



42A01SE0001 81 TECK

010

DIAMOND DRILLING

TOWNSHIP: TECK

REPORT NO: 81

WORK PERFORMED FOR: BATTLE MOUNTAIN (CANADA) INC.

RECORDED HOLDER: SAME AS ABOVE

: OTHER

<u>CLAIM NO.</u>	<u>HOLE NO.</u>	<u>FOOTAGE</u>	<u>DATE</u>	<u>NOTE</u>
L626766	TA-91-01	96.5 m	Oct 91	(1)
P6817	TA-91-02	74.9 m	Oct 91	(1)
L626766	TA-91-03	176.3 m	Oct 91	(1)

3 DBH / 399.7

NOTES: (1) W 9280.00044

**Battle Mountain (Canada) Inc.**

**KIRKLAND LAKE PROJECT**

**REPORT ON OCTOBER, 1991 DIAMOND DRILLING PROGRAMME**

**TECK "A" PROPERTY**

**TECK TOWNSHIP, LARDER LAKE MINING DIVISION**

**ONTARIO, CANADA**

**Kirkland Lake, Ontario  
November 29, 1991**

**W. Benham**

**Battle Mountain (Canada) Inc.**

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1.0 SUMMARY

During October 5th to October 12th, 1991 Battle Mountain (Canada) Inc. completed a diamond drilling programme on their Teck "A" property located in Teck Township, Ontario. Three holes were drilled, for a total of 347.75 metres, to test the "DK" gold showing.

Although pyrite + calcite + quartz veins, which are similar in appearance to the "DK" showing mineralization, were intersected in all three holes, all the assays were nil to trace gold. No further work is recommended.

## 2.0 INTRODUCTION

This report describes the results of a diamond drilling programme completed by Battle Mountain (Canada) Inc. (BMCI) from October 5th to October 12th, 1991 on the Teck "A" property located in Teck Township in northeastern Ontario, Canada. Three holes were drilled to test the "DK" gold showing.

The holes were drilled by Heath & Sherwood of Kirkland Lake and the core assayed by Swastika Laboratories in Swastika. The core was logged by Mark Masson, B.Sc., assisted by technician R. Peever; the programme was supervised by W. Benham, B.Sc., the BMCI Kirkland Lake project geologist. The drill plans and sections accompanying this report were drafted by B. Madill. The logs were typed by C. Anderson and the final logs designed and produced using WordPerfect 5.1 by MDC Geological Consultants.

### 2.1 Location and Access

The Teck "A" property is located near the southeastern corner of Teck Township, about 5 km south of the Town of Kirkland Lake (NTS 42A/1; UTM 571000 E, 532900 N; See Drawings No. 1 & 2).

Access is provided by Highway 112 which crosses the southwestern corner of the property at Murdock Creek at the common boundary between Teck Township and Otto Township. An old winter wagon road goes from this point along the Highway, and follows up-stream a south flowing tributary of Murdock Creek as far as the southwest corner of claim L.626766 and then turns east to follow the stream along the southern margin of the Murdock Creek Stock. The northeastern part of the property is accessible by the old road to the tailings-basin of Lakeshore Mines Ltd.

### 2.2 Claims

The Teck "A" property consists of twenty-nine (29) mining claims in the Larder Lake Mining Division optioned by Queenston Mining Inc. (formerly HSK Minerals Ltd.) from J. Kidston and M. Dymont. The property is currently held by Battle Mountain (Canada) Inc. as part of an option agreement with Queenston Mining Inc. dated June 15, 1989.

A lease has been issued for the three claims, L.495720 to L.495722 inclusive for a period of twenty-one years from March 1, 1991. An application to lease, mining rights only, for ten claims (L.545728, L.545729, L.565133, L.565134, L.565135, L.565138, L.565139, L.565150, L.565152 and L.566532) was submitted on February 19, 1991. The remaining sixteen claims are in good standing until at least 1993, prior to submission and approval of this work for assessment credits.

Patented claim 6817 was optioned from Beyer & Beyer on July 9, 1990, and included within the BMCI-Queenston agreement. This claim ties onto the western boundary of Teck "A"

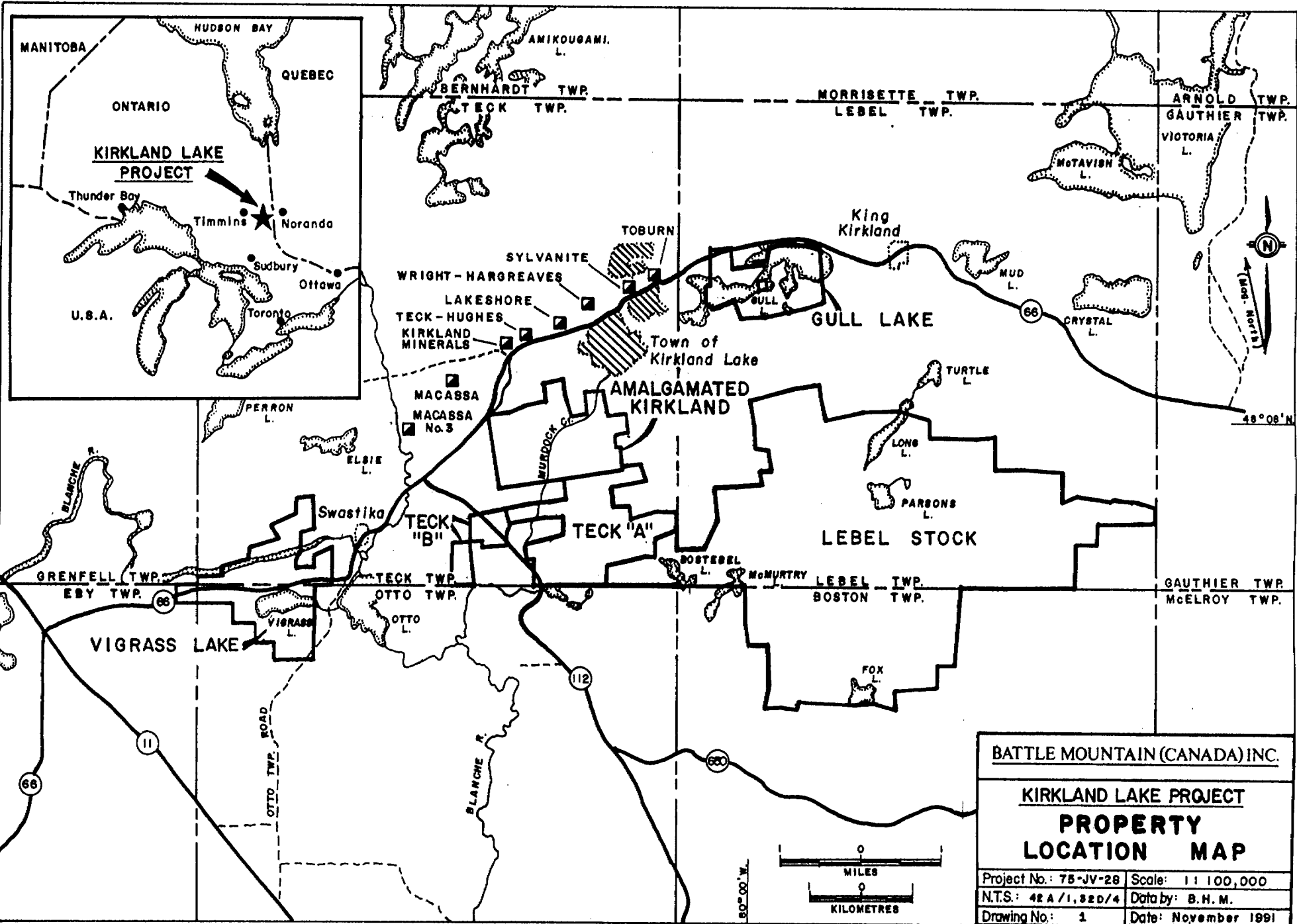
claim L.626766 and for the purposes of this report it is included in the Teck "A" property. Claim L.1111433 was staked by Queenston in 1989 and subsequently added to the agreement. The Beyer and Queenston claims join together the Teck "A" and Teck "B" properties into a single continuous group in which BMCI has a beneficial interest.

### 2.3 Topography & Vegetation

The property is characterised by low rounded knolls and steep-sided ridges up to 30 metres high. Two broad, open grassy swamps along the banks of a tributary stream to Murdock Creek (one trending 070° along the southern margin of the Murdock Creek Stock to the Lakeshore tailings pond, and the other at 010° along the western boundary of claim L.545728), divide the property into four topographic segments.

Most of the property is covered by second growth poplar bush with local, small stands of birch, spruce, balsam and pine.



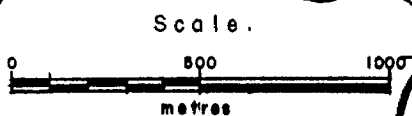
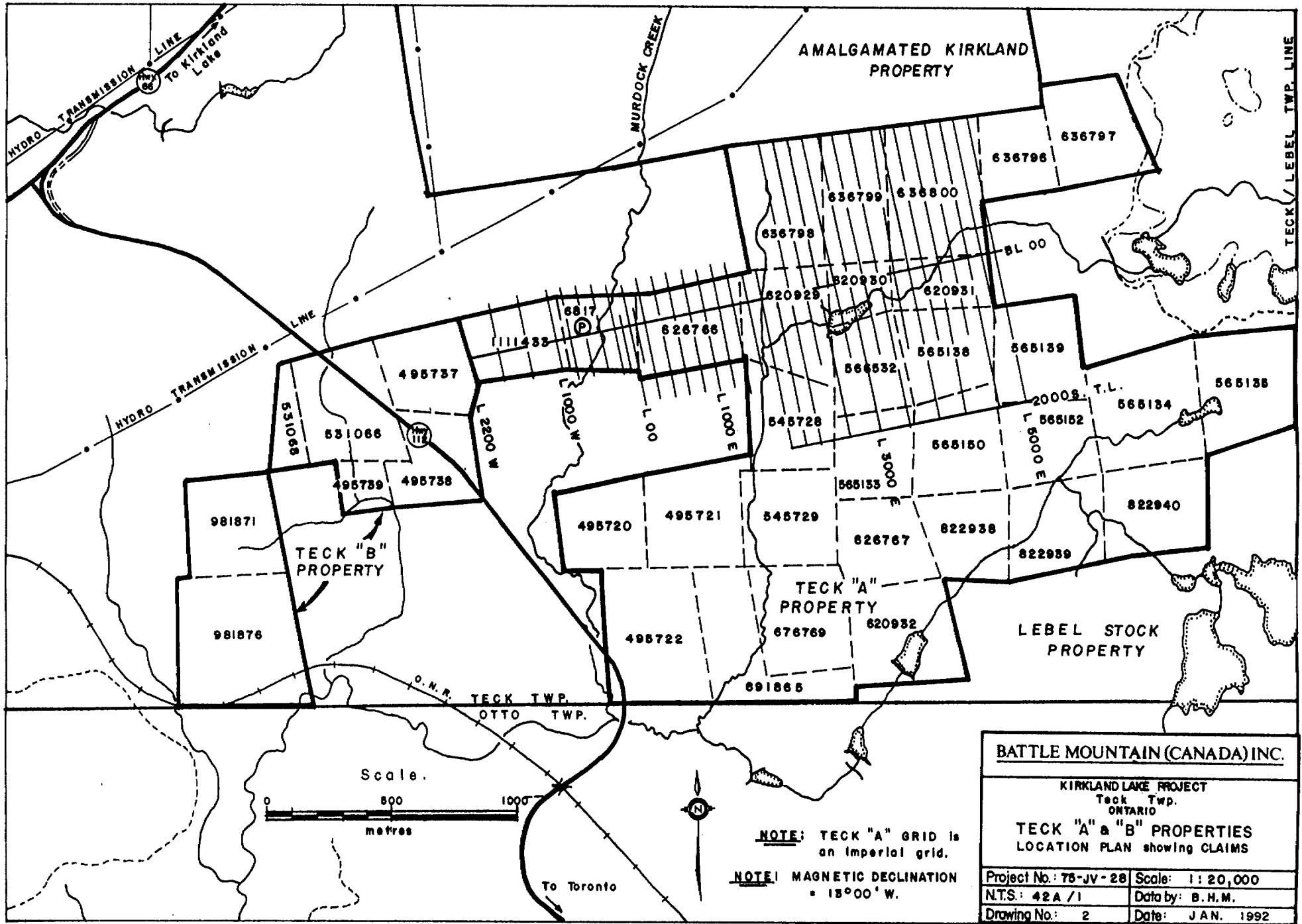


**BATTLE MOUNTAIN (CANADA) INC.**

**KIRKLAND LAKE PROJECT**

**PROPERTY LOCATION MAP**

Project No.: 75-JV-28	Scale: 1 : 100,000
N.T.S.: 42 A / 1, 52 D / 4	Data by: B. H. M.
Drawing No.: 1	Date: November 1991



**NOTE:** TECK "A" GRID is an Imperial grid.

**NOTE:** MAGNETIC DECLINATION = 13°00' W.

<b>BATTLE MOUNTAIN (CANADA) INC.</b>	
KIRKLAND LAKE PROJECT Teck Twp. ONTARIO	
<b>TECK "A" &amp; "B" PROPERTIES</b> LOCATION PLAN showing CLAIMS	
Project No.: 75-JV-28	Scale: 1 : 20,000
N.T.S.: 42A / 1	Data by: B.H.M.
Drawing No.: 2	Date: JAN. 1992

### 3.0 PREVIOUS WORK

There is no record of work carried out on the property prior to 1977 when the initial claims of the Teck "A" group were staked. Numerous historic trenches were found in the subsequent programmes along the southern margin of the Murdock Creek Stock and on carbonate zones in the Larder Lake Group volcanics, as shown on the published geology map of Teck Township (Thomson, 1950).

The following is a list of work carried out on the Teck "A" property from 1977 until the property was optioned to BMCI in 1989:

- 1) Prospecting, VLF-EM and magnetic surveys and hand stripping by M. Dymant and J. Kidston in 1977-1981;
- 2) Mapping, magnetic and HLEM surveys, rock geochemical sampling and drilling (5 holes, 594 metres) by Labrador Exploration Ltd. in 1982;
- 3) Prospecting, an induced polarization survey and drilling (4 holes, 653.52 metres) by Rio Algom Exploration Inc. in 1985;
- 4) Mapping, soil geochemical, magnetic, VLF-EM and induced polarization surveys by HSK Minerals Ltd. in 1988 (Hughes & Webster, 1989).

The 1988 soil geochemical survey resulted in the discovery of the "DK" gold showing. Grab samples of strongly carbonatized and silicified mafic syenite(?) with 3 to 10% euhedral, coarse-grained pyrite assayed up to 13.66 g/t Au. The showing was flanked to the south by IP chargeability and magnetic anomalies. The highest drill intersection, of 407 ppb Au over 3.4 metres in Rio Algom hole 5, is located 152 metres (500 feet) to the east of the "DK" showing.

Geological mapping, overburden stripping and channel sampling were carried out on the Teck "A" property by BMCI during the periods July to November, 1989 and June to August, 1990 (Benham, 1990). The HSK imperial grid from 1988 was re-cut in the winter of 1990, and extended to the west onto the Beyer and Queenston (L.1111433) claim, and further to the south. A total field magnetic survey was completed, together with a VLF-EM survey over only the Queenston claim.

The only significant assays from the channel sampling were at the "DK" showing. This showing once stripped and washed was seen to be up to 10% coarse euhedral pyrite in a carbonated, silicified pod, five metres long and four metres wide. Channel samples taken over the showing returned up to 6.44 g/t Au over 3.12 metres. Overburden stripping along strike did not locate any auriferous rocks similar to the "DK" showing, although a series of east-west striking shear zones, locally pyritic, were exposed and sampled.

Strongly jointed, altered syenite which was exposed in the 10+32E stripped area, averaged 276 ppb Au over an estimated true width of three metres. This carbonate zone is located along the western edge of a 120 metre long broad IP anomaly and parallels a northwesterly trending magnetic low.

#### 4.0 REGIONAL GEOLOGY AND MINERALIZATION

The Kirkland Lake district is in the Abitibi Greenstone belt of the Archean Superior Province of the Canadian Shield. It lies to the south of the major east-west trending Blake River synclinorium, the northern and southern limbs of which are defined by the Destor-Porcupine and Larder Lake-Cadillac Fault Zones or Breaks. Most of the historical gold production in the Abitibi Belt is spatially associated with these two regional structural zones. The southern limb of the Blake River synclinorium in the Kirkland Lake area consists of tholeiitic volcanics of the Kinojevis Group. These are unconformably overlain by the trachytic volcanic and coarse clastic sedimentary rocks of the Timiskaming Group, and their associated syenitic intrusives. The southern boundary of the Timiskaming Group is marked by the regionally south-dipping Larder Lake Fault Zone. The assemblage to the south of this fault consists of the Larder Lake Group, consisting of komatiitic and tholeiitic volcanic rocks with thin interflow graywacke, argillite and iron formation sedimentary rocks. The Larder Lake Group are intruded by plutons of pyroxenite, gabbro and syenite, including the Lebel, Murdock Creek and Otto stocks.

The Kirkland Lake gold camp has produced in excess of 23 million ounces of gold from quartz-veined shoots in a deposit known historically as the Kirkland Lake Break or Mile of Gold. There were six producing mines along the deposit, of which the one remaining active producer is the Macassa Mine of Lac Minerals Ltd, at the west end of the deposit. The deposit strikes 067°, with a dip to the south of 75°-80°. It lies mostly within augite-syenites which intrude interbedded coarse tuffaceous and clastic sedimentary units of the Timiskaming Group. The augite-syenites and the country rocks are intruded in the area of the deposit by hypabyssal felsic syenite plugs and by syenite porphyry dykes. All of the intrusive phases are comagmatic with the enclosing trachytic volcanic rocks. Some of these plugs and dykes are locally mineralised or form one of the walls of the shoots. The entire deposit has been dismembered by a complex series of younger, steeply dipping reverse faults, of which the largest is the Kirkland Lake Main Break. Many of the larger shoots lie against, or are terminated by, one or more of the branches of this fault system.

The Kerr Addison mine, which is located 36 km to the east in the Larder Lake district, has produced in excess of ten million ounces, and is still in production. This ore deposit is hosted by altered and strongly sheared mafic to ultramafic volcanics of the Larder Lake Group immediately to the south of the Larder Lake Fault Zone, and is associated with altered plugs and dykes, known locally as "albitite", of unknown original composition. It contains two distinct ore-types: "green-carbonate ore", as quartz veins in altered ultramafic volcanic rocks; and "flow-ore", as pyritic, altered and deformed variolitic, pillowed basalts, with only minor quartz veining. Both ore types are spatially associated with the "albitite" plugs and dykes, but they have different distribution and plunges on the longitudinal section.

## 5.0 PROPERTY GEOLOGY

The majority of the Teck "A" property is underlain by komatiitic to basaltic volcanic rocks of the Larder Lake Group, intruded by the southern part of Murdock Creek Stock along the northern tier of claims. The major "Teck "A" Fault Zone", previously referred to as the "DK Fault", lies along the south side of the stock, sub-parallel to the Larder Lake Fault Zone to the north.

### 5.1 Stratigraphy

The komatiitic volcanic rocks of the Larder Lake Group are polysutured and spinifex-textured flows and talc-carbonate-chlorite schists. The basaltic volcanic rocks are fine to coarse grained, massive to pillowed flows with finely laminated, interflow sediments which consist of graywackes, argillites and oxide-facies iron formations. Locally the pillowed basalts are variolitic.

### 5.2 Intrusive Rocks

The Murdock Creek syenite has been subdivided into leuco-, meso- and mela-syenite facies. Contacts between the facies are very irregular and subjective. The more mafic syenites are found along the margin of the stock. Xenoliths, roof pendants or windows of amphibolite-bearing and spinifex-textured komatiites are observed within the Murdock Creek syenite.

Locally aphanitic, pink, fractured, strongly jointed phases of the syenite have a shear fabric which strikes 005° to 035°, sub-parallel to the Lakeshore Fault set.

Narrow irregular, carbonated, pyritic syenite dykes similar to the Murdock Creek Stock intrude the volcanic rocks.

Irregular pods and dykes of strongly magnetic, micaceous, coarse grained pyroxenites are found within the deformation zone along the southern margin of the Murdock Creek Stock and intruding the stock itself. Locally the pyroxenites are strongly sheared to friable masses of exfoliated mica.

### 5.3 Structure

The Larder Lake Group volcanics strike 045° to 065° and dip steeply to the south. Pillow fabrics indicate a south-facing volcanic sequence.

Numerous faults, shear zones and areas of closely spaced foliation fabrics were observed on the northern part of the Teck "A" property. These structures are divided into two sets at 015° (Lakeshore set) or 070° (Larder Lake Fault Zone set).

The Teck "A" Fault Zone strikes 060° to 075°, along the contact at the southern margin of the Murdock Creek Stock with the adjacent Larder Lake Group volcanic rocks. The fault zone consists of discrete sharp faults and zones of chlorite-talc-carbonate schists which are well exposed in stripped areas from 3+00E to 10+32E, north and south of the baseline. Observed and magnetically interpreted faults and shear zones are found up to 150 metres north of the baseline within the syenite stock and up to 450 metres to the south within the basaltic volcanics. The Teck "A" Fault Zone is a regional structure, sub-parallel to the Larder Lake Fault Zone, which may join with it to both the east and the west. Like the Larder Lake Fault in the immediate region, the Teck "A" Fault Zone may dip to the south, with the block between these major structures largely occupied by the Murdock Creek Stock as a south dipping structural wedge.

Murdock Creek, which passes through patented claim 6817, follows the Lakeshore Fault at 015° to 025°. A sub-parallel structure is interpreted to pass through the swamps on claim L.545128, 600 metres to the east of the Lakeshore Fault. To the north, on the Amalgamated Kirkland property, carbonated syenites are found along this structure. The Lakeshore Fault offsets the western extension of the Teck "A" Fault Zone an estimated 300 metres to the south, off the claim group.

Areas of closely-spaced foliation fabrics striking 005° to 040° were observed in the syenite stock and the basalts. These fabrics are related to splays off the above structure.

#### 5.4 Mineralization and Alteration

The only known significant mineralization is "DK" showing. It consists of up to 10% coarse grained euhedral pyrite in a carbonated, silicified "syenite"(?) pod five metres long and four metres wide. Channel samples taken over the showing have returned up to 6.44 g/t Au over 3.12 metres. Overburden stripping along strike did not locate any auriferous rocks similar to the "DK" showing.

Strongly jointed, altered syenite which is exposed in the 10+32E stripped area, averages 276 ppb Au over an estimated true width of three metres. This carbonate zone is located along the western edge of a 120 metre long broad IP anomaly and parallels a northwesterly trending magnetic low.

## 6.0 DRILLING

### 6.1 Drilling Programme

Diamond drilling on the Teck "A" property was started on October 5th and completed on October 12th, 1991 by Heath & Sherwood Drilling (1986) Inc. of Kirkland Lake under the supervision of W. Benham. The drill core was logged by M. Masson. A total of 312 sawn half-core samples were assayed for gold, using one assay ton fusions, by Swastika Laboratories Ltd.

Three holes were drilled for a total of 347.75 metres to test the "DK" gold showing. Holes TA91-01 and TA91-03 were drilled on unpatented claim L.626766 and one hole, TA91-02, is located on patented claim 6817.

### 6.2 Drill Results

The results of the drilling are described in drill logs TA91-01 to TA91-03 (Appendix I) and illustrated on drill sections DC-041, and DC-042. The drill hole locations are shown on Drawing DP-004. All sampled intervals and assay results are recorded in the drill logs. Assay certificates are in Appendix II.

Hole TA91-01 was drilled along line 00, immediately below the "DK" showing, and intersected variolitic pillowed basalts to a depth of 20.35 metres, followed by massive, medium to coarse grained diorite or basalt. The contact between these two units is a 45° to 50° south-dipping shear zone, 35 cm wide. This shear zone and the adjacent basalts, from 16.2 to 43.6 metres, contain seven widely spaced, 4-35 cm wide, quartz and calcite veins with 2-7% coarse grained euhedral pyrite. These mineralized veins are similar in appearance to the "DK" mineralization. However, all assays were nil to trace gold.

Hole TA91-02 was drilled 50 metres to the west along strike of the "DK" showing. This hole intersected similar geology and mineralization as the first hole, with variolitic basalt to the contact with the diorite or basalt unit at 32.7 metres, with the lower 4.0 metres of the variolitic basalt being sheared. The only anomalous assay, of 0.12 g/t Au over 1.30 metres from 28.7 to 30.0 meters, was from blue-grey quartz veins with 3-4% coarse grained pyrite at the beginning of this sheared interval.

Hole TA91-03, an undercut 60 metres below hole TA91-01, intersected a 5.6 metre wide shear zone with 1-2% pyrite from 55.2 to 60.8 metres at the contact between pillowed basalts and more massive basalt. A 3.00 metre wide interval within this shear zone, from 56.5 to 59.5 metres, contains 65% white, ribboned quartz veins with graphite and galena-filled fractures and assayed 0.28 g/t Au. Massive basalts from 81.45 to 85.00 metres, with 2-3% quartz and calcite veins and 1-2% medium grained pyrite, assayed 0.13 g/t Au over the 3.55 metres.

Correlation between these holes and with the surface geology indicates that these shear zones and the stratigraphic contacts are dipping to the south at about 45°-50°.

AMALGAMATED KIRKLAND  
PROPERTY

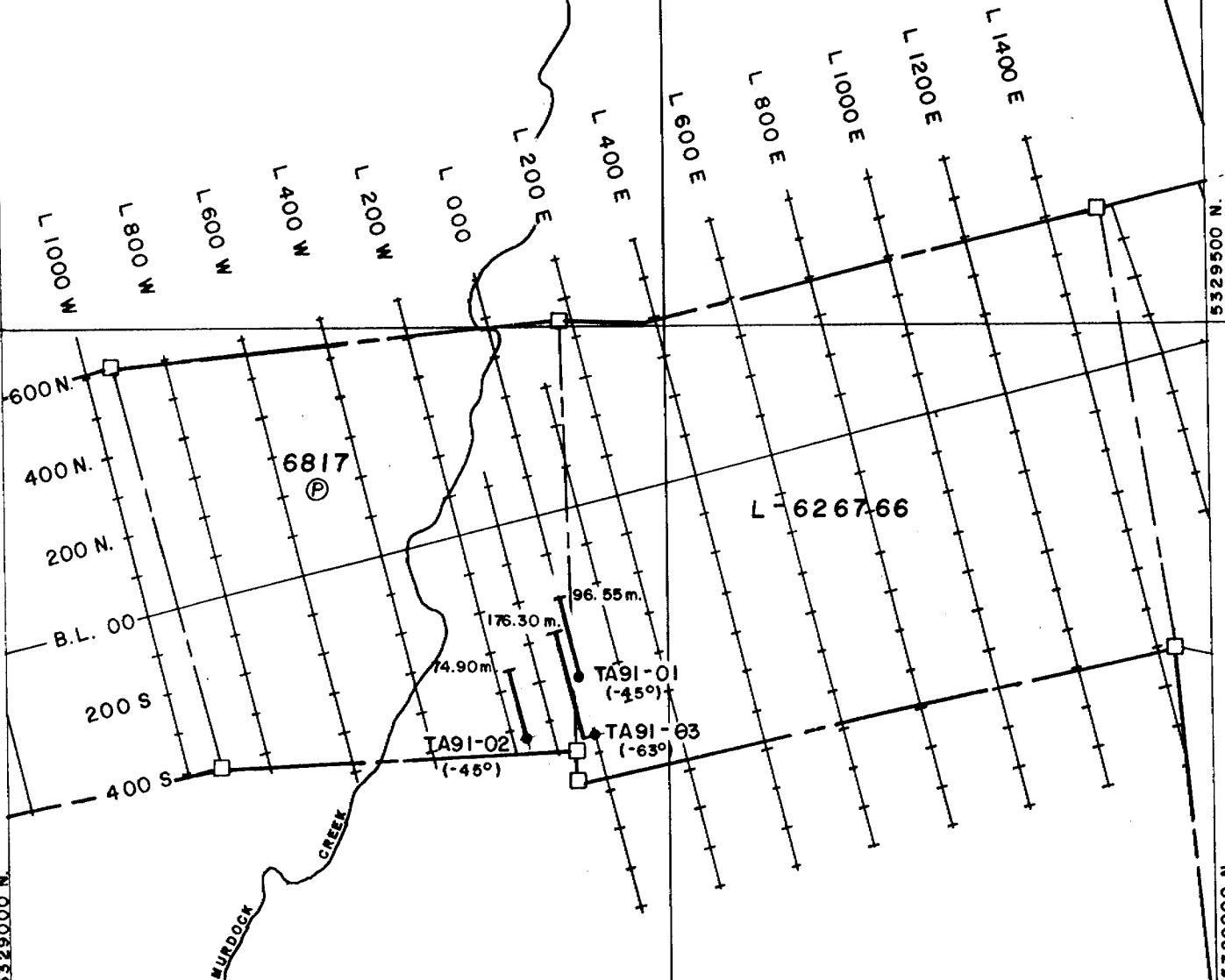
577000 E.

5329500 N.

5329500 N.

5329000 N.

5329000 N.



600 N.

400 N.

200 N.

B.L. 00

200 S.

400 S.

6817

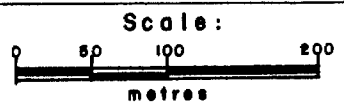
L 626766

TA91-01 (-45°)

TA91-02 (-45°)

TA91-03 (-63°)

TECK "A" GRID is  
an imperial grid.  
MAGNETIC DECLINATION  
= 13°00' W.



BATTLE MOUNTAIN (CANADA) INC.	
KIRKLAND LAKE PROJECT Queenston Mining Inc. ONTARIO	
TECK "A" PROPERTY DRILL PLAN	
Project No: 75-JV-28	Scale: 1:5000
NTS: 42 A / 1	Data by:
Drawing No: DP-004	Date: Nov. 1991

577000 E.



## 7.0 CONCLUSIONS AND RECOMMENDATIONS

The 1991 Teck "A" drilling intersected mineralization which is very similar in appearance to the "DK" showing, i.e. grey-white to pink, quartz + calcite veining with coarse grained euhedral pyrite; however this mineralization was only weakly anomalous in gold. The mineralized veins are associated with a sheared contact between variolitic pillowed basalts in their hanging wall and underlying more massive medium to coarse grained basalts, with the contact dipping 45-50° to the south. The geochemically anomalous intersection in Rio Algom hole 85-5, which is located 150 metres to the east, may correlate with anomalous channel samples near the collar of this hole and would also indicate a 45° south dip.

The 1991 Teck "A" drill programme did not intersect any significant gold mineralization, and together with the overburden stripping and channel sampling, has adequately tested for the strike and down-dip extensions of the "DK" gold mineralization without success. No further work is recommended.

REFERENCES

- Benham, W., 1990, Report on Geological Mapping, Overburden Stripping and Channel Sampling, Teck "A" Property, Kirkland Lake Project, Teck Township, Larder Lake Mining Division, Ontario; Battle Mountain (Canada) Inc.
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- Thomson J.E., 1950, Geology of Teck Township and Kenogami Lake area, Kirkland Lake Gold Belt: Ontario Department of Mines, Annual Report for 1948, Vol. 57, Part 5, p. 1-53. Reprinted 1989.

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January 22, 1992

Kirkland Lake Project

Teck "A" Drilling

APPENDIX I  
DIAMOND DRILL LOGS

Battle Mountain (Canada) Inc.

November, 1991

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-01

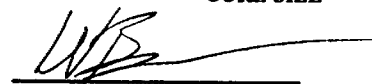
PAGE: 1 of 6

PROPERTY	Teck "A"	DATE LOGGED	October 8, 1991 - October 9, 1991	EASTING	000
TOWNSHIP	Teck	LOGGED BY	Mark Masson	NORTHING	124 S
CLAIM No.	L 626766	DRILLED BY	Heath & Sherwood	ELEVATION	
STARTED	October 5, 1991	CORE LOCATION	Kirkland Lake Warehouse	COLLAR SURVEY	
COMPLETED	October 8, 1991	DOWNHOLE SURVEYOR	B.M.C.I.	LENGTH	96.55
		SURVEY INSTRUMENT		UNITS	metres
				CORE SIZE	NQ

PURPOSE To test "DK" showing

COMMENTS No anomalous assays

SIGNED BY

  
(W. Benham)

Depth	Method	Azimuth	Dip
Collar	Compass	346	45
6.0			45
50.0			45
61.0			45
92.0			44

SUMMARY LOG				ASSAY SUMMARY		
INTERVAL From To	DESCRIPTION	INTERVAL From To	DESCRIPTION	INTERVAL From To	LENGTH in metres	AVERAGE Au g/t
0.00 1.50	<b>OVERBURDEN</b>		84.50 - 94.50 Shear zone @ 35-45° tca.			
1.50 20.35	<b>VARIOLITIC PILLOWED BASALT</b>		92.40 - 92.95 Quartz + calcite + pyrite vein, 1-2% pyrite.			
	10.10 - 11.00 Shear zone @ 70° tca. Trace-2% pyrite.					
	16.20 - 16.70 Quartz + calcite + 3% pyrite.					
	19.15 - 19.65 Strongly foliated @ 75° tca.	96.55	E. O. H.			
	19.45 - 19.65 5-7% fine to medium grained euhedral pyrite.					
	20.00 - 20.35 Quartz + calcite + 5-7% medium to coarse grained euhedral pyrite.					
20.35 43.60	<b>DIORITIC BASALT/GABBRO</b>					
	Coarse grained.					
	22.45 - 22.80 Shear zone @ 45°. 1% medium grained pyrite.					
	33.60 - 34.20 1% coarse grained pyrite.					
	36.60 4 cm wide quartz + calcite vein @ 75° tca, 2% coarse grained pyrite.					
	43.00 - 43.60 Quartz + calcite vein, 1% pyrite.					
43.60 68.80	<b>BASALT</b>					
	Leucoxene spotted.					
68.80 96.55	<b>DIORITIC BASALT/GABBRO</b>					
	Medium to coarse grained.					

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-01

PAGE: 2 of 6

INTERVAL		DESCRIPTION	SAMPLE							ASSAYS		
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check
0.00	1.50	OVERBURDEN										
1.50	20.35	<b>VARIOLITIC PILLOWED BASALT</b> Massive, medium green, fine to very fine grained with light green subrounded to elliptical variolites and variolitic masses frequently near dark green chloritic pillow selvages. Non-magnetic.										
	1.50 - 6.20	Ground is somewhat rubbly, broken with approximately 85% recovery.	9344	1.50	2.50	1.00	90					NIL
			9345	2.50	3.00	0.50	80					0.01
			9346	3.00	4.00	1.00	95					NIL
	4.60 - 4.80	Quartz + pyrite veinlets. Three narrow $\leq$ 0.5 cm, white-buff to pink quartz $\pm$ carbonate veinlets @ 55° tca. Wall rock is altered to a yellow-green colour up to 1 cm from vein, moderately silicified and carbonitized (hydrochloric acid reaction) and carries 1-2% fine grained sub-euhedral pyrite cubes.	9347	4.00	4.90	0.90	80	2	2			0.02
			9348	4.90	6.00	1.10	60	1	1-2			0.01
			9349	6.00	6.90	0.90	100					0.01
	7.00 - 7.10	1-2% clotty sub-euhedral pyrite associated with hairline calcite fractures and irregular blebs up to 0.5 cm.	9350	6.90	7.40	0.50		Tr.				0.01
			9351	7.40	8.00	0.60						NIL
	8.25 - 8.30	Quartz + calcite + pyrite vein. Irregular, grey-white quartz + calcite vein with 3-5%, medium grained sub-euhedral pyrite grains and small clusters within veins and scattered in adjacent wall rock.	9352	8.00	8.50	0.50		Tr.	1			NIL
	8.90 - 9.10	1-2% irregular, euhedral pyrite crystals and clusters on quartz + calcite veinlets and masses in massive aphanitic basalt.	9353	8.50	9.10	0.60		1	2			NIL
	10.10 - 11.00	Shear zone @ 70° tca. Chlorite + quartz + calcite + pyrite. Upper contact is a 0.5 cm quartz + calcite veinlet on a sharp, chlorite slip. Minor pyrite in veinlet.	9354	9.10	10.10	1.00			2-3			NIL
			9355	10.10	10.50	0.40		Tr.	2			NIL
	10.10 - 10.50	Well foliated to weakly laminated variolitic basalt with 2% hairline quartz + calcite veinlets and trace disseminated pyrite.										
	10.50 - 10.65	Quartz + calcite + pyrite veining. Somewhat irregular white quartz veining with small salmon pink spots and calcite fillings on hairline fractures. Wall rock has strong pervasive carbonate and 1-2% euhedral pyrite crystals.	9356	10.50	11.00	0.50		2	5			NIL
	10.65 - 11.00	Stretched variolites cut by minor quartz + calcite stringers with 1% euhedral pyrite.	9357	11.00	11.50	0.50		Tr.	Tr.			0.01
			9358	11.50	12.00	0.50		Tr.	Tr.			NIL
			9359	12.00	12.50	0.50						NIL
	12.40	Fault @ 20° tca. Chlorite + calcite. 1 cm wide chloritic shear with barren, white calcite infilling.	9360	12.50	13.00	0.50		Tr.	Tr.			NIL



**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-01

PAGE: 4 of 6

INTERVAL		DESCRIPTION	SAMPLE							ASSAYS			
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check	
20.35	43.60	<b>DIORITIC BASALT/GABBRO</b> Massive, fine to medium grained, equigranular with a typical green-white diabasic type texture. Comprised of 40% dark green chloritic subhedral to anhedral crystals and crystal masses of amphibole within a grey-white plagioclase background. Pervasively weakly magnetic with patchy strongly magnetic areas. Somewhat variable from fine to medium to coarse grained. Quartz vein @ 43.00 m mark contact between coarse grained dioritic basalts and fine grained basalts but this is somewhat subjective and difficult to recognize.											
	20.35 - 20.80	Quite fine grained, dark green, chloritic, moderately well foliated @ 60° tca, pervasively carbonitized groundmass and carrying 2-3% calcite veinlets.	9371	20.35	20.85	0.50					Cal.	NIL	
	20.80 - 21.50	Unit becomes increasingly coarser grained grading to medium grained massive diorite @ 23.0 metres.	9372	20.85	21.50	0.65					Cal.	NIL	
	22.45 - 22.80	Shear zone @ 45° tca. Chlorite + calcite + quartz + pyrite. Moderately well foliated to sheared zone with 5-10% irregular calcite + quartz veining with 1% medium grained euhedral pyrite within veins and adjacent to vein wall rock.	9373	21.50	22.30	0.80					Cal.	NIL	
			9374	22.30	22.80	0.50		1	5		Cal.	NIL	
			9375	22.80	23.50	0.70					Cal.	NIL	
			9376	23.50	24.00	0.50						0.01	
			9377	24.00	24.50	0.50				1-2	Cal.	NIL	
			9378	24.50	25.00	0.50						NIL	
			9379	25.00	26.00	1.00						NIL	
			9380	26.00	27.00	1.00						0.01	
			9381	27.00	28.00	1.00						0.01	
			9382	28.00	29.00	1.00						NIL	
	9383	29.00	30.00	1.00						NIL			
	9384	30.00	31.00	1.00				Tr.		0.01			
	9385	31.00	32.00	1.00				Tr.		NIL			
	9386	32.00	33.00	1.00				Tr.		NIL			
	9387	33.00	33.60	0.60				Tr.		0.01			
	33.60 - 34.20	Light green, bleached zone proximal to sharp, strong chloritic slip @ 85° tca. Section is cut by 2-3% grey-white calcite veinlets and quartz veinlets ≤ 1 cm. Carries 1% patchy coarse grained pyrite and pyritic clots in wall rock.	9388	33.60	34.20	0.60					Cal.	NIL	
			9389	34.20	35.00	0.80			1	2-3		Tr.	0.02
			9390	35.00	35.50	0.50					Tr.		NIL
	35.50 - 37.00	Unit is weakly stockworked with 3-5% irregular anastomosing quartz + calcite veins up to 2 cm wide at various core angles. These veinlets are in turn cut by a later ladder type quartz + calcite vein system (≤ 0.5 cm) @ 75° tca. Veins carry 0.5-1% scattered sub-euhedral pyrite cubes and small masses which are also evident sporadically in wall rock.	9391	35.50	36.00	0.50		0.5-1	3-5		Cal.	NIL	
			9392	36.00	36.50	0.50		0.5-1	2		Cal.	0.01	

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-01

PAGE: 5 of 6

INTERVAL		DESCRIPTION	SAMPLE							ASSAYS						
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check				
	36.60	3-4 cm wide white to pink-brown quartz + calcite + potassic feldspar vein @ 75° tca with 1-2% euhedral brassy pyrite cubes, ≤ 2 mm, in wall rock adjacent to vein.	9393	36.50	37.00	0.50		1	2	Cal.K-Spar	NIL					
			9394	37.00	37.50	0.50		Tr.	1	Cal.	NIL					
			9395	37.50	38.00	0.50				Tr.	Cal.	NIL				
			9396	38.00	38.90	0.90					1	Cal.	0.03			
			9397	38.90	39.50	0.60		Tr.		1	Cal.	NIL				
			9398	39.50	40.00	0.50							NIL			
			9399	40.00	41.00	1.00					Tr.		NIL			
			9400	41.00	42.00	1.00					Tr.		NIL			
			9401	42.00	43.00	1.00		1		2			NIL			
			42.00 - 43.00	Massive, undeformed but pervasively carbonated and carries 2% light grey to brown quartz + calcite + pyrite veinlets, ≤ 1 cm wide, scattered throughout. Section has 0.5% disseminated fine grained euhedral pyrite and displays a weak red-brown alteration proximal to veins, potassic alteration(?).	9401	42.00	43.00	1.00								
			43.00 - 43.60	Semi-massive white quartz + calcite vein with irregular boundaries and carrying 2-3% chloritized wall rock fragments and internal chloritic wisps. Vein is barren except for 0.5% sub-euhedral pyrite grains on chloritic wisps and hairline fractures. Adjacent to vein, wall rock carries 0.5-1% euhedral pyrite grains up to 0.5 cm.	9402	43.00	43.60	0.60		1		35		NIL		
			43.60	68.80	<b>BASALT</b> Leucoxene spotted, massive, fine to very fine grained, dark green chloritic mafic volcanic. Nondescript, no pillows variolites etc. Distinguished by 1-2% buff-white, spotty leucoxene(?) development throughout. Pervasive calcite in groundmass and as 2-3% quartz + calcite stringers and veinlets throughout. Typically non-magnetic but has patchy zones of strong magnetism. Lower contact is gradational over 0.75 metre as it grades from very fine grained, leucoxene spotted, to fine and medium coarse grained dioritic basalt/gabbro.	9403	43.60	44.50	0.90				1		0.01	
						9404	44.50	45.10	0.60					1		NIL
						9405	45.10	46.00	0.90							0.01
						9406	46.00	47.00	1.00							0.01
9407	47.00	48.00				1.00							0.01			
9408	48.00	49.00				1.00							NIL			
9409	49.00	50.00				1.00							0.01			
9410	50.00	51.00				1.00							NIL			
9411	51.00	52.00				1.00							0.01			
9412	52.00	53.00				1.00							0.01			
9413	53.00	54.00				1.00							0.01			
9414	54.00	55.00				1.00							NIL			
9415	55.00	56.00				1.00							0.01			
9416	56.00	57.00				1.00							0.01			
9417	57.00	58.00				1.00							0.01			
9418	58.00	59.00	1.00							NIL						
9419	59.00	60.00	1.00							NIL						
9420	60.00	61.00	1.00							NIL						





**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-02

PAGE: 1 of 5


PROPERTY	Teck "A"	DATE LOGGED	October 9, 1991 - October 10, 1991	EASTING	050 W
TOWNSHIP	Teck	LOGGED BY	Mark Masson	NORTHING	162 S
CLAIM No.	P 6817	DRILLED BY	Heath & Sherwood	ELEVATION	
STARTED	October 8, 1991	CORE LOCATION	Kirkland Lake Warehouse	COLLAR SURVEY	
COMPLETED	October 9, 1991	DOWNHOLE SURVEYOR	B.M.C.I.	LENGTH	74.90
		SURVEY INSTRUMENT		UNITS	metres
				CORE SIZE	NQ

Depth	Method	Azimuth	Dip
Collar	Compass	346	45
30.0			45
72.0			44

PURPOSE To test "DK" showing

COMMENTS

SIGNED BY

  
(W. Benham)

**SUMMARY LOG**

**ASSAY SUMMARY**

INTERVAL		DESCRIPTION	INTERVAL		DESCRIPTION	INTERVAL		LENGTH	AVERAGE
From	To		From	To		From	To		
0.00	3.60	<b>OVERBURDEN</b> <b>VARIOLITIC BASALT</b> Massive to pillowed. 13.00 - 13.20 Quartz + calcite + pyrite vein @ 60° tca, 3-5% pyrite. 25.85 - 26.10 Quartz + calcite + pyrite vein @ 50-60° tca, 1-2% pyrite. 28.70 - 32.70 Foliated @ 70-80° tca, 5-15% blue-grey quartz veining. 3-4% coarse grained pyrite.			E. O. H.	28.70	30.00	1.30	0.12
3.60	32.70		74.90						
32.70	44.80	<b>DIORITIC BASALT/GABBRO</b> 39.45 - 39.60 1% medium grained pyrite, 3-4% quartz veins. 40.30 - 41.35 1-2% coarse grained euhedral pyrite, 1-2% quartz. 41.35 - 41.65 Quartz + calcite + pyrite vein @ 45-60° tca. 35% quartz, 3-5% coarse grained pyrite.							
44.80	50.50	<b>BASALT</b> Leucoxene spotted. 45.00 - 50.50 3-4% quartz + calcite. 1-2% pyrite.							
50.50	74.90	<b>DIORITIC BASALT/GABBRO</b>							

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-02

PAGE: 2 of 5

INTERVAL		DESCRIPTION	SAMPLE						ASSAYS			
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check
0.00	3.60	OVERBURDEN										
3.60	32.70	<b>VARIOLITIC BASALT</b> Variolitic, massive to poorly pillowed, chloritic fine to very fine grained medium green basalt. Varies from quite soft to medium hard. Contains 2-3% ubiquitous calcite ± quartz stringers and veinlets, ≤ 1 cm, at various core angles.	9449	3.60	4.50	0.90						
			9450	4.50	5.00	0.50		Tr.	1		NIL	
			9451	5.00	6.00	1.00					NIL	
			9452	6.00	7.00	1.00					NIL	
			9453	7.00	8.00	1.00					NIL	
			9454	8.00	9.00	1.00					NIL	
			9455	9.00	10.00	1.00					NIL	
			9456	10.00	11.00	1.00			1-2		NIL	
			9457	11.00	12.00	1.00					NIL	
			9458	12.00	12.80	0.80					NIL	
		13.00 - 13.20 Quartz + calcite + pyrite vein @ 60° tca. Somewhat irregular, anastomosing, grey-white quartz + calcite veining with 3-5% fine sub-euhedral pyrite within vein and on small hairline sutures in wall rock parallel to vein.	9459	12.80	13.30	0.50		3	5	Cal.	NIL	0.05
		13.10 - 13.20 1 cm wide, branching white-salmon pink, quartz + potassic feldspar(?) vein with 1% fine grained, euhedral pyrite on vein walls.	9460	13.30	14.00	0.70					NIL	
			9461	14.00	15.00	1.00					NIL	
			9462	15.00	16.00	1.00					NIL	
			9463	16.00	16.50	0.50					NIL	
		16.75 - 16.85 Barren, white quartz + calcite vein @ 30° tca with minor chloritic suturing.	9464	16.50	17.00	0.50				5	NIL	
			9465	17.00	18.00	1.00					NIL	
		18.00 Moderately stretched elongated variolites @ 50° tca.	9466	18.00	19.00	1.00					NIL	
			9467	19.00	20.00	1.00		Tr.	1		NIL	
		20.20 - 25.00 Very irregular, wavy foliation developed @ 5-15° tca. Contains abundant quartz + calcite (10%) veining parallel to this fabric and also 2-3% white-pink (quartz + potassic feldspar? rose quartz) quartz veinlets up to 1 cm wide which are very irregular and in places pygmatically folded. Scattered through this are zones of patchy pyrite generally proximal to the white-pink quartz veinlets. Pyrite is medium grained, sub to euhedral and locally reaches 1-2%.	9468	20.00	20.50	0.50		1	5		0.01	
			9469	20.50	21.00	0.50		1	5-7		0.01	
			9470	21.00	21.50	0.50		Tr.	3-5		0.01	
			9471	21.50	22.00	0.50		1	5-7		0.02	
			9472	22.00	22.50	0.50		Tr.	3-5		0.01	
			9473	22.50	23.00	0.50		Tr.	1-2		NIL	
			9474	23.00	23.50	0.50		Tr.	1-2		NIL	
			9475	23.50	24.00	0.50		0.5	2-3		NIL	
			9476	24.00	24.50	0.50		0.5	2-3		NIL	
			9477	24.50	25.00	0.50		Tr.	1-2		NIL	
			9478	25.00	25.75	0.75		Tr.	1		NIL	
		25.85 - 26.10 Quartz + calcite + pyrite vein @ 50-60° tca. Grey-white quartz + calcite vein and quartz + calcite breccia veinlets	9479	25.75	26.25	0.50		1	5-10		NIL	

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-02

PAGE: 3 of 5

INTERVAL		DESCRIPTION	SAMPLE						ASSAYS			
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check
		with 1-2% medium grained, sub-euhedral pyrite crystals and small masses within vein and adjacent wall rock. Sharp, tight chlorite slip @ 80° tca.										
	26.50		9480	26.25	27.00	0.75		Tr.	1		NIL	
			9481	27.00	27.50	0.50		Tr.	1		NIL	
			9482	27.50	28.00	0.50		Tr.	1-2		NIL	
			9483	28.00	28.70	0.70		Tr.	2-3		NIL	
	28.70 - 30.00	Somewhat patchy to pervasive blue-grey quartz veining and flooding (often fragmented and very irregular) with 3-4% coarse grained euhedral pyrite (cubes up to 4 mm) developed in wall rock and on fractures within quartz. Calcite occurs in later fracturing within quartz (ladders) and surrounding wall rock. Pyrite is coarse grained and occurs as disseminations and as veinlets @ 45-65° tca. Interstitial to these patchy silicified zones, the host is very soft and highly chloritic and frequently carries 1-2% fine to medium grained euhedral pyrite.	9484	28.70	29.50	0.80		3-4	35-40	Cal.	0.12	
			9485	29.50	30.00	0.50		2-3	15-20		0.11	
	28.70 - 32.70	Foliated to weakly laminated volcanics with patchy quartz + calcite + pyrite veining @ 70-80° tca. Upper contact is a sharp, wavy chlorite slip @ 75-80°.	9486	30.00	30.50	0.50		1-2	5-7		NIL	
			9487	30.50	31.00	0.50		2-3	10-15		0.07	
	31.00 - 32.00	Unit is quite prominently foliated to weakly laminated @ 70-80° tca. Comprised of wispy bands of chloritic, foliated volcanics with 0.5-1% fine grained euhedral pyrite, quartz + calcite veinlets from 1 mm to 3 cm and quartz + calcite + pyrite bands up to 2 cm wide.	9488	31.00	31.50	0.50		3-4	5-10		NIL	
			9489	31.50	32.10	0.60		3-4	5-10		0.02	
	32.00 - 32.50	Magnetic and may mark contact from pillowed basalt to a coarser dioritic basalt. Actual contact obscured due to shearing and mineralization but from 33.0 m the basalts are definitely different (i.e. coarser, more magnetic).	9490	32.10	32.70	0.60		1	2-3		NIL	
32.70	44.80	<b>DIORITIC BASALT/GABBRO</b> Massive medium to dark green, fine to medium grained chloritic mafic volcanic. Nondescript with approximately 25-35% chloritized amphibole-pyroxene? within a variable chlorite, chlorite + plagioclase background. Patchy moderate to strong magnetics. Contains 1-2% calcite veinlets.	9491	32.70	33.40	0.70		Tr.	1		NIL	
			9492	33.40	34.00	0.60					NIL	
			9493	34.00	35.00	1.00					NIL	
			9494	35.00	36.00	1.00					NIL	
			9495	36.00	37.00	1.00					NIL	
	37.00	Fault @ 35° tca, 1 cm wide, fragmented quartz + calcite veinlet bounded by sharp strong chlorite slips.	9496	37.00	38.00	1.00					NIL	
	38.00	Unit is moderately well foliated @ 50° tca with 2-3% wispy calcite veining and a gradual increase in pyrite towards zone @ 41.35 m.	9497	38.00	39.00	1.00					NIL	





**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-03


PAGE: 1 of 7

PROPERTY	Teck "A"	DATE LOGGED	October 11, 1991 - October 13, 1991	EASTING	000
TOWNSHIP	Teck	LOGGED BY	Mark Masson	NORTHING	172 S
CLAIM No.	L 626766	DRILLED BY	Heath & Sherwood	ELEVATION	
STARTED	October 10, 1991	CORE LOCATION	Kirkland Lake Warehouse	COLLAR SURVEY	
COMPLETED	October 12, 1991	DOWNHOLE SURVEYOR	B.M.C.I.	LENGTH	176.30
		SURVEY INSTRUMENT		UNITS	metres
				CORE SIZE	NQ

PURPOSE To test "DK" showing

COMMENTS

SIGNED BY

  
(W. Benham)

Depth	Method	Azimuth	Dip
Collar	Compass	346	63
3.0			63
60.0			62
90.0			62
170.0			61

**SUMMARY LOG**

**ASSAY SUMMARY**

INTERVAL From To	DESCRIPTION	INTERVAL From To	DESCRIPTION	INTERVAL From To	LENGTH in metres	AVERAGE Au g/t
0.00 1.15	<b>OVERBURDEN</b>			56.50 59.50	3.00	0.28
1.15 23.00	<b>BASALT</b> Massive		57.00 - 58.10 65% white quartz veins with < 1% black graphite ± galena filled fractures @ 75° tca.	81.45 85.00	3.55	0.13
	10.70 - 11.10 Shear zone @ 50° tca. 1% coarse grained pyrite. 5% quartz veins.		58.10 - 60.00 Silicified 1% magnetite. 1-2% pyrite, 3% quartz veins.	108.00 108.60	0.60	0.16
	17.05 - 17.20 Quartz + calcite + pyrite vein. 1-2% fine grained pyrite.	60.80 87.70	<b>BASALT</b> Leucoxene spotted, trace to 1% pyrite, trace to 3% quartz + calcite veins.			
23.00 55.20	<b>PILLOWED BASALT</b>		<b>BASALT</b> Massive, trace to 2% pyrite, trace to 5% quartz + calcite veining.			
	33.60 - 33.75 Quartz + calcite + pyrite vein @ 55° tca. 2-3% medium grained pyrite.	87.70 137.50	<b>DIORITIC BASALT/GABBRO</b> 151.00 - 151.30 Sheared @ 45° tca. 1% pyrite.			
	35.00 - 35.15 Calcite + quartz + pyrite vein @ 50° tca.	137.50 176.30	E. O. H.			
	39.50 - 39.65 Bleached, 1-2% pyrite.					
	46.60 - 46.65 Blue-grey quartz flooding, 2-3 pyrite.	176.30				
	50.20 - 50.30 Quartz + calcite + pyrite vein, 3-5% pyrite.					
	51.55 - 51.75 Quartz + calcite + pyrite zone, 3-4% medium grained pyrite.					
55.20 60.80	<b>SHEAR ZONE</b> Sheared @ 65° tca silicified. 1-2% fine grained pyrite.					





**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-03

PAGE: 3 of 7

INTERVAL		DESCRIPTION	SAMPLE						ASSAYS			
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check
		a dark grey to buff calcite + quartz groundmass. Vein is quite irregular and upper contact is lined with sub-euhedral pyrite.										
33.75	34.10	Basalt is well foliated with sharp chlorite slips calcite veinlets and trace fine grained euhedral pyrite.	9551	34.15	34.90	0.75		Tr.	Tr.			NIL
			9552	34.90	35.20	0.30		Tr.	10-15			NIL
35.00	35.15	Calcite + quartz ± pyrite vein @ 50° tca. Light grey-buff to pink calcite + quartz vein with minor contorted wall rock inclusions which carry 0.5-1% finely disseminated pyrite.	9553	35.20	36.00	0.80		Tr.				NIL
36.45		1% coarse grained euhedral clotty pyrite on grey-white calcite pod within a dark green chloritic pillow selvage. Pillows displays chloritic cracking at right angles to selvage. Possible south facing in the up-hole direction.	9554	36.00	36.60	0.60		Tr.				NIL
			9555	36.60	37.50	0.90						NIL
			9556	37.50	38.50	1.00						NIL
			9557	38.50	39.40	0.90						NIL
39.50	39.65	Bleached pyrite zone. 1-2% finely disseminated subhedral pyrite in a grey-buff, strongly carbonated, weakly silicified zone. Upper contact is a sharp slip @ 70° tca while lower contact is irregular and diffuse.	9558	39.40	39.90	0.50		1		Cal.		0.01
			9559	39.90	40.50	0.60						NIL
			9560	40.50	41.00	0.50		Tr.	2			NIL
			9561	41.00	41.50	0.50						NIL
			9562	41.50	42.00	0.50		Tr.	Tr.			NIL
			9563	42.00	42.50	0.50		Tr.	Tr.			NIL
			9564	42.50	43.00	0.50						NIL
			9565	43.00	44.00	1.00						NIL
44.40		1 cm wide, discontinuous, blue-grey calcite + quartz vein @ 45° tca with 3% fine to medium grained euhedral pyrite.	9566	44.00	44.50	0.50		Tr.	Tr.			NIL
			9567	44.50	45.00	0.50						NIL
			9568	45.00	46.00	1.00						NIL
			9569	46.00	46.50	0.50						NIL
46.60	46.65	Dark blue-grey, very fine grained to aphanitic calcite + quartz flooding (veining) with 2-3% medium (≤ 2 mm) euhedral pyrite cubes. Vein @ 40° tca.	9570	46.50	47.00	0.50		1	5			NIL
			9571	47.00	47.50	0.50		Tr.	Tr.			NIL
			9572	47.50	48.00	0.50		Tr.	Tr.			NIL
			9573	48.00	48.50	0.50						0.01
			9574	48.50	49.00	0.50						NIL
			9575	49.00	49.50	0.50						NIL
			9576	49.50	50.00	0.50		Tr.	Tr.			NIL
50.20	50.30	Calcite + quartz + pyrite zone. 3-5% very fine grained sub-euhedral disseminated pyrite in a very fine grained, yellow-brown carbonated and silicified groundmass which is in turn pseudo-brecciated "crack & seal" by narrow (≤ 1 mm) blue-grey quartz ± calcite fracturing. Weak diffuse boundaries.	9577	50.00	50.50	0.50		2	5	Cal.	Sil.	0.03
			9578	50.50	51.00	0.50		Tr.	Tr.			0.04
			9579	51.00	51.50	0.50		Tr.	Tr.			NIL
51.55	51.75	Quartz + calcite + pyrite zone. Upper contact sharp chlorite slip @ 50° tca. Lower contact irregular and	9580	51.50	52.00	0.50		2	3-5	Cal.	Sil.	0.02
			9581	52.00	53.00	1.00		Tr.	Tr.	Cal.		NIL

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-03

PAGE: 4 of 7

INTERVAL		DESCRIPTION	SAMPLE							ASSAYS		
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check
		diffuse. 3-4% medium grained euhedral pyrite cubes and clusters disseminated through a dirty brown moderately silicified and carbonatized groundmass. Cut by 3% later barren white quartz stringers.										
	53.00 - 55.20	Unit becomes increasingly foliated @ 45° tca and cut by 3-4% calcite ± quartz veinlets and a strong pervasive carbonate in matrix. Carries trace patchy sub-euhedral pyrite.	9582	53.00	53.50	0.50		Tr.	2-3		Cal.	NIL
			9583	53.50	54.00	0.50		Tr.	3		Cal.	NIL
			9584	54.00	54.70	0.70		Tr.	1-2			NIL
			9585	54.70	55.20	0.50		0.5-1	2-3			0.01
55.20	60.80	<b>SHEAR ZONE</b> Sheared to laminated @ 65° tca. Chlorite + sericite + quartz + hematite + pyrite ± magnetite. Strongly foliated to laminated, pseudo-mylonitic zone which is pervasively silicified.										
	55.20 - 56.00	Well foliated, weakly to moderately silicified, chloritic mafic volcanics intruded (parallel to foliation) by 3-5% salmon pink aphanitic quartz ± potassic feldspar (?) veinlets up to 2-3 cm wide. These veinlets generally have 1-2% fine grained euhedral pyrite within veins and in adjacent wall rock. Volcanics are strongly magnetic and display weak patchy zones of hematization.	9586	55.20	56.00	0.80		1	3-5		Sil.	NIL
	56.00 - 57.00	Zone takes on a strongly banded to laminated appearance due to alternating sections of: 1) Dark green foliated, chloritic, volcanic. 2) Yellow-green sericitized volcanic. 3) Purple hematized bands. These lamellae range from 1 mm to 2-3 cm wide and entire section is overprinted by a pervasive silicification. Also carries 3-4% salmon pink (quartz ± potassic feldspar?) veinlets up to 1.5 cm wide parallel to laminations. Entire zone carries 1% finely disseminated and minor banded pyrite.	9587	56.00	56.50	0.50		1			Sil.	0.03
			9588	56.50	57.00	0.50		1			Sil.	0.15
	57.00 - 58.10	Zone consists of mottled dirty yellow-brown to grey, medium grained, altered dioritic basalt intruded by semi-massive, milk white quartz veins up to 30 cm wide.	9589	57.00	57.50	0.50		Tr.	65		Galena Graph	0.52
	57.25 - 57.50	White quartz vein has dark blue-black hairline sutures (possibly graphite and/or galena?) @ 75° tca. These sutures frequently have spotty subhedral pyrite on/or adjacent to them.	9590	57.50	58.10	0.60		Tr.	55		Galena Graph	0.51
	58.10 - 60.00	Pervasively silicified, dirty grey-brown altered basalt with patchy purple hematization (1% fine grained magnetite	9591	58.10	58.75	0.65		1-2	2		Sil.	0.14
			9592	58.75	59.50	0.75		1-2	3-4		Sil.	0.14

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-03

PAGE: 5 of 7

INTERVAL		DESCRIPTION	SAMPLE							ASSAYS			
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check	
60.80	60.00 - 60.80	evident) and 1-2% finely disseminated pyrite. Section cut by 3% barren milk white quartz veins up to 15 cm.	9593	59.50	60.00	0.50		1	1-2	Sil.	NIL		
		Zone is moderately well foliated medium to fine grained dioritic basalt strongly magnetic and somewhat bleached and silicified proximal to a pink-white calcite + quartz vein @ 5-15° tca. Very minor disseminated pyrite.	9594	60.00	60.80	0.80		Tr.		Sil+Cal	0.01		
	60.80 - 87.70	<b>BASALT</b> Very fine grained dark green-black, very soft chloritic volcanic. Comprised predominantly of aphanitic chloritic matrix with fine irregular patchy grey-white (plagioclase) altered groundmass. Pervasive, ubiquitous carbonatization, calcite. Pervasive moderate magnetics. Patchy buff-grey to brown leucoxene spotting up to 1%. Trace spotty subhedral pyrite on small irregular calcite clots and proximal to minor grey-white to salmon-pink quartz + calcite ± potassic feldspar(?) veinlets up to 1 cm wide. Lower contact of unit is subjective as it grades to fine grained magnetic basalts.	9595	60.80	61.50	0.70		Tr.	Tr.		NIL		
		9596	61.50	62.00	0.50		Tr.	Tr.		NIL			
		9597	62.00	63.00	1.00		Tr.	Tr.		NIL			
		9598	63.00	64.00	1.00		Tr.	Tr.		0.02			
		9599	64.00	65.00	1.00		Tr.	Tr.		NIL			
		9600	65.00	66.00	1.00		Tr.	Tr.		NIL			
		9601	66.00	67.00	1.00		Tr.	Tr.		NIL			
		9602	67.00	68.00	1.00		Tr.	Tr.		0.01			
		9603	68.00	69.00	1.00		Tr.	Tr.		0.04			
		9604	69.00	70.00	1.00		Tr.	Tr.		NIL			
		9605	70.00	70.50	0.50		1	2		0.03			
		9606	70.50	71.00	0.50		Tr.	Tr.		0.05			
		9607	71.00	71.60	0.60		Tr.	Tr.		0.01			
		9608	71.60	72.25	0.65					NIL			
		71.60 - 87.70	Massive, strongly magnetic and in places has a weak spotted appearance due to grey-brown spots and clusters of what appears to be leucoxene ± sericite alteration or replacement of some pre-existing mineral in groundmass. In places a crude crystal cleavage is evident.										
		72.25 - 72.75	Moderately well foliated zone with 3% quartz + calcite + pyrite veining. Narrow calcite + quartz veinlets with bleached silicified alteration halos (up to 1 cm wide) with 1-2% medium grained euhedral pyrite within halo and wall rock. Also a 10 cm wide grey-white quartz vein with	9609	72.25	72.75	0.50		1	10		0.08	
				9610	72.75	73.50	0.75		Tr.	Tr.		0.02	
				9611	73.50	74.00	0.50					NIL	
9612	74.00			75.00	1.00					NIL			
9613	75.00			76.00	1.00					0.01			

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-03

PAGE: 6 of 7

INTERVAL		DESCRIPTION	SAMPLE						ASSAYS			
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check
		calcite fractures and internal chlorite wisps. 1% pyrite on vein wall and on chloritic sutures internally.	9614	76.00	77.00	1.00					0.01	
			9615	77.00	77.50	0.50		1	2-3		0.04	
			9616	77.50	78.00	0.50					NIL	
			9617	78.00	79.00	1.00					NIL	
			9618	79.00	80.00	1.00					0.08	
	80.00 - 82.00	Unit has 1% fine grained euhedral magnetite crystals ( $\leq$ 1 mm) evident throughout.	9619	80.00	81.00	1.00		Tr.	1		0.04	
			9620	81.00	81.45	0.45					0.04	
	81.45 - 87.70	Unit contains up to 2-3% white to salmon pink quartz $\pm$ potassic feldspar(?) + calcite veinlets up to 2 cm wide from 0-50° tca. These veinlets typically have salmon pink rims grading to white quartz cores. Calcite occurs as infilling of cross-fractures in vein and as a grey-white sugary background. Veins have 1-2% medium grained euhedral pyrite on walls and adjacent wall rock.	9621	81.45	82.00	0.55		1	3		0.24	
			9622	82.00	82.50	0.50		1	2-3		0.13	
			9623	82.50	83.10	0.60		1	2		0.05	
			9624	83.10	83.50	0.40		Tr.	Tr.		NIL	
			9625	83.50	84.00	0.50		1-2	2-3		NIL	
			9626	84.00	85.00	1.00		0.5	1-2		0.23	
			9627	85.00	85.50	0.50		Tr.	Tr.		NIL	
			9628	85.50	86.00	0.50					0.01	
			9629	86.00	86.50	0.50		Tr.	1		0.01	
			9630	86.50	87.00	0.50		Tr.	1		NIL	
			9631	87.00	87.70	0.70		Tr.	Tr.		NIL	
87.70	137.50	<b>BASALT</b> Massive, fine to very fine grained dark green basalt. Moderately hard, strong pervasive magnetics. Non-pillowed, non variolitic etc. Pervasive, ubiquitous calcite veining and flooding. In places unit acquires a mottled patchwork appearance due to irregular medium grained dioritic phases and patches intermixed with very fine grained basaltic unit. These coarser phases then grade to dark green-blue, aphanitic volcanics with minor leucoxene. i.e. from $\approx$ 130-137.5 unit is dark blue-green aphanitic mafic volcanic with 1-2% fine leucoxene spotting. Then from 137.5-138.0 grades to a massive medium grained dioritic basalt.										
	87.70 - 88.20	Section carries 5-10% milk white to brown quartz + calcite + pyrite veining intruding moderately foliated chloritic basalt @ 50° tca. Contains 1% medium grained euhedral pyrite in wall rock.	9632	87.70	88.30	0.60		1	10-15		0.06	
			9633	88.30	88.80	0.50		Tr.	1-2		NIL	
	88.80 - 89.30	Irregular grey-white calcite $\pm$ quartz veining with minor included smeared basalt and carrying 1% medium grained euhedral pyrite.	9634	88.80	89.30	0.50		1	10-15		NIL	
			9635	89.30	90.00	0.70		Tr.	1-2		NIL	
			9636	90.00	91.00	1.00					0.01	
			9637	91.00	92.00	1.00					NIL	
			9638	92.00	93.00	1.00					NIL	

**BATTLE MOUNTAIN (CANADA) INC.  
DIAMOND DRILL LOG**

HOLE: TA-91-03

PAGE: 7 of 7

INTERVAL		DESCRIPTION	SAMPLE						ASSAYS					
FROM	TO		No.	From	To	Length	%Rec	%Py	%QV	%Ser	Au, g/t	Au, Check		
137.50	176.30	96.00 - 102.00	Unit grades to a fine to medium grained massive basalt with a fine diabasic texture. Strongly magnetic. Weak calcite veining.		9639	99.00	100.00	1.00				NIL		
				9640	100.00	100.50	0.50					NIL		
		100.80	1 cm wide calcite + quartz vein @ 75° tca with a 1 cm wide red-brown alteration halo which carries 2% euhedral pyrite.		9641	100.50	101.00	0.50		Tr.	1	NIL		
				9642	101.00	102.00	1.00					0.01		
				9643	106.00	107.00	1.00					NIL		
				9644	107.00	108.00	1.00					NIL		
		108.00 - 108.50	Moderately altered, calcite + quartz flooding and small calcite veinlets. Zone carries 1% medium grained euhedral disseminated pyrite.		9645	108.00	108.60	0.60		1	5		0.16	
				9646	108.60	109.10	0.50		Tr.	Tr.		NIL		
				9647	109.10	110.00	0.90					NIL		
				9648	119.00	120.00	1.00					NIL		
				9649	120.00	120.70	0.70		1-2	3-5		NIL		
				9650	120.70	121.20	0.50					0.05		
				9651	121.20	122.00	0.80					NIL		
				9652	122.00	123.00	1.00					NIL		
				<b>DIORITIC BASALT/GABBRO</b>										
				Massive, medium to coarse grained green-white dioritic basalt or gabbro. Somewhat variable from coarse to fine grained with 20-35% dark green subhedral chloritized pyroxene in a grey-white plagioclase groundmass. In places has a very coarse spotted texture due to subhedral pyroxene crystals evident up to 0.5 cm in the anhedral groundmass. May be equivalent to pyroxenite on surface? Generally weak to non-magnetic.										
				151.00 - 151.30	Unit is moderately well sheared @ 45° tca and is cut by 5% irregular calcite + quartz vein with angular included wall rock fragments. 1% spotty euhedral pyrite.		9653	150.00	151.00	1.00				NIL
				9654	151.00	151.50	0.50		1	5	NIL			
		151.30 - 160.00	Unit is fine to medium grained, massive diabasic textured mafic volcanic.		9655	151.50	152.00	0.50				NIL		
		160.00 - 176.30	Grades to coarse grained massive diorite/gabbro with spotted pyroxenes up to 0.5 cm.											
		<b>END OF HOLE</b>												
		Casing pulled.												

Kirkland Lake Project

Teck "A" Drilling

APPENDIX II  
ASSAY CERTIFICATES



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1W-4149-RA1

## Assay Certificate

Company: **BATTLE MOUNTAIN (CANADA) INC.**  
Project: 75-JV-28  
Attn: W. Benham

Date: OCT-10-91  
Copy 1. Box 635, Kirkland Lake, P2N 3K1  
2. Fax to 567-6448

We hereby certify the following Assay of 32 CORE samples submitted OCT-09-91 by R. Peever.

RECEIVED OCT 15 1991

Sample Number	Au g/tonne	Au check g/tonne
9344	Nil	
9345	0.01	Nil
9346	Nil	
9347	0.02	
9348	0.01	
9349	0.01	
9350	0.01	
9351	Nil	
9352	Nil	
9353	Nil	
9354	Nil	
9355	Nil	
9356	Nil	
9357	0.01	
9358	Nil	
9359	Nil	
9360	Nil	
9361	Nil	
9362	0.01	
9363	0.01	
9364	Nil	
9365	0.01	
9366	Nil	
9367	Nil	
9368	0.02	
9369	0.03	0.02
9370	0.02	
9371	Nil	
9372	Nil	
9373	Nil	

Au was determined using 1 AT fusions

Certified by Donna Gardner



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Page 2 of 2

1W-4149-RA1

## Assay Certificate

Company: **BATTLE MOUNTAIN (CANADA) INC.**  
Project: 75-JV-28  
Attn: W. Benham

Date: OCT-10-91  
Copy 1. Box 635, Kirkland Lake, P2N 3K1  
2. Fax to 567-6448

We hereby certify the following Assay of 32 CORE samples submitted OCT-09-91 by R. Peever.

Sample Number	Au g/tonne	Au check g/tonne
9374	Nil	
9375	Nil	

Au was determined using 1 AT fusions

Certified by Donna Gardner





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1W-4152-RA1

## Assay Certificate

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: 75-JV-28  
Attn: W.BENHAM

Date: OCT-15-91  
Copy 1. P.O.BOX 635 KIRKLAND LAKE, ONT. P2N 3K1  
2. FAX TO 567--4840

We hereby certify the following Assay of 73 CORE samples submitted OCT-09-91 by R. PEEVER.

Sample Number	Au g/tonne	Au check g/tonne
9376	0.01	
9377	Nil	
9378	Nil	
9379	Nil	
9380	0.01	
9381	0.01	
9382	Nil	
9383	Nil	Nil
9384	0.01	
9385	Nil	
9386	Nil	
9387	0.01	
9388	Nil	
9389	0.02	
9390	Nil	
9391	Nil	
9392	0.01	
9393	Nil	
9394	Nil	
9395	Nil	
9396	0.03	
9397	Nil	
9398	Nil	
9399	Nil	
9400	Nil	
9401	Nil	Nil
9402	Nil	
9403	0.01	
9404	Nil	
9405	0.01	

Au was determined using 1 AT fusions

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## Assay Certificate

1W-4152-RA1

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: **75-JV-28**  
Attn: **W.BENHAM**

Date: **OCT-15-91**  
Copy 1. P.O.BOX 635 KIRKLAND LAKE, ONT. P2N 3K1  
2. FAX TO 567-4840

We hereby certify the following Assay of 73 CORE samples submitted OCT-09-91 by R. PEEVER.

Sample Number	Au g/tonne	Au check g/tonne
9406	0.01	
9407	0.01	
9408	Nil	
9409	Nil	0.01
9410	Nil	
9411	0.01	
9412	0.01	
9413	0.01	
9414	Nil	
9415	0.01	
9416	0.01	
9417	0.01	
9418	Nil	
9419	Nil	
9420	Nil	
9421	Nil	
9422	Nil	
9423	Nil	
9424	0.01	Nil
9425	Nil	
9426	Nil	
9427	0.01	
9428	Nil	
9429	Nil	
9430	Nil	
9431	Nil	
9432	0.01	
9433	0.01	
9434	0.01	
9435	0.01	

Au was determined using 1 AT fusions

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## Assay Certificate

1W-4152-RA1

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Project: 75-JV-28  
Attn: W.BENHAM

Date: OCT-15-91  
Copy 1. P.O.BOX 635 KIRKLAND LAKE, ONT. P2N 3K1  
2. FAX TO 567--4840

We hereby certify the following Assay of 73 CORE samples submitted OCT-09-91 by R. PEEVER.

Sample Number	Au g/tonne	Au check g/tonne
9436	Nil	
9437	Nil	
9438	Nil	
9439	Nil	
9440	Nil	
9441	Nil	
9442	Nil	
9443	0.01	
9444	Nil	
9445	Nil	
9446	Nil	
9447	Nil	Nil
9448	0.01	

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## Assay Certificate

1W-4158-RA1

Company: **BATTLE MOUNTAIN (CANADA) INC.**  
Project: 75-JV-28  
Attn: WAYNE BENHAM

Date: OCT-16-91  
Copy 1. BOX 635, KIRKLAND LAKE P2N 3K1  
2. FAX TO 567-6448

We hereby certify the following Assay of 52 CORE samples submitted OCT-10-91 by R. PEEVER.

Sample Number	Au g/tonne	Au check g/tonne
9449	Nil	Nil
9450	Nil	
9451	Nil	
9452	Nil	
9453	Nil	
9454	Nil	
9455	Nil	
9456	Nil	
9457	Nil	
9458	Nil	
9459	0.05	0.04
9460	Nil	
9461	Nil	
9462	Nil	
9463	Nil	
9464	Nil	
9465	Nil	
9466	Nil	
9467	Nil	
9468	0.01	
9469	0.01	
9470	0.01	
9471	0.02	
9472	0.02	Nil
9473	Nil	
9474	Nil	
9475	Nil	
9476	Nil	
9477	Nil	
9478	Nil	

Au was determined using 1 AT fusions

Certified by Donna Gardner



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## Assay Certificate

1W-4158-RA1

Company: **BATTLE MOUNTAIN (CANADA) INC.**  
Project: 75-JV-28  
Attn: WAYNE BENHAM

Date: OCT-16-91  
Copy 1. BOX 635, KIRKLAND LAKE P2N 3K1  
2. FAX TO 567-6448

We hereby certify the following Assay of 52 CORE samples submitted OCT-10-91 by R. PEEVER.

Sample Number	Au g/tonne	Au check g/tonne
9479	Ni1	
9480	Ni1	
9481	Ni1	
9482	Ni1	
9483	Ni1	
9484	0.12	0.12
9485	0.11	
9486	Ni1	
9487	0.07	
9488	Ni1	
9489	0.02	
9490	Ni1	
9491	Ni1	
9492	Ni1	
9493	Ni1	
9494	Ni1	
9495	Ni1	
9496	Ni1	
9497	0.01	
9498	Ni1	
9499	Ni1	
9500	Ni1	Ni1

Au was determined using 1 AT fusions

Certified by Donna Gardner

Handwritten: *Handwritten Assays*



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Handwritten: *2*

## Assay Certificate

1W-4165-RA1

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: **75-JV-28**  
Attn: **WAYNE BENHAM**

Date: **OCT-16-91**  
Copy 1. P.O. BOX 635, KIRKLAND LAKE, ONT. P2N 3K1  
2. FAX TO 567-6448

We hereby certify the following Assay of 26 CORE samples submitted OCT-11-91 by R. PEEVER.

Sample Number	Au g/tonne	Au check g/tonne
9501	Nil	
9502	0.02	0.03
9503	Nil	
9504	Nil	
9505	Nil	
9506	Nil	
9507	Nil	
9508	Nil	
9509	Nil	
9510	Nil	
9511	Nil	
9512	Nil	
9513	0.01	0.01
9514	Nil	
9515	Nil	
9516	Nil	
9517	Nil	
9518	Nil	
9519	Nil	
9520	Nil	
9521	Nil	
9522	Nil	
9523	Nil	
9524	Nil	
9525	Nil	
9526	Nil	

Au was determined using 1 AT fusions

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Page 1 of 3

## Assay Certificate

1W-4176-RA1

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: 75-JV-28  
Attn: W.BENHAM

Date: OCT-17-91  
Copy 1. P.O.Box 635, Kirkland Lake, Ont. P2N 3K1  
2. Fax to 567-6448

We hereby certify the following Assay of 65 core samples submitted OCT-15-91 by .

Sample Number	Au g/tonne	Au check g/tonne
9527	0.01	
9528	Nil	
9529	Nil	
9530	Nil	
9531	Nil	
9532	Nil	Nil
9533	Nil	
9534	Nil	
9535	Nil	
9536	Nil	
9537	Nil	
9538	Nil	
9539	0.01	
9540	Nil	
9541	Nil	
9542	Nil	
9543	Nil	
9544	Nil	Nil
9545	Nil	
9546	Nil	
9547	Nil	
9548	Nil	
9549	Nil	
9550	0.01	
9551	Nil	
9552	Nil	
9553	Nil	
9554	Nil	
9555	Nil	
9556	Nil	

Au was determined using 1 AT fusions

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Assaying - Consulting - Representation

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1W-4176-RA1

## Assay Certificate

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: 75-JV-28  
Attn: W.BENHAM

Date: OCT-17-91  
Copy 1. P.O.Box 635, Kirkland Lake, Ont. P2N 3K1  
2. Fax to 567-6448

We hereby certify the following Assay of 65 core samples submitted OCT-15-91 by .

Sample Number	Au g/tonne	Au check g/tonne
9557	Nil	
9558	0.01	
9559	Nil	
9560	Nil	
9561	Nil	
9562	Nil	
9563	Nil	
9564	Nil	
9565	Nil	Nil
9566	Nil	
9567	Nil	
9568	Nil	
9569	Nil	
9570	Nil	
9571	Nil	
9572	Nil	
9573	0.01	
9574	Nil	
9575	Nil	
9576	Nil	
9577	0.03	
9578	0.04	0.04
9579	Nil	
9580	0.02	
9581	Nil	
9582	Nil	
9583	Nil	
9584	Nil	
9585	0.01	
9586	Nil	

Au was determined using 1 AT fusions

Certified by Donna Gardner





# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Page 3 of 3

## Assay Certificate

1W-4176-RA1

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: 75-JV-28  
Attn: W.BENHAM

Date: OCT-17-91  
Copy 1. P.O.Box 635, Kirkland Lake, Ont. P2N 3K1  
2. Fax to 567-6448

We hereby certify the following Assay of 65 core samples submitted OCT-15-91 by .

Sample Number	Au g/tonne	Au check g/tonne
9587	0.03	
9588	0.15	
9589	0.54	0.50
9590	0.51	
9591	0.14	

Au was determined using 1 AT fusions

Certified by Donna Gardner



# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Page 1 of 3

## Assay Certificate

1W-4177-RA1

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: 75-JV-28  
Attn: W.BENHAM

Date: OCT-18-91  
Copy 1. P.O.Box 635, Kirkland Lake, Ont. P2N 3K1  
2. Fax to 567-6448

We hereby certify the following Assay of 64 core samples submitted OCT-15-91 by .

Sample Number	Au g/tonne	Au check g/tonne
9592	0.13	0.15
9593	Nil	
9594	0.01	
9595	Nil	
9596	Nil	
9597	Nil	
9598	0.02	
9599	Nil	
9600	Nil	
9601	Nil	
9602	0.01	
9603	0.04	
9604	Nil	
9605	0.03	
9606	0.05	
9607	0.01	
9608	Nil	
9609	0.06	0.09
9610	0.02	
9611	Nil	
9612	Nil	
9613	0.01	
9614	0.01	
9615	0.04	
9616	Nil	
9617	Nil	
9618	0.08	
9619	0.04	
9620	0.04	
9621	0.23	0.24

Au was determined using 1 AT fusions

Certified by Donna Gardner



# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Page 2 of 3

## Assay Certificate

1W-4177-RA1

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: 75-JV-28  
Attn: W.BENHAM

Date: OCT-18-91  
Copy 1. P.O.Box 635, Kirkland Lake, Ont. P2N 3K1  
2. Fax to 567-6448

We hereby certify the following Assay of 64 core samples submitted OCT-15-91 by .

Sample Number	Au g/tonne	Au check g/tonne
9622	0.13	
9623	0.05	
9624	Nil	
9625	Nil	
9626	0.23	
9627	Nil	
9628	0.01	
9629	0.01	
9630	Nil	
9631	Nil	
9632	0.05	0.07
9633	Nil	
9634	Nil	
9635	Nil	
9636	0.01	
9637	Nil	
9638	Nil	
9639	Nil	
9640	Nil	
9641	Nil	
9642	0.01	
9643	Nil	
9644	Nil	
9645	0.15	0.16
9646	Nil	
9647	Nil	
9648	Nil	
9649	Nil	
9650	0.05	
9651	Nil	

Au was determined using 1 AT fusions

Certified by Donna Gardner



# Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Page 3 of 3

## Assay Certificate

1W-4177-RA1

Company: **BATTLE MOUNTAIN CANADA INC.**  
Project: **75-JV-28**  
Attn: **W.BENHAM**

Date: **OCT-18-91**

Copy 1. P.O.Box 635, Kirkland Lake, Ont. P2N 3K1  
2. Fax to 567-6448

We hereby certify the following Assay of 64 core samples submitted OCT-15-91 by .

Sample Number	Au g/tonne	Au check g/tonne
9652	Nil	
9653	Nil	
9654	Nil	
9655	Nil	

Au was determined using 1 AT fusions

Certified by Donna Gardner

APPENDIX III  
CERTIFICATE OF QUALIFICATIONS

CERTIFICATE OF QUALIFICATIONS

I, Wayne Benham of 921 Willowdale Ave. in the City of Toronto in the Province of Ontario.

DO HEREBY CERTIFY:

1. That I am a graduate of Queen's University, Kingston, Ontario with a Bachelor of Science (B.Sc.), Geological Science, 1970.
2. That I have been practising my profession as an exploration geologist since 1970.
3. That I have personally supervised the work described in this report.

Signed



Wayne Benham  
Kirkland Lake, Ontario

Dated this November 29, 1991.



W9280.00044

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used for correspondence. Questions about this collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, Fourth Floor, 159 Cedar Street, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.

- Instructions:**
- Please type or print and submit in duplicate.
  - Refer to the Mining Act and Regulations for requirements of filing assessment work or consult the Mining Recorder.
  - A separate copy of this form must be completed for each Work Group.
  - Technical reports and maps must accompany this form in duplicate.
  - A sketch, showing the claims the work is assigned to, must accompany this form.

Recorded Holder(s) <b>BATTLE MOUNTAIN (CANADA) INC.</b>		T-5179	Client No. <b>105640</b>
Address <b>390 Bay Street, Suite 2910, Toronto, Ontario M5H 2Y2</b>		Telephone No. <b>(416) 867-9815</b>	
Mining Division <b>Larder Lake</b>	Township/Area <b>Teck Twp.</b>	M or G Plan No. <b>M 392</b>	
Dates Work Performed	From: <b>June 21, 1991</b>	To: <b>November, 1991</b>	

**Work Performed (Check One Work Group Only)**

Work Group	Type
<input type="checkbox"/> Geotechnical Survey	
<input checked="" type="checkbox"/> Physical Work, Including Drilling	<b>Drilling</b>
<input type="checkbox"/> Rehabilitation	
<input type="checkbox"/> Other Authorized Work	
<input type="checkbox"/> Assays	
<input type="checkbox"/> Assignment from Reserve	

**ONTARIO GEOLOGICAL SURVEY  
 GIS - ASSESSMENT FILES**

JUN 16 1992

**RECEIVED**

Total Assessment Work Claimed on the Attached Statement of Costs \$ 26,965.65

**Note:** The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

**Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)**

Name	Address
<b>W. Benham (Author)</b>	<b>P. O. Box 635, Kirkland Lake, Ont. P2N 3K1</b>
<b>Heath &amp; Sherwood Drilling (1986) Inc.</b>	<b>P. O. Box 998, Kirkland Lake, Ont. P2N 3L3</b>
<b>Swastika Laboratories</b>	<b>P. O. Box 10, Swastika, Ontario P0K 1T0</b>
<b>M. Masson (Geologist)</b>	<b>P. O. Box 1343, Kirkland Lake, Ont. P2N 3P2</b>

(attach a schedule if necessary)

**Certification of Beneficial Interest \* See Note No. 1 on reverse side**

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date <b>Jan 23/92</b>	Recorded Holder or Agent (Signature) <i>[Signature]</i> <b>O. E. Leigh</b>
--	--------------------------	--

**Certification of Work Report**

I certify that I have a personal knowledge of the facts set forth in this Work report, having performed the work or witnessed same during and/or after its completion and annexed report is true.		
Name and Address of Person Certifying <b>W. Benham, P. O. Box 635, Kirkland Lake, Ontario P2N 3K1</b>		
Telephone No. <b>(705) 567-4840</b>	Date <b>Jan 23/92</b>	Certified By (Signature) <i>[Signature]</i> <b>W. Benham</b>

**For Office Use Only**

Total Value Cr. Recorded <i>Applied: \$20,640.</i> <i>Reserve \$6326.</i>	Date Recorded <b>January 29/92</b>	Mining Recorder <i>[Signature]</i>	Received Stamp <b>LARDER LAKE DIVISION</b> <b>JAN 29 PM 2 23</b> <b>RECEIVED</b>
	Deemed Approval Date	Date Approved	
Date Notice for Amendments Sent			





Statement of Costs for Assessment Credit

État des coûts aux fins du crédit d'évaluation

Mining Act/Loi sur les mines

Transaction No./N° de transaction  
DOCUMENT #  
9280-000414

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7264.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adresser toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4<sup>e</sup> étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7264.

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre	5,553.27	
	Field Supervision Supervision sur le terrain		5,553.27
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert-conseil	Type		
	DRILLING	15,797.56	
	ASSAYING	3,580.19	
			19,377.75
Supplies Used Fournitures utilisées	Type		
	FIELD EQUIPMENT	495.00	
			495.00
Equipment Rental Location de matériel	Type		
<b>Total Direct Costs Total des coûts directs</b>			<b>25,420.02</b>

2. Indirect Costs/Coûts indirects

\*\* Note: When claiming Rehabilitation work indirect costs are not allowable as assessment work. Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type		
	TRUCK RENTAL	522.72	
	FUEL	105.25	
	COURIER	13.70	
Food and Lodging Nourriture et hébergement			
Mobilization and Demobilization Mobilisation et démoblisation			
<b>Sub Total of Indirect Costs Total partiel des coûts indirects</b>			<b>641.67</b>
Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excédant pas 20 % des coûts directs)			<b>5,083.34</b>
<b>Total Value of Assessment Credit (Total of Direct and Allowable Indirect costs) Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)</b>			<b>30,503.36</b>

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Note : Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

Filing Discounts

- Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.
- Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
	× 0.50 =

Remises pour dépôt

- Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
- Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Évaluation totale demandée
	× 0,50 =

Certification Verifying Statement of Costs

I hereby certify: that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

VICE PRESIDENT AND  
that as MANAGER OF EXPLORATION I am authorized  
(Recorded Holder, Agent, Position in Company)

to make this certification

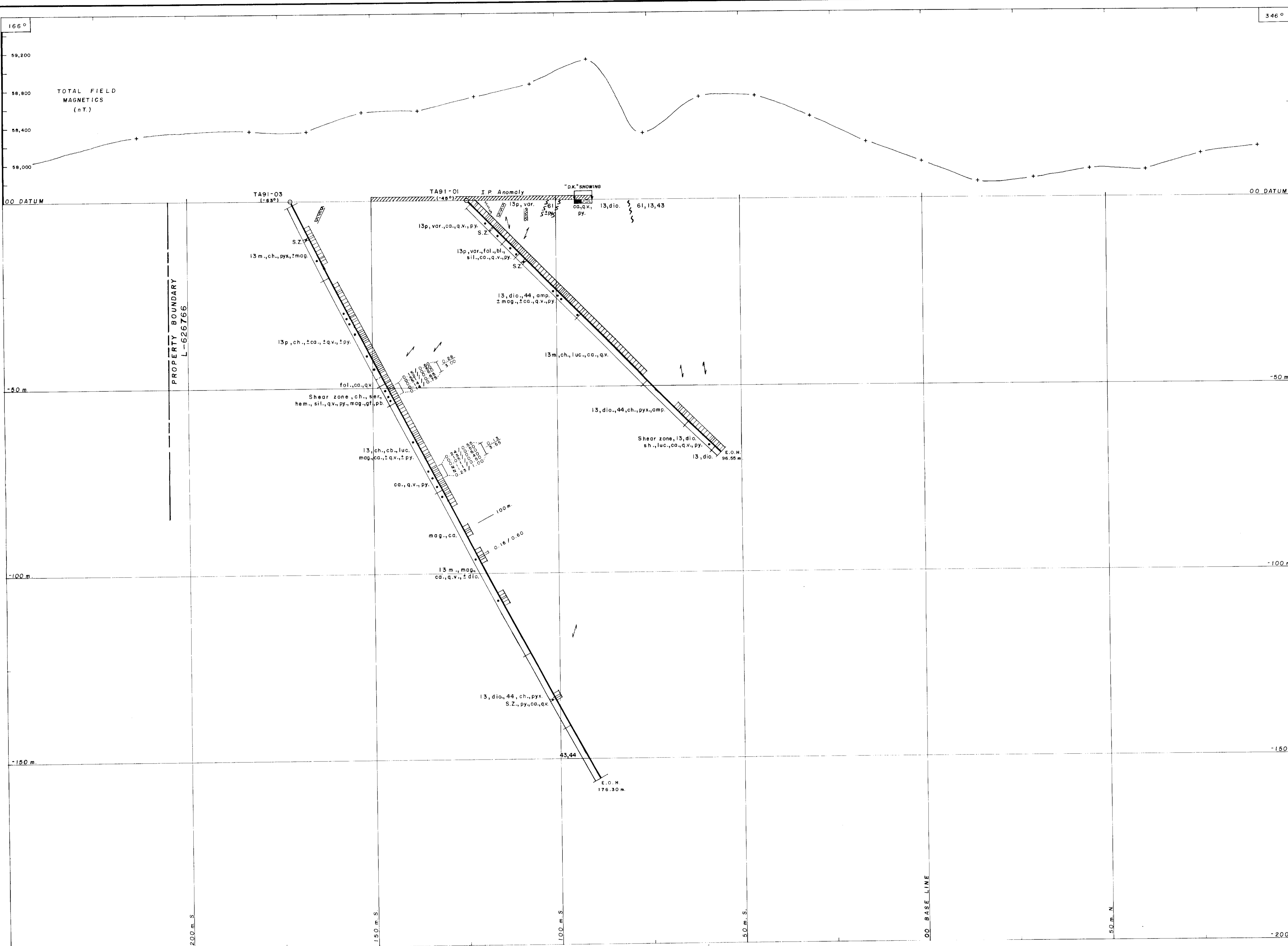
Attestation de l'état des coûts

J'atteste par la présente : que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de \_\_\_\_\_ je suis autorisé  
(titulaire enregistré, représentant, poste occupé dans la compagnie)

à faire cette attestation.

Signature [Signature] Date June 27/92



### LEGEND

<b>60 ALTERATION</b>	<b>46 Syenite</b>
61 Chlorite ± Calc ± Carbonate ± Quartz 612 Weak 613 Moderate 614 Strong	461 Augite Syenite 462 Meta Syenite 463 Meso Syenite 464 Leuco Syenite
62 Sericite ± Carbonate ± Chlorite ± Quartz 622 Weak 623 Moderate 624 Strong	<b>20 SEDIMENTS</b>
65 Carbonate ± Chlorite Fuchsite ± Quartz 652 Weak 653 Moderate 654 Strong	21 Conglomerate 22 Graywacke 23 Argillite 25 Siltstone 26 Mudstone 27 Iron Formation
69 Carbonatized Syenite	<b>10 VOLCANICS</b>
<b>40 INTRUSIVES</b>	11 Komatiites 13 Basalts 18 Trachytes 18a Ash Tuff 18b Lapilli Tuff
41 Diabase 412 Lamprophyre	
42 Peridotite 43 Pyroxenite 44 Gabbro 45 Diorite	

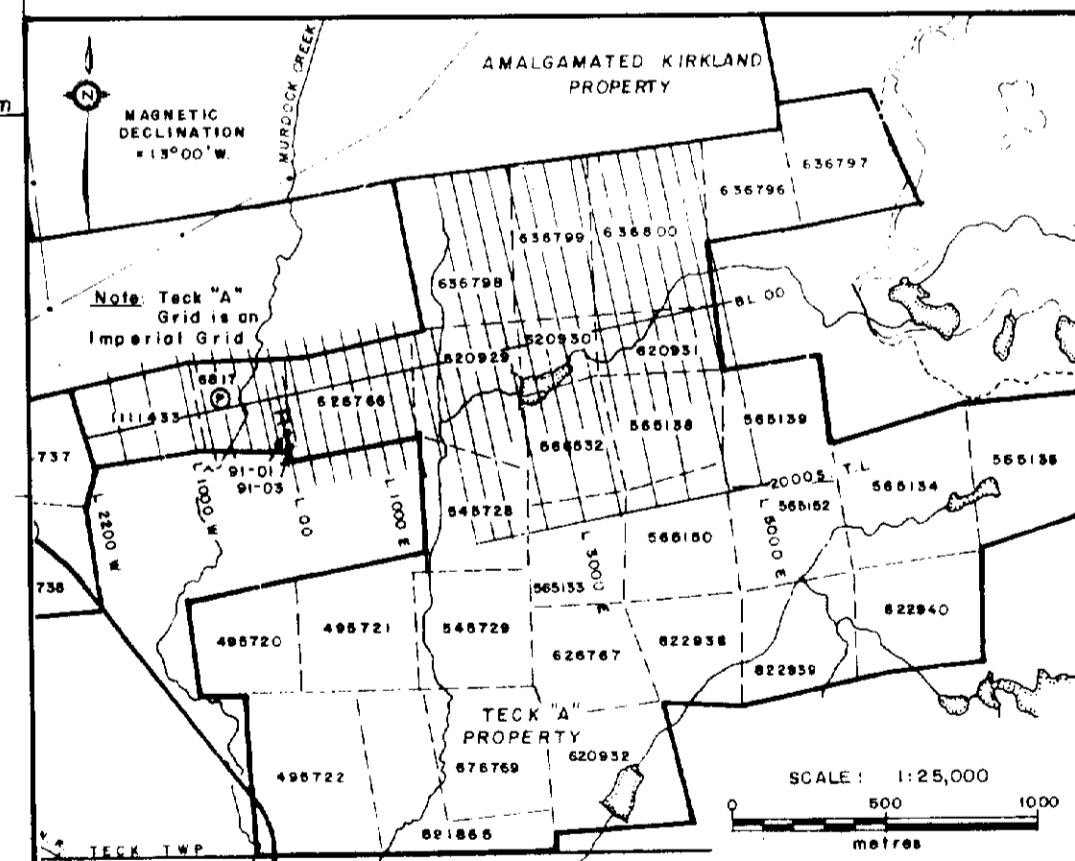
### SYMBOLS

	Bedding, Contacts
	Breccia
	Facing direction
	Foliation
	Fault, Fault Zone
	Drag folding
	Pyrite Mineralization

### ABBREVIATIONS

agp - augite porphyritic	fp - feldspar porphyritic	qtz - quartz
amp - amphotoidol	fsp - feldspathic	qv - quartz vein
amb - amphibole	fz - fault zone	sch - schist
ank - ankerite	gl - graphitic	ser - sericitic
bl - bleached	hem - hematite	sil - siliceous
blz - boulder	jsp - jasper	sp - sphalerite
bx - breccia	lam - laminated	spx - spinifex
ca - calcite	m - massive	sh - sheared
cb - carbonate	mag - magnetite	trc - trachytoidal
cp - calcopyrite	p - pitted	var - variscitic
fc - fractured	pb - galena	ves - vesicular
fch - fuchsite	py - pyrite	v.g - visible gold
chl - chlorite	alb - albite	spc - specularite
fol - foliated	por - porphyritic	luc - leucocane
dio - dioritic	pyx - pyroxene	serp - serpentinized
mo - molybdenite	tal - talc	

Collar co-ordinates and elevations are not surveyed.



**BATTLE MOUNTAIN (CANADA) INC.**

**KIRKLAND LAKE PROJECT**  
Queenston Mining Inc.  
ONTARIO

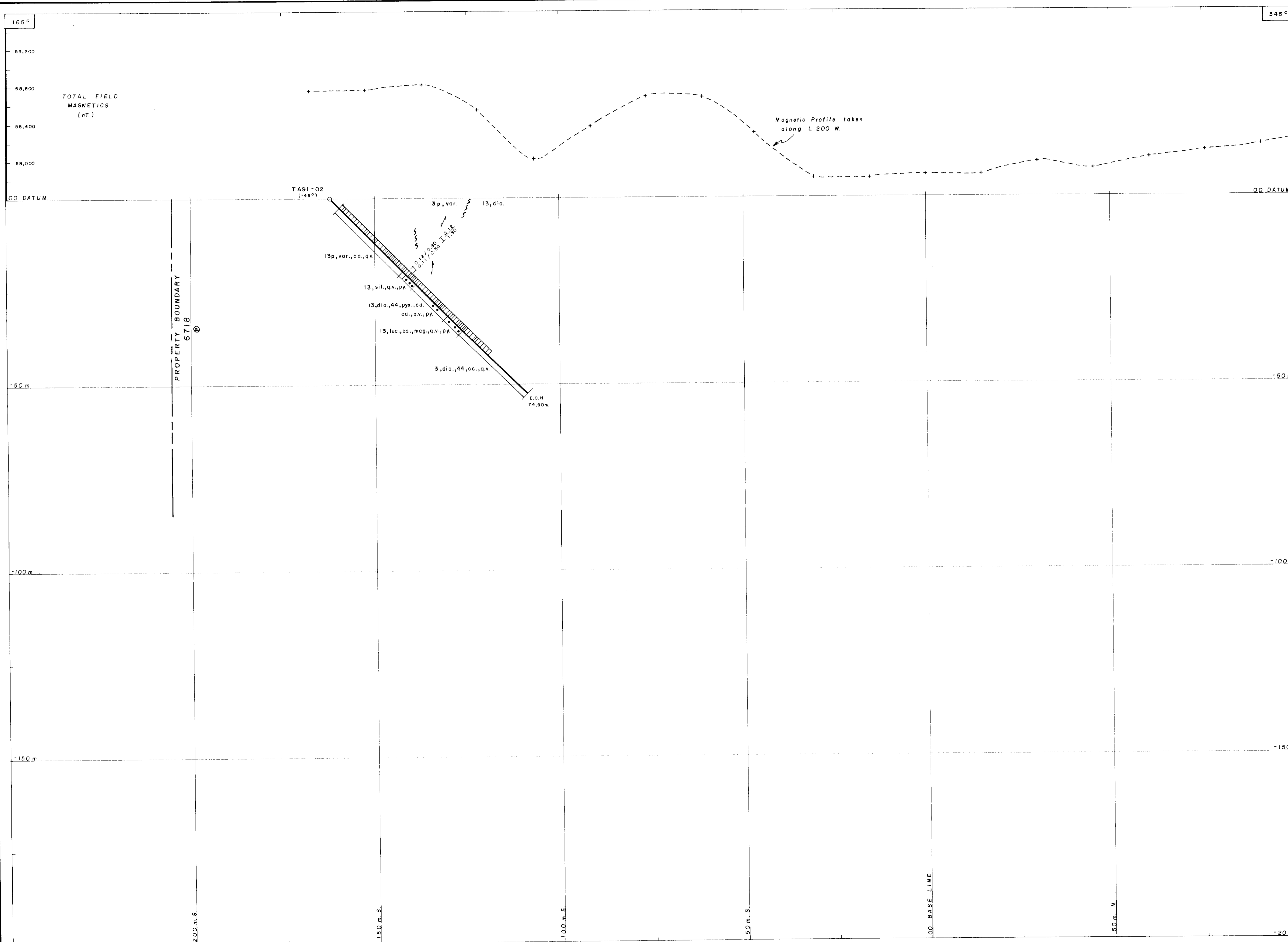
**TECK "A" PROPERTY**

**SECTION 0+00**

HOLES TA91-01 & 03

PROJECT No.: 75-JV-28	DATA BY: W. Benham / M. Masson
NTS: 42 A/1	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: DC-041	DATE: November 1991

SCALE: 1:500



### LEGEND

<b>60 ALTERATION</b>	<b>46</b> Syenite
<b>61</b> Chlorite:1Talc 3Carbonate:1Quartz	<b>461</b> Augite Syenite
612 Weak	<b>462</b> Mela Syenite
613 Moderate	<b>463</b> Meso Syenite
614 Strong	<b>464</b> Leuco Syenite
<b>62</b> Sericite:1Carbonate 4Chlorite:1Quartz	<b>47</b> Felsite
622 Weak	<b>20 SEDIMENTS</b>
623 Moderate	<b>21</b> Conglomerate
624 Strong	<b>22</b> Graywacke
<b>65</b> Carbonate:1Chlorite Fuchsite:1Quartz	<b>23</b> Arenite
652 Weak	<b>25</b> Siltstone
653 Moderate	<b>26</b> Mudstone
654 Strong	<b>27</b> Iron Formation
<b>69</b> Carbonatized Syenite	<b>10 VOLCANICS</b>
<b>40 INTRUSIVES</b>	<b>11</b> Komatiites
<b>41</b> Diabase	<b>13</b> Basalts
<b>412</b> Lamprophyre	<b>18</b> Trachytes
<b>42</b> Peridotite	<b>18a</b> Ash Tuff
<b>43</b> Pyroxenite	<b>18b</b> Lapilli Tuff
<b>44</b> Gabbro	
<b>45</b> Diorite	

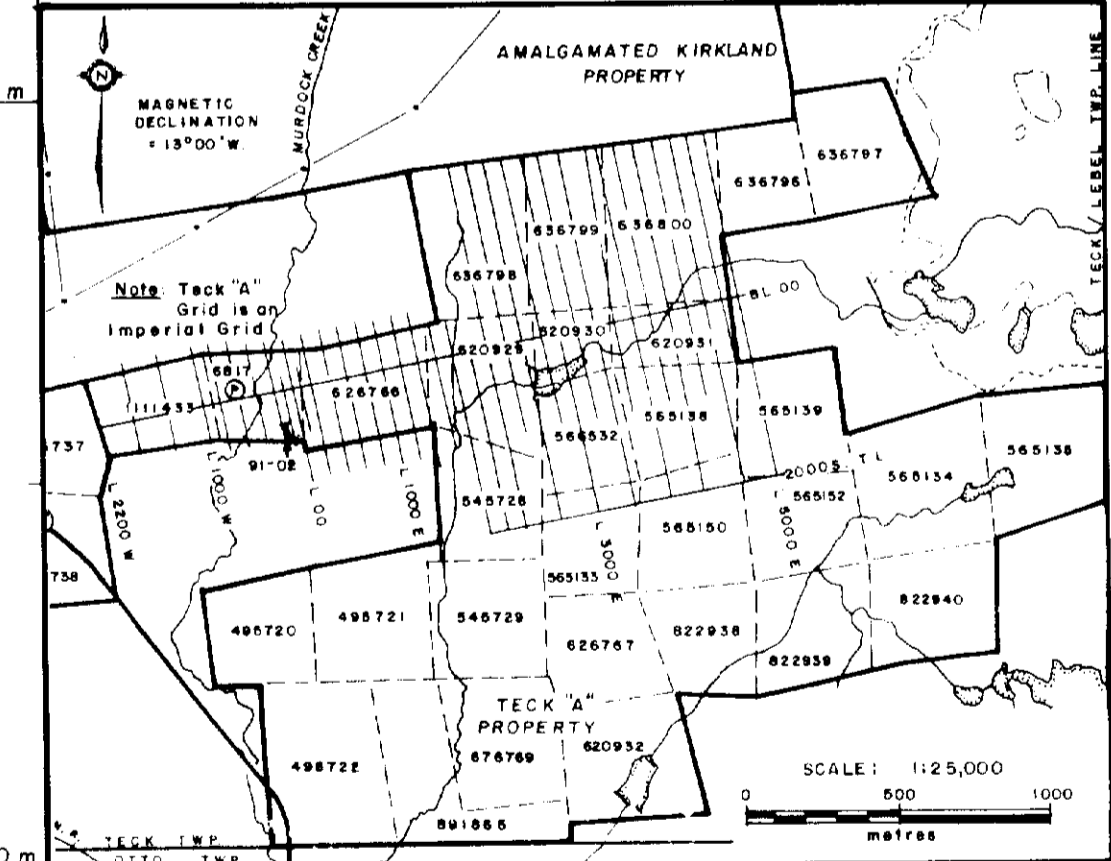
### SYMBOLS

	Bedding, Contacts
	Breccia
	Facing direction
	Foliation
	Fault, Fault Zone
	Drag folding
	Pyrite Mineralization

### ABBREVIATIONS

agp - augite porphyritic	fp - feldspar porphyritic	qtz - quartz
amg - amygdule	fsp - feldspathic	qv - quartz vein
amp - amphibole	fz - fault zone	sch - schist
ank - ankerite	gl - graphitic	ser - sericitic
bl - breccia	hem - hematite	sil - silicic
bld - boulder	isp - Jasper	sp - sphalerite
bx - breccia	lom - laminated	spx - spinifex
ca - calcite	m - massive	sh - sheared
cb - carbonate	mag - magnetite	trc - trachytoid
cp - chalcopyrite	p - pillowed	var - varietal
fc - fractured	pb - galena	ves - vesicular
fch - fuchsite	py - pyrite	wg - visible gold
chl - chlorite	alb - albite	spc - specularite
fol - foliated	por - porphyritic	luc - leucocene
dio - dioritic	pyx - pyroxene	BRP - sergentitized
mo - molybdenite	tal - talc	

Collar co-ordinates and elevations are not surveyed.



**BATTLE MOUNTAIN (CANADA) INC.**

**KIRKLAND LAKE PROJECT**  
Queenston Mining Inc.  
ONTARIO

**TECK "A" PROPERTY**

**SECTION 0+50W.**

HOLE TA91-02

PROJECT No.: 75-JV-28	DATA BY: W. Benham / M. Masson
NTS: 42 A/1	DRAWN BY: B.H. Modill, Tech.
DRAWING No: DC-042	DATE: November 1991

SCALE: 1:500