2.23991

De Beers

ASSESSMENT REPORT ON THE

WINTER 2001-2002

AIRBORNE GEOPHYSICAL AND DRILL PROGRAMME

ON CLAIMS

ADJACENT TO VICTOR KIMBERLITE PIPE

Farliert Jan 11/2003

Scott Boyce

May, 2002

DE BEERS CANADA EXPLORATION INC. ONE WILLIAM MORGAN DRIVE TORONTO ONTARIO CANADA M4H ING TEL (416) 423 5811 FAX (416) 423 9944 RECEIVED JUL 2 6 2032 GEOSCIENCE ASSESSMENT OFFICE



43B13SW2011 2.23991 BMA 527 834

TABLE OF CONTENTS

INTRODUCTION 1	I
LOCATION, ACCESS AND LOGISTICS	ļ
Location 1	1
Access	2
Logistics	3
PERMITTING AND CLAIM TENURE	3
Permitting	3
Claim Tenure	4
GENERAL GEOLOGY AND TECTONIC SETTING	Į
PREVIOUS WORK	5
Early Reconnaissance	5
Discovery of the Attawapiskat Kimberlites	5
Re-Evaluation of the Attawapiskat Kimberlites	7
2001-2002 AIRBORNE GEOPHYSICAL AND DRILL PROGRAMME 8	3
Personnel	B
Geophysical Programme	B 9
Drill Programme) 1 1
EXPLORATION EXPENDITURES	2
CONCLUSIONS	3

APPENDICES:

- 1. AIRBORNE GEOPHYSICAL SPECIFICATIONS
- 2. ANOMALY AND DRILL HOLE SUMMARY
- 3. DRILL LOGS
- 4. EXPENDITURE DETAILS
- 5. LIST OF PERSONNEL

MAPS:

- 1. AIR PHOTO BASE MAP
- 2. TOTAL MAGNETIC FIELD
- 3. APPARENT RESISTIVITY 6200HZ COPLANAR

INTRODUCTION

An airborne magnetic and EM survey and follow-up drill programme were carried out during the winter of 2001-2002 over a group of claims in the vicinity of the Victor Kimberlite Pipe. This was part of a more extensive programme in the Victor area. The programme was conducted with a view to identifying any previously undiscovered kimberlitic bodies. Improved geophysical techniques were employed so as to highlight more subtle anomalies that could potentially be kimberlite. The airborne work was performed in November and December 2001; the follow-up work drilling was conducted in February and March 2002.

LOCATION, ACCESS AND LOGISTICS

Location

The Attawapiskat Kimberlite Province is located approximately 90 km west of the community of Attawapiskat, and 100 km west of the James Bay coast, in Ontario, Canada (Figure 1). This area is within the Attawapiskat River basin, which comprises part of the James Bay Lowlands.





Figure 1: Location map of the claims, Victor Pipe and Victor Camp

The Lowlands are a vast expanse of flat, muskeg terrain, developed on marine clays of the former Tyrell Sea. The majority of the land is occupied by a mosaic of fen and bog (or muskeg), characterized by perennially wet conditions, and by scattered, stunted tree cover of black spruce and tamarack. Well-developed forest communities are confined to narrow ribbons of land which border the region's rivers and major creeks.

Access

The Victor Camp was used as the operational base for this programme; it was serviced by fixed-wing aircraft and helicopter, and by winter road.

There is a temporary winter airstrip at Victor. Commercial Aviation provided fixed-wing service out of Timmins using a Navajo aircraft. Helicopter support was provided by Canadian Helicopters out of Moosonee. An A-Star 350BA was used to shuttle people and some supplies between the project site and the community of Attawapiskat. The helicopter was stationed in camp for the duration of the programme. (The airborne survey was flown by Questral Heicopters Ltd.).

A winter road from Moosonee to Victor Camp via Attawapiskat was open between November 17 and March 29. The CME 75 drill rig was transported to and from the work site by this road. Other rigs were already on-site.

Access to the drill sites was by temporary winter trails that had been cleared using a bulldozer. Efforts were made to stay away from treed areas, and on small lakes as much as possible. No creek or rivers were crossed. Daily access to the work site was by snowmobile.

Logistics

Victor Camp was used to house the work crew. The airborne geophysical and follow-up drill programme on the western claim block were only two of several programmes conducted out of Victor during the winter of 2001-2002. Most of these programmes were part of the on-going Victor pre-feasibility study.

PERMITTING AND CLAIM TENURE

Permitting

No permits were required for the work performed in this programme. No drainages were crossed in the making of the temporary winter trails.

Claim Tenure

Work was performed on the following 15 claims, which are 100% owned by

De Beers Canada Exploration Inc.:

P 1052169	P 1227244
P 1052170	P 1227245
P 1052177	P 1227246
P 1052178	P 1246006
P 1052709	P 1246016
P 1052710	P 1246042
P 1227239	P 1246057
P 1227243	

GENERAL GEOLOGY AND TECTONIC SETTING

The Attawapiskat Kimberlite Province lies within the Western Superior Structural Province of the Canadian Shield. The Archean units of the Western Superior are overlain by Lower Paleozoic carbonate formations, which are part of the Hudson Bay Basin. The kimberlites are located on the south-east flank of the Cape Henrietta Maria arch which divides the Hudson Bay platform rocks into two basins, the Hudson Bay Basin to the northwest and the Moose River Basin to the southeast. This arch is the northeastern extension of the Transcontinental Arch. The stratigraphy of the Moose River Basin is described in depth by Sandford B.V. (1987) and Suchy and Stearn (1993), and is summarised in Figure 3. The area of interest is underlain by four sedimentary sequences of Lower Silurian Formations unconformably overlying an Upper Ordovician sequence, which rests on basement rocks. The basement rocks are found at a depth of 273 m near the Victor Kimberlite.

Series	Stage	Formation	Rock Type
	ian ger	Kenogami	Evaporitic dolostones,
-	llock your	River	gypsum, anhydrite,
A		Formation	dolomitic mudstones
R		Attawapiskat	Patch reefs,
3	Llandoverian	Formation	inter-reef carbonates
LOWER SI		Ewan River	
		Formation	
		Sever	Alternating fossiliferous
		River	limestone and
		Formation	evaporitic dolostones
ORD.	ASH.	Red Head Rapids Fm.	Limestones, dolostones, evaporites, sandstones

Figure 2 : Palaeozoic stratigraphy of the sedimentary sequence in the area of the Victor kimberlite. After Suchy and Steam (1993)

PREVIOUS WORK

Early Reconnaissance

Reconnaissance sediment sampling was conducted in the Attawapiskat River area as early as 1962, when two-person teams canoed down major rivers, such as the Albany and the Attawapiskat, collecting stream sediment samples. The samples were processed on site by manual gravitation methods. This firstpass exploration identified several sites with kimberlitic indicator minerals (garnet and ilmenite) downstream of the kimberlite cluster. Further reconnaissance stream sediment sampling was done in 1963 to cover smaller tributaries in the area. One diamond, approximately 0.005 carat, was found in a stream sediment sample east-southeast of the kimberlite cluster.

In 1970, follow-up work consisted of the collection of large (one to ten cubic yards) stream sediment samples taken at anomalous kimberlitic indicator mineral sites, for the purpose of finding diamonds. No diamonds were found, and the area was abandoned.

Further reconnaissance work during the mid-1980's employed modern exploration techniques and defined a large kimberlitic indicator mineral glacial dispersal train leading to the Attawapiskat River.

Discovery of the Attawapiskat Kimberlites

During follow-up sediment sampling on the Attawapiskat River area, kimberlite boulders were discovered on the bank of the river in the summer of 1987.

This discovery, in addition to competitor activity in the area, prompted the flying of a total field aeromagnetic and gradiometer survey over the apex of the indicator mineral dispersal train. The survey detected several intrusive type magnetic anomalies. Due to ideal geological conditions in the area of interest, where the basement cover rocks consisted of several hundred metres of Paleozoic nonmagnetic carbonate rocks, the magnetic anomalies were classic, discrete bulls-eye features. These anomalies were therefore staked immediately as BP Selco were also actively prospecting for diamonds in the area.

Drilling in the winter of 1988 confirmed the kimberlitic nature of the magnetic anomalies. Core samples were taken and submitted for microdiamond assay, kimberlitic indicator mineral analyses and petrographic work. The petrographic studies identified the kimberlites as hypabyssal macrocrystic kimberlites (Scott-Smith, 1995). Micro-diamond abundance was very low and kimberlitic indicator mineral compositions indicated that the pipes were of moderate interest only.

Re-Evaluation of the Attawapiskat Kimberlites

Work was abandoned in the area until 1995, when the lapsing date for the claims was approaching. It was decided to re-examine the data before making a final decision to drop the claims. As a large amount of core was archived after the initial exploration programme was completed, it was decided to relog the core and to update the previous analytical work. Additional micro-diamond analyses were done to increase the total mass treated for each body to a minimum of 200 kilograms, wherever possible.

During the reassessment of the project additional petrographic work was done and some of the kimberlites were re-interpreted as being crater-facies (Scott-Smith, 1995). The current interpretation is that most of the pipes in the Attawapiskat cluster are actually crater-facies pyroclastic rocks with lesser hypabyssal units.

The re-interpretation of the micro-diamond (MiDA) data using the additional mass treated indicated that the micro-diamond distribution was unusual in these kimberlites and that they may be low micro-diamond producers. The limited number of micro-diamonds recovered showed a distribution which was skewed toward the larger micro-diamond size fractions which, it is

considered, relate to the coarse nature of the pyroclastics from where the samples originate. In 1995 all remaining core from the Attawapiskat kimberlites was processed for the recovery of macro-diamonds and two were recovered. This confirmed the coarse size frequency distribution that was suggested from the micro-diamond analysis and justified a renewed interest in this kimberlite province.

Since 1999 a large amount of drilling and bulk-sampling has been conducted on known kimberlites in the area. The large majority of the work has focussed on the Victor Kimberlite. The Victor Project is now in the pre-feasibility stage; as a result adjacent claims have come under more intense scrutiny. No kimberlites have been discovered on these claims to date. No drilling was performed on them prior to 2002.

2001-2002 AIRBORNE GEOPHYSICAL AND DRILL PROGRAMME

Personnel

De Beers permanent staff, De Beers contractors, and personnel from Fugro Airborne Surveys, AMEC Earth and Environmental, Boart Longyear, Attawapiskat Technical Services, and Moosonee Transportation (MTL) were directly involved in this programme. The personnel involved totalled 22; names are listed in Appendix 5.

Geophysical Programme

Fugro Airborne Surveys Inc. were contracted for the geophysical survey. The objective of the survey was primarily to ensure that there were no other likely kimberlitic targets in the vicinity of the Victor mine plan area. This claim block comprised only a part of the total area investigated during this survey.

The claims which are the subject of this report were flown from December 2 - 5, 2001.

Geophysical instrument specifications are listed in Appendix 1. The electromagnetic system used was the Dighem Resolve recently designed by Fugro. The system comprises five coplanar coils and one coaxial coil and covers a frequency range of 300 Hz to 100 kHz. This configuration allows for conductive overburden mapping (in this geological setting) as well as discrimination of deeper bedrock targets.

Survey details are summarized below:

Flightline Spacing	50m
Flightline Direction	N-5
Tieline Spacing	500m
Tieline Direction	E-W
Terrain Clearance	20m
Total Line-km for Claims	436

GEOPHYSICAL RESULTS

A total of 15 weak and small anomalies were identified within the claim group. The majority of these were magnetic but there were also four EM anomalies identified.

Drill Programme

Follow-up drilling commenced on February 17, 2002 and continued intermittently until March 28. A large part of this programme was carried out in conjunction with a civil engineering programme which was involved in determining the overburden stratigraphy and bedrock characteristics, for

potential infrastructure planning should mine development take place at Victor. AMEC Earth and Environmental Inc. was the contractor for this work. These holes were logged in detail by AMEC soils engineers.

The majority of the holes were drilled by the AMEC-supervised Boart Longyear CME 75 rig. This was an auger rig with coring capability, mounted on a Nodwell. Augers were 8-inch hollow stem and drill rods NQ. Overburden stratigraphy was determined through the use of split-spoons and Shelby tubes. The hollow stems served as casing for the NQ rods. Water for coring was supplied from a 500-gallon tank mounted on a sled, which was dragged behind a dozer. This rig was operated on a 24-hour basis for the majority of the programme.

Two holes were drilled by the De Beers-owned RC-100 rig, which had been used in the past for reverse circulation drilling. This drill was also mounted on a Nodwell. The rig was modified so that it was capable of drilling short lengths of core using air, eliminating the need to bring water to the rig (Figure 2). Augers used were 4 ½-inch solid stem. As no hollow stems were available for this rig it was necessary to case the holes with NQ casing before coring. Using solid stem augers also meant it was difficult to make a proper log of the overburden. The RC-100 was operated on a day-shift basis only. Two additional holes were also attempted by this drill rig, but were abandoned, and redrilled by the LF 70 core rig.

The Boart Longyear LF 70 core rig drilled three holes, using HQ rods. Overburden material was recovered by triple tubing. This rig was on-site primarily for other purposes. Generally, between 1 and 10 metres of bedrock were drilled at each target. This was deemed sufficient, as the targets were predominantly shallow. All holes, with the exception of V-02-233C, were vertical.

SURVEYING

In the majority of cases drill holes were initially spotted using a Trimble Pro XRS Real Time GPS (without a local base station), and then picked up upon completion of the hole with a Trimble 4800 GPS with a base station and post-processing software; the latter provided sub-centimetre accuracy.

DRILLING RESULTS

No kimberlite was intersected during this programme. A total of 21 holes were drilled on this group of claims. Thirteen anomalies were evaluated by drilling. Eight additional holes were also drilled as part of the Victor civil engineering programme; these provided useful overburden thickness and bedrock type information. Three anomalies were not drilled. One of these was outcropping limestone; another was too close to a creek; a third was too close to the Attawapiskat River.

All but three holes intersected Attawapiskat Formation limestone. V-02-222E was abandoned at 22.0m in a river deposit; the CME 75 had great difficulty dealing with the cobbles. It is probable that the anomaly was due to fluvial magnetite. V-02-233E and V-02-256E were terminated at 42.0 and 51.0m respectively, as it was apparent that they were drilling into a thick sequence of unconsolidated sediments (a sinkhole?), and that the anomalies did not have a kimberlitic origin. Hole V-02-221E was abandoned upon auger refusal at 5.3m, as it intersected a small pocket of natural gas; it is likely that the gas was associated with limestone bedrock, rather than kimberlite.

Overburden thickness was variable, ranging from 4.1m to 23.3m, in those areas not part of a sinkhole or adjacent to a creek. The area to the north covered by claims 1227243 and 1246057 generally had thicker overburden. Overburden was generally marine clay or silt, often overlying till or in some cases sand or gravel.

Anomaly and drilling data are summarised in Appendix 2. Detailed drill logs can be found in Appendix 3.

EXPLORATION EXPENDITURES

Costs for the programme (both airborne geophysics and drilling) are summarised below, and detailed in Appendix 4. Costs associated with engineering aspects of the AMEC CME 75 holes (such as vane tests and installation of piezometers) were not included with the exploration expenditures.

Camp Costs	\$51,500
Permanent Staff	\$1,100
Temporary Staff	\$40,671
Fuel	\$21,278
Equipment Rental	\$10,489
Drilling Boart Longyear	\$62,463
Mobilisation Costs	\$2,677
Drilling Consumables	\$3,200
Airborne Geophysics (Fugro)	\$36,183
GRAND TOTAL	\$229,560

CONCLUSIONS

None of the targets evaluated were kimberlitic; due to the subtle nature of these anomalies it is unlikely that the remaining uninvestigated geophysical anomalies are due to kimberlite either. The bedrock intersected in all cases was Attawapiskat Formation limestone.

APPENDIX 1

Airborne Geophysical Specifications

INTRODUCTION

A DIGHEM^{RESOLVE} electromagnetic/resistivity/magnetic survey was flown for De Beers Canada Exploration Inc., from November 23 to December 11, 2001, over a survey block located near Attawapiskat, Ontario. The survey area can be located on NTS map sheets 43B/13.

Survey coverage consisted of approximately 1666.7 line-km, including tie lines. Flight lines were flown in an azimuthal direction of $0^{\circ}/180^{\circ}$ with a line separation of 50 metres.

The survey employed the DIGHEM^{RESOLVE} electromagnetic system. Ancillary equipment consisted of a magnetometer, radar, barometric and laser altimeter, video camera, analog and digital recorders, and an electronic navigation system. The instrumentation was installed in an AS350B2 turbine helicopter (Registration C-FZTA) which was provided by Questral Helicopters Ltd. The helicopter flew at an average airspeed of 121 km/h with an average EM sensor height of 21 metres.

Section 2 provides details on the survey equipment, the data channels, their respective sensitivities, and the navigation/flight path recovery procedure. Noise levels of less than 2 ppm are generally maintained for wind speeds up to 35 km/h. Higher winds may cause the system to be grounded because excessive bird swinging produces difficulties in flying the helicopter. The swinging results from the 5 m^2 of area which is presented by the bird to broadside gusts.

SURVEY EQUIPMENT

This section provides a brief description of the geophysical instruments used to acquire the survey data and the calibration procedures employed.

Electromagnetic System

Model: DIGHEMRESOLVE

<u>Type</u>: Towed bird, symmetric dipole configuration operated at a nominal survey altitude of 21 metres. Coil separation is 7.9 metres for 400 Hz, 1500 Hz, 6200 Hz, 25,000 Hz and 100,000 Hz and 9.0 metres for the 3300 Hz coil-pair.

Coil orientations/freque	encies: <u>orienta</u>	tion	<u>nominal</u>	<u>actual</u>
	coplanar	1	400 Hz 3	40 Hz
	coplanar	1	1,500 Hz	1,524 Hz
	coaxial	1	3,300 Hz	3,314 Hz
	coplanar	1	6,200 Hz	6,255 Hz
	coplanar	1	25,000 Hz	27,213 Hz
	coplanar	1	100,000 Hz	106,280 Hz
Channels recorded:	6 in-phase char	nnels		
	6 quadrature ch	nannels		
	2 monitor chan	nels		
<u>Sensitivity :</u>	0.13 ppm at	400 H	z Cp	
	0.12 ppm at	1,500	Hz Cp	
	0.06 ppm at	3,300	Hz Cx	
	0.24 ppm at	6,200	Hz Cp	
	0.44 ppm at	25,00	0 Hz Cp	
	0.44 ppm at	100,0	00 Hz Cp	
Sample rate:	10 per second	, equiva	ient to 1 sampl	e every 3m, at a survey speed of
	110 km/h.			

The electromagnetic system utilizes a multi-coil coaxial/coplanar technique to energize conductors in different directions. The coaxial coil is vertical with its axis in the flight direction. The coplanar coils are horizontal. The secondary fields are sensed simultaneously by means of receiver coils which are maximally coupled to their respective transmitter coils. The system yields an in-phase and a quadrature channel from each transmitter-receiver coil-pair.

Calibration of the system during the survey will use the Fugro AutoCal automatic, internal calibration process. At the beginning and end of each flight, and at intervals during the flight, the system will be flown up to high altitude to remove it from any "ground effect" (response from the earth). Any remaining signal from the receiver coils (base level) will be measured as the zero level, and removed from the data collected until the time of the next calibration. Following the zero level setting, internal calibration coils, for which the response phase and amplitude have been determined at the factory, are automatically triggered – one for each frequency. The on-time of the coils is sufficient to determine an accurate response through any ambient noise. The receiver response to each calibration coil "event" is compared to the expected response (from the factory calibration) for both phase angle and amplitude, and the applied phase and gain corrections adjusted to bring the data to the correct value.

In addition, the output of the transmitter coils are continuously monitored during the survey, and the applied gains adjusted to correct for any change in transmitter output (due to heating, etc.)

Because the internal calibration coils are calibrated at the factory (on a resistive halfspace) ground calibrations using external calibration coils on-site are not necessary for system calibration. A check calibration may be carried out on-site to ensure all systems are working correctly. All system calibrations will carried out in the air, at sufficient altitude that there will be no measurable response from the ground.

The internal calibration coils are rigidly positioned and mounted in the system relative to the transmitter and receiver coils. In addition, when the internal calibration coils are calibrated at the factory, a rigid jig is employed to ensure accurate response from the external coils.

Using real time Fast Fourier Transforms and the calibration procedures outlined above, the data will be processed in real time from measured total field at a high sampling rate to inphase and quadrature values at 10 samples per second.

Magnetometer

Model: Fugro AM102 processor with Geometrics G822 sensor

<u>Type:</u> Optically pumped cesium vapour

Sensitivity: 0.01 nT

Sample rate: 10 per second

The magnetometer sensor is housed in the EM bird, 29 m below the helicopter.

Magnetic Base Station

<u>Primary</u>

Model:	Fugro CF1 base station		
<u>Sensor type:</u>	Geome	Geometrics G822A sensor	
Counter specifi	cations:	Accuracy:	±0.1 nT
		Resolution:	0.01 nT
		Sample rate	1 Hz
GPS specificati	ons:	Mode	I: Ashtech Z-Surveyor

Type: Code and carrier tracking of L1 band, 12-channel, dual-frequency C/A code at 1575.42 MHz, and L2 P-code at 1227 MHz

Sensitivity: 1.0 second update Accuracy: Manufacturer's stated accuracy for differential corrected GPS is better than 1 metre

Environmental

Monitor specifications: Temperature:

Accuracy: ±1.5°C max Resolution: 0.0305°C

Sample rate: 1 Hz

Range: -40°C to +75°C

Barometric pressure:

Model: Motorola MPXA4115A Accuracy: ±3.0° kPa max (-20°C to 105°C temp. ranges) Resolution: 0.013 kPa Sample rate: 1 Hz Range: 55 kPa to 108 kPa

Secondary

<u>Model :</u>	GEM Systems GSM-19T
Туре:	Digital recording proton precession
Sensitivity:	0.10 nT
Sample rate:	0.2 per second

A digital recorder is operated in conjunction with the base station magnetometer to record the diurnal variations of the earth's magnetic field. The clock of the base station is synchronized with that of the airborne system to permit subsequent removal of diurnal drift. The Fugro CF1 was the primary base station. It was located at 306386.21, 585395.26 (NAD27, Zone 17). The GSM-19T base station was used as a backup unit and was located at 306386.21, 5853958.25 (NAD27, Zone 17).

Radar Altimeter

Manufacturer:SperryModel:RT220Type:Short pulse modulation, 4.3 GHzSensitivity:0.3 m

The radar altimeter measures the vertical distance between the helicopter and the ground. This information is used in the processing algorithm which determines conductor depth.

Laser Altimeter

<u>Manufacturer:</u>	Optech
Model:	G150
Туре:	Fixed pulse repetition rate of 2 kHz
Sensitivity:	±5 cm from 10°C to 30°C
	±10 cm from -20°C to +50°C

The laser altimeter is housed in the EM bird and measures the vertical distance between the EM bird and the ground.

Barometric Pressure and Temperature Sensors

Model:	DIGHEM D 1300		
<u>Type:</u>	Motorola MPX4115AP analog pressure sensor AD592AN high-impedance remote temperature sensors		
Sensitivity:	Pressure :	150 mV/kPa	
	Temperature :	100 mV/°C or 10 mV/°C (selectable)	
Sample rate:	10 per second		

The D1300 circuit is used in conjunction with one barometric sensor and up to three temperature sensors. Two sensors (baro and temp) are installed in the EM console in the aircraft, to monitor pressure and internal operating temperatures.

Analog Recorder

<u>Manufacturer :</u>	RMS Instruments
Type:	DGR33 dot-matrix graphics recorder
Resolution:	4x4 dots/mm
Speed:	1.5 mm/sec

2.2549

The analog profiles are recorded on chart paper in the aircraft during the survey. Table 2-1 lists the geophysical data channels and the vertical scale of each profile.

TABLE 2-1. THE ANALOG PROFILES

Channel Name	Parameter	Scale units/mm
400I	Coaxial in-phase (400 Hz)	2.5 ppm
400Q	Coaxial quad (400 Hz)	2.5 ppm
1500I	Coplanar in-phase (1500 Hz)	2.5 ppm
1500Q	Coplanar quad (1500 Hz)	2.5 ppm
6K2I	Coplanar in-phase (6200 Hz)	5 ppm
6K2Q	Coplanar quad (6200 Hz)	5 ppm
1X8I	Coaxial in-phase (3300 Hz)	5 ppm
1X8Q	Coaxial quad (3300 Hz)	5 ppm
25KI	Coplanar in-phase (25000 Hz)	10 ppm
25KQ	Coplanar quad (256000 Hz)	10 ppm
100KI	Coplanar in-phase (100000 Hz)	10 ppm
100KQ	Coplanar quad (100000 Hz)	10 ppm
ALTR	Altimeter (radar)	3 m
MAGC	Magnetics, coarse	20 nT
MAGF	Magnetics, fine	2.0 nT
2SP	Coplanar sferics monitor	
2PL	Coplanar powerline monitor	
1KPA	Altimeter (barometric)	30 m
2TDC	Internal (console) temperature	1° C
3TDC	External temperature	1º C

Digital Data Acquisition System

<u>Manufacturer:</u>	RMS Instruments
<u>Model:</u>	DGR 33
Recorder:	Scan disk compact flash card

The data are stored on a scan disk compact flash card and are downloaded to the field workstation PC at the survey base for verification, backup and preparation of in-field products.

Video Flight Path Recording System

<u>Type:</u> Panasonic VHS Colour Video Camera (NTSC) <u>Model:</u> AG 720/VW-CL322

Fiducial numbers are recorded continuously and are displayed on the margin of each image. This procedure ensures accurate correlation of analog and digital data with respect to visible features on the ground.

Navigation (Global Positioning System)

Airborne Receiver

Model:	Ashtech Glonass GG24
<u>Type:</u>	SPS (L1 band), 24-channel, C/A code at 1575.42 MHz, S code at 0.5625
	MHz, Real-time differential.
Sensitivity :	-132 dBm, 0.5 second update
Accuracy:	Manufacturer's stated accuracy is better than 10 metres real-time

Base Station

<u>Model:</u>	Ashtech Z-Surveyor
<u>Type:</u>	Code and carrier tracking of L1 band, 12-channel, dual-frequency C/A code
	at 1575.42 MHz, and L2 P-code at 1227 MHz
<u>Sensitivity:</u>	1.0 second update
<u>Accuracy:</u>	Manufacturer's stated accuracy for differential corrected
	GPS is better than 1 metre

The Ashtech GG24 is a line of sight, satellite navigation system which utilizes time-coded signals from at least four of forty-eight available satellites. Both Russian GLONASS and American NAVSTAR satellite constellations are used to calculate the position and to provide real time guidance to the helicopter. The Ashtech system can be combined with a RACAL or similar GPS

Page 8

receiver which further improves the accuracy of the flying and subsequent flight path recovery to better than 5 metres. The differential corrections, which are obtained from a network of virtual reference stations, are transmitted to the helicopter via a spot-beam satellite. This eliminates the need for a local GPS base station. However, the Ashtech Z-surveyor was used as a backup to provide post-survey differential corrections.

The Ashtech Z-surveyor was operated as a base station and utilizes time-coded signals from at least four of the twenty-four NAVSTAR satellites. The base station raw XYZ data are recorded, thereby permitting post-survey processing for theoretical accuracies of better than 5 metres.

The Ashtech GG24 receiver is coupled with a PNAV navigation system for real-time guidance.

Although the base station receiver is able to calculate its own latitude and longitude, a higher degree of accuracy can be obtained if the reference unit is established on a known benchmark or triangulation point. For this survey, the GPS station was located at latitude 52°48'10.85916N, longitude 83°52'25.75719W at an elevation of 86.7 a.m.s.l. The GPS records data relative to the WGS84 ellipsoid, which is the basis of the revised North American Datum (NAD83). Conversion software is used to transform the WGS84 coordinates to the NAD27 system displayed on the base maps.

Field Workstation

A PC is used at the survey base to verify data quality and completeness. Flight data are transferred to the PC hard drive to permit the creation of a database using a proprietary software package (typhoon-version 19.00.02). This process allows the field geophysicists to display both the positional (flight path) and geophysical data on a screen or printer.

PROCESSING TECHNIQUES

Base Maps

Base maps of the survey area have been produced from published topographic maps. These provide a relatively accurate, distortion-free base which facilitates correlation of the navigation data to the UTM grid. The original topographic maps are scanned to a bitmap format and combined with geophysical data for plotting the final maps. The survey results are presented on

Page 9

nine separate map sheets for each parameter at a scale of 1:5,000. All maps are created using the following parameters:

Projection Description:

Datum :	NAD27 (0	Canada Mean)	
Ellipsoid:	Clarke 18	66	
Projection:	UTM (Zon	ie: 17)	
Central Meridian:	81°		
False Northing:	0		
False Easting:	500000		
Scale Factor:	0.9996		
WGS84 to Local Co	onversion:	Molodensky	
Datum Shifts:	DX: 10	DY: -158	DZ: -187

Electromagnetic Data

EM data are processed at the recorded sample rate of 10 samples/second. Spheric rejection median and Hanning filters were applied to reduce noise to acceptable levels. The multi-channel profiles are used in conjunction with the resistivity maps and images to determine if and where levelling adjustments are required.

Apparent Resistivity

The apparent resistivity in ohm-m were generated from the in-phase and quadrature EM components for all six frequencies, using a pseudo-layer half-space model. A resistivity map portrays all the EM information for that frequency over the entire survey area. This contrasts with the electromagnetic anomaly map which provides information only over interpreted conductors. The large dynamic range makes the resistivity parameter an excellent mapping tool.

The preliminary resistivity maps and images were carefully inspected to locate any lines or line segments which required levelling adjustments. Subtle changes between in-flight calibrations of the system can result in line to line differences, particularly in resistive (low signal amplitude) areas. Manual levelling was carried out to eliminate or minimize resistivity differences which can be caused by changes in operating temperatures. These levelling adjustments were very subtle, and do not result in the degradation of anomalies from valid bedrock sources.

After the manual levelling process is complete, revised resistivity grids are created. The resulting grids were subjected to a microlevelling filter in order to smooth the data for contouring.

The calculated resistivities for the five coplanar frequencies and the one coaxial frequency are included in the XYZ and grid archives. Values are in ohm-metres on all final products.

Total Magnetic Field

The aeromagnetic data are corrected for diurnal variation using the magnetic base station data. The data were then levelled using the tie and traverse line intercepts. Manual adjustments were applied to any lines that require levelling, as indicated by shadowed images of the gridded magnetic data. After the manual levelling process is complete, the magnetic grids were subjected to a microlevelling filter.

Calculated Vertical Magnetic Gradient

The diurnally-corrected, levelled total magnetic field data are subjected to a processing algorithm which enhances the response of magnetic bodies in the upper 500 m and attenuates the response of deeper bodies. The resulting vertical gradient data is included in the XYZ archived.

Contour, Colour and Shadow Map Displays

The geophysical data are interpolated onto a regular grid using a modified Akima spline technique. The resulting grid is suitable for generating contour maps of excellent quality. The grid cell size was 12.5 metres or 25% of the line interval.

Colour maps are produced by interpolating the grid down to the pixel size. The parameter is then incremented with respect to specific amplitude ranges to provide colour "contour" maps. Colour maps of the total magnetic field are particularly useful in defining the lithology of the survey area.

Digital Terrain

The radar altimeter values (ALTR - aircraft to ground clearance) were subtracted from the differentially corrected de-spiked GPS-Z values, which were transformed to the local datum, to produce profiles of the height above mean sea level along the survey lines. These values were Page 11

gridded to produce contour maps showing approximate elevations within the survey blocks. The calculated digital terrain data were then tie-line levelled. Any remaining subtle line-to-line discrepancies were manually removed. After the manual corrections were applied, the digital terrain data were filtered with a microlevelling algorithm. All of these corrections were used to adjust the GPS-Z data. The radar altimeter values were subtracted from the new corrected GPS-Z data to produce the final digital terrain data.

The accuracy of the elevation calculation is directly dependent on the accuracy of the two input parameters, ALTR and GPS-Z. The ALTR value may be erroneous in areas of heavy tree cover, where the altimeter reflects the distance to the tree canopy rather than the ground. The GPS-Z value is primarily dependent on the number of available satellites. Although post-processing of GPS data will yield X and Y accuracies in the order of 5 metres, the accuracy of the Z value is usually much less, sometimes in the ± 20 metre range. Further inaccuracies may be introduced during the interpolation and gridding process.

Because of the inherent inaccuracies of this method, no guarantee is made or implied that the information displayed is a true representation of the height above sea level. Although this product may be of some use as a general reference, THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.

APPENDIX 2

Anomaly and Drill Hole Summary

Hole ID	Anomaly ID	Anomaiy Type	Northing	Easting	Claim ID	Drill Hole Start Date	Drill Hole Finish Date	Drilled By	EOH (m)	Bedrock Contact (m)	Bedrock Type	Comments
V-02-208E	ATT_0060	EM	5 854 127	305 412	P 1227246	23-Feb-02	24-Feb-02	CME 75	29.3	3.8	limestone	
V-02-212E	ATT_0056	EM	5 854 937	305 543	P 1227246	28-Feb-02	1-Mar-02	CME 75	13.4	5.1	limestone	
V 02 212E	ATT 0044	Mag	5 857 418	306 554	B 1227242	2 Mar 02	3 Mar 02	CME 75	22 6	21.6	limestere	Not cored (shattered limestone
V-02-213E	<u></u>	IVIAY	5 057 410	- 300 334	F 122/24J	2-14121-02	J-IVIAI-UZ	CIVIL 75	22.0	21.0	milestone	Net eared (abothered line eatons
V-02-220E	ATT_0041	Mag	5 858 837	307 483	P 1246057	5-Mar-02	6-Mar-02	CME 75	22.9	21.6	limestone	bedrock recovered in split spoon)
												Hole abandoned due to gas pocket
V-02-221E	ATT_0042	Mag	5 858 508	306 146	P 1227243	5-Mar-02	5-Mar-02	CME 75	5.3	5.3?	limestone?	intersected; inconclusive
											not intersected;	Hole abandoned as core tube
V-02-222E	ATT_0045	Mag	5 857 468	304 964	P 1227244	6-Mar- <u>02</u>	7-Mar-02	CME 75	22.0	N/A	river deposit	continually blocking up
V-02-224E	ATT_0062	Mag	5 855 349	304 551	P 1227245	8-Mar-02	8-Mar-02	CME 75	8.1	4.1	limestone	
											not intersected;	Hole abandoned at 42m; core barrel
V-02-233E	ATT_0058	EM	5 856 050	307 227	P 1227239	27-Mar-02	27-Mar-02	RC-100/LF 70	42.0	N/A	sinkhole	sanding up
												Hole angled due S at 60 deg to avoid
V-02-236C	ATT_0050	Mag	5 856 112	306 339	P 1052177	13-Mar-02	16-Mar-02	LF 70	63.0	18.0	limestone	sinkhole
V-02-254E	ATT_0043	Mag	5 858 630	305 505	P 1227244	23-Mar-02	24-Mar-02	RC-100	9.7	6.6	limestone	
V-02-255E	ATT_0039	Mag	5 859 056	305 789	P 1246042	24-Mar-02	25-Mar-02	RC-100	10.6	7.4	limestone	
											not intersected;	Drilled to 51m without intersecting
V-02-256E	ATT_0083	Mag	5 857 075	306 580	P 1052169	27-Mar-02	28-Mar-02	RC-100/LF 70	51.0	N/A	sinkhole	bedrock
V-02-257E	ATT_0046	EM	5 859 693	307 039	P 1246057	23-Mar-02	24-Mar-02	CME 75	26.5	23.5	limestone	
V-02-204E	N/A	N/A	5 854 732	306 253	P 1227246	17-Feb-02	19-Feb-02	CME 75	15.6	8.2	limestone	
V-02-205E	N/A	N/A	5 854 749	305 934	P 1227246	20-Feb-02	20-Feb-02	CME 75	17.0	9.8	limestone	
V-02-206E	N/A	N/A	5 854 993	306 422	P 1227246	21-Feb-02	22-Feb-02	CME 75	13.8	5.3	limestone	
V-02-207E	N/A	N/A	5 855 017	306 951	P 1052709	22-Feb-02	23-Feb-02	CME 75	10.7	6.7	limestone	
V-02-209E	N/A	N/A	5 854 315	306 359	P 1227246	24-Feb-02	25-Feb-02	CME 75	9.8	3.1	limestone	
V-02-210E	N/A	N/A	5 855 675	306 827	P 1227239	25-Feb-02	26-Feb-02	CME 75	26.2	13.7	limestone	
V-02-211E	N/A	N/A	5 855 227	306 011	P 1227246	26-Feb-02	27-Feb-02	CME 75	21.9	15.7	limestone	
V-02-223E	N/A	N/A	5 856 325	304 359	P 1227245	7-Mar-02	8-Mar-02	CME 75	7.6	3.4	limestone	
Not drilled	ATT_0040	Mag	5859386	308393.3	P 1246016						unknown	On bank of Attawapiskat River
Not drilled	ATT_0052	Mag	5855308	305543.6	P 1227246						unknown	On bank of creek
Not drilled	ATT_0053	Mag	5854444	305909.7	P 1227246						limestone	Outcrop

APPENDIX 2: ANOMALY AND DRILL HOLE SUMMARY TABLE

APPENDIX 3

Drill Logs

an	nec	9											R	ECC	ORD	OF	BC	RE	HO		No.	V02-204E PAGE 1 OF 2
PROJ	IECT	Victor Diamond Proje	ct - Geot	echn	ical I	nvestig	gation I	Program	m (Wir	iter 20	02)									ENG	SINEEF	२ <u>A.Z.</u>
PROJ	ECT NO.	TC19417-1003		DRIL	LER	<u>B</u>	part Lor	ngyear		75)	B	ORING	G MET	HOD _	4.5" }	IST AU	iger / 2	2.5" HC	2 Corir	ng LOG	GED	BY <u>P.M./R.L.</u>
		De Beers Canada		LOC		DN <u>B</u>	og Mus	keg Te	<u>ist Pad</u>	B2 (/	AMEC		02-08)							CON) BY <u>D.M.L.</u>
		<u>04.0 m</u>			JRU.	<u>_N</u>	5,654,1	132 E	300,25		B			<u> </u>	art: 17	re0 02	<u> </u>	<u>1. 18 F</u>	eb 02	CHE		N.S.V.
SAMI AU BU PS	PLE TYPE: Auger Bulk Piston Samp	S ler	RC Rock SS Split TW Thin WS Was	k Core Spoo Walle h San	en ed Op nple	en (She	alby)				ABBI P.P. U.W. PT	REVIA Pocket I Net Uni Standar	FIONS Penetro It Weight d Proct	meter nt or Test		P.L. Po RQD Ro SCR So k Pe	int Load ck Qua lid Core meabil	d Streng lity Des Recov	gth Inde signation /ery	ex (1 ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analysi
		SOIL PROFILE			5	SAMPL	ES		žER		Ê	DY	NAMIC ESISTA				ON	PLAST			LIQUID	
ELEV DEPTH (m) 84.0	Existing	DESCRIPTION		STRAT PLOT	NUMBER	түре	RECOVERY (%)	SPT "N" VALUES or ROD	WELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (r	MTO IIN RI UNDR 2	VANE ITACT EMOUL AINED	DED SHEAI	NiL Al Al RSTR	CON V/ CON V/ INTACT REMOU ENGTH	ANE LDED I (kPa)	LIMIT WP I WAT		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LIMIT T (%) 20	REMARKS
0.0	MUSKE Brown p Frozen t	G (BOG) eat, fibrous, moist o 0.3 m		<u>85</u> 87 87 87	1	ss	42	3			-								1.			Top 0.05 m of snow
				र र रूर र र	2	TW	42			- - 	83_										582	Organic content=90.9%
	Presenc	e of wood pieces, wet		77 7 7 77	3	TW	83			- - - - -	82									 		
<u>81.4</u> 2.6	SANDY Dark gre trace gra inclusior stiff, low	SILT TILL y sandy siit, some cla avel (angular), spot s of organics to 4.9m plasticity, moist	y, , very		4	SS	67	29			81_								ſ			MTO Vane test probably affected by gravel Organic content=0.8% P.P. > 430 kPa
	Grey-bro	own sandy silt, some c	slay,		5	TW	46			- - - - - - - - -	80_									4		P.P. > 430 kPa GS
					6	TW	67			5 	79_											U.W.=21.5 kN/m ³ P.P. = 120 kPa
M 1 00.00	Becomir	ng light grey, soft								- 6 -	78_	•	4									remould strength
GPU LIGIN. VUI 1-2 EVVE	Grey sa gravel, s	ndy silt, some clay, so soft, moist	me		8	TW TW	79 67				77_								-0			P.P. = 25 to 50 kPa GS P.P. = 25 to 50
75.8 8.2	COMPL WEATH Light bro	ETELY TO HIGHLY ERED LIMESTONE wn limestone. sandy	silt,	HH							76_											KPa High resistance to augering at 8.2m
	trace gra	avel, very dense, mois	, st	H.H.H.H.	9	SS N	50	80/0.1		9 	75_											-

Continued on Next Page

an	nec	9										R	ECC	RD	OF I	BO	REI	HOI	LEN	NO.	V02-205E PAGE 1 OF 2
PROJ	ECT	Victor Diamond Project - G	eotechr	nical	Investig	gation I	Progra	m (Wir	nter <u>20</u>)02)									ENG	BINEEF	R <u>A.Z.</u>
PROJ	ECT NO.	TC19417-1003	DRI	LEF	₹ <u></u> <u></u>	part Lo	ngyear	(CME	75)	B	ORING	6 MET		4.5" H	ST Auge	ər / 2.9	5" HQ	Corin	ig LOG	GED	3Y <u>R.L./P.M.</u>
CLIEN	NT	De Beers Canada	LOC	ATIC	ON <u>F</u> €	en Mus	keg Te	st Pad	F1 (/	AMEC I	BHCV	02-07)							CON	IPILE	Э ВҮ <u>D.M.L.</u>
ELEV	ATION	<u>84.0 m</u>	_ coc	DRD.	<u>N</u>	5,854,	749 E	305,93	34	8	ORING	G DATI	E <u>Sta</u>	art: <u>20 </u>	Feb 02	End	: 20 Fe	eb 02	CHE	CKED	BY <u>N.S.V.</u>
SAMI AU BU PS F	PLE TYPE Auger Bulk Piston Samp	S RC R SS S TW T	ock Corr plit Spoc hin Walk Vash Sar	e xn ed Op mple	en (She	əlby)				ABBF P.P. U.W. PT	REVIA1 Pocket I Wet Uni Standar	FIONS Penetro it Weigh d Proct	meter nt or Test	L L L L L L L L L L L L L L L L L L L	P.L. Point RQD Rock ICR Solid Perm	Load Qualit Core Core	Streng ty Desi Recove y	sth Inde ignatior ery	אנ (I ₅₀) ר	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE		5	SAMPL	ES		E A			DY		CONE		TRATION	1		~ NAT	URAL		
ELEV DEPTH (m)	Eviating		STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	PT "N" VALUES or ROD	VELL / PIEZOME	DEPTH (m)	ELEVATION (m)	2 MTO II IN RI UNDR 2	VANE TACT EMOUL	DED SHEAU	0 8 NILC ▲ II ▲ F R STRE	0 100 CON VAN NTACT REMOULE ENGTH (k 0 100	IE XED (Pa)	UASTIC MIT ₩₽ ₩₽ ₩₽	ER CC	TURE TENT W ONTEN 20 3	LIMIT WL 	REMARKS
0.0	MUSKE Dark bro partly ar Frozen t	G (FEN) G (FEN) wwn peat, partly fine fibrous, norphous, wet to 0.15 m	<u></u> 	1	ss	25	2														Water at surface
			<u>8</u> 7 7 7	2	TW	0				83_											
			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3	TW	0															
			<u>~</u>	-					E_2	82_											
			<u>4 1</u> <u>14</u>	4	AU				-	-										942	Organic content=73.1%
			<u>4 4</u>	 						81											-
<u>80.7</u> 3.4	CLAYEN Grey sitt	Y SILT , some clay (content variabl	e 11	5	ss	56	1		- - - -	-	-			1					-		P.P. = 155 kPa
	clayey s	ilt matrix, low plasticity, moist	st	6	τw	61			- - 4 -	80_						_					Shelby tube upper 0.3m easy to push, lower 0.15m hard
									ŀ	-									Į		to push
				7	ss	67	26		- - - - -	79_								ŀ	• -1		GS P.P. ≈ 190 kPain clay
	Light gre interbed mm spa	ey to dark grey silty clay s (25 to 50 mm thick at 150 cing)		8	ss	50	38												 -		GS
									E_6	78_											-
				9	ss	63	19														GS P.P. = 170 kPa
				10	TW	61				77_	1							- - - -		² -₩	GS (top 0.1m) GS (bottom 0.1m) P.P. > 430 kPa
				11	т	29				76											Shelby tube easy to push
	Becomir	ng firm			<u>1</u>	!												$\left \right $			
75.1	SANDY Grey sa gravel, li	SILT TILL ndy silt, some clay, trace ow plasticity, wet			1				- -9 -	75_											Shelby tube easy to push

Continued on Next Page

PROJ PROJ CLIEN ELEV, AU A BU B PS F	ECT Victor Diamond Project - Geot ECT NO. TC19417-1003 NT De Beers Canada ATION 83.4 m PLE TYPES RC Rock Nuger SS Split Julk TW Thin	LOC	LER	Investij 1. <u>B</u> o 2N Fé	gation part Loi	Progran ngyear	<u>m (Wir</u>	nter 20	02)									ENC	SINEEF	R <u>A.Z.</u>
PROJ CLIEN ELEV SAMF AU A BU B PS F	ECT NO. TC19417-1003 IT De Beers Canada ATION 83.4 m PLE TYPES RC Rock Auger SS Split Julk TW Thin			N Fe	part Lo	ngyear	(OHE													
CLIEN ELEV AU A BU B PS F	ATION <u>B3.4 m</u> PLE TYPES RC Rock Nuger SS Split Julk TW Thin	COC		DN Fe				75)	В	ORIN	g met	HOD	4. <u>5</u> " ⊦	ST Aug	jer / 2	.5" HC	Corin	g LOC	GED I	BY <u>P.M.</u>
SAMF AU A BU E PS F	ATION 83.4 m PLE TYPES RC Rock Auger SS Split Julk TW Thin	COC	1011	···· <u>··</u>	en Mus	keg Te	st Pad	F2 (/	MECI	<u>BH CV</u>	(02-09)							CO	I PILE	DBY <u>D.M.L.</u>
SAMF AU A BU E PS F	PLE TYPES RC Rock Auger SS Split Bulk TW Thin		JRD.	N	5,854,9	993 E	306,42	22	в	ORIN	G DAT	E <u>Sta</u>	art: 21	Feb 02	Enc	1: 22 F	eb 02	CHE	CKED	BY <u>N.S.V.</u>
	Piston Sampler WS Was	k Core Spoc Walk sh Sar	ə ən əd Op nplə	en (She	alby)			-	ABBF P.P. U.W. PT	REVIA Pocket Net Un Standa	TIONS Penetro it Weigl rd Proci	ometer ht tor Test	۲ ۲ ۲ ۲	P.L. Poir RQD Roc SCR Solk Perr	nt Load k Qual d Core neabili	l Streng lity Desi Recov ity	ith Inde gnatior ery	ux (I ₅₀) 1	C DS GS	Consolidation Direct Shear Grain Size Analysi
	SOIL PROFILE		5	SAMPL	ES	,	Ř ER		ê	D) R	NAMIC	CONE	PENE		N	PLAST	NAT	URAL	LIQUID	
ELEV DEPTH (m)		STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	PT "N" VALUES or ROD	VELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (n			LDED SHEA	0 8 NIL(▲ 1 ▲ F RSTRI	ON VAI NTACT REMOUL ENGTH (DED (kPa)	LIMIT ₩⊳ I WAT		NTEN	LIMIT W(4 T (%) 30	REMARKS
0.0	MUSKEG (Bog) Dark brown peat, fine fibrous, wet Frozen to 0.15 m	<u>v</u> v	1	ss	13	2	-	-	83_											
		<u>~ ~</u>	2	TW	33															
		5 7 7 7 7 7 7 7 7 7 7							82											
81.0		<u>84</u> 84 84						2												Nilcon Vane cannot determine remould strength
2.4	CLAYEY SILT Grey clayey silt, trace sand, occasional gravel, trace dark brown organics and shell fragments, firm to		3	τw	92														p	Shelby tube easy to push then becomes hard Organic content=1.9% P.P.=100 kPo
<u>80.1</u> 3.4	stiff, low plasticity, moist		4	TW	67				80_				<u> </u>				H¢	4	 	Shelby tube hard to push GS
	trace gravel (angular), very stiff, low plasticity, damp to moist Brown clay seams		5	ss	75	25		- - 4	-								•	-1		GS
									79											P.P.>430 kPa
78.1			6	SS	50	18		5	78								•			P.P.=60 kPa Last 0.07 m SS bouncing on rock
5.5	WEATHERED LIMESTONE Brown sand, trace gravel, silt seams, very dense, wet	HHH				00/0.00		- - 												augering below 5. m SS bouncing on rock
		4 14 14 1	8	ss N	60	50/0.13			77_											SS bouncing on rock
76 1		1 H H Y	9	SS N	0	50/0.08		- - - - -												SS bouncing on rock
7.3	LIMESTONE Light brown to brown, moderately weathered, vuggy porosity (5-30%) Jointing: bedding and cross joints; close to very close spacing; rough undulating surfaces; tight joints with oxidized surfaces Strendth: low		10	RC	68	10			76											Auger refusal at 7.3 m Switched to HQ coring SCR=27%
				RC	100	63		- - - - - - - - - - - - - - - - - - -												

Continued on Next Page

ſ	an	nec®						х					R	ECC	RD	OF	BC	RE	HC	DLE	No.	V02-207E PAGE 1 OF 2
	PROJI	ECT Victor Diamond Project - (Geote	chn	ical I	nvestig	gation (Progra	m (Wir	nter 20)02)									_ EN	GINEEI	R <u>A.Z.</u>
	PROJ	ECT NO. <u>TC19417-1003</u>	_ [DRIL	LER	<u>Bo</u>	part Lor	ngyear	(CME	75)	B	ORIN	S MET	HOD _	<u>4.5" H</u>	IST AL	iger / 2	2.5" HC	2 Cor	ing LO	GGED	BY <u>P.M.</u>
	CLIEN	NT <u>De Beers Canada</u>	_ L	-00		N <u>Po</u>	otential	Camp	Site (/	Alterna	ative)		<u> 8 8 8 8</u>	V02-1	1)		~ -				MPILE	DBY <u>D.M.L.</u>
┝	ELEV	ATION <u>83.0 m</u>			KU.	<u>_N</u>	5,855,0	J17 E	306,9	51	<u> </u>		5 DAT	E <u>Sla</u>	int: 22	Feb U	2 60	d: 23 F	eb 0	2 CF	ECKEL) BY <u>N.S.V.</u>
	SAMF AU A BU B PS F	PLE TYPES RC Auger SS Bulk TW Piston Sampler WS	Rock Split S Thin V Wash	Core Spoo Valle Sam	n nd Op 1 pie	en (She	alby)				ABB P.P. U.W. PT	REVIA Pocket Net Un Standar	TIONS Penetro it Weigi d Proci	ometer ht tor Test	F F S k	P.L. Po RQD Ro SCR So SCR So	oint Loa ock Qua olid Con ormeabi	d Stren; ality Des e Recov	gth In ignati /ery	dex (I ₅₀) on	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			ę	SAMPL	.ES		Ë,		_	DY R	NAMIC	CONE	PENE		ON	DIAST	o NA	TURAL		
Ē	ELEV DEPTH (m)			STRAT PLOT	NUMBER	ТҮРЕ	RECOVERY (%)	PT "N" VALUES or RQD	VELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (m			LDED SHEA	0 8 NILC ▲ II ▲ F RSTRI 10 8	0 1 CON V NTACT REMOU ENGTH	00 ANE JLDED H (kPa) 00	W _P ₩ _P ₩ ₩A1		XSTURE NTENT W -0 CONTEI 20	WL WI WI WT (%) 30	REMARKS
	0.0	MUSKEG (BOG) Brown peat, fibrous Frozen to 0.46 m		たいば	1	55	58	18			-											Used solid stem auger to break through ice
				* 7 ** * 7	2	τw	63				82_											
		Dark brown, semi fibrous		いいい							81_											
	80.9 2.1	SILT Grey, trace clay, compact, wet			3	SS	28	2	-										φ	I		P.P.=55 kPa Shelby tube hard
	80.3 2.7	CLAYEY SILT Grey clayey silt, trace sand (coarse & sub-angular), stiff to very stiff, lor plasticity, damp to maint	, , ,		-				-	3	80_											P.P.>430 kPa
		Coccasional to trace gravel (sub-angular to angular), trace brown clay, presence of white shel fragments, stiff, low plasticity			5	ss	92	13														P.P.=215 kPa
		Occasional gravel, very stiff, damp			6	ss	89	26		4 - - -	79_											GS MTO Vane exceeded limits
		Trace gravel, damp to moist			7	ss	67	21		5	78_											P.P.=405 kPa GS P.P.=165 kPa
		Moist			8	τw	75				-											Shelby tube easy to push
14 AD:00:2 Z										6	77_											. P.P.≖70 kPa
	76.3 6.7	COMPLETELY TO HIGHLY WEATHERED LIMESTONE		H, H, H					_	-	76_											MTO Vane exceeded limits
11 C-10, 11+		to very dense, wet		1, 1, 1, 1, 1	9	SS	22	33												•		GS (combined samples SS9 &
FIR: C14		Gravelly sand, some silt		<u> </u>	10	ss	33	40		- - 8 -	75_										-	5510)
EC GEO MWS			ء د د	(H,H,H)							74											
Format: AN		Gravelly sand with silt, wet		14 H	11	ss N	88	50/0.0	5													
		Continued on Next Page																				
a	nec	9										R	ECC	ORD	OF	BC	RE	HO	LEI	No.	V02-208E PAGE 1 OF 4	
-----------------------------	--	---	--	--------------------------	------------	--------------	--------------------------	-----------------	-------------	------------------------------	--------------------------------	--	--------------------------	-------------------------	--	---	---	----------------------------	----------------------------	---------------------	--	
PRO	JECT	Victor Diamond Project - Ge	otechr	nical I	investi	gation I	Progra	m (Wir	nter 20	02)									EN	GINEEF	R <u>AZ</u>	
PRO	JECT NO.	TC19417-1003	DRI	LER	8 <u>B</u>	oart Lor	igyear	(CME	75)	В	ORING	S MET	HOD	4.5" H	IST A	uger / 2	2.5" <u>H</u> C	Cori	ng LOC	GGEDI	BY <u>P.M./R.L.</u>	
CLIE	INT	De Beers Canada	LOC	ATIC	N <u>P</u>	otential	Camp	Site (/	Alterna	tive) (AMEC	BH C	V02-0-	4}					co	MPILE	DBY <u>D.M.L.</u>	
ELE	VATION	<u>84.3 m</u>	co	ORD.	<u>_N</u>	5,854,	127 E	305,4	12	В	ORING	DAT	E <u>Sta</u>	art: 23	Feb 0	2 En	d: 24 F	eb 02	CH		BY <u>N.S.V.</u>	
SAN AU BU PS	IPLE TYPE: Auger Bulk Piston Samp	S RC Ro SS Sp TW Thi ler WS Wa	ck Con lit Spoc in Walk ish Sat	a an ad Op mole	en (She	alby)				ABB P.P. 1 U.W.1 PT	REVIAT Pocket F Net Unit	FIONS Penetro t Weigl d Proct	ometer ht tor Test		P.L. P RQD R SCR S C P	oint Loa ock Qua olid Core armeabi	d Strøn ility Des a Recov litv	gth Ind ignatio /ery	ex (i ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analysis	
		SOIL PROFILE	T	5	SAMPL	ES		Щ.	<u> </u>		DY	NAMIC			TRAT	ION	<u> </u>	NAT		•		
ELEV DEPT (m) 84.3	H 3 Existing	DESCRIPTION ground surface	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOMET	DEPTH (m)	ELEVATION (m)	MTO IIIN RE UNDR			NIL AI AI RSTR	CON V NTACI REMOU ENGTI 30 1	IQO /ANE / JLDED H (kPa) IQO	PLAST LIMIT Wp WA		ONTEN 20	LIQUID LIMIT 	REMARKS	
0.0	ICE to 0	.6m							F	84]								
<u>83.7</u> 0.6	7 WATER								- 1	83_												
82.3	Dark bro	G (FEN) wn peat, fine fibrous, wet		1	тw	50			<u>_</u> 2	82_											Shelby tube very soft to push	
81.	1 2 CLAYEY Grey cla sand, pi	/ SILT yey slit, trace gravel, trace eces of limestone, firm, wet		2	SS TW	17	4			81_											Split spoon sank under its own weight for 0.15 m P.P.=0 kPa Shelby tube pushing on rock	
80.3	SHATTE	REDLIMESTONE	X	4	<u>ss</u>	50	50/0.1		F₄												Auger refusal at	
4.0	0.2m of spoon) of limestor	grey graveliy silt (split over highly fractured le (core barrel)	Æ	6	RC	60	0			80_									 		Switched to HQ coring SCR=10%	
	Light bro	onc own limestone, slightly ed, onstalline structure	Ξ					-	ŧ	-												
	micro-ka fossilifer 0.04m)	arstification throughout, ous, vugginess (up to		7	RC	83	0		E 5 E												SCR=13%	
	Jointing vertical of close sp surfaces Filling: ti minor si Strength Fracture 4.8-5.1n 16.2-16 17.85-1	bedding, cross; flat to orientation; moderate to acing; rough undulating ght joints to joints filled with it and clay to tow to medium d zones: 4.1-4.2m, n, 9.8-9.9m, 10.4-10.5m, 25, 16.75-16.85m, 7.9m, 18-18.1m, 0.4m, 40.800		8	RC	100	73			79											SCR=81% P.L.=4.77 MPa (6.1 to 6.4m segment)	
	19.65-11 21.6-21. 22.75-2: 24.8-25. At 5.2m with dar trace cla	9.1m, 19.85-20.1m, 7m, 22.45-22.55m, 2.85m, 23-23.3m, 1m, 26.2-26.3m, 27.7-27.8m , 0.13m thick karst void filled k grey silt, some gravel, ly		9	RC	100	80			77_											SCR=90% P.L.=4.02 MPa (7.3 to 7.5m segment)	
				10	RC	100	45			76_											SCR=50% P.L.=2.14 MPa (9.2 to 9.4m	

an	nec	9										R	ECC	R) OF	BC	RE	HOI	LEI	No.	V02-209E PAGE 1 OF 2
PROJ	IECT	Victor Diamond Project - Geo	otechn	ical	Investi	igation	Progra	m (Wi	nter 20	02)									ENC	SINEEF	₹_ <u>A.Z.</u>
PROJ	ECT NO.	TC19417-1003	DRIL	LEF	<u>В</u>	oart Lo	ngyear	(CME	75)	B	ORIN	G MET	HOD _	4.5"	HST A	uger / 2	2.5" HC	<u>2 Corin</u>	ng LOG	GED I	3Y <u>P.M.</u>
		De Beers Canada	LOC		<u>P</u> NC	otential	Camp	<u>Site (</u>	<u>Alterna</u>	ative)			<u>V02-16</u>	5 <u>)</u>					COL		JBY <u>D.M.L.</u>
ELEV		<u>83.2 m</u>		JRD.	<u>_N</u>	5,854,	315 E	306,3	59	8 		5 DATI	= <u>Sta</u>	an: 24		<u>2 En</u>	0: 25 F	-ed 02			BY <u>N.S.V.</u>
SAME AU A BU E PS F	PLE TYPE Auger Bulk Piston Samp	S RC Roc SS Spli TW Thi Ner WS Wa	sk Core it Spoo N Walle sh San	n n nd Op nple	en (Sh	elby)		.		ABBI P.P. U.W. PT	REVIA Pocket Net Un Standa	TIONS Penetro it Weigh rd Proct	məter nt or Test	<u>.</u>	P.L. P RQD R SCR S k P	oint Loa ock Qua olid Con ermeabi	d Stren Ility Des Recov Ility	gth Inde signatior very	א (I ₅₀) ר	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			SAMP		· · · ·	L R		Ê		ESIST	CONE	PEN			PLAST	IC NAT	URAL	LIQUID	
ELEV DEPTH (m) 83.2	Existing	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (r		VANE VTACT EMOUL RAINED	DED SHEAI	NIL A R STF	CON V INTACI REMOI RENGTI 80 1	iyo 'ANE JLDED Η (kPa) Ιφο	LIMIT Wp I	TER CC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LIMIT WL WL IT (%) 30	REMARKS
0.0	MUSKE Brown p moist Frozen t	G eat, fine fibrous, non-woody, to 0.28 m	25 25 25 25 25 25 25 25 25 25 25 25 25 2	1	ss	67	1/0.46			83_											
			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2	τw	58				82											
<u>81.4</u> 1.8	CLAYE Grey cla plasticity	Y SILT yey silt, some sand, stiff, low y, moist	2 2	3	ss	89	8		2	81_						 					P.P.≈190 to 285 kPa
80.2				4	τw	72												þ			Pneum. Piezo installed @ 2.4 m GS P.P.>430 kPa
3.1	SHATTE Brown g trace sill dense, v	ERED LIMESTONE pravel (angular), some sand, t and clay, compact to vet	14 14 14 V	5	ss	58	18			80_											
			1444	6	ss	100	55		[4 - -	79_							 				
			1.1.1.1	8	RC	100	0														Switch to coring at 4.5 m SCR=0%
78.0			1.						F.	78	1										
5.2	LIMEST LIMEST Light bro moderal Joints: b generall spacing generall	ONE / CHALKY ONE pown to brown, slightly to ledy weathered bedding and few cross joints; y flat orientation; very close ; rough undulating surfaces; y tight joints with few joints	HHHH	9	RC	12	0		6	77_											SCR=0% Standpipe installed at 6.1 m screen: 4.3 - 6.1 m sand: 3.3 - 6.1 m plug: 1.5 - 3.3 m
5	filled wit Fracture 4.5-5.2n 8.0-8.5n	h silt d zones: n, 6.3-7.3m, 7.5-7.8m, n, 8.7-8.9m, and 9-9.8m		10	RC	63	0														grout: 0 - 1.5 m SCR≈0%
	Strengt	n: medium to low	ННННН	11	RC	93	7		- 7 	76_											SCR=14%
				12	RC	83	7		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	74_											SCR=11%

an	nec [©]								RECORD OF BOREHOLE No. V02-210E PAGE 1 OF 3
PROJ	ECT Victor Diamond Project - Geo	techn	ical I	nvestig	ation	Progra	ter 20	002)	ENGINEER <u>A.Z.</u>
PRO.	ECT NO. TC19417-1003	DRIL	LER	Bo	art Lo	ngyear	75)	В	ORING METHOD 4.5" HST Auger / 2.5" HQ Coring LOGGED BY R.L.
CLIEN	NT De Beers Canada	LOC	ATIC	ΟΝ <u>Cπ</u>	ushing	Area	BH	CV02-0	03) COMPILED BYD.M.L.
ELEV	ATION 82.9 m	COC	RD.	<u>N 5</u>	5,855,0	675 E	7	В	ORING DATE Start: 25 Feb 02 End: 26 Feb 02 CHECKED BY N.S.V.
SAM AU BU PS	PLE TYPES RC Roc Auger SS Split Bulk TW Thin Platon Sampler WS Was	k Core t Spoo Walle sh San	n nd Op	en (Shel	lby)			ABBF P.P. F U.W.N	REVIATIONS P.L. Point Load Strength Index (1 ₅₀) Pocket Penetrometer RQD Rock Quality Designation C Consolidation Wet Unit Weight SCR Solid Core Recovery DS Direct Shear Standard Proctor Test k Permeability GS Grain Size Analysis
	SOIL PROFILE	Ţ	5	SAMPL	ES				
ELEV DEPTH (m)	DESCRIPTION	STRAT PLOT	NUMBER	ТҮРЕ	RECOVERY (%)	SPT "N" VALUES or RQD	DEPTH (m)	ELEVATION (m)	Lesis function FLOS FLOST A0 B0 FLOST MOISTURE LOUID LOUID 20 40 60 80 100 LIMIT CONTENT LOUID MOTO VANE NILCON VANE Wp W W REMARKS Instact ▲ INTACT ▲ INTACT INTACT INTACT INTACT W W V REMARKS INDRAINED SHEAR STRENGTH (kPa) WATER CONTENT (%) 20 40 60 80 100 10 20 30 10 10 20 30 10 10 20 30 10 10 20 30 10 10 20 30 10 10 20 30 10 10 20 30 10 10 20 30 10
0.0	MUSKEG Brown to dark brown peat, fine fibrous, non-woody, wet Frozen to 0.3 m	12 2 2 2 2 2	1	ss	54	14			
		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2	™	50		1	82	516 U.W.=5.9 kN/m²
80.8	CLAYEY SILT	4 4 34 34	3	ss	100	10	2	81_	P.P.=30 to 50 kPa
	Grey clayey silt , trace sand, trace shell fragments, stiff, low plasticity, damp to moist		4	ss	100	10		80_	GS In Crganic contente 18% P.P.=240 to 335
			5	T₩ SS	100	10	4	79_	P.P.>430 kPa P.P.=215 kPa
			7	τw	72		5	78_	Pnuem. Piezo. S/N: #27C0204 Installed at 5.2m (2m south of borshole) by push-in method Shelby tube hard to push
77.0 6.0	SiLTY CLAY Grey silty clay, stiff, low to medium plasticity, damp		8	ss	33	13	6	77_	P.P.=140 KPa
			9	TW	61		7	76_	MTO Vare easy to push Shelby tube hard to push P.P.=310 to 360
			10	ss	75	8		75_	125 Nrºa SP.P.=96 to 120 KPa
			11	TW	67		_9 	74_	U.W.=19.6 kN/m ³ Sheiby tube easy to push

an	ned	0									R	ECC	RD	OF	BC	RE	HO		No.	V02-211E PAGE 1 OF 3
PROJ	ECT	Victor Diamond Project - G	eotechn	ical I	nvestig	ation I	^o rogra	m (Winte	<u>r 20</u>	02)								ENG	SINEEF	۲ <u>A.Z.</u>
PROJ	ECT NO.	TC19417-1003	DRIL	LER	<u>Bo</u>	art Lor	ngyear	(CME 75	<u>)</u>	B	ORING ME		<u>4.5" H</u>	IST AL	iger / 2	2.5" HC	Corir	ng LOC	GED	3Y <u>P.M.</u>
CLIEN	NT	De Beers Canada	_ LOC	ATIC	XN <u>Co</u>	nstruc	tion Ca	amp/Offic	es	(AMEC	BH CV02-0)5)						CON	MPILE) BY
ELEV	ATION	83.8 m	_ coc	ORD.	<u>N</u> :	5,855,3	2 <u>27 E</u>	306,011		В	ORING DAT	E <u>Sta</u>	<u>rt: 26 </u>	Feb 03	<u>2 En</u>	d: 27 F	eb 02	CHE	ECKED	BY <u>N.S.V.</u>
SAM AU BU PS	PLE TYPE Auger Bulk Piston Sam	ES RC F SS S TW T pler WS V	Rock Core Split Spoc Thin Walk Vash Sar	e en ed Op mple	en (Shei	lby)				ABBF P.P. F U.W.V PT S	EVIATIONS Pocket Penetr Vet Unit Weig Standard Proc	5 ometer jht :tor Test	F F S k	P.L. Po RQD Ro SCR So SCR So	oint Loa ock Qua olid Con ormeabi	d Stren Ility Des e Recov	gth Inde signation very	ex (1 ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE		5	SAMPL	ES	_	Щ.,		_	DYNAMI				ON		NAT	URAI		
ELEV DEPTH (m)		DESCRIPTION	RAT PLOT	NUMBER	түре	COVERY (%)	"N" VALUES	L / PIEZOME1 NSTALLATION	DEPTH (m)	LEVATION (m)			0 8 NILC ▲ II ▲ F		00 ANE LDED	WAT	CON CON		LIQUID LIMIT 	REMARKS
83.8	Existing	ground surface	SI			REC	SPT	N N		Ξ	20	40 6	0 8	0 1			10 2	20 3	30	
0.0	MUSKE Brown p trace w Frozen	EG peat, non-woody, fine fibrous ood chunks, wet to 0.76 m	s, <u>s s</u> s, <u>s s</u>	1	55	100	66													SPT in frozen zone
			र र र र र र र	2	ss	17	1		1	83_									913	
	Dark br	own, some woody particles	<u>~~~</u> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	3	Tw Z	33			2	82										Shelby tube moderate pressure to push
81.6	CLAYE	YSILT					<u> </u>	H H												
	Grey cla (sub-an to hard,	ayey silt, trace gravel igular), trace sand, very stiff low plasticity, damp		4	ss	72	48			81_										Stone in split spoon P.P.>430 kPa
				╞			<u> </u>	IJF	3											GS
				5	ss N	61	38			-								+1		P.P.>430 kPa
				6	ss	67	31		4	80										P P >430 kPa
								BB												1.3.5 400 N U
				7	ss	83	25		5	79_							++			GS P.P.=215 kPa Specific Gravity =2.72
				8		56														Shelby tube hard to push
									6	78_										: P.P.>430 kPa
	Increas and 7.3	ed silt content between 6.3n 3m, damp to moist	r III	9	ss	78	38			-								-1		P.P.≂240 kPa GS P.P.>430 kPa
5								BB		77										
	Some	clay seams, damp to moist		10	ss	67	31		7											P.P.>430 kPa
					55	RJ	20			76_					<u> </u>					P.P.≖190 kPa GS
									8											
										75_										-
				12	тw	100			9											Shelby tube herd to push

an	nec	9									RECORD OF BOREHOLE No. V02-2 PAGE 1	12E OF 2
PROJ	IECT	Victor Diamond Project - Geo	techn	ical	Investi	gation (Progra	m (Wi	nte <u>r 20</u>)02)	ENGINEER <u>AZ</u>	2
PROJ	ECT NO.	TC19417-1003	DRIL	LEF	₹ <u></u> <u>B</u> c	part Lor	ngyear	(CME	75)	В	BORING METHOD 4.5" HST Auger / 2.5" HQ Coring LOGGED BY P.M	<u>/./R.K.</u>
		Ue Beers Canada	100		л <u>Р</u>		<u>i Treat</u>	ment f	<u>Plant 8</u> 42	Water	er tanks (AMEC BH CV02-06) COMPILED BY D.M	<u>4.L.</u>
ELEV		<u></u>			<u> </u>	5,854,5	937 E	305,5	43	8	BORING DATE Start 20 FOD 02 ENG TMATUZ CHECKED BY N.3	5.V.
AU A	PLE TYPE Auger Bulk Piston Samp	S RC Roc SS Spli TW Thir Der WS Wat	k Core t Spoo n Walle sh Sar	e en ed Op nple	en (She	Nby)				ABBI P.P. U.W. PT	SHE VIA ILONS P.L. Point Lead Strength Index (I _{sol}) Pocket Penetrometer RQD Rock Quality Designation C Consolidati Vest Unit Weight SCR Solid Core Recovery DS Direct She Standard Proctor Test k Permeability GS Grain Size	ion ar Analysia
		SOIL PROFILE		;	SAMPL	ES		HE K		Ê		
ELEV DEPTH (m) 84.3	Existing	DESCRIPTION ground surface	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or ROD	WELL / PIEZOME INSTALLATIC	DÉPTH (m)	ELEVATION (r	20 40 60 20 1/0 LMIT MOST UME LMIT MTO VANE NILCON VANE IMIT CONTENT LMIT CONTENT LMIT □ INTACT △ INTACT w₀ w w_₀ w REMOULDED □ INTACT △ INTACT → -	RKS
0.0	MUSKE Brown p scattere Frozen 1	G (BOG) eat, coarse fibrous, woody, d woody chunks, wet lo 0.15 m	7 7 7 7 7 7 7 7 7 7	1	ss	75	9			84_	451	
			지 <u>지</u> 지 지 지 지 지 지 지	2	TW	58				83_		
82.1	Dark bro fibrous,	own silt with organics, fine non-woody, trace gravel, wet	र र र र र र	3	TW	63			- - - - 2			
2.2	CLAYE Grey cla sand ler	Y SILT ayey silt, trace gravel, trace ases, trace rootlets, stiff, wet		4	ss	44	9			82	P.P.=50 ki	Pa
	Grey cla gravel (s	yey silt, some sand, trace sub-angular), hard, damp		5	TW	89		-	3 - - -	81_	Shelby tub to push P.P.>430	xe hard kiPa
				6	ss	56	42		- -4	80_	GS PP>430	kPa
				7	ss	44	55				P.P.>430	kРa
<u>79.1</u> 5.2	COMPL WEATH Grey sa compac	ETELY TO HIGHLY IERED LIMESTONE Ind with gravel, trace silt, t to very dense, wet	H H H	8	ss	22	24			79_		
	Beige cl spoon, i	halky limestone at tip of split moist	<u> </u>	9	SS N	60	50/0.1	3		78_	Hard to au between 6 7.3m	iger i.1m and
			<u> </u>	10	ss ss	0	50/0.0	3		77_	SPT bour rock	cing on cing on
7.4	LIMEST Light bro modera micro-ki fracture 8.4m	ONE own to brown limestone, tely to highly weathered, arstification throughout, zone between 7.55 and		12	RC	42	14		- 8	76	a coth	usal at to HQ
	Jointing dipping close sp surface Strengt	: generally liat with few orientation; close to very sacing; rough undulating s; sand and silt fillings h: medium		13	RC	83	15		- - - - - - - - - -	76_	y	6

an	nec®									RECORD OF BOREHOLE No. V02-213 PAGE 1 OF	E 3
PROJ	ECT Victor Diamond Project - Geo	<u>techni</u>	call	Investig	ation	Progra	m (Winter	200	02)	ENGINEER <u>A.Z.</u>	_
PROJ	ECT NO. TC19417-1003	DRIL	LER	Bo:	art Lo	ngyear	(CME 75)		B	BORING METHOD _4.5" HST Auger / 2.5" HQ Coring LOGGED BY P.M./R.	<u>K.</u>
CLIEN	NT De Beers Canada	LOC	ATIC	XN <u>Cla</u>	ıy/Till∶	Stockp	l <u>es (a</u> me	CI	BH CV	2V02-14) COMPILED BY	_
ELEV	ATION 82.0 m	C00	RD.	<u>N 8</u>	5,857,	418 E	306,554	_	Bi	BORING DATE Start: 2 Mar 02 End: 3 Mar 02 CHECKED BY N.S.V.	_
SAMI AU BU PS	PLE TYPES RC Roc Auger SS Split Bulk TW Thir Piston Sampler WS Was	k Core Spoor Walled sh Sam	n d Op Iplei	en (Shel	by)				ABBR P.P. F U.W.V PT S	SREVIATIONS P.L. Point Load Strength Index (I _{so}) Pocket Penetrometer RQD Rock Quality Designation C Consolidation // Wet Unit Weight SCR Solid Core Recovery DS Direct Shear Standard Proctor Test k Permeability GS Grain Size Analy	ysis
	SOIL PROFILE	Γ	5	SAMPLI	ES		Ĕ,				_
ELEV DEPTH (m)		STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	MELL / PIEZOME	ОЕР I Н (m)	ELEVATION (m	20 40 60 80 100 PUSITE MOISTURE LIMIT CONTENT LIMIT MTO VANE NILCON VANE № ₩ REMARKS II INTACT △ INTACT ▲ REMOULDED INDRAINED SHEAR STRENGTH (kPa) WATER CONTENT (%) 20 40 60 80 100 10 20 30	
0.0	MUSKEG Brown peat Frozen to 0.46 m	<u>26</u> 77 77	1	55	54	48					
	Dark brown, fibrous, non-woody, trace coarse fibres, moist	2 4 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2	2	TW	79				81_ 	Shelby tube eas	₹Ÿ
80.3 1.7 79.9	SILT Grey silt, trace clay, soft, moist		3	55	100	2		2	80_	P.P.=96 kPa	
2.1	SAND Grey sand, trace silt, fine grained, loose, wet		4	TW	83					Shelby tube eas to push GS	3Y
3.1	SILT Grey silt, trace clay, trace sand, trace gravel, hard, moist		5	ss	67	35					
77.6	Grey clayey silt, trace sand, very stiff, moist		6	ss	89	19			78_	P.P.>430 kPa GS	
4.4 77.3 4.7	SAND Grey sand, trace silt, fine grained, Noces, wet CLAYEY SILT Grey clayey silt (clay content varies with depth), trace white shell framents, soft to firm low plasticity.		7	55	89	8			77_	P.P.=50 kPa	
E	Grey silty clay to clayey silt, damp to moist		8	τw	100				76	Shelby tube ver easy to push	y
										P.P.=240 kPa	
	Sand lense, fine grained, loose, wet Grey silty clay, trace gravel (sub-rounded), trace white sheil fragments, soft, wet		9	τw	79				75	Hold to be very easy to push GS Specific Gravity 2.72 P.P.=0 kPa	у ′
	Brown siity clay, firm, wet								, , , , , , , , , , , , , , , , , , ,		
	Grey silty clay, trace gravel (sub angular), firm, wet		10		92			,	73_	Pruem. Piezo. S/N: #27C07?? installed at 8.8n by augentig in second testhole	'A n

an	neć	9										R	ECO	RD	OF	BO	RE	HOI		lo.	V02-220E PAGE 1 OF 3
PRO.	IECT	Victor Diamond Project - Ge	otechn	ical I	nvestic	ation I	Progra	m (Winte	<u>er 20</u>	02)									ENG	SINEEF	₹ <u>A.Z.</u>
PROJ	IECT NO.	TC19417-1003	DRIL	LER	Bo	art Loi	ngyear	(CME 7	5)	8	ORIN	G METI		<u>4.5"</u> ⊢	IST Au	ger / 2	2 <u>.5" HC</u>	Corin	ig LOG	IGED E	3Y <u>R.K./P.M.</u>
CLIEN	NT	De Beers Canada	LOC	ATIC	DN <u>Ck</u>	ay/Till :	Stockp	iles (AN	NEC	BH CV	02-20)							COM	APILEC) BY
ELEV	ATION	82.5 m		DRD.	<u>N</u>	5,858,6	837 E	307,483		_ в	ORIN	G DATE	<u>Sta</u>	rt: 5 N	/lar 02	End:	: 6 Mai	r 02	CHE	CKED	BY <u>N.S.V.</u>
SAMI AU BU PS	PLE TYPE Auger Bulk Piston Sam	ES RC RC SS Sp TW Th pler WS W	ock Core plit Spoo hin Walle (ash San	a in ad Op nple	en (She	lby)				ABBF P.P. F U.W.V PT	REVIA Pocket Net Un Standa	TIONS Penetro it Weigh rd Proct	meter It or Test	F F S	P.L. Po RQD Ro SCR So K Pe	int Load ck Qua lid Core rmeabil	d Strenç Ility Des Recov Ilty	gth Inde ignatior ery	א (I ₅₀) ו	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE		5	SAMPL	ES		N		(D) R	(NAMIC ESISTA	CONE	PENE		NC	PLAST		URAL	UCOLI	
ELEV DEPTH (m)		DESCRIPTION	STRAT PLOT	NUMBER	TYPE	ECOVERY (%)	or ROD	ELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (n			DED SHEAF	0 8 NIL(▲ F RSTRI	CON VANTACT REMOU	NE LDED (kPa)	LIMIT Wp IIII WAT			₩L ₩L 	REMARKS
<u>82.5</u> 0.0	Existing ICE to (ground surface).6m	888			<u>~</u>	5	∣з			- '	4									
81.9	MUSK				 					82_											
	Brown	beat to 1.1m	<u>77</u> 77 77	1	55	83	35		.1	-										553	þ
1.4	SANDY Grey sa loose, v	' SILT andy silt, trace clay, very vet		2	TW	79				81	Î										Shelby tube easy to push
									2		Į.										P.P.=0 kPa
				3	ss	100	3			80_	∎à \							I	- -		P.P.≃25 kPa GS
79.1				4	TW	92			_3				T								P.P.=190 kPa Shelby tube tip
3.4	CLAYE Grey cl to hard	Y SILT ayey silt, trace sand, very stif low plasticity, moist	Ť	5	ss	58	40		4	79_											MTO Vane cannot be pushed P P = 240 kPa
				6	ss	100	16		-	78_											MTO Vane cannot be pushed
				7	TW	83			_5												Shelby tube easy to push
					1					77_		<u> </u>									Р.Р.=165 КРа
				8	тw	92			_6						ו						P.P.=140 kPa
	Becom	ing very soft		9	ss	100	2			76_		_								>	P.P.=95 KPa
				10	TW	92			_7	-											Shelby tube easy to push
										75_					2						1.F.= 140 NF8
				11	т	88			_8			P									Shelby tube very easy to push
									9	74_											U.W.=19.3 kN/m³ P.P.≃0 kPa
										73											Split spoon penetrated on

an	nec	9										R	ECC	RD	OF	BC	RE	HOI	LEN	No.	V02-221E PAGE 1 OF 1
PROJ	ECT	Victor Diamond Project - Ge	otechr	lical	Investig	ation (Progra	m (Wir	nter 20	02)									ENG	GINEEF	R <u>A.Z.</u>
PROJ	ECT NO.	TC19417-1003	DRI	LEF	R <u>Bo</u>	art Lor	ngyear	(CME	75)	В	ORING	METI	HOD _	<u>4.5" H</u>	ST Aug	ger / 2	2.5" HC	<u>) Corin</u>	ig LOG	GED	BY <u>P.M.</u>
	NT A TIONI	De Beers Canada	. LOC		DN <u>Cla</u>	ay/Till S	Stockpi	iles (/	AMEC	<u>BH CV</u>	<u>02-19)</u>								CON		DBY <u>D.M.L.</u>
ELEV		81.8 m	. 00	JRD.	<u>N</u>	5,858,:	508 E	306,14	16	B		DAN	= <u>Sta</u>	iπ: 5 Ν	iar 02	Ena	: 5 Mai	-02			BY <u>N.S.V.</u>
AU A BU E PS F	PLE TYPE: Auger Bulk Piston Samp	S RC R0 SS S1 TW Th kerWS W	ock Cor plit Spoc hin Walk ash Sai	ə ən əd Op mple	en (She	lby)				ABBF P.P. F U.W.V PT	REVIAT Pocket F Net Unit Standard	IONS Penetro Weigh d Procte	meter ht or Test	F F S X	P.L. Poi RQD Roo ICR Sol	nt Load ck Qua id Core meabil	d Streng lity Des a Recov lity	gth Inde ignatior ery	nx (i ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			SAMPL	ES		A TER		Ê	DYI	NAMIC	CONE	LOT			PLASTI	C NATI	URAL	LIQUID	
ELEV DEPTH (m) 81.8	Existing	DESCRIPTION ground surface	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or ROD	WELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (I	ZI MTO II IN ■ RE UNDR 21	VANE TACT EMOUL AINED 0 4	DED SHEAI	0 8 NILC ▲ 11 ▲ F R STRE 0 8	ON VA NTACT REMOUL ENGTH 0 10	UNE LDED (kPa)	LIMIT WP WAT	ER CC	NTEN 20 20 20 31	LIMIT WL 	REMARKS
0.0	MUSKE Brown p scattered Frozen t	G eat, coarse fibrous, woody, d woody chunks, wet o 0.3 m	77 77 77	1	ss	92	42														
			2 X X 2 X X X X X	2	TW	38			- 	81											Shelby tube easy to push
			2					1	Ē											679	
79.7			24	3		67			2	80_										'	P.P.=0 kPa
2.1	SILT Grey silt with dep fragmen	, trace clay (content varies th), trace sand, trace shell ts, firm, low plasticity, wet		4	ss	100	4												 		GS PP=70 kPa
				_					Ē,	79_											1.1 ION U
78.3	Grey cla (sub-rou shell frag moist to SANDY	yey silt, trace gravel nded), trace sand, trace gments, stiff, low plasticity, wet SILT TILL		5	ss	75	10		 									9			P.P.=135 kPa
	Grey sar gravel (a hard, lov	ndy silt, some clay, trace angular to sub-angular), v plasticity, wet		6	TW	38			- - - - - -	78_						<u> </u>		 			Shelby tube very hard to push GS Tip of tube bent
	Increase	d gravel content below 4.5m						1	ŀ												P.P.>430 KPa
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	- -		7	ss	63	40		- - - - 5	77_											
76.5	END OF (Probab	HOLE y on limestone)		8	55 \$	0	50/0														Auger refusal at 5.3 m SPT bouncing on rock Mathane gas pocket encountered Borehole abandoned

a	nec ^o										R	ECC	RD) OF	BC	RE	HO	LEI	No.	V02-222E PAGE 1 OF 3
PRO.	JECT Victor Diamond Project - Geo	techn	ical I	<u>nvestig</u>	ation	Progra	m (Winter	200)2)									ENG	GINEEF	R <u>A.Z.</u>
PRO.	JECT NO. TC19417-1003	DRIL	LER	R <u>Bo</u>	art Lo	ngyear	(CME 75	2	_ в	oring	METI	HOD _	4.5" ⊦	IST AL	uger / 2	2.5" HC	Corir	ng LOC	GGED I	BY <u>P.M./R.K.</u>
CLIEN	NT De Beers Canada	LOC	ATIC	N <u>No</u>	rth Gr	anny C	reek (AN	IEC	BHC	V02-16)							CO	MPILE	DBY <u>D.M.L.</u>
ELEV	/ATION 83.8 m	coc	ORD.	<u>N</u>	5,857,	468 <u>E</u>	304,964		B	ORING	DATE	<u>Sta</u>	art: 6 N	<u>Mar 02</u>	End	: 7 Ma	r 02	CHI	ECKED	BY <u>N.S.V.</u>
SAMI AU BU PS	PLE TYPES RC Roc Auger SS Spi Bulk TW Thin Piston Sampler WS Wa	ck Core it Spoo n Walle sh Sar	n n nd Op nple	en (Shei	lby)				ABBF P.P. F U.W.V PT S	REVIAT Pocket F Wet Unit Standard	IONS Penetro Weigh Procti	meter It or Test		P.L. Po RQD Ro SCR So k Pe	oint Loa ock Qua oild Core omeabi	d Streng Ility Des e Recov	gth Inde signatio /ery	ex (i ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analysis
	SOIL PROFILE	T	5	SAMPL	ES		E Z		<u> </u>	DYI RE		CONE	PENE		ON	DLAST	n NAT	TURAL		
ELEV DEPTH (m)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or ROD	WELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (m	MTO II IN RE UNDR/ 20	0 4 VANE TACT EMOUL AINED 0 4	0 <u>6</u> DED SHEA 06	0 8 NIL ▲ 1 ▲ 1 RSTR	BO 1 CON V INTACT REMOU ENGTH BO 1	00 ANE ILDED I (kPa) 00	WA1		STURE VTENT • • • • • • • • • • • • • • • • • • •	UMIT 	REMARKS
0.0	MUSKEG Brown peat, woody, coarse fibrous, scattered woody chunks, moist to wet	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1	55	17	1			8											
82.4		2 2 2 2 2 2 2 2 2 2 2 2	2	τw	46			1	03											
81.6	Grey sandy silt, trace gravel, wet		3	55	17	3		2	82											
2.2	Grey clayey sit, trace sand, sand lenses and sit seams, occasional gravel, trace shell fragments, firm, low plasticity, wet		4	55	67	6		3	81_											P.P.=190 kPa
			5	τw	83				80								₽			Shelby tube medium-hard to push GS P.P.=95 kPa
			6	55	92	7		4									F	•-1		P.P.≂65 kPa GS
	Brown, moist			R				5	79 				^							Shelby tube hard to push
			7	TWN	92				-		4	/								P.P.=190 kPa
E 1 1007	Grey-brown silt and clay		8	ss	67	11		6	78			•						6		P.P.≈190 kPa Pneum. Piezo. S/N: 27C0224 installed at 6.1m
			9	TW	96			7	77	-							F	-1		Shelby tube easy to push GS P.P.=0 kPa
			10	ss	100	3		8	76_											P.P.=0 kPa
								9	75_											-
									-											Shelby tube easy to push

an	nec	9											R	ECC	RD	OF	BC	RE	HOI	EN	No.	V02-223E PAGE 1 OF 1
PROJ	ECT	Victor Diamond Project	<u>ct - Geot</u>	echn	ical I	nvestig	ation F	Progra	m (Wir	ter 20	02)									ENC	SINEEF	R <u>A.Z.</u>
PROJ	ECT NO.	TC19417-1003		DRIL	LER	<u>Bc</u>	part Lor	ngyear		75)	B		S MET		<u>4.5"</u> ⊢	IST AL	<u>iger / 2</u>	2.5" HC	<u>2 Corir</u>	ig LOG	GED E	BY <u>R.K.</u>
		De Beers Canada		200		жі <u>Lo</u> N	w Grad		Stockj	<u>) 9116 (</u>	AMECI		02-13) E 94		lar 02	End	- 8 Ma				DBY <u>U.M.L.</u>
SAM		<u></u>																				<u> </u>
AU AU BU E	Auger Bulk Piston Samp	oler V	SS Split TW Thin WS Was	Spoo Walle	n nd Op nple	en (She	lby}				P.P. F U.W.V PT	Vet Uni	Penetro it Weigl d Proci	meter ht tor Test	+ + - *	RQD Ro SCR So	oint Loa ock Qua olid Core	d Streng Ility Des 9 Recov	gin inde signation very	אג (1 ₅₀) ז	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			5	SAMPL	ES		N ER		Ê	DY	NAMIC	CONE	LOT			PLAST	IC NAT	URAL	LIQUID	
ELEV DEPTH (m)		DESCRIPTION		STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	PT "N" VALUES or ROD	VELL / PIEZOMI INSTALLATIC	DEPTH (m)	ELEVATION (r				DILC All AF RSTRI 0 B	CON V NTACT REMOL ENGTH	ANE JLDED I (kPa)	LIMIT ₩p I WAT		NTEN	LIMIT WL T (%)	REMARKS
<u>85.3</u> 0.0	Existing MUSKE Brown p wet	ground surface G leat, woody, coarse fib	rous,	2 2 2 2 2 2 2	1	ss	100	- 	5	-	85_								r -			P P >430 kPa
	Frozen I	to 0.6 m		2 2 2 2 2 2																	1028	
				r 7 77	2	ss	100	1		-1 	84_									 		Second blow with hammer advance split spoon to 1.52
					3	τw	75		-	2												Shelby tube very easy to push ₽.Ρ.≖0 kPa
<u>82.9</u> 2.4	CLAYE Grey silt	Y SILT I, some clay, trace grav	vel								83											
82.0	(subang	jular), rootlets, firm, we	et		4	ss	67	6		3	82									g		P.P.≠95 kPa GS
3.4	SHATTI			T.	5	ss N	0	50/0.03		Ę	-											SPT bouncing on
	fragmen	its		H H Y	6	ss N	0	50/0.03		4												SPT bouncing on rock
<u>81.0</u> 4.3	LIMEST	ONE medium brown limesto	one.								81_			-								Auger refusal at 4.3 m Switched to HO
	slightly n micro-ka and 5.4 Jointing	weathered, arstification between 5 5m : flat-dip-vertical orient	.35m ation;		7	RC	81	19		5												coring P.L.=0.71 MPa (At 4.4 m) Coring rate slow SCR=26%
	very clo some sa Strength	se to moderate spacing and filling h: medium to high	g;								80_									_		P.L.≉1.79 MPa (4.6 to 4.6m segment) Coring rate slow to
A. 10. 12 TM				H	8	RC	100	62		- - - - -	79_											SCR=67%
100-101										- - -												(6 to 6.4m segment)
					9	RC	96	23			78_											SCR=30%
77.7	END OF	FHOLE		=							-							\vdash				
AMECGEC																						
									1													

an	nec	9										R	ECO	ORI	0 0	FBC	RE	HO	LEN	No.	V02-224E PAGE 1 OF 1
PROJ	ECT	Victor Diamond Project - G	eotech	nical	Invest	igation	Progra	m (Wir	<u>ter 20</u>	002)									ENG	SINEEF	۲. <u>A.Z.</u>
PROJ	ECT NO.	TC19417-1003	_ DRI	LLEF	<u>в</u>	oart Lo	ngyear	(CME	75)		ORIN	G MEI	HOD	4.5"	HST A	uger <u>/ 2</u>	2 <u>.5" H</u> C	2 Corir	ng LOC	GED	3Y <u>P.M./D.B.</u>
CLIEN	т	De Beers Canada	_ LOC	CATIO	DN <u>L</u>	ow Gra	de Ore	Stock	pile (AMEC	BH C	/02-18	<u>)</u>						CO	MPILE) BY D.M.L.
ELEV	ATION	82.2 m	CO	ORD	<u> </u>	5,855,	349 E	304,5	51	8	ORIN	g dat	E <u>St</u>	art: 8	Mar 03	2 End	: 9 Ma	r 02	CHE	CKED	BY N.S.V.
SAMF AU A BU E PS F	PLE TYPE Nuger Bulk Piston Samp	S RCF SSS TWT Ner WSV	Rock Cor Split Spo Thin Wall Nash Sa	e on ed Op mple	en (Sh	elby)				ABBI P.P. U.W. PT	REVIA Pocket Net Un Standa	TIONS Penetr it Weig rd Proc	S ometer ht tor Tes	t	P.L. F RQD F SCR S K F	Point Loa lock Qua lolid Con Permeabi	d Stren ality Des e Recov ility	gth Indi signatio /ery	əx (I ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analysi
		SOIL PROFILE			SAMP	LES		Ц Ц Ц			D) R	(NAMI ESIST	C CON	E PEN PLOT			PLAST	IC NAT	URAL		
ELEV DEPTH (m)	F ortest	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	PT "N" VALUES or RQD	VELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (IT		20 VANE TACT EMOU RAINE[20	40 LDED D SHEA 40	60 NII ▲ ▲ AR STF 60	80 CON V INTAC REMO REMO RENGT 80	100 /ANE T ULDED H (kPa) 100	Limit ₩p IIIII WA		STURE ITENT • • • • • • • • • • • • • • • • • • •	LIMIT WL I IT (%) 30	REMARKS
0.0	MUSKE Brown p scattere Frozen t	Ground surface G eat, woody, coarse fibrous, d woody chunks, wet o 0.46 m	<u>v</u> <u>v</u> v	1	ss	46	7	>		82										854	
			4 x x 4 x 4 x 4 x	2	τw	8			- - - - - - - -	81_											
			<u>24</u> 22 24 24 24 24	3	τw	38			-												
<u>80.0</u> 2.2	CLAYEY Grey cla (sub-rou brown cl fragmen	Y SILT yey silt, trace gravel nded), few sand lenses, lay seams, trace shell ts, stiff, moist		4	SS	63	8			80_								1			P.P.=120 kPa
	Beige-gi	rey silty sand, some gravel		5	ss	75	48			79_											GS (upper 0.15m of SS5) P.P.≈165 kPa
	dense Grey cla damp to	yey silt, some gravel, hard, moist							- - 				1 1								
<u>78.1</u> 4.1 <u>77.8</u> 4.5	COMPL WEATH Whitish- Verv der	ETELY TO HIGHLY ERED LIMESTONE grey silty sand with gravel, se		7	SS SS	100	74 50/0.03			78_											P.P.>430 kPa 56 blows for last 0.15m of SPT-SS Auger refusal at
	LIMEST Light bro moderat micro-ka	ONE own limestone, slightly to lely weathered, arstification throughout badding arrow that dipple	_ Н Н ,		RC	42	0		5 5 	77_											4.5 m Switched to HQ coring
	orientati spacing silt filling Strength	not very close to close rough undulating surfaces not to medium	┙┥┥┥┍╷	9	RC	100	30		6	76_											-
			1 H H H H	- 10	RC	100	67			75_											P.L.=1.39 MPa (At 7.2 m) P.L.=1.72 MPa
	END OF	HOLE							- 8			 									(7.4 to 7.5m segment) P.L.≈1.83 MPa (7.6 to 7.7m segment) P.L.=2.29 MPa
																					(7.8 to 8m segment)

a	nec	9										R	ECC	RD	OF	BC	RE	HO	LEI	No.	V02-257E PAGE 1 OF 3
PRO.	JECT	Victor Diamond Project - Ge	otechr	nical	Investig	gation	Progra	m (Wi	nter 20	002)									ENG	GINEEF	R <u>A.Z.</u>
PRO	JECT NO.	TC19417-1003	DRI	LLEF	R <u>B</u>	oart Lo	ngyear	(CME	75)		ORIN	g met	HOD _	4.5" H	IST AL	lger / 2	2.5" HC) Cori	ng LOC	GGED	BY <u>R.K.</u>
	NT	De Beers Canada	LOC		DN <u>P</u> o	otential	Pipe (Outlet	(~320_	m Sou	h of A	tawap	iskat R	iver)						MPILE	DBY <u>D.M.L.</u>
ELEV		<u>83.7 m</u>		JRD	. <u>N</u>	5,859,	693 E	307,0	39	^µ		3 DAI	E <u>Sta</u>	art: 23	Mar 0	2 En	d: 24 N	Mar 02	CH	CKED	DBY <u>N.S.V.</u>
AU BU PS	IPLE TYPE Auger Bulk Piston Samr	S RC RC SS Sp TW Th WS W	ock Con dit Spoo din Walk ash Sar	e on ed Op mole	ien (She	ilby)				P.P. U.W. PT	REVIA Pocket Wet Un Standai	TIONS Penetro it Weigl	i ometer ht tor Test		P.L. Po RQD Ro SCR So	oint Loa ock Qua olid Core	d Streng lity Des e Recov	gth Ind signatio /ery	lex (I ₅₀) In	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			SAMPL	ES		眂	r –	<u> </u>		NAMIC			ETRATI	ON	,, 				
ELEV	-		PLOT	BER	۳	RY (%)	ALUES	IEZOMET LLATION	TH (m)	(m) NOIT	MTC		10 6		30 1 CON V.	00 ANE	PLASTI LIMIT Wp	IC MOI	STURE VTENT W	LIQUID LIMIT W.	REMARKS
DEPTH (m)	l Fristing		STRAT	NUN	ΙŁ	RECOVE	SPT "N" \	WELL / P	DEP	ELEVA		EMOUI RAINEC 20 4	LDED SHEAI 40 6	A I RSTR 0 6	REMOU ENGTH 30 1	/LDED I (kPa) 00	WAT	rer Ci 10	- ONTEN 20	IT(%) 3¦0	
0.0	ICE to C	0.45m	***				<u> </u>		E		1					+		<u>†</u>			
83.3	3	-							F												
0.5	Brown p	G beat, woody, coarse fibrous							Ē	83_	1										
			<u></u>			1		1	Ē1							1					
			2	1	ss	33	2	1	È.		1										
82.2			<u></u>					1	Ē												
1.5	Brown s	SILI andy silt, some gravel				42			Ē	82_	1								+		
	(sub-an	gular), trace shell fragments, t, moist		ŕ		42			- 2		1										
	At 2.5m	traces of alove group						1	E												
	(sub-an	gular) and shells	게	3	ss	67	28	ĺ	Ē									•			GS
	Gley, an	UISt							Ē	81_							 	++		-	
				•					- 3												
				4	ss	75	26		Ē												
	Grey cla	yey silt, traces of sand,				\		1	F	80											
79.9 3.8	gravel (: moist	sub-angular) and shells,						1	Ē		1	1									Auger grinding on
	Grey sa	ndy silt, traces of clay and	Ø	5	ss	75	20		F ⁴		1										gravel P.P.=380 kPa
	gravel (s	sub-angular to sub-rounded), f to firm, moist				1	<u> </u>	Į	F		1						Į				
									Ē	79_	1										
				6	ss	75	20		Ē5		3										P.P.>430 kPa Organic
			Ø		1	-		4	F												content=0.8%
								1	Ē												
				7	ss	58	11		È	78_								∦—		-	F.F.=240 NF4
						}		1	<u>_</u> 6						1						
								1	Ē					ſ	/						
				8	ss	58	10		Ē		1				X			Î			P.P.≖120 kPa
								1	ŧ	77_		\top	1	-/				#			-
								{	F7		1								1		P.P.=140 kPa
				9		54			ŧ		1	$ \rangle$		`	X						Shelby tube hant
					 	4	<u>†</u>	1	F	76	1	`			$\left \right\rangle$						at tip
									Ē,												1
			Ø						Ē		1		$\lceil \rangle$	Į				1			
									F		1			Ν		$\left \right\rangle$					
			Ø	10	ss	33	7		Ē	75_	1	ļ		$ \downarrow$	ļ	$\vdash $	<u> </u>		1		GS P.P.=95 kPa
			Ø		╞		-	1	Ľ۹		1			`		126					
				11	ss	0	8		È		1				Γ	'	Ī				P.P.=95 kPa
		A ()) (-			1			_	F				}								
		Continued on Next Page																			

2	me	ക			_					-			RI	ECC	RD	OF	BC	RE	HO		10.	V02-257E PAGE 2 OF 3
P	ROJECT	Victor Diamond Pro	oject - Geo	techn	nical I	Investig	<u>ation F</u>	Progra	m (Wir	nter 20	02)									ENG	SINEEF	R <u>A.Z.</u>
P	ROJECT	NO. TC19417-1003		DRIL	LLER	8 <u>Bo</u>	art Lor	igyear	(CME	75)	В	ORING	MET	HOD _	4.5" ⊢	IST AL	iger / 2	2.5" HC	Corir	ng LOG	GED	BY <u>R.K.</u>
C		De Beers Canada		LOC		DN <u>Po</u>	tential	Pipe C	Dutlet (~320 r	n Sout	h of At	lawapi	skat Ri	ver)					CON	APILE	DBY <u>D.M.L.</u>
E		N <u>83.7 m</u>		coc	ORD.	<u>_N</u>	5,859,6	593 E	307,03	39	B	ORING	DATE	<u>Sta</u>	rt: 23	Mar 0	2 En	d: <u>24 N</u>	lar 02		CKED	BY <u>N.S.V.</u>
S A B P	AMPLET U Auger U Bulk S Piston	YPES Sampler	RC Roo SS Spli TW Thir WS Was	ck Core it Spoo n Walle sh Sar	e on ed Op mple	en (She	lby)				ABBF P.P. F U.W.N PT	REVIAT Pocket I Net Uni Standar	FIONS Penetro t Weigh d Procte	meter nt or Test	F F S	P.L. Po ROD Ro SCR So CR So	oint Loa ock Qua olid Core	d Strenç lity Desi a Recov lity	jth Inde ignatio ery	өх (I ₅₀) п	C DS GS	Consolidation Direct Shear Grain Size Analysis
F		SOIL PROFILE			1	SAMPL	ES ŵ	8	METER	ê	(m)	DY RI 2	NAMIC ESISTA 0 4	CONE NCE P 0 6	PENE LOT 0 8	TRATI 0 1	0N 00	PLASTI LIMIT		URAL	Liquid Limit	· · · · · · · · · · · · · · · · · · ·
EL DE (I	EV PTH m)	DESCRIPTION		STRAT PLO	NUMBER	17PE	RECOVERY (PT "N" VALU	VELL / PIEZO	DEPTH (r	ELEVATION	MTO	VANE TACT EMOUL AINED	.DED SHEAJ	NIL(▲ I ▲ F RSTRI	CON V. NTACT REMOU ENGTH 10 1	ANE ILDED I (kPa) 00	₩ _P	ER CO	w o	w∟ —1 T(%) 30	REMARKS
					12	ss	67	10	<u>></u>		74_											
									-													P.P.≓140 kPa
					13	55	83	10			73_								9			P.P.=120 kPa
					_																	
										- - 12 -	12											
					14	TW	92				71_	-										P.P.≠140 kPa
										13												
											70_											
					15	ss	83	13		[_14 - - -									Þ			P.P.≈95 kPa
				Ø						Ē	69_	 										
					_					[]5												
					16	ss	58	19			68_	 										P.P.≈95 kPa
										[16 												
	Bec	oming wet					 			 - - - -	67_	1		 				 				
					17	ss	83	10														P.P.≖0 kPa
										- - - 18	66_									-		
					18	ss	83	7			65_											. P.P.≭0 kPa
		<u> </u>					<u> </u>		1	19		<u> </u>		<u> </u>		<u> </u>		<u> </u>	1[

a	nec ⁴	9										R	ECC	R) OF	BC	RE	HO		lo.	V02-257E PAGE 3 OF 3
PRO.	JECT	Victor Diamond Project - Geo	techn	ical II	nvestiç	ation I	Program	<u>m (Wir</u>	nter 20	02)									ENG	INEEF	R <u>A.Z.</u>
PRO.	JECT NO.	TC19417-1003	DRIL	LER	Bo	oart Lor	ngyear	(CME	75)	8	ORIN	G MET		4.5" H	HST A	uger / 2	2.5" H <u>C</u>	Cori	ng LOG	GED	BY <u>R.K.</u>
CLIEN	NT	De Beers Canada	LOC	ATIO	N <u>Po</u>	otenti <u>al</u>	Pipe C	Dutlet (~320 r	n Sout	h of A	tawapi	skat R	iver)		-			CON	/PILEC	DBY <u>D.M.L.</u>
ELEV	ATION	83.7 m	COC	RD.	N	5,859,6	693 E	307,03	39	B	ORIN	G DAT	E <u>Sta</u>	art: 23	Mar 0	2 En	d: 24 <u>N</u>	lar 02	CHE	CKED	BY <u>N.S.V.</u>
SAMI AU BU PS	PLE TYPE: Auger Bulk Piston Samp	S RC Roc SS Split TW Thin ler WS Was	k Core Spoo Walle sh San	n d Ope nple	an (She	ilby)				ABBF P.P. F U.W.V PT	REVIA Pocket Net Un Standa	TIONS Penetro it Weigh rd Proct	meter nt or Test		P.L. Po RQDR SCR So k Po	oint Loa ock Qua olid Core ermeabi	d Strenç ality Des e Recov ility	jth Inde ignatio ery	ex (l ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE		s	AMPL	ES		A ER		ê	D) R	NAMIC	CONE	LOT			PLAST		URAL	LIQUID	
ELEV DEPTH (m)	1	DESCRIPTION	STRAT PLOT	NUMBER	түре	RECOVERY (%)	PT "N" VALUES or ROD	FLL / PIEZOME	DEPTH (m)	ELEVATION (n			DED SHEA	NIL ▲ I RSTR	CON V INTACI REMOL ENGTH	YU ANE JLDED H (kPa)	LIMIT ₩⊳ ₩— ₩ΑΤ	ER CO	VTENT V -0 ONTEN 20 3	LIMIT 	REMARKS
				19	ss	83	10	>	20	64_								•			
	Becomir	ng brown							21	63_											
				20	55	83	19		22	62											GS P.P.=95 kPa
				21	ss	33	14		23	61											Drillers out of augers. Switched to HQ
23.5	5 LIMEST Light bro high stre Becomir Jointing:	ONE own limestone, unweathered, angth ng brown, vuggy porosity bedding and cross joints;		22	RC	83	36		24	60_											conng at 23.5 m P.L.=4.87 MPa (23.5 to 23.7m segment) SCR=40%
	flat to dig	pping orientation; close to se spacing; rough undulating							Ē	- 59_	_										
	surfaces Strength	s n: medium to low	HHH	23	RC	0	0		25 												SCR=0%
5			H H H	24	RC	100	8		- - - - - - - -	58_											P.L.=2.23 MPa (25.5 to 25.6m segment) SCR#33%
26.5	END OF	HOLE																			

an	nec	9				-						REC	OR	D OF	BC	RE	HO	LEI	No.	V02-222E PAGE 2 OF 3
PROJ	ECT	Victor Diamond Project - Ge	otechn	nical I	investi	gation	Progra	m (Win	ter 20	02)								ENG	GINEEF	R <u>A.Z.</u>
	EGINU. IT	De Beore Canada			с <u>в</u> е лым	orth Cr	ngyear	UME	15) AMEC	BU CY	UNG 1	METHOL	J <u>4.5"</u>	HSLA	uger / 2	2.5" HC	2 Corir		JGED E	אז <u>P.M./R.K.</u> איז סאר
		83.8 m	COC		N <u>N</u>	5.857	468 F	304.96		<u>, оп сч</u> Р			Start: 6	Mar 02	End	· 7 Mai	r 02	СШ	FCKED	BY NSV
SAM		S 50 5	ak C			2,001,		557,00								d Charles	alb (~ <			
AU A BU E PS F	Auger Bulk Piston Samp	Der WS Wa	it Spoo in Walk ash Sar	an ad Op mple	en (She	elby)				P.P. F U.W.V PT S	Vet Unit V	netromete Veight Proctor Te	ər əst	RQD R SCR S k P	oint Loai ock Qua olid Con ermeabi	a Streng Ility Des e Recov Ility	yın Inde ignatio rery	ax (l ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			SAMPL	ES	T	N ET ER		Ê	DYN/ RES	AMIC CO	NE PEN E PLOT			PLASTI			LIQUID	
ELEV DEPTH (m)		DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or ROD	WELL / PIEZOM	DEPTH (m)	ELEVATION (1	MTO V. INTA REN UNDRAI 20	ANE ACT AOULDED NED SHE 40	NI A CARST 60	ILCON V INTAC REMOI RENGTI 80	'ANE T JLDED H (kPa) IQ0	UMIT Wp I WAT	TER CC	ONTEN	LIMIT WL 4 IT (%) 30	REMARKS
			Æ	11	TW	92		۶d					+	+	<u> </u>	<u> </u>	\top			P.P.=95 kPa
7 <u>3.6</u> 10.2	SANDY Brown s some gi subrour	SILT TILL sandy silt, some clay, trace to ravel (subangular to ided), soft, low plasticity, wet							10	74_	•									
				12	ss	100	2		- 11	72							•			P.P.=0 kPa GS
71.3	SAND			13	TW	100			12											P.P.=0 kPa Shelby tube hit
	Grey fin (angula wet	e to coarse sand and gravel r to subrounded), very dense,	000	14	ss	71	78/0.28		13	71_										flowing up into at 12.5 m; could not push further Sand and gravel flowing up into auger
	Snatter	eu iimesione inclusion	2000	15	ss	50	71													P.P.>430 kPa P.P.>430 kPa GS
	Gravel	rraction reduces to trace		16	ss	58	75		- - - - -											P.P.>430 kPa
<u>69.1</u> 14.7	SANDY Grey sa (subanç very de	SILT Indy silt, trace to some gravel gular), limestone inclusions, nse, wet		- - - -					15	69_				_						
				17	ss	50	100/0.2		-	68_		_					-			P.P.>430 kPa SS bouncing on rock
67.2 16.6	GLACIO	DFLUVIAL GRAVEL AND	, <mark>.</mark>	18	SS N	60	50/0.1			67										Pneum. Piezo. S/N: 27C0242 installed at 16.5m SS bouncing on rock
	COBBL Brown t (compo and lime sub-rou	ES o grey gravel and cobbles sed of granite, sandstone, estone; sub-angular to nded), some sand		19	RC	75	0		- 17 -											Auger refusal at 16.6 m Switched to HQ coring SCR=0%
				20	RC	0	o		18	66										SCR=0%
			.0 0	<u>\</u>				-	- - 19	65										-

an	nec	9											R	ECC	RD	OF	BC	RE	HOI	E N	lo.	V02-222E PAGE 3 OF 3
PROJ	ECT	Victor Diamond Pro	oject - Geot	techn	ical I	nvestig	ation F	Program	<u>m (Wir</u>	ter 20	02)									ENG	INEEF	₹ <u>A.Z.</u>
PRO.	ECT NO.	TC19417-1003		DRIL	LER	<u>Bo</u>	part Lor	ngyear	(CME	75)	В	ORING	G MET	HOD	4.5" H	<u>IST Au</u>	ger / 2	2.5" HC	Corin	g LOG	GED I	3Y <u>P.M./R.K.</u>
CLIEN	NT.	De Beers Canada		LOC	ATIC	N <u>N</u>	orth Gra	anny C	reek (AMEC	BHC	V02-16	5 <u>)</u>							CON	IPILED) BY _D.M.L.
ELEV		83.8 m		COC	DRD.	N	5,857,4	468 E	304,96	54	B		G DATI	E <u>Sta</u>	art: 6 M	<u>lar 02</u>	End	: 7 Mai	· 02	CHE	CKED	BY <u>N.S.V.</u>
SAMI AU BU PS	PLE TYPE Auger Bulk Piston Samp	S oler	RC Rock SS Split TW Thin WS Was	k Core Spoo Walle h San	n ad Op nple	en (She	ilby)				ABBF P.P. (U.W.) PT	REVIAT Pocket I Wet Uni Standar	FIONS Penetro it Weigi d Proct	ometer ht tor Test	F F S K	P.L. Po RQD Ro SCR So CR So	int Loai ck Qua lid Core rmeabi	d Strenç Ility Des e Recov lity	gth Inde ignatior ery	ix (I₅₀) 1	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			5	SAMPL	ES.		rer N		ê	DY R	NAMIC ESISTA	CONE	PENE			PLAST		URAL		
ELEV DEPTH		DESCRIPTION		RAT PLOT	IUMBER	TYPE	OVERY (%)	N" VALUES	L / PIEZOME ISTALLATIO	DEPTH (m)	EVATION (II	MTO		DED	0 8 NiL0 ▲ Ii ▲ F		NE LDED	LIMIT Wp I			LIMIT WL I T (%)	REMARKS
				ST	Ĺ		REC	. LdS	A EL		ដ	UNDR 2	AINED 20 4	10 6	0 8	=NGTH 10 10	(kPa) 20	1	10 2	20 3	0	
					21	RC	30	o		20	64_											SCR=0%
				0000	22	RC	50	0			63_										-	SCR=0%
				00000	23	RC	15	0			62											SCR=0%
61.8				P						22		 										
	Water le	evels (h a s).																				
	Pnuem.	Piezo, #27C0224																				
	At 0.5m	, 29-Mar-02																				
	Priuem. At 0.9m	Piezo. #27C0242 , 29-Mar-02																				
1											F											
																					1	
2																						
08:51																						
202																						
5/15/2																						
ate: 0																						
2																						
417.G																						
1019																						
ġ.						ļ		ļ		l	l	ļ				ļ		l	ļ	ļ	ļ	ļ
SWW									[
ee Bee																						
AMEC																						
ormat																						

an	nec ^Ø								RECORD OF BOREHOLE No. V02-220E PAGE 2 OF 3
PROJ	ECT Victor Diamond Project - Geol	techn	ical I	nvestig	ation	Progra	m (Winter 20	02)	ENGINEER
PROJ	ECT NO. TC19417-1003	DRIL	LER	Bo	art Lo	ngyear	(CME 75)	В	BORING METHOD 4.5" HST Auger / 2.5" HQ Coring LOGGED BY R.K./P.M.
CLIEN	NT De Beers Canada	LOC	ATIC	N <u>Cla</u>	ay/Till (Stockp	les (AMEC	BH CV	V02-20) COMPILED BY D.M.L.
ELEV	ATION 82.5 m	coc	RD.	<u>N</u> :	5,858,	837 E	307,483	В	BORING DATE Start: 5 Mar 02 End: 6 Mar 02 CHECKED BY N.S.V.
SAMP AU A BU E PS P	PLE TYPES RC Roc Auger SS Spiit Suk TW Thin Piston Sampler WS Was	k Core Spool Walle In Sam	n d Op 1ple	en (Shel	lby)			ABB P.P. U.W. PT	REVIATIONS P.L. Point Load Strength Index (I ₅₀) Pocket Penetrometer RQD Rock Quality Designation C Consolidation Wet Unit Weight SCR Solid Core Recovery DS Direct Shear Standard Proctor Test k Permeebility GS Grain Size Analysis
	SOIL PROFILE		S	SAMPL	ES		Ë,		
ELEV DEPTH (m)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RGD	WELL / PIEZOME INSTALLATION DEPTH (m)	ELEVATION (m)	20 40 60 80 100 PLASIL CONTENT MOISTURE CONTENT LMUID LMIT MTO VANE NILCON VANE wp w w_L INTACT △ INTACT w w_L INTACT △ INTACT w w_L UNDRAINED SHEAR STRENGTH (kPa) WATER CONTENT (%) VATER CONTENT (%) 20 40 60 80 100 10 20 30
	Trace shell fragments in Sample SS13		12	55	100	2		72	Weight of hammer P.P.=0 kPa GS P.P.=0 kPa P.P.=0 kPa
70.0 12.5	SILT AND CLAY Brown silt and clay, trace sand, very stiff, moist		14	T¥ SS	79 100	16	13	70_	to push 0.15 m, then medium-hard to push 0.16 m, then medium-hard to push 0.16 m, to push 0.16 m, remainder of tube P.P.=190 kPa GS P.P.=190 kPa
			16	тw	71			-	Shelby tube medium-hard to push
							15	68_	
			17	55	50	19		67_	P.P.=96 kPa GS
<u>65.4</u> 17.1	SAND Beige sand, trace gravel, silt seams, dense, wet		18	ss	17	17		65_	P.P.=140 kPa
			19	ss	100	47			GS GS
	Continued on Mart Days		20	ss	100	33		04_	

an	nec ⁴	9											RI	ECC	R) OF	BC	RE	HO		lo.	V02-220E PAGE 3 OF 3
PROJE	ECT	Victor Diamond Proje	ect - Geote	chni	cal l	nvestig	ation I	Progra	m (Wir	nter 20	02)									ENG	SINEEF	R <u>A.Z.</u>
PROJE	ECT NO.	TC19417-1003	[ORIL	LER	Bo	art Lor	ngyear	(CME	75)	8	ORING	6 METI	HOD _	4.5"	HST AL	iger / 2	2.5" HC	Q Cori	ng LOC	GED	BY <u>R.K./P.M</u>
	T	De Beers Canada	L	.00/	ATIC	N <u>Cla</u>	ay/Till S	Stockp	iles (/		<u>BH CV</u>	02-20)								CON	APILE	DBY <u>D.M.L.</u>
ELEVA		82.5 m	(200	RD.	<u>_N (</u>	5,858,8	337 E	307,48	33	<u> </u>		5 DATE	= <u>Sta</u>	irt: 5	Mar 02	End	6 Mai	r 02	CHE	CKED	BY <u>N.S.V.</u>
SAMP AU A BU B PS P	LE TYPE: uger ulk iston Samp	S Ier	RC Rock SS Split S TW Thin V WS Wash	Core Spoor Valle Sam	n d Ope iple	en (She	lby}				ABBF P.P. F U.W.N PT	REVIA Pocket i Vet Uni Standar	FIONS Penetro t Weigh d Procte	meter at or Test		P.L. Po RQD Ro SCR So k Pe	int Loa ock Qua lid Core meabil	d Streny Ility Des a Racov ility	gth Ind ignatio rery	ex (I ₅₀) n	C DS GS	Consolidation Direct Shear Grain Size Analys
		SOIL PROFILE			s	AMPL	ES		Z ER		6	DY RI	NAMIC	CONE	PENI					URAL	מווסנו	
EPTH		DESCRIPTION		RAT PLOT	UMBER	TYPE	OVERY (%)	N" VALUES	, / PIEZOME STALLATIO	ОЕРТН (m)	EVATION (#		0 4 VANE TACT EMOUL	<u>0 6</u> .DED	0 NiL ▲	BO 1 CON V. INTACT REMOL	NE	WP WP		STURE (TENT W O	UMIT WL 1	REMARKS
				۲. ۲	2		REC	SPT	NEL! NEL!		ш	UNDR 2	AINED 0 4	SHEAF 0 6	1817 0	ENGTH 80 1	l (kPa) po		10 :	20 3	80	
62.6					21	ss	0	42		-	63_											Standnice
19.7	SILT TIL Grey cla moist to	L (PROBABLY) yey silt, trace gravel, ł damp	hard,		22	ss	75	59	H	20												installed at 19.8 i screen: 16.8-19.8 m sand: 16.2-22.9 i plug: 15.5-16.2 n
					23	55	63	72			62											grout: 0-15.5 m P.P.=335 kPa
											61_											с.5 Р.Р.>430 kPa Р.Р.=335 kPa
60.9 21.6	SHATTE	REDLIMESTONE			24	55	80	92/0.23		E	-											
	Grey-bei very den	ige gravelly sand, son ise, wet	ne silt,	HHH		N				_22	-					1						
59.6				\mathcal{H}	25 26	55 55	27 75	61/0.23 50/0.1			60_											
22.9	Water le No data	HOLE vel in standpipe (b.g.:	s.):												-							casing Auger refusal at 22.9 m

an	neco								_			RECC	RD	OF BC	RE	HOL	E No.	V02-213E PAGE 2 OF 3
PRO.	ECT <u>Victo</u>	or Diamond Project - Geo	techn	ical I	nvestig	ation	Progra	m (Wi	<u>nter 20</u>	02)							ENGINEE	R <u>A.Z.</u>
PRO.	ECT NO. <u>TC19</u>	9417-1003	DRIL	LER	Bo	art Loi	ngyear	(CME	75)	B	ORIN		4.5" H	ST Auger / 2	2.5" HC	Coring	LOGGED	BY <u>P.M./R.K.</u>
CLIE	IT <u>De B</u>	eers Canada	LOC	ATIC	N <u>Cla</u>	ay/Till :	Stockp	iles (AMEC	BH CV	/02-14	4)					COMPILE	D 8Y <u>D.M.L.</u>
ELEV	ATION <u>82.0</u>	<u>m</u>	COC	RD.	N	5,857,4	418 E	306,5	54	В	ORIN	G DATE Sta	<u>art: 2 M</u>	ar 02 End	: 3 Mar	02	CHECKEE	BY <u>N.S.V.</u>
SAMI AU BU PS	PLE TYPES Auger Bulk Piston Sampler	RC Roc SS Spli TW Thir WS Was	k Core it Spool Walle sh San	n n nd Ope	en (Shei	lby)			_	ABBR P.P. 1 U.W. PT	REVIA Pockel Wet Ui Standa	TIONS Penetrometer nit Weight ard Proctor Test	P R S k	.L. Point Loa QD Rock Qua CR Solid Con Permeabi	d Streng ality Desi e Recov lity	ith Index ignation ery	(I50) C DS GS	Consolidation Direct Shear Grain Size Analysis
	SOIL	PROFILE	T	S	SAMPL	ES		۲.	1		D	YNAMIC CONE	PENE	TRATION		NATUR		
ELEV DEPTH (m)	DE	ESCRIPTION	STRAT PLOT	NUMBER	түре	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOMET	DEPTH (m)	ELEVATION (m)		20 40 6 O VANE NTACT REMOULDED RAINED SHEAI 20 40 6	0 80 NILC ▲ IN ▲ R R STRE	D 100 ON VANE ITACT EMOULDED NGTH (kPa) D 100	PLASTIK LIMIT WP H WAT	ER CON	NT LIQUID IRE LIMIT WL UTENT (%) 30	REMARKS
			W	11	TW N	89	,		E	-								adjacent to BH V02-213F
				12	ss	100	7			72								P.P.=0 kPa Shelby tube very easy to push P.P.=0 kPa P.P.=50 kPa
				13	τw	89				71_		₽				ø		Shelby tube very easy to push GS
				14	55	0	16											Nilcon Vane cannot be pushed P.P.=0 kPa
	Grey silty clay moist	to clayey silt, damp to								70_ 								Nilcon Vane cannot determine
	Grey silty clay (angular), trac limestone incl wet	r, trace gravel se sand, occasional lusion, firm, moist to		15	55	100	5			68_						a B		P.P.=0 kPa P.P.=96 kPa
<u>67.1</u> 14.9	CLAYEY SILT Grey clayey si gravel (angula occasional silt	ilt, some sand, trace ar to sub-angular), t nodules, stiff, wet		16	ss	100	10			67_						F		GS Attempted to push Shelby tube but refusal encounlered on limestone inclusion (retrieved from tip
	At 16.9 m, 0.0	14 m thick silt seam		17	55	100	8			65_ 65_ 64_			•					P.P.=0 KPa
	Trace to some medium grain clayey silt incl	e gravel (fine to led, sub-angular), some lusions, very stiff, wet		18	ss	100	20			63						8		

amec	0							•••••			RECC	RD	OF E	301	RE	HOL	EN	lo.	V02-213E PAGE 3 OF 3
PROJECT	Victor Diamond Project	- Geotechni	cal In	vestig	ation F	Program	n (Win	ter 20	02)								ENG	INEEF	A.Z.
PROJECT NO	TC19417-1003	DRILI	LER	Bo	art Lor	ngyear	(CME	75)	В	ORING M		<u>4.5" H</u>	ST Auge	r <u>/ 2.5</u>	5" HQ	Coring	g LOG	GEDE	BY <u>P.M./R.K.</u>
CLIENT	De Beers Canada	LOC#		N <u>Cla</u>	ay/Till S	Stockpi	les (A	MEC	BH CV	02-14)							COM	PILED	DBY <u>D.M.L.</u>
ELEVATION	82.0 m		RD.	<u>N</u> :	5,857,4	418 E	306,55	4	8	ORING D	ATE <u>Sta</u>	art: 2 M	ar 0,2 E	<u>nd: 3</u>	3 Mar	02	CHE	CKED	BY <u>N.S.V.</u>
SAMPLE TYP AU Auger BU Bulk PS Piston San	ES RC SS TW npler WS	Rock Core Split Spoon Thin Walled Wash Sam	i J Opei ple	n (Shei	by)				ABBF P.P. F U.W. PT	REVIATIO Pocket Pen Net Unit W Standard P	INS etrometer leight troctor Test	P R S k	L. Point QD Rock CR Solid Perm	Load S Quality Core F eability	Strengi y Desig Recove /	th Index gnation ery	x (I ₅₀)	C DS GS	Consolidation Direct Shear Grain Size Analysis
	SOIL PROFILE		S	AMPLI	ES		N		Ê	DYNA RESI	MIC CONE	PENE		P	LASTIC	NATU	IRAL	LIQUID	
ELEV DEPTH (m)	DESCRIPTION	STRAT PLOT	NUMBER	түре	RECOVERY (%)	PT "N" VALUES or RQD	VELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (n	MTO VA	40 6 NE CT OULDED NED SHEAL 40 6	0 8 NILC ▲ IN ▲ R R STRE 0 8	0 100 CON VANI NTACT EMOULD ENGTH (k 0 100	E ED Pa)	MIT WP WATE			LIMIT WL (%)	REMARKS
60.4 21.6 COMPT WEAT Grey ts graine dense 59.4 22.6 END C Water Pnuen At 1.1r Pnuen At 3.7r	PLETELY TO HIGHLY HERED LIMESTONE o light brown sity sand (co d), trace gravel (angular), wet DF HOLE levels (b.g.s.): n. Piezo. #27C0???A m, 29-Mar-02 15:00 n. Piezo. #27C0??B m, 29-Mar-02 15:00	arse very 7.74.74	19 20 21	SS SS SS	25 67	30 90/0.15		20	62										Pnuem. Piezo. S/N: #27C07?7B installed at 20.9m in third testhole adjacent to BH V02-213E P.P.=50 kPa 24 blows for last 0.15m of SPT-SS20 Auger refusal at 22.6 m Probably limestone bedrock

a	med	9											R	ECC	RD	OF	BC	RE	HOL	E N	lo.	V02-212E PAGE 2 OF 2
PRO	DJECT	Victor Diamond Proje	ect - Geo	techn	ical I	nvesti	gation I	Program	m (Wir	iter 20	02)									ENG	INEEF	R <u>A.Z.</u>
PRO	JJECT NO.	TC19417-1003		DRIL	LER	B	oart Lor	ngyear	(CME	<u>75)</u>	B		MET		<u>4.5" H</u>	ST Au	ger / 2	.5" HC	<u>) Corin</u>	g LOG	GEDE	BY <u>P.M./R.K.</u>
		De Beers Canada		LOC	ATIC	XN <u>P</u>	oposed	t Treat	ment F	<u>rlant &</u>	Water	Tanks		<u>-CBH</u>	CV02	06)				CON	IPILED	184 <u>D'W'F'</u>
ELE	VATION	84.3 m		COC	RD.	<u>N</u>	5,854,9	937 E	305,54	3	B	ORING	S DATE	= <u>Sta</u>	rt: 28	-eb 02	Enc	1: 1 Ma	ar 02	CHE	CKED	ых <u>N.S.V.</u>
SAI AU BU PS	MPLE TYPE Auger Bulk Piston Sam	S	RC Roc SS Spli TW Thir WS Was	k Core t Spoo Walle sh San	n Id Ope Inple	en (She	alby)				ABBF P.P. F U.W.V PT	REVIAT Pocket F Vet Uni Standar	FIONS Penetro t Weigh d Procte	meter It or Test	P F S K	L. Poi QD Roc CR Sol Per	nt Loak ck Qua id Core meabil	ity Des Recov	ath Inde Ignation ery	x (l ₅₀)	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			S	Sampl	ES		TER			DY RE	NAMIC	CONE	PENE		N -		- NATI	JRAL		
ELEV	, H	DESCRIPTION		AT PLOT	UMBER	TYPE	OVERY (%)	N" VALUES	. / PIEZOME STALLATIOI	JEPTH (m)	EVATION (m	MTO	0 4 VANE TACT EMOUL	0 6 DED	0 8/ NILC ▲ 11	D 10 ON VA ITACT EMOUL	0 JNE _DED	LIMIT Wp H	" MOIS CONT 		LIMIT WL	REMARKS
(111)				STF	z		REC	SPT "	MELL		EL	UNDR 2	AINED	SHEAI	RSTRE	NGTH	(kPa) 0	1 WA	0 2	0 3	0 0	
				F						-	-											
					14	RC	100	47	1	- 	-											SCR=57% Core barrel
									1	-	74						I					jammed at 10.1m
					15	RC	82	46		È	-											SCR=64%
										_11												
				Ì⊨							73_											
										-												P.L.=1.88 MPa (11.3 to 11.6m
										-												segment)
1				F	16	RC	87	61		-12	-											SCR=75%
				F							72_											P.L.=1.0 MPa (11.9 to 12.1m
	At 12.4	5m, 0.1m thick fracture	ed zone	-						-	-											segment>
				ļ.	L					Ē	-											
				—	1.7			E0		13	-											SCR=70%
70				H	"	RC	90	50		Ę	71_											
13	4 END O	FHOLE				U	1															
Ε																						
2																				ł		
5									1													
202																						
2 50																						
B									1	l I												
2					ĺ				1													
2									1													
5						l			l	l	l	ļ	ļ		l			l			ļ	l
Ē									1											-		
2																						
ž									l													
5				1					{													
AME																						
									ŀ													

A PRO.	DEC JECT <u>Victor Diamond Project - Geo</u>	techr	nical i	Investig	gation	Progra	<u>n (W</u> int	<u>er 20</u>	02)		F	, EC			• A	ORE			9 No.	V02-211E PAGE 2 OF 3
PRO	JECT NO. TC19417-1003	DRI	LEF	R BC	part Lo	ngyear	(CME 7	75)	В		IG ME	THOD	4.5"	HST	Auger /	2.5" H	Q Cor	- ing LO	GGED E	BY P.M.
CLIE	NT De Beers Canada	LOC	ATIC	ON <u>Co</u>	onstruc	tion Ca	mp/Off	ices	(AMEC	C BH	CV02-	05)						_ co	MPILED	BY D.M.L.
ELEV	ATION 83.8 m	coc	DRD.	<u>N</u>	5,855,	227 E	306,01	1	В	ORIN	ig da	TE <u>S</u>	tart: 2	6 Feb	<u>02 E</u>	nd: 27	Feb 02	<u>2</u> CH	ECKED	BY <u>N.S.V.</u>
SAM AU BU PS	PLE TYPES RC Roc Auger SS Spli Buk TW Thir Piston Sampler WS Was	k Con t Spoo t Walk sh Sar	ə xn əd Op mple	ien (She	alby)				ABBF P.P. U.W. PT	REVI, Pocke Wet U Stand	ATION t Penel nit Wei ard Pro	S rometer ght ctor Tes	st	P.L. RQD SCR k	Point Lo Rock Qu Solid Co Permea	ad Stre Jality De vre Recc bility	ngth Inc signatio overy	be x (I ₅₀) on	C DS GS	Consolidation Direct Shear Grain Size Analys
ELEV DEPTH (m)	SOIL PROFILE	STRAT PLOT	NUMBER	SAMPL	ECOVERY (%)	T N VALUES or ROD	ELL / PIEZOMETER INSTALLATION	DEPTH (m)	ELEVATION (m)		PYNAM 20 O VAN INTACI REMOL RAINE	IC CONTANCE 40 E JLDED D SHE	AR ST	80 LCON INTA REM RENG		PLAS LIMIT WP I	TIC MO CO	TURAL ISTURE NTENT W -0 ONTEN	LIQUID LIMIT W. 	REMARKS
					α	5	3 1 17		-	┢──	1		+	1	100	+		\int	30	P.P.>430 kPa
								_10	74											
l l					67		88	•	73_	 		_			_					P.P.>430 kPa
72.2			13	55	67	44		<u>11</u>												
11.0	Grey sandy silt, some clay, trace gravel (sub-angular), firm, low							_12	72_	-			-			1		┨	-	
2	plasticity, wet		14	ss	72	7											-	46		GS
								_13												
		Ø	 						70_	1_		_				_	_			
			15	ss	67	8		14										¢		
								15	69_		+		+	-		+	-			
68.1			16	TW	83															
15.7	COMPLETELY TO HIGHLY WEATHERED LIMESTONE	14.7						16	68_				+					+		
	Beige sandy silt, trace gravel, completely weathered, very dense, wet	4 14 14 14	17	SS N	100	50/0.1: 50/0.1:			-											Autor rofusal at
66.4	Brown limestone, highly weathered, porous (30% porosity), fractured	14 H H	19	RC	0	0		17	67											16.6 m Switched to HQ coring SCR=0%
17.4	n throughout Jointing: flat and dipping orientation; close to very close spacing; sand and silt fillings Strength: very low		20	RC	50	0			66_											SCR=6%
	Brown limestone, highly to moderately weathered, sandy structure Jointing: flat, dipping orientation; vertical, close spacing; rough		21	RC	74	0		-	65_											SCR=20%

Communed on Ne

a	nec	9	4 .							~~·		R	ECC	RD	OF	BC	RE	HOL	EN	10.	V02-211E PAGE 3 OF 3
PROJ		Victor Diamond Project - G	eotechi	nical I	investij	gation f	Program	m (Wir	<u>iter 20</u>	02)				4 5 1 1	ET A	aor / 2			ENG		K <u>A.Z.</u>
CUEN	EGT NO.	<u>TC 19417-1003</u>			<u> </u>	Dan Lor	tion Co		(5) Teore J				HUD _	4.5° H	ST AU	ger / <u>z</u>	2.5" HL				317 <u>P.M.</u>
		83.8 m	CO		N <u>0</u>	5 855 (001 Ca	306.01	1	R			5 <u>7</u> F Sta	rt 26	 Feb 02	- End	1· 27 F	eh 02	CHE		BY NSV
		0.00	_ 00			0,000,2		000,0						11. 20		<u> </u>	u. 27 1	00 02			
AU A BU E PS F	PLE TYPE Auger Bulk Piston Samp	S RC R SS S TW T DerWS W	ock Cor plit Spoo hin Wall /ash Sa	e on ed Op mple	en (She	alby)				P.P. F U.W.V PT S	REVIA Pocket F Vet Uni Standar	Penetro t Weigh d Procto	meter nt or Test	F 5 k	P.L. Poi RQD Roo SCR Sol	int Load ck Qua lid Core meabil	d Strenş ility Des a Recov lity	ignation ery	× (I ₅₀) I	C DS GS	Consolidation Direct Shear Grain Size Analysis
•		SOIL PROFILE		5	SAMPL	ES		N ER		e	DY RE	NAMIC	NCE P	PENE LOT			PLASTI	NATI	URAL		
ELEV DEPTH (m)		DESCRIPTION	STRAT PLOT	NUMBER	түрЕ	RECOVERY (%)	SPT "N" VALUES or ROD	WELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (n	2 MTO □ IN ■ RE UNDR	0 <u>4</u> VANE TACT EMOUL AINED 0 4	06 DED SHEAI	0 8 NILC ▲ II ▲ F R STRE 0 8	0 10 CON VA NTACT REMOUI ENGTH 0 10	NE LDED (kPa)	WP WP WAT	0 2	TURE TENT N ONTEN 0 3	UMIT WL 	REMARKS
	Strengti At 19.3r	n: low n, 0.5m thick fractured zone	H H H	22	RC	73	0		-												
64.0 19.8 63.7 20.1	0.3m th Chalky	ick karst void limestone, highly altered							20	64_											SCR=19%
	(oxidation karstific 20.4m; low stre	on); oxidation along ation between 19.8m and karst voids (0.5cm to 2cm); ngth								63_							-				
62.3				23	RC	93	24		21												SCR=53%
21.5			μ	-					F								Į				
6 <u>1.9</u> 21.9	ENDO	F HOLE	_Π		┢╌║		├	ା⊒ି	<u> </u>	02_							-	<u> </u>		<u> </u>	Standpipe
	Standpi At 2.3m At 2.4m	pe water level (b.g.s): , upon completion , 28-Mar-02 17:30																			screen to 18.3m, sand to 15.2m, bentonite to 14.6m, grout to surface. 0.74m stickup

an	nec®		RECORD OF BOREHOLE No. V02-210E PAGE 2 OF 3
PROJ	ECT Victor Diamond Project - Geo	cal Investigation Program (Winter 2002)	ENGINEER A.Z.
PROJ	ECT NO. TC19417-1003	LER Boart Longyear (CME 75) E	SORING METHOD 4.5" HST Auger / 2.5" HQ Coring LOGGED BY R.L.
CLIEN	NT De Beers Canada	ATION Crushing Area (AMEC BH CV02-	03) COMPILED BY _D.M.L.
ELEV	ATION <u>82.9 m</u>	RD. <u>N 5,855,675 E 306,827</u> E	30RING DATE <u>Start: 25 Feb 02 End: 26 Feb 02</u> CHECKED BY N.S.V.
SAM AU BU PS	PLE TYPES RC Roc Auger SS Spli Bulk TW Thin Piston Sampler WS War	ABB P.P. d Open (Shelby) U.W. ple PT	REVIATIONS P.L. Point Load Strength Index (Isg) Pocket Penetrometer RQD Rock Quality Designation C Consolidation Wet Unit Weight SCR Solid Core Recovery DS Direct Shear Standard Proctor Test k Permeability GS Grain Size Analysis
	SOIL PROFILE	SAMPLES	
ELEV DEPTH (m)	DESCRIPTION	NUMBER TYPE RECOVERY (%) SPT "N" VALUES or ROD MELLI PIEZOME INSTALLATIO DEPTH (m) DEPTH (m)	20 40 60 80 100 LMIT MOISTURE LMIT CONTENT LMIT MTO VANE NILCON VANE ILMIT CONTENT LMIT CONTENT LMIT CONTENT LMIT CONTENT LMIT CONTENT LMIT Ware REMARKS □ INTACT Δ INTACT Δ INTACT Ware REMARKS Imit MIT Ware REMARKS Imit Imit Imit Content Imit Imit Content Imit Imit Content Imit Imit Content Imit Imit </td
71.2		12 SS 58 5 58 7 11 72	
11.7	SANDY SILT TILL Brown sandy silt, some clay and gravel, firm to soft, low plasticity, wet	71	Tip of tube is bent
		13 TW 88	
<u>69.2</u> 13.7	SHATTERED LIMESTONE Light brown to brown, angular gravel sizes, trace silt, trace clay, moderately weathered, medium to low streads wat	14 SS 100 1000.22 [Switched to HQ coring @ 13.7 m SCR=0%
	At 14.5m, 0.2m thick yellowish	16 SS 0 20/0.01	
	brown chalky limestone, completely weathered (limestone fragments in sitly matrix)	17 RC 43 0 - 15 68	Pruem. Piezo. S/N: #27C0045 Installed at 15.1m SCR=0%
		18 RC 71 0	SCR=0%
	Yellowish brown chalky limestone, completely weathered (limestone fragments in silty matrix)	19 RC 38 0 66_	SCR=0%
		20 RC 7 0 -18 65	SCR=0%
	Highly to moderately weathered, micro-karstification (15%),	19 64_	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>
	Continued on Novt Bago		

an	nec	9								···	F	ECC	ORD	OF B	OR	EH	OLE	E No.	V02-210E PAGE 3 OF 3
PRO.	JECT	Victor Diamond Project - G	eotechr	nical	nvest	igation I	Progra	m (Wir	ter 20	02)							(ENGINEE	R <u>A.Z.</u>
PRO.	JECT NO.	TC19417-1003	_ DRI	LER	<u>B</u>	loart Lo	ngyear	(CME	75)	В	ORING ME		4.5" H	ST Auger	/ 2.5"	HQC	oring l	LOGGED	BY <u>R.L.</u>
CLIE	NT	De Beers Canada	_ LOC	ATIC	ON <u>C</u>	rushing	Area	(AME	C BH	CV02-0	13)							COMPILE	DBY D.M.L.
ELEV	ATION	82.9 m		ORD.	<u>_N</u>	5,855,	675 E	306,82	27	8	ORING DA	TE <u>Sta</u>	art: <u>25 F</u>	-eb 02	End: 2	3 Feb	02 (DBY <u>N.S.V.</u>
SAM AU BU PS	PLE TYPE Auger Bulk Piston Samj	S RC P SS S TW T	Rock Con Split Spoo Thin Walk Vash Sar	a on ad Op mple	en (Sh	elby)				ABBF P.P. I U.W.N PT	EVIATION Pocket Penet Net Unit Wei Standard Pro	S rometer ght ctor Test	P R S k	L. Point L QD Rock C CR Solid C Perme	oad Sti Juality [ore Re ability	ength Design covery	Index (ation	l ₅₀) DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			SAMP	LES	r	NER N		ê	DYNAM RESIST	ANCE P			PLA	STIC .	NATUR	AL LIQUI	a
ELEV DEPTH (m)		DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOME INSTALLATIC	DEPTH (m)	ELEVATION (n	UNDRAINE 20 20 20	40 6 E JLDED D SHEAI 40 6	NILC ▲ IN ▲ R R STRE	ON VANE NTACT EMOULDE NGTH (KF 0 100	LIM W ED Pa) V	/ATEF		₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	REMARKS
	fossilife Jointing dipping spacing planar s	rous : bedding, cross; flat, orlentation; very close ; rough undulating to rough aurfaces	HHHH	21	RC	82	0												SCR=11%
			HH	22	RC	o	0		_20 E	63_									SCR=0%
	Slightly low stre	to moderately weathered, ngth	<u> </u>	23	RC	30	0		21	62		-							SCR=0%
			<u> </u>	24	RC	37	0		22	61									SCR=1%
			14 H	25	RC	30	0			-									SCR=0%
23.7	LIMES Light br slightly Jointing close to undulat Strengt	ONE own chalky limestone, weathered : flat, vertical orientation; moderate spacing; rough ing surfaces h: medium		26	RC	2	0		24	59									SCR=0%
56.7	r			27	RC	50	21		25	58_									SCR=29%
26.4	END O Water I Pnuem At 1.3m At -0.8r Pnuem At 2.7n At 3m,	F HOLE evels (b.g.s.): . Piezo. #27C0204 ., upon completion n, 28-Mar-02 18:00 Piezo. #27C0045 n, upon completion 28-Mar-02 18:00																	(26 to 26 Im segment)

an	nec	0											RE	ECC	RD	OF	BC	RE	HOL	E N	lo.	V02 PAG	209E
PROJ	ECT	Victor Diamond Pro	oject - Geo	techn	iical I	Investic	ation	Program	n (Win	ter 20	02)									ENG	INEEF	۲. 	<u>A.Z.</u>
PROJ	ECT NO.	TC19417-1003		DRIL	LER	BC	oart Lo	ngyear	(CME	75)	В	ORING	METH	HOD _	4.5" H	<u>ST Au</u>	ger / 2	<u>.5" HC</u>	Corin	gLOG	IGED I	BY .	<u>P.M.</u>
	1T	De Beers Canada		LOC	ATIC	DN <u>Po</u>	tential	Camp	Site (A	lterna	tive) (AMEC	BH C	<u>v02-18</u>	5)					CON	IPILE	DBY_	D.M.L.
ELEV	ATION	83.2 m		coc	DRD.	<u>N</u>	5,854,	315 E	306,35	9	B	ORING	DATE	Sta	rt: 24 f	eb 02	Enc	1: 25 F	eb 02	CHE	CKED	BY _	N.S.V.
SAM AU BU PS	PLE TYPE Auger Bulk Piston Sam	ES	RC Roc SS Spli TW Thir WS Was	k Core I Spoo Walke sh Sar	e in ed Op nple	en (She	lby)				ABBF P.P. F U.W.V PT S	REVIAT Pocket F Vet Unit Standard	IONS Penetroi t Weigh d Procto	meter t or Test	P R S K	L. Poi QD Roc CR Sol Per	nt Load ck Qua id Core meabil	l Streng lity Desi Recov ity	ith Inde: gnation ery	X (1 ₅₀)	C DS GS	Conso Direct Grain	lidation Shear Size Analysi
		SOIL PROFILE			ş	SAMPL	ES		μ Έ		(DY	NAMIC	CONE NCE P	PENE		- AK	DIACT	NATL	JRAL			
ELEV DEPTH (m)		DESCRIPTION		STRAT PLOT	NUMBER	түре	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (m	2 MTO IN RE UNDR	0 40 VANE TACT EMOULI AINED 0 40	0 6 DED SHEAI 0 6	0 8 NILC ▲ IN ▲ R R STRE 0 8	0 10 ON VA NTACT EMOUL NGTH 0 10	0 NE DED (kPa)i 0	WAT			₩ι ₩ι 1 Γ (%)	R	EMARKS
73.4										-	1												
	END O Water I Pneum At 1m, Standp At 2.3m	F HOLE evels (b.g.s.): . Piezo. 29-Mar-02 ipe at 6.1m h, 29-Mar-02									73_												

an	nec®										RECORD OF BOREHOLE No. V02-208 PAGE 2 OF
PRO.	JECT Victor Diamond F	Project - Geote	chni	ical I	nvest	igation I	Progra	<u>m (Wir</u>	nter 20	02)	ENGINEER <u>A.Z.</u>
PROJ	JECT NO. TC19417-1003	[ORIL	LER	B	oart Lor	ngyear	(CME	75)	_ в	BORING METHOD _4.5" HST Auger / 2.5" HQ. Coring LOGGED BY _ P.M./R.
CLIEN	NT <u>De Beers Canad</u>	a L	.0C/	ATIC	<u>P</u>	otential	Camp	Site (/	Alterna	<u>tive) (</u>	(AMEC BH CV02-04) COMPILED BY D.M.L.
ELEV	/ATION <u>84.3 m</u>		200	RD.	_N	5,854,	127 E	305,4	12	B	BORING DATE Start: 23 Feb 02 End: 24 Feb 02 CHECKED BY N.S.V.
SAMI AU BU PS	PLE TYPES Auger Bulk Piston Sampler	RC Rock SS SplitS TW Thin V WS Wash	Core Spoor Valle Sam	n di Ope nple	en (Sh	eiby)				ABBF P.P. F U.W.N PT S	BREVIATIONS P.L. Point Load Strength Index (I _{sc}) Pockel Penetrometer RQD Rock Quality Designation C Consolidation V. Wet Unit Weight SCR Solid Core Recovery DS Direct Shear Standard Proctor Test k Permeability GS Grain Size Analy
	SOIL PROFILE			S	AMP	LES		ER 2			
ELEV DEPTH (m)	DESCRIPTION		STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	PT "N" VALUES or RQD	VELL / PIEZOME INSTALLATION	DEPTH (m)	ELEVATION (m	20 40 60 80 100 PLASIC MOSTURE LMUT CONTENT LMUT LMUT MTO VANE NILCON VANE wp w w, REMARKS II INTACT △ INTACT →
			Ц				S S	-	-		segment)
		-		11	RC	100	70		10	74_	SCR=70%
		-		12	RC	100	31		- - - - - - - - - - - - - - - - - - -		SCR=49%
				13	RC	100	75		- - - - - - - - - - - - - - - - - - -	73	SCR=92%
									13	71_	segment)
				14	RC	93	72	1	- - - - - - - - - - - - - - - - - - -		SCR=79% P.L.=3.35 MPa (13.8 to 13.9m segment)
			\square \square \square	15	RC	93	67			70_	SCR=80%
			┥┥┝						- - - - - - -		
				16	RC	100	25		- - - - - - - - - - - - - - - - - - -	68_	3- SCR=47%
]	È	67.	, 1
				17	RC	100	41		- - - 18	88	SCR=61%
			HHH						- - - - - -		

an	nec [©]										R	ECC	RD	OF	BC	RE	HOI	LE N	lo.	V02-208E PAGE 3 OF 4
PRO	JECT Victor Diamond Project - Geol	lechn	ical I	nvesti	gation	Progra	m (Wir	nter 20	02)									ENG	INEEF	₹ <u>A.Z.</u>
PRO	DECT NO. <u>TC19417-1003</u>	DRI		× <u>B</u>	oart Lo	ngyear	(CME	75)	B	ORING	MET		<u>4.5"</u> ⊢	IST AL	iger / 2	2.5" HC	<u>Corir</u>	ng LOG	GEDI	3Y <u>P.M./R.L.</u>
FLEV	ATION 84.3 m	COC		<u>יין</u> אל א	5 854	127 F	305.4	<u>Aiterna</u> 12	(IVE) (<u>VUZ-U</u> z	+) art: 23	Feb 0		d: 24 F	eb 02	CUN		IBY NSV
SAM							000,4									d Stree				
AU BU PS	Auger SS Split Bulk TW Thin Piston Sampler WS Was	Spoo Walke h Sar	a In And Op Note	en (She	elby)				P.P. I U.W. PT	Pocket F Wet Unit Standard	Penetro Weight Proct	meter ht or Test	7 F S W	RQD Ro SCR So	ini Loa ick Qua ilid Core imeabi	lity Des Recov	ignation rery	אל (1 ₅₀) ז	C DS GS	Consolidation Direct Shear Grain Size Analysis
	SOIL PROFILE	ļ	<u>۽</u>		LES	T	N ER		Ê	DY RE						PLAST			LIQUID	
ELEV DEPTH (m)	DESCRIPTION	STRAT PLOT	NUMBER	ΞΥΡΕ	RECOVERY (%)	PT "N" VALUES or RQD	VELL / PIEZOME INSTALLATIC	DEPTH (m)	ELEVATION (r		VANE TACT EMOUL AINED	DED SHEAM	0 0 NIL(▲ I ▲ F R STRI 0 8	CON V NTACT REMOU ENGTH	ANE LDED I (kPa)	UMIT Wp I WAT			LIMIT 	REMARKS
			-			s S	>	 -	-			· · · · ·			<u> </u>					
			18	RC	87	19		20	65_											SCR=32%
	At 20.1m, 0.15m thick karst void		-						64_											Core barrel dropped Lost core between 20.15 and 20.3 m
			19	RC	87	63		21	63_											SCR=63%
	Slightly to moderately weathered, slightly micro-karstified							22	62_											
			20	RC	97	55		23												SCR=58%
	At 23m, 0.2m thick karst void filled with limestone gravel sizes, some silt, trace clay							24												
			21	RC	11	0			60_											SCR=0%
002 2:06:27 PM	At 24.8m, 0.3m thick karst void filled with silt, some limestone gravel sizes, trace clay							25	59_						; 					
J Date: 05/15/2	At 26.2m. 0.1m thick karst void filled		22	RC	20	0		- - - 26	58_					:						SCR=5%
-ile: TC19417.GP	with dark grey silt, some limestone gravel sizes, trace clay Slightly weathered, slightly micro-karstified At 26.3m, 0.08m thick limestone with grey silty clay and shell-like		23	RC	41	30		27												Core barrel clogged Retrieved 25 mm SCR=33%
EO MWS	inclusions, wet								57_											
ormat AMEC G	Slightly to moderately weathered, medium grey banding between 28 and 28.3 m							28	56_											

	S Victor Diamond Pre	piect - Gent	echnir	cal Ir	vestio	ation F	Program	n (Win	iter 20	102)		RE	ECC	RD	OF	BC	RE	HOL	ENG	IO.	V02 PAGE	-208E 4 OF 4
PROJECT NO.	TC19417-1003	<u>100. 000</u>	DRILI	FR	Bo	artion	novear		75)	<u>, s</u>	ORING			4.5" H	ST Aur	ner / 2	5" HC) Corin	a I OG	GEDE	·	PM/RI
CLIENT	De Beers Canada				N Po	tential	Camp	Site (A	lterna	tive) (BH C	V02-04		<u></u>) BY	D.M.L.
	84.3 m		COO	RD	N <u>1 v</u>	5 854 1	27 F	305 41	2	B			: Sta	rt: 23	Feb 02	End	1 24 F	eb 02	CHE		BY	N.S.V.
AU Auger BU Bulk PS Piston Sam	pler	RC Rock SS Split TW Thin WS Was	Core Spoon Walled h Samj	i 1 Ope ple	en (Shel	by)				P.P. U.W. PT	REVIAT Pocket F Net Unit Standard	Penetro Weigh d Procte	meter t or Test	F F S K	P.L. Poli RQD Roc SCR Soli Per	nt Load ck Qua id Core meabil	d Strenş lity Des Recov ity	ignation ery	x (1 ₅₀) 1	C DS GS	Consoli Direct S Grain S	dation Thear Ize Analys
	SOIL PROFILE			S	AMPLI	ES		TER		_	DY RE	NAMIC	CONE	PENE)N 		NATI	JRAL			
ELEV DEPTH	DESCRIPTION		AT PLOT	UMBER	TYPE	OVERY (%)	N" VALUES r RQD	. / PIEZOME)EPTH (m)	EVATION (m	2i MTO □ IN ■ RE	0 4 VANE TACT MOUL	DED	0 8 NiLC ▲ II ▲ F	0 10 CON VA NTACT REMOUL	0 INE IDED			TURE TENT V		RE	MARKS
(m)			STF	z		REC	ЪТ " 0	NELL	u	E	UNDR 2	AINED 0 4	SHEAN 0 6	R STRE	ENGTH 0 10	(kPa) 0	1	0 2	0 3	(%) 0		
				24	RC	100	70	-	29	-											SCR=7	0%
55.0 29.3 END O	FHOLE	<u> </u>								55												
												i										
													- 									
																				-		

a	nec		0						4			R	ECC	RD	OF	BO	RE	HOI	EN	lo.	V02-207E PAGE 2 OF 2
PROL		Victor Diamond Project -	Geotechn		nvestig	lation I	rogra	m (Wir	nter 20 75)	02)				4 60 11	OT 4				ENG		≺ <u>A.Z.</u>
PROL	JECTINO.	1019417-1003			<u> </u>	ban Loi	ngyear		/5)	B				4.5" H	STAU	ger / 2	.5" HG				BY <u>P.M.</u>
		De Beels Caliada	LOU		N <u>PC</u>			<u>Sile (/</u>					<u>vuz-11</u>				4. 00 E	ah 00			DBT D.M.L.
		<u></u>				0,000,0	<u> </u>	300,90	<u>, , , , , , , , , , , , , , , , , , , </u>	B		DAT		11. 221			J. ZJ F				IBT <u>N.S.V.</u>
SAM AU BU PS	PLE TYPE Auger Bulk Piston Samp	S RC SS TW pler WS	Rock Core Split Spoo Thin Walle Wash San	e on ed Ope nple	ən (She	ilby)				ABBF P.P. J U.W.V PT	REVIA Pocket I Net Uni Standar	IONS Penetro t Weigh d Procto	meter t or Test	P R S k	P.L. Poi RQD Roo CR Sol Per	nt Load ck Qua id Core meabil	d Streng lity Des Recov lity	gth Inde ignatior ery)))	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE		s		ES		Z ER		2	DY RI	NAMIC	CONE	PENE			PI ASTI		URAL		
ELEV DEPTH (m)		DESCRIPTION	STRAT PLOT	NUMBER	түре	ECOVERY (%)	T "N" VALUES or ROD	ELL / PIEZOME INSTALLATIO	DEPTH (m)	ELEVATION (n	MTO II IN II RI UNDR	0 4 VANE TACT EMOUL AINED	DED	0 8 NILC ▲ IN ▲ R R STRE	0 10 CON VA NTACT EMOUI	NE DED (kPa)	LIMIT WP WAT			CIMIT ₩L 	REMARKS
						æ	Р.	3			2	0 4	0 6	0 8	0 10	0		0 2	0 3		
			1. 																		
72.9									<u>10</u>	73_											Auger refusal at 10.1 m
10.1	SHATT Light br sizes, si weather	ERED LIMESTONE own, coarse to fine gravel lightly to moderately red, low strength		12	RC	67	o														soring SCR=0%
10.7	END OI	FHOLE			/ I				- -												Casing bit wore off casing stem, wireline broke. Coring terminated

a	nec		0		_,,,						001		RI	ECC	RD	OF	BC	RE	HOI	EN	10.	V02-206E PAGE 2 OF 2
PROJ		VICTOR Ulamond Project	- Geotec	nnic >"	<u>ai in</u>	vestig	ation F	-rograi	m (Win	<u>ter 20</u> 75\	<u>UZ)</u>		-		A 5" 1 "	ST A.		E UC		ENG		<u>A.Z.</u>
		De Beers Canada	יע ור	∿LL)∩∆	.с. г. ТІЛА	<u> </u>	n Muel	ryyear kea Te	st Pad	<u>73)</u> F2 (4			∍ IVIE I I 02_∩Ω\	HUD _	4.5 H	JIAU	ger / 2	.5 HL			NDII EL	и <u>Р.М.</u> ЭВҮ ОМІ
ELEV	ATION	83.4 m	C()))	RD.	N:	5.854.9	993 E	306.42	2	B			E Sta	rt: 21	Feb 02	Enc	1: 22 F	eb 02	CHE		BY N.S.V.
SAM		S 50		010			,,										int Loc	1 Street	ath leda			
AU BU PS	Auger Bulk Piston Samp	bler WS	Split Sp Thin Wa Wash S	ore oon alled Samp	Oper le	ı (She	ilby)				P.P. F U.W.V PT	Pocket I Vet Uni Standar	Penetro t Weigh d Procte	meter nt or Test	F 5 k	CR Sol	ck Qua iid Core meabi	lity Des Recov	ignation ery	1 1	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE			SA	MPL	ES		N ETER		Ê	DY RE		NCE P	LOT			PLAST		URAL	LIQUID	
ELEV DEPTH (m)		DESCRIPTION	TDAT DI OT		NUMBER	түре	COVERY (%)	r "N" VALUES	ILL / PIEZOMI	DEPTH (m)	ELEVATION (MTO IIIN RE UNDR	VANE TACT EMOUL	.DED SHEAI	NILC ▲ II ▲ F		NE LDED (kPa)	UMIT Wp I	TER CC		LIMIT WL 	REMARKS
							8	SPI	N N		<u> </u>	2	0 4	0 6	08	0 10	ò	1	0 2	0 3	0	RI =1 02 MPa
										10												9.3 to 9.5m segment)
					40		07	22			73_											
					12		61	20		- 11												SCR=58%
	Light ye limestor Jointing	llowish brown chalky ne, moderately weathered bedding and cross joint	d L		_																	
	flat oriei surface: Limesto 11.5 m)	ntation; rough undulating s ne (same as from 7.3 m	to		13	RC	93	27		12 	71_											SCR=46%
								 		13												
					14	RC	100	97			70_											SCR=100%
13.8	END OI	FHOLE																	-			
																					:	

a	nec	0			*****						F	RECO	ORC) OF	BC	RE	HOI		No.	V02-205E PAGE 2 OF 2
PRO.	JECT	Victor Diamond Project - Ge	otec <u>hr</u>	nical	Investi	gation	Progra	m (Wir	<u>nter 20</u>	02)								ENG	SINEE	R <u>A.Z.</u>
PRO.	JECT NO.	TC19417-1003	DRI	LER	₹ <u>B</u>	oart Lo	ngyear	(CME	75)	В	oring Me	THOD .	<u>4.5" </u>	HST AL	uger / 2	2.5" HC	Corin	ng LOG	GEDI	3Y <u>R.L./P.M.</u>
CLIEI	NT	De Beers Canada	LOC	ATIC	ON <u>F</u>	en <u>Mu</u> s	keg Te	st Pad	F1 (/	MEC I	3H <u>CV02-0</u>)7)						CON	IPILE) BY
ELEV	ATION	84.0 m	coc	DRD.	N	5,854,	749 E	305,9	34	В	ORING DA	TE <u>Sta</u>	<u>art: 20</u>	Feb 0	2 En	d: 20 F	eb 02	CHE	CKED	BY <u>N.S.V.</u>
SAM AU BU PS	PLE TYPE Auger Bulk Piston Sam	ES RC RC SS Sp TW Th peer WS W	ock Con blit Spoc hin Walk ash Sar	e in ed Op mple	en (Sh	elby)				ABBF P.P. I U.W. PT	REVIATION Pocket Pene Wet Unit We Standard Pro	IS trometer ight octor Test		P.L. Po RQD Ro SCR So k Po	oint Loa ock Qua olid Corr armeabi	d Stren Ility Des e Recov	gth Inde lignatior rery	ax (I ₅₀) N	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE		5	SAMP	LES		Ë,			DYNAN	IC CONE				DI ACT	n NAT	URAL		
ELEV DEPTH (m)	1	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOME	DEPTH (m)	ELEVATION (m	20 MTO VAN □ INTAC ■ REMO UNDRAINE 20	40 6 T ULDED ED SHEA 40 6	NIL ▲ RSTR	80 1 CON V INTACT REMOU REMOU RENGTH 80 1	00 ANE JLDED H (kPa)	WA1		ITURE ITENT W D XNTEN 20 3	UNAD UMIT 	REMARKS
74.3				12	TW	75	1		E	-										GS
9.8	COMP WEATI Light bi very de	LETELY TO HIGHLY HERED LIMESTONE rown silty sand, trace gravel, inse, wet	<u> </u>							74										High resistance to augering at 10.4m Auger refusal at 10.9 m Switched to HO
73.2	LIMES	TONE	- É	13	SS		50/0.16		F 11	73										coring
	Light bi modera Jointing flat to d	rown limestone, slightly to ately weathered, fossiliferous 3: bedding and cross joints; lipping orientation; rough ing to rough planar surfaces;	HHH	14	RC	71	0			-										SCR=4%
	tight, h Strengt	ard, non-softening joints h: medium		15	RC	76	o		12	72										. SCR=0%
	At 12.6 brown : Chalky highly v	m, 0.1m thick yellowish siltstone layer limestone, moderately to weathered, low strength nick siltstone layer over	НННН	16	RC	82	10		13	71_										P.L.≈2.05 MPa (13.0 to 13.2m segment) SCR=27%
	iimesto 12.6m)	ne (same as from 10.9m to	HHH	17	RC	54	a		14	70_										SCR=23%
EL 1 0000	Chaiky 12.7m	limestone (same as from to 13.6m)	НННН	18	RC	100	11		- - - - - - -	69										SCR=28% P.L.≓1.06 MPa (15.6 to 15.7m
67.9 16.1 67.0	SILTS Light b limesto Jointing orienta Strengt	TONE rown siltstone with few ne interbeds, highly altered j: bedding joints; flat tion; very close spacing th: very low		19	RC	80	0		16 	68_										SCR=28%

an	nec	9									RE	COF	RD C	OF BC	RE	HOL	E N	lo.	V02-204E
PROJ	ECT	Victor Diamond Project - Ge	<u>otechr</u>	lical I	nvesti	gation I	Progra	m (Wir	nter 20	02)							ENG	INEEF	R <u>AZ</u>
PROJ	ECT NO.	TC19417-1003	DRI	LER	: <u>В</u>	oart Lo	ngyear	(CME	75)	В	BORING METH	OD <u>4</u> .	5" HST	Auger / 2	2.5" HQ	Corin	g LOG	GED I	BY P.M./R.L.
CLIEN	νT	De Beers Canada	LOC		ж <u>в</u>	og Mus	keg Te	st Pad	82 (AMEC	BH CV02-08)						CON	APILE	DBY <u>D.M.L.</u>
ELEV	ATION	84.0 m	co	DRD.	N	5,854,	732 E	306,2	53	в	ORING DATE	Start	17 Fe	002 En	d: 19 Fe	eb 02	CHE	CKED	BY <u>N.S.V.</u>
SAMP AU A BU E PS P	PLE TYPE Auger Bulk Piston Samp	S RC R SS S TW Ti bler WS W	ock Cor dit Spoo din Walk ash Sai	a xn ad Op npie	en (Sh	elby)				ABBI P.P. U.W. PT	REVIATIONS Pocket Penetrom Wet Unit Weight Standard Proctor	eter Test	P.L. RQI SCR k	Point Loa Rock Qua Solid Core Permeabi	d Streng Ility Desi a Recove lity	ith Inde gnation ery	x (I ₅₀)	C DS GS	Consolidation Direct Shear Grain Size Analysis
		SOIL PROFILE		S	SAMP	LES		TER			DYNAMIC (RESISTAN	CONE P				. NATI	JRAL		
ELEV DEPTH (m)		DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOME INSTALLATIOI	DEPTH (m)	ELEVATION (m	20 40 MTO VANE □ INTACT ■ REMOULD UNDRAINED S 20 40	60 ED SHEAR 5 60	80 NILCOI ▲ INTA ▲ REN STREN(80	100 N VANE ACT IOULDED GTH (kPa) 100	WATI	ER CO	TURE TENT V INTEN 0 3	UMIT WL WL T (%)	REMARKS
<u>74.1</u> 9.9	LIMEST Light bri	ONE own limestone, highly to lelv weathered (9.9-11.9m)	HH H					-	- - 10	74_									Auger Refusal at 9.8 m Switched to HQ coring
	modera (11.9-15 fossilife (9.9-10. 11.38-1	5.6m), vuggy porosity, rous, fractured zones 5m, 11.02-11.07m, 1.84m, 12.55-12.62m)		10	RC	91	43			73_									SCR=48%
	Jointing flat-dipp to mode undulati opening Strengtl	: bedding, cross; ing-vertical orientation; close rate spacing; rough ng surfaces; 1 to 2mm is; sand fillings n: low to medium		11	RC	83	33												50D-50%
			HHH						12	72_									P.L.=0.19 MPa
			H H H						13	71_									segment)
				12	RC	95	78		- - - - 14	70_									SCR=83% P.L.=0.19 MPa (13.4 to 13.6m segment)
			HHH							-									P.L.=1.3 MPa (14.3 to 14.6m segment)
68.4				13	RC	99	88		15 	69_									SCR=90%
68.4	END OF	FHOLE																	

HOLE ID:	V-02-233E
RIG ID:	LF 70
CORE SIZE:	HQ
NORTHING:	5856046.7
EASTING:	307226.9
DATUM:	NAD 27 Zone 17
DATE STARTED:	27-Mar-02
DATE FINISHED:	27-Mar-02
LOGGED BY:	Michael Tyne

From (m)	To (m)	LITHOLOGY	DESCRIPTION
0	3	ORGANICS	
3	4.5	CLAY	Moist light-grey clay; soft; medium plasticity.
4.5	6	CLAY	Moist light grey silty clay; soft; low plasticity
6	6.3	SAND	Moist light grey silty sand; poorly sorted.
63	17.6	CLAY	Moist light grey clay very soft; high plasticity; with occasional brown laminations. Below 15m rapid dilatency: <10% limestone gravel; subangular; 5-20mm
17.6	22.5	ORGANICS	Hard and brittle peat.
22.5	29.8	SAND	Moist tan silty sand; fine-grained; occasional 10cm intervals of peat on 40cm spacings. Below 27m trace gravel; subangular to sub-rounded quartz(?).
29.8	30.1	ORGANICS	Peat
30.1	34.8	SAND	Brown silty sand; <5% clay; slight plasticity. From 31.3 - 33m <10% silt & clay; poorly sorted; sub-angular to rounded quartz grains (fine; <5% medium). Below 33m approx. 10% gravel.
34.8	39	CLAY	Moist tan silty sandy clay; medium plasticity; soft. (Diamicton?)
39	41.1	SAND	Moist tan silty sand (fine to medium). Trace subrounded gravel.
41.1	42	SAND	Well-graded sand. Trace rounded quartz gravel. Trace shells. <3% silt.
42	42	EOH	

HOLE ID:	V-02-236C
RIG ID:	LF 70
CORE SIZE:	HQ
NORTHING:	5856112.4
EASTING:	306339.3
DATUM:	NAD 27 Zone 17
AZIMUTH:	180
DIP:	-60
DATE STARTED:	13-Mar-02
DATE FINISHED:	16-Mar-02
LOGGED BY:	SCOTT BOYCE

From (m)	To (m)	LITHOLOGY	DESCRIPTION
0	1.5	ORGANICS	Organics
1.5	18.0	CLAY	Marine clay. No till noted at base of interval.
18.0	24.1	LIMESTONE	Intensely fractured limestone.
24.1	40		Chalky limestone; moderately fractured.
40	50		Weathered broken mottled limestone.
50	52.2		Mottled limestone; moderately fractured.
52.2	52.7		Mud seam
52.7	63		Mottled limestone; competent below 54m.
63	63	EOH	

HOLE ID:	V-02-255E
RIG ID:	RC-100
CORE SIZE:	NQ
NORTHING:	5859055.939
EASTING:	305789.151
DATUM:	NAD 27 Zone 17
DATE STARTED:	24-Mar-02
DATE FINISHED:	25-Mar-02
LOGGED BY:	SCOTT BOYCE

From (m)	To (m)	LITHOLOGY	COMMENTS
Ó	7.4	OVERBURDEN	Marine clay noted at 4.5m and 6m.
7.4	10.55	LIMESTONE	
10.55	10.55	EOH	

HOLE ID:	V-02-254E	
RIG ID:	RC-100	
CORE SIZE:	NQ	
NORTHING:	5858629.8	
EASTING:	305504.5	
DATUM:	NAD 27 Zone 17	
DATE STARTED:	23-Mar-02	
DATE FINISHED:	24-Mar-02	
LOGGED BY:	SCOTT BOYCE	

From (m)	<u>To (m)</u>	LITHOLOGY	COMMENTS
0	6.6	OVERBURDEN	Marine clay noted at 4.5m and 6m.
6.6	9.7	LIMESTONE	
9.7	9.7	EOH	
HOLE ID:	V-02-256E		
----------------	----------------		
RIG ID:	LF 70		
CORE SIZE:	HQ		
NORTHING:	5857075.4		
EASTING:	306580.1		
DATUM:	NAD 27 Zone 17		
DATE STARTED:	27-Mar-02		
DATE FINISHED:	28-Mar-02		
LOGGED BY:	Michael Tyne		

From (m)	To (m)	LITHOLOGY	DESCRIPTION
0	3	CLAY	Moist light grey sandy clay; very soft; medium plasticity; trace pieces of wood.
			Moist light grey sandy clay; firm/stiff; medium plasticity; trace gravel subangular to
3	6	CLAY	rounded quartz.
6	12	OVB	No recovery
12	15	CLAY	Moist light grey clay; soft with medium-high plasticity above 12.4m; below this very stiff with high dry strength.
15	21.7	OVB	No recovery.
			Boulders and gravel (subrounded). Fluvial sediments (SB). One 35 cm piece of
21.7	30.4	BOULDERS	kimberlite (?).
30.4	33	CLAY	Moist olive clay; stiff; medium plasticity. Entrained limestone fragments; 5mm to 55mm; angular.
33	36	SAND	To 35.5m moist silty sand; very stiff; compact and cohesive; black banding; rusty laminations; overall green-blue colour. Below 35.5m moist light grey silty sand.
			Moist silty clay; stiff; medium plasticity; rusty brown; black stained bands. Below 37m
36	37.5	CLAY	light grey/green sandy silty clay.
37.5	44.5	ORGANICS	Dark brown organic silt (peaty). Very stiff; cohesive; compact.
			To 48.3m moist light grey/green silty clay; stiff; low plasticity. Trace coarse sand; subangular. Below this more sandy; medium plasticity; very stiff; mottled with orange
44.5	51	CLAY	(gleying??).
51	51	EOH	

.

APPENDIX 4

Expenditure Details

APPENDIX 4: EXPENDITURE DETAILS

ITEM	TIME/U	JNITS	CHARGE RATE		TOTAL COST	COMMENTS
Camp Costs				T		
(groceries, camp supplies, and travel)						
Drill programme	194	man-days	250	day	48,500	
Airborne programme	12	man-days	250	day	3,000	
					51,500	
Permanent Staff						
Victor Project Manager	2	days	550	day	1,100	
Temporary Staff						
D4 Dozer Dayshift Operator	240	hrs	30	hr	7,200	20 days
D4 Dozer Nightshift Operator	120	hrs	30	hr	3,600	10 days
CME 75 Supervising Geologist	10	days	520	day	5,200	75% of 13 days
CME 75 DS Geologist	13	days	408	day	5,304	
CME 75 NS Geologist	13	days	408	day	5,304	
De Beers On-Site Supervising Geologist	20	days	350	day	7,000	
Assistant Geologist	6	days	350	day	2,100	
RC-100 Driller	64	hrs	42	hr	2,688	include I shift for rig preparation
RC-100 Drill Helper	7	days	325	day	2,275	
					40,671	
Fuel						
RC-100	4	days	205	drum	1,640	
CME-75	13	days	205	drum	6,663	
LF 70	5	days	205	drum	3,075	
D4 Dozer	20	days	205	drum	6,150	
Airborne programme (Helicopter)					3,750	
					21,278	
Equipment Rental						
D4 Dozer	20	days	5600	month	3,613	trail construction and drill support
GPS	14	days	8500	month	3,839	
Diesel Generator	13	days	1240	month	537	for CME 75
Bombardier	0.5	month	5000	month	2,500	mount for RC-100
					10,489	
Drilling Boart Longyear						
LF 70					10,983	metres and hourly charges
CME 75	312	hrs	165	hr	51,480	based on hours only
					62,463	
Mobilisation Costs			1 1			
CME 75					2,677	transportation to site
Drill Consumables						
Hole plug and grout					3,200	
Geophysics						
Fugro	436	line-km	83	line km	36,183	excluding Camp Costs and Fuel

\$229,560

APPENDIX 5

List of Personnel

PERSONNEL INVOLVED IN AIRBORNE PROGRAMME:

De Beers Canada Exploration

Position

Gary Hodgkinson

Project Geophysicist

Fugro Airborne Surveys Inc.

Doug Robinson	Field Processor
Darcy Blouin	Operator
Luke Kukovica	Pilot

PERSONNEL INVOLVED IN DRILL PROGRAMME:

De Beers Canada Exploration	Position
Scott Boyce	On-site Supervising Geologist
Becky Chouinard	Geologist
Michael Tyne	Geologist
Brad Wood	Project Manager

AMEC Earth and Environmental Inc.

Robert Lachance	On-site Supervising Engineer
Randy Knudsen	Soils Engineer
David Brown	Soils Engineer
Pedram Molkara	Soils Engineer

Boart Longyear

Ed Legault	Foreman
Brian Leonard	Driller RC-100

Steve Corey	Driller CME 75
Jamie Goddard	Drillers Helper CME 75
Tim Boone	Driller CME 75
Edmund LeBlanc	Drillers Helper CME 75

Attawapiskat First Nation Technical Services

Bernard Hookimaw	Drillers Helper
John Wheesk	Equipment Operator
John-Paul Martin	Equipment Operator

Moosonee Transportation Ltd.

Oliver Rickard

Equipment Operator



Work Report Summary

Transaction No:	W0260.01255	Status:	APPROVED
Recording Date:	2002-JUL-26	Work Done from:	2001-NOV-21
Approval Date:	2002-OCT-09	to:	2002-MAR-28

Client(s):

171748 DE BEERS CANADA EXPLORATION INC.

Survey Type(s):

			AEM		AGR		AMAG		PDRI	_L
w	ork Report I	Details:	. <u>.</u>							
CI	aim#	Perform	Perform Approve	Applied	Applied Approve	Assign	Assign Approve	Reserve	Reserve Approve	Due Date
Р	1052169	\$9,260	\$9,260	\$1,600	\$1,600	\$0	0	\$7,660	\$7,660	2008-FEB-09
Ρ	1052170	\$373	\$373	\$1,600	\$1,600	\$0	0	\$0	\$0	2008-FEB-09
Ρ	1052177	\$9,260	\$9,260	\$2,000	\$2,000	\$0	0	\$7,260	\$7,260	2008-FEB-09
Ρ	1052178	\$373	\$373	\$2,000	\$2,000	\$0	0	\$0	\$0	2008-FEB-09
Р	1052709	\$9,260	\$9,260	\$0	\$0	\$0	0	\$9,260	\$9,260	2008-FEB-09
Ρ	1052710	\$373	\$373	\$0	\$0	\$0	0	\$373	\$373	2008-FEB-09
Р	1227239	\$20,761	\$20,761	\$3,200	\$3,200	\$0	0	\$17,561	\$17,561	2005-JUL-29
Ρ	1227243	\$23,747	\$23,747	\$6,400	\$6,400	\$0	0	\$17,347	\$17,347	2005-JUL-29
Ρ	1227244	\$23,747	\$23,747	\$6,400	\$6,400	\$0	0	\$17,347	\$17,347	2005-JUL-29
Р	1227245	\$23,747	\$23,747	\$6,400	\$6,400	\$0	0	\$17,347	\$17,347	2005-JUL-29
Р	1227246	\$68,182	\$68,182	\$6,400	\$6,400	\$46,379	46,379	\$15,403	\$15,403	2005-JUL-29
Ρ	1246006	\$747	\$747	\$4,000	\$4,000	\$0	0	\$0	\$0	2008-JAN-11
Ρ	1246016	\$5,227	\$5,227	\$32,000	\$32,000	\$0	0	\$0	\$0	2008-JAN-11
Ρ	1246042	\$11,500	\$11,500	\$16,000	\$16,000	\$0	0	\$0	\$0	2008-JAN-11
Ρ	1246057	\$23,001	\$23,001	\$32,000	\$32,000	\$0	0	\$0	\$0	2008-JAN-11
		\$229,558	\$229,558	\$120,000	\$120,000	\$46,379	\$46,379	\$109,558	\$109,558	-

External Credits:

Reserve:

\$109,558 Reserve of Work Report#: W0260.01255

\$109,558

\$0

3 Total Remaining

Status of claim is based on information currently on record.



43B13SW2011 2.23991 BMA 527 834

900

Ministry of Northern Development and Mines Ministère du Développement du Nord et des Mines

Date: 2002-OCT-11

TORONTO, ONTARIO



GEOSCIENCE ASSESSMENT OFFICE 933 RAMSEY LAKE ROAD, 6th FLOOR SUDBURY, ONTARIO P3E 6B5

Tel: (888) 415-9845 Fax:(877) 670-1555

Submission Number: 2.23991 Transaction Number(s): W0260.01255

Dear Sir or Madam

M4H 1N6

Subject: Approval of Assessment Work

DE BEERS CANADA EXPLORATION INC.

ONE WILLIAM MORGAN DRIVE

CANADA

We have approved your Assessment Work Submission with the above noted Transaction Number(s). The attached Work Report Summary indicates the results of the approval.

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

If you have any question regarding this correspondence, please contact BRUCE GATES by email at bruce.gates@ndm.gov.on.ca or by phone at (705) 670-5856.

Yours Sincerely,

Sheila Lessard Acting Senior Manager, Mining Lands Section

Cc: Resident Geologist

Donald R. Boucher (Agent)

Assessment File Library

De Beers Canada Exploration Inc. (Claim Holder)

De Beers Canada Exploration Inc. (Assessment Office)



These meaking to stake unlines (1976) and the consult with the Previncial Mining Records a "office of the Unitery of VATEMIN Development with the Area for editional information on the stake of the lands there have not. This Rep 16 the Hamile for the Mathematic with yes of and stake development persponse and the Mathematic Hamile Records and the Rep 16 completes and the State State of the Mathematic Hamile Records and the Rep 16 completes and on shown is derived from digital data evaluations the Provincial Mining Reco

Centect information: Provincial Mating Report ers (office - Folke roe Willet Green Miller Centre - Tek 1 (889) 415-9845

Hite 9 stum: NAO 83 Prejection: UTM (6 dograe)



200





43B13SW2011 2.23991 BMA 527 834

220

-----Contour interval = 2 ohm - meter: 0.4 0.6 2.23991 DE BEERS CANADA EXPLORATION INC. MAP 3: APPARENT RESISTIVITY 6200 Hz COPLANAR **Claims Adjacent to Victor Kimberlite Pipe** Date: May 9, 2002 Revised Date: 5/06/2002



	Kilometres	•			
Scale: 1:10,000					
	2.239	991			
DE BEER	S CANADA EXPI	LORATION INC.			
V	ICTOR PRO	OJECT			
AP 1: 4	IR PHOTO	BASE MAP			
aims Adja	cent to Victor I	Kimberlite Pipe			
^{stion:} UTM NAD 27, Zone 17					
r: SWB	Scale: 1: 10,000	Date: May 9, 2002			
ву: АСВ	NTS: 43B13	Revised Date: 5/06/2002			