1.5 mm Bottom Cutoff
North lobe	179
North pipe	180
South pipe	87

Estimates of grade from microdiamonds can be made in different ways. In this case, the results of the microdiamond and any macrodiamond sampling are plotted on a grade-size plot (see Section 17.2), and a polynomial curve is fitted to the data. This fitting requires professional judgement. The fitted curve is used to estimate the grade above a bottom cutoff. MRM used this method to estimate the grades in Table 17-3. MRM notes that the grade-size plots demonstrate that diamond size distribution in the South pipe is similar to that in the North lobe and North pipe. AMEC examined the grade-size curves prepared by MRM for 5034 and is satisfied that this approach is reasonable.

Hearne Pipe

The raw sample grades from the two drilling campaigns in 1999 and 2001/2 are shown in Table 17-4.

Table 17-4: Hearne – LDD Sample Grades

	Grade (cpht) 1.5 mm Bottom Cutoff	
Geology	1999	2001/2
HNTKN	200	239
HNTKNt	239	219
HNTKSD	322	216
HNHKG	58	53
HNHKG2	195	85
HNHKN	237	227
HSTKW	229	-
HSTKM	193	-

The sample grades from the two campaigns are similar with the exception of the HNHKG2 unit. Three different grade intervals are evident in the sampling data, a low grade (HNHKG), intermediate grade (HNHKG2), and high grade represented by the remaining units.

Diamond size distributions of individual rock types are "noisy," reflecting the small sample size. The distributions are broadly similar with the exception of the Hearne North TKSD unit, which in both LDD campaigns has a coarser distribution than any other unit. To reduce the data scatter, the hypabyssal rock types were combined by year and the tuffisitic rock types by year. As with 5034, the LDD samples drilled in 1999 show a finer diamond size distribution than the 2000/1 campaigns. As in 5034, the reasons for this are increased liberation caused by the drill bit in the 1999 campaign and a smaller bottom cutoff used on the 1999 de-watering screen. If the 1999 and 2000/1 campaigns are combined for the tuffisitic and hypabyssal rock types, the resulting plots show a very similar diamond size distribution.

Based on the above analysis, the size frequency distributions for Hearne do not suggest any significant distinction between geological units, with the possible exception of the Hearne North TKSD unit. However, as this unit comprises less than 6% of the resource, it was not treated separately.

Based on the diamond size distributions prepared by MRM, AMEC considers these conclusions reasonable.

Based on the grade and diamond size frequency analysis, Hearne was sub-divided into the three units defined by grade differences. As with 5034, the MRM department investigated the issues of differing support size, regularization and de-clustering of the sample data. As in 5034, no de-clustering was carried out and no allowance made for the differing support sizes.

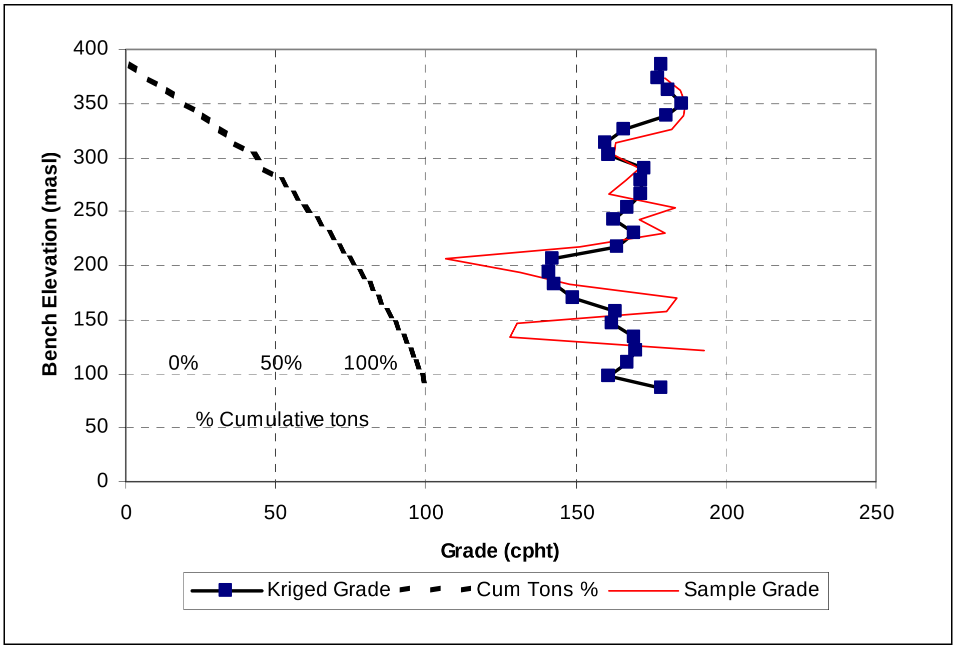
Due to the small size of the Hearne resource, grade estimates were not done in 25 m x 25 m x 12 m blocks but rather per 12 m slices per geological unit.

The global kriged grades per unit are summarized in Table 17-5 and by bench in Figure 17-2.

Table 17-5: Hearne – Global Grade per Unit

Lobe	Mean Kriged Grade (cpht) 1.5 mm Bottom Cutoff
TK & HNHKN	199
HNHKG2	139
HNHKG	54

Figure 17-2: Hearne – Mean Kriged Grade with Depth



Tuzo Pipe

Global grades were estimated for the five main rock types using microdiamonds from diamond drill core and macrodiamonds from LDD sampling. For each rock type, the micro and macrodiamonds were plotted on a grade-size plot and a polynomial curve fitted to the data. These fitted curves were then used to estimate the grades of each rock type. AMEC examined the grade-size curves prepared by MRM for Tuzo and is satisfied that this approach is reasonable.

As stated in Section 17.3, dilution content and grade are significant components of the internal geology model for the Tuzo pipe. Detailed dilution studies were carried out on seven diamond drill holes completed in 2002 (MPV-02-109C to MPV-02-115C, inclusive). The results of the dilution study were used to correct global grade estimates for dilution. Dilution estimates were calculated as follows:

$$\frac{\sum country\ rock\ core\ length}{\sum kimberlite + country\ rock\ core\ length}\ x\,100$$

This was calculated for each geological unit per hole. The results are shown per hole per geological unit in Table 17-6. The dilution value of 90% in the TKBMg is considered an outlier and was excluded from the average dilution calculation.

Table 17-6: Tuzo – Dilution Estimates

Drill Hole	Geological Unit			
	TKBMg	TKBM	TKtH	TKBtM
02 – 109C	45	29	-	-
02 – 110C	21	14	6	22
02 – 111C	37	27	-	12
02 – 112C	46	18	-	-
02 – 113C	-		7	-
02 – 114C	-	18	-	-
02 – 115C	90	19	-	-
Mean	**37**	**21**	**7**	**17**

The resultant percentage was applied to the microdiamond sample mass. The global grades, using diluted microdiamond values, are shown per rock type in Table 17-7.

Table 17-7: Tuzo – Global Resource Grades

Unit	Grade (cpht) 1.5 mm Bottom Cutoff
TKBM	79
TKBMg	57
TKBtW	74
TKBtM	144
TKtH	245

AMEC considers this approach to be reasonable, as waste was not submitted for microdiamond analysis. AMEC has not audited the dilution calculation.

17.5 Revenue Models

Introduction

Diamonds occur in very low concentrations measured in parts per million for smaller-sized stones and parts per billion for larger stones (greater than 1 ct). Kimberlite samples vary in size depending on whether the intention is to assess the average grade, the diamond size distribution, or the average value of the pipe. The majority of diamond value is derived from the larger stones in the diamond size distribution. Even for large parcels of diamonds (10,000 ct or more) it is often difficult to obtain enough stones in the larger sieve classes to confidently estimate an average diamond value for that size class. As a result, it is usual in the diamond industry to model the diamond size distribution and/or the diamond value distribution to reduce the effects of sample size on the estimation process.

In creating an average diamond value per carat for each kimberlite source, MRM has modelled both the diamond size distribution and the diamond value distribution. These adjustments are discussed in the next sections.

5034 Pipe

Approximately 3,000 ct were valued from the Centre, West, and East lobes over three drilling campaigns in 1999, 2000, and 2001. The two LDD programs of 2001 and 2002 constitute the majority of the diamond parcel available for revenue analysis. MRM combined microdiamond and macrodiamond data to generate a diamond size distribution per source. Where no macrodiamond data are available (e.g., North pipe), the distribution is based entirely on the microdiamond data. MRM used this approach to accommodate different bottom cutoffs and different degrees of liberation. The resulting diamond size distribution was further modified to allow for a strict 1.5 mm bottom cutoff and restricted recovery in the +6 and +7 sieve classes. MRM used particle size measurements (granulometry) and information from existing operations to make these corrections.

AMEC considers this approach reasonable and has reviewed the grade-size plots used to model the diamond size distribution. One impact of the modelling process is that the diamond size distribution is slightly coarser than the raw data. This reflects the strict 1.5 mm cutoff, the adjustment to the +6 and +7 sieve classes, and the modelling of more large stones in the +19 sieve class and above.

MRM has not modelled the diamond size distribution to the characteristics of a specific treatment plant because the study work constituted a "desktop study." Further adjustments to the grade and average dollar per carat may be required when a final treatment process is selected.

Diamond damage is not specifically addressed in the calculation of dollar per carat. However, the larger part of the parcel's values is derived from the 2000/1 LDD sampling in which diamond damage was much reduced relative to the 1999 campaign.

MRM compared the average diamond value per sieve class for the West, Centre, and East lobes and found that the Centre and East lobes showed similar average values per sieve class, while the East lobe showed slightly lower average values in the -13 +6 sieve sizes. For this reason, two revenue distributions were prepared, one for the Centre and East lobes, and one for the West lobe.

For the Centre and East lobe diamond value model, MRM adjusted the average diamond value per sieve class for diamond sieve classes +6, +15, +17, +19, +21, and +23. The same size classes were adjusted in the West model. In making the adjustments, MRM used a composite revenue model as a guide. This model is based on data from kimberlite mines in the De Beers group that have a similar overall dollar per carat. AMEC examined the plots of the diamond revenue models prepared by MRM and considers the adjustments reasonable.

The North lobe and the North and South pipes are assumed to have an assortment similar to the Centre and East lobes. The combination of the size frequency distribution and assortment models results in the revenue values shown in Table 17-8.

Table 17-8: 5034 – Revenue Value per Lobe/Pipe (US$)[1,2]

Centre Lobe	East Lobe	West Lobe	North Lobe	South Pipe	North Pipe
65[3]	65[3]	53[4]	66	67	64

[1] Bottom cutoff of 1.5 mm
[2] January 2003 DTC Price Book
[3] Lower and upper 90% confidence limits of $53/ct and $78/ct, respectively
[4] Lower and upper 90% confidence limits of $40/ct and $67/ct, respectively

Hearne Pipe

A total of just over 2,900 ct were recovered between 1998 and 2002 from the Hearne pipe. MRM combined the diamond value information by rock type and by year and concluded that there was no reason to generate separate diamond revenue models. MRM adjusted the average diamond value per sieve class for diamond sieve classes +19, +21, and +23. As with pipe 5034, the adjustments were made using a composite revenue model as a guide. The combination of the size frequency distribution and assortment model results in an average dollar per carat value of US$50/ct at a bottom cutoff of 1.5 mm (January 2003 DTC Price Book. lower and upper 90% confidence limits of $42/ct and $59/ct, respectively).

AMEC examined the plots of the diamond revenue models prepared by MRM and considers the adjustments reasonable.

Analysis of the diamond size distributions (Section 17.3) concluded that a single size distribution is adequate to represent all the geological units present in Hearne. This is supported by the grade-size plots generated from the micro and macrodiamond data. The grade-size plots for the different units all tend to have the same profile, indicating a similar diamond size frequency distribution.

Based on grade-size plots prepared by MRM, AMEC considers this conclusion reasonable.

Tuzo Pipe

For the Tuzo pipe, approximately 600 ct, recovered in the 1998 and 1999 LDD campaigns, were valued. A characteristic of the Tuzo microdiamond data is the evidence of two different grade-size distributions. A higher grade is evident in the TKBtM and TKtH units than in the TKBM, TKBMg, and TKBtW units. The parallel nature of the grade-size curves suggests that the two geological unit combinations are likely to have similar size frequency distributions. This is borne out in the distribution curves, with the TKBM, TKBMg, and TKBtW units having a marginally coarser distribution.

A single assortment profile has been modelled for the Tuzo diamond population. MRM adjusted the average diamond value per sieve class for diamond sieve classes +6, +12, +13, +15, +17, +19, +21, and +23. As with pipe 5034, the adjustments were made using a composite revenue model as a guide. AMEC examined the plots of the diamond revenue models prepared by MRM and considers these adjustments to be reasonable.

The combination of this assortment model with the two slightly different size frequency populations results in the revenue estimates shown in Table 17-10.

Table 17-9: Tuzo – Revenue Value per Geological Unit (US$)[1,2]

Coarse TKtH+TKBtM	Fine TKBM+TKBMg+TKBtW
43	40

[1] Bottom cutoff of 1.5 mm
[2] January 2003 DTC Price Book

17.6 Mineral Resource Classification

The mineral resource at Gahcho Kué is classified according to the CIM definitions referred to in National Instrument 43-101 and conforms to the guidelines for "Reporting of Diamond Exploration Results, Identified Mineral Resources and Ore Reserves," published by Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories (NAPEGG).

In classifying the resource, MRM considered qualitative levels of confidence in volume estimation, sample quality, sample representivity, estimation technique, and average dollar per value. Table 17-11 shows the resource classification matrix used to arrive at the classification. Volume and geological models tend to co-exist, as the confidence in the geological model (perimeter and internal contacts) defines the volume calculations. Sampling data refers to quality assurance (QA) and quality control (QC) issues and not the number or size of samples. Grade, revenue, and density risk comprises the number, size, and representivity of the sampling data as well as the estimation technique(s) applied.

Table 17-10: Gahcho Kué Resource Classification Matrix

	Volume	Geology	Sampling	Density	Grade	Revenue
5034						
West L	Indicated	Indicated	Indicated	Indicated	Indicated	Indicated
Centre L	Indicated	Indicated	Indicated	Indicated	Indicated	Indicated
East L	Indicated	Indicated	Indicated	Indicated	Indicated	Indicated
North L	Inferred	Inferred	Indicated	Inferred	Inferred	Inferred
North P	Inferred	Inferred	Indicated	Inferred	Inferred	Inferred
South P	Inferred	Inferred	Indicated	Inferred	Inferred	Inferred
Hearne						
Above 206 masl	Indicated	Indicated	Indicated	Inferred	Indicated	Indicated
Below 206 masl	Indicated	Indicated	Indicated	Inferred	Inferred	Indicated
Tuzo	Inferred	Inferred	Inferred	Inferred	Inferred	Inferred

For the 5034 West, Centre, and East lobes, the geological models and resultant volumes are based on external lobe or pipe morphology. Simulation studies carried out on grade show that the number of samples and their location is sufficient to define an Indicated resource above 110 masl. The diamond parcel available for revenue estimation is in excess of 3,000 ct and is adequate for average price calculations.

The North lobe and pipe and the South pipe of 5034 are Inferred resources. Limited sampling has resulted in poorly defined volumes and geological models (external and internal contacts or boundaries). Microdiamond data were used to estimate global grades only and the diamond size frequency distributions for revenue purposes. No macrodiamond data are available for assortment analysis in the revenue estimation. The identification of different diamond size distributions and assortments in the 5034 lobes highlights the potential over-simplification of an assumed single similar distribution and assortment model for the North lobe and the North and South pipes.

The risk in the Hearne geological model is the significance placed on macrodiamond grade in defining internal geological zones. Simulation studies have shown that sample data are sufficient to define an Indicated resource above 206 masl. The number of samples falls off rapidly with depth. The macrodiamond parcel is in excess of 2,700 ct and is sufficient for both size frequency distribution and assortment analysis.

The Tuzo pipe is classified as Inferred. The Tuzo grade resource is based exclusively on microdiamond data with limited macrodiamond confirmation. Grade estimation is limited to global estimates per geological unit. Dilution is significant, and accurate estimates are only available for the 2002 core drilling data. Uncertainty exists in the geological model in terms of the possibility of large waste inclusions in the TKB units. The global estimates above 110 masl preclude a meaningful mine plan and hence the creation of a reserve. Finally, the diamond parcel available for revenue estimation (assortment) is limited to 530 ct, and grades and size frequency distributions per geological unit are highly dependent on the micro to macrodiamond relationship.

Global density estimates per geological unit are used to convert grade estimates from carats per cubic metre to carats per hundred tonnes. These estimates are based core drilling samples from all the pipes.

17.7 Mineral Resource Summary

The mineralization of the Gahcho Kué project as of March 2003 is classified as Indicated and Inferred mineral resources. The resources are shown by pipe and by elevation for the total project in Table 17-12. The Gahcho Kué resources are summarized to a depth of 110 masl. The resource grades and revenues are based on a 1.5 mm bottom cutoff, and the revenue estimates are US$ on the January 2003 Diamond Trading Company price book.

Table 17-11: Gahcho Kué Project Mineral Resource Summary[1] – March 2003

Pipe	Resource Category	Volume	Tons	Carats	Revenue (US$)	Grade (cpht)	Revenue ($/ct)
5034	Indicated	3,280,000	8,570,000	13,770,000	833,000,000	160	61
	Inferred	1,710,000	4,530,000	8,120,000	536,000,000	180	66
Hearne	Indicated	2,170,000	5,470,000	9,320,000	466,000,000	170	50
	Inferred	620,000	1,630,000	2,560,000	128,000,000	160	50
Tuzo	Inferred	4,320,000	10,520,000	12,370,000	521,000,000	120	42
Total	Indicated	5,450,000	14,040,000	23,090,000	1,299,000,000	170	56
	Inferred	6,650,000	16,680,000	23,040,000	1,185,000,000	140	51

1 The current mine plan will remove 65 % of these resources

18.0 OTHER RELEVANT DATA AND INFORMATION

No other data or information are relevant for the review of the Gahcho Kué project.

19.0 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON PRODUCTION AND DEVELOPMENT PROPERTIES

AMEC reviewed the Preliminary Assessment prepared by DBCEI to evaluate the economics of the 2003 resource estimate on the Gahcho Kué project. Although this Preliminary Assessment (the desktop study) incorporates "inferred mineral resources that are considered too speculative geologically" to be categorized as mineral reserves, AMEC's assessment supports the financial model for the project developed by DBCEI. The capital and operating cost estimates are considered to be at a scoping level, with an expected range of accuracy of ±30%.

The current development plan is based on open pit mining using conventional truck and shovel equipment. The kimberlite will be hauled to a stockpile near the plant site, and most waste rock will be deposited around the south sides of the Hearne and the 5034 pits. Because of the remote site location, substantial infrastructure will be required to support the operation and to provide transportation links. Site infrastructure will include equipment maintenance facilities, offices, workforce accommodations, and water supply. The operation will consume a significant amount of electrical power; the study assumes that the power will be generated on site.

AMEC's review and comments on the proposed development plan described in the desktop study are outlined below.

19.1 Mine Design and Operations

The mining component of the study consisted of determining the likely ultimate open pit dimensions, preparing a production forecast using the resulting tonnages and grades, estimating the mining equipment requirements for this forecast, and estimating the associated capital and operating costs.

19.1.1 Geotechnical

Geotechnical studies have been completed by Jarek Jakubec, C.Eng, of Steffen Robertson & Kirsten (Canada) Inc. (SRK). AMEC has accepted these data with the understanding that they were prepared by a Qualified Person.

Based on the limited geotechnical analysis available at the time of the study update, a single inter-ramp slope angle of 50° was used for mine design purposes. This angle falls within the mid range of angles proposed by SRK and is considered conservative in the competent granite. AMEC believe that this is prudent until more detailed geotechnical work is completed to define slope angles more accurately. SRK has proposed a geotechnical data collection program to obtain the information required.

19.1.2 Optimization

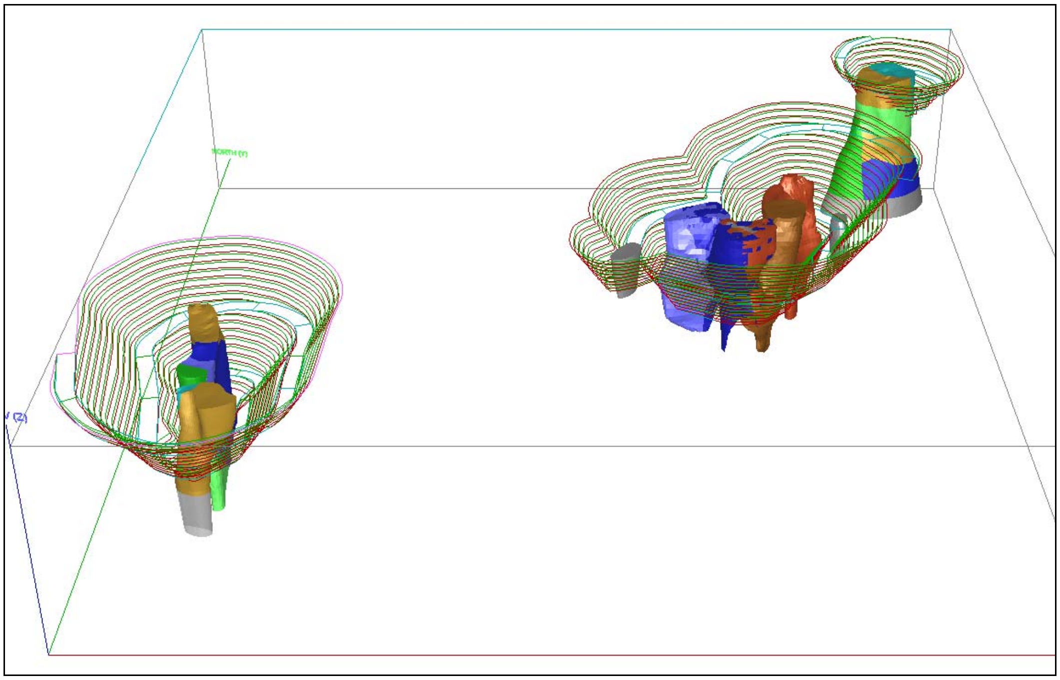
Open pit optimization was performed using the Whittle Four-X© computer software package based on the 2003 mineral resource model as defined in the mineral resource summary in Section 17. The optimization process determined the economic open pit boundaries, ore tonnes, carats, and waste tonnes for the life of mine. The ultimate pit was used as a template to guide the mine design process. Evaluation was based on a pre-determined set of parameters, such as grade, price book, costs, and others (see Table 19-1). These initial costs were derived from previous desktop studies completed by De Beers. AMEC reviewed these estimates and believes that they are reasonable based on previous experience.

Table 19-1: Optimization Criteria

Item	Unit	Value
Cost per surface tonne loaded	$/t mined	2.18
Replacement capital	$/t mined	0.52
Cost hauled	$/t km	0.22
Power costs (diesel)	$/t processed	12.16
Treatment costs	$/t processed	6.58
G&A costs	$/t processed	20.00

The Whittle defined pit contains 19 Mt of ore, 31 Mct (162 cpht) of diamonds, and 136 Mt of waste rock. Three separate shells, one for each of the three kimberlites in the Gahcho Kué group (see Figure 19-1), were developed. These pits extend to depths from surface of approximately 250 m in 5034, 220 m in Hearne, and 140 m in Tuzo. In total, the three pits would deplete 20 Mt of ore, or 65% of the 31 Mt Gahcho Kué resource.

Figure 19-1: Hearne, 5034, and Tuzo Final Pit Shells, Looking North



19.1.3 Pit Design

The pit design was performed in Gemcom using the Whittle pit shell as a template. Whittle shells only approximate a final pit and do not function as practical mine designs. The transition from the shell to the design pit marginally affects tonnes and grade, as shown in Table 19-2. In addition to the geotechnical parameters described, the design parameters listed in Table 19-3 were also applied to determine the final pit design. AMEC believes that the designs have been created utilizing good engineering judgement and accurately reflect the Whittle shells.

Table 19-2: Whittle Pit vs. Design Pit

Pit	Ore to Plant (Mt)	Carats to Plant	Grade to Plant (ct/t)	Waste Mined (Mt)
Whittle	19.0	30.8	1.62	136.2
Design	19.7	32.1	1.64	128.9

Table 19-3: Pit Design Parameters

Parameter	Criteria
Bench height	12 m
Bench face angle	75°
Ramp width	30 m - upper benches 25 m - lower benches
Ramp gradient	10%

19.1.4 Production Forecast

The kimberlite pipes lie beneath approximately 10 m to 15 m of water in Kennady Lake. Before mining can take place, the area around the pipes must be contained and dewatered by constructing a series of dikes around the pit positions and pumping out the water. A minimum distance of 100 m will be maintained between each final pit boundary and dike position. Dikes for 5034 and Hearne will be constructed at the start of the project and those for Tuzo two years prior to the start of Tuzo mining.

To maximize NPV, the pipes will be mined according to value: 5034 followed by Hearne, and finally Tuzo. Mining will commence on the accessible portion of 5034 to provide waste rock for construction of the dikes. Pipe 5034 will provide plant feed through to 2017. In 2017, production from Hearne will commence and will provide ore through to the end of the mine life. Tuzo will supplement the feed in 2019 and 2020. The 5034 and Hearne pits have been divided into two components (phases) to improve project economics. The mine material movement schedules utilize these designs.

The production schedule (Table 19-4) incorporates a plant build-up period for the first two years of operation. Production is scheduled to commence in 4th quarter 2010, with plant commissioning incrementally building up to full production by the end of the 2nd quarter 2011. The maximum production rate of 2 Mt/a will be maintained from 2012 through 2019. The current forecast assumes that the open pits will be completed in 2020. At that time, approximately 65% of the known resources from Hearne, 5034, and Tuzo will have been removed. Should the economics of the project improve (e.g. a higher average diamond value), the potential exists for either pit expansion or the development of underground options to recover further resources.

Table 19-4: Gahcho Kué Mine Production

	Total Tonnes 2010 – 2020
5034 Cut 1	
Ore (kt)	4,190
Grade (cpht)	163
Waste (kt)	16,590
5034 Cut 2	
Ore (kt)	8,110
Grade (cpht)	166
Waste (kt)	58,050
Hearne Cut 1	
Ore (kt)	2,610
Grade (cpht)	177
Waste (kt)	11,950
Hearne Cut 2	
Ore (kt)	2,490
Grade (cpht)	161
Waste (kt)	33,300
Tuzo	
Ore (kt)	2,260
Grade (cpht)	144
Waste (kt)	5,670
Total	
Ore (kt)	19,660
Grade (cpht)	164
Waste (kt)	125,570

Pit dewatering schemes and costs are based on groundwater modelling performed by HCI and documented in the report entitled, "Predicted Hydrologic Consequences of Developing Gahcho Kué Diamond Project." HCI has predicted that groundwater inflows to the three pits would be in the range of 1,700 to 3,000 m^3/d. This is a relatively low level of inflow and can be managed without an active dewatering system. In-pit pumps and sumps have been included in the overall design to handle seasonal flows. AMEC has used these data with the understanding that they have been prepared by a Qualified Person.

The waste dumps will be as close to the mining area as possible without compromising any future pit extension. Two dumps will be constructed, one west of the Hearne pit and the other a combined pile for 5034 and Tuzo, located south of 5034. One-way haul distances would be 300 m from Hearne, and 300 m to 400 m from 5034. Caribou migration and local flora revegetation were taken into consideration in dump design by incorporating a "dome" shape with a final contoured angle of 17°. Based on limited AMD testwork, waste rock material is not acid generating.

19.1.5 Mine Equipment

Equipment selection and utilization to meet the mine plan is based on the following philosophy:

- All earthmoving equipment will be purchased and operated by the owner. The equipment supplier will perform maintenance under a repair and maintenance (R&M) agreement.
- All equipment will be diesel powered.
- A 250 mm drill will be used for primary drilling in waste and a 165 mm diameter drill for primary drilling in ore. A 64 mm secondary blasting drill rig will drill and blast any oversize rocks from primary blasting.
- A fleet of shovels and front-end loaders will load ore and waste. Loaders will be of 12 m^3 bucket size, able to load the 136 t haul trucks. Two loaders will be purchased, one dedicated to pit ore loading and the other to loading ore from the surface stockpile to the plant. The front shovels will be tracked face shovels of 15 to 17 m^3 bucket capacity. The four loading units provide adequate loading capacity to cover loader breakdowns, overhauls, and other contingencies.
- The ore and waste hauling fleet will comprise 136 t class off-highway trucks.
- Ancillary equipment will include 25 t road graders, 25 t rubber-tired dozers, a 35 t excavator with quick-couple rockbreaker attachment, and a water truck for road maintenance. Waste pile and load site maintenance will be performed with 65 t class track dozers.
- Replacement intervals for equipment will vary according to demand and operating conditions. The following general replacement intervals are assumed:

  Drill rigs ....50,000 h
  Tracked face shovels...45,000 h
  Front-end loaders ....25,000 h
  Trucks ....50,000 h
  Ancillary equipment .... 25,000 - 30,000 h

The mining equipment requirements are listed in Table 19-5.

Table 19-5: Open Pit Production Equipment

Equipment Type	Initial	Maximum
Ore Primary Drill (165 mm)	1	1
Waste Primary Drill (250 mm)	1	2
Secondary Drill	1	3
Front Shovel Excavator	2	2
Front-end Loader	1	1
136 t Haulage Truck	3	8
65 t Tracked Dozer	4	4
25 t Motor Grader	2	2
25 t Rubber-Tire Dozer	2	2
Water Truck	1	1

19.2 Surface Development and Infrastructure

19.2.1 Site Conditions

Subsurface materials consist of a relatively thin veneer of till over good-quality metavolcanic bedrock. The thickness of the till ranges from nil (near exposed bedrock) to more than 5 m in some areas of the site. Similar sites in the Northwest Territories exhibit till with significant amounts of moisture in the form of thin ice lenses. Bedrock is likely to be slightly weathered, with infrequent joints and occasional ice lenses below and adjacent to the overburden.

Site grading considerations will include the undulating terrain, rough microtopography, and need to preserve the permafrost. A suitable, well-compacted, borrow fill blanket at least 1 m thick will be required for site benching and contouring. Minor excavations and rock removal will also be required in some areas.

19.2.2 Site Layout

The following major surface developments and facilities are planned for the project:

- airstrip
- site roads and laydown areas
- vehicle parking areas complete with block-heater stations
- waste rock piles
- waste transfer and storage area
- processed kimberlite containment (PKC)

- water treatment plant
- bulk emulsion plant and explosives storage
- container and general freight storage
- process plant
- aggregate crushing and stockpiling equipment
- shops/warehouse
- administration/security building
- power plant
- permanent accommodations complex
- construction camp
- diesel fuel storage facility
- sewage treatment plant
- incinerator
- potable water treatment plant
- glycol boilers.

19.2.3 Site Access Roads

Site roads will be constructed to provide access to the airstrip, freshwater intake pumphouse, ammonium nitrate/emulsion building, and other services. The roads will be 10 m wide to accommodate two-way traffic, where required, with adequate safety shoulders. The roads will be constructed with a minimum of 1 m of fill and 0.15 m of surface course.

Two major surface haul roads are required for the open pit mining operations. The haul roads will be constructed from run-of-mine waste during the development of each pit phase; roads to waste piles will be constructed as the need arises. Most roads will be constructed early in the mine life, requiring only maintenance and little ongoing construction in later years. The total length of haul roads outside the pit will be approximately 3,000 m, with a minimum width of 25 m.

19.2.4 Tailings Impoundment

The south arm of the lake has been designated as the PKC area. PK slurry will be pumped initially to the southeast of the containment area, progressing to the west and north. This leaves the remaining containment to the northwest available for water collection from site runoff and PK slurry. The water will be stored for subsequent reclaim for process water or discharged through a water treatment plant. PK will be deposited progressively, while retaining a channel between the south bank of the plant site area and the PK pile. This will allow lake water flow to be restored when the dikes are breached upon mine closure.

19.2.5 Water Management

The maximum anticipated freshwater demand for the process plant is estimated at 150 m^3/h. Approximately 135 m^3/d of potable water will be required for the 600-person construction camp; peak demand is estimated at 20 m^3/h. Less water will be required for the permanent accommodations complex.

Open pit inflow water, PKC drainage water, and excess water originating from runoff and seepage from waste rock piles and the site will need to be treated prior to discharge to Kennady Lake. Treatment will consist of removing suspended solids, but not dissolved metals, chlorides, or ammonia. In addition, the following assumptions have been made:

- Based on preliminary testwork, waste rock pile seepage will not be acidic.
- Regulated discharge water quality limits will be equivalent to freshwater aquatic life criteria (similar to background concentrations).

Regular monitoring of water quality will be a key component of the ongoing environmental management program, requiring extensive use of the environmental laboratory included as part of the infrastructure.

19.2.6 Electrical Power

The anticipated electrical load for the project is summarized in Table 19-6.

Table 19-6: Estimated Electrical Loads

Area	MW
Process Plant	6.5
Infrastructure	3.5
Mine	1.7
Total	**11.7**

Peak, non-continuous demand was estimated at 15 MW. Mining loads include various collection sump pumps, heat-tracing for water pipelines from the pits to the water treatment plant, and some area lighting along haul roads. Process plant loads include the plant, primary crushing, and conveying. All other site loads are attributed to infrastructure, and include such sources as indoor and outdoor lighting; building HVAC equipment (air handling units, fans); PKC and collection sump pumps and pipe heat-tracing; shop equipment; power plant and glycol system auxiliaries; emulsion plant; airstrip lighting; and other site utilities. The mining and infrastructure demand figures do not include in-pit dewatering pumps and remote in-pit lighting; stand-alone diesel-driven pumps and light plants are proposed for this purpose.

19.2.7 Transportation

Airstrip

Bruce Geotechnical Consultants conducted a study in 1997 ("Assessment of Airstrip Options," Mountain Province Mining Inc, AK5034 Diamond Project, 1997) that examined two options for the airstrip location. The study recommended the airstrip be southeast of Kennady Lake because of the lower frequency of crosswinds, even though the ground conditions would make construction more expensive. The recommended location is reflected in the 2002 Desktop Study, issued in 2003.

The airstrip will be constructed of general fill, with base and surface courses of compacted select fill. The runway will be 2,000 m long x 45 m wide with a 150 m wide cleared and graded area. Airstrip specifications are based on requirements for fully loaded Boeing 737 type (100 and 200 series) aircraft.

Access Road

Access to Gahcho Kué for the delivery of major construction and operations goods and materials will be via the annual winter road, in operation during February and March, and under favourable conditions, into early April.

The trucking route will follow the Tibbitt-to-Contwoyto winter road north from the end of the Ingraham Trail (km 0), east of Yellowknife. A winter road spur approximately 122 km long will be constructed each year to connect the site to the winter road at km 343. The Tibbitt-to-Contwoyto winter road is operated annually under a Licence of Occupation by the Joint Venture Partners who operate the Ekati, Diavik, and Lupin mines. The Joint Venture Partners charge other winter road users a toll to recover the costs of constructing and maintaining the road.

19.3 Capital Cost Estimate

19.3.1 Introduction

The total estimated cost to design, construct, and commission the 6,000 t/d facilities described in this study is $608 million. A summary of the capital cost estimate is shown in Table 19-7.

Table 19-7: Base Case – Initial Capital (Cdn$M)

Item	Cost
Mining	40
Site Development	19
Plant	83
Utilities	52
Ancillary Buildings	54
Water/Waste Management	56
Subtotal Direct	304
Owners Costs	57
Indirects	122
Subtotal	483
Contingency	125
Total	**608**

Unless otherwise stated, all costs are expressed in 1st quarter 2003 Canadian dollars, with no allowance for escalation or interest during construction. The estimate has been prepared at a scoping level, with an expected accuracy range of ± 30%. The estimate comprises the direct field costs of executing the project, plus the indirect costs associated with the design, construction, and commissioning of the new facilities. AMEC has reviewed the capital estimate and agrees that it is appropriate for a project of this magnitude.

19.3.2 Sustaining Capital Costs

Sustaining capital includes the cost of replacing mining equipment and dike construction. The total estimated sustaining capital costs from years 2010 to 2019 are summarized in Table 19-8. AMEC believes that the cost allowance is sufficient to support project operations.

Table 19-8: Sustaining Capital ($000)

Item	Total 2010 – 2019
Mining Equipment	**33,656**
Surface Equipment	**1,390**
Dikes	**22,657**
Indirects incl. Contingency	**16,585**
Total	**74,289**

19.3.3 Assumptions

The following assumptions have been made in the preparation of the capital cost estimate:

- All material and equipment purchases and installation subcontracts are competitively tendered on a lump sum basis.
- The project will proceed on an EPCM basis.
- A 70-hour workweek will be followed for the construction phase of the project.
- Skilled tradespersons, supervisors, and contractors are available.
- Quotes in Rand are converted to Canadian dollars at an exchange rate of 0.184.
- Quotes in US dollars are converted to Canadian dollars at an exchange rate of 1.48.

19.3.4 Exclusions

The following are not included in the capital cost estimate:

- escalation (included in financial model)
- interest during construction
- cost of schedule delays such as those caused by:
  - scope changes
  - unidentified ground conditions
  - labour disputes
  - environmental permitting activities
- cost of financing
- sustaining capital
- acquisition costs

- sunk costs
- working capital
- exploration site operating expenses
- prefeasibility and feasibility studies
- field investigations and off-site testwork prior to project execution
- environmental assessment, permitting and related costs.

19.4 Operating Costs

19.4.1 Introduction

Operating cost estimates were developed by DBCEI for three areas: mining, process and general and administration (G&A). The methodologies used for cost estimation are explained below. AMEC believes these estimates reflect a scoping level study, with a range of accuracy of ±30%. A contingency of 10% has been applied. The life-of-mine average operating costs by area are shown in Table 19-9.

Table 19-9: Life-of-Mine Average Operating Costs

Area	$/t processed
Mining	17.33
Processing	5.88
G&A	32.78
Total	**55.99**

19.4.2 Mining Operating Costs

The following procedure was used to estimate mine operating costs:

- Mining equipment productivity was calculated using haulage simulation and standard industry productivities for loading and drilling equipment.
- Annual equipment usage requirements were calculated by applying these productivities to the annual production forecast.
- Labour requirements were also derived in this fashion, with Northern wage rates from relevant AMEC data applied to estimate the labour cost component.
- Equipment hourly operating costs were based on public domain cost data.
- Costs for auxiliary and support equipment were applied.

- The mine general expense component was estimated from AMEC experience.

19.4.3 Process

The estimated plant operating costs were based on the Snap Lake Optimization Study, with adjustments and factoring where necessary to reflect the different production rate. Process costs include operating and maintenance labour, consumables, and supply costs for the following:

- primary crushing
- process plant
- recovery.

Plant costs do not include:

- power
- security
- process plant building costs (HVAC, building maintenance)
- grading and valuation.

These costs have been collected within G&A expenses.

19.4.4 G&A

The G&A estimate includes costs for power, surface operations, freight, site and off-site G&A. Costs were derived from internal AMEC data from previous Northern studies. AMEC believes they are reasonable.

19.4.5 Financial Analysis

The financial evaluation was performed by DBCEI using the "escalate/de-escalate" methodology, whereby all cash inflows and outflows are escalated by Canadian inflation of 2% annually (Consumer Price Index is used as a proxy for inflation), then subsequently de-escalated at the same rate to determine net present value (NPV) and internal rate of return (IRR). This allows for appropriate application of tax pools, which must be applied against escalated profits.

The Gahcho Kué project is a joint venture of DBCEI, MPD, and Camphor Ventures. All of the financial models are based upon 100% ownership. Financial evaluation and computation of NPV and IRR were undertaken in accordance with the modified joint venture agreement dated 24 October 2002. Two cases have been considered: one based on inclusion of joint venture sunk costs, and the other looking forward from 2003. Based on the above assumptions, the after-tax IRR for the both cases is positive, but does not yet reach the joint venture hurdle rate (15%).

A sensitivity analysis was completed for both the NPV and the IRR against capital, operating costs, and revenue. The project was found to be most sensitive to the changes in revenue.

AMEC believes that the financial model fairly represents the state of the project at this time.

20.0 CONCLUSIONS AND RECOMMENDATIONS

AMEC reviewed pertinent data from the Gahcho Kué project to obtain a sufficient level of understanding to assess the existing Mineral Resource statement and the general conclusions of the Preliminary Assessment contained in the updated 2002 Desktop Study, issued in April 2003 on the project. AMEC's general conclusions from this review are as follows:

- The geology of the Gahcho Kué project is well understood at this level of study. Four main kimberlite pipes have been defined: 5034, Hearne, Tuzo, and Tesla. Tesla is not included in the Gahcho Kué resource because of its small size and low grade.

- The composite geological model of the Gahcho Kué kimberlite pipes, as well as the shape and infill of the individual kimberlite pipes, is similar to that of the kimberlites in the Kimberley area of South Africa, but extremely different from many other Canadian kimberlites such as those found at Fort à la Corne, Attawapiskat, and Lac de Gras. The Gahcho Kué pipes are considered to be root-to-diatreme transition zones and therefore must have undergone significant erosion.

- Diamond deposit grade and value are evaluated by their microdiamond and macrodiamond data. Microdiamond samples are collected from core drilling. Macrodiamond data are recovered from bulk samples from large-diameter drilling (LDD). The macrodiamond data are more critical. Key quality assurance and control steps implemented during the LDD work (1999, 2001, and 2002) consisted of caliper surveyed drill holes (for volume determination), geological reference samples taken at 1 m intervals, head feed granulometry samples collected and processed on site, underflow samples collected at regular intervals, and LDDH locations preceded by NQ core holes (2002 program only).

- A reverse-flood, airlift-assist drilling method employing nominal 610 mm diameter tricones was used in the 2001 and 2002 bulk sampling evaluation programs. This process greatly reduced diamond breakage during sample recovery in the LDD programs.

- DBCEI has carried out numerous internal checks on the 1997-2002 Gahcho Kué evaluation databases. It is good industry practice to periodically submit a project's database for independent external audit.

- The estimation variable is grade measured in carats per hundred tonnes (cpht). Grade is estimated in carats per cubic metre (ct/m^3) and then converted to cpht by applying a density value. For the West, Centre, and East lobes of 5034, local block estimates were created within the 3-D block model using the results of the LDD. A single estimate, based on microdiamond sampling, was made for the North Lobe, North Pipe, and South Pipe. Large-diameter drilling was used at Hearne, where estimates were constructed for 12 m benches across the entire pipe. For Tuzo, an average grade per rock type was created using the results from microdiamond sampling. Density is estimated by kriging in the West lobe of 5034. For the remaining pipes and lobes, an average density is estimated per rock type.

- A diamond value is estimated by combining a diamond value distribution and a diamond size distribution. The diamond value distribution is estimated using diamonds recovered from the large-diameter drilling. The diamond size distribution is obtained by modelling the micro and macrodiamonds from the pipes. The diamond value distributions were adjusted during this process for sample size.

- In AMEC's opinion, the approach described above is consistent with accepted industry practice and is appropriate for the purposes of declaring a resource and reserve at Gahcho Kué.

- The mineral resource at Gahcho Kué is classified according to the CIM definitions referred to in National Instrument 43-101. In classifying the resource, consideration is given to qualitative levels of confidence in volume estimation, sample quality, sample representivity, estimation technique, and average dollar per value.

- AMEC recommends that further sampling for grade is carried out during the next phase of study (prefeasibility) to upgrade the current Inferred resources to Indicated.

- Information relating to the x-ray properties of diamonds was obtained from the evaluation programs and from the 2002 ODS. The ODS included magnetic susceptibility testing of the diamonds and gangue and the development of a luminescent profile of the gangue material. The number of stones larger than diamond sieve #12 was small, and the results were therefore biased toward the luminescence intensity (LI) values of the small stones. Generally, the large stones (>#12) showed good luminescence, while the smaller ones were more problematic. It is clear that the recovery of small sizes will require very sensitive diamond-sorting equipment.

- AMEC recommends that further work on processing be conducted in the following areas as part of the next phase of study (prefeasibility):waste rock sorting, laser and x-ray sorting, high pressure rolls crushing, jigging, dewatering / thickening, slurry / paste rheology, material handling, scrubbing, autogenous milling, and mineral identification.

- Based on the limited geotechnical analysis available at the time of the study update, a single inter-ramp slope angle of 50° was used for mine design purposes. This angle falls within the mid range of angles proposed by SRK and is considered conservative in the competent granite. AMEC believes that this is prudent until more detailed geotechnical work is completed to define slope angles more accurately.
- Open pit optimization was performed using the Whittle Four-X© computer software package based on the 2003 mineral resource model. The pit design was performed in Gemcom using the Whittle pit shell as a template. The optimization process determined the economic open pit boundaries, ore tonnes, carats, and waste tonnes for the life of mine. The Whittle defined pit contains 19 Mt of ore, 31 Mct (162 cpht) of diamonds, and 136 Mt of waste rock. Three separate shells, one for each of the three kimberlites in the Gahcho Kué group, were developed. These pits extend to depths from surface of approximately 250 m in 5034, 220 m in Hearne, and 140 m in Tuzo. In total, the three pits would deplete 20 Mt of ore, or 65% of the 31 Mt Gahcho Kué resource. AMEC believes that the optimization and designs have been created utilizing good engineering judgement and that the designs accurately reflect the Whittle shells.
- The south arm of Kennady Lake has been designated as the processed kimberlite (PK) containment area. PK slurry will be pumped initially to the southeast of the containment area, progressing to the west and north. This leaves the remaining containment to the northwest available for water collection from site runoff and PK slurry. The water will be stored for subsequent reclaim for process water or discharged through a water treatment plant. PK will be deposited progressively, while retaining a channel between the south bank of the plant site area and the PK pile. This will allow lake water flow to be restored when the dikes are breached upon mine closure.
- Open pit inflow water, PKC drainage water, and excess water originating from runoff and seepage from waste rock piles and the site will need to be treated prior to discharge to Kennady Lake. Treatment will consist of removing suspended solids, but not dissolved metals, chlorides, or ammonia. In addition, the following assumptions have been made:
  - Based on preliminary testwork, waste rock pile seepage will not be acidic.
  - Regulated discharge water quality limits will be equivalent to freshwater aquatic life criteria (similar to background concentrations).
- Regular monitoring of water quality will be a key component of the ongoing environmental management program, requiring extensive use of the environmental laboratory included as part of the infrastructure.

- The environmental assessment and permit application process is a critical path issue in the project development timeline and reflects the technical and political complexities associated with permitting mining projects in the Northwest Territories. The main issues for Gahcho Kué are loss of fish habitat and socioeconomic considerations. Relative to the former issue, a fundamentally different tailings management plan, such as disposal in a land-based impoundment, may be necessary in order to reach a mutually satisfactory compensation formula. Socioeconomic concerns include the cumulative effects of an additional mine in the NWT. Both should be discussed with the regulators at an early stage of the project.
- A sensitivity analysis was completed for both the NPV and the IRR against capital, operating costs, and revenue. The project was found to be most sensitive to changes in revenue.
- AMEC believes that the Gahcho Kué financial model fairly represents the state of the project at this time.

This review by AMEC supports the April 2003 Gahcho Kué Mineral Resource statement and the general conclusions reached in the updated Desktop Study.

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APPENDIX A

MICRO AND MACRODIAMOND DATA

Table-I: Microdiamond Data

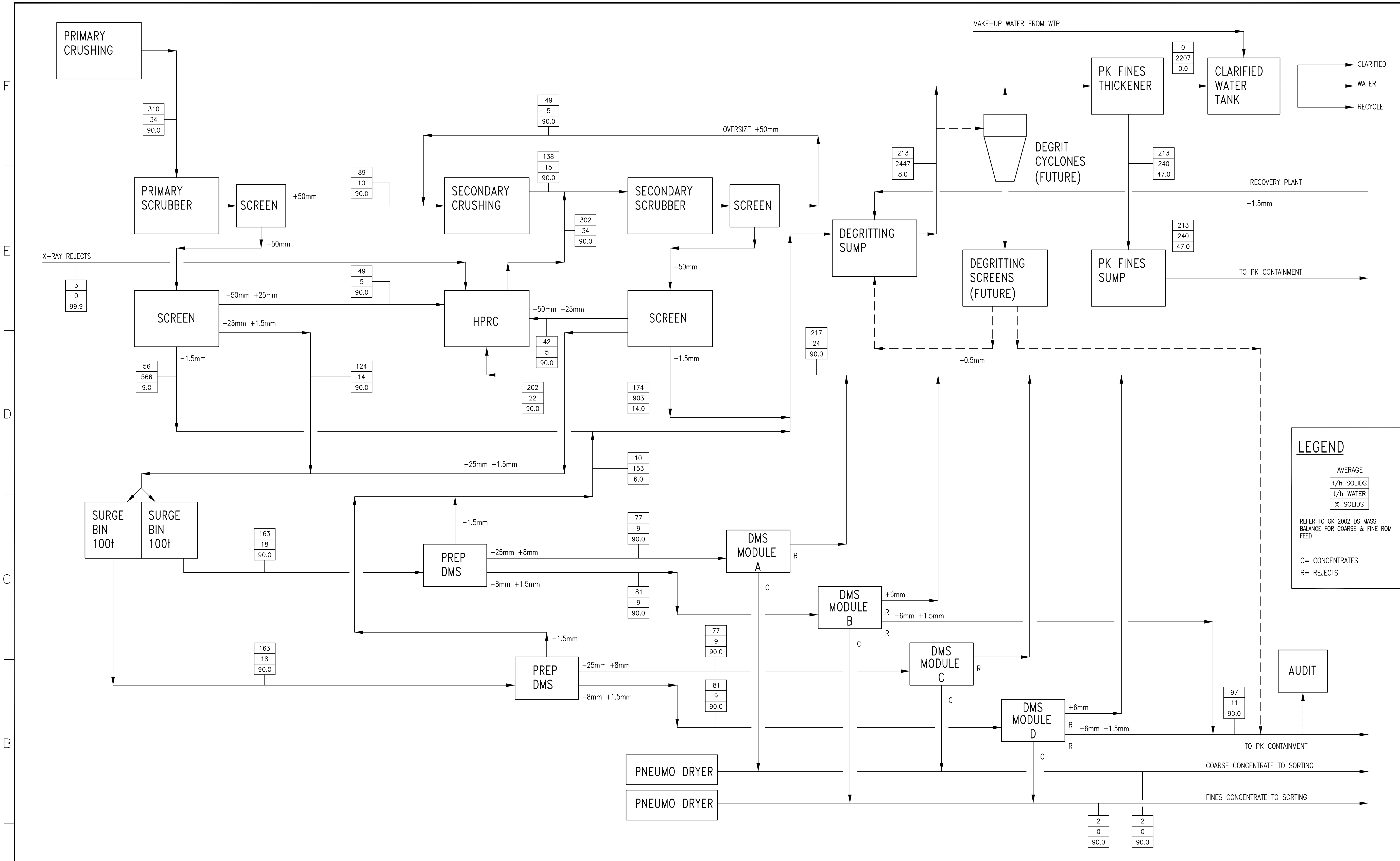
Pipe / Lobe Consignments	Laboratory Number	Samples	Total Aliqt.	Treated Mass (kg)	MD06+ Micros[2]	MD06+ SP20KG[1,2]	Total Micros[2]
			5034				
			302/307/0001				
Central Lobe							
CAN97/082	KAL97/0081	103, 221, 267–8					
CAN97/098	KAL97/0079	174–183	18	384	1068	55.63	1517
CAN97/115	KAL97/0083	269–70, 281–2					
CAN02/0451	KAL02/0194	774/6/8, 780/2	5	80	193	48.25	333
Total			**23**	**464**	**1261**	**54.35**	**1850**
East Lobe							
CAN97/082	KAL97/0081	104	1	22	21	19.09	37
West Lobe							
CAN97/082	KAL97/0081	105–6, 222	3	66	156	47.27	201
CAN02/0452	KAL02/0195	786/8, 790/2/4	5	80	220	55.00	283
Total			**8**	**146**	**376**	**51.51**	**484**
North Lobe							
CAN97/115	KAL97/0083	296–8, 312–3, 329	6	120	369	61.50	484
CAN02/0448	KAL02/0193	763/5/7	3	60	125	41.67	184
Total			**9**	**180**	**494**	**54.89**	**668**
5034 North							
CAN98/030	KAL98/0075	348–52, 368–73	11	228	747	65.53	1186
			302/307/0012				
5034 South							
CAN99/098	KAL99/0089	1–4	12	240	410	34.17	593
CAN00/300	KAL01/0026	28–35					
			Hearne				
			302/307/0005				
CAN97/263	M97/0173	025 – 026	2	40.00	112	56.00	252
CAN97/264	KAL97/144	027 – 032	6	132.00	238	36.06	323
CAN97/309	M97/1952	118 – 119	2	40.00	67	33.50	127
CAN97/310	KAL97/164	120 – 127	8	168.00	353	42.02	437
CAN99/005	KAL99/039	306 – 308	3	60.00	42	14.00	47
CAN00/0294	KAL01/045	469 – 474	6	120.00	109	18.17	117
CAN00/0351	KAL01/041	475 – 479	5	98.00	206	42.04	355
CAN00/0352	KAL01/042	480 – 484	5	107.70	485	90.06	558
CAN02/0453	KAL02/319	610/12/14/16/18/20	6	96.00	289	60.21	477
CAN02/0455	KAL02/320	629/31/33/35/37	5	80.00	208	52.00	289
Total			**48**	**941.70**	**2109**	**44.79**	**2982**
			Tuzo				
			302/307/0004				
CAN97/260	KAL97/146	047 – 052	6	124.00	259	41.77	401
CAN97/316	KAL97/166	099 – 105	7	154.00	195	25.32	281
CAN99/234	KAL00/065	315 – 322	8	176.00	217	24.66	299
CAN99/235	KAL00/066	323 – 329	7	154.00	276	35.84	353
CAN02/0557	KAL02/322	599, 601, 603	3	48.00	171	71.25	295
CAN02/0607	KAL02/326	606, 608, 610	3	48.00	69	28.75	100
Total			**34**	**704.00**	**1187**	**33.72**	**1729**

[1] average number of stones per 20 kg above 0.000032 carats per stone
[2] excludes synthetic diamonds.

Table-II: Macrodiamond (LDD) Data

HOLE_ID	LOCATION X	LOCATION Y	LOCATION Z	Depth (m)	Volume (m^3)	Density (t/m^3)	Mass (t)	Carats (ct)	Stones
5034									
MPV-99-01L	589296.0	7035202.0	404.4	75.0	4.20	2.54	10.67	19.08	173
MPV-99-02L	589313.5	7035202.0	404.4	219.7	15.94	2.42	38.59	82.20	1106
MPV-99-03L	589339.0	7035210.0	404.4	263.1	19.92	2.51	49.91	92.59	1288
MPV-99-04L	589362.0	7035209.0	404.4	281.1	20.86	2.54	52.96	101.64	1220
MPV-99-05L	589389.0	7035165.0	404.4	237.1	17.34	2.63	45.65	60.18	632
MPV-99-06L	589386.0	7035150.0	404.4	203.5	14.80	2.85	42.19	38.48	568
MPV-99-07L	589406.0	7035148.0	404.4	209.1	15.29	2.66	40.69	31.44	406
MPV-99-08L	589424.0	7035141.0	404.4	208.5	15.48	2.69	41.68	55.14	661
MPV-99-09L	589445.0	7035141.0	404.4	236.5	17.65	2.75	48.60	69.89	1141
MPV-99-10L	589467.0	7035174.0	404.4	299.1	22.21	2.69	59.81	91.49	1416
MPV-99-11L	589480.0	7035194.0	404.4	263.1	19.70	2.73	53.77	115.17	1604
MPV-99-12L	589490.0	7035218.0	404.4	275.3	20.77	2.67	55.46	97.69	1627
MPV-99-14L	589486.0	7035214.0	404.4	299.2	28.31	2.68	75.92	179.57	3436
MPV-01-55L	589482.2	7035204.9	404.4	247.7	69.03	2.70	186.38	298.39	4058
MPV-01-59L	589488.8	7035224.0	404.4	156.4	42.41	2.70	114.51	196.22	2725
MPV-01-62L	589473.5	7035186.4	404.4	221.2	60.09	2.70	162.24	218.08	2413
MPV-01-63L	589461.9	7035172.3	404.4	240.0	63.64	2.70	171.83	199.90	2414
MPV-02-081L	589384.0	7035165.9	404.4	190.2	51.67	2.68	138.47	137.45	1467
MPV-02-083L	589379.4	7035161.0	404.4	15.7	0.26	2.68	0.69	0.00	0
MPV-02-086L	589384.3	7035159.3	404.4	192.3	52.13	2.68	139.70	109.57	1191
MPV-02-088L	589346.0	7035207.5	404.4	259.5	77.94	2.46	191.74	419.62	4046
MPV-02-089L	589346.8	7035201.0	404.4	206.8	58.30	2.46	143.42	243.72	2584
MPV-02-090L	589377.9	7035162.5	405.8	167.4	45.17	2.68	121.05	123.94	1477
MPV-02-102L	589340.9	7035203.5	404.4	151.6	41.42	2.46	101.90	179.86	1881
					794.53			3161.31	
Hearne									
MPV-99-37L	588446.0	7034585.0	404.4	203.0	19.30	2.43	46.88	96.20	1440
MPV-99-38L	588432.0	7034585.0	404.4	173.0	5.26	2.34	12.31	26.18	358
MPV-99-39L	588457.0	7034700.0	404.4	299.0	22.32	2.69	60.12	94.72	1067
MPV-99-40L	588445.0	7034820.0	404.4	299.0	23.08	2.68	61.84	101.68	1134
MPV-99-41L	588452.0	7034740.0	404.4	257.0	19.31	2.81	54.34	70.00	744
MPV-99-42L	588450.0	7034780.0	404.4	288.8	21.47	2.64	56.60	79.52	988
MPV-99-44L	588450.0	7034800.0	404.4	294.0	22.05	2.55	56.25	91.31	998
MPV-99-45L	588455.0	7034720.0	404.4	155.2	13.62	2.60	35.40	64.24	1280
MPV-99-46L	588430.0	7034840.0	404.4	285.2	26.01	2.46	64.01	179.13	2941
MPV-99-47L	588457.0	7034680.0	404.4	203.2	17.88	2.67	47.78	49.46	733
MPV-01-57L	588430.3	7034843.8	404.4	159.4	43.90	2.47	108.28	243.25	2672
MPV-01-58L	588454.2	7034815.8	404.4	189.3	50.19	2.48	124.64	282.45	3154
MPV-01-60L	588440.8	7034833.2	404.4	150.8	40.79	2.47	100.61	223.42	2470
MPV-02-091L	588455.5	7034660.1	404.4	267.8	73.28	2.57	188.34	172.43	1668
MPV-02-099L	588447.1	7034776.6	404.4	225.7	58.83	2.54	149.63	267.36	2666
MPV-02-101L	588445.1	7034810.2	404.4	186.6	49.66	2.46	122.22	282.14	2877
MPV-02-103L	588450.4	7034770.0	404.4	154.0	40.64	2.48	100.65	228.49	2468
MPV-02-105L	588442.4	7034771.0	404.4	159.9	42.17	2.48	104.72	221.35	2380
					589.76			2773.33	
Tuzo									
MPV-99-13L	589811	7035880	404.4	274.8	24.67	2.45	60.35	74.09	774
MPV-99-15L	589770	7035910	404.4	65.1	4.43	2.32	10.27	13.85	151
MPV-99-16L	589800	7035910	404.4	224.5	17.72	2.49	44.08	64.54	750
MPV-99-18L	589770	7035890	404.4	240.3	19.98	2.50	49.98	27.37	345
MPV-99-19L	589800	7035890	404.4	299.2	23.60	2.41	56.84	85.91	916
MPV-99-20L	589830	7035890	404.4	198.5	15.03	2.38	35.82	73.20	875
MPV-99-21L	589770	7035870	404.4	252.4	21.09	2.40	50.67	27.57	353
MPV-99-22L	589800	7035870	404.4	299.3	24.99	2.41	60.15	52.06	591
MPV-99-48L	589789	7035880	404.4	216.3	18.28	2.49	45.46	26.89	301
MPV-99-49L	589789	7035860	404.4	246.7	21.31	2.48	52.85	37.59	432
MPV-99-50L	589811	7035860	404.4	274.9	23.41	2.41	56.48	49.57	538
					214.51			532.64	

APPENDIX B
DRAWINGS



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APPROVED FOR CONSTRUCTION

CLIENT PROJECT MGR. TECH. DIR./DEPT. MGR AREA LEADER

SCALE NTS | PACKAGE CODE

DR.	FBK	
DSN.	FBK	
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SIGN	BY	D/M/Y

DE BEERS

amec

SUBJECT
GAHCHO KUE 2002 DESKTOP STUDY
6000t/d PLANT
MAIN PLANT BLOCK FLOW DIAGRAM

DE BEERS DRAWING NO.
MINE PROJECT

DRAWING NO.
A1−U841A−300−N−001

REV.
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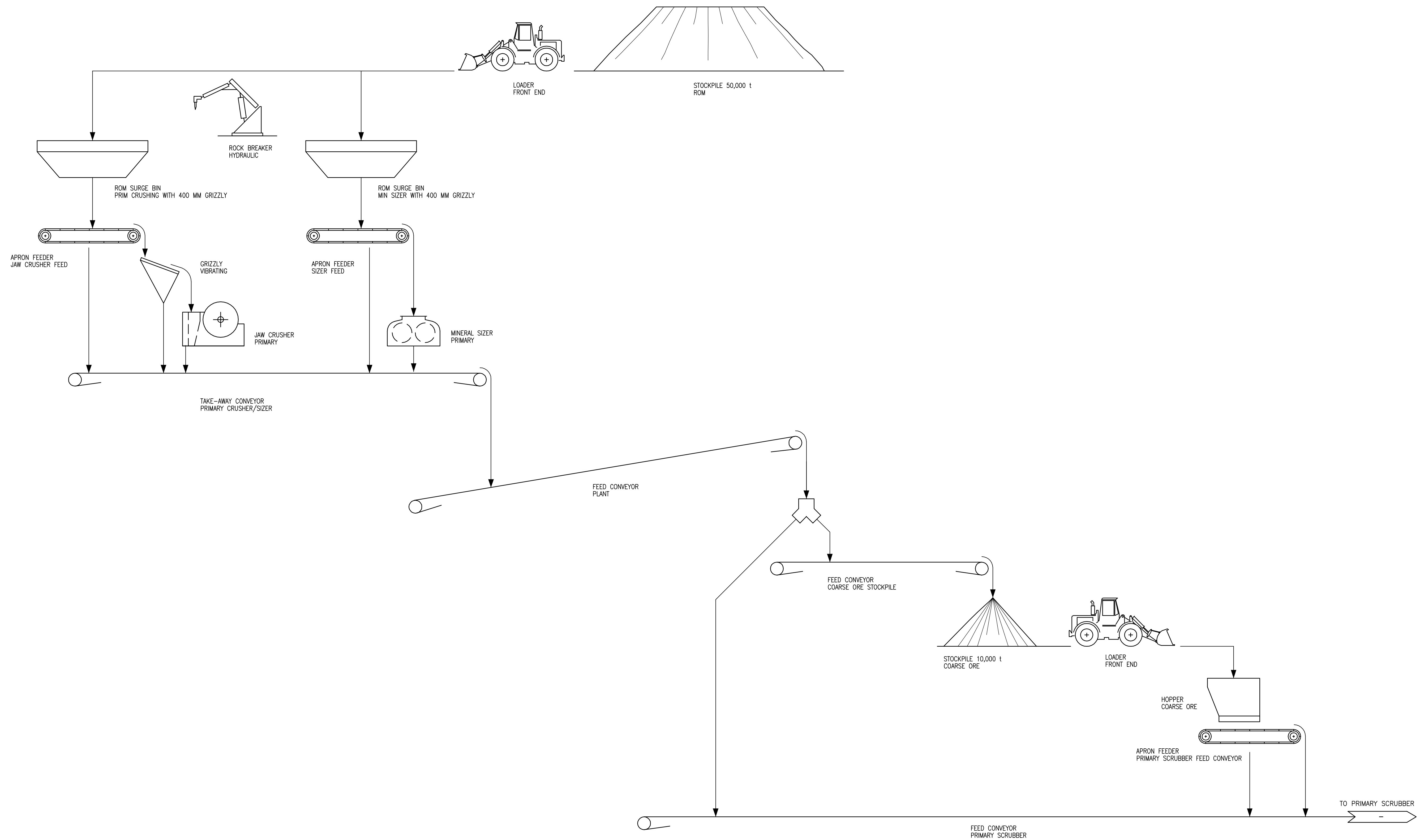

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CLIENT PROJECT MGR. TECH. DIR./DEPT. MGR AREA LEADER

DR.	FBK	11/07/02
DSN.	PD	
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SIGN	BY	D/M/Y

SCALE
NTS

PACKAGE CODE

DE BEERS

amec

SUBJECT
GAHCHO KUE 2002 DESKTOP STUDY
6000 t/d PLANT
PRIMARY CRUSHING FLOW DIAGRAM

DE BEERS DRAWING NO.
MINE PROJECT

DRAWING NO.
A1-U841A-300-N-003

REV.
A

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I, Malcolm L Thurston, of Scottsdale, Arizona hereby certify:

I am a member of the Australian Institute of Mining and metallurgy, a self-regulating body as defined by N.P. 43-101. I am a graduate of the University of London England (1979) and hold a B.Sc (Hons) degree in Mining Geology. In addition, I hold a postgraduate degree in geostatistics from the Centre de Geostatistique of the Ecole des Mines de Paris in Fontainebleau, France (1986) and the degree of Doctor of Philosophy from the University of the Witwatersrand (1999).

I have been employed in the minerals industry for 23 years working as an exploration geologist, mine geologist and mineral resource evaluation specialist in gold, base metals and diamonds. I have first-hand experience in the estimation of kimberlite grade, tonnage and value for the purposes of resource and reserve estimation and have worked on kimberlite projects in South Africa, Botswana and Russia. I have consulted on most major diamond projects in Canada.

As a result of my experience and qualifications, I am a Qualified Person as defined in N.P. 43-101. I am currently the Chief Geostatistician of AMEC Mining and Metals Consulting, of 2001 West Camel Back Road, Phoenix and have been so since August 1998.

I visited the Gahcho Kue site from 10 February until 16 February 1999 during which time I observed the 1999 large diameter drilling campaign. This was my only visit to site.

This report (Gahcho Kue – Independent Qualified Person's Review and Technical Report, June 2003) was prepared under my direct supervision in consultation with technical specialists, who are Qualified Persons in the fields of mine engineering and metallurgy. The Qualified Person for Mining prepared Section 19. The Qualified Person for Metallurgy prepared Section 16. I supervised or directly prepared the remaining sections of the report.

The Qualified Person for mining is Mark Pearson. Mark is the Senior Mining Engineer of AMEC Mining and Metals Consulting, of 111 Dunsmuir, Vancouver, in the Province of British Columbia. He is a member of the Association of Professional Engineers in British Columbia. Mark has practiced his profession continuously since 1988 and has been involved in diamond evaluation in Canada, gold and base metal evaluations in Canada, United States, Chile, Brazil, Austria, and Iran and mine operations in Canada.

The Qualified Person for metallurgy is John Lindsay. John is the Principal Metallurgist of AMEC Mining and Metals Consulting, of 2020 Winston Park Drive, Oakville, in the Province of Ontario. He is a member of the Association of Professional Engineers Ontario (PEO). John has practiced his profession continuously since 1981 and has been involved in diamond operations in South Africa and Botswana, gold operations in South Africa, evaluation and development of gold, base metals and diamond projects in Canada, South Africa, Angola, Namibia, Kazakhstan, Jamaica and New Caledonia.

I am not aware of any material fact or material change with respect to the subject matter of this technical report, which is not reflected in this report, the omission to disclose which would make this report misleading.

I am independent of Mountain Province in accordance with the application of Section 1.5 of National Instrument 43-101. I have read National Instrument 43-101, Form 43-101FI and this report has been prepared in compliance with NI 43-101 and Form 43-101FI.

Dated at Phoenix, Arizona, this 16th day of June 2003.

Malcolm L Thurston

Malcolm L. Thurston, PhD, MAusImm

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I, Mark J Pearson, of Delta, British Columbia hereby certify:

I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC), a self-regulating body as defined by N.P. 43-101. I am a graduate of the Montana College of Mineral Science and Technology (1988) and hold a B.Sc (Hons) degree in Mining Engineering.

I have been employed in the minerals industry for 15 years working as a mining engineer, in mine operations and evaluations for gold, base metals, coal and diamonds. I have consulted on several diamond projects in Canada.

As a result of my experience and qualifications, I am a Qualified Person as defined in N.P. 43-101. I am currently the Senior Mining Engineer of AMEC Mining and Metals Consulting, of 111 Dunsmuir St., Vancouver and have been so since November 1997.

I was responsible for section 19 of the technical report. I have not visited the Gahcho Kué site.

I am not aware of any material fact or material change with respect to the subject matter of this technical report, which is not reflected in this report, the omission to disclose which would make this report misleading.

I am independent of Mountain Province in accordance with the application of Section 1.5 of National Instrument 43-101. I have read National Instrument 43-101, Form 43-101FI and this report has been prepared in compliance with NI 43-101 and Form 43-101FI.

Dated at Vancouver, British Columbia, this 16th day of June 2003.

PROFESSIONAL
PROVINCE OF
M.J. PEARSON
26035
BRITISH COLUMBIA
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I, John Lindsay, am a Principal Metallurgist of AMEC Mining and Metals Consulting, of 2020 Winston Park Drive, Oakville, in the Province of Ontario.

I am a member of the Association of Professional Engineers Ontario (PEO). I graduated from the University of Strathclyde, Glasgow, UK with a Bachelor of Science degree in metallurgy in 1981.

I have practiced my profession continuously since 1981 and have been involved in diamond operations in South Africa and Botswana, gold operations in South Africa, evaluation and development of gold, base metals and diamond projects in Canada, South Africa, Angola, Namibia, Kazakhstan, Jamaica and New Caledonia.

As a result of my experience and qualifications, I am a Qualified Person as defined in N.P. 43-101. I am currently a Consulting Engineer of AMEC Mining and Metals Consulting, and have been so since August 1995.

I am the author of Section 18 of the Technical Report, which relates to the mineral processing and metallurgical testing aspects of the Gahcho Kué property in NWT. I have not visited the Gahcho Kué site.

I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report and that the omission to disclose would make this report misleading.

I am independent of Mountain Province Diamonds Inc. and De Beers Canada Corporation in accordance with the application of Section 1.5 of National Instrument 43-101 I have read National Instrument 43-101 and Form 43-101FI and section 18 of the Technical Report has been prepared in compliance with same.

Dated at Toronto, Ontario, this 16th day of June 2003.

LICENSED PROFESSIONAL ENGINEER
J. A. LINDSAY
PROVINCE OF ONTARIO

John Lindsay, P. Eng.
PEO# 90442344

AMEC E&C Services Limited
111 Dunsmuir Street, Suite 400
Vancouver, B.C. V6B 5W3
Tel +1 604 664 3471
Fax +1 604 664 3041
www.amec.com

CONSENT OF QUALIFIED PERSON

TO: The Securities regulatory authorities of each of the provinces and territories of Canada

I, Malcolm L. Thurston, PhD, MAusImm, do hereby consent to the filing of the technical report prepared for Mountain Province Diamonds Inc., and dated 16th June 2003, in respect of the Gahcho Kue property, NWT.

DATED at Toronto, Ontario, this 16th day of June 2003.

Malcolm L. Thurston

Malcolm L. Thurston, PhD, MAuslmm

AMEC E&C Services Limited
2001 West Camelback Road, Suite 400
Phoenix, Arizona USA 85015
Tel: (602) 343-2436
Fax: (602) 343-2499
www.amec.com

CONSENT OF QUALIFIED PERSON

TO: The Securities regulatory authorities of each of the provinces and territories of Canada

I, Mark Pearson, P.Eng., do hereby consent to the filing of the technical report prepared for Mountain Province Diamonds Inc., and dated 16th June 2003, in respect of the Gahcho Kué property, NWT.

DATED at Toronto, Ontario, this 16th day of June 2003.

PROFESSIONAL
PROVINCE OF
M.J. PEARSON
26035
BRITISH COLUMBIA
ENGINEER

____
Mark Pearson, P.Eng.

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Vancouver, B.C. V6B 5W3
Tel +1 604 664 3471
Fax +1 604 664 3041
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CONSENT OF QUALIFIED PERSON

TO: The Securities regulatory authorities of each of the provinces and territories of Canada

I, John Lindsay, P.Eng., do hereby consent to the filing of the technical report prepared for Mountain Province Diamonds Inc., and dated 16th June 2003, in respect of the Gahcho Kue property, NWT.

DATED at Toronto, Ontario, this 16th day of June 2003.

John Lindsay, P. Eng.
PEO# 90442344

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Mountain Province Diamonds Inc.
(Registrant)

Date June 17, 2003

By: */S/ "Pradeep Varshney"*
(Print) Name: Pradeep Varshney
Title: Chief Financial Officer