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Battle Mountain (Canada) Inc.

KIRKLAND LAKE PROJECT

REPORT ON OVERBURDEN STRIPPING

DETAILED MAPPING AND CHANNEL SAMPLING

AMALGAMATED KIRKLAND PROPERTY

May - July, 1990

TECK TOWNSHIP, LARDER LAKE MINING DIVISION

ONTARIO, CANADA

2.13956

Kirkland Lake, Ontario
September, 1990

W. Benham
Qualification.
2.143

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1.0 SUMMARY

During the 1990 summer field season a program of overburden stripping, detailed mapping and channel sampling was carried out to follow up the 1989 discovery of the 102-8350E gold zone and to test other areas where anomalous grab samples had been found along magnetically interpreted altered structural breaks.

Significant results from the 1990 program include a channel samplE of a silicic pyritic zone at 10237N, 8345E (the "102-8350" zone) which averaged 6.04 g/t Au over 5.85 metres including 8.36 g/t Au over 3.80 metres, as well as a new showing which contained abundant native gold and assayed 797.5 g/t Au across 0.45 metres at 8030E, 9883N (the "99-8030" zone).

Exploration work completed to date by Battle Mountain (Canada) Inc. on the Amalgamated Kirkland property has identified six mineralized altered structural "breaks" which can be favourably compared to the those at the present and past producing major gold mines along the Kirkland Lake Main Break and at the Upper Canada mine.

A 23 hole, 3110 metre, drill program is recommended to test the new gold discoveries and some unexplained geophysical anomalies.

2.0 INTRODUCTION

This report describes the results of the 1990 overburden stripping, outcrop washing, mapping, and channel sampling program carried out by Battle Mountain (Canada) Inc. during the 1990 field season from May 15 to July 25, 1990. This work was designed to follow up the 1989 discovery of the 102-8350 gold zone and to investigate other areas where grab samples returned anomalous gold assays, particularly samples taken during the 1989 mapping program.

2.1 Property, Location and Access

The Amalgamated Kirkland property consists of 27 mining claims optioned by Queenston Mining Inc. (formerly HSK Minerals Ltd.) from Premier Exploration Inc. The property is currently held by Battle Mountain (Canada) Inc. as part of an option agreement with Queenston Mining Inc. dated June 15, 1989.

An application for lease, mining rights only, was submitted November 12, 1987.

The property is located in the Larder Lake Mining Division in the southeast quarter of Teck Township south and southwest of the town of Kirkland Lake (NTS 42 A/1; UTM 538800E/568600N; See Figure 1).

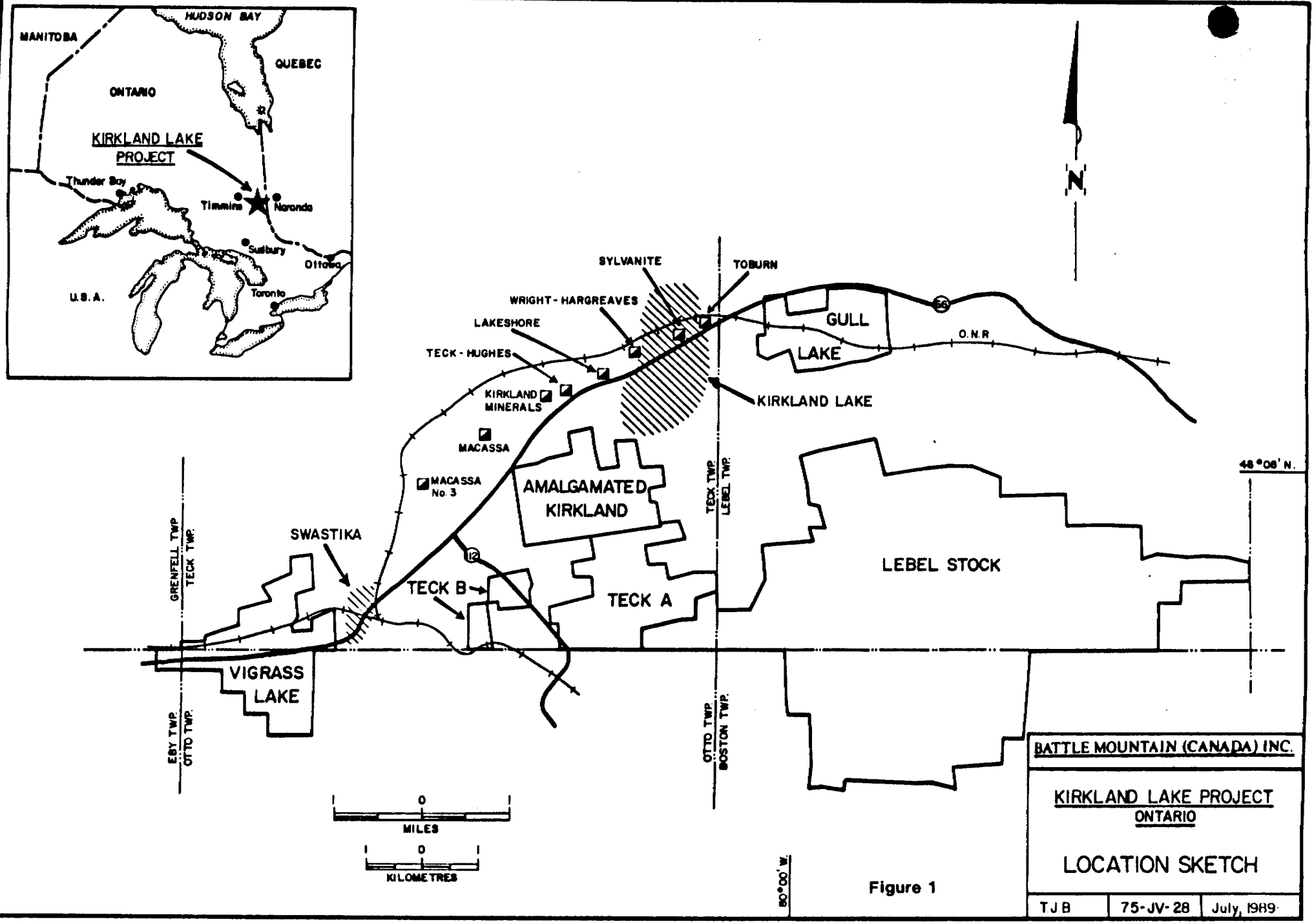
Access to the northeastern part of the property is provided by Main, Queen and Earl streets in the Town of Kirkland Lake and the Hunton Shaft bush road, as well as to the northwest through Government Road West (Chaput Hughes) and the Industrial Plaza on Highway 66.

A right of way for hydro and natural gas lines crosses the northern part of the property. The southwesterly flowing Murdock Creek divides the property diagonally, approximately in half.

2.2 Topography

The property consists of seventy percent low rounded knolls and ridges and thirty percent tag alder and black spruce swamps. Elevations range from 305 to 345 m asl. There is about thirty percent outcrop and relatively thin overburden of one to twenty metres over the majority of the claims.

Most of the property is covered by second growth poplar bush with local small stands of birch, spruce, balsam and pine.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QUEBEC
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KIRKLAND LAKE PROJECT
Thunder Bay
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SYLVANITE
TOBURN
WRIGHT - HARGREAVES
LAKESHORE
TECK - HUGHES
KIRKLAND MINERALS
KIRKLAND LAKE
GULL LAKE
O.N.R
MACASSA
MACASSA No. 3
AMALGAMATED KIRKLAND
SWASTIKA
TECK B
TECK A
LEBEL STOCK
VIGRASS LAKE
GRENFELL TWP.
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KILOMETRES
BATTLE MOUNTAIN (CANADA) INC.
KIRKLAND LAKE PROJECT
ONTARIO
LOCATION SKETCH
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July, 1989

Figure 1

3.0 PREVIOUS WORK

The Amalgamated Kirkland property has had a long history of exploration. Numerous programs consisting of geological mapping, hand and power trenching, geochemical sampling, geophysical surveys, and diamond drilling have been carried out over a number of years. The historical exploration has not been systematic; instead it has been concentrated on specific claims or known showings.

The following is a brief list of companies which have carried out work on the property:

1. Highland Kirkland Mines Ltd. (1911-1924 & 1936-1937);
2. Amalgamated Kirkland Gold Mines Ltd. (1939-1940);
3. Frobisher Exploration Co. (1972);
4. Mayfield Exploration and Development Ltd. (1972);
5. Orme Prospecting Syndicate (1973);
6. Kerr Addison Mines Ltd. (1974);
7. Newmont Exploration of Canada Limited (1978);
8. Lampe Resources Ltd. (1983);
9. Eden Roc Mineral Corporation (1983-1984);
10. Accord Resources Ltd. (1986).

During the 1989 summer fall field season, a mapping and overburden stripping program by Battle Mountain (Canada) Inc. resulted in the discovery of two significant, highly anomalous gold-bearing alteration zones (Benham, 1990). One showing, the 101-7290E zone, averaged 2.48 g/t Au over 6 metres, while the 102-8350E zone averaged 2.22 g/t Au across 6 metres including 5.0 g/t Au over 1.5 metres. Both showings are associated with altered, sericitic, pyritic ductile-brittle shear zones in Timiskaming tuffs and graywackes which are intruded by syenite dykes.

4.0 REGIONAL GEOLOGY

The Kirkland Lake area is situated in the central part of the Archean, Abitibi Greenstone Belt, on the south limb of a major east-west trending, east plunging synclinorium which is located approximately at the mid point between the Round Lake and Lake Abitibi Batholiths. The northern and southern limbs of this synclinorium are wide east west trending deformation zones known as the Porcupine-Destor and Cadillac-Larder Lake Breaks, respectively. The Cadillac-Larder Lake deformation zone can be traced from Val d'Or, Quebec to the Matachewan area in Ontario and lies immediately south of Kirkland Lake. The trace of the more specific and historically referenced Larder Lake Break runs through the centre of the Amalgamated Kirkland property. All the historically significant and presently producing gold mines of the Kirkland Lake district are located to the north of the historical Larder Lake "Break", mostly along a sub-parallel structure known as the Kirkland Lake Main Break.

5.0 PROPERTY GEOLOGY

The property is underlain by three geological domains. The southern domain includes the northern half of the Murdock Creek syenite stock which intrudes altered, spinifex textured komatiitic volcanics of the Larder Lake Group. The central domain consists of complexly folded and faulted Timiskaming ash- and lapilli-tuffs interbedded with conglomerates, graywackes, arenites, siltstones and mudstones which are intruded by narrow syenite dykes. The northern domain is dominated by a 100 to 300 metre wide feldspar porphyritic-syenite body, known as the Amalgamated Kirkland syenite, which intrudes Timiskaming conglomerates and graywackes. The southern and central domains are separated by a 50 to 300 metre wide zone of intense carbonatization and chlorite-carbonate-talc schists associated with the Larder Lake Fault Zone.

The Lakeshore (015° to 025°) and the Murdock Creek (035° to 045°) fault sets offset an earlier alteration-mineralization related ductile-brittle shear set at 055° to 080°.

Anomalous gold mineralization is associated with the earlier pyritic, sericitic, carbonated shear set. The best mineralization is found in silicified, blue-grey quartz-breccia zones containing up to 30% fine grained pyrite as well as minor galena and molybdenite.

Thin section studies have shown that the pyrite is the result of the total destruction of magnetite present as detrital grains within the tuffs and lapilli tuffs.

6.0 GROUND MAGNETICS

Detailed orientation magnetic surveys over the newly discovered gold zones indicated that the mineralized alteration zones are coincident with areas of low magnetic susceptibility. Total field and vertical gradient magnetic surveys were carried out, over the central and northern geological domains, along grid lines at 50 metre spacings and readings every 12.5 metres (Roth, 1990).

Six sub-parallel, linear, low magnetic anomalies, which are associated with the alteration-mineralization shear set trending 055° to 080°, and offset by faults striking 015° to 045°, have been interpreted from the ground magnetic data. For reference purposes, these six magnetic lows have been named the "99", "100", "101", "102", "106", and "107" structures as shown on Drawing GP-001.

The "99" magnetic low anomaly is centred at 9900N, from 7950E to 8100E. A 1989 grab sample from a sericitic shear zone containing pyritic, quartz-carbonate veining at 8030E, 9890N, assayed 4.66 g/t Au.

The magnetic low anomaly associated with the "100" structure can be traced from 7300E to 8550E. Sericite-carbonate alteration and syenites were found along this anomaly during the 1989 program.

The "101" magnetic low anomaly is located 25 metres north of the gold zone located near the western boundary at 7290E, 10223N. This anomaly can be traced to 7650E, 10100N.

The "102" magnetic low anomaly which trends 055° to 080°, is associated with the gold-bearing, silicic, pyritic, sericitic 102-8350 zone discovered in 1989. This anomaly can be traced across the property from 7350E to 9650E, a distance of 2200 metres. It is offset by 015° to 040° striking faults with apparent offsets of 10 to 60 metres.

The "106" structure is located in the northwest corner of the property. The historic Amalgamated Showing located at 7350E, 10575N is associated with this magnetic low which extends to 7600E.

The "107" magnetic low anomaly parallels a contact between conglomerates and the Amalgamated Kirkland syenite from 7800E to 8400E and possibly through to the area of mineralization north of the Hunton shaft.

7.0 OVERBURDEN STRIPPING, CHANNEL SAMPLING AND MAPPING

Using the magnetic interpretation and the 1989 mapping results as guides, a program of overburden stripping, outcrop washing, channel sampling and detailed mapping was carried out during the 1990 summer field season to trace the 102-8350 gold zone along strike as well as to test parts of the interpreted "99" and "100" sub-parallel structures.

Grid north-south, overburden-removal "slit trenches" were dug at 50 metre intervals from 8050E to 8550E and at 7910E, 7850E and 7650E to search for the strike extensions of the gold bearing "102" structure. After successfully locating the mineralized alteration zone, the overburden was removed over a continuous area along the strike of the structure from 8150E to 8200E (the "102-8170" zone) and from 8250E to 8450E (the "102-8350" zone).

Overburden was stripped from two "slit trenches" along the "100" structure at 8085E and 8250E, as well as along the "99" magnetic low at 7975E, 8030E and 8085E.

The areas stripped of overburden were washed, mapped in detail and channel sampled. The results of the mapping are presented on Drawings TG-001 to 011 at a scale of 1:125 and Drawing TG-012 and 013 at a scale of 1:500. The assay results are shown on Drawings TA-001 to 011 at a scale of 1:125. The locations of the stripped areas, relative to the line grid and claims, are shown on Drawing PL-002, at a scale of 1:5,000.

The "102" structure has been traced intermittently as a gold bearing, pyritic, sericitic, silicic alteration zone for 540 metres from 8450E to 7910E. Selected grab samples of pyritic, silicic, sericitic tuffs and graywackes returned assays up to 36.55 g/t Au. Grab samples taken of the "102" zone during 1990 are summarized below.

GRAB SAMPLE SUMMARY

Sample Location	Rock Description	Au Assay
8300E, 10225N	Sericite + carbonate Tuff, 1-2% pyrite	718 ppb
8280E, 10225N	Sericite schist, 25% pyrite	2.06 g/t
8280E, 10225N	Quartz, 3-5% Pyrite, 1% Galena	405 ppb
8190E, 10223N	Sericite + ankerite tuff, 1-2% pyrite	21.52 g/t
8180E, 10218N	Graywacke, quartz + carbonate, 3% pyrite	106 ppb
8156E, 10220N	Carbonated, silicified, graywacke, 3-4% pyrite	36.55 g/t
7910E, 10227N	Ash-tuff, 2-3% pyrite	15.89 g/t

The gold mineralization associated with the "102" structure from 8150E to 8450E can be divided into five zones or fault blocks, with apparent strike lengths of 25 to 60 metres and apparent widths of 1 to 8 metres. The blocks are offset by steeply southeast dipping faults, striking 015° to 045°. The blocks differ in tenor, widths, and altered host rocks. Host rocks include lapilli-tuffs, syenites, arenites and mudstones. Higher gold grades appear to be directly related to higher silica content, either in the form of quartz veins, quartz breccia, quartz stringers or pervasive silica flooding. Although some sulphides are always present, higher pyrite and base-metal sulphide contents do not equate to higher gold content.

7.1 The "102-8350" Zone

At 8345E, a channel-sample across a silicic, pyritic zone averaged 6.04 g/t Au over 5.85 metres (estimated true width 5.00 metres) including 8.36 g/t Au over 3.80 metres (estimated true width of 3.45 metres).

The results of detailed mapping of the 102-8350E gold zone by H. Dillon-Leitch are described in Appendix I.

7.2 The "102-8170" Zone

On the "102" zone, the 8150E to 8200E stripped area has exposed mineralized arenites and laminated mudstone/siltstone in what is referred to as the "102-8170" zone. The laminated mudstone/siltstones exhibit soft sediment deformation and drag-folding plunging 50° to the southwest (232°). These mudstones interfinger with lapilli tuffs to the northeast. Pyritic quartz veining with highly anomalous gold contents are located along and near the mudstone-arenite contacts. The arenite is fractured, faulted and brecciated. The faults and fractures usually contain narrow chloritic, pyritic, quartz veinlets and veins. A dome-shaped arenite outcrop centred at 8190E, 10220N may follow an anticlinal axis. The mudstone-arenite contacts and silicic gold mineralization strike 050° to 055°, the same as the synclinal fold axis located in the adjacent mudstones to the northwest. It is possible, therefore, that the gold-bearing quartz veining may be structurally controlled by an axial planar cleavage.

At 8190E, a channel sample across the fractured, sericitic, carbonated arenite "domal" outcrop averaged 3.50 g/t Au over 7.40 metres, including 23.87 g/t over 0.90 metres at the northern arenite-mudstone contact. At 8197E, a section of mudstone with 0.5 - 1.0 cm wide quartz veinlets and chloritic, pyritic fractures, averaged 12.71 g/t Au over 1.00 metres.

7.3 Other Trenches along the "102" Structure

No anomalous channel samples were cut in trenches 8100E, 8050E and 7850E, primarily because no bedrock was exposed where the "102" zone was anticipated. This may be due to a lack of silicification, which appears to be necessary for higher grade gold content and which creates the higher resistive weathering at the 8170 and 8350 gold zones.

At 7912E, a four metre wide section averaged 612 ppb Au, including 1.50 g/t Au over 1.50 metres, in the vicinity of an earlier grab sample which assayed 15.89 g/t Au. The bedrock where this grab sample was taken was covered by mud at the time the channel-samples were taken as the walls of the trench had slumped inwards. The anomalous grab sample contained 2-3% pyrite, whereas the channels in this area which were sampled contained less than 1% pyrite.

7.4 The "99" Zone

On the "99" zone, at 7975E, 9907N, stripping exposed a 0.35 metre wide blue-grey quartz breccia vein, with 1-3% pyrite, which assayed 0.99 g/t Au over 0.45 metres. An adjacent sample in

pyritic tuffs assayed 864 ppb Au over 0.50 metres. This vein strikes 100° and dips 68° northeast. No other anomalous samples were cut from this trench.

At 8030E, 9883N (1989, 8050 Trench), a 0.60 metre channel sample of highly sheared, sericitic, chloritic ash tuffs with quartz-calcite veinlets and trace pyrite assayed 39.6 g/t Au. A follow-up channel sample cut 1.0 metre to the west assayed 761.11 g/t Au, with a check assay of 834.45 g/t Au, for an average of 797.5 g/t Au over a width of 0.45 metres. A second follow-up sample 1.5 metres to the east assayed 216 ppb Au over 0.50 metres.

The channel which assayed 797.5 g/t Au has abundant native gold visible to the unaided eye in a deeply weathered sulphide-quartz vein. The very fine grained delicate leaf gold lines the walls of vugs and along fractures in the vein. The sulphides consist of 0.5-2 mm euhedral pyrite in a white to blue-grey quartz + ankerite matrix. The vein is 26 cm wide at 8029E, but it pinches to less than 1 cm, 2.5 metres to the east. It's width is not known to the west due to overburden cover. Stripping at 8085E, 9900N, 55 metres to the east, failed to reach bedrock.

7.5 The "100"Zone

Overburden was stripped in two "slit trenches" along the "100" structure at 8085E and 8250E. No bedrock was exposed over the target at 9980N, 8085E. A 15 to 20 metre wide zone of sericitic tuff with sporadic pyrite mineralization was exposed at 8250E. No anomalous assays were returned for channel samples cut across this zone. Four grab samples returned assays of 3 to 51 ppb Au.

Channel assays across the anomalous gold zones sampled during the 1990 summer field season are summarized below:

TABLE 1

CHANNEL SAMPLE ASSAY SUMMARY

Zone	Easting	Au g/t	Width (metres)	Average (g/t Au / metres)
102-7912	7912E	0.61	4.00	
102-8170	8160E	2.44	2.50*	
	8170E	6.31	3.17*	– 2.94 / 3.26
	8177E	0.64	4.10*	
	8190E	3.50	7.40*	–2.98 / 5.03*
	including	8.23	2.90+	
	8195E	2.54	7.98*	–10.39 / 1.56+
	including	15.47	0.78+	
	8197E	12.71	1.00+*	
102-8275	8275E	1.99	3.20	
	8295E	0.43	2.50	–1.45 / 2.40
	8310E	1.99	1.50	
102-8350	8330E	3.13	2.75*+	
	8345E	6.04	5.85*	
	including	8.36	3.80+	
	8352E	5.20	3.90*	–4.68 / 4.11+
	including	8.59	2.10+	
	8360E	3.28	6.50*+	–3.40 / 4.18*
	8365E	3.04	5.40*+	
	8370E	1.41	4.80*	
	8375E	4.18	3.20*	
	8380E	1.22	2.00*	
	8385E	1.00	3.20*	

TABLE 1, Continued

CHANNEL SAMPLE ASSAY SUMMARY

Zone	Easting	Au g/t	Width (metres)	Average (g/t Au / metres)
102-8400	8390E	4.71	0.70	
	8390E	0.71	1.60	
	8395E	4.14	0.75	
	8400E	4.30	1.65	- 1.71 / 1.55
	8405E	0.51	2.00	
	8405E	0.92	1.90	
	8410E	0.51	2.25	
102-8425	8425E	0.85	1.90	
	8430E	3.26	1.70	- 2.15 / 1.38
	8435E	5.18	0.70	
	8440E	0.87	1.20	
99-7975	7975E	0.92	0.95	
99-8030	8026.5E	399.24	0.90	
	including	797.50	0.45	
	8027.5E	15.34	1.55	
	including	39.70	0.60	
	8029E	0.13	1.52	

8.0 CONCLUSIONS AND RECOMMENDATIONS

Exploration work completed to date by Battle Mountain (Canada) Inc. has identified six mineralized altered structures which can be favourably compared to the present and past major producing Kirkland Lake "Main Break" and Upper Canada "Break" structures.

The 102-8350E, 102-8170E and 99-8030E mineralized zones are significant gold discoveries within a major gold producing mining district. Channel sampling has returned sub-ore to ore grade assays over substantial widths.

The 99-8030E zone is a surface showing of spectacular native gold, which has been discovered in a mining district which has been intensely prospected for over 80 years.

A 23 hole, 3110 metre, drill program is recommended to test these new gold discoveries as well as some unexplained IP chargeability anomalies and magnetic lows located along interpreted favourable structural breaks.

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APPENDIX I

Geology of the 102-8350E Zone

August 1990

H. Dillon-Leitch

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1.0 Introduction

The gold showing exposed at 10235N in the 8350E trench was enlarged during 1990, and now consists of a stripped and washed exposure from 8250E to 8450E between 10230N and 10265N. This area is divided into the 8350E zone (between 8330E and 8440E) and the 8275E zone (between 8250E and 8330E). The "102" structure is interpreted, from the ground magnetic and IP surveys, to extend westward to about 7400E-10325N. Only the 8350E zone of the "102" structure is described here.

This report is based on detailed mapping, assay and whole rock geochemical analyses, and rock slab and petrologic examinations.[1] The objectives of the study were to characterize the alteration and mineralization of the zone and the immediately surrounding altered rocks, with the aim of identifying the mineralogical changes accompanying the alteration and mineralization.

Twenty two samples were selected and thin sectioned so as to give two transects across the 8350E zone, as it was exposed in late December 1989, at about 8360E and 8390E. Additional samples were collected nearby from the syenite body to the east, and of less altered or highly mineralized units hosting the zone.

In general the geology around the 8350E zone appears relatively simple, consisting of a south dipping sequence underlain by a thin syenitic unit, all lying within trachytic tuffs. However, in detail the zone is a complex area with distinct units marked by very different alteration, mineralization, and deformation styles.

2.0 Lithology

2.1 Trachyte tuff

The trachyte tuff (map unit 18) is predominantly a lapilli-tuff (18b), with rare ash tuff (18a). The clasts are angular to sub-rounded, but most commonly sub-angular, and are from 2 mm to less than 20 cm, most frequently 3 mm to 3 cm in size. The size distribution of the clasts is bimodal, with larger lapilli to rare blocks (greater than 6.4 cm, where present mapped as unit 18c) supported in a finer lapilli matrix, with the larger clasts representing 30 to 60 percent of those present.

Lithic clasts constitute less than 15 percent of the rock, usually less than 10 percent, and consist of mafic and altered volcanic rocks probably derived from the Keewatin basement, as well as chloritic fragments. Clasts of quartz-feldspar porphyry, chert, or jasper have not been identified in hand specimen. Minor quartz and/or mudstone clasts have been provisionally identified.

Trachytic clasts vary from mafic (20 to 40 percent chlorite- or amphibole-bearing, after augite?) to leucocratic (less than 20 percent mafic minerals). While trachytoid textures are not uncommon, most clasts have an equigranular texture, frequently associated with hypabyssal intrusives.

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[1]The thin section descriptions and whole-rock geochemical analyses are included in the companion volume on Geological Mapping (Benham, 1990)

Primary mineralogy of the trachytic clasts appears to have been principally feldspars (oligoclase?) with minor pyroxene and magnetite.

The matrix consists of broken feldspar crystals, minor lithic fragments, and small trachytic or syenitic clasts.

Bedding is infrequently observed in the lapilli-tuff. Clast size variations are seen vertically and laterally, on a 2 to 3 m scale, making bedding difficult to identify and trace. Graded bedding has not been recognized, and facing directions have not been determined. Ash tuff beds are rare, forming thin lenses with strike lengths of less than five metres. Contacts between ash- and lapilli-tuff beds are typically diffuse over a few centimetres, although a few sharp contacts have been observed.

2.2 Syenite

Between 8387E and 8450E, as well as between 8272E and 8343E, a unit interpreted as a leuco-syenite (map unit 464), with less than 30 percent mafic minerals, immediately underlies the mineralized zone. This unit is characterized by a medium-grained, equigranular to rarely porphyritic texture. Feldspar grains are from 0.5 mm to 4 mm long. The matrix to the feldspar is a mixture of fine-grained chlorite, biotite, oxides, and rare amphibole. The mafic mineral concentration is from 5% to 15%, while oxides are less than 5%. Individual mafic grains or phenocrysts are rare, with mafic minerals concentrated in the matrix. Xenoliths of wallrock are rare, from 2 mm to 1.0 cm across. The most commonly recognized xenoliths appear to be highly mafic, possibly pyroxene-bearing.

Primary mineralogy appears to have been abundant feldspar (oligoclase), minor amphibole or pyroxene, and minor oxides. Primary oxide content, as magnetite, ranges from two to four percent. Deuteric hematization of primary feldspars is high, giving cloudy textures. Secondary feldspars (orthoclase and albite?) are clear.

In hand specimen this unit varies from a deep purple-red (8450E; low secondary alteration), through a salmon pink (8385E), to buff, where it is moderately carbonate-altered and foliated. Very strongly carbonate-altered and mineralized equivalents of the syenite are inferred along strike on the north side of the mineralized zone where the rocks have similar equigranular texture and position relative to the main body of the mineralization.

Contact relationships with the enclosing tuffs range from sheared and faulted, with thin chlorite slips, to intrusive. Intrusive contacts are recognized where the width of the syenite changes rapidly, i.e., at 8412E, 8303E, and 8285E. Fine-grained, chilled margins and jagged contacts were seen at 8412E. An origin as a massive flow is possible, but is considered unlikely, because basal rip-up and flow top breccia textures are not observed and the unit is oblique to local bedding trends. This unit may be entirely due to alteration (extreme K-metasomatism), but this is considered a remote possibility because of the sharp contacts, and very different mineralogy and texture compared with the enclosing trachyte-tuffs.

Compared to other syenite bodies examined on the Amalgamated Kirkland property, this body is narrower, generally aphyric, and more variable in composition due to its alteration.

3.0 Structure

At least three main structural lineation or fault directions have been identified: the mineralized zone at about 067°; off-setting sinistral faults at 015°, known as the "Lakeshore" set; and sinistral to dextral set of fault offsets at 045°, known as the " Murdock Creek" set.

Bedding directions from the stripped area immediately around the zone are from 120° to 135°. Bedding south of the zone, between 8290E and 8350E at about 10150N, trends from 080° to 107° and dips to the northeast between 45° and 60°.

The overall strike of the mineralized zone is approximately 067°. However, this is a result of numerous, metre-scale, sinistral offsets of the individual fault-bounded mineralized bodies with individual strikes of 080° to 105° and with dips of 65° to 75° to the south.

The earliest fabric appears to be associated with the mineralized zone itself. This fabric is interpreted as a shear fabric ("C") and strikes between 070° and 095°, dipping between 75° and 85° to the south. Crosscutting, weakly curvilinear fabrics which may be interpreted as an "S" or flattening fabric strike between 030° and 055°, dipping between 75° and 90° to the southeast. However, the foliation interpreted to be related to the Murdock Creek fault set has a similar orientation and the classification of these fabrics is uncertain except in the highly sericitic parts of the mineralized zone.

The sub-vertical elongation of breccia fragments in the inner, silicic zone suggests a vertical component of motion within this unit. A horizontal sense of shear, derived from slickensides on the silicic mineralized unit, indicates a dextral strike-slip offset. Small, discontinuous chloritic slips, parallel to the mineralized zone, may also exhibit a dextral sense of offset, indicated by a sigmoidal or "Z"-shaped, "S" fabric.

Locally an intersection lineation is observed within the highly mineralized zone trending 056° and plunging 65° northeast. This may be related to the intersection of the 015° or the 035°-047° fault-related fabrics and the "C"-"S" fabrics. This "C"-"S" intersection lineation trends between 146° and 180°, plunging about 80° to the south.

A set of faults trending between 035° and 047°, known as the "Murdock Creek" set, offset the mineralization in a predominantly sinistral sense. The prominent valleys exposed during stripping parallel this fault set. Lateral motion is from one to ten metres. The dip is steep (80°-85°) to the south east. The faults consist of 1 to 3 mm wide chlorite slips with rare quartz patches concentrated in discontinuous dilatant zones. A prominent slaty to spaced cleavage parallels this trend within the trachytic wall-rocks.

Dextral offset along the "Murdock Creek" set is suggested by an 037° trending fault at 8450E. In addition, the trace of the mineralized zone to the west of 8250E is interpreted to be displaced dextrally, about an inferred 045° trending fault.

Trachytic clasts, oriented parallel to the 045° fabric trend, appear to plunge steeply to the west within this plane. As this trend is later than the mineralization the plunge of the two features should be different.

The final set of sinistral offsets trend between 010° and 025° and dip sub-vertically ("Lakeshore" set). The scale of offset is centimetres to less than five metres. This fault set is defined

by millimetre wide chloritic slips which anastomose, join other sets for small distances, and may die out abruptly or as a series of splays. A conjugate joint set appears to parallel this fault orientation.

4.0 Alteration and Mineralization

4.1 Alteration Facies

Alteration associated with the mineralization consists of variable amounts of carbonate (ankerite), chlorite, sericite, quartz, and sulphide. There is a general zoning pattern to the alteration, based on the relative proportions of the alteration minerals, around the mineralization. these zones are from the outermost:

a. Outer: Ankerite + chlorite;

b. Transition: Ankerite + chlorite + sericite;

c. Intermediate: Carbonate + sericite; and

d. Inner: Quartz + ankerite + sericite, or Silicic.

The width of mineralization-associated alteration is asymmetrical around the mineralized zone, as it extends further to the south, than to the north, where it is usually limited by the "syenite" or red dyke. The contacts between the various alteration zones are gradational except in the case of the inner, highly silicic zone, which may be vein-like and sharply defined.

The alteration facies are interpreted to be superimposed on a property wide, or regional chlorite plus carbonate facies alteration assemblage.

This zoning of the alteration facies corresponds to an increase in the gold content about the silicic zone.

4.1.1 Outer Zone: Ankerite + Chlorite

The outermost appearance of recognizable alteration consists of ankerite and chlorite in a zone which is highly variable in width, but usually less than fifteen metres wide. In this zone the original lapilli fragments are clearly identifiable and the matrix is a medium dark to light green colour compared to the dark green trachyte elsewhere on the property. The trachytic clasts are various shades of light pink compared to pink to deep red colours.

The carbonate is ankerite and is present up to 25%, compared with the regionally altered trachytes which contain less than 10 percent ankerite. The chlorite content is less than 20 percent, which is similar to the less altered country rocks. However, in the alteration zone the chlorite typically forms discrete porphyroblasts, as compared to fabric-related, tabular subhedra in the regionally altered rocks.

One characteristic of this alteration facies is the incipient oxidation of magnetite to hematite, corresponding to a noticeable decrease in the magnetic intensity compared to the typically strongly magnetic lapilli tuff.

Pyrite content is generally less than 5% as disseminated grains and concentrations along a 070° to 085° trending spaced cleavage.

Gold contents are typically less than 100 ppb, and generally below 50 ppb in this outer facies. The few assays greater than 100 ppb are associated with areas of higher sericite content in the transition zone or in local narrow inliers of the intermediate zone facies.

4.1.2 Transition Zone: Ankerite + Chlorite + Sericite

The outer ankerite + chlorite facies grades into an ankerite + sericite schist in a transitional zone, of variable width up to five m wide, composed of ankerite + chlorite + sericite.

In this transition zone there is a distinctive chlorite-spotted texture, consisting of 0.2 to 1.0 mm wide, subequant chlorite porphyroblasts. This is due to the overprinting sericite alteration related to the intermediate zone, which bleaches the groundmass, making the chlorite porphyroblasts more visible. Closer to the intermediate zone the sericite content increases, until an arbitrary cutoff of about 20% sericite is taken as the inner boundary of the transition zone with the intermediate zone.

Magnetite is almost totally replaced in the transition zone and pyrite begins to replace hematite as the intermediate zone boundary is approached. With increasing sericite content approaching the intermediate zone, pyrite is locally seen to replace the hematite-altered magnetite grains.

Visually similar, but more ankerite-rich, alteration is developed along and about the 015° and 045° trending cross faults. The chlorite content of these faults is less than 10 percent, chlorite porphyroblasts are rare, with the chlorite in ankerite veinlets or as ragged, elongate patches parallel to the foliation. The decrease in magnetic intensity around these faults is similar to that exhibited by the outer and transition zones surrounding the mineralization. However, it is not related to similar progressive replacement of magnetite to hematite to pyrite. Disseminated pyrite is rarely associated with these late structures, although minor pyrite can be seen along ankerite and/or calcite + chlorite veinlets developed parallel to the late, crosscutting, fault zones.

4.1.3 Intermediate Zone: Carbonate + Sericite

The intermediate zone of alteration is marked by the addition of sericite to form an ankerite + sericite (± chlorite) assemblage which is up to 11 m wide. This alteration is not symmetrical around the mineralization, but is typically wider to the south of the silicic, inner zone. Within this zone the chlorite content decreases rapidly towards the silicic zone from 10% at the outer edge to nil adjacent to the silicic zone. Quartz content is less than 5%, the sericite content is from 20 to less than 50%, but is generally less than carbonate content of 30% to 50%. Areas with sericite concentrations higher than 40% represent less than 5% percent of this zone, and have a distinct light green colour as opposed to the cream colour where carbonate is dominant.

The destruction of magnetite is complete within this alteration facies. Pyrite completely replaces hematite over a short distance, typically of one to two metres from the inner edge of the transition zone.

Pyrite concentrations are from trace to 30%, typically between 2% and 10%. The higher gold contents within this unit are generally associated with areas of higher sulphide content, but not on a simple one to one basis, as high gold assays are also found in areas with less than 2% pyrite.

Volcaniclastic textures are preserved within most of this facies. The clasts become indistinct in areas with very high concentrations of sulphide or sericite or those with a granular texture. These latter areas may reflect the alteration of the syenite which lies along the north side of the silicic zone, or a strongly carbonate-altered trachytic tuff.

4.1.4 Inner Zone: Quartz + Ankerite + Sericite

The most highly altered facies of the 8350E zone consists of a resistive, positive-weathering, 0.2 m to 1.5 m wide, massive quartz + ankerite + sericite + sulphide unit often displaying brecciated textures and a distinctive blue colour. This blue colour varies in intensity and is interpreted to be due to the presence of finely disseminated pyrite, minor amounts of galena, and traces of molybdenite. Quartz forms grains as centimetre long, tabular euhedra or anhedral masses, as well as fine, subhedral grains in the carbonate-rich groundmass. Sericite content is less than 10%. The ankerite content varies from about 25% to greater than 50%; where carbonate is predominant the blue colour is less pronounced and the rock appears to be gradational from the intermediate zone, but with higher sulphide concentrations.

Breccia-like textures, defined by quartz veinlet stockworks or centimetre wide zones of silica-flooding and angular, millimetre to centimetre size, carbonate + sulphide or sericite + sulphide fragments, indicate multiple episodes of brittle deformation within this unit. Volcaniclastic textures are preserved in some of the sericite-rich fragments. Laminated or quartz ribbon textures were not observed.

The blue coloured, silicic unit consistently returns high gold assays, but not always necessarily the highest. This unit is characterized by 10%, to more than 30%, sulphides. There is visible fine- to coarse-grained galena, locally up to 10%, as well as minor sphalerite and rare chalcopyrite. Trace element geochemistry indicates that finely disseminated molybdenite may be present, but this has not been confirmed petrologically to date.

4.2 Mineralization

The gold mineralization is generally related to the increasing content of sulphides associated within the intermediate and inner alteration zones characterised by high silica and sericite. The true width of high sulphide concentration and corresponding gold mineralization zone is from less than one metre to a maximum of just under six metres. The highest continuous channel sample was 8.36 g/t Au over 3.80 m (0.244 oz/t Au over 12.5 ft).

Between 8330E and about 8440E a one to five metre wide, gold mineralized zone or shoot has been outlined over a 110 m strike length. Within this shoot the widest and strongest area of

anomalous gold and sulphide mineralization is located from 8340E to 8385E, where the syenite unit is not identified, co-incident with the largest area and strongest development of the intermediate and inner alteration facies.

Between 8330E and 8340E the syenite becomes progressively altered and sulphide concentration increases to the point where the syenitic texture is obliterated and the rock becomes an ankerite + sericite + quartz + pyrite unit, i.e. the mineralized zone. This could indicate that the mineralization is possibly a replacement of the syenite body. However, the identification of a trachytic clast fabric within the highly mineralized zone at 8360E, 8375E, and 8385E would indicate that the zone is a replacement of tuffaceous rocks in at least these areas, so that the original extent of the syenite body is restricted to either end of this mineralized shoot

Contacts between un-mineralized and weakly mineralized zones are diffuse, whereas zones of varying sulphide concentration are often readily recognizable, and range from very sharp to diffuse over one or more metres. Internal contacts within the moderately mineralized (5 to 15 percent sulphide) zone are typically diffuse with the exception of weakly blue coloured, high sulphide concentration patches (8355E-10238N, 8364E-10238N, and 8375E-10236N).

Sulphide mineralization within the syenite unit, along strike from the highly mineralized zone, consists of trace to less than 5 percent pyrite, with traces of chalcopyrite and galena. The sulphide content of the syenite is the highest at its margins; internal concentrations are rarely above 1%. A discontinuous, narrow zone of pyrite mineralization and ankerite + sericite alteration is present along the north side of the syenite from 8390E to 8405E.

5.0 Discussion

The gold mineralization and accompanying alteration zones of the 8350E zone, located primarily within trachytic lapilli-tuff and to a lesser extent in parts of the syenite body, crosscut the local bedding trend, indicating that alteration and mineralization are structurally controlled.

The 8350E zone consists of a narrow, discontinuous, inner silicic alteration zone surrounded by successive zones of less intense alteration. The outermost zone consists of weak to moderate ankerite + chlorite (porphyroblastic) alteration superimposed on a property-wide, weak ankerite + chlorite (tabular) assemblage. An intermediate zone of ankerite + sericite alteration succeeds the outer zone; where the two zones overlap a transition zone is developed and an ankerite + sericite + spotted chlorite assemblage is observed. The spotted chlorite assemblage is a useful field criteria for identifying the outer margin of the intermediate alteration zone.

The outermost or first appearance of sericite has been used during field mapping in an attempt to delineate a recognizable alteration halo about the mineralization. Unfortunately, the post-mineralization, high carbonate alteration associated with the crosscutting structures is also accompanied by minor sericite, making the accurate delineation of the mineralized zones difficult.

The outer, ankerite plus spotted chlorite is moderately to weakly magnetic, while the intermediate and inner sericite and quartz bearing zones are nonmagnetic. The change in magnetic intensity is in the transition zone, where magnetite is completely replaced by hematite.

In detail, areas of less intense alteration can appear out of sequence, surrounded by more intensely altered areas. These discrepancies are seen where the alteration-mineralization zone is widest.

Trachytic clasts are identifiable and are often still a pinkish colour in the outer ankerite + chlorite zone. Within the intermediate, ankerite + sericite zone the clasts are generally still recognizable. However, within the area of strongest carbonate alteration, where a granular texture is developed, the clasts become difficult to distinguish. Lapilli-sized clasts can, however, be traced into the heavily mineralized parts of the intermediate zone and within the blue-coloured, quartz- and sulphide-rich inner zone.

The inner zone does not appear to be highly siliceous in the field. However, the SiO_2 content is about 65 to 75 weight percent, indicating considerable silicification of rocks with initial silica contents similar to basalts and andesites (typically 46 to 52 weight percent).

The blue colour of the inner zone is most likely due to a combination of very finely disseminated pyrite, as well as traces of galena, and molybdenite.

Increasing ankerite + sericite alteration of the syenite body between 8330E and 8343E has resulted in the development of a granular-textured rock that is virtually indistinguishable from altered and deformed volcaniclastic rocks. Syenite is not identified between 8343E and 8387E where the intensity of the hanging-wall alteration is very high and the original syenitic textures may have been totally obliterated. However, as trachytic clasts have been identified in parts of the granular-textured, mineralized zone it is unlikely that this entire zone consists of replaced syenite.

The asymmetric distribution of the silicic, inner zone close to the northern side of the alteration envelope may indicate a primary feature, such as a silica cap with an underlying alteration zone; alternatively this asymmetry may reflect structural anisotropy.

Very weak pyrite mineralization in the outer zone increases rapidly in the transition zone, where pyrite replaces hematite after magnetite. Pyrite concentrations in the intermediate zone, from nil to 30%, increase with proximity to the silicic, inner zone, which contains 10% to 35%. Pyrite replacement of some clasts preserves an apparent primary volcaniclastic texture, even with high sulphide concentrations, and after brecciation, and silicification.

The development of pyrite is directly correlated to the presence of sericite, particularly in the intermediate zone. It is proposed that the bulk of the pyrite formed at the same time as the sericite, particularly as those clasts which are preferentially altered to sericite are also pyritic. Ankerite and quartz deposition continued during brittle deformation and minor pyrite was deposited in these dilatant structures. Higher sulphide concentrations distal to the silicic zone and within the intervening sulphide-poor, ankerite + chlorite areas are probably related to high primary permeability. Similarly the discontinuous, blue coloured, silicic patches located within the intermediate zone, may reflect dilational zones which focused fluid flow.

Gold is seen as inclusions or in close association with pyrite (grains of the larger size fraction), galena, sphalerite, chalcopyrite, and tellurides. Gold concentration is related, in a general sense, to the sulphide content of the rock and to the degree of silicification. Silicification is as weak, quartz-veinlet stockworks in the intermediate zone and as patches of silica-flooding in the inner zone about brecciated fragments. Moderate concentrations of gold (1 to 3 g/t) correspond with sulphide

concentrations from 2% to 15% and where silicification is relatively low. Higher gold concentrations are found in the brittle deformed, quartz + ankerite + sericite + sulphide inner zone, where gold may have been mobilized into the dilatant structures. This proposed sequence is compatible with a general sulphidation model, where rocks rich in iron oxides react with S^{-2} to form pyrite. The reaction destabilizes the gold thio-complex and deposits the gold. Part of this gold is then mobilized during brittle deformation and redeposited in the quartz-rich areas.

Most of the sulphide mineralization is located along the southern side of a syenite body and the contact with the enclosing trachytic lapilli-tuffs. This relationship is not seen to the west (8170E zone) where the mineralization is located at the sheared contact between mudstones-arenites and trachytic lapilli tuff, and where the syenite body is absent. This indicates that the 8350E zone represents a locally unique example of alteration and mineralization, and that the original rock composition may only be a significant factor in localizing the sulphide/gold mineralization in this particular location.

The dominant dip of the northeast to north-northeast trending cross faults is steeply to the east. The 045° set forms major sinistral offsets of the mineralization about every 50 to 100 m along strike; less common dextral offset is also associated with this set. The late, 015° set offsets the mineralization sinistrally with minor disruption.

The strong ankerite ± chlorite ± sericite alteration associated with the cross-faults, particularly the 045° set, results locally in an apparent extension of the intermediate (ankerite + sericite) alteration zone on both sides of the mineralization. This north-northeast trend overprints the earlier, less extensive alteration associated with sulphide and gold mineralization, causing widespread bleaching and obliterates an inferred innermost limit of chlorite isograd, and which otherwise defines the outermost limit of easily recognisable alteration associated with the mineralized zone.

The "C"-"S" fabrics in the highly sericitic parts of the intermediate zone and slickensides along the inner zone indicate dextral shear. The plunge of the mineralization is not currently known; "C"-"S" intersection lineations plunge steeply to the south-southeast while clast elongation directions plunge steeply to the west.

The alteration of magnetite to hematite is a more reliable indicator of the marginal effect of the ankerite + sericite alteration associated with mineralization, as this reaction can be confirmed in the field by the reduced magnetic susceptibilities of the rocks and is readily identifiable in polished thin section.

6.0 Conclusions

The "102"-8350E altered and mineralized zone has been followed continuously for over 100 metres along a major, east-west striking and steeply south dipping structure. The apparent 067° strike is derived from the sinistral offsets of fault blocks with actual strikes of 085° to 105°. The 8350E zone is characterized by a 10 to 15 metre wide zone of low magnetic intensity reflecting the width of sericitic alteration, where hematite has replaced magnetite.

The observation of lapilli-size fragments throughout the examined mineralized zone indicates that the alteration is primarily within trachytic volcaniclastic rocks. Complete alteration of the syenite

body is very localized and it is probably not the host rock for those parts of the zone where the syenite is not readily identified, such as the inner, silicic zone.

The outermost, first appearance of sericite isograd, and perhaps a "spotted chlorite" assemblage of the transition zone, are the only field-applicable criteria for defining the outer contacts of the less altered parts of the zone. The low magnetic susceptibility associated with the alteration of magnetite to hematite coincides with the outer limits of the intermediate zone, or the appearance of sericite. The alteration around the crosscutting fault/ deformation zones, with their abundant carbonate and minor sericite, also have low magnetic susceptibilities and care must, therefore, be taken during the interpretation of magnetic data for tracing the zone along strike or in identifying similar, parallel zones.

All the deformation styles are characterised as brittle rather than ductile. Ductile deformation associated with the first phase of deformation and mineralization is restricted to limited areas of high sericite alteration immediately south of the silicic, inner zone, where the weak development of an "S"-"C" fabric confirms the highly brittle nature of the first deformation period.

Sulphide mineralization began early during the alteration history, with the development of the sericite-rich facies. Gold is proposed to have been deposited at the same time as the pyrite was formed by the replacement of iron oxides. Later mobilization and enrichment of gold took place during brittle deformation and subsequent quartz-veining and -flooding and developed a 60 m long zone or shoot of mineralization.

ADDENDUM TO THE APPENDIX

Alteration mineralogy

Chlorite

- 0 to 1%
- Deep green pleochroism, Berlin-blue birefringence; a clinochlore, penninite?
- Fine, weakly oriented matrix material, replacing rare amphibole/pyroxene grains, and as cleavage trails in areas distal to the alteration/mineralization zone.
- Ragged porphyroblasts (to 3 mm across) within the outer and transitional alteration facies.
- Associated with crosscutting carbonate veinlets related to late fault sets.
- Located in pressure shadows about sulphide grains.
- Associated with gold mineralization/alteration, late crosscutting fault regimes, and regional metamorphism.

Ankerite

- 15 to 60%
- Predominantly ankerite, possibly ferro-dolomite.
- May contain abundant fluid and opaque inclusions, giving a dusty, brownish colour in thin section.
- Fine, equigranular grains in the matrix and trachytic clasts where it variably replaces primary feldspar grains.
- Develops coarser grains and/or patches with increasing concentration.
- Individual grains appear to be randomly oriented, while patches and veinlets are oriented.
- Replaces chlorite, sericite, and both primary and secondary feldspars within the alteration/mineralization zone.
- Appears to have a lengthy paragenesis, i.e., associated with an early?, property scale, weak carbonate alteration, the carbonate + sericite alteration (intermediate zone) and accompanying gold/sulphide mineralization of the 8350E zone, and later carbonate alteration about crosscutting structures.

Calcite

- Primarily in late, crosscutting veinlets with variable, minor chlorite, quartz, feldspar, ankerite, and pyrite.
- Also on late cleavage or fracture surfaces.
- Locally as large grains or patches in late veinlets; chlorite occurs along veinlet margins.
- Locally forms ovoid patches up to 2 cm long, in the syenite, reminiscent of vesicles; chlorite often rims these forms.

Sericite

- Nil to 50%, typically less than 35%
- Oriented, fine- to rare tabular-grains within the matrix material.
- Fine, random grains to mat-like replacement of feldspar grains.
- Locally replaces complete trachytic clasts or large patches of the matrix, giving a light green colour.
- Locally replaces chlorite grains and porphyroblasts, most commonly replaces feldspar grains or phenocrysts.
- Often oriented, strongest alignment is parallel to "C" and "S" planes associated with the 080° trending, mineralized structure.
- Also associated with the crosscutting later fabrics (045° and 015°? fault sets).
- Partially replaced by or intergrown with ankerite, indicating that within the mineralized zone sericite was an early mineral or that ankerite was precipitated in at least two stages.

Muscovite

- Rare, equant to tabular porphyroblasts (0.2 to 1.0 mm).
- Tabular grains are oriented parallel to cleavage.
- Restricted to the transition and intermediate zones.

Feldspar

- Primarily oligoclase?
- Minor albite and orthoclase are suspected.
- Twinned and non-twinned grains.
- Locally wholly replaced by ankerite in the carbonate-rich, intermediate facies.
- Locally, completely replaced by sericite in the highly sericite-altered (intermediate) facies.
- Generally partially replaced by a fine intergrowth of sericite and carbonate in the transitional and outer alteration zones.

Quartz

- Nil to 30%
- Small anhedral grains, patches, veinlet material, rare vermicular intergrowths with feldspar, and as zones of silica-flooding.
- Is restricted to the most highly altered facies (inner).
- In silicified zones, quartz appears to be later than sericite, most ankerite and sulphide (pyrite); where the silicic material is brecciated the secondary matrix is ankerite with minor sulphide.
- Limited quartz-flooding in the blue coloured, silicic, inner zone.
- Most common form in the sericite-rich facies is as veinlets and stockworks or large (cm-size) tabular subhedra, filling vugs?
- Accompanied by carbonate, feldspar, and chlorite in veinlets related to the late fault sets.

Pyrite

- Trace to 35%
- From anhedral to euhedral, subhedra predominate.
- Grains from submicroscopic to 2 mm, most frequently between 0.05 and 1.0 mm.
- Sulphide-rich zones exhibit a bimodal size distribution: 0.02 to 0.2 mm and 0.2 to 1.5 mm.
- Variably replaces hematite after magnetite in the chlorite facies; complete replacement in the chlorite + sericite transition alteration facies.
- gold appears to be associated with or included in the larger grain size fraction.
- Locally contains inclusions of chalcopyrite, galena, sphalerite, and tellurides.
- Trains and individual grains locally oriented parallel to local fabrics.
- Minor pyrite is developed in fault-related veinlets or on late cleavage surfaces .
- Most is associated with the 080° trending alteration zone and high concentrations are related to the most highly altered parts of the zone.
- Locally oxidized to hematite by surface weathering.

Chalcopyrite

- Nil to less than 0.5%
- Anhedra, generally less than 0.5 mm long, mm-scale patches locally along chlorite-filled fractures.
- Locally as free grains, as inclusions in pyrite, and rarely as "chalcopyrite disease" in sphalerite.

Galena

- Nil to 2% locally.
- Subhedral to tabular anhedra.
- 0.02 to 3 mm, mostly less than 0.1 mm.
- Associated with coarse pyrite and rare sphalerite.
- Rare tellurides and gold locally in close proximity.
- Inclusions in pyrite indicate a similar paragenesis as pyrite and gold.
- Minor occurrences along later, fault-related veinlets indicates mobilization.

Sphalerite

- Nil to 0.5%
- Anhedra to 0.5 mm long, locally forms patches to centimetre size.
- Chalcopyrite inclusions.
- Pale brown colour; low iron content.

Molybdenite

- Not identified, presence is suspected from trace element analysis.
- Could partially account for the blue colouration of the silicic zone.

Tellurides

- Not positively identified, possibly lead- or silver-tellurides (altite or hessite).
- Small, 10 to 50 micron, rounded anhedral grains included in pyrite and associated with gold, galena, or sphalerite.

Gold

- Rare, small anhedra (2 to 20 microns).
- Inclusions in larger pyrite grains or as free grains in ankerite.
- Locally, closely associated with galena, chalcopyrite and tellurides.
- Concentration appears to be more closely related to alteration intensity than to sulphide concentration, i.e., the sericite-rich (intermediate) and silicic (inner) zones.

Magnetite

- Nil to less than 5%
- Subequant anhedra to subhedra, 0.02 to 2.0 mm across.
- Primary mineral in trachyte and syenite, also a detrital mineral in reworked tuffs.
- Variably alters to hematite with increasing carbonate alteration.
- Weakly affected by the property-scale carbonate alteration.
- Locally strongly altered by the crosscutting, fault-controlled carbonate alteration.
- Complete alteration within the highly carbonate-altered and mineralized zones.

Hematite

- Trace to 5%
- Subequant anhedra to subhedra 0.02 to 2.0 mm across, locally forms elongate, wispy patches up to 1.0 mm.
- Partial to total replacement of magnetite associated with the development of sericite and ankerite alteration .
- Locally totally replaced by pyrite with increasing alteration.

TABLE 2.

Mineral Concentrations in the Alteration Zones (Facies) from the 8350E Gold Mineralization Zone.

Alteration Zone	Inner	Intermediate	Transition	Outer	Regional
Mineral Assemblage	Qz + Ank + Ser	Ank + Ser	Ank + Ser ± Ch	Ank + Ch	Ch + Ank
Width (m)	0.2 - 1.5	1 - 11	1 - 5	1 - 15	
Chlorite	----	tr - 3 %	3 - 10 %	< 10 %	5 - 15 %
Ankerite	< 50 %	15 - 50 %	15 - 50 %	15 - 50 %	15 - 25 %
Sericite	10 - 30 %	20 - 50 %	5 - 20 %	< 5 %	----
Quartz	10 - 30 %	tr - < 5 %	tr	tr	----
Pyrite	5 -35 %	tr - 15 %	1 - 10 %	tr - 10 %	tr
Chalcopyrite	< 0.5 %	< 0.5 %	< 0.3 %	tr	----
Galena	< 0.3 %	tr	----	----	----
Sphalerite	< 0.1 %	tr	----	----	----
Tellurides	tr	----	----	----	----
Molybdenite	tr?	----	----	----	----
Magnetite	----	tr	< 1 %	3 - 5 %	< 5 %
Hematite	tr	tr	1 - 5 %	< 1 %	tr
Gold	4 - 34 g/t	50 ppb to 30 g/t	50 ppb to 1.5 g/t	1 - 300 ppb	< 50 ppb

Qz = quartz; Ser = sericite; Ch = chlorite; Ank = ankerite

Battle Mountain (Canada) Inc.

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DETAILED MAPPING AND CHANNEL SAMPLING

AMALGAMATED KIRKLAND PROPERTY

May - July, 1990

TECK TOWNSHIP, LARDER LAKE MINING DIVISION

ONTARIO, CANADA

Kirkland Lake, Ontario
September, 1990

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L 495277
L 500059
L 500058
L 477299
L 477300

BL. 100 N

CREEK
MURDOCK

(10x40m.)
(7x40m.)
10x75m.
(10x35m.)
(15x35m.)
(20x50m.)
20x190m.
(5x50m.)
(6x30m.)
(10x35m.)
(10x40m.)

LEGEND

1989 STRIPPING

1990 STRIPPING

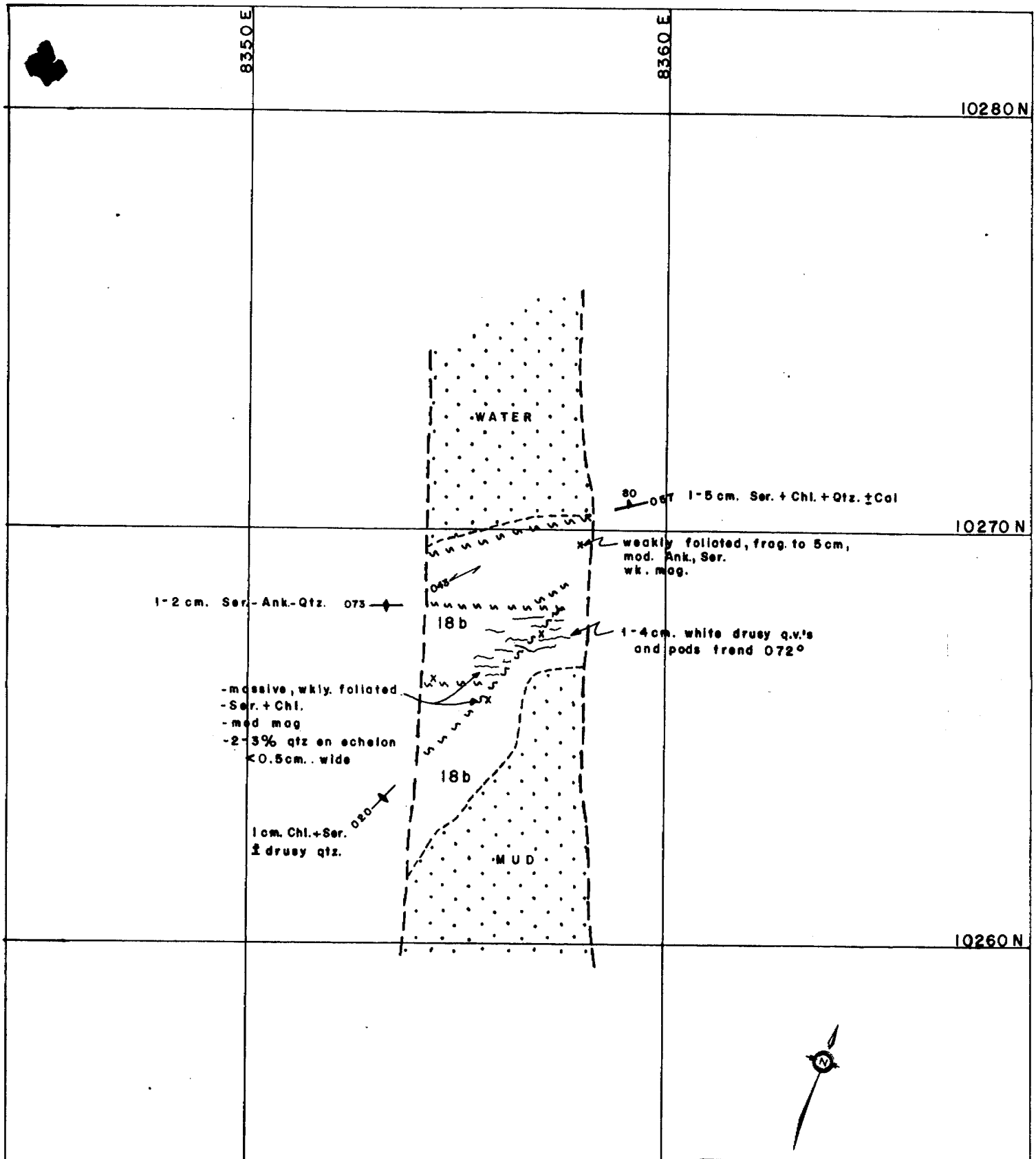
SCALE

0 100 200
metres

BATTLE MOUNTAIN (CANADA) INC.

KIRKLAND LAKE PROJECT
AMALGAMATED KIRKLAND PROPERTY
"POWER STRIPPING"

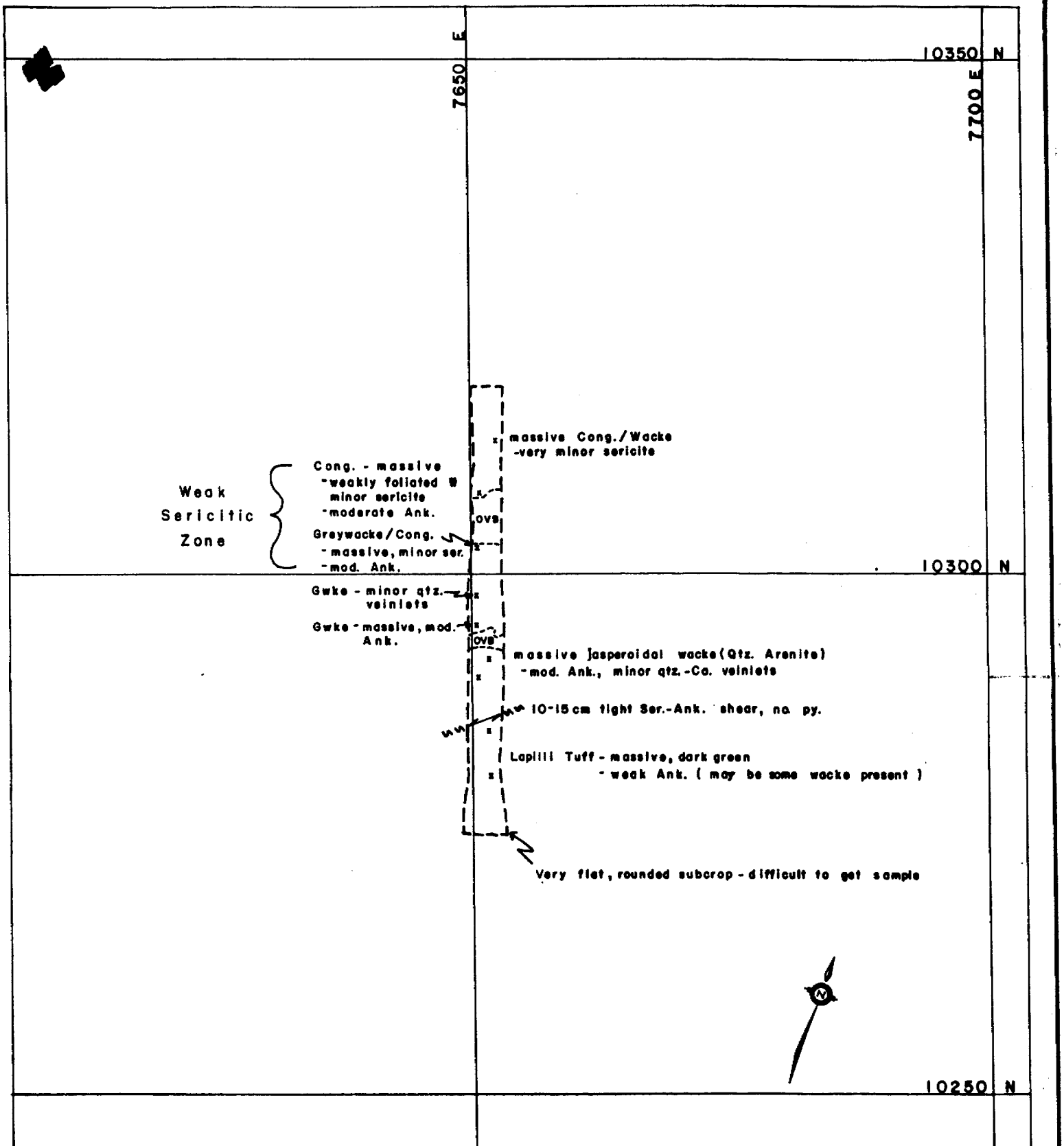
Project No.: 75-JV-28	Scale: 1:5000
N.T.S.: 42 A/1	Data by:
Drawing No.: PL-002	Date: November 30/90



BATTLE MOUNTAIN (CANADA) INC.

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(GEOLOGY PLAN)
TRENCH 8350 E

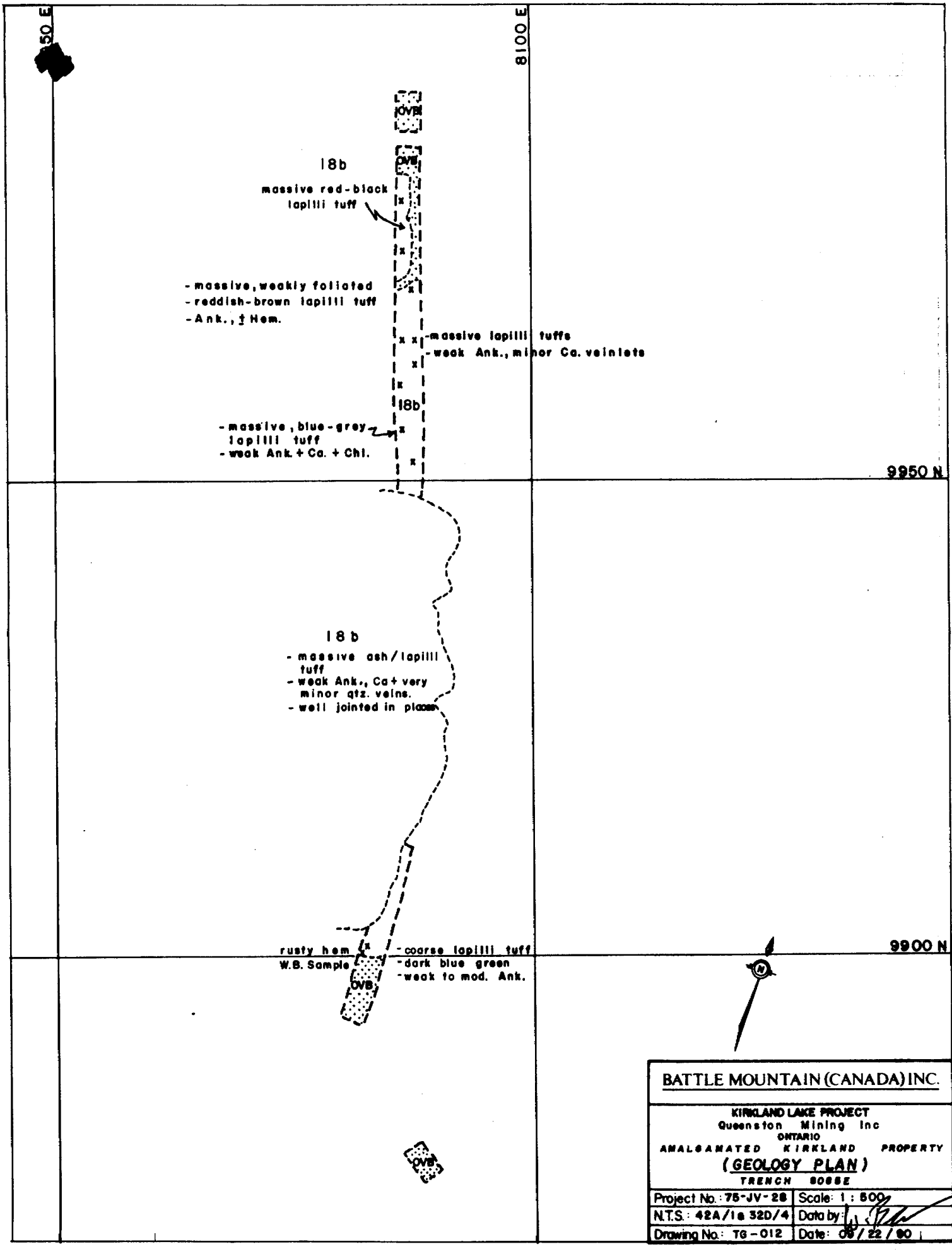
Project No.: 75-JV-28	Scale: 1 : 125
N.T.S.: 42A/1a32D/4	Data by: W. [illegible]
Drawing No.: TG-011	Date: 09/22/90



BATTLE MOUNTAIN (CANADA) INC.

KIRKLAND LAKE PROJECT
Queenston Mining Inc
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(GEOLOGY PLAN)
TRENCH 7650E

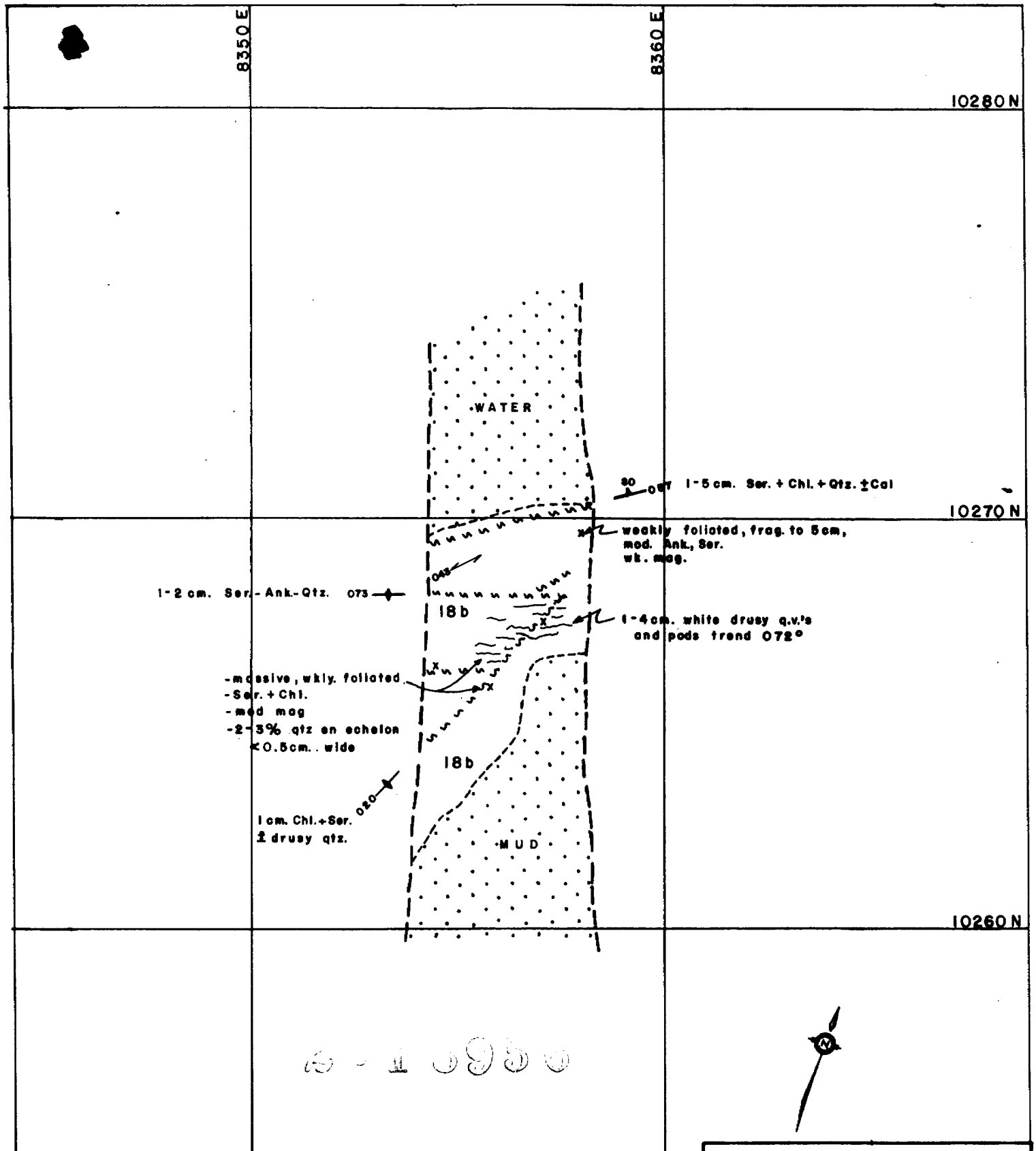
Project No.: 75-JV-28	Scale: 1 : 500
N.T.S.: 42A/1 & 32D/4	Data by:
Drawing No.: TG-013	Date: 09/22/90



BATTLE MOUNTAIN (CANADA) INC.

KIRKLAND LAKE PROJECT
Queenston Mining Inc
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(GEOLOGY PLAN)
TRENCH 8088E

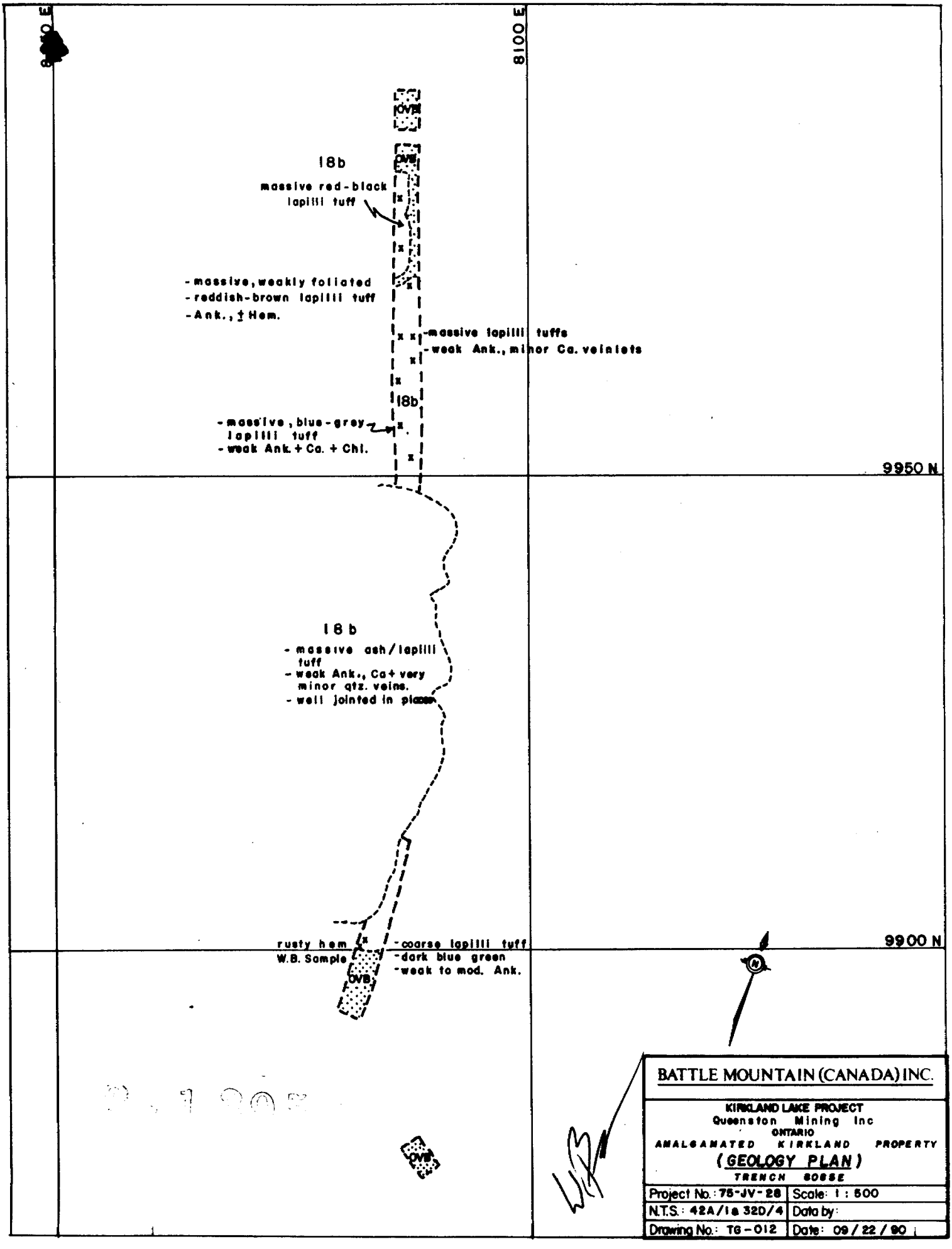
Project No.: 75-JV-28	Scale: 1 : 500
N.T.S.: 42A/1 & 32D/4	Data by:
Drawing No.: TG-012	Date: 09 / 22 / 90



BATTLE MOUNTAIN (CANADA) INC.

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(GEOLOGY PLAN)
TRENCH 8350E

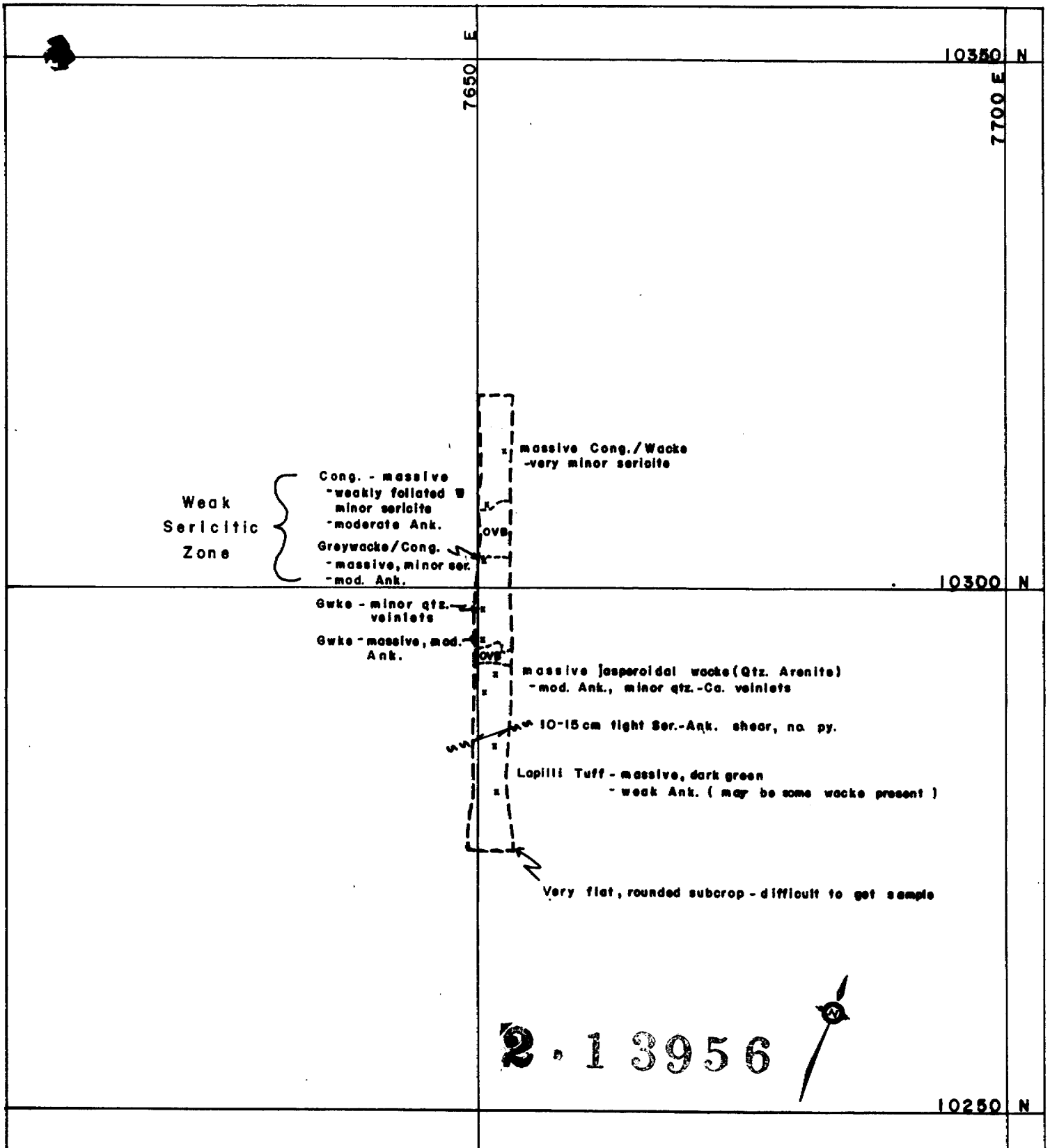
Project No.: 75-JV-28	Scale: 1 : 125
N.T.S.: 42A/1a32D/4	Data by:
Drawing No.: TG-011	Date: 09/22/90



BATTLE MOUNTAIN (CANADA) INC.

KIRKLAND LAKE PROJECT
Queenston Mining Inc
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(GEOLOGY PLAN)
TRENCH 8088E

Project No.: 75-JV-28	Scale: 1 : 500
N.T.S.: 42A/1 & 32D/4	Data by:
Drawing No.: TG-012	Date: 09/22/90



BATTLE MOUNTAIN (CANADA) INC.

KIRKLAND LAKE PROJECT
Queenston Mining Inc
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(GEOLOGY PLAN)
TRENCH 7650E

Project No.: 75-JV-28	Scale: 1:500
N.T.S.: 42A/1a 32D/4	Data by:
Drawing No.: TG-013	Date: 09/22/90

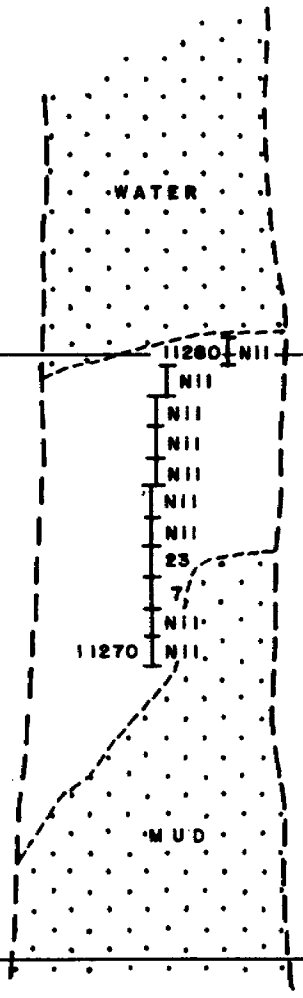
8350 E

8360 E

10280 N

10270 N

10260 N

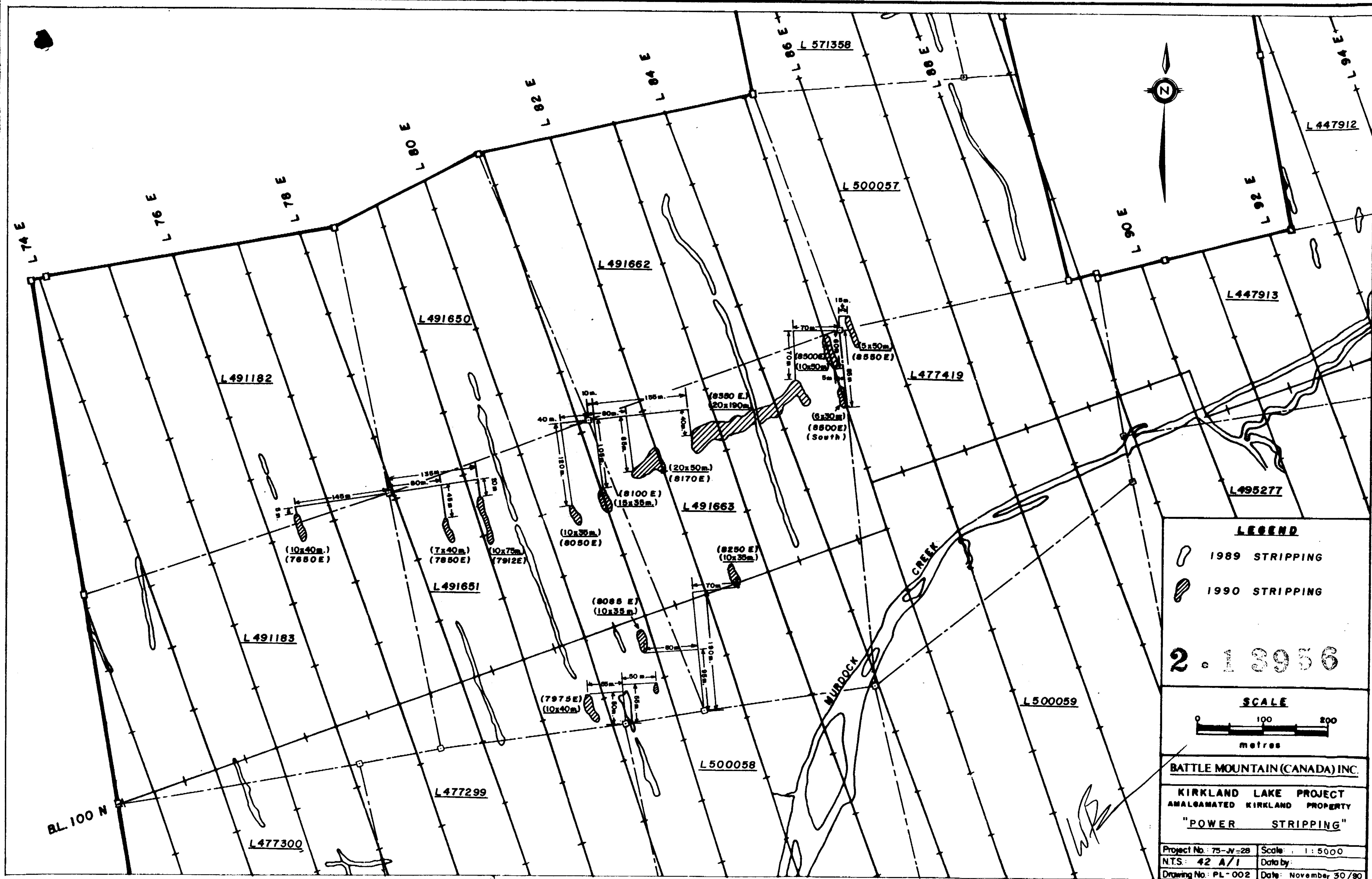


2.13956

BATTLE MOUNTAIN (CANADA) INC.

KIRKLAND LAKE PROJECT
Queenston Mining Inc
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(ASSAY PLAN)
CHANNEL SAMPLING – TRENCH 8360 E

Project No.: 75-JV-28	Scale: 1 : 125
N.T.S.: 42A/1 & 32D/4	Data by:
Drawing No.: TA – 011	Date: 09 / 21 / 90



L 74 E
L 76 E
L 78 E
L 80 E
L 82 E
L 84 E
L 86 E
L 88 E
L 90 E
L 92 E
L 94 E
L 571358
L 447912
L 500057
L 491662
L 491650
L 447913
L 491182
L 477419
L 491663
L 495277
L 491651
L 491183
L 500059
L 500058
L 477299
L 477300
BL. 100 N
MURDOCK
CREEK
(10x40m.)
(7650E)
(7x40m.)
(7850E)
(10x75m.)
(7912E)
(10x35m.)
(8050E)
(8100 E)
(15x35m.)
(20x50m.)
(8170E)
(8380 E.)
(20x190m.)
(8500E)
(10x50m)
(5x50m.)
(8550E)
(6x30m)
(8500E)
(South)
(8250 E)
(10x35m.)
(8085 E)
(10x35m)
(7975E)
(10x40m)
LEGEND
1989 STRIPPING
1990 STRIPPING
2 . 13956
SCALE
0 100 200
metres
BATTLE MOUNTAIN (CANADA) INC.
KIRKLAND LAKE PROJECT
AMALGAMATED KIRKLAND PROPERTY
"POWER STRIPPING"
Project No.: 75-JV-28
Scale: 1:5000
N.T.S.: 42 A/1
Drawn by:
Drawing No.: PL-002
Date: November 30/90

ASSAY CERTIFICATES

AND

PROOF OF EXPENDITURES

2.13956

BATTLE MOUNTAIN (CANADA) INC.
390 BAY STREET, SUITE 2910,
TORONTO, ONTARIO M5H 2Y2

001755

July 6 19 90

PAY Four Thousand Five Hundred & Thirty-One —— 27 /100 DOLLARS $ 4,531.27

TO Swastika Laboratories,
P.O. Box 10,
Swastika, Ontario.
P0K 1T0

BATTLE MOUNTAIN (CANADA) INC.

[redacted]

Canadian Imperial Bank of Commerce
MAIN BRANCH-COMMERCE COURT
TORONTO, ONTARIO M5L 1G9

NOT NEGOTIABLE / NON NÉGOCIABLE

⑈001755⑈ ⑆00002⑈010⑆ 13⑈46113⑈

DETACH & RETAIN THIS STATEMENT

BATTLE MOUNTAIN (CANADA) INC. 001755

DATE	DESCRIPTION		AMOUNT
July 06'90	Invoice # 22447 - June 11'90	$ 736.02 ✓	
	# 22448 - June 11'90	137.47 ✓	
	# 22466 - June 12'90	274.95 ✓	
	# 22482 - June 15'90	1,152.65 ✓	
	# 22511 - June 21'90	512.77 ✓	
	# 22512 - June 21'90	385.42 ✓	
	# 22546 - June 25'90	570.82 ✓	
	# 22552 - June 25'90	232.65 ✓	
	# 22575 - June 27'90	155.02 ✓	
	# 22599 - June 29'90	373.50 ✓	4,531.27

✓

22447

SWASTIKA LABORATORIES

(A DIVISION OF ASSAYERS CORPORATION LIMITED)

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX (705) 642-3300

DATE: 11 June 1990

VENDU A / SOLD TO: Battle Mountain Canada Inc
Box 635
Kirkland Lake, Ontario
P2N 3K1
W. Benham

1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)

75 JV-28 101 718 Assaying

NO. D'EXEMPT. DE TAXE FED. / FED. LICENCE NO.	NO. D'EXEMPT. DE TAXE PROV. / PROV. LICENCE NO.	NOTRE NO. DE COMMANDE / YOUR ORDER NO.	NOTRE NO DE COMMANDE / OUR ORDER NO.	CONDITIONS / TERMS	REP. / SALES REP.
		75-JV-28		NET 30 DAYS	

QUANTITE / QUANTITY	DESCRIPTION	PRIX UNITAIRE / UNIT PRICE	MONTANT / AMOUNT
18	Au assays Gq	$ 8.75	$ 157.50 -
NA 3	Ag Cu Pb	11.50	34.50 -
3	Mo	2.60	7.80 -
18	Sample Handling	3.00	54.00 -
	Cert.#OW-0734-RG1 June 8, 1990		
~~24~~ 24	Au assays AKs	8.75	210.00 -
24	Sample Handling	3.00	72.00 -
	Cert.#OW-0733-RG1 June 6, 1990		
24	Au assays 20 AKs 4 Gq NA	8.75	210.00 -
24	Sample Handling	3.00	72.00 -
	Cert.#OW-0748-RG1 June 8, 1990		
	Sub-total		817.80 -
	-10%.....		81.78 -
	TOTAL...		$ 736.02

W Benham BENHAM

FACTURE/INVOICE

ANALYTICAL CHEMISTS ● ASSAYERS ● CONSULTANTS
ESTABLISHED 1928

** 44 samples = $465.30

MAIL

JUN 19 1990

Clm #1755 - $4531.27

A/c 75-JV-28/105-779

APPROVED FOR PAYMENT

O E Long

** Expenditures claimed Cert #OW-0733
6 samples x $11.75 = 70.50
- 10 % 7.05
$63.45

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

0W-0733-RG1

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

Date: JUN-06-90
Copy 1. P.O.BOX 635,KIRKLAND LAKE,ONT. P2N 3K1
2. HOLD COPY

We hereby certify the following Geochemical Analysis of 24 CHANNEL SAMPLES samples submitted JUN-04-90 by ROBERT PEEVER.

Sample Number		Au ppb	Au check ppb
8905		55	34
8906		Nil	
8907		31	
8908		Nil	
8909		Nil	
8910		7	
8911		Nil	
8912	TR 8550E	10	17
8913		Nil	
8914		Nil	
8915		24	
8916		Nil	
8917		17	
8918		Nil	
8919		Nil	
8920		Nil	
8921		3	
8922		Nil	
8923		Nil	
8924		Nil	
8925		Nil	
8926		Nil	
8927		Nil	
8928		Nil	Nil

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244. FAX (705) 642-3300

BATTLE MOUNTAIN (CANADA) INC.
390 BAY STREET, SUITE 2910,
TORONTO, ONTARIO M5H 2Y2

001866

July 30 19 90

PAY Four Thousand Six Hundred & Fifty-Nine —— 06 /100 DOLLARS $ 4,659.06

TO Swastika Laboratories,
P.O. Box 10,
Swastika, Ontario.
P0K 1T0

BATTLE MOUNTAIN (CANADA) INC.

[redacted]

Canadian Imperial Bank of Commerce
MAIN BRANCH-COMMERCE COURT
TORONTO, ONTARIO M5L 1G9

NOT NEGOTIABLE / NON NÉGOCIABLE

⑈001866⑈ ⑆00002⑈010⑆ 13⑈46113⑈

DETACH & RETAIN THIS STATEMENT

BATTLE MOUNTAIN (CANADA) INC. 001866

DATE	DESCRIPTION	AMOUNT
July 30'90	Invoice # 22615; 22626; 22641; 22642; 22665; 22677; 22684; 22704; 22722; 22693; 22694.	4,659.06

22641

SWASTIKA LABORATORIES

(A DIVISION OF ASSAYERS CORPORATION LIMITED)

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX (705) 642-3300

9 July 1990

VENDU A / SOLD TO: Battle Mountain Canada Inc
Box 635
Kirkland Lake, Ontario
P2N 3K1
W. Benham

1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)

101 718

NO. D'EXEMPT. DE TAXE FÉD. / FED. LICENCE NO.	NO. D'EXEMPT. DE TAXE PROV. / PROV. LICENCE NO.	VOTRE NO DE COMMANDE / YOUR ORDER NO.	NOTRE NO DE COMMANDE / OUR ORDER NO.	CONDITIONS / TERMS	REP. DES VENTES / SALES REP.
		75-JV-28		NET 30 DAYS	

QUANTITÉ / QUANTITY	DESCRIPTION	PRIX UNITAIRE / UNIT PRICE	MONTANT / AMOUNT
16	Au assays AK's	$ 8.75	$ 140.00-
16	Sample Handling	3.00	48.00 -
	Cert.#OW-0921-RG1 July 6, 1990		
17	Au assays AK's	8.75	148.75-
3	check Au assays using 1 A.T. fusions	9.75	29.25-
17	Sample Handling	3.00	51.00-
	Cert.#OW-0913-RG1 July 6, 1990		
		Sub-total...	417.00 -
	WB	-10%.....	41.70 -
		TOTAL.....	$ 375.30

FACTURE/INVOICE

ANALYTICAL CHEMISTS ● ASSAYERS ● CONSULTANTS
ESTABLISHED 1928

PAID
JUL 2 5 1990

APPROVED FOR PAYMENT

Ck# 1866 - $469.06

A/c 75-JV-28/105-779

* Expenditure claimed Cert # OW-0921

16 samples $169.00
-10% $16.80
$152.20

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

0W-0921-RG1

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

Date: JUL-06-90
Copy 1. HOLD FOR PICK UP 567-4840

We hereby certify the following Geochemical Analysis of 16 ROCK samples submitted JUL-04-90 by M. MASSON.

Sample Number		Au ppb
11040		21
11041		Nil
11042		Nil
11043		7
11044		21
11045		7
11046		31-24
11047		10
11048		14
11049	8100E	Nil
11050		3
11051		Nil
11052		10/10
11053		10
11054		10
11055		Nil

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 FAX (705) 642-3300

22665

SWASTIKA LABORATORIES

(A DIVISION OF ASSAYERS CORPORATION LIMITED)

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX (705) 642-3300

DATE: 11 July 1990

VENDU À / SOLD TO: Battle Mountain Canada Inc
Box 635
Kirkland Lake, Ontario
P2N 3K1
W. Benham

1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)

101-718

NO. D'EXEMPT. DE TAXE FÉD. / FED. LICENCE NO.	NO. D'EXEMPT. DE TAXE PROV. / PROV. LICENCE NO.	NOTRE NO. DE COMMANDE / YOUR ORDER NO.	NOTRE NO DE COMMANDE / OUR ORDER NO.	CONDITIONS / TERMS	REP. DES VENTES / SALES REP.
		75-JV-28		NET 30 DAYS	

QUANTITÉ / QUANTITY	DESCRIPTION	PRIX UNITAIRE / UNIT PRICE	MONTANT / AMOUNT
** 20	Au assays AK's Tr 8050E	$ 8.75	$ 175.00-
20	Sample Handling	3.00	60.00 -
	Cert.#OW-0936-RG1 July 10, 1990		
** 38	Au assays AK's Tr 7912E	8.75	332.50-
38	Sample Handling	3.00	114.00 -
	Cert.#OW-0947-RG1 July 10, 1990		
		Sub-total	681.50-
		-10%.....	68.15-
		TOTAL.....	$ 613.35

FACTURE/INVOICE

ANALYTICAL CHEMISTS ● ASSAYERS ● CONSULTANTS
ESTABLISHED 1928

DATE
JUL 2 5 1990

APPROVED FOR PAYMENT

Ck #1866 = $459.06

A/C 75-JV-28 / 105-779

* Expenditures claimed Cert. #OW-0936
20 samples = $235.00
-10% $23.50
$211.50

** Expenditures claimed Cert #OW-0947
38 samples $446.50
-10% $44.65
$401.85

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

0W-0936-RG1

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

Date: JUL-10-90

Copy 1. HOLD COPY 567-4840

We hereby certify the following Geochemical Analysis of 20 ROCK samples submitted JUL-06-90 by M. MASSON.

Sample Number		Au ppb	Au check ppb
11056		Nil	
11057		Nil	
11058		Nil	
11059		Nil	
11060		7	
11061		Nil	
11062		Nil	
11063		17	10
11064		7	
11065	TR 8050E	14	
11066		Nil	
11067		21	
11068		3	
11069		Nil	
11070		34	
11071		14	
11072		3	3
11073		12	
11074		Nil	
11075		Nil	

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 FAX (705) 642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

0W-0947-RG1

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

Date: JUL-10-90
Copy 1. HOLD COPY 567-4840

We hereby certify the following Geochemical Analysis of 38 ROCK samples submitted JUL-09-90 by M. Masson.

Sample Number	Au ppb	Au g/tonne	Au 2nd g/tonne
11076	10		
11077	Nil		
11078	3		
11079	Nil		
11080	7		
11081	Nil		
11082	10		
11083	1766	1.85	1.44
11084	1310	1.34	
11085	58		
11086	271		
11087	55		
11088	Nil		
11089	202		
11090	1382	1.32	
11091	10		
11092	14		
11093	7		
11094	3		
11095	17		
11096	10		
11097	38		
11098	549/651		
11099	254		
11100	69		
11101	41		
11102	41		
11103	45		
11104	38		
11105	65		

TR 7912E

Results reported in g/tonne were assayed using 1 AT fusions

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 FAX (705)642-3300

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

0W-0947-RG1

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

Date: JUL-10-90
Copy 1. HOLD COPY 567-4840

We hereby certify the following Geochemical Analysis of 38 ROCK samples submitted JUL-09-90 by M. Masson.

Sample Number		Au ppb	Au g/tonne	Au 2nd g/tonne
11106		199/171		
11107		Nil		
11108		10		
11109		7		
11110	TR7912E	7		
11111		7		
11112		3		
11113		10		

Results reported in g/tonne were assayed using 1 AT fusions

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 FAX (705)642-3300

22684

SWASTIKA LABORATORIES

(A DIVISION OF ASSAYERS CORPORATION LIMITED)

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX (705) 642-3300

DATE: 13 July 1990

VENDU A / SOLD TO: Battle Mountain Canada Inc
Box 635
Kirkland Lake, Ontario
P2N 3K1
W. Benham

1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)

101 718

NO. EXEMPT. DE TAXE FED. / FED. LICENCE NO.	NO. EXEMPT. DE TAXE PROV. / PROV. LICENCE NO.	NOTRE NO. DE COMMANDE / YOUR ORDER NO.	NOTRE NO DE COMMANDE / OUR ORDER NO.	CONDITIONS / TERMS	REP. DES VENTES / SALES REP.
		75-JV-28		NET 30 DAYS	

QUANTITE / QUANTITY	DESCRIPTION	PRIX UNITAIRE / UNIT PRICE	MONTANT / AMOUNT
20	Au assays *16 Blks 4 Cg	$ 8.75	$ 175.00
20	Sample Handling	3.00	60.00
	Cert.#OW-0954-RG1 July 12, 1990		
K N/A 17	Au assays VAd	8.75	148.75
2	Ag Zn	8.00	16.00
17	Sample handling	3.00	51.00
	Cert.#OW-0955-RG1 July 12, 1990		
		Sub-total	450.75
		-10%.....	45.08
		TOTAL....	$ 405.67

FACTURE/INVOICE

ANALYTICAL CHEMISTS ● ASSAYERS ● CONSULTANTS
ESTABLISHED 1928

JK

*16 samples = $169.20

PAID
JUL 25 1990
Cheque 1866 - $169.20

APPROVED FOR PAYMENT

A/c 75-JV-28 /105-779

Expenditures claimed Cert # OW 0954
16 samples = $188.00
-10% 18.80
$169.20

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

0W-0954-RG1

Company: **BATTLE MOUNTAIN CANADA INC.** Date: JUL-12-90
Project: 75-JV-28 Copy 1. HOLD COPY 567-4840
Attn: W. BENHAM

We hereby certify the following Geochemical Analysis of 20 ROCK samples submitted JUL-10-90 by M. Masson.

Sample Number		Au ppb
C-991		10
C-992		10
C-993		3
C-994		Nil
11114		Nil
11115		10
11116		31/17
11117		10
11118		Nil
11119	Tr.7912R	10
11120		10
11121		14
11122		Nil
11123		17
11124		Nil
11125		75/75
11126		17
11127		Nil
11128		Nil
11129		10/10

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 FAX (705) 642-3300

22693

SWASTIKA LABORATORIES

(A DIVISION OF ASSAYERS CORPORATION LIMITED)

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX (705) 642-3300

[redacted]

VENDU A / SOLD TO: Battle Mountain Canada Inc
Box 635
Kirkland Lake, Ontario
P2N 3K1
W. Benham

101 718

1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)

NO. D'EXEMPT. DE TAXE FED. / FED. LICENCE NO.	NO. D'EXEMPT. DE TAXE PROV. / PROV. LICENCE NO.	VOTRE NO. DE COMMANDE / YOUR ORDER NO.	NOTRE NO DE COMMANDE / OUR ORDER NO.	CONDITIONS / TERMS	REP. DES VENTES / SALES REP.
		75-JV-28		NET 30 DAYS	

QUANTITÉ / QUANTITY	DESCRIPTION	PRIX UNITAIRE / UNIT PRICE	MONTANT / AMOUNT
N/A 28	Au assays Ud	$ 8.75	$ 245.00
28	Sample Handling	3.00	84.00
	Cert.#OW-0970-RG1 July 13, 1990		
* 20	Au assays AKs	8.75	175.00
20	Sample Handling	3.00	60.00
	Cert.#OW-0962-RG1 July 13, 1990		
		Sub-total.....	564.00
		-10%.....	56.40
		TOTAL.....	$507.60

JK

FACTURE/INVOICE

ANALYTICAL CHEMISTS ● ASSAYERS ● CONSULTANTS
ESTABLISHED 1928

* 20 Samples = $211.50

DATE
JUL 2 5 1990

Ck #1866 = 465.06

A/c # 75-JV-28 / 105-779

APPROVED FOR PAYMENT

* Expenditures claimed Cert # OW-0962
20 samples $235.00
+10% 23.50
$258.50

Established 1928

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Geochemical Analysis Certificate

0W-0962-RG1

Company: **BATTLE MOUNTAIN CANADA INC.** Date: JUL-13-90
Project: 75-JV-28 Copy 1. HOLD COPY 567-4840
Attn: WAYNE BENHAM

We hereby certify the following Geochemical Analysis of 20 ROCK samples submitted JUL-11-90 by ROBERT PEEVER.

Sample Number		Au ppb
11130		21/21
11131		Nil
11132		Nil
11133		Nil
11134		Nil
11135		Nil
11136		7
11137		10
11138		5
11139	Tr. 7850 E	Nil
11140		Nil
11141		17/27
11142		3
11143		10
11144		10
11145		10/10
11146		Nil
11147		Nil
11148		Nil
11149		Nil

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244. FAX (705) 642-3300

22694

SWASTIKA LABORATORIES

(A DIVISION OF ASSAYERS CORPORATION LIMITED)

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX (705) 642-3300

16 July 1990

VENDU A / SOLD TO: Battle Mountain Canada Inc
Box 635
Kirkland Lake, Ontario
P2N 3K1
W. Benham

101 718

1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)

NO. D'EXEMPT. DE TAXE FED. / FED. LICENCE NO.	NO. D'EXEMPT. DE TAXE PROV. / PROV. LICENCE NO.	VOTRE NO DE COMMANDE / YOUR ORDER NO.	NOTRE NO DE COMMANDE / OUR ORDER NO.	CONDITIONS / TERMS	REP. DES VENTES / SALES REP.
		75-3V-28		NET 30 DAYS	

QUANTITE / QUANTITY	DESCRIPTION	PRIX UNITAIRE / UNIT PRICE	MONTANT / AMOUNT
NA 34	Au assays Dad	$ 8.75	$ 297.50-
34	Sample Handling	3.00	102.00-
	Cert.#OW-0964-RG1 July 13, 1990		
15	Au assays AK's	8.75	131.25-
15	Sample Handling	3.00	45.00-
	Cert.#OW-0977-RG1 July 16, 1990		
		Sub-total...	575.75-
		-10%.....	57.58-
		TOTAL.....	$ 518.17-

FACTURE/INVOICE

ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS
ESTABLISHED 1928

JK

* 15 samples - $158.63

PAID
JUL 25 1990
Cheque #1866 - 459.06
A/C 75-JV-28 / 105-779

APPROVED FOR PAYMENT
Ole Leight

* Expenditures claimed Cert # OW-0977
15 samples 176.25
-10% 17.62
$158.63

Established 1928

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Geochemical Analysis Certificate

0W-0977-RG1

Company: **BATTLE MOUNTAIN CANADA INC** Date: JUL-16-90

Project: 75-JV-28 Copy 1. HOLD 567-4840

Attn: W. BENHAM

We hereby certify the following Geochemical Analysis of 15 ROCK samples submitted JUL-12-90 by M.MASSON.

Sample Number		Au ppb	Au check ppb
11150		27	14
11151		Nil	
11152		Nil	
11153		Nil	
11154		10	
11155		7	
11156		Nil	
11157		34	38
11158		10	
11159	Ts. B100 R	13	
11160		Nil	
11161		Nil	
11162		5	
11163		3	2
11164		7	

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244 FAX (705) 642-3300

BATTLE MOUNTAIN (CANADA) INC.
390 BAY STREET, SUITE 2910,
TORONTO, ONTARIO M5H 2Y2

001898

August 7 19 90

PAY One Thousand Four Hundred & Twenty-Four — 02 /100 DOLLARS $ 1,424.02

TO Swastika Laboratories,
P.O. Box 10,
Swastika, Ontario.
P0K 1T0

: BATTLE MOUNTAIN (CANADA) INC.

Canadian Imperial Bank of Commerce
MAIN BRANCH-COMMERCE COURT
TORONTO, ONTARIO M5L 1G9

[redacted]

NOT NEGOTIABLE / NON NÉGOCIABLE

⑈001898⑈ ⑆00002⑈010⑆ 13⑈46113⑈

DETACH & RETAIN THIS STATEMENT

BATTLE MOUNTAIN (CANADA) INC. 001898

DATE	DESCRIPTION		AMOUNT
Aug. 07'90	Invoice # 22735 - July 25'90	$ 539.32 ✓	
	# 22736 - July 26'90	652.05 ✓	
	# 22737 - July 26'90	232.65 ✓	1,424.02

22735

SWASTIKA LABORATORIES

(A DIVISION OF ASSAYERS CORPORATION LIMITED)

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX (705) 642-3300

DATE: 25 July 1990

VENDU A / SOLD TO: Battle Mountain Canada Inc
Box 635
Kirkland Lake, Ontario
P2N 3K1
W. Benham

1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)

105-779
75 JV 28 lot 748

NO. D'EXEMPT. DE TAXE FÉD. / FED. LICENCE NO.	NO. D'EXEMPT. DE TAXE PROV. / PROV. LICENCE NO.	VOTRE NO. DE COMMANDE / YOUR ORDER NO.	NOTRE NO DE COMMANDE / OUR ORDER NO.	CONDITIONS / TERMS	REP. DES VENTES / SALES REP.
				NET 30 DAYS	

QUANTITE / QUANTITY	DESCRIPTION	PRIX UNITAIRE / UNIT PRICE	MONTANT / AMOUNT
~~X~~ 14	Au assays AK's	$ 8.75	$ 122.50 -
14	Sample Handling	3.00	42.00 -
	Cert.#OW-0996-RG1 July 18, 1990		
NA 19	Au assays VA d.	8.75	166.25 -
19	Sample Handling	3.00	57.00 -
	Cert.#OW--0997-RG1 July 18, 1990		
18	Au assays AK s	8.75	157.50 -
18	Sample Handling	3.00	54.00 -
	Cert.#OW-1012-RA1 July 19, 1990		
	Sub-total.....		599.25 -
	-10%.....		59.93 -
	TOTAL.....		$ 539.32

FACTURE/INVOICE

ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS
ESTABLISHED 1928

** 32 samples = $338.40

PAID
AUG - 7 1990

APPROVED FOR PAYMENT

Cheque #1898 = $1,424.02

** Expenditures claimed Cert # OW-0996

A/c 75-JV-28/105-779

14 samples $164.50
-10% 16.45
$148.05

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

0W-0996-RG1

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

Date: JUL-18-90
Copy 1. HOLD COPY 567-4840

We hereby certify the following Geochemical Analysis of 14 ROCK samples submitted JUL-16-90 by M.MASSON.

Sample Number	Au ppb	Au check g/tonne
11165	3	
11166	7	
11167	10/7	
11168	Nil	
11169	7	
11170	Nil	
11171	Nil	
11172	10	
11173	Nil	
11174	Nil	
11175	7	
11176	Nil	
11177	1059	0.99
11178	939/789	

Ti 7975R

Results reported in g/tonne were assayed using 1 AT fusions

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705)642-3244 FAX (705)642-3300

Swastika Laboratories

Established 1928

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

JUL 23 1990

Geochemical Analysis Certificate

0W-1003-RG1

Company: **BATTLE MOUNTAIN CANADA INC** Date: JUL-19-90

Project: 75-JV-28 Copy 1. HOLD COPY

Attn: W. BENHAM

We hereby certify the following Geochemical Analysis of 26 ROCK samples submitted JUL-17-90 by .

Sample Number		Au ppb	Au check g/tonne	Au 2nd g/tonne
11179		Nil		
11180		Nil		
11181		Nil		
11182		Nil		
11183	Tr 7975E	Nil	Nil	
11184		Nil		
11185		Nil		
11186		3		
11187		Nil		
11188		Nil		
11189		Nil		
11190		Nil		
11191		Nil		
11192		31		
11193		39497	39.15	40.25
11194		216		
11195		21		
11196		31		
11197		Nil		
11198	Tr 8030E	Nil		
11199		Nil		
11200		Nil		
11201		Nil		
11202		17		
11203		38/27		
11204		14		
11205		27		
11206		24		
11207		27		

Au results reported in g/tonne were assayed using 1 AT fusions

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244 FAX (705) 642-3300

22736

SWASTIKA LABORATORIES

(A DIVISION OF ASSAYERS CORPORATION LIMITED)

P.O. BOX 10, SWASTIKA, ONTARIO P0K 1T0
TELEPHONE: (705) 642-3244 FAX (705) 642-3300

DATE: 26 July 1990

VENDU A / SOLD TO: Battle Mountain Canada Inc
Box 635
Kirkland Lake, Ontario
P2N 3K1
W. Benham

1.5% LATE CHARGE OVER 30 DAYS (ANNUAL RATE 18%)

105-779
75 JU 28 101 718

NO. D'EXEMPT. DE TAXE FED. / FED. LICENCE NO.	NO. D'EXEMPT. DE TAXE PROV. / PROV. LICENCE NO.	VOTRE NO. DE COMMANDE / YOUR ORDER NO.	NOTRE NO DE COMMANDE / OUR ORDER NO.	CONDITIONS / TERMS	REP. DES VENTES / SALES REP.
		75-JV-28		NET 30 DAYS	

QUANTITE / QUANTITY	DESCRIPTION	PRIX UNITAIRE / UNIT PRICE	MONTANT / AMOUNT
*** 26	Au assays AK's	$ 8.75	$ 227.50
26	Sample Handling	3.00	78.00
	Cert.#OW-1003-RG1 July 19, 1990		
* 17	Au assays 16 AK's 1 G	8.75	148.75
17	Sample Handling	3.00	51.00
	Cert.#OW-1021-RG1 July 23, 1990		
** 17	Au assays 17 AK's	8.75	148.75
2	Au check assays using 1 A.T. fusions	9.75	19.50
17	Sample Handling	3.00	51.00
	Cert.#OW-1028-RG1 July 25, 1990		
	Sub-total		724.50
	-10%		72.45
	TOTAL		$ 652.05

FACTURE/INVOICE

ANALYTICAL CHEMISTS • ASSAYERS • CONSULTANTS
ESTABLISHED 1928

* 17 samples = $169.20

** 43 samples = $454.73

** Expenditures claimed cert No #OW-1028
5 samples @ $11.75 = $58.75
2 checks @ 9.75 = 19.50
$78.25 APPROVED FOR PAYMENT
-10% 7.83
$70.42

DATE
AUG - 7 1990

Cheque 1898: $1424.02

*** Expenditures claimed Cert. No #OW-1003

A/c 75-JV-28 / 105-779

26 samples (29) = $305.50
30.55
$274.95

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Established 1928

Assaying - Consulting - Representation

AUG - 1 1990

Geochemical Analysis Certificate

0W-1028-RG1

Company: **BATTLE MOUNTAIN CANADA INC.** Date: JUL-25-90

Project: 75-JV-28 Copy 1. HOLD COPY 567-4840

Attn:

We hereby certify the following Geochemical Analysis of 17 ROCK samples submitted JUL-20-90 by .

Sample Number		Au ppb	Au check g/tonne	Au 2nd g/tonne
11242	Tr 8030E	151		
11243		27		
11244		17		
11245		987		
11246		740235	761.11	834.45
11247		1783	1.47	
11248		178		
11249		233		
11250		76		
11251	Tr 8250E	2043	2.19	
11252		878		
11253		38		
11254		216	185	
11255		27		
11256		7		
11257		Nil		
11258		17		

Results reported in g/tonne were assayed using 1 AT fusions

Certified by G. Lebel

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244. FAX (705) 642-3300

ML

Ministry of Northern Development and Mines
Ontario

DOCUMENT W9108.00081

42A01NE8930 2.13956 TECK

900

Report of Work
Mining Act
(Expenditures, Subsection 77(19)) 2.13956 and Lands Branch.

Type of Work Performed	Mining Division	Township or Area
Assaying Channel Samples	Larder Lake	Teck Township

Recorded Holder	Prospector's Licence No.
Battle Mountain (Canada) Inc.	T 5179

Address	Telephone No.
390 Bay Street, Suite 2910, Toronto, Ontario, M5H 2Y2	(416) 867-9815

Work Performed By: Battle Mountain (Canada) Inc.

Name and Address of Author (of Submission): W. Benham, Battle Mountain (Canada) Inc., 390 Bay Street, Ste. 2910, Toronto, Ont. M5H 2Y2

Date When Work was Performed: From: Day 17 Mo. 05 Yr. 90 To: Day 25 Mo. 07 Yr. 90

All the work was performed on Mining Claim(s): Indicate no. of days performed on each claim. *See Note No. 1 on reverse side

Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days
477419	4.23	491651	121.02								
							SEE ATTACHED SCHEDULE I				

Instructions
Total days credits may be distributed at claim holder's choice. Enter number of days credits per claim in the expenditure days credit column (below).

Calculation of Expenditure Days Credits: Total Expenditures $ 1,878.75 ÷ 15 = Total Days Credits 125.25

Total Number of Mining Claims Covered by this Report of Work: 5

Mining Claims (List in numerical sequence). If space is insufficient, attach schedules with required information

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
L	1046765	18.89									
L	1046773	60									
L	1046774	46.36									

ONTARIO GEOLOGICAL SURVEY GIS - ASSESSMENT FILES APR 30 1991 RECEIVED

RECEIVED MAR 11 1991 MINING LANDS SECTION

Total Number of Days Performed	Total Number of Days Claimed	Total Number of Days to be Claimed at a Future Date
125.25	125.25	

Certification of Beneficial Interest *See Note No. 2 on reverse side

I hereby certify that, at the time the work was performed, the claims covered in this report of work were recorded in the current recorded holder's name or held under a beneficial interest by the current recorded holder.

Date: Feb. 19, 1991

Recorded Holder or Agent (Signature): O. E. Leigh

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Address of Person Certifying: T. J. Bottrill, Battle Mountain (Canada) Inc., 390 Bay Street, Suite 2910, Toronto, Ontario M5H 2Y2

Telephone No. (416) 867-9815

Date: Feb 19, 1991

Certified By (Signature): T. J. Bottrill

Received Stamp: RECEIVED LARDER LAKE MINING DIVISION FEB 22 1991 TIME 4:08pm

For Office Use Only

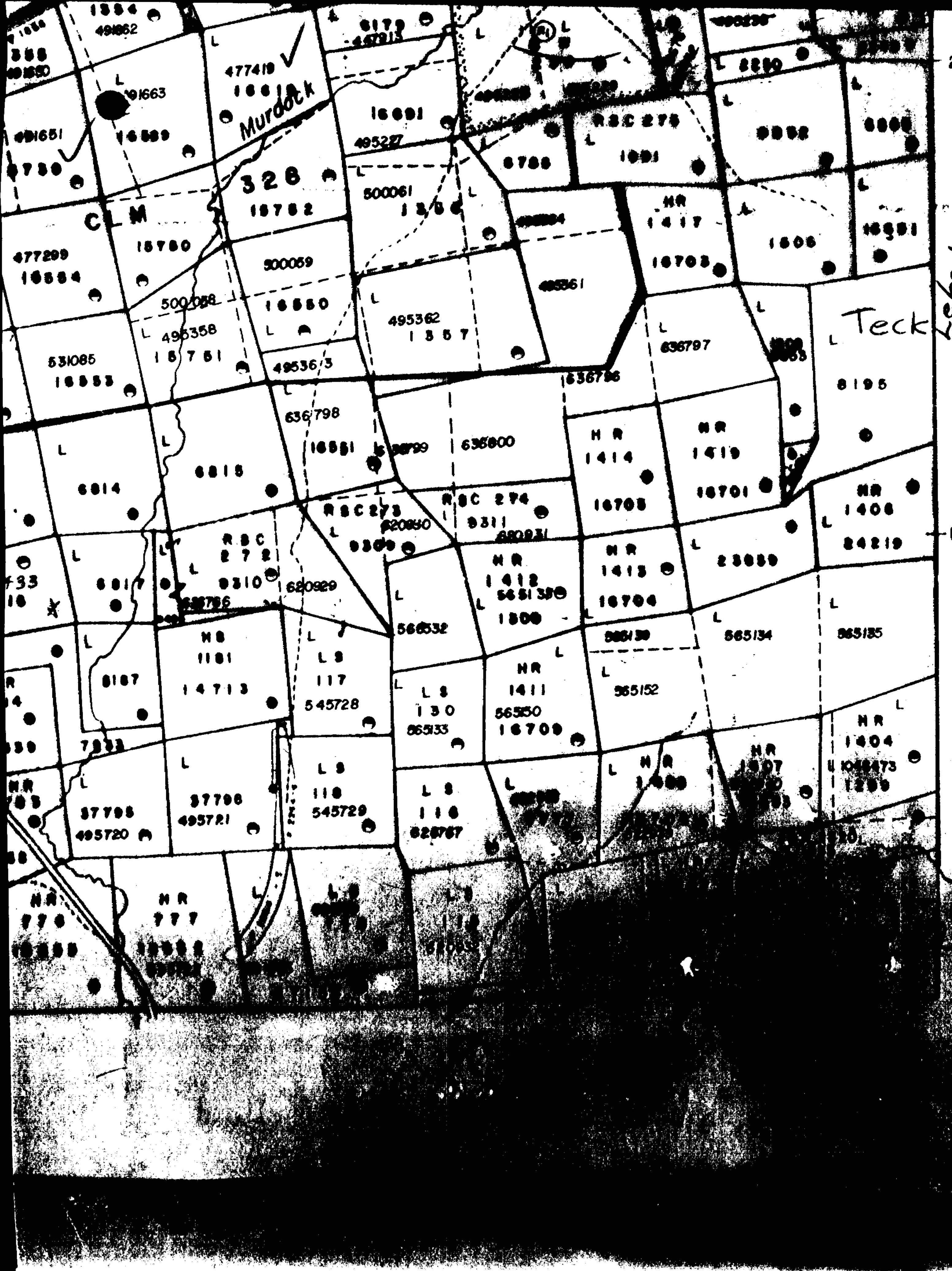
Total Days Cr. Recorded	Date Recorded	Mining Recorder
125.25	Feb. 22/91	
	Date Approved as Recorded	Provincial Manager, Mining Lands

SCHEDULE I

No. of Days Work Performed on Each Claim

Trench	No. of Samples	477419	491651	Cert. No.	Amount
8550E	6	63.45✓	-	0733	$ 63.45
8100E	16		169.20✓	0921	169.20
8050E	20		211.50✓	0936	211.50
7912E	38		401.85✓	0946	401.85
7912E	16		169.20✓	0954	169.20
7850E	20		211.50✓	0962	211.50
8100E	15		158.63✓	0977	158.63
7975E	14		148.05✓	0996	148.05
7975E, 8030E	26		274.95	1003	274.95
8030E	5		70.42	1028	70.42
Total Expenditures		63.45	1,815.30		$1,878.75
Total Days Credit		4.23	121.02		125.25

FL: KL\DAWRKPRF.TEK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328
CLM
Teck
Lebel
477419
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491651
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16782
16780
477299
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636797
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636800
6815
6814
HR
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1419
16701
1406
24219
RSC 274
RSC 273
RSC 272
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620931
9309
9310
620929
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1413
16704
23059
565132
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565135
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LS 117
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LS 130
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HR 1411
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565152
HR 1404
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545729
LS 116
37795
495720
37796
495721
HR 777

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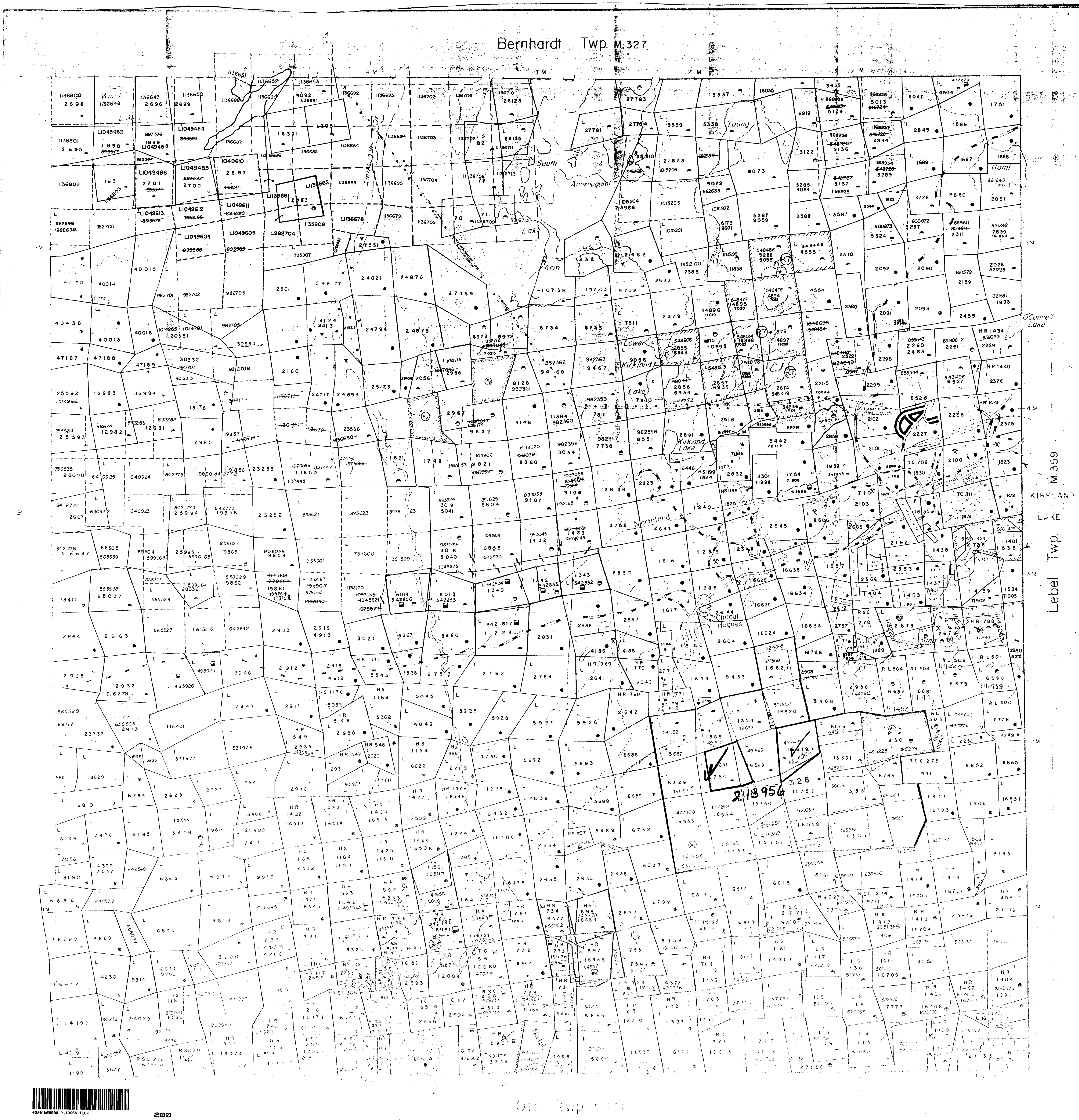
McMurtry



THE TOWNSHIP OF

TECK

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 20 CHAINS

DISPOSITION OF CROWN LANDS

ROADS
IMPROVED ROADS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED

NOTES

400' surface rights reservation along the shores of all lakes and rivers

Areas shown thus for slime disposal

Mining claim L.5779 - Mining Rights subject to Sec. 36 of the Mining Act. (R.S.O. 1950)

AREAS WITHDRAWN FROM STAKING

(R1) SURFACE RIGHTS WITHDRAWN FROM STAKING SECTION 43/70 ORDER NO. W76/80

(R2) SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W108/82

~~(R3) SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W8/86~~
ORDER NO. O-20/88 OPENS PART W-08/86

(R4) SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W9/86.
ORDER NO. O-22/88 OPENS PART OF W9/86

~~(R5) SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W18/86~~
ORDER NO. O-L19-90 NR OPENS W18/86
NOV 15/90

~~(R6) MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W90/87 NR~~
ORDER NO. O-33/88 OPENS W-90/87

(R7) MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W-22/88

(R8) MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. ~~W-47/90~~ W-L 2/89 NR
ORDER NO. O-L17-90 NER OPENS W-L2/89NR

~~MINING RIGHTS WITHDRAWN FROM STAKING SUBJECT TO PENDING PROCEEDINGS~~

~~(R9) MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36 ORDER NO. W-L-3/89 NR~~
ORDER NO. O-L11/90 OPENS W-L3/89NR

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

DATE OF ISSUE
FEB 12 1991
LARDER LAKE
MINING RECORDER'S OFFICE

PLAN NO. M.302

MINISTRY OF NORTHERN DEVELOPMENT AND MINES

42A01NE8938 2.13956 TECK

200

569000 E

572500 E

5332000 N

5330000 N

CHAPUT HUGHES

Tailings

CANADIAN KIRKLAND

KIRKLAND LAKE

KIRKLAND GOLD RAND

AMALGAMATED KIRKLAND FAULT

LAKESHORE FAULT

HUNTON SHAFT

MURDOCK CREEK

CO-GENERATION PLANT

ABANDONED

100 N. BASE LINE

BASE LINE 100 N

LARDER LAKE FAULT ZONE

LAKESHORE FAULT

ABANDONED

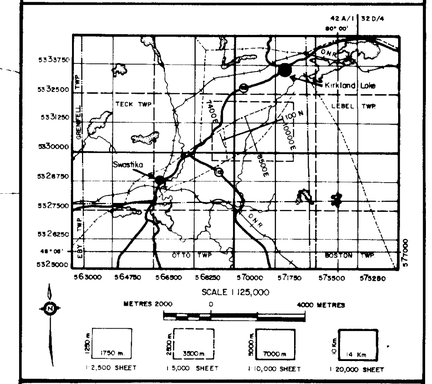
7400 E 7500 E 7600 E 7700 E 7800 E 7900 E 8000 E 8100 E 8200 E 8300 E 8400 E 8500 E 8600 E 8700 E 8800 E 8900 E 9000 E 9100 E 9200 E 9300 E 9400 E 9500 E 9600 E 9700 E 9800 E 9900 E 10000 E

"106" "105" "104" "103" "102" "101" "100" "99" "98" "97" "96" "95" "94" "93" "92" "91" "90" "89" "88"

"107" "103E" "102E" "100E" "99E"

LEGEND

- FAULT
- "102" "STRUCTURAL BREAK" MAGNETIC LOW
- I.P. CHARGEABILITY (Pole-dipole a=12.5m.)
- GOLD PROSPECT
- OVERBURDEN TRENCH



BATTLE MOUNTAIN (CANADA) INC.

2.13956

BATTLE MOUNTAIN GOLD COMPANY

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO
AMALGAMATED KIRKLAND PROPERTY

GROUND MAGNETIC INTERPRETATION

PROJECT No.: 75-JV-28	DATA BY: W Benham
N.T.S.: 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: GP-001	DATE: Revised January 1991

SCALE: 1:5000

100 0 100 200 METRES

210

8470 E | 8480 E | 8490 E | 8500 E | 8510 E | 8520 E | 8530 E | 8540 E | 8550 E

10330 N
10320 N
10310 N
10300 N
10290 N
10280 N
10270 N

OVB

18b
sheared, cb.

- mod. well sheared
- minor ser.
- no py.

Massive, dark green, foliated to sheared
- strong cb.

18b

ovb.

18a,b

Dark blue-gray, fine to med. grained.
- strong cb. (ank.)

mod. well foliated
- no py.

Strong shear — fr. py.

- strong cb.

18b

ovb

23, 22

Massive, fine to med. grained, well foliated
- up to 1% ser.
- well developed ank.

710, 17

Q.V. - fr. py.

OVB

23

Massive, fine grained
- 1% ser.
- strong ank.

709, 24

Sericitic 23, sheared
- minor py.

OVB

Massive, fine grained
- 1% ser.
- strong ank.

22

OVB

22

708, 31

Massive, wkly. foliated
- minor py.

OVB

18a

Massive, fine grained (Trachyte)

LEGEND

60 ALTERATION

- 61 Chlorite ± Talc ± Carbonate ± Quartz
  - 612 Weak
  - 613 Moderate
  - 614 Strong
- 62 Sericite ± Carbonate ± Chlorite ± Quartz
  - 622 Weak
  - 623 Moderate
  - 624 Strong
- 65 Carbonate ± Chlorite Fuschite ± Quartz
  - 652 Weak
  - 653 Moderate
  - 654 Strong
- 69 Carbonatized Syenite

40 INTRUSIVES

- 41 Diabase
  - 412 Lamprophyre
- 42 Peridotite
- 43 Pyroxenite
- 44 Gabbro
- 45 Diorite
- 46 Syenite
  - 461 Augite Syenite
  - 462 Melo Syenite
  - 463 Meso Syenite
  - 464 Leuco Syenite

20 SEDIMENTS

- 21 Conglomerate
- 22 Graywacke
- 23 Arenite
- 25 Siltstone
- 26 Mudstone
- 27 Iron Formation

10 VOLCANICS

- 11 Komatiites
- 13 Basalts
- 18 Trachytes
  - 18f Flows
  - 18a Tuffs

SYMBOLS

- Bedding, dipping, vertical (facing unknown)
- Bedding, dipping, vertical, overturned (facing known)
- Pillow facing direction, dipping, vertical, overturned
- Foliation (S1a), dipping, vertical dip unknown
- Foliation (S2 or S1b), dipping, vertical, dip unknown.
- Joint, dipping, vertical
- Fault, dipping, vertical
- Shear zone, defined, inferred
- Mineral elongation strike and plunge
- Minor fold showing plunge
- Geological contact, known, inferred
- Diamond Drill Hole
- Outcrop Area
- Limit of deep subcrop
- Historic trench
- Pit or trench outline
- Shaft

GRAIN/CLAST SIZE

SEDIMENTARY ROCKS
- a - fine grained
- b - medium grained
- c - coarse grained
- p - pebble
- d - cobble
- e - boulder
- g - grit

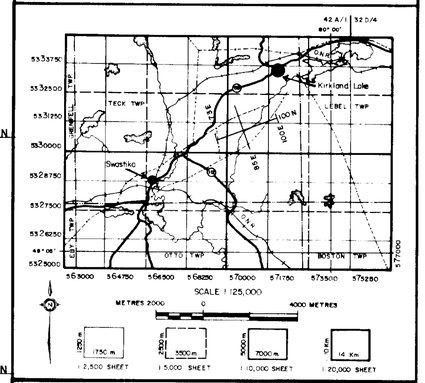
VOLCANIC ROCKS
- a - ash tuff
- b - lapilli tuff
- c - block tuff
- f - flow
- fbx - flow breccia

IGNEOUS ROCKS
- a - fine grained
- b - medium grained
- c - coarse grained
- p - pegmatitic

SAMPLE NO. 8501 — 1600 ← PPB AU; 1.6 → g./t AU; LOCATION

ABBREVIATIONS

agp. - augite porphyritic	fp. - felspar porphyritic	q.v. - quartz vein
amg. - amygdaloidal	fsp. - feldspathic	ser. - sericitic
amp. - amphibolite	gf. - graphitic	sil. - siliceous
ank. - ankerite	hem. - hematite	sp. - sphalerite
bx. - breccia	lam. - laminated	spx. - spinifex
ca. - calcite	m. - massive	sh. - sheared
cb. - carbonate	mag. - magnetite	trc. - trachoidal
ch. - chlorite	p. - pillowed	var. - variolitic
cp. - chalcopyrite	pb. - galena	ves. - vesicular
fc. - fractured	py. - pyrite	



BATTLE MOUNTAIN (CANADA) INC.

2.13956

BATTLE MOUNTAIN GOLD COMPANY

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(GEOLOGY PLAN)
TRENCHES 8500E and 8550E

PROJECT No. 75-JV-28	DATA BY M. Masson
NTS 42A/1 B 32D/4	DRAWN BY B.H. Madill, Tech.
DRAWING No. TG-001	DATE 09/19/90

SCALE 1:125

0 1 2 3 4 5 10
metres

8470 E | 8480 E | 8490 E | 8500 E | 8510 E | 8520 E | 8530 E | 8540 E | 8550 E

10260 N

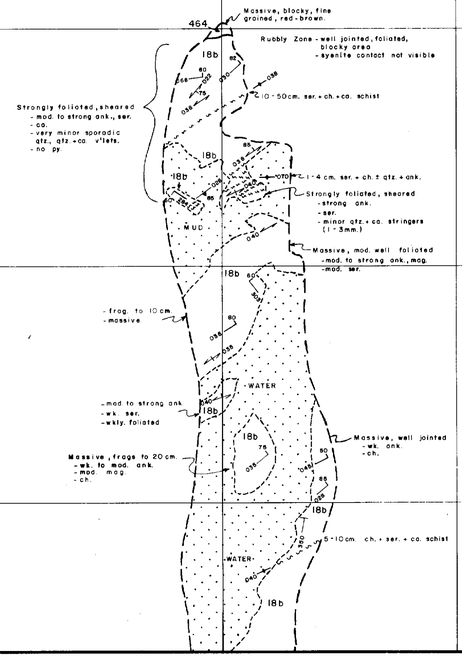
10250 N

10240 N

10230 N

10220 N

10210 N



LEGEND

60 ALTERATION

- 61 Chlorite ± Talc ± Carbonate ± Quartz
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  - 614 Strong
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  - 623 Moderate
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- 26 Mudstone
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- 11 Komatiites
- 13 Basalts
- 18 Trachytes
  - 181 Flows
  - 18a Tuffs

SYMBOLS

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- Fault, dipping, vertical
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- Historic trench
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SAMPLE NO. 8501 — 1600 ← PPB AU; 1.6 ← g./t. AU; LOCATION

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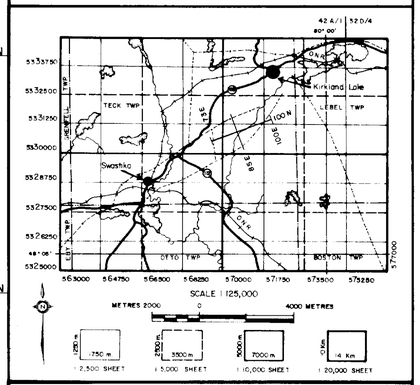
ca. - calcite	m. - massive	sh. - sheared
cb. - carbonate	mag. - magnetite	trc. - trachyoidal
ch. - chlorite	p. - pillowed	var. - variolitic
cp. - chalcopyrite	pb. - galena	ves. - vesicular
fc. - fractured	py. - pyrite	



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(GEOLOGY PLAN)

TRENCH 8500 E

PROJECT No.: 75-JV-28	DATA BY: M. Masson
N.T.S.: 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: TG-002	DATE: 09/13/90
SCALE: 1:125	

0 1 2 3 4 5 10 metres

42A01NE8930 2.13956 TECK

8390 E | 8400 E | 8410 E | 8420 E | 8430 E | 8440 E | 8450 E | 8460 E

10260 N | 10250 N | 10240 N | 10230 N | 10220 N | 10210 N

8400 ZONE

LIMIT of STRIPPING

8425 ZONE

TRENCH "8425E"

TRENCH "8450E"

Mud | Water | 18b | 464 | 624/18 | 624/23 | 624/46 | Q.V.

LEGEND

- 18b — TRACHYTE LAPILLI TUFFS
- 23 — ARENITE
- 26 — MUDSTONE
- 464 — LEUCO SYENITE
- Q.V. — QUARTZ VEIN, ± Pyrite, ± Galena
- 624/18 — STRONGLY ALTERED TUFFS (GREATER THAN 2% py.)
- 624/23 — STRONGLY ALTERED SEDIMENTS
- 624/46 — STRONGLY ALTERED SYENITE (GREATER THAN 2% py.)
- SILICIC, 5-30% Py
- CARBONATE-SERICITE ALTERATION (SERICITE ISOGRAD)

SYMBOLS

- Bedding, dipping, vertical (facing unknown)
- Bedding, dipping, vertical, overturned (facing known)
- Pillow facing direction, dipping, vertical, overturned
- Foliation (S_{1-3}), dipping, vertical, dip unknown
- Foliation (S_2 or S_{1-3}), dipping, vertical, dip unknown
- Joint, dipping, vertical
- Fault, dipping, vertical
- Shear zone, defined, inferred
- Mineral elongation strike and plunge
- Minor fold showing plunge
- Geological contact, known, inferred
- Sample point, character, character + assay, assay
- Claim post, iron bar, post
- Glacial striae, ice direction known, unknown

GRAIN/CLAST SIZE

Sedimentary rocks
- a - fine grained
- b - medium grained
- c - coarse grained
- p - pebble
- d - cobble
- e - boulder

Volcanic rocks
- a - ash tuff
- b - lapilli tuff
- c - block tuff

Igneous rocks
- a - fine grained
- b - medium grained
- c - coarse grained
- p - pegmatite

- x — Data point
- Drill hole
- Outcrop limit
- Limit of deep subcrop
- Limit of shallow subcrop
- Historic trench
- Pit or trench outline
- Shaft
- Survey, station, point

SHEET ①	SHEET ②	SHEET ③	SHEET ④

42 A/1 | 32 D/4

Kirkland Lake | TECK TWP | LEBEL TWP | Swastika | ONTARIO | BOSTON TWP

553000 | 564750 | 566500 | 568250 | 570000 | 571750 | 573500 | 575250 | 577000

SCALE 1:125,000

METRES 2000 | 0 | 4000 METRES

1250 m | 1730 m | 1:2,500 SHEET
2750 m | 3800 m | 1:5,000 SHEET
5000 m | 7000 m | 1:10,000 SHEET
10 Km | 14 Km | 1:20,000 SHEET

BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(102 STRUCTURE)

8350, 8400 and 8425 GOLD ZONES

PROJECT No.: 75-JV-28	DATA BY: W. Benham
NTS: 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: TG-003	DATE: 08/26/90

SCALE: 1:125

0 1 2 3 4 5 10 metres

42A01NE0939 2.13956 TECK

240

(SHEET 4 of 4)

8300 E 8310 E 8320 E 8330 E 8340 E 8350 E 8360 E 8370 E 8380 E

10260 N

8275 ZONE

8350 ZONE

10250 N

Old Trench 8300 E

Trench 8300 E

LIMIT of STRIPPING

10220 N

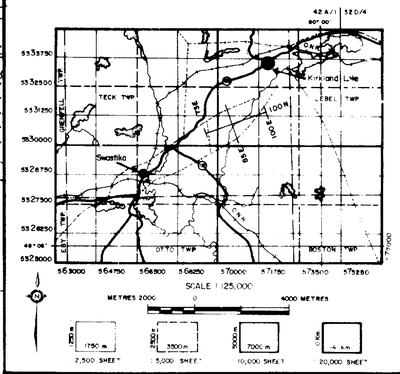
10210 N

18b Mud 464 624/46 624/18 624 / 46 QV

5-10%py 5-15%py 3-8%py 1-5%py 2-5%py 1-2%py

NOTE: *Refer to SHEET No. 4 for legend and geological symbols.*

SHEET ① | SHEET ② | SHEET ③ | SHEET ④



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(102 STRUCTURE)

8275 and 8350 GOLD ZONES

PROJECT No. 75-JV-28	DATA BY W. Benham
N.T.S. 42A/1 & 32D/4	DRAWN BY B.H. Madill, Tech.
DRAWING No. TG-004	DATE 08 / 26 / 90
SCALE 1:125	

0 1 2 3 4 5 10 metres

42A01NE0030 2.13956 TECK

250

8210 E | 8220 E | 8230 E | 8240 E | 8250 E | 8260 E | 8270 E | 8280 E | 8290 E

10260 N.

10250 N

10220 N

10210 N

LIMIT of STRIPPING

Water

Mud

18b

464

624/18

624/18b

624/46

5-10% py

1-2% sphal

80°

Trench "8250 E"

NOTE : Refer to SHEET No. 4 for legend and geological symbols.

SHEET ①	SHEET ②	SHEET ③	SHEET ④

42A/1 | 32D/4

Kirkland Lake

TECK TWP

SHOSTAC

OTTO TWP

BOSTON TWP

5338750 | 5332500 | 5331250 | 5330000 | 5328750 | 5327500 | 5326250 | 5325000

563000 | 564750 | 566500 | 568250 | 570000 | 571750 | 573500 | 575250 | 577000

SCALE 1:25,000

METRES 2000 0 4000 METRES

1:2,500 SHEET | 1:5,000 SHEET | 1:10,000 SHEET | 1:25,000 SHEET

BATTLE MOUNTAIN (CANADA) INC

2.13956

KIRKLAND LAKE PROJECT

Queenston Mining Inc.

ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(102 STRUCTURE)

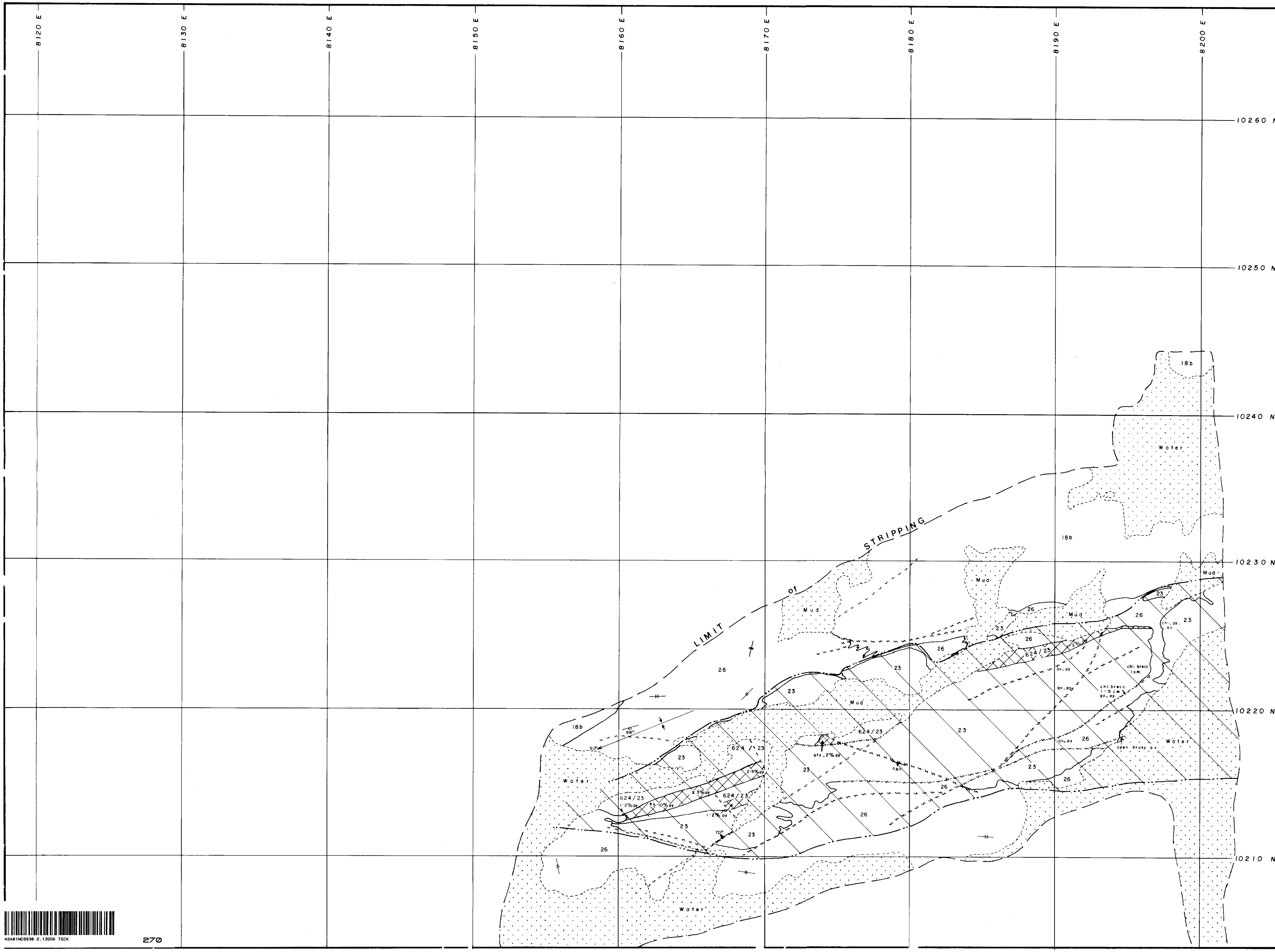
8275 GOLD ZONE

PROJECT No. 75-JV-28	DATA BY W. Benham
N.T.S. 42A/1 & 32D/4	DRAWN BY B.H. Madill, Tech.
DRAWING No. TG-005	DATE 08 / 26 / 90
SCALE 1:125	0 1 2 3 4 5 10 metres

42A01NE8938 2.13956 TECK

260

(SHEET 2 of 4)



LEGEND

18b	TRACHYTE LAPILLI TUFFS
23	ARENITE
26	MUDSTONE
464	LEUCO SYENITE
Q V	QUARTZ VEIN, ± Pyrite, ± Galena
624/18	STRONGLY ALTERED TUFFS (GREATER THAN 2% py.)
624/23	STRONGLY ALTERED SEDIMENTS
624/46	STRONGLY ALTERED SYENITE (GREATER THAN 2% py.)
	SILICIC, 5-30% Py.
SERICITE ISOGRAD	CARBONATE - SERICITE ALTERATION

SYMBOLS

- Bedding, dipping, vertical (facing unknown)
- Bedding, dipping, vertical, overturned (facing known)
- Pillow facing direction, dipping, vertical, overturned
- Foliation (S_{1a}), dipping, vertical, dip unknown
- Foliation (S_2 or S_{1b}), dipping, vertical, dip unknown
- Joint, dipping, vertical
- Fault, dipping, vertical
- Shear zone, defined, inferred
- Mineral elongation strike and plunge
- Minor fold showing plunge
- Geological contact, known, inferred
- Sample point, character, character + assay, assay
- Claim post, iron bar, post
- Glacial striae, ice direction known, unknown

GRAIN/CLAST SIZE

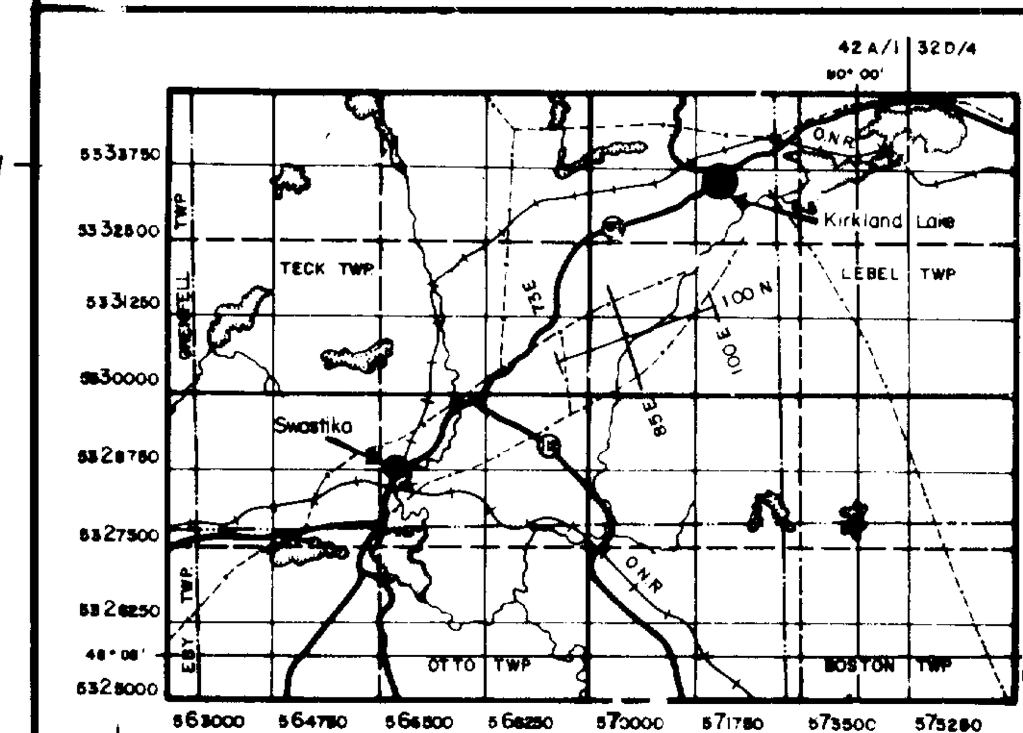
Sedimentary rocks
- a - fine grained
- b - medium grained
- c - coarse grained
- p - pebble
- d - cobble
- e - boulder

Volcanic rocks
- a - ash tuff
- b - lapilli tuff
- c - block tuff

Igneous rocks
- a - fine grained
- b - medium grained
- c - coarse grained
- p - pegmatitic

- X Data point
- Drill hole
- Outcrop limit
- Limit of deep subcrop
- Limit of shallow subcrop
- Historic trench
- Pit or trench outline
- Shaft
- Survey, station, point

SHEET ①	SHEET ②	SHEET ③	SHEET ④



SCALE 1:125,000

METRES 2000 0 4000 METRES

1:2,500 SHEET — 1750 m × 1250 m
1:5,000 SHEET — 3500 m × 2500 m
1:10,000 SHEET — 7000 m × 5000 m
1:20,000 SHEET — 14 Km × 10 Km

BATTLE MOUNTAIN (CANADA) INC.

2.13956

BATTLE MOUNTAIN GOLD COMPANY

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(102 STRUCTURE)

8170 GOLD ZONE

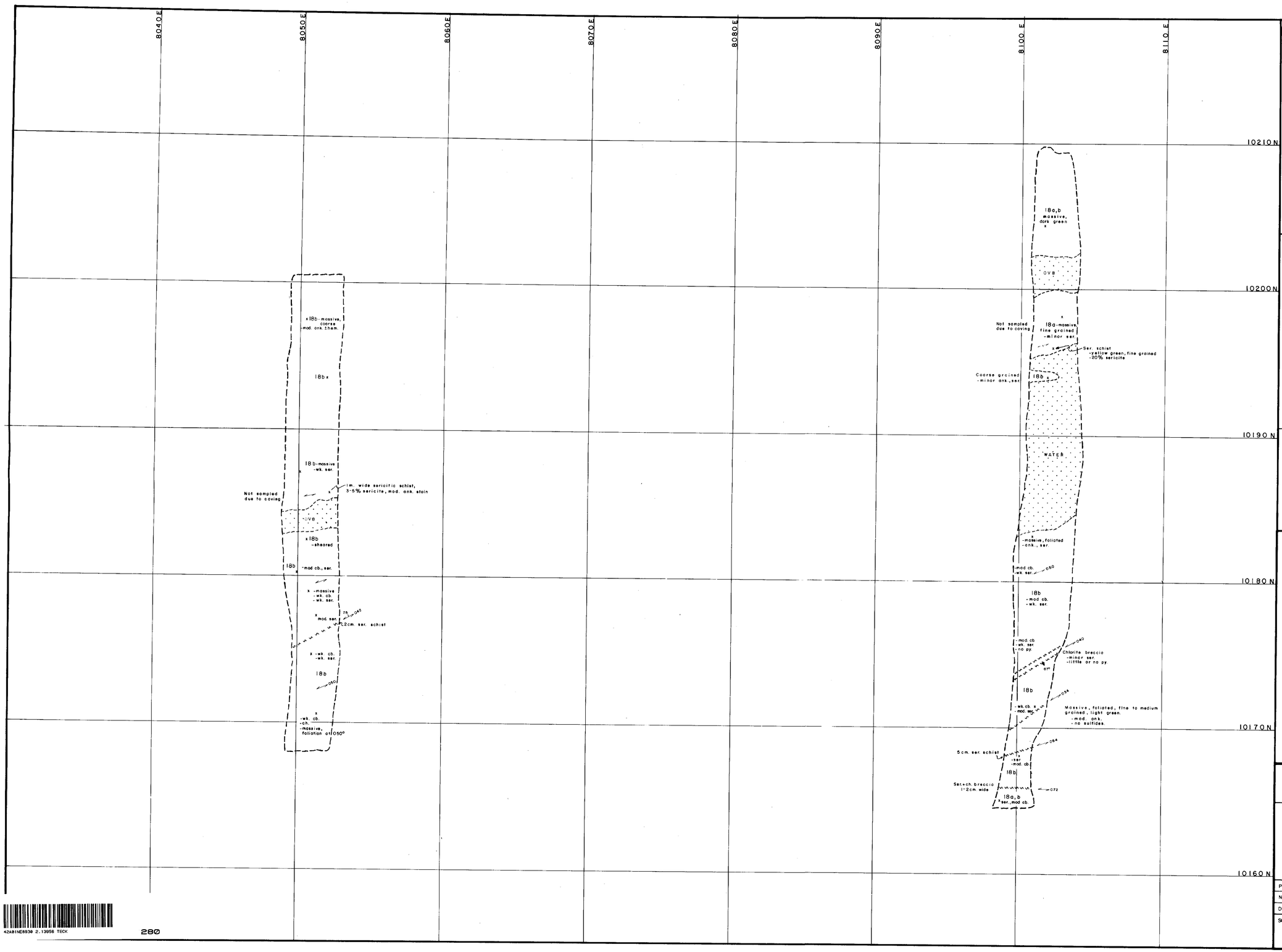
PROJECT No.: 75-JV-28	DATA BY: W Benham
N.T.S.: 42A/1 & 32D/4	DRAWN BY: B. H. Madill, Tech.
DRAWING No.: TG-006	DATE: 08/26/90
SCALE: 1:125	

0 1 2 3 4 5 10
metres

42A01NE8930 2.13956 TECK

270

(SHEET 1 of 4)



LEGEND

60 ALTERATION

- 61 Chlorite ± Talc ± Carbonate ± Quartz
  - 612 Weak
  - 613 Moderate
  - 614 Strong
- 62 Sericite ± Carbonate ± Chlorite ± Quartz
  - 622 Weak
  - 623 Moderate
  - 624 Strong
- 65 Carbonate ± Chlorite ± Fuschite ± Quartz
  - 652 Weak
  - 653 Moderate
  - 654 Strong
- 69 Carbonatized Syenite

40 INTRUSIVES

- 41 Diabase
  - 412 Lamprophyre
- 42 Peridotite
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  - 461 Augite Syenite
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20 SEDIMENTS

- 21 Conglomerate
- 22 Graywacke
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- 25 Siltstone
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10 VOLCANICS

- 11 Komatiites
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  - 181 Flows
  - 18a Tuffs

SYMBOLS

- Bedding, dipping, vertical (facing unknown)
- Bedding, dipping, vertical, overturned (facing known)
- Pillow facing direction, dipping, vertical, overturned
- Foliation (S1a), dipping, vertical dip unknown
- Foliation (S2 or S1b), dipping, vertical, dip unknown
- Joint, dipping, vertical
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- Shear zone, defined, inferred
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- Diamond Drill Hole
- Outcrop Area
- Limit of deep subcrop
- Historic trench
- Pit or trench outline
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GRAIN/CLAST SIZE

SEDIMENTARY ROCKS

a - fine grained
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a - ash tuff
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IGNEOUS ROCKS

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SAMPLE NO. 8501 — 1600 PPB AU — 1.6 g/t. AU — LOCATION

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ch. - chlorite	p. - pillowed	var. - variolitic
cp. - chalcopyrite	pb. - galena	ves. - vesicular
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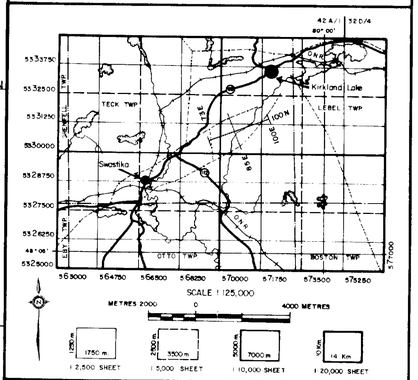


BATTLE MOUNTAIN (CANADA) INC.

8-1898

BATTLE MOUNTAIN GOLD COMPANY

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO
AMALGAMATED KIRKLAND PROPERTY

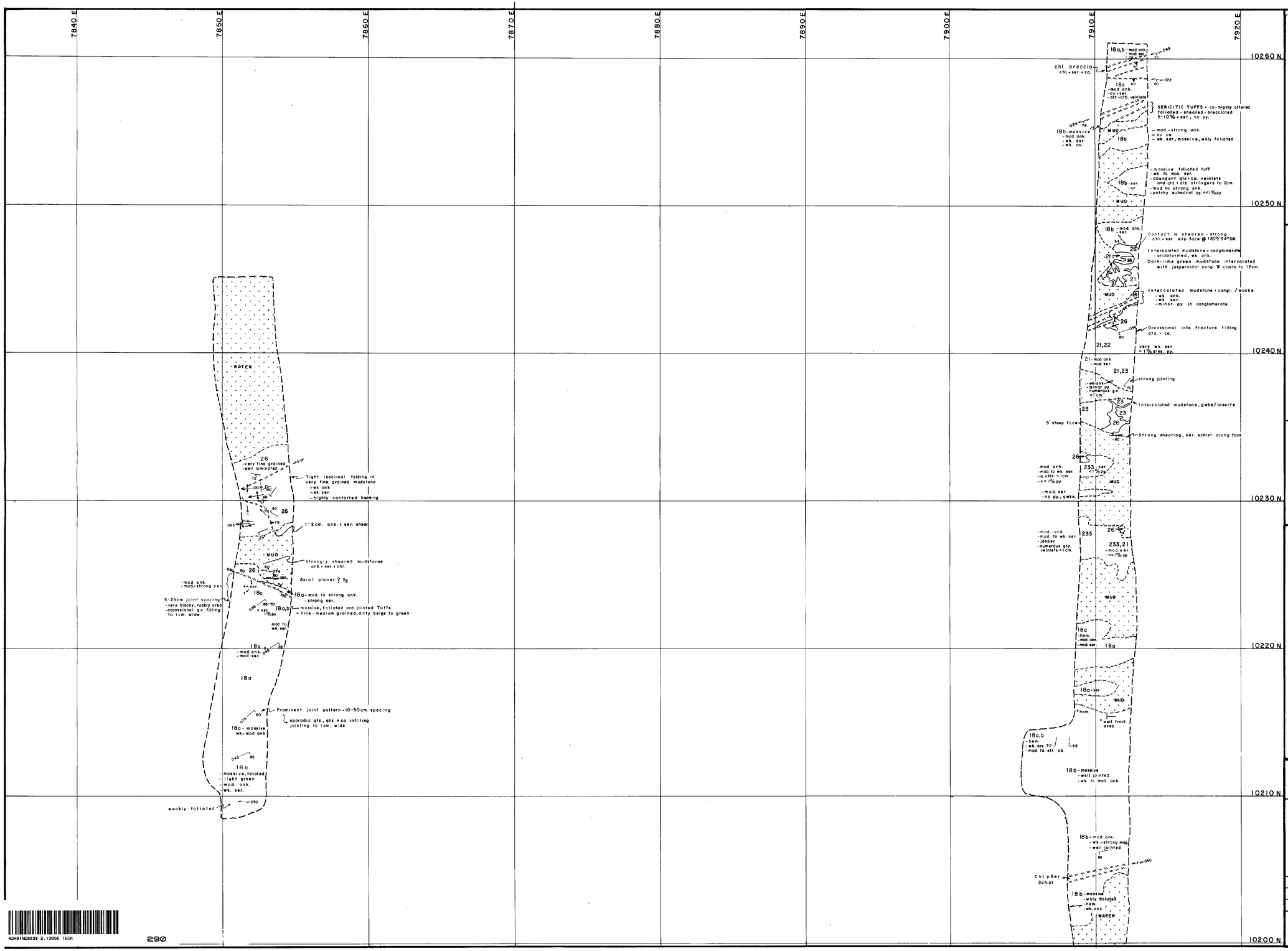
(GEOLOGY PLAN)

TRENCHES 8050E and 8100E

PROJECT No. 75 - JV - 28	DATA BY M. Masson
NTS 42A/1 & 32D/4	DRAWN BY B.H Madill, Tech.
DRAWING No TG - 007	DATE: 09 / 18 / 90

SCALE 1:125

0 1 2 3 4 5 10
metres



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- Shaft

GRAIN/CLAST SIZE

SEDIMENTARY ROCKS

- a - fine grained
- b - medium grained
- c - coarse grained
- p - pebble
- d - cobble
- e - boulder
- g - grit

VOLCANIC ROCKS

- a - ash tuff
- b - lapilli tuff
- c - block tuff
- f - flow
- fbr - flow breccia

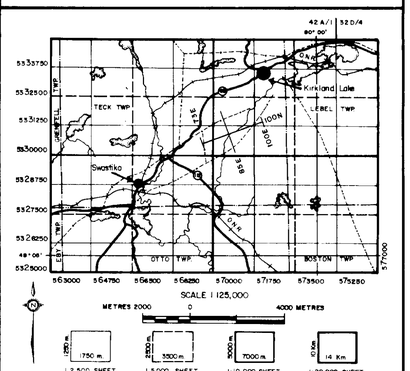
IGNEOUS ROCKS

- a - fine grained
- b - medium grained
- c - coarse grained
- p - pegmatitic

SAMPLE NO. 6501 LOCATION — 1600 PPB AU — 1.6 g./t. AU

ABBREVIATIONS

agp. - augite porphyritic	fp. - feldspar porphyritic	q.v. - quartz vein
amg. - amygdaloidal	fsp - feldspathic	ser. - sericitic
amp. - amphibolite	gf. - graphitic	sil. - silicic
ank. - ankerite	hem. - hematite	sp. - sphalerite
bx. - breccia	lam. - laminated	spx. - spinifex
ca. - calcite	m. - massive	sh. - sheared
cb. - carbonate	mag. - magnetite	trc. - trachoidal
ch. - chlorite	p. - pillowed	var. - variolitic
cp. - chalcopyrite	pb. - galena	ves. - vesicular
fc. - fractured	py. - pyrite	



BATTLE MOUNTAIN (CANADA) INC.

B-1895

BATTLE MOUNTAIN GOLD COMPANY

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

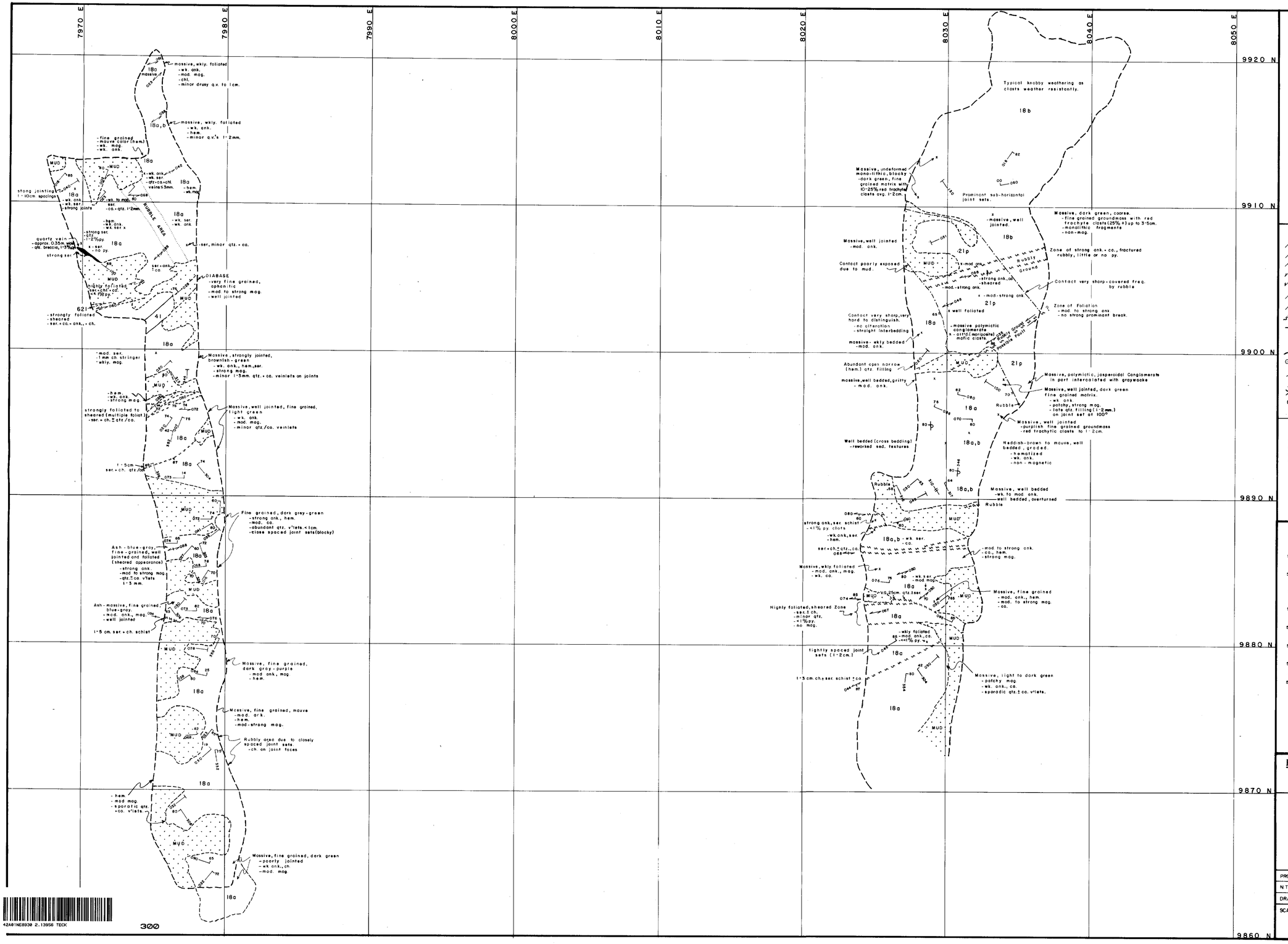
AMALGAMATED KIRKLAND PROPERTY

(GEOLOGY PLAN)

TRENCHES 7850E and 7912E

PROJECT No.: 75-JV-28	DATA BY: M Masson
N.T.S.: 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No. TG-008	DATE: 09/16/90
SCALE: 1:125	

0 1 2 3 4 5 10
metres



LEGEND

60 ALTERATION

- 61 Chlorite ± Talc ± Carbonate ± Quartz
  - 612 Weak
  - 613 Moderate
  - 614 Strong
- 62 Sericite ± Carbonate ± Chlorite ± Quartz
  - 622 Weak
  - 623 Moderate
  - 624 Strong
- 65 Carbonate ± Chlorite Fuschite ± Quartz
  - 652 Weak
  - 653 Moderate
  - 654 Strong
- 69 Carbonatized Syenite

40 INTRUSIVES

- 41 Diabase
  - 412 Lamprophyre
- 42 Peridotite
- 43 Pyroxenite
- 44 Gabbro
- 45 Diorite
- 46 Syenite
  - 461 Augite Syenite
  - 462 Melo Syenite
  - 463 Meso Syenite
  - 464 Leuco Syenite

20 SEDIMENTS

- 21 Conglomerate
- 22 Graywacke
- 23 Aranite
- 25 Siltstone
- 26 Mudstone
- 27 Iron Formation

10 VOLCANICS

- 11 Komatiites
- 13 Basalts
- 18 Trachytes
  - 181 Flows
  - 18a Tuffs

SYMBOLS

- Bedding, dipping, vertical (facing unknown)
- Bedding, dipping, vertical, overturned (facing known)
- Pillow facing direction, dipping, vertical, overturned
- Foliation (S1a), dipping, vertical dip unknown
- Foliation (S2 or S1b), dipping, vertical, dip unknown.
- Joint, dipping, vertical
- Fault, dipping, vertical
- Shear zone, defined, inferred
- Mineral elongation strike and plunge
- Minor fold showing plunge
- Geological contact, known, inferred
- Diamond Drill Hole
- Outcrop Area
- Limit of deep subcrop
- Historic trench
- Pit or trench outline
- Shaft

GRAIN/CLAST SIZE

SEDIMENTARY ROCKS

- a - fine grained
- b - medium grained
- c - coarse grained
- p - pebble
- c - cobble
- e - boulder
- g - grit

VOLCANIC ROCKS

- a - ash tuff
- b - lapilli tuff
- c - block tuff
- f - flow
- fbx - flow breccia

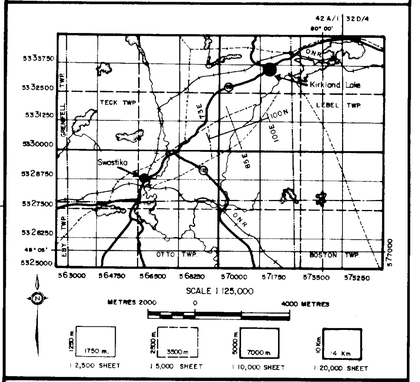
IGNEOUS ROCKS

- a - fine grained
- b - medium grained
- c - coarse grained
- p - pegmatitic

SAMPLE NO. 8501 — LOCATION — 1600 PPB AU — 1.6 g/t AU

ABBREVIATIONS

agp. - augite porphyritic	fp. - feldspar porphyritic	q.v. - quartz vein
amg. - amygdaloidal	fsp - feldspathic	ser. - sericitic
amp. - amphibolite	gf. - graphitic	sil. - silicic
ank. - ankerite	hem. - hematite	sp. - spholerite
bx. - breccia	lam. - laminated	spx. - spinifex
ca. - calcite	m. - massive	sh. - sheared
cb. - carbonate	mag. - magnetite	trc. - trachoidal
ch. - chlorite	p. - pillowed	var. - variolitic
cp - chalcopyrite	pb. - galena	ves. - vesicular
f.c. - fractured	py. - pyrite	V.G. - visible gold



BATTLE MOUNTAIN (CANADA) INC.

2 • 13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(GEOLOGY PLAN)

TRENCHES 7975E and 8030E

PROJECT No.: 75-JV-28	DATA BY: M. Masson
N.T.S. 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: TG-009	DATE: 09/17/90
SCALE: 1:125	

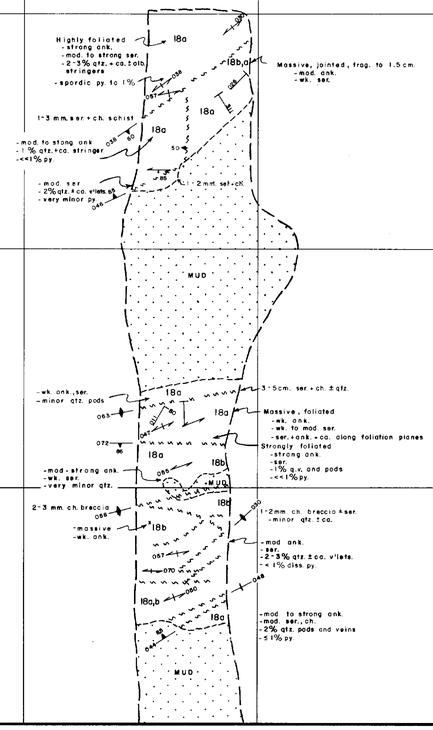
0 1 2 3 4 5 10 metres

42A01NE8938 2.13956 TECK

300

8220 E | 8230 E | 8240 E | 8250 E | 8260 E | 8270 E | 8280 E | 8290 E

10060 N
10050 N
10040 N
10030 N
10020 N
10010 N
10000 N



LEGEND

60 ALTERATION

- 61 Chlorite ± Talc ± Carbonate ± Quartz
  - 612 Weak
  - 613 Moderate
  - 614 Strong
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  - 623 Moderate
  - 624 Strong
- 65 Carbonate ± Chlorite Fuschite ± Quartz
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  - 653 Moderate
  - 654 Strong
- 69 Carbonatized Syenite

40 INTRUSIVES

- 41 Diabase
- 412 Lamprophyre
- 42 Peridotite
- 43 Pyroxenite
- 44 Gabbro
- 45 Diorite
- 46 Syenite
- 461 Augite Syenite
- 462 Melo Syenite
- 463 Meso Syenite
- 464 Leuco Syenite

20 SEDIMENTS

- 21 Conglomerate
- 22 Greywacke
- 23 Arenite
- 25 Siltstone
- 26 Mudstone
- 27 Iron Formation

10 VOLCANICS

- 11 Komatiites
- 15 Basalts
- 18 Trachytes
- 18f Flows
- 18a Tuffs

SYMBOLS

- Bedding, dipping, vertical (facing unknown)
- Bedding, dipping, vertical, overturned (facing known)
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- Foliation (S2 or S1b), dipping, vertical, dip unknown
- Joint, dipping, vertical
- Fault, dipping, vertical
- Shear zone, defined, inferred
- Mineral elongation strike and plunge
- Minor fold showing plunge
- Geological contact, known, inferred
- Diamond Drill Hole
- Outcrop Area
- Limit of deep subcrop
- Historic trench
- Pit or trench outline
- Shaft

GRAIN/CLAST SIZE

SEDIMENTARY ROCKS
- a - fine grained
- b - medium grained
- c - coarse grained
- p - pebble
- d - cobble
- e - boulder
- g - grit

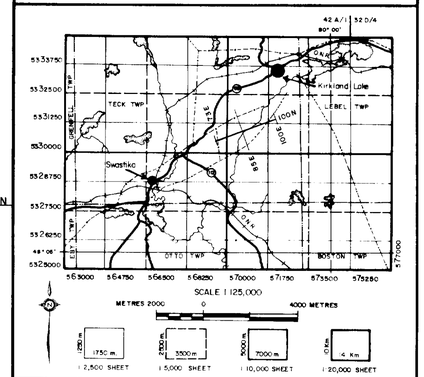
VOLCANIC ROCKS
- a - ash tuff
- b - lapilli tuff
- c - block tuff
- f - fine
- fbx - flow breccia

IGNEOUS ROCKS
- a - fine grained
- b - medium grained
- c - coarse grained
- p - pegmatitic

SAMPLE NO. 8501 — LOCATION — 1600 PPB AU — 1.6 g/t. AU

ABBREVIATIONS

agp. - augite porphyritic	fp. - feldspar porphyritic	q.v. - quartz vein
amg. - amygdaloidal	fsp - feldspathic	ser. - sericitic
amp. - amphibolite	gf. - graphitic	sil. - silicic
ank. - ankerite	hem. - hematite	sp. - sphalerite
bx. - breccia	lam. - laminated	spx. - spinifex
ca. - calcite	m. - massive	sh. - sheared
cb. - carbonate	mag. - magnetite	trc. - trachoidal
ch. - chlorite	p. - pillowed	var. - variolitic
cp. - chalcopyrite	pb. - galena	ves. - vesicular
fc. - fractured	py. - pyrite	



BATTLE MOUNTAIN (CANADA) INC.

2 • 13956

BATTLE MOUNTAIN GOLD COMPANY

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(GEOLOGY PLAN)

TRENCH 8250 E

PROJECT No. 75 - JV - 28	DATA BY M. Masson
NTS 42A/1 B 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No. TG - 010	DATE 09 / 12 / 90

SCALE: 1:125

0 1 2 3 4 5 10
metres

8470 E
8480 E
8490 E
8500 E
8510 E
8520 E
8530 E
8540 E
8550 E

10330 N
10320 N
10310 N
10300 N
10290 N
10280 N
10270 N

OVB.

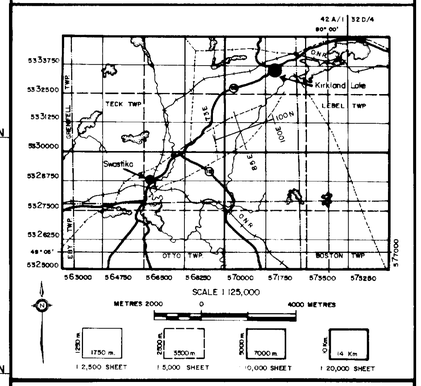
8809 NII NII 31 NII 8905 45

8715 24 NII NII 14 NII 8910 7

LEGEND

SAMPLE NUMBER	ASSAY VALUE
11080	1.65 g./t. AU / metre 177 ppb AU

- < 100 ppb
- ≥ 100 ppb
- ≥ 1.00 g./t.
- ≥ 3.50 g./t.
- ≥ 8.50 g./t.
- ≥ 17.00 g./t.



BATTLE MOUNTAIN (CANADA) INC.

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KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(ASSAY PLAN)

CHANNEL SAMPLING
TRENCHES 8500E and 8550E

PROJECT No.: 75 - JV - 28	DATA BY:
N.T.S.: 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: TA - 001	DATE: 09 / 19 / 90
SCALE: 1 : 125	

0 1 2 3 4 5 10
metres

8470 E | 8480 E | 8490 E | 8500 E | 8510 E | 8520 E | 8530 E | 8540 E | 8550 E

10260N

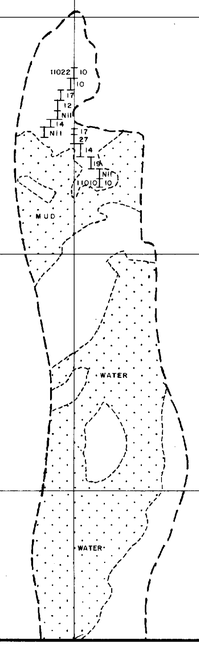
10250N

10240N

10230 N

10220 N

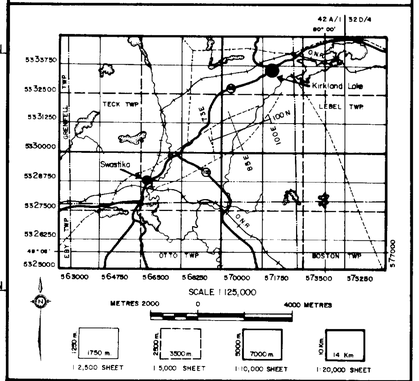
10210 N



LEGEND

SAMPLE NUMBER	ASSAY VALUE
11080	1.65 g./t. AU / metre
	177 ppb AU

- < 100 ppb
- ≥ 100 ppb
- ≥ 1.00 g./t.
- ≥ 3.50 g./t.
- ≥ 8.50 g./t.
- ≥ 17.00 g./t.



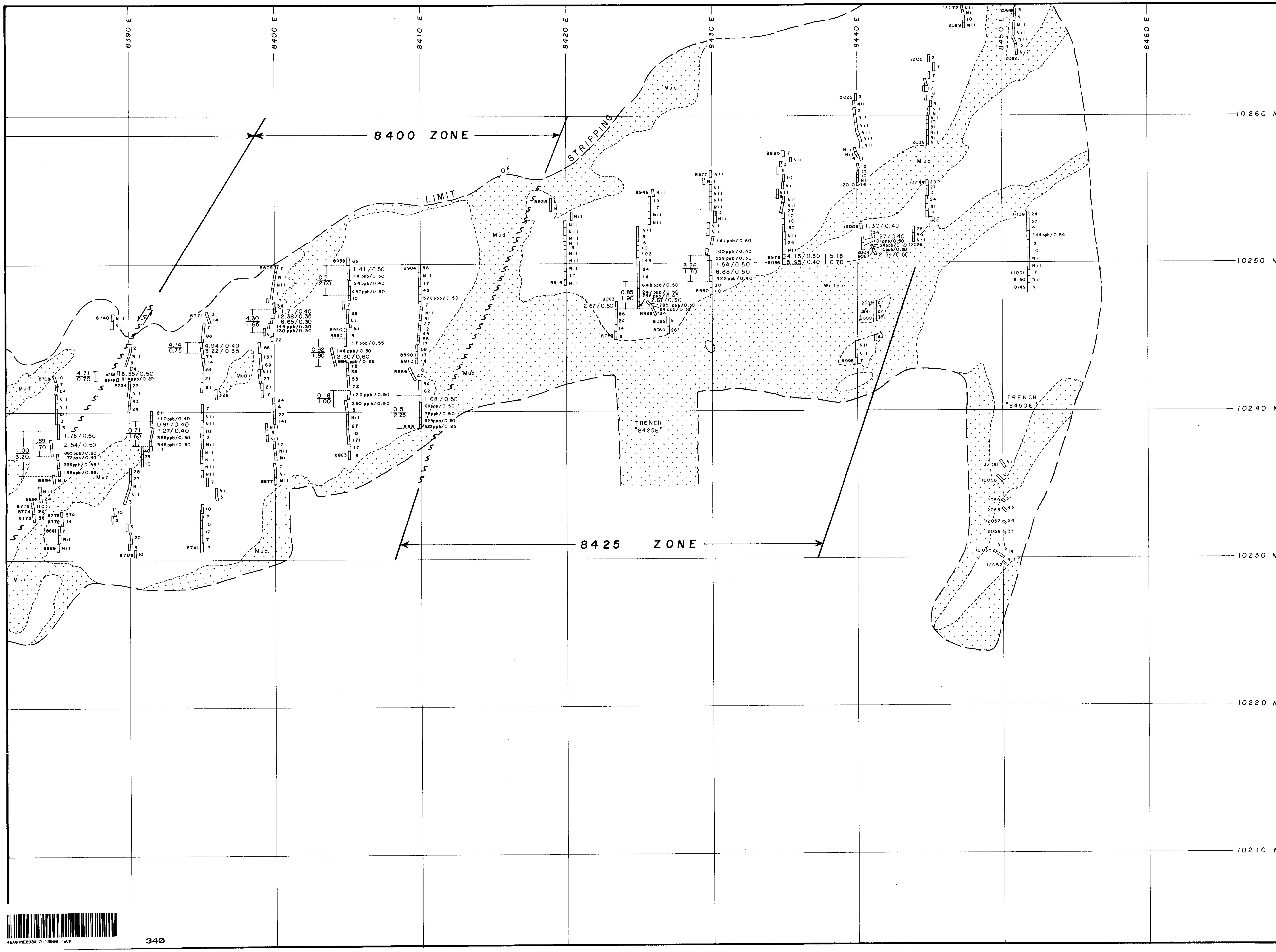
BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(ASSAY PLAN)
CHANNEL SAMPLING
TRENCH 8500 E

PROJECT No. 75-JV-28	DATA BY:
N.T.S. 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: TA-002	DATE: 09/13/90

SCALE: 1:125
0 1 2 3 4 5 10
metres

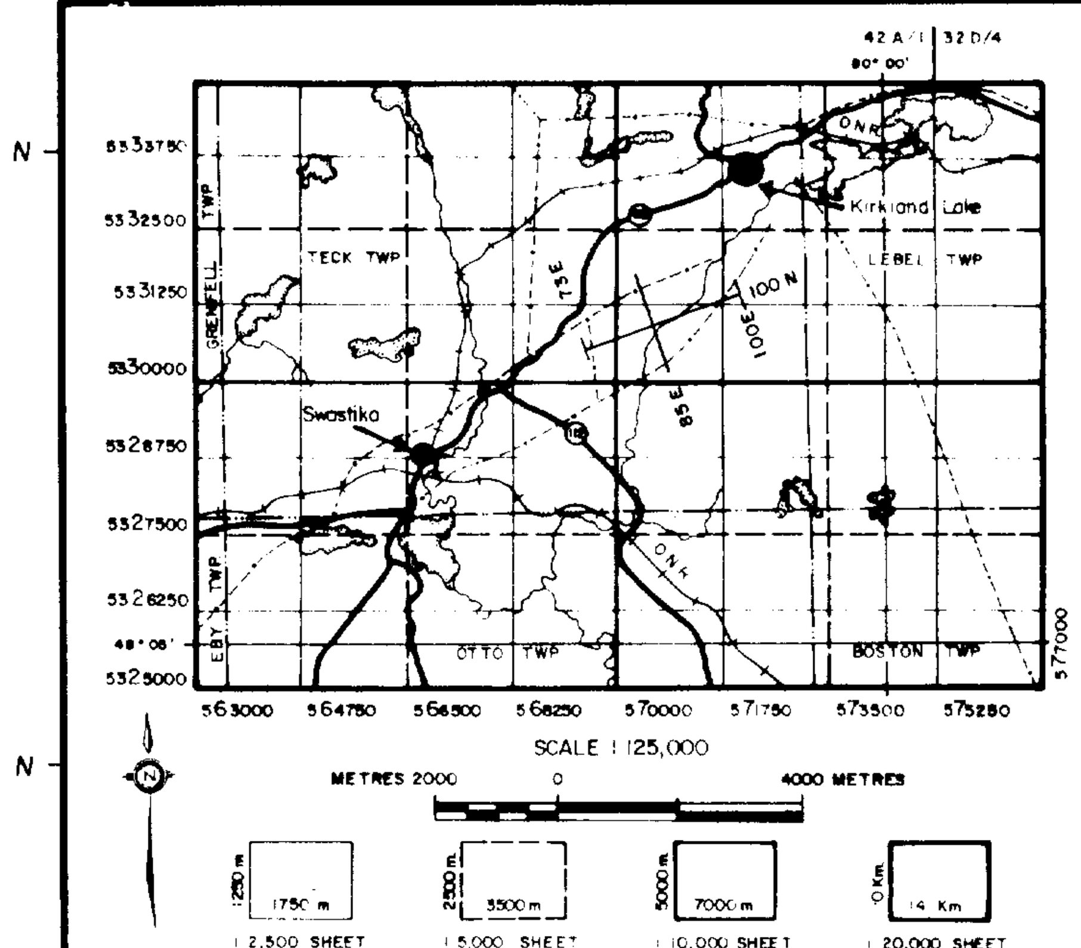


LEGEND

SAMPLE NUMBER	ASSAY VALUE
8125	4.80/0.50 (GRAMS PER TONNE AU/METRE)
	175 ppb/0.50 (PARTS PER BILLION AU/METRE)
	34 (PARTS PER BILLION)

< 100 ppb
≥ 100 ppb
≥ 1.00 g/t
≥ 3.50 g/t
≥ 8.50 g/t
≥ 17.00 g/t

SHEET 1 · SHEET 2 · SHEET 3 · SHEET 4



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(ASSAY PLAN)

102 STRUCTURE CHANNEL SAMPLING
8350, 8400 and 8425 GOLD ZONES

PROJECT No. 75-JV-28	DATA BY
NTS 42A/1 & 32D/4	DRAWN BY B.H. Modill, Tech.
DRAWING No. TA-003	DATE 08/16/90
SCALE 1:125	0 1 2 3 4 5 10 metres

(SHEET 4 of 4)

42A01NE0038 2.13956 TECK

340

8300 E | 8310 E | 8320 E | 8330 E | 8340 E | 8350 E | 8360 E | 8370 E | 8380 E

10260 N

8275 ZONE — 8350 ZONE

10250 N

Old Trench 8300 E

Mud

LIMIT of STRIPPING

10220 N

10210 N

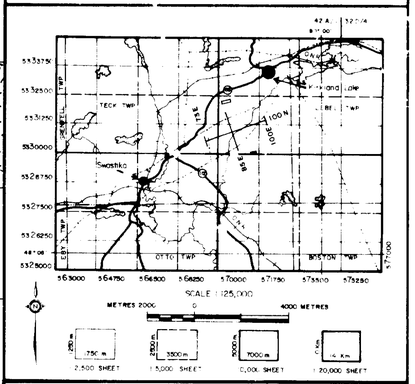
LEGEND

SAMPLE NUMBER — ASSAY VALUE

8125 | 4.80 / 0.50 (GRAMS PER TONNE AU/METRE)
175 ppb / 0.50 (PARTS PER BILLION AU/METRE)
34 (PARTS PER BILLION)

< 100 ppb
≥ 100 ppb
≥ 1.00 g/t
≥ 3.50 g/t
≥ 8.50 g/t
≥ 17.00 g/t

SHEET ① | SHEET ② | SHEET ③ | SHEET ④



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(ASSAY PLAN)
102 STRUCTURE CHANNEL SAMPLING
8275 and 8350 GOLD ZONES

PROJECT No. 75-JV-28	DATA BY
NTS 42A/1 & 32D/4	DRAWN BY B.H. Madill, Tech.
DRAWING No. TA-004	DATE 08/16/90
SCALE 1:125	

0 1 2 3 4 5 10 metres

42A01NE0930 2.13956 TECK

350

8210 E
8220 E
8230 E
8240 E
8250 E
8260 E
8270 E
8280 E
8290 E
10260 N
10250 N
10220 N
10210 N
LIMIT of STRIPPING
Water
Mud
Trench "8250 E"
11269 Nil 17 Nil 10 Nil 3 3 Nil 7 14 45
11259
8058 21 21
27 33 17 Nil 21 Nil Nil Nil 10 10 28 24
8042 17 24
8041 5 Nil Nil Nil 58 Nil 24
8029 1.57/0.40 1.99/0.30
8028 2.78/0.50 1.20/0.50 1.51/0.50 2.30/0.50 2.87/0.50 1.71/0.50 31
2.10 2.30
8020 3 34

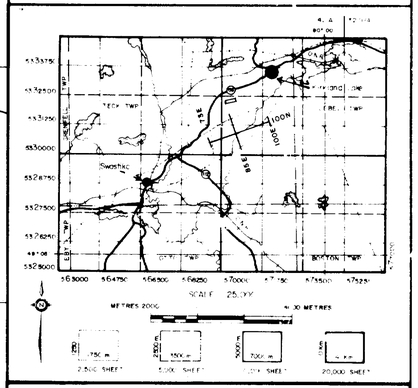
LEGEND

SAMPLE NUMBER — ASSAY VALUE

8125 4.80/0.50 (GRAMS PER TONNE AU/METRE)
175ppb/0.50 (PARTS PER BILLION AU/METRE)
34 (PARTS PER BILLION)

- < 100 ppb
- ≥ 100 ppb
- ≥ 1.00 g/t
- ≥ 3.50 g/t
- ≥ 8.50 g/t
- ≥ 17.00 g/t

SHEET ① | SHEET ② | SHEET ③ | SHEET ④



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO
AMALGAMATED KIRKLAND PROPERTY
(ASSAY PLAN)
102 STRUCTURE CHANNEL SAMPLING
8275 GOLD ZONE

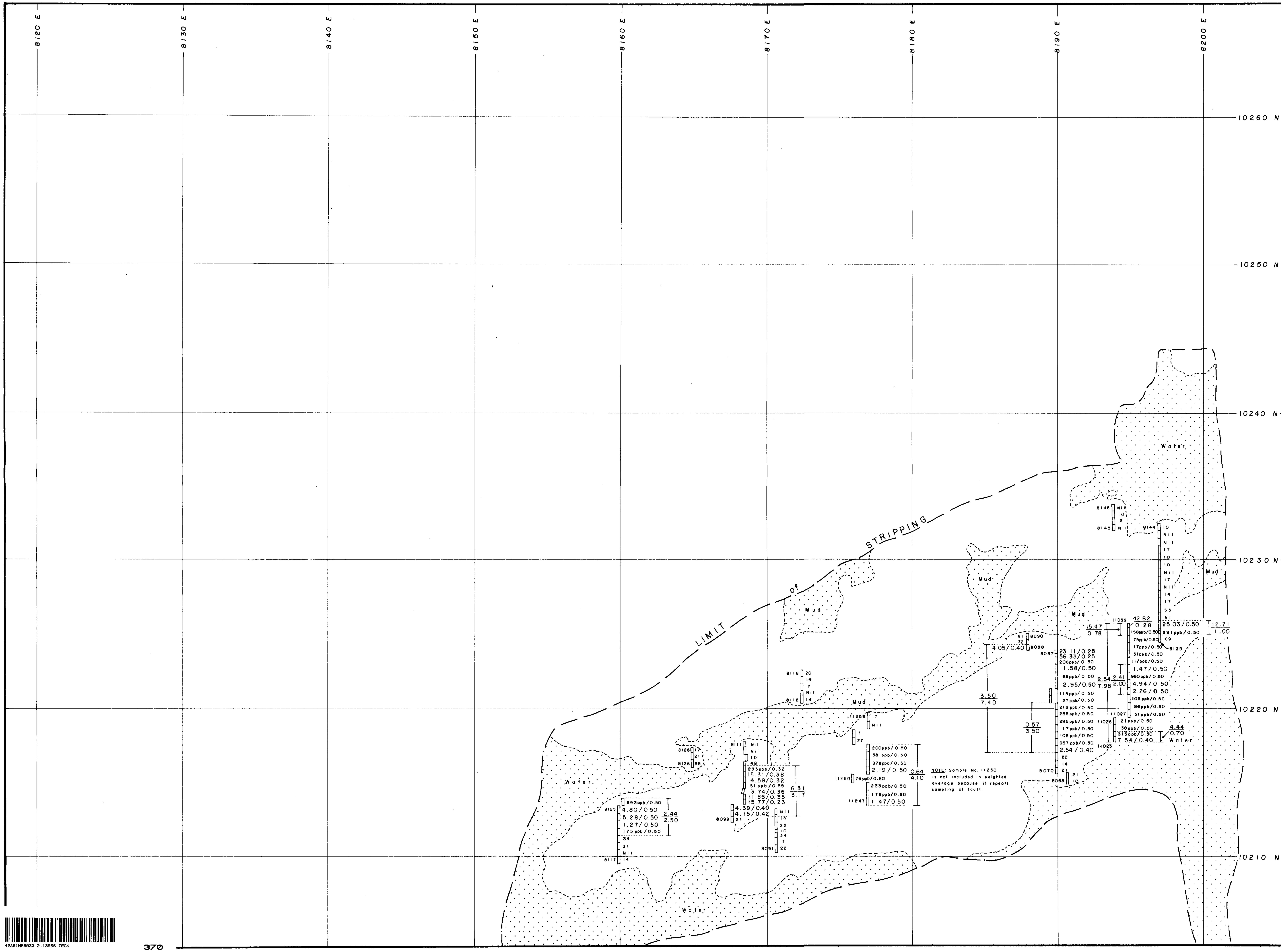
PROJECT No. 75-JV-28	DATA BY
N.T.S. 42A/1B 32-4	DRAWN BY B.H. Madill, Tech.
DRAWING No. TA-005	DATE 08/16/90
SCALE 1:125	

0 1 2 3 4 5 10
metres

42A01NE0938 2.13956 TECK

360

(SHEET 2 of 4)

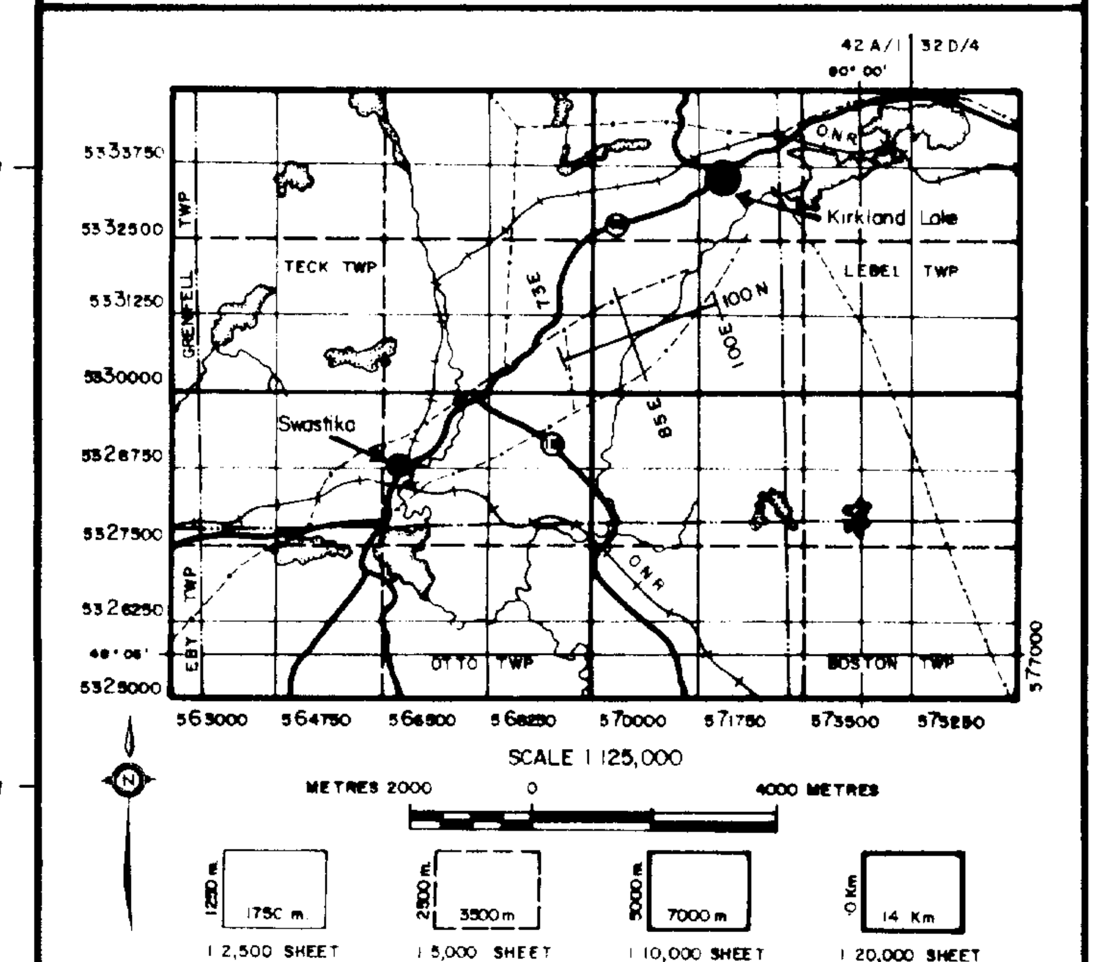


LEGEND

SAMPLE NUMBER	ASSAY VALUE
8125	4.80 / 0.50 (GRAMS PER TONNE AU/METRE)
	175 ppb / 0.50 (PARTS PER BILLION AU/METRE)
	34 (PARTS PER BILLION)

- < 100 ppb
- ≥ 100 ppb
- ≥ 1.00 g/t
- ≥ 3.50 g/t
- ≥ 8.50 g/t
- ≥ 17.00 g/t

SHEET ①	SHEET ②	SHEET ③	SHEET ④



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(ASSAY PLAN)

102 STRUCTURE CHANNEL SAMPLING
8170 GOLD ZONE

PROJECT No.: 75-JV-28	DATA BY
NTS 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: TA-006	DATE: 08/16/90
SCALE 1:125	

metres

8040 E | 8050 E | 8060 E | 8070 E | 8080 E | 8090 E | 8100 E | 8110 E

10210 N
10200 N
10190 N
10180 N
10170 N
10160 N

OVB

WATER

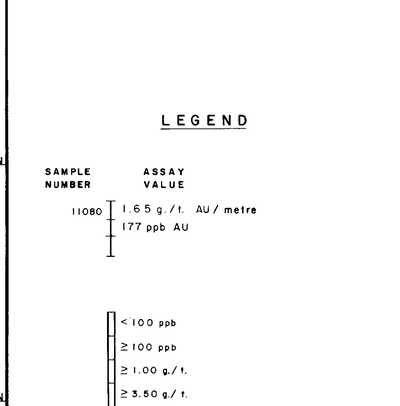
11075 NII NII 12 3 14 34 NII 3 21 NII 14 7 17 NII NII 7 NII NII NII 11056 NII

11064 3 5 NII NII 13 10 36 NII 7 10 NII NII NII 21 11150 11055 NII 10 10 10 NII 3 NII 14 10 28 7 21 7 NII NII 11040 21

LEGEND

SAMPLE NUMBER	ASSAY VALUE
11080	1.65 g./t. AU / metre 177 ppb AU

- < 100 ppb
- ≥ 100 ppb
- ≥ 1.00 g./t.
- ≥ 3.50 g./t.
- ≥ 8.50 g./t.
- ≥ 17.00 g./t.



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(ASSAY PLAN)

CHANNEL SAMPLING
TRENCHES 8050E and 8100E

PROJECT No.: 75-JV-28	DATA BY:
N.T.S.: 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech
DRAWING No.: TA-007	DATE: 09/18/90
SCALE: 1:125	

0 1 2 3 4 5 10
metres

7840 E | 7850 E | 7860 E | 7870 E | 7880 E | 7890 E | 7900 E | 7910 E | 7920 E

10250 N

10240 N

10230 N

10220 N

10210 N

10200 N

WATER

11149 N11 N11 N11 10 10 10
11142 3
MUD
11141 22 N11 N11 5 10
11136 7 N11
N11 N11 N11
11130 21

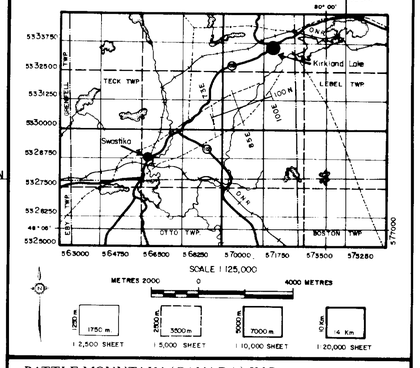
11129 10 N11 N11 14 75 N11 17 N14 14 10
11120 MUD 10 N11 10
11115 24 10 N11
MUD
MUD
11107 N11 185 65 38 45 41 41
11100 69
254/0.55 | 408 / 0.90
600/0.40
38 10 17
11095
3 7 14
MUD
10
11090 1.32 g/t/0.50
202/0.50
N11/0.50
55/0.50
271/0.50
58/0.50
1.34 g/t/0.50 | 1.50
1.65 g/t/0.50 | 1.00
0.612 / 4.00
MUD
10 N11
11080 N11 3
N11
11076 10
11113 10
MUD
5 7
7 7
11108 10
WATER

LEGEND

SAMPLE NUMBER | ASSAY VALUE

11080 | 1.65 g./t. AU / metre
177 ppb AU

- < 100 ppb
- ≥ 100 ppb
- ≥ 1.00 g./t.
- ≥ 3.50 g./t.
- ≥ 8.50 g./t.
- ≥ 17.00 g./t.



BATTLE MOUNTAIN (CANADA) INC.

2.13956

BATTLE MOUNTAIN GOLD COMPANY

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(ASSAY PLAN)

CHANNEL SAMPLING
TRENCHES 7850E and 7912E

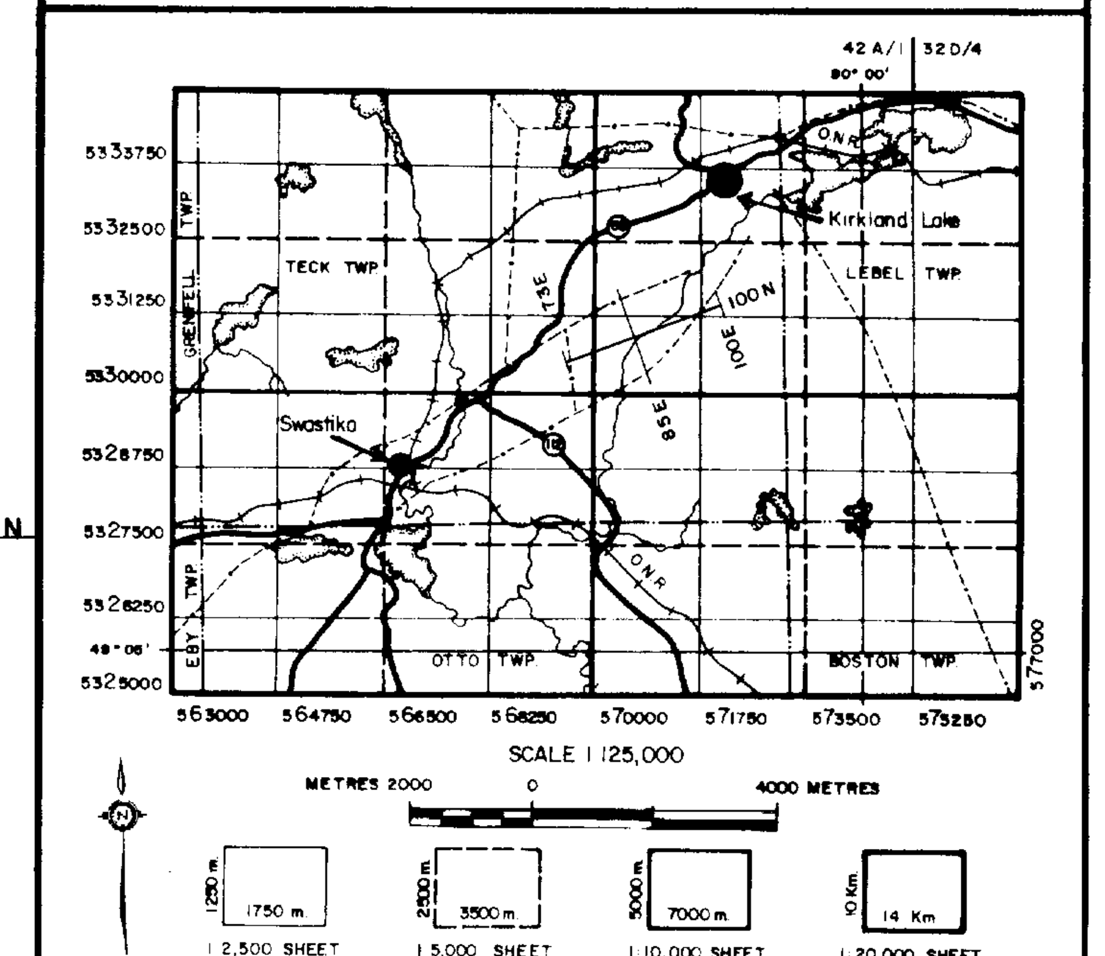
PROJECT No.: 75-JV-28	DATA BY
N.T.S.: 42A/1 & 32D/4	DRAWN BY: B.H. Madill, Tech.
DRAWING No.: TA – 008	DATE: 09/16/90

SCALE: 1:125
0 1 2 3 4 5 10
metres

LEGEND

SAMPLE NUMBER	ASSAY VALUE
11080	1.65 g./t. AU/ metre
	177 ppb AU

- < 100 ppb
- ≥ 100 ppb
- ≥ 1.00 g./t.
- ≥ 3.50 g./t.
- ≥ 8.50 g./t.
- ≥ 17.00 g./t.



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(ASSAY PLAN)

CHANNEL SAMPLING
TRENCHES 7975E and 8030E

PROJECT No.: 75-JV-28	DATA BY:
N.T.S.: 42A/1 & 32D/4	DRAWN BY: B.H. Modill, Tech.
DRAWING No.: TA-009	DATE: 09/17/90
SCALE: 1:125	

metres

42A01NE8938 2.13956 TECK

400

8220 E
8230 E
8240 E
8250 E
8260 E
8270 E
8280 E
8290 E

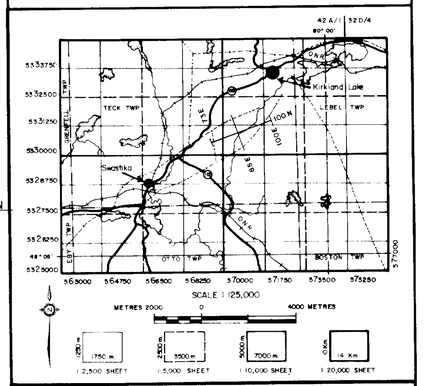
10060 N
10050 N
10040 N
10030 N
10020 N
10010 N
10000 N

11241 27 37 7
31 Nil Nil
7 5 10 Nil
Nil 3
11228 14 Nil
MUD
11225 Nil Nil Nil 14 Nil Nil
Nil MUD Nil
Nil 3 Nil Nil 10 9 3 Nil
11208 11227 17 11226 3
MUD

LEGEND

SAMPLE NUMBER	ASSAY VALUE
11080	1.65 g./t. AU / metre 177 ppb AU

- < 100 ppb
- ≥ 100 ppb
- ≥ 1.00 g./t.
- ≥ 3.50 g./t.
- ≥ 8.50 g./t.
- ≥ 17.00 g./t.



BATTLE MOUNTAIN (CANADA) INC.

2.13956

KIRKLAND LAKE PROJECT
Queenston Mining Inc.
ONTARIO

AMALGAMATED KIRKLAND PROPERTY

(ASSAY PLAN)

CHANNEL SAMPLING
TRENCH 8250 E

PROJECT No. 75-JV-28	DATA BY
NTS 42A/1 & 32D/4	DRAWN BY B.H. Madill, Tech.
DRAWING No. TA-010	DATE: 09/12/90

SCALE 1:125

0 1 2 3 4 5 10
metres

42A01NE0039 2.13956 TECK