Preliminary Report Of
Diamond Drill Activities
McVicar Lake Property (1446)

GENERAL INFORMATION

1.1 Introduction

This preliminary report addresses the diamond drilling efforts of BHP-Utah Mines Ltd. during the period of January 7 to February 8, 1991. This program remains ongoing and is expected to be completed on or about February 15, 1991.

The McVicar Lake Property is located within the Patricia Mining Division in northwestern Ontario (NTS 52 O/11 and O/12). Diamond drilling has been completed on the following mining claims:

KRL 846023, 846024, 886074, 903219, 910888

A full and complete report of the results of this drill program will supplant this preliminary report. The final report is expected during March, 1991.

1.2 Location and Access

This property is located approximately 80 km west of Pickle Lake, Ontario. Access to this property is limited to charter aircraft as there are no roads into the region. Charter services are being provided by Goldbelt Air and Winisk Air, both based in Pickle Lake.

1.3 Current Drilling Objectives

The objectives of the 1991 diamond drill program are to test the northern and western extensions of the auriferous structure hosting the "McVicar Lake Altered Zone" (AZ).

DIAMOND DRILLING

2.1 Introduction

During the period January 7, 1991 through to approximately February 15, 1991 a series of twelve (12) diamond drill hoes are planned or have been completed along

OM90-112

a north and west trending fault structure through the McVicar Lake property.

Diamond drilling services are being provided by Langley Drilling Ltd. who are utilizing a JKS 300 diamond drill. Transportation of the diamond drill was provided by charter aircraft to the McVicar Lake site from Pickle Lake, Ontario. Demobilization of the drill will be completed using the reverse procedure. Coring size is BQ with drill core storage located at the McVicar Lake camp site. Drill collar locations are indicated on Map 1. Completed diamond drill logs for each hole are included in Appendix 1.

The drill core is routinely split and delivered to Accurassay Laboratories Ltd. in Thunder Bay, Ontario. The sample rejects are also being stored in Thunder Bay. All samples are analyzed for gold (Au) utilizing a fire assay technique and/or a cyanide leaching technique. An up-to-date Report of Analysis is included for reference in Appendix II. Please note that a large number of samples remain outstanding.

Diamond drilling is being carried out with imperial rods. Drill logging continued to utilize imperial measurements but a systematic metric conversion was completed to facilitate section construction. All measurements on drill sections and plans are metic.

2.2 Progress To Date

On this date, February 8, 1991, ten drill holes have been completed; ML-91-62, ML-91-63 are currently being drilled. Drill collar locations have been tabulated below, Table 2.21. Total footage will be 4,120 feet (1,244.8 m).

Table 2.21: Drill Hole Locations

ML-91-52	L4+00N, 0+25E	319' (97.2 m)
ML-91-53	L5+00N, 0+50E	629' (191.7 m)
ML-91-54	L7+00N, 0+25W	289' (88.1 m)
ML-91-55	L6+00N, 0+00	419' (127.7 m)
ML-91-56	L6+50N, 0+00	369' (112.5 m)
ML-91-57	L7+00N, 1+00W	319' (97.2 m)
ML-91-58	L6+50N, 0+80W	269' (82.0 m)
ML-91-59	L7+50N, 1+50W	279' (85.0 m)
ML-91-60	L7+00N, 0+75W	329' (100.3 m)
ML-91-61	L8+00N, 2+00W	279'(85.0 m)
*ML-91-62	L7+50N, 0+75W	300' (91.5 m)
*ML-91-63	ISLAND ZONE	320' (97.5 m)
*Planned Drill Hole		TOTAL = 4,120' (1,255.8 m)

RESULTS TO DATE

3.1 Section 4+00N

One drill hole (ML-91-52 was collared on L4+00N, 0+30E facing grid west (azimuth 240°), dipping at -58°. This drill hole tested the northern extension of the gold bearing fault structure identified to the south during a previous drill program. The drill log is appended, a graphical representation is found on Section Map 4+00N.

This drill hole intersected a weakly altered, moderately foliated basalt with subordinate fault gouge in contact with an ironstone unit. Oriented core measurements indicate a 292° trend dipping 54° to the northeast. Overall, the section is steeper and less altered than the intersections to the south.

Twenty-nine intervals were selected for analysis. No economic or significant assays are reported. The highest value obtained from 259.0'-269.0' (3.30' recovered) in a fault gouge is 0.012 oz/t gold (350 ppb).

3.2 Section 5+00N

One drill hole (ML-91-53) was collared on L5+00N, 0+53E facing grid west (azimuth 240°), dipping -55°. This drill hole tested the northern extension of the fault structure intersected on L4+00N. the drill log is appended, a graphical representation is found on Section Map 5+00N.

A closer equivalent of the "altered zone" was intersected in this drill hole. A zone of moderate to intensely foliated basalt from 278.6'-298.6' contained minor quartz veining. A change from brittle to ductile deformation is also noted.

Thirty-five intervals were selected for analysis. No economic or significant assays are reported. The highest value obtained from 279.9'-283.6' (sample 2946) in sheared basalt is 0.006 oz/t gold (200 ppb).

3.3 Section 6+00N

One drill hole (ML-91-55) was collared on L6+00N, 0+00 facing grid west (azimuth 240°), dipping at -56°. This drill hole tested the northern extension of the ductile fault structure intersected on L5+00N. The drill log is appended, a graphical representation is found on Section Map 6+00N.

This drill hole also intersected a ductile shear structure of similar tenor to ML-91-53. A zone of moderate to intensely foliated basalts from 280.4'-288.8' contained trace amounts of apple green mica.

Twenty-three intervals were selected for analysis. The results are pending.

3.4 Section 6+50N

Two drill holes ML-91-56 and ML-91-58 collared at 0+00 and 0+80W respectively were drilled facing grid west (azimuth 240°), dipping at -55°. Both drilled holes tested the northern extensions of the ductile shear structure intersected on section 6+00N. The drill log is appended, a graphical representation is found Section Map 6+50N.

Both drill holes intersected zones of intensely foliated basaltic rock (logged as an altered zone) with an apparent dip of 20° northeast. Overall this section realized a decrease in the degree of alteration and deformation. The interval in ML-91-56 is very thin, 5.1'.

Twenty-eight intervals were selected for analysis, fourteen from each drill holes. The results are pending for all intervals.

3.5 Section 7+00N

Three drill holes are complete on this section, ML-91-54,57,60. Their collars are 1+25W, 1+00W, and 0+75W respectively. Each drill hole faced grid west (azimuth 240°), dipping -58°, -55°. and -55° respectively. All three drill holes tested the northern extension of the ductile fault structure intersected on section 6+50N.

All three drill holes intersected intensely foliated and mineralized basalt and gabbro with an apparent dip of 25° to the northeast. Pyrite mineralization in each is complimented with the appearance of apple green mica and quartz vein material. Overall, the intersections are thicker, more altered and more mineralized than the previous intersections.

Economic intersections are reported from ML-91-54. Three intervals (samples 2978, 2979, 2982) report values in excess of 0.100 oz/t gold. Sulphide rich zones and a narrow quartz vein report 0.159, 0.324, and 0.131 respectively. Analytical results from ML-01-57 and ML-91-60 are pending.

3.6 Section 7+50N

One drill hole (ML-91-59) was collared at L7+50N, 1+45W facing grid west (azimuth 240°), dipping at -50°. This drill hole tested the northern extension of the auriferous structure intersected on L7+00N. The drill log is appended, a graphical representation is found on Section Map 7+50N.

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This drill hole intersected a zone of intensely sheared and foliated rock with weak pyrite mineralization. Minor apple green mica and few narrow quartz veins are noted within this altered interval. The alteration intensity is similar to Section 7+00N, however, the mineralization is less.

Seventeen intervals were selected for analysis. The results are pending.

R.G. Bonner, B.Sc.
McVicar Lake, Ontario
RGB/bh

REPORT OF

DIAMOND DRILL ACTIVITIES

McVICAR LAKE PROPERTY

(1446)

AN OMIP SPONSORED PROGRAM

by R.G.BONNER

March 28, 1991

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SUMMARY

The McVicar Lake Property comprises 109 contiguous mining claims located in Northwestern Ontario, NTS 52 O/11 and O/12. The property is an aggregate of approximately 4,360 acres. Diamond drilling was limited to three mining claims on the east shore of McVicar Lake.

During the period January 7 - February 10, 1991 twelve BQ diamond drill holes were completed with an aggregate footage of 4,138 feet (1,262 M). This program was designed to test the northern extension of the McVicar Lake Fault in areas perceived to have potential for structural dilation. Previous drilling outlined one sub-economic dilation zone, the Altered Zone (AZ) which sub-crops on the east shore of McVicar Lake.

Geologically the grid area is underlain by Archean basaltic flows with interbedded ironstone tentatively correlated with the Meen-Jacknife Formation. These lithologies are in contact with a late gabbroic intrusive also of Archean age. Late regional deformation defined the shear gabbro-basalt contact thus establishing the McVicar Lake Fault. All lithologies have been metamorphosed to greenschist facies.

Foliation and lineation measurements obtained from oriented core samples indicate a series of fault plane flexures occur in the immediate vicinity of the North Flexure. In turn, each flexure is responsible for an incremental re-alignment of the McVicar Lake Fault to the northwest from a predominately north trend on sections 2-5+00N. Additionally, the strike-slip movement, occurring through the same interval, is increasingly influenced by a dip-slip component about these same flexures. This dip-slip vector appears to be maximized between the two identified flexures.

Gold mineralization at the McVicar Lake Property is contained within intensely altered (sericite-pyrite) dilations related to refraction of the fault plane in areas of rheologic contrast. Gold is predominately contained within pyrite mineralization although free gold is known to occur within the margins of quartz veins. Three alteration zones are defined by the appearance of diagnostic mineral assemblages. These zones are:

1. Outer propylitic alteration with chlorite+silica+pyrite+carbonate. This zone is known to extend hundreds of metres from the host structure.

2. Fault hosted potassic alteration with sericite+quartz+carbonate (calcite and Fe-carbonate)+pyrite+gold. This zone is contained within and along the margins (<5 M) of the host structure.

3. Hanging wall argillic alteration is of limited extent and characterized by kaolin replacement of plagioclase.

Two drill holes (ML-91-54 and 63) intersected high grade gold mineralization within pyrite rich intervals. Drill hole ML-91-54 intersected 0.239 oz/ton gold over 6.6 feet including an interval reporting 0.376 oz/ton gold over 3.2 feet. Drill hole ML-91-63 intersected 0.338 oz/ton over 1.3 feet. In addition anomalous gold assays (>1000 ppb) are reported from four drill holes in close proximity to these high grade intersections.

CONCLUSIONS AND RECOMMENDATIONS

1. The North Flexure dilation is located on the strike extension of the previously identified Altered Zone. Alteration, geometry, and host lithologies are similar at both locations.

2. The North Flexure is auriferous and one intersection of "mineable grade/mineable width" is reported (0.239 oz/ton over 6.6'). This high grade intersection is directly attributable to the presence of significant percentages of pyrite (>30%) mineralization previously unknown at the AZ.

3. Intersections to date appear to indicate a trend of 350-010° plunging at 30-40° for the mineralized portion of the North Flexure. This trend is perpendicular to the trend of the AZ, however, additional information will be required to more accurately predict the trend of the North Flexure.

4. The drill results from the North Flexure are significant and additional work is required. The auriferous North Flexure remains untested in all directions. Specifically, an initial surface and downhole Pulse EM survey is recommended. This survey will exploit a resistivity contrast believed to exist between the sulphide-gold rich zones and the overlying magnetic lithologies. The downhole feature will bring the survey as close as possible to the gold bearing source, this may avoid the complications presented by the magnetite. Surface readings are also recommended as the survey array would be in-place. Positive results from these surveys can be utilized to fine tune future drill sets.

5. Diamond drilling is recommended in the immediate vicinity of the North Flexure. The objective of this program should test the down dip region of the high grade intersections reported in ML-91-54 and 63. This effort will delineate the gold zone's attitude and provide information on grade continuity. The following drill collars are recommended but remain subject to positive geophysical results (item 5):

Hole #	Line	Picket	Depth	Dip	Azm
ML-64	NG 7+00N	0+75E	100	55	240
ML-65	NG 7+25N	1+00W	80	55	240
ML-66	NG 7+25N	1+50W	100	55	240
ML-67	NG 7+50N	1+00W	100	55	180

Total = 380 M (1,250 FT)
(minimum program only)

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TIMMINS, ONTARIO

PRELIMINARY REPORT OF DIAMOND DRILL ACTIVITIES

McVICAR LAKE, ONTARIO (1446)

GENERAL INFORMATION

1.1 Introduction

This report addresses the diamond drilling efforts of BHP-UTAH MINES LTD. during the period of January 7 to February 8, 1991. The McVicar Lake Property is located within the Patricia Mining Division in northwestern Ontario (NTS 52 O/11 and O/12). Diamond drilling was completed on the following mining claims:

KRL 846023, KRL 846024, KRL 886074

1.2 Location and Access

This property is located approximately 80 km west of Pickle Lake, Ontario, Figure 1.2a. Access to the property is limited to charter aircraft as there are no roads into the region. Charter services were provided by Goldbelt Air and Winisk Air, both based in Pickle Lake.

1.3 Topography and Vegetation

The topography is generally flat lying and moderately covered by glacial debris. Outcroppings are uncommon and rarely exceed 20 metres in height. There is approximately 5% bedrock exposure.

Vegetation comprises spruce and birch trees in low lying areas with jackpine dominating the sandy ridges.

1.4 Previous Work By BHP-UTAH MINES LTD.

Previous to January 1991 BHP-Utah completed several phases of diamond drilling with an approximate aggregate footage of 16,000 feet in fifty-one drill holes. The drill activities were complimented by geological, geophysical and geochemical surveys. These activities have persisted since 1984.

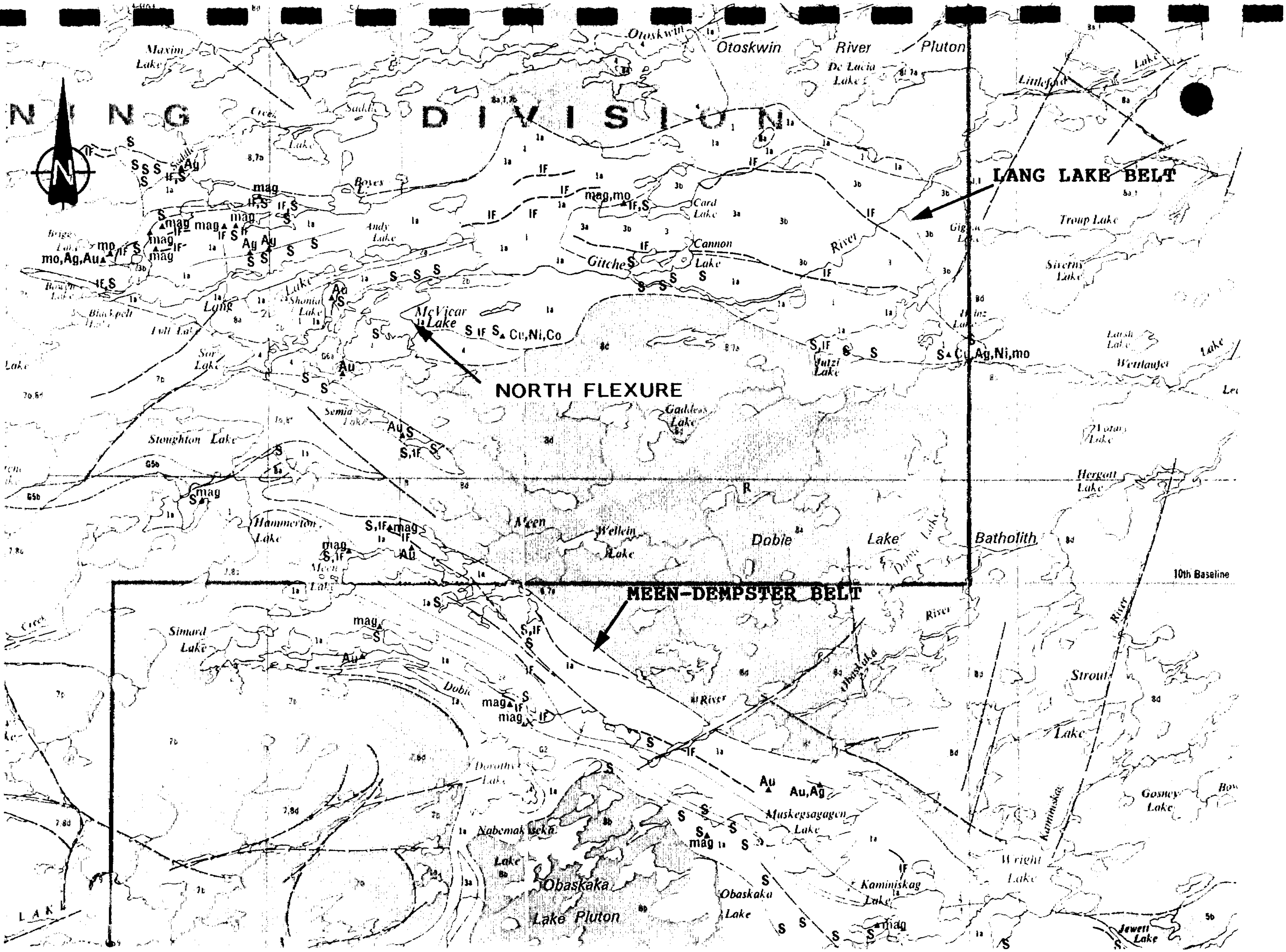


Figure 1.2a.
LOCATION MAP
(from Sage and Breaks, 1982)

Scale 1:253,440 or 1 Inch to 4 Miles

The bulk of diamond drilling, on this property, tested the extensions of subcropping auriferous mineralization contained within a southeasterly plunging, intensely sheared and altered dilation zone (AZ). This zone, trending on a basalt-gabbro contact, reported 0.96 oz/T gold over 6.1 feet (ML-87-27).

1.5 Current Drilling Objectives

The objectives of the 1991 diamond drill program were to test the northern and western extensions of the auriferous McVicar Fault (colloquial name) hosting the AZ. Previous drilling north of the AZ (1989) intersected narrow sub-economic mineralization in the general vicinity of a change in the direction (deflection ?) of this structure. The series of drill holes are designed to test for the existence of a dilation developed about this western deflection.

GEOLOGY

2.1 Regional Geology

The Lang Lake Greenstone Belt, approximately 40 km x 10 km wide, lies within the Uchi Subprovince of the Superior Structural Province (Figure 1.2a). This relatively small belt was tectonically detached from the Meen-Dempster Belt, lying to the south (*Sage and Breaks, 1982*). Additionally, this belt has been isoclinally folded to produce an east trending and east plunging syncline.

The lithologic package includes various units of mafic through to felsic metavolcanics and metapyroclastics. Clastic and chemical sediments are also present. Late gabbroic intrusives have been subsequently intruded by tonalitic bodies along the southern belt margin. All of the rock has undergone metamorphism and while the prefix "meta" is implied it has been omitted from the balance of this report.

Structurally, the southern margin of the Lang Belt is positioned in contact with the Bearhead Fault Zone (*Osmani, I.A., 1989 et al, 1989*). This NW-SE trending dextral mega-structure is recognized over a 500 km length from the Manitoba border area and represents a subprovince boundary (Berens River) to the northwest of this region. The Bearhead Fault apparently disappears some 60 km to the SE, within the northern margin of the Meen-Dempster Belt.

2.2 Local Geology

The McVicar Lake Property is underlain by Archean supracrustal volcanics correlatable with the Meen-Jacknife Lake Cycle of Stott and Wallace (*1984*). Massive to pillowed basaltic and andesitic flows are overlain by felsic pyroclastics and sediments. Large cross-cutting gabbroic intrusives are subsequently cross-cut by tonalitic bodies. Detailed lithological descriptions from a 1987 diamond drill report are included in Appendix III.

Structurally, the immediate grid area is cross-cut by a NW-SE fault (McVicar Lake Fault). This fault is characterized by intense alteration and deformation of a ductile-brittle nature. The alteration intensity is reflected by dramatic increases in sericite, carbonate, and chlorite. Hydrothermal breccia commonly envelopes the structure. Folding is known but as yet poorly understood due to a paucity of exposures.

The McVicar Lake east shore area is relatively well understood despite the limited exposure. Extensive diamond drilling has defined an east-west basalt-gabbro contact with a shallow north dip. This contact zone is characterized by a complex collection of xenoliths up to tens of metres wide. The basalt flows are commonly interbedded with narrow oxide ironstone units.

The metamorphic grade is greenschist. Weak to intensely developed foliations are known to occur away from the McVicar Fault in association with chloritic and sericitic lithologies.

DIAMOND DRILLING

3.1 Introduction

During the period January 7, 1991 through to approximately February 11, 1991 a series of twelve (12) diamond drill holes were completed along a north and west trending fault structure traversing the McVicar Lake property.

Table 2.2a: **STRATIGRAPHIC COLUMN - McVICAR LAKE PROPERTY**

AGE	GROUP	LITHOLOGY
		Tonalite plutons, Granite plutons
	---------INTRUSIVE---------	
		North Flexure, Altered Zone, brecciated basalt,brecciated gabbro, fault gouge
	~~TECTONISM~~~~~~~~	
		Dobie Lake Batholith
	---------INTRUSIVE---------	
ARCHEAN		Gabbro, anorthositic gabbro
	---------INTRUSIVE---------	
	Billett Lake	Greywacke, mudstone, ironstone
	~~UNCONFORMITY~~~~~~~	
	Meen-Jacknife Lake	Basalt, porphyritic basalt

[*Modified after Thomas (1988), Stott and Wallace (1984), Sage and Breaks (1975)*]

Diamond drilling services were provided by Langley Drilling Ltd. utilizing a JKS 300 diamond drill. Transportation of the diamond drill was provided by charter aircraft to the McVicar Lake site from Pickle Lake, Ontario. Demobilization of the drill was completed using the reverse procedure. Coring size is BQ with drill core storage located at the McVicar Lake camp site. Drill collar locations are indicated on Map 1. Completed diamond drill logs for each hole are included in Appendix I.

The drill core was routinely split and delivered to Accurassay Laboratories Ltd. in Thunder Bay, Ontario. The sample rejects are also being stored in Thunder Bay. All samples are analyzed for gold (Au) utilizing a fire assay technique and/or a cyanide leaching technique. The Report of Analysis is included for reference in Appendix II.

Drill hole results are discussed by section from south to north. All drill holes tested the extensions of the McVicar Lake Fault which hosts the auriferous Altered Zone to the south.

Diamond drilling was completed with imperial rods. Drill logging continued to utilize imperial measurements but a systematic metric conversion was completed to facilitate section construction. All measurements on drill sections and plans are metric.

3.2 Section 4+00N (ML-91-52)

Two drill holes (ML-87-21, ML-91-52) were collared on L4+00N, 0+00 and 0+30E respectively. Both holes faced grid west (azimuth 240°), dipping at -60° and -58°, also respectively. Please note that ML-87-21 was previously reported by Thomas *(1988)*, it is repeated here for comprehensiveness only. This follow-up drill hole (ML-91-52) tested the down dip extension of the gold bearing fault structure (McVicar Lake Fault) intersected in ML-87-21 during a previous drill program. Its principle objective was attitude determination for the purpose of "fine tuning" future drill holes. A lithological summary is presented in Table 3.2a, graphical representations are found in Figure 3.2b and Section Map 2.

Table 3.2a: **Lithological Summaries - ML-87-21,ML-91-52**

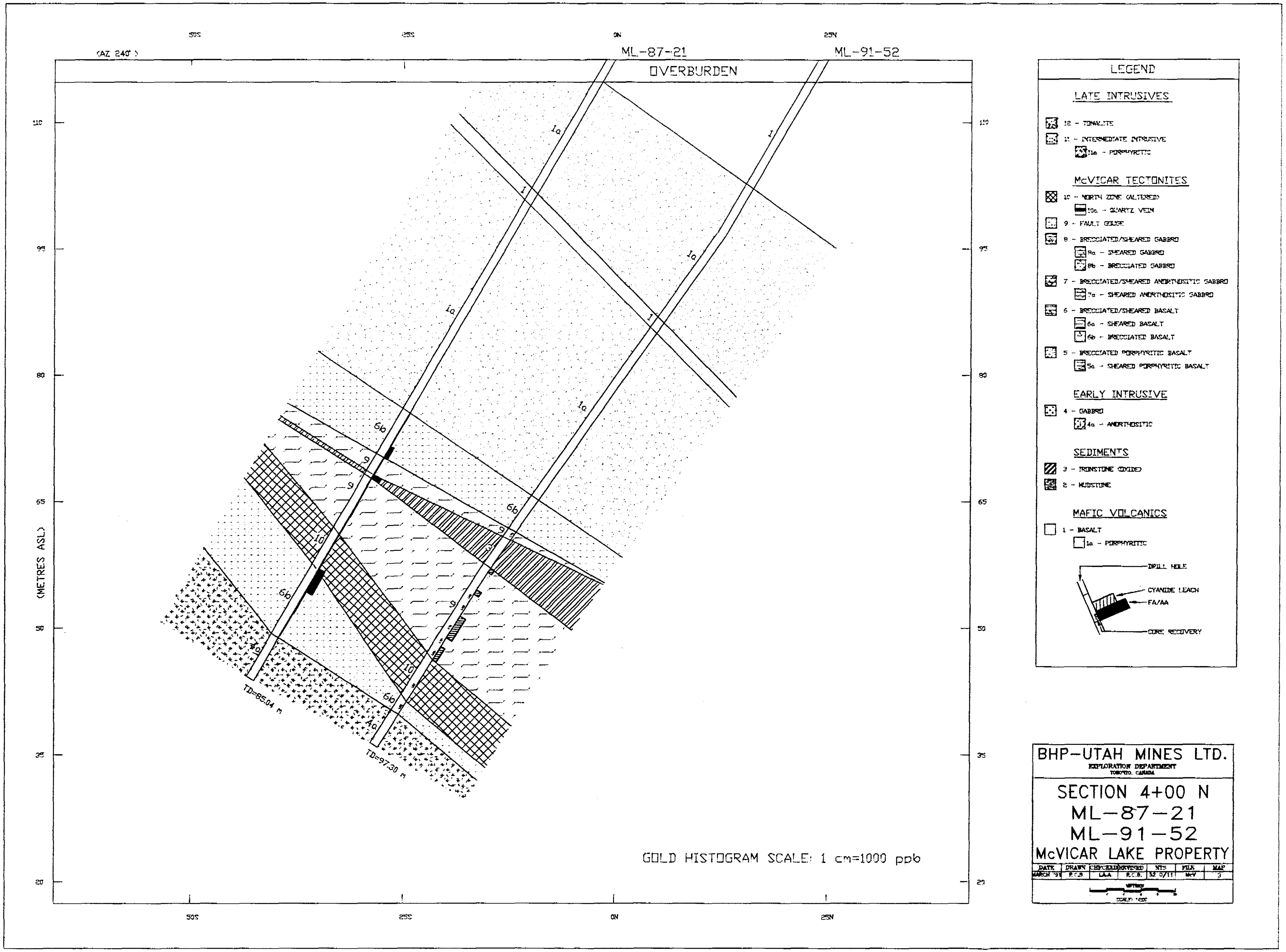
ML-87-21

FOOTAGE	LITHOLOGY
0.0 - 30.0	Overburden
30.0 - 106.7	Basalt
106.7 - 128.5	Brecciated Basalt
128.5 - 137.5	Sheared Volcanic
137.5 - 159.0	Altered Zone
159.0 - 218.0	Brecciated Basalt
218.0 - 231.5	Gabbro
231.5	End of Hole

ML-91-52

FOOTAGE	LITHOLOGY	
0.0 - 10.0	Overburden	
10.0 - 58.0	Basalt	
58.0 - 120.6	Porphyritic Basalt	
120.6 - 126.9	Basalt	
126.9 - 204.7	Porphyritic Basalt	
204.7 - 220.0	Sheared Porphyritic Basalt	
220.0 - 223.5	Fault Gouge	
223.5 - 237.1	Ironstone	
237.1 - 279.0	Fault Gouge	
279.0 - 293.5	NF - Intermediate Intrusive	Tr Py
293.5 - 298.2	NF - Sheared Basalt	Tr Py
298.2 - 303.9	Brecciated/Sheared Basalt	
303.9 - 319.0	Anorthositic Gabbro	
319.0	End of Hole	

Both ML-87-21 and ML-91-52 intersected the target zone through the intervals 137.5′-159.0′ and 279.0′-298.2′ respectively. These intervals consisted of sheared-foliated basalt with intervals of ironstone and fault gouge material. The presence of quartz boudins and veins, with minor apple green mica and carbonate, are reminiscent of the AZ. Oriented core measurements (ML-91-52) indicate a local 292° trend dipping 54°, however, Figure 3.2b demonstrates an apparent 40° dip to the northeast. Overall, the



(AZ 240°)
50S
25S
0N
25N
ML-87-21
ML-91-52
OVERBURDEN
(METRES ASL)
110
95
80
65
50
35
20
TD=85.04 m
TD=97.30 m
GOLD HISTOGRAM SCALE: 1 cm=1000 ppb
LEGEND
LATE INTRUSIVES
12 - TONALITE
11 - INTERMEDIATE INTRUSIVE
11a - PORPHYRITIC
McVICAR TECTONITES
10 - NORTH ZONE (ALTERED)
10a - QUARTZ VEIN
9 - FAULT GOUGE
8 - BRECCIATED/SHEARED GABBRO
8a - SHEARED GABBRO
8b - BRECCIATED GABBRO
7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
7a - SHEARED ANORTHOSITIC GABBRO
6 - BRECCIATED/SHEARED BASALT
6a - SHEARED BASALT
6b - BRECCIATED BASALT
5 - BRECCIATED PORPHYRITIC BASALT
5a - SHEARED PORPHYRITIC BASALT
EARLY INTRUSIVE
4 - GABBRO
4a - ANORTHOSITIC
SEDIMENTS
3 - IRONSTONE (OXIDE)
2 - MUDSTONE
MAFIC VOLCANICS
1 - BASALT
1a - PORPHYRITIC
DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY
BHP-UTAH MINES LTD.
EXPLORATION DEPARTMENT
SECTION 4+00 N
ML-87-21
ML-91-52
McVICAR LAKE PROPERTY

FIG. 3.2b

section is steeper and less altered then the intersections reported to the south within the AZ, deformation is predominately brittle.

Twenty-nine intervals were selected for gold analysis. No economic or significant assays are reported. The highest value obtained from 259.0'-269.0' (3.0' recovered) in a sericite rich fault gouge is 350 ppb gold.

3.3 Section 5+00N (ML-91-53)

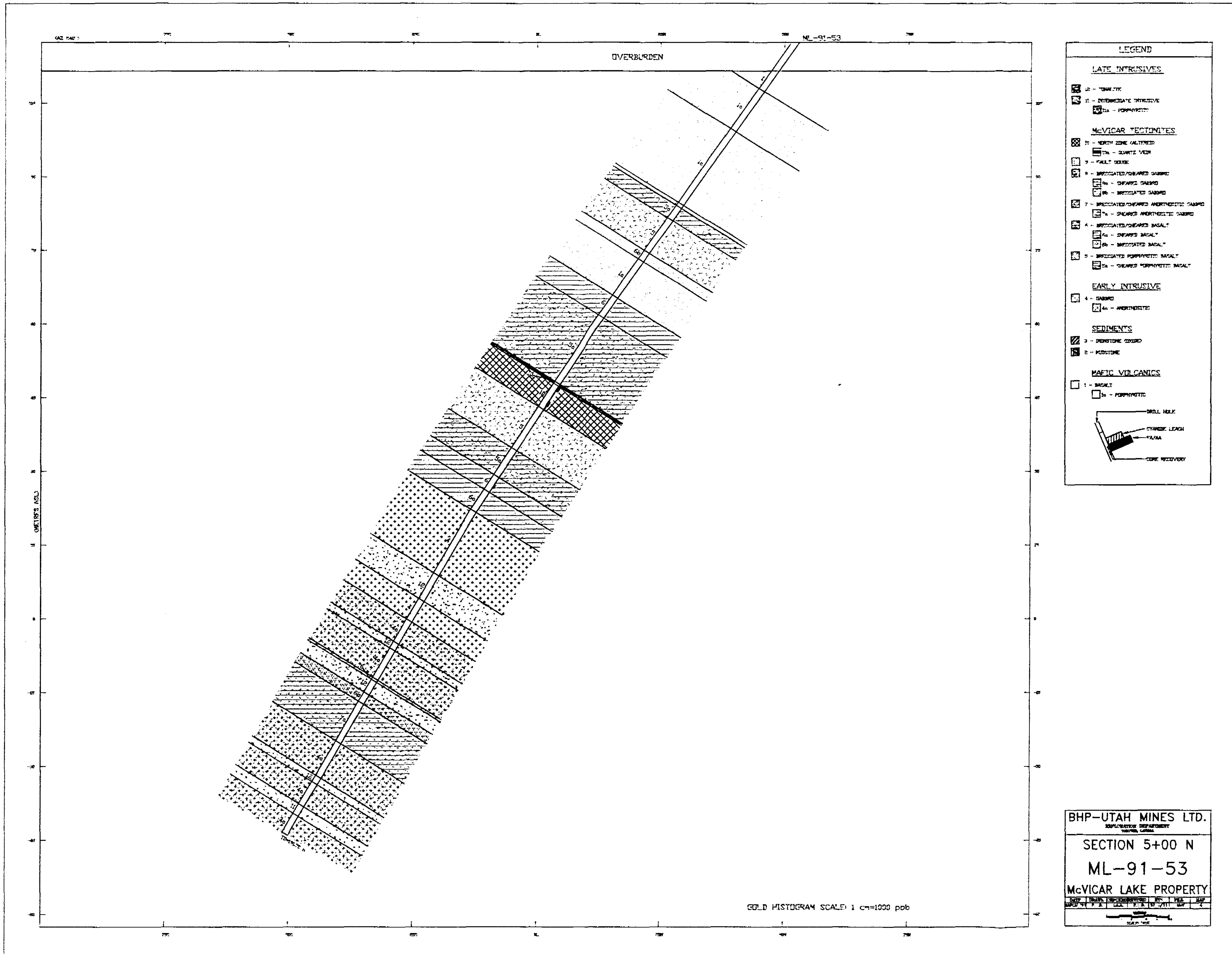
One drill hole (ML-91-53) was collared on L5+00N, 0+53E facing grid west (azimuth 240°), dipping at -55°. This drill hole tested the northern extension of the fault structure intersected on L4+00N. A lithological summary is presented in Table 3.3a, graphical representations are found in Figure 3.3b and Section Map 3.

ML-91-53 intersected the target zone through the interval 278.6'-298.6'. This interval consists of moderately foliated and sheared basalt containing minor quartz veining. Alteration associated with this zone consists of sericite-apple green mica-pyrite and is in concert with an observed change from predominately brittle (section 4+00N) to predominately ductile deformation. Oriented core measurements indicate a 282° trend dipping 35°. Measurements of slip lineations demonstrate a 323° trend plunging at 26°.

Thirty-five intervals were selected for gold analysis. No economic or significant assays are reported. The highest value obtained from 279.9'-283.6' in sheared basalt is 200 ppb gold.

Table 3.3a: **LITHOLOGICAL SUMMARY - ML-91-53**

FOOTAGE	LITHOLOGY	
0.0 - 23.5	Overburden	
23.5 - 40.4	Basalt	
40.4 - 73.4	Porphyritic Basalt	
73.4 - 133.4	Porphyritic Basalt	
133.4 - 136.0	Basalt	
136.0 - 146.0	Sheared Porphyritic Basalt	
146.0 - 172.7	Brecciated Porphyritic Basalt	
172.7 - 179.5	Brecciated Basalt	
179.5 - 209.4	Porphyritic Basalt	
209.4 - 225.5	Sheared/Brecciated Basalt	
225.5 - 278.6	Sheared Porphyritic Basalt	
278.6 - 279.9	NF - Quartz Vein	3-5% Py
279.9 - 298.6	NF - Sheared Basalt	2-5% Py
298.6 - 331.1	Brecciated Porphyritic Basalt	
331.1 - 352.8	Sheared Porphyritic Basalt	
352.8 - 364.4	Brecciated/Sheared Basalt	2-3% Py
364.4 - 380.5	Sheared Basalt	
380.5 - 429.3	Gabbro	
429.3 - 449.0	Tonalite	
449.0 - 465.0	Gabbro	
465.0 - 481.9	Anorthositic Gabbro	
481.9 - 487.2	Tonalite	
487.2 - 509.6	Anorthositic Gabbro	
509.6 - 511.4	Sheared/Brecciated Basalt	
511.4 - 521.0	Tonalite	
521.0 - 528.3	Brecciated Gabbro	
528.3 - 558.4	Sheared Anorthositic Gabbro	
558.4 - 585.0	Anorthositic Gabbro	
585.0 - 589.7	Tonalite	
589.7 - 607.0	Anorthositic Gabbro	
607.0 - 614.2	Intermediate Intrusive	
614.2 - 629.0	Anorthositic Gabbro	
629.0	End of hole	



ML-91-53
OVERBURDEN
(METRES ASL)
GOLD HISTOGRAM SCALE: 1 cm=1000 ppb
LEGEND
LATE INTRUSIVES
McVICAR TECTONITES
7a - SHEARED ANORTHOSITIC GABBRO
6a - SHEARED BASALT
6b - BRECCIATED BASALT
5 - BRECCIATED PORPHYRITIC BASALT
EARLY INTRUSIVE
4 - GABBRO
4a - ANORTHOSITIC
SEDIMENTS
2 - MUDSTONE
MAFIC VOLCANICS
1 - BASALT
1a - PORPHYRITIC
DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY
BHP-UTAH MINES LTD.
SECTION 5+00 N
ML-91-53
McVICAR LAKE PROPERTY

Fig 3.3b

3.4 Section 6+00N (ML-91-55)

One drill hole (ML-91-55) was collared on L6+00N, 0+00 facing grid west (azimuth 240°), dipping at -56°. This drill hole tested the northern extension of the ductile fault structure intersected on L5+00N. A lithological summary is presented in Table 3.4a, graphical representations are found in Figure 3.4b and Section Map 4.

Table 3.4a: **LITHOLOGICAL SUMMARY - ML-91-55**

FOOTAGE	LITHOLOGY	
0.0 - 27.0	Overburden	
27.0 - 120.1	Basalt	
120.1 - 128.2	Brecciated Basalt	
128.2 - 177.3	Basalt	
177.3 - 257.3	Basalt	
257.3 - 280.4	Brecciated Basalt	1% Py
280.4 - 288.8	NF - Sheared/Silicified Basalt	2% Py
288.8 - 294.8	NF - Strongly Sheared Basalt	3% Py
294.8 - 305.0	NF - Sheared/Brecciated Basalt	3% Py
305.0 - 309.4	NF - Sheared Intermediate Intrusive	3% Py
309.4 - 316.0	NF - Sheared/Brecciated Basalt	1% Py
316.0 - 321.0	NF - Strongly Sheared Basalt	
321.0 - 325.8	Brecciated/Sheared Basalt	
325.8 - 419.0	Anorthositic Gabbro	
419.0	End of Hole	

ML-91-55 intersected the target zone through the interval 280.4'-288.8'. This zone comprises moderate to intensely foliated basalt containing trace amounts of apple green mica, sericite, and silicification. The silicification is present as a pervasive weak to moderate flooding and/or discrete quartz veins. Oriented core measurements indicate a 300° trend dipping 53°. Measurements of slip lineations demonstrate a 030° trend plunging at 48°.

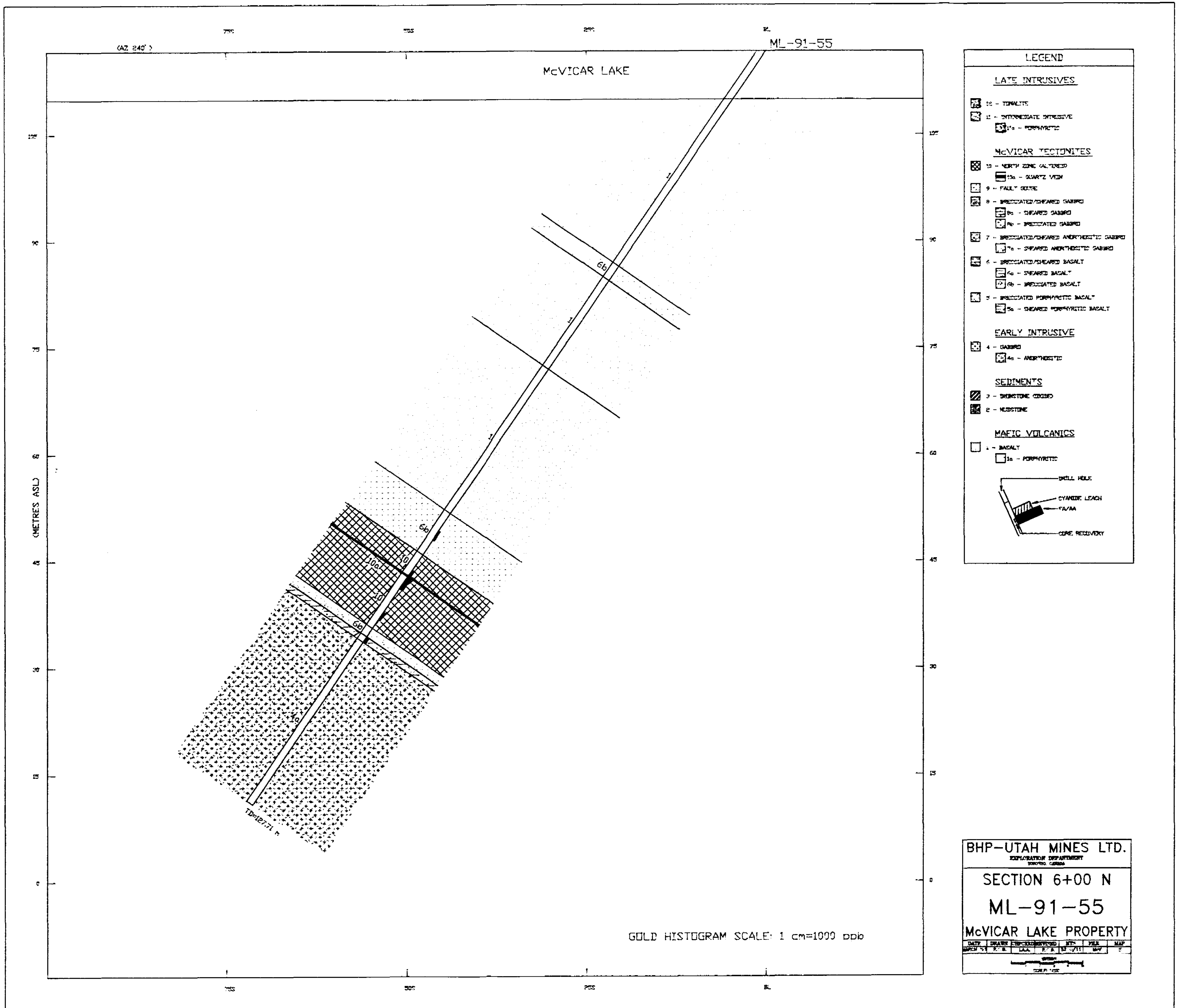

ML-91-55
McVICAR LAKE
(METRES ASL)
LEGEND
LATE INTRUSIVES
McVICAR TECTONITES
EARLY INTRUSIVE
SEDIMENTS
MAFIC VOLCANICS
GOLD HISTOGRAM SCALE: 1 cm=1000 ppb
BHP-UTAH MINES LTD.
SECTION 6+00 N
ML-91-55
McVICAR LAKE PROPERTY

Fig 3.4b

Twenty-three intervals were selected for gold analysis. No economic values are reported, however, several intervals do report significant gold assays. A continuous interval from 288.8'-302.0', comprising four sample intervals 2998-3002, reports 438, 594, 344, 219 ppb gold respectively. A 0.7' quartz vein with up to 2% pyrite is responsible for the highest value (594 ppb gold).

3.5 Section 6+50N (ML-91-56,58)

Two drill holes ML-91-56 and ML-91-58 collared at 0+00 and 0+80W respectively were drilled facing grid west (azimuth 240°), dipping at -55°. Both drill holes tested the northern extensions of the ductile shear structure intersected on section 6+00N. Collar locations were also selected to intersect a proposed plunging zone of mineralization intersected in ML-91-54. Lithological summaries are presented in Table 3.5a, graphical representations are found in Figure 3.5b and Section Map 5.

Table 3.5a: **LITHOLOGICAL SUMMARIES - ML-91-56,58**

ML-91-56

FOOTAGE	LITHOLOGIES	
0.0 - 20.0	Overburden	
20.0 - 133.0	Basalt	
133.0 - 154.0	Brecciated Basalt	
154.0 - 269.0	Basalt	
269.0 - 281.6	Brecciated Basalt	
281.6 - 286.7	NF - Sheared Basalt	Tr-1% Pyrite
286.7 - 304.2	Brecciated Basalt	
304.2 - 318.0	Sheared Basalt	
318.0 - 323.5	Brecciated/Sheared Basalt	
323.5 - 333.5	Brecciated/Sheared Anorthositic Gabbro	
333.5 - 369.0	Anorthositic Gabbro	
369.0	End of Hole	

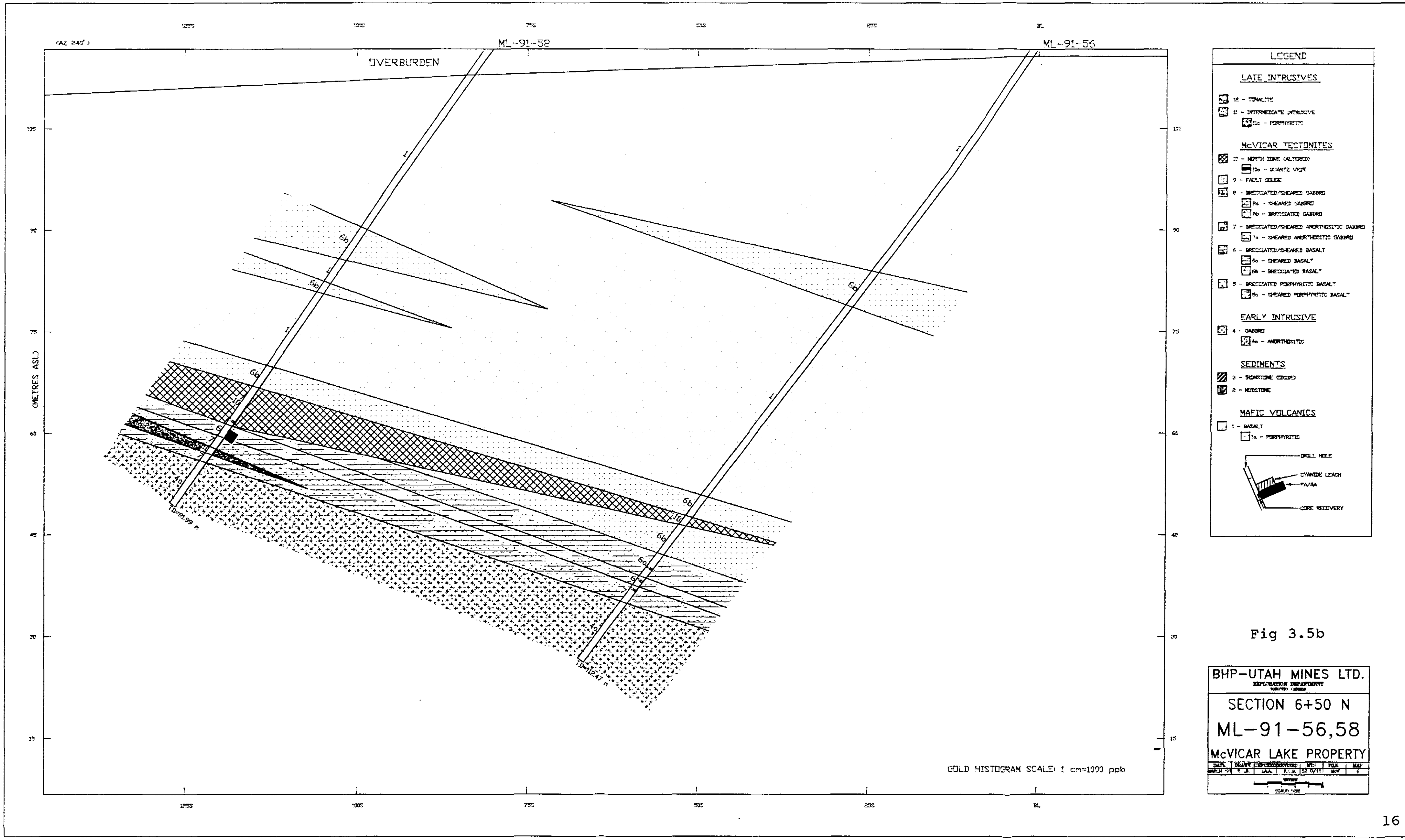
Table 3.5a: **LITHOLOGICAL SUMMARIES - ML-91-56,58** (Cont'd)

ML-91-58

FOOTAGE	LITHOLOGIES	
0.0 - 15.5	Overburden	
15.5 - 109.0	Basalt	
109.0 - 124.5	Brecciated Basalt	
124.5 - 138.2	Basalt	
138.2 - 144.0	Brecciated Basalt	
144.0 - 187.0	Basalt	
187.0 - 199.0	Brecciated Basalt	Tr-1% Pyrite
199.0 - 221.5	NF - Sheared Basalt	Tr-2% Pyrite
221.5 - 228.5	Sheared/Brecciated Basalt	Tr-3% Pyrite
228.5 - 236.0	Brecciated Anorthositic Gabbro	
236.0 - 238.3	Intermediated Intrusive	Tr-3% Pyrite
238.3 - 243.3	Brecciated Anorthositic Gabbro	
243.3 - 269.0	Anorthositic Gabbro	
269.0	End of Hole	

Drill holes ML-91-56 and ML-91-58 intersected their target zones through the intervals 281.6'-286.7' and 199.0'-221.5' respectively. Both zones comprise intensely foliated basalt (logged as an altered "North Flexure" - NF). The degree of deformation is consistent with that on Section 6+00N, moderate to intense foliations are developed over a relatively narrow interval. Both drill holes exhibit an increase in pyrite, sericite and carbonate within and proximal to the NF, however, this section is unique with the appearance of a pervasive ochre coloured Fe-carbonate alteration. Also, there is a rapid decrease in the apparent width of the NF down dip on this section. The section construction indicates an apparent dip of 20° northeast (Figure 3.5b).

Twenty-eight intervals were selected for analysis, fourteen from each drill hole. No economic values are reported, however, one significant interval from ML-91-58 is reported. Sample 3049 from 223.6'-228.5' reports 677 ppb gold. This interval is characterized by a brecciated/sheared basalt with intense carbonate alteration and minor quartz mesoveins containing up to 2% pyrite.



(AZ 249°)
ML-91-58
ML-91-56
OVERBURDEN
(METRES ASL)
TD=81.99 m
TD=112.47 m
LEGEND
LATE INTRUSIVES
McVICAR TECTONITES
EARLY INTRUSIVE
SEDIMENTS
MAFIC VOLCANICS
GOLD HISTOGRAM SCALE: 1 cm=1000 ppb
BHP-UTAH MINES LTD.
SECTION 6+50 N
ML-91-56,58
McVICAR LAKE PROPERTY

Fig 3.5b

3.6 Section 7+00N (ML-89-50, ML-91-54,57,60)

Four drill holes were completed on this section; ML-89-50, ML-91-54,57,60. Their collars are 1+50W, 1+25W, 1+00W, and 0+75W respectively. Each drill hole faced grid west (azimuth 240°), dipping -45°, -58°, -55°, and -55° respectively. Please note that ML-89-50 was previously reported by Waldie *(1989)*, it is repeated here for comprehensiveness only. These drill holes all targeted the down dip extension of the anomalous interval (2.6 g/mt gold) intersected by ML-89-50 from 169.0'-174.0'. Lithological summaries are presented in Table 3.6a, graphical representations are found in Figure 3.6b and Section Map 6.

All four drill holes intersected intensely foliated sheared and mineralized basalt in close proximity to a gabbro-basalt contact, the target horizon. Pyrite mineralization, up to 30% over narrow intervals, occurs in ML-91-54,57 and is complimented by the appearance of apple green mica and quartz vein material. Overall, the intersections are thicker (>20'), more altered and more mineralized than the previous section intersections. However, the North Flexure appears to "pinch-out" along section to the northeast as demonstrated by the rapid thinning observed in ML-91-60. This section produces an apparent dip of 20° to the northeast (Figure 3.6b).

Seventy-five intervals were selected for gold analysis; 16 (ML-89-50) [submitted during 1987, reported during 1988 -Thomas *(1988)*], 18 (ML-91-54), 17 (ML-91-57), 24 (ML-91-60). Economic intersections are reported from ML-91-54 in addition to several significant intersections from ML-89-50 and ML-91-57. There are no significant values reported from ML-91-60.

Four intervals within ML-89-50 (samples 3715, 3716, 3717, 3719) report values in excess of 200 ppb gold. The highest value from 169.0'-174.0' is 2600 ppb gold from an intensely foliated (sheared) basalt with quartz boudins and extensive sericite alteration. Additional anomalous intervals are reported from similarly sheared lithologies with variable degrees of sericite, apple green mica alteration, and quartz veining (Table 4.1a).

Table 3.6a: **LITHOLOGICAL SUMMARIES - ML-89-50, ML-91-54,57,60**

ML-89-50

FOOTAGE	LITHOLOGIES
0.0 - 26.0	Overburden
26.0 - 135.0	Basalt
135.0 - 149.5	Brecciated/Sheared Basalt
149.5 - 153.5	Brecciated/Sheared Basalt
153.5 - 159.0	Ironstone
159.0 - 209.0	North Flexure
209.0 - 239.0	Brecciated/Sheared Basalt
239.0 - 327.0	Tonalite
327.0 - 439.0	Anorthositic Gabbro
439.0	End of Hole

ML-91-54

0.0 - 15.0	Overburden	
15.0 - 47.0	Basalt	
47.0 - 58.7	Ironstone	
58.7 - 143.0	Basalt	
143.0 - 180.6	Brecciated Basalt	
180.6 - 183.9	NF - Sheared Brecciated Basalt	1% Py
183.9 - 192.5	NF - Sulphide Zone	20% Py
192.5 - 195.7	NF - Quartz-Pyrite Vein	30% Py
195.7 - 198.1	NF - Sulphide Zone	20% Py
198.1 - 201.5	NF - Sheared Intermediate Intrusive	2% Py
201.5 - 202.5	NF - Quartz-Pyrite	20% Py
202.5 - 224.0	NF - Sheared Gabbro	5% Py
224.0 - 231.5	NF - Intermediate Intrusive	4% Py
231.5 - 251.1	Kaolinized Anorthositic Gabbro	
251.1 - 283.0	Anorthositic Gabbro	
283.0 - 289.0	Vuggy Basalt	
289.0	End of Hole	

Table 3.6a: **LITHOLOGICAL SUMMARIES - ML-89-50, ML-91-54,57,60** (Cont'd)

ML-91-57

FOOTAGE	LITHOLOGIES	
0.0 - 6.0	Overburden	
6.0 - 72.5	Porphyritic Basalt	
72.5 - 94.0	Ironstone	
94.0 - 134.0	Basalt	
134.0 - 185.3	Basalt	
185.3 - 212.6	Brecciated Basalt	
212.6 - 220.4	NF - Sheared Basalt	1-3% Py
220.4 - 225.1	NF - Sulphide Zone	5-40% Py
225.1 - 233.0	NF - Sheared Intermediate Intrusive	2-5% Py
233.0 - 249.0	NF - Sheared Gabbro	1-5% Py
249.0 - 256.8	NF - Sheared Gabbro	Tr-1% Py
256.8 - 319.0	Anorthositic Gabbro	
319.0	End of Hole	

ML-91-60

0.0 - 10.0	Overburden	
10.0 - 34.0	Basalt	
34.0 - 116.5	Basalt	
116.5 - 134.0	Ironstone	
134.0 - 221.0	Basalt	
221.0 - 236.0	Brecciated Basalt	
236.0 - 239.7	Porphyritic Basalt	
239.7 - 248.6	Brecciated Basalt	
248.6 - 255.8	NF - Sheared Basalt	3% Py
255.8 - 260.5	Sheared/Brecciated Basalt	
260.5 - 279.0	Vuggy Basalt	
279.0 - 292.0	Brecciated/Sheared Anorthositic Gabbro	
292.0 - 299.4	Anorthositic Gabbro	
299.4 - 304.5	Brecciated/Sheared Anorthositic Gabbro	
304.5 - 321.7	Intermediate Intrusive	
321.7 - 329.0	Anorthositic Gabbro	
329.0	End of Hole	

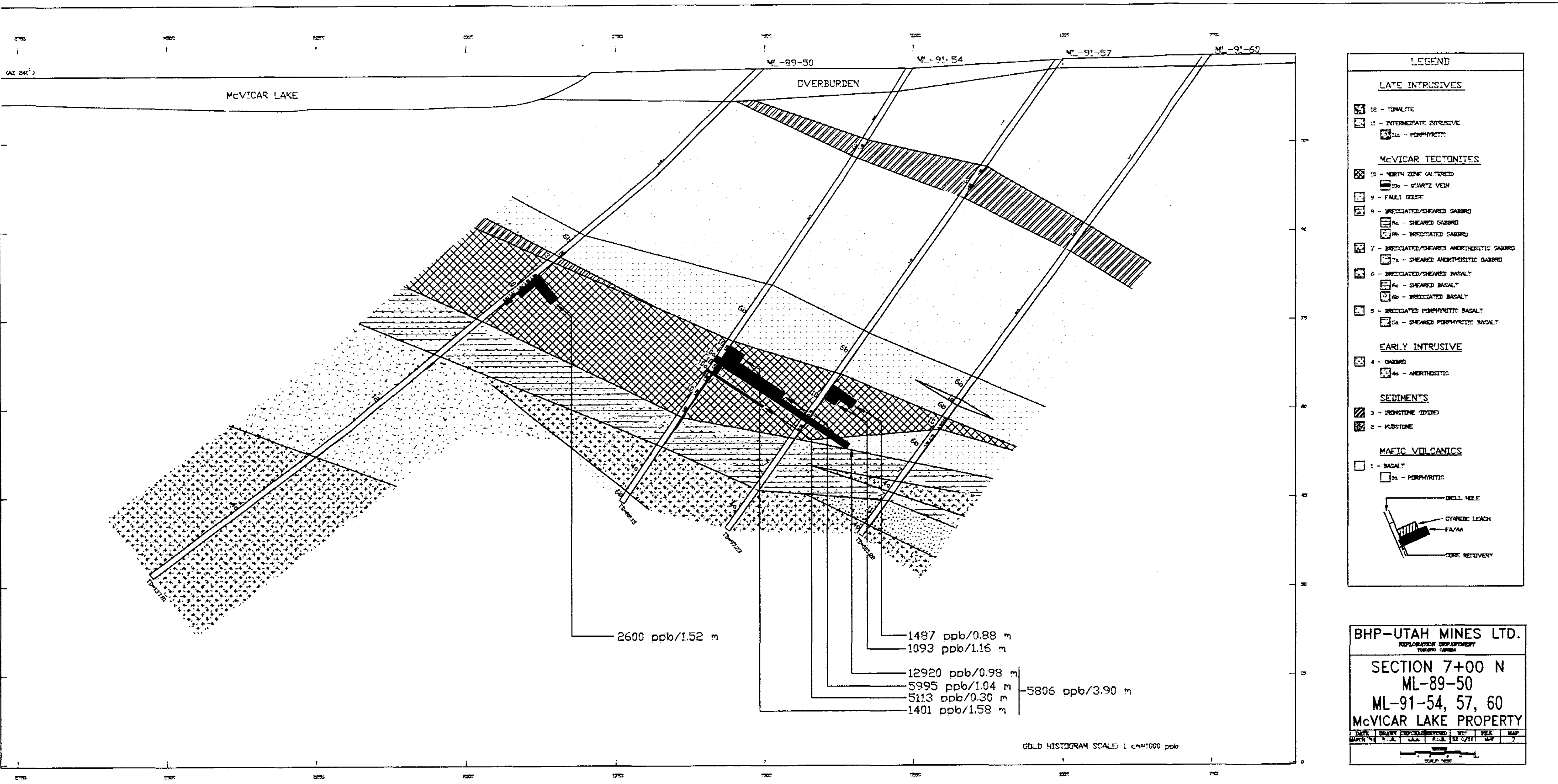

ML-89-50
ML-91-54
ML-91-57
ML-91-60
McVICAR LAKE
OVERBURDEN
2600 ppb/1.52 m
1487 ppb/0.88 m
1093 ppb/1.16 m
12920 ppb/0.98 m
5995 ppb/1.04 m
5113 ppb/0.30 m
1401 ppb/1.58 m
5806 ppb/3.90 m
GOLD HISTOGRAM SCALE: 1 cm=1000 ppb
LEGEND
LATE INTRUSIVES
12 - TONALITE
11 - INTERMEDIATE INTRUSIVE
11a - PORPHYRITIC
McVICAR TECTONITES
10 - NORTH ZONE (ALTERED)
10a - QUARTZ VEIN
9 - FAULT GOUGE
8 - BRECCIATED/SHEARED GABBRO
8a - SHEARED GABBRO
8b - BRECCIATED GABBRO
7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
7a - SHEARED ANORTHOSITIC GABBRO
6 - BRECCIATED/SHEARED BASALT
6a - SHEARED BASALT
6b - BRECCIATED BASALT
5 - BRECCIATED PORPHYRITIC BASALT
5a - SHEARED PORPHYRITIC BASALT
EARLY INTRUSIVE
4 - GABBRO
4a - ANORTHOSITIC
SEDIMENTS
3 - IRONSTONE (OXIDE)
2 - MUDSTONE
MAFIC VOLCANICS
1 - BASALT
1a - PORPHYRITIC
DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY
BHP-UTAH MINES LTD.
EXPLORATION DEPARTMENT
SECTION 7+00 N
ML-89-50
ML-91-54, 57, 60
McVICAR LAKE PROPERTY

Fig 3.6b

Three ML-91-54 intervals (samples 2978, 2979, 2982) report values in excess of 3400 ppb gold (0.100 oz/t). Sulphide (pyrite) rich quartz vein zones (2) and a narrow quartz vein report 0.174 (3.4′), 0.376 (3.2′), and 0.139 (1.0′) oz/T gold respectively (width's are apparent). All three intervals are contained within the target horizon, the "North Flexure". Furthermore, this collection of high grade intersections is within a wider interval of anomalous values from 183.9′-202.5.′ (Table 4.1a).

Two contiguous intervals in ML-91-57 from 220.4′-229.0′ report values in excess of 1000 ppb gold. Sample 3034, a 4.7′ interval (apparent width), reports 2411 ppb gold from a sulphide-silica rich host. Sulphides within this interval ranged to 40% pyrite in a quartz-sericite matrix. Also sample 3035, a 3.9′ interval, reports 1093 ppb gold from a sheared sericite altered intermediate intrusive containing 5% disseminated pyrite.

3.7 Section 7+25N (ML-91-63)

One drill hole (ML-91-63) collared at L7+25N, 1+22W facing grid west (azimuth 240°), dipping at -55°. This drill hole tested the northwestern extension of the anomalous intersections achieved on Section 7+00N. A lithological summary is presented in Table 3.7a, graphical representations are found in Figure 3.7b and Section Map 7.

ML-91-63 intersected the target zone through the interval 209.0′-249.0′. This intersection consists of variably sheared basalt with narrow intervals containing up to 3% pyrite disseminations. Within this zone a narrow 1.3′ quartz-sulphide rich band contains up to 20% pyrite. The entire interval has weak to moderate sericite alteration with narrow zones containing apple green mica.

Seventeen intervals were selected for gold analysis. One economic grade is reported along with two additional assays in excess of 1000 ppb gold. The highest value reporteld (11,589 ppb gold) is sample 3149 from 223.0′-224.3′, a zone of semi-massive pyrite with quartz ribbons. In addition sample 3146 (214.5′-217.0′) and sample 3148 (219.5′-223.0′) report 1325 and 957 ppb gold respectively from sheared basalt with 3-5% pyrite disseminations.

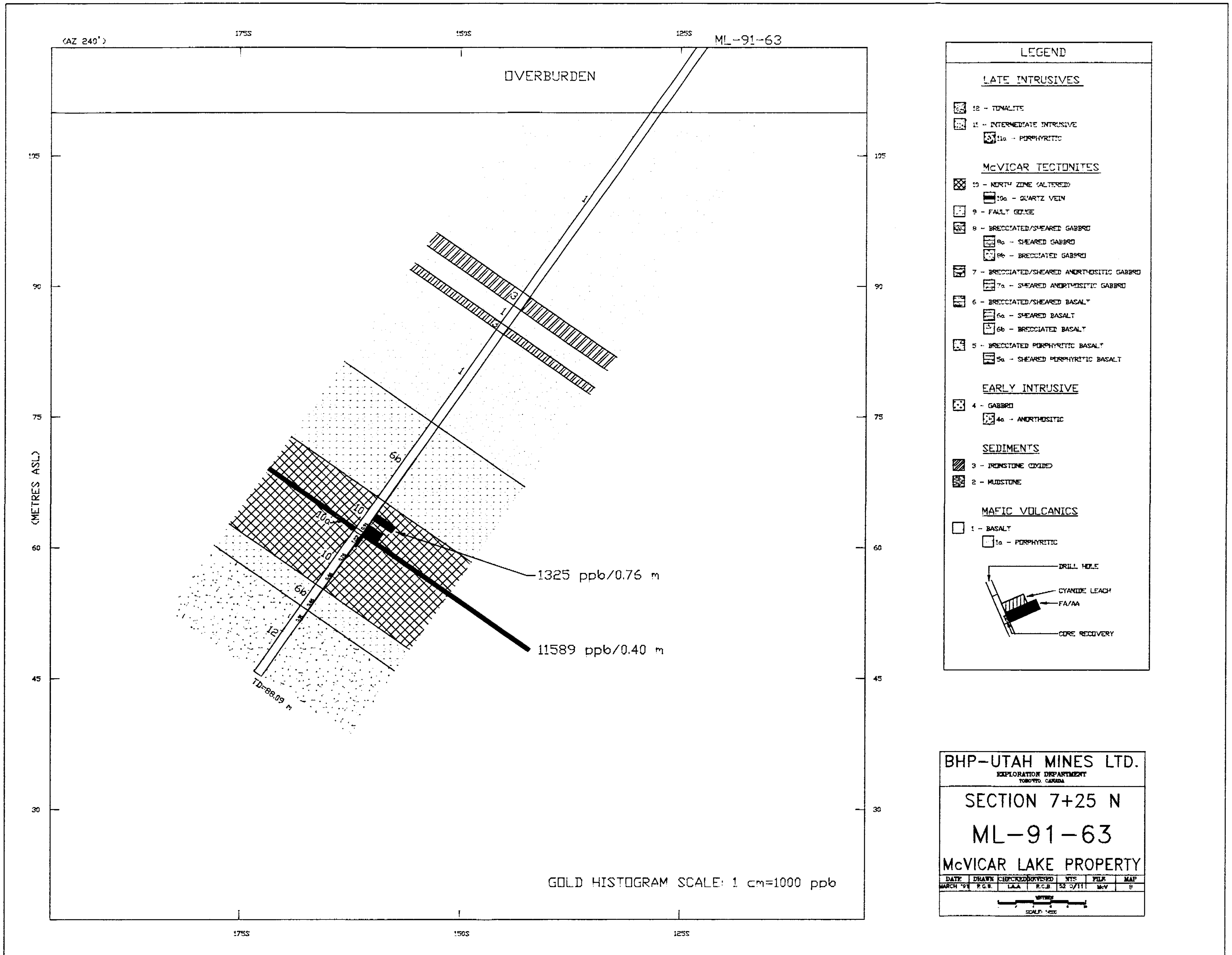
Table 3.7a **LITHOLOGICAL SUMMARY - ML-91-63**

FOOTAGE	LITHOLOGY	
0.0 - 30.0	Overburden	
30.0 - 115.0	Basalt	
115.0 - 121.0	Ironstone	
121.0 - 129.0	Basalt	
129.0 - 132.0	Ironstone	
132.0 - 174.5	Basalt	
174.5 - 209.0	Brecciated/Sheared Basalt	
209.0 - 223.0	NF - Sheared Basalt	1-5% Py
223.0 - 224.3	NF - Quartz/Sulphide Zone	10-20% Py
224.3 - 229.0	NF - Sheared Basalt	5-7% Py
229.0 - 249.0	NF - Sheared Basalt	Tr Py
249.0 - 259.0	Brecciated/Vuggy Basalt	
259.0 - 289.0	Kaolinized Tonalite	
289.0	End of Hole	

3.8 Section 7+50N (ML-91-59,62)

One drill hole (ML-91-62) collared at L7+50N, 0+75W facing grid west (azimuth 240°), dipping at -57°. This drill hole tested the north-eastern plunge of the auriferous structure intersected on L7+00N. A lithological summary is presented in Table 3.8a, graphical representations are found in Figure 3.8b and Section Map 8.

ML-91-62 intersected the target zone through the interval 277.5'-297.0'. This interval consists of intensely foliated and sheared basalt with minor apple green mica and few narrow quartz veins. Pyrite is present as disseminations up to 3%. The entire interval has undergone weak to moderate alteration recognized by an increased sericite and silica content. Trace amounts of apple green mica are present. Overall, the alteration intensity is similar to that encountered on Section 7+00N, however, the mineralization is less. Oriented core measurements from within the target zone report an S_1 foliation trending 315°/48°. Slip lineations trend and plunge at 062°/57°.



(AZ 240°)
175S
150S
125S
ML-91-63
OVERBURDEN
105
90
75
60
45
30
(METRES ASL)
6b
10
10a
10
12
TD=88.09 m
1325 ppb/0.76 m
11589 ppb/0.40 m
GOLD HISTOGRAM SCALE: 1 cm=1000 ppb
LEGEND
LATE INTRUSIVES
12 - TONALITE
11 - INTERMEDIATE INTRUSIVE
11a - PORPHYRITIC
McVICAR TECTONITES
10 - NORTH ZONE (ALTERED)
10a - QUARTZ VEIN
9 - FAULT GOUGE
8 - BRECCIATED/SHEARED GABBRO
8a - SHEARED GABBRO
8b - BRECCIATED GABBRO
7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
7a - SHEARED ANORTHOSITIC GABBRO
6 - BRECCIATED/SHEARED BASALT
6a - SHEARED BASALT
6b - BRECCIATED BASALT
5 - BRECCIATED PORPHYRITIC BASALT
5a - SHEARED PORPHYRITIC BASALT
EARLY INTRUSIVE
4 - GABBRO
4a - ANORTHOSITIC
SEDIMENTS
3 - IRONSTONE (OXIDE)
2 - MUDSTONE
MAFIC VOLCANICS
1 - BASALT
1a - PORPHYRITIC
DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY
BHP-UTAH MINES LTD.
EXPLORATION DEPARTMENT
TORONTO, CANADA
SECTION 7+25 N
ML-91-63
McVICAR LAKE PROPERTY
DATE | DRAWN | CHECKED | REVISED | NTS | FILE | MAP
MARCH '91 | P.G.B. | L.A.A. | R.C.B. | 52 O/11 | McV | 8
METRES
SCALE 1:200

Fig 3.7b

Table 3.8a: **LITHOLOGICAL SUMMARY - ML-91-59,62**

ML-91-59

FOOTAGE	LITHOLOGY
0.0 - 20.0	Overburden
20.0 - 58.3	Basalt
58.3 - 62.2	Ironstone
62.2 - 100.5	Basalt
100.5 - 109.1	Ironstone
109.1 - 138.0	Basalt
138.0 - 139.9	Brecciated Basalt
139.9 - 142.9	Volcanic Mudstone
142.9 - 147.0	Basalt
147.0 - 157.3	Brecciated Basalt
157.3 - 190.8	Brecciated/Sheared Gabbro
190.8 - 239.8	North Flexure
239.8 - 267.1	Gabbro
267.1 - 279.0	Basalt - Very Fine Gabbro
279.0	End of Hole

ML-91-62

0.0 - 12.0	Overburden	
12.0 - 29.4	Basalt	
29.4 - 46.4	Ironstone	
46.4 - 122.7	Basalt	
122.7 - 133.2	Ironstone	
133.2 - 180.8	Basalt	
180.8 - 195.5	Ironstone	
195.5 - 230.6	Porphyritic Basalt	
230.6 - 233.4	Sheared Porphyritic Basalt	
233.4 - 237.4	Ironstone	
237.4 - 263.8	Basalt	
263.8 - 277.5	Brecciated Basalt	
277.5 - 283.4	NF - Sheared Basalt	Tr Py
283.4 - 285.2	NF - Quartz Vein	3% Py
285.2 - 297.0	NF - Sheared Basalt	2% Py
297.0 - 305.2	Brecciated Gabbro	
305.2 - 349.0	Granodiorite/Tonalite	
349.0	End of Hole	

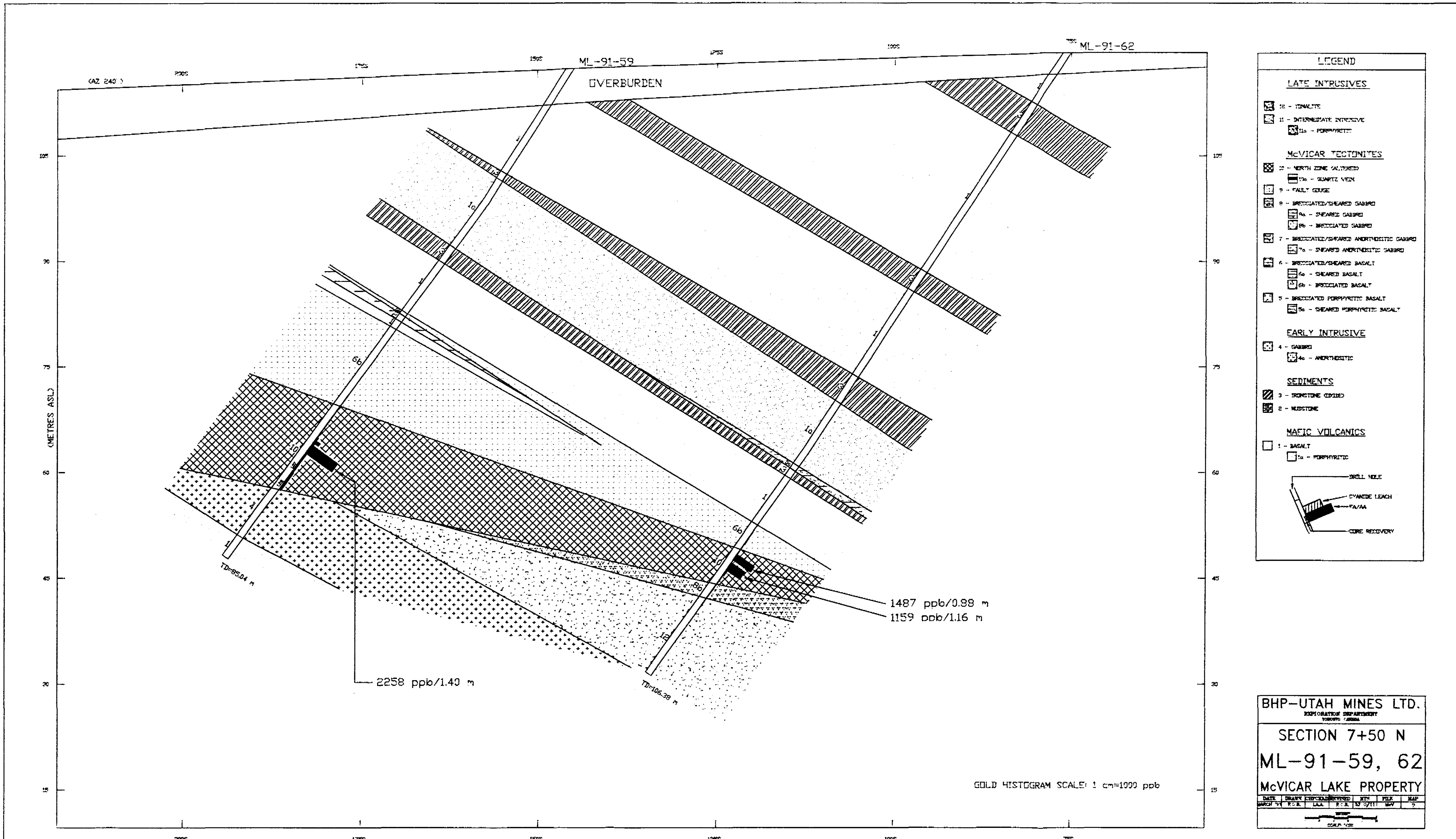

ML-91-59
ML-91-62
OVERBURDEN
(METRES ASL)
1487 ppb/0.88 m
1159 ppb/1.16 m
2258 ppb/1.40 m
GOLD HISTOGRAM SCALE: 1 cm=1000 ppb
LEGEND
LATE INTRUSIVES
12 - TONALITE
11 - INTERMEDIATE INTRUSIVE
11a - PORPHYRITIC
McVICAR TECTONITES
10 - NORTH ZONE (ALTERED)
10a - QUARTZ VEIN
9 - FAULT GOUGE
8 - BRECCIATED/SHEARED GABBRO
8a - SHEARED GABBRO
8b - BRECCIATED GABBRO
7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
7a - SHEARED ANORTHOSITIC GABBRO
6 - BRECCIATED/SHEARED BASALT
6a - SHEARED BASALT
6b - BRECCIATED BASALT
5 - BRECCIATED PORPHYRITIC BASALT
5a - SHEARED PORPHYRITIC BASALT
EARLY INTRUSIVE
4 - GABBRO
4a - ANORTHOSITIC
SEDIMENTS
3 - IRONSTONE (OXIDE)
2 - MUDSTONE
MAFIC VOLCANICS
1 - BASALT
1a - PORPHYRITIC
DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY
BHP-UTAH MINES LTD.
EXPLORATION DEPARTMENT
SECTION 7+50 N
ML-91-59, 62
McVICAR LAKE PROPERTY

Fig 3.8b

Seventeen intervals were selected for gold analysis. No economic values are reported, however, two intervals do report significant gold values in excess of 1000 ppb. The highest value reported (1487 ppb gold) is sample 3130 from 280.5'-283.4', a zone of sheared sericite rich basalt with trace disseminated pyrite. In addition sample 3132 from 285.2'-289.0' reports 1159 ppb gold from the same unit but with disseminated pyrite ranging to 2%.

3.9 Section 8+00N (ML-91-61)

One drill hole (ML-91-62) collared at L8+00N, 2+00W facing true south (azimuth 180°), dipping at -57°. This drill hole tested the western extension of the anomalous intersections achieved on Section 7+00N. A lithological summary is presented in Table 3.9a, graphical representations are found in Figure 3.9b and Section Map 9.

Table 3.9a: **LITHOLOGICAL SUMMARY - ML-91-61**

FOOTAGE	LITHOLOGY	
0.0 - 12.0	Overburden	
12.0 - 32.5	Basalt	
32.5 - 56.3	Porphyritic Basalt	
56.3 - 60.8	Basalt	
60.8 - 70.7	Ironstone	
70.7 - 85.3	Basalt	
85.3 - 105.0	Porphyritic Basalt	
105.0 - 125.3	Ironstone	
125.3 - 129.0	Basalt	
129.0 - 130.9	Ironstone	
130.9 - 137.5	Brecciated Basalt	
137.5 - 141.0	Sheared Basalt	
141.0 - 160.6	Brecciated/Sheared Basalt	
160.6 - 164.5	NF - Sheared Basalt	Tr-2% Py
164.5 - 165.5	NF - Cherty Ironstone	2% Py
165.5 - 170.1	NF - Brecciated Basalt	Tr-1% Py
170.1 - 174.0	NF - Sheared Basalt	
174.0 - 181.9	NF - Brecciated Basalt	Tr-1% Py
181.9 - 209.0	NF - Sheared Basalt	Tr Py
209.0 - 228.8	Gabbro	
228.8 - 279.0	Anorthositic Gabbro	
279.0	End of Hole	

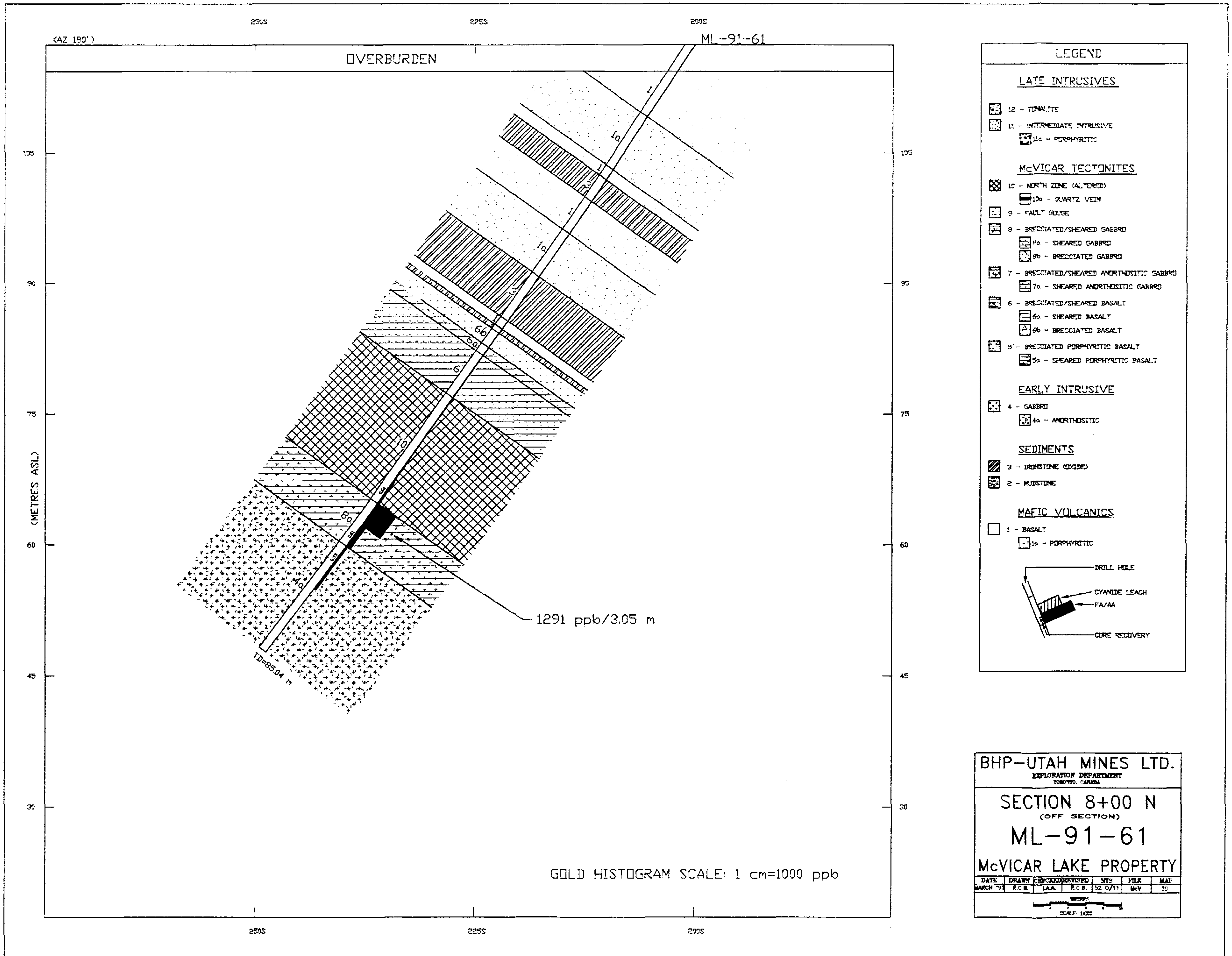

(AZ 180°)
250S
225S
200S
ML-91-61
OVERBURDEN
105
90
75
60
45
30
(METRES ASL)
1291 ppb/3.05 m
TD=85.04 m
GOLD HISTOGRAM SCALE: 1 cm=1000 ppb
LEGEND
LATE INTRUSIVES
12 - TONALITE
11 - INTERMEDIATE INTRUSIVE
11a - PORPHYRITIC
McVICAR TECTONITES
10 - NORTH ZONE (ALTERED)
10a - QUARTZ VEIN
9 - FAULT GOUGE
8 - BRECCIATED/SHEARED GABBRO
8a - SHEARED GABBRO
8b - BRECCIATED GABBRO
7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
7a - SHEARED ANORTHOSITIC GABBRO
6 - BRECCIATED/SHEARED BASALT
6a - SHEARED BASALT
6b - BRECCIATED BASALT
5 - BRECCIATED PORPHYRITIC BASALT
5a - SHEARED PORPHYRITIC BASALT
EARLY INTRUSIVE
4 - GABBRO
4a - ANORTHOSITIC
SEDIMENTS
3 - IRONSTONE (OXIDE)
2 - MUDSTONE
MAFIC VOLCANICS
1 - BASALT
1a - PORPHYRITIC
DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY
BHP-UTAH MINES LTD.
EXPLORATION DEPARTMENT
TORONTO, CANADA
SECTION 8+00 N
(OFF SECTION)
ML-91-61
McVICAR LAKE PROPERTY
DATE | DRAWN | CHECKED | REVISED | NTS | FILE | MAP
MARCH '91 | R.C.B. | L.A.A. | R.C.B. | 52 O/11 | McV | 10

Fig 3.9b

ML-91-61 intersected the target zone through the interval 160.6'-209.0'. This interval consists of sheared and brecciated basalt with minor ironstone. Core recovery was non-existent to very poor from 189.0'-239.0', one thirty foot interval recovered only 2.0' of core. Where core was recovered, basalts are intensely foliated with chloritic and sericitic alteration. Carbonate and minor patchy Fe-carbonate are strong to moderate both marginal to and within the target zone. Sulphides in the recovered portions of core are present as disseminations up to 1-2%.

Nineteen core intervals were selected for gold analysis. An additional four sludge samples were recovered from those intervals with very poor core recoveries. No economic values are reported, however, two sludge samples report significant gold assays. The highest value reported (1291 ppb gold) is sample 3101 from 209.0'-219.0', the base of a thirty foot interval with virtually no recovery. Visual examination of the sludge itself revealed fine pyritic blebs (1%) in a white sericite rich mud. In addition sample 3102 from 219.0'-229.0' reports 259 ppb gold in similar white mud.

RESULTS

Twelve drill holes tested an auriferous fault structure, the McVicar Lake Fault, which extends north from a known gold enriched dilation, colloquially named the Altered Zone (grid reference - BL0+00, L0+00). This dilation is directly attributable to a rheologic contrast encountered as the McVicar Fault obliquely intersected a gabbro-basalt contact about the grid reference. The previously unexplored areas to the north appear to host a broad ironstone unit(s) which may have caused a deflection of the McVicar Fault under the lake. This activity presents additional opportunities for dilation, again the result of rheologic contrast.

Collar elevations are approximations determined from published topographic maps (1:50,000, NTS 52 O/11). The generally flat ground conditions were utilized for calculations to target depth and for section plotting. Target attitude is, in part, determined from section constructions. Additional information is provided by attitude measurements obtain from oriented core samples. The oriented core measurements were acquired with the aid of a Core $Tech_{PATPEND}$ orientation system. Foliation measurements (S_1)

demonstrate a progressive refraction of the principle structure to the west, to trend approximately 340°. A correction has been applied to the apparent dip measurements to compensate for the oblique section intersections, thus true dips are reported for the balance of the report. Therefore, in the immediate vicinity of the North Flexure foliations (S_1) are oriented at 280°/40° (RHR).

Geologically the auriferous McVicar Fault trends along the basalt-gabbro contact. The hanging wall basalt hosts narrow intervals of ironstone, as flow "caps". The footwall gabbro is often modified with "anorthositic". The tectonized intervals within the North Flexure are intensely foliated, intensely altered equivalents of the basalt and/or gabbro. Enveloping the NF are hydro-breccia's which display a high degree of variability with respect to the deformation intensity. Characteristically, the enveloping breccia appears to thicken and thin in concert with the NF itself.

Three zones of alteration are recognized associates of the North Flexure (McVicar Lake Fault); propylitic, potassic, and argillic. Each is characterized by its own assemblage of minerals recognized in core specimens. The outer most zone, propylitic, is first recognized by the appearance of fine light green silica veinlets and chloritic fracture coatings. In addition, minor disseminated pyrite and a pervasive calcite alteration (increasing intensity to the Fault) are observed. Potassic alteration is encountered in close proximity to the fault, its lateral distribution is quite limited (<5m). This zone is characterized by the appearance of sericite, pyrite, carbonate as calcite and/or Fe-carbonate, apple green mica, and quartz. Gold mineralization is essentially restricted to this zone. Thirdly, there is a minor argillic alteration sporadically encountered in the footwall anorthositic gabbro. It is typified by completely kaloinized plagioclase. Geological sections with gold histograms have been plotted (1:200) and appended for reference (Section Maps 2-9).

All anomalous gold (>100 ppb) assays reported from the McVicar Lake drill program are tabulated in Table 4.1a (n=51), a complete report of all the analytical results has been included in Appendix II (n=253). This total (n) does not include the previously reported results from drill holes ML-87-21 and ML-89-50. These results are included here for comprehensiveness only.

Table 4.1a: **ANOMALOUS GOLD INTERVALS - McVICAR LAKE 1991**

H_N	SAMPLE	INTERVAL (M)	LITHOLOGY	AU	LEACH
21	1391	53.04 - 54.56	Bre MV	205.0	
21	1393	56.88 - 57.39	Black Chert	500.0	
21	1402	69.80 - 70.13	Sh MV	375.0	
21	1403	70.13 - 72.85	Sh MV	415.0	
50	3715	51.51 - 53.04	Sh MV	2600.0	
50	3716	53.04 - 54.56	Sh MV	560.0	
50	3717	54.56 - 56.08	Sh MV	540.0	
50	3719	57.61 - 58.83	Sh MV	260.0	
52	2912	72.32 - 72.90	Fault Gouge		250.0
52	2915	75.34 - 75.95	Fault Gouge		312.5
52	2918	79.00 - 82.05	Fault Gouge (PR)		375.0
52	2920	83.27 - 85.10	Fault Gouge (PR)		250.0
53	2945	84.92 - 85.31	Qtz Vn (5%)	44.0	187.5
53	2946	85.31 - 86.44	Sh MV (4%)	225.0	62.5
53	2948	88.00 - 89.00	Sh MV (3%)	37.0	187.5
53	2949	89.00 - 90.07	Sh MV (3%)	167.0	62.5
53	2957	109.06 -109.97	AGM-Qtz (2%)		156.3
54	2971	54.60 - 55.05	Bre Gb (1%)		187.5
54	2977	56.05 - 57.64	Sul Zn (7%)(PR)	1401.0	
54	2978	57.64 - 58.67	Sul Zn (20%)	5995.0	
54	2979	58.67 - 59.65	Qtz Vn (30%)(PR)	12920.0	
54	2980	59.65 - 61.42	Sh Int (5%)(PR)	375.0	
54	2982	61.42 - 61.72	Qtz Vn (20%)	5113.0	
54	2983	61.72 - 63.76	Sh Gb (4%)(PR)	101.0	
54	2974	69.80 - 72.85	Sludge	113.0	
55	2993	81.38 - 82.91	Bre MV		125.0
55	2998	88.03 - 88.97	Sh MV (1%)	153.0	438.0
55	2999	88.97 - 89.18	Qtz Vn (1%)	297.0	594.0
55	3000	89.18 - 89.86	AGM-Sh MV (1%)	288.0	344.0
55	3001	89.86 - 91.14	Sh Bre MV (2%)	255.0	219.0
55	3006	95.10 - 96.32	Sh Bre MV (1%)		125.0
55	3009	99.30 -100.19	Bre Sh An Gb		187.5

H_N	SAMPLE	INTERVAL (M)	LITHOLOGY	AU	LEACH
57	3034	67.18 - 68.61	Sul Zn (20%)	2411.0	
57	3035	68.61 - 69.80	Sh Int (3%)	1093.0	
58	3049	68.15 - 69.65	Sh Bre MV (2%)	677.0	
59	3068	64.22 - 64.62	Sul Zn-Qtz(7%)	426.0	
59	3069	64.62 - 65.04	Sh Gb (2%)	122.0	
59	3073	65.04 - 66.45	Sh Gb (4%)	2258.0	
59	3071	66.45 - 69.80	Sh Gb-Ser (2%)(PR)	100.0	
59	3072	69.80 - 72.85	Sh Gb (PR)	143.0	
61	3101	63.75 - 66.80	Sludge (0% PR)	1291.0	
61	3102	66.80 - 69.85	Sludge (0% PR)	259.0	
61	3104	72.90 - 75.95	Sludge (0% PR)	113.0	
62	3130	85.50 - 86.38	Sh MV	1487.0	
62	3132	86.93 - 88.09	Sh MV (2%)	1159.0	
63	3146	65.38 - 66.14	AGM-Qtz Vn(4%)	1325.0	
63	3148	66.90 - 67.97	Sh Mv (2%)	957.0	
63	3149	67.97 - 68.37	Sul Zn (15%)	11589.0	
63	3150	68.37 - 69.80	Sh MV (6%)	141.0	
				(n = 51)	

Abbreviations

AGM - apple green mica	Bre - brecciated
Qtz Vn - quartz vein	Sh - sheared
Sul Zn - sulphide rich zone	MV - basalt
(?%) - percentage pyrite	Gb - gabbro
(PR) - poor recovery	An - anorthosite
Ser - sericite	Int - intrusive

A number of samples were subjected to testing utilizing a "cyanide leach recovery" technique, designed to extract and report all gold contained within a sample. This technique can also provide insight into the accuracy of the standard fire assay analysis, used for the bulk of the analysis. These results are also reported in Table 4.1a. Both techniques employed during this program utilized a 30 gram aliquot.

The results of the comparative analysis indicate an overall increase in gold values for those intervals reporting <1000 ppb gold, however, the range fluctuates. This inconsistency is probably related to the process of sample splitting and an uneven distribution of auriferous sulphide within the sample.

Gold mineralization is dependent on the presence of pyrite and/or quartz veining, only minor observations of chalcopyrite and pyrrhotite are noted on the drill logs. Syn-genetic sulphides (chalcopyrite and pyrrhotite) are generally limited to the hanging wall gabbro intrusive. Drill holes without sulphide consistently report only trace gold despite the presence of both deformation and alteration.

Gold grains, observed in thin section, range from 1-15 microns and are positioned within or along pyrite boundaries. The presence of gold on the intra-pyrite grain boundaries, between two generations of pyrite, is in accordance with the observed textural position of tetrahedrite (Plates 4.1a, 4.1b). These observations are utilized for paragenetic sequencing. A complete report of these observations, including a paragenesis, is appended for reference (Appendix IV).

DISCUSSION

Previous drill programs, extending back to 1987, have tested the McVicar Lake Fault north from the contact with the Dobie Lake Batholith. Over its drill tested length the structure is anomalous with respect to gold. To-date the most significant features recognized are the two dilation points, the Altered Zone (1987) and the newly discovered North Flexure (1991).

At the AZ, auriferous hydrothermal quartz vein(s) are contained within a dilated plunging shoot whose development is the result of an oblique intersection with the rheologic basalt-gabbro contact. Syn-tectonic alteration about the McVicar Lake Fault, a response to caustic fluid movement along the same, is characterized by the formation of chlorite, sericite, apple green mica, pyrite,

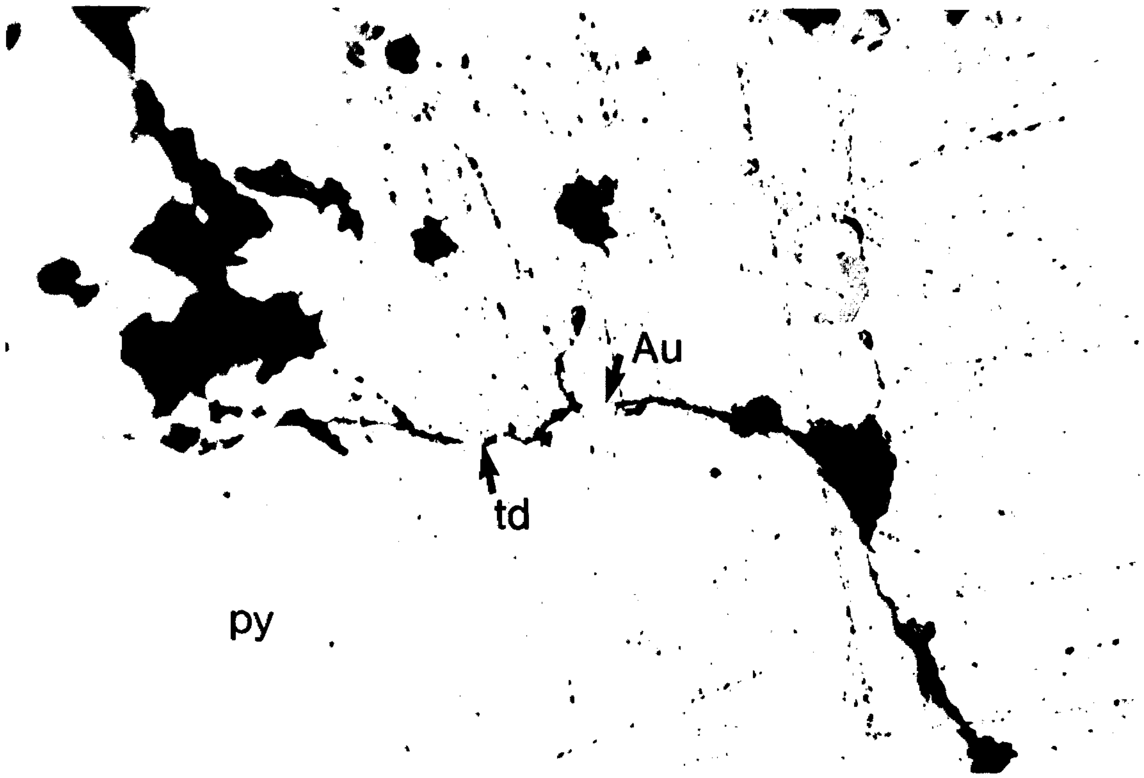


Plate [illegible] Gold (Au) and Tetrahedrite (td) within fractured Pyrite (py) from [illegible] (194'). Gold is 10 microns (374x, oil immersion, reflected light)

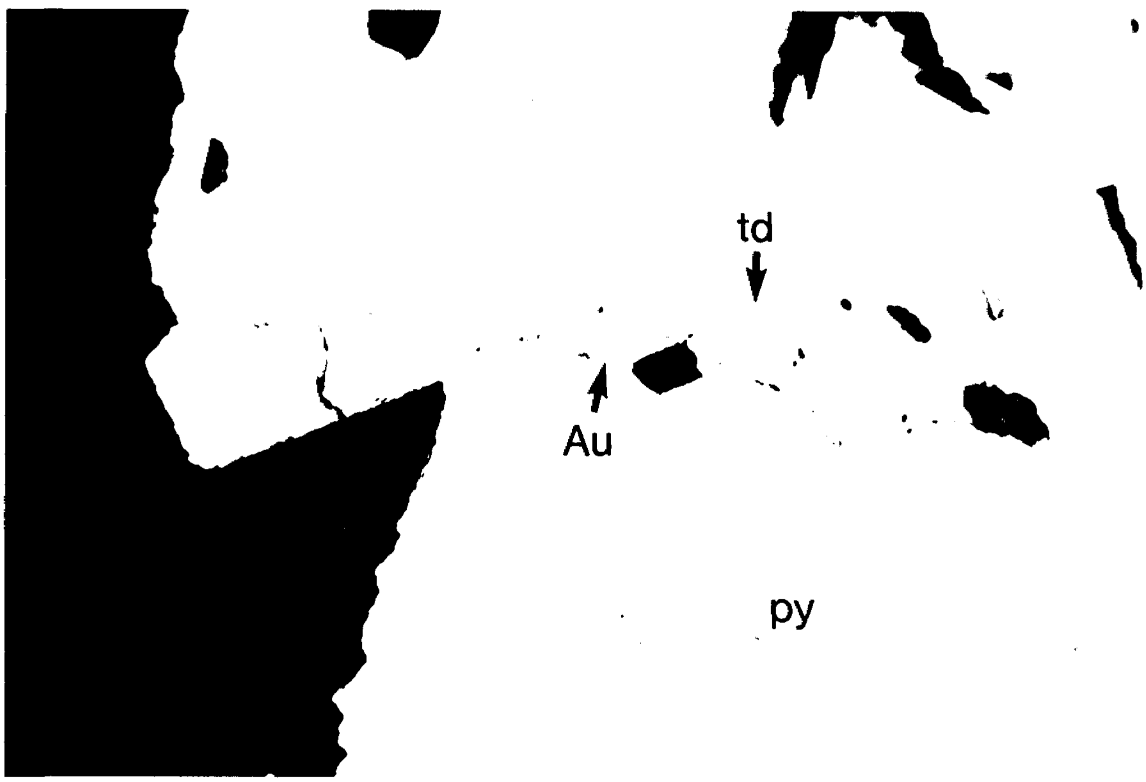


Plate 3.1b Gold (Au) with Tetrahedrite enclosed in pyrite. Gold is 10 and 2 microns. Drill hole [illegible] 54 (194'). (374x, oil immersion, reflected light)

C

and carbonate (calcite and Fe-carbonate) mineral species. Gold in this zone is ascribed to the presence of pyrite. Free gold, observed along quartz vein margins at the AZ, has not provided sufficient continuity to be of overall significance. This lack of pyrite, in essence, makes the AZ sub-economic.

The newly discovered North Flexure, has many features similar to the AZ; alteration mineral species, zone attitude (dip), and the presence of a dilation are all similar. Apple green mica appears to be limited to the intensely sheared intervals (<1′) and margins the dilation (enveloping?) and quartz veins. Sericite is ubiquitous but never reaches the degree of intensity observed at the AZ. Carbonates are limited to the brecciated margins also enveloping the dilation. However, over narrow intervals (up to 6.6′) pyrite content reaches 30% by volume. This <u>significant</u> increase in sulphide content is coincident with several economic assays including one interval of "mineable width/mineable grade" (0.239 oz/ton over 6.6′). The highest assay reported is 0.376 oz/ton over 3.2′(sample 2979) in ML-91-54 (Table 4.1a).

The dilation of the North Flexure is a manifestation of the refraction of the McVicar Lake Fault to the west. This refraction appears to be the result of the regional northwesterly compression responsible for the bulk of the regional deformation (*Osmani, I.A., 1989, 1989*). However, the trace of the MLF continues to be the basalt-gabbro contact. In the immediate vicinity of the NF two separate components of structure are suggested by the drilling. First, a change from brittle (section 2+00N and 4+00N) to ductile deformation is noted on the down dip extensions of those sections between 5+00N and 6+50N. A transition to ductile deformation is accompanied by alteration and mineralization, albeit weak. The limited information indicates that this component of the stress field trends 110°, plunging approximately 30-40° - as at the AZ. Speculation regarding similar geometry to the AZ lead to testing of this region in an effort to intersect down dip the anomalous interval in ML-89-50. This ductile zone now appears to be related to a small flexure in the fault plane best observed on the surface trace (Figure 4.2b).

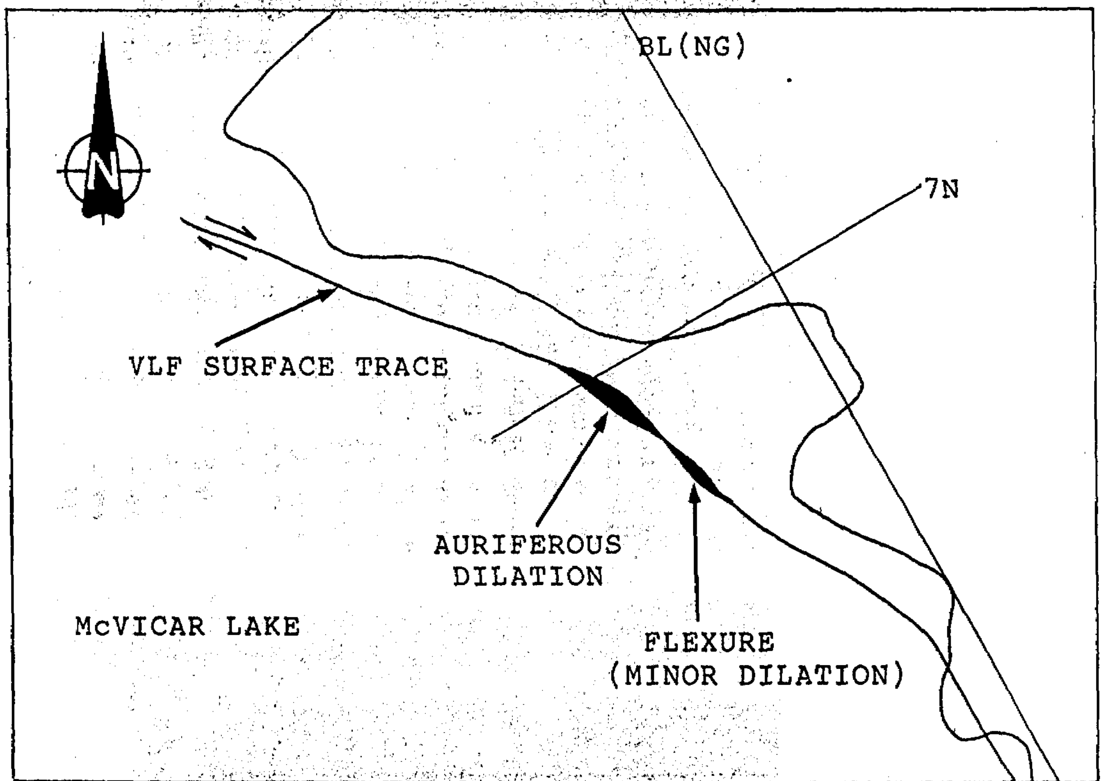


Figure 4.2b.

SURFACE PROJECTION

Additionally, a second auriferous dilation zone is indicated by the results of the drilling on sections 7+00N, 7+25N, 7+50N, and 8+00N. Deformation here is ductile although a brittle component is recognized by the weak to moderately foliated breccia fragments enveloping the mineralized portion of the NF. This dilation appears to plunge at 30-40° but trends approximately 350-010° as indicated by the intersections. The control of the mineralization is probably related to a plunge direction along the trend of the refraction hinge, again related to a flexure in the fault plane. This second flexure results in a change in the direction of the MLF to predominately west (VLF trace), out under McVicar Lake. Notably, all of the significant assays are reported from this north trending dilation. Furthermore, existence of two proximal dilations is believed to be unique in this area and while a conjugate relationship remains unproven, their geometry is strongly suggestive.

Previously, diamond drilling focused on the AZ and its plunge extensions. This most recent effort has afforded the opportunity to test the McVicar Lake Fault in an area with dilation potential, a favourable site of gold accumulation. The 1991 winter program successfully located a new auriferous (0.239 oz/ton over 6.6') dilation zone. Along with the high grade intersections, the most westerly collar (8+00N, 2+00W) reported significant gold values in sludge samples from intervals with no recovery. This drill hole appears to be proximal to the heavily mineralized NF, thus suggesting a broader zone of mineralization.

Finally, a gold deposit potential exists about the North Flexure, mineable width and mineable grade is very encouraging.

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APPENDIX II

REPORT OF ANALYSIS

APPENDIX II: GOLD GEOCHEMISTRY - McVICAR LAKE PROPERTY

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-87-21	1388	48.46	-	49.99	10.0	
ML-87-21	1389	49.99	-	51.51	2.5	
ML-87-21	1390	51.51	-	53.04	2.5	
ML-87-21	1391	53.04	-	54.56	205.0	
ML-87-21	1392	54.56	-	56.88	10.0	
ML-87-21	1393	56.88	-	57.39	500.0	
ML-87-21	1394	57.39	-	59.10	5.0	
ML-87-21	1395	59.10	-	60.66	5.0	
ML-87-21	1396	60.66	-	62.64	45.0	
ML-87-21	1397	62.64	-	63.70	15.0	
ML-87-21	1398	63.70	-	65.23	2.5	
ML-87-21	1399	65.23	-	66.75	2.5	
ML-87-21	1400	66.75	-	68.28	2.5	
ML-87-21	1401	68.28	-	69.80	5.0	
ML-87-21	1402	69.80	-	70.13	375.0	
ML-87-21	1403	70.13	-	72.85	415.0	
ML-87-21	1404	72.85	-	75.90	40.0	
ML-87-21	1405	75.90	-	78.94	2.5	
ML-89-50	3713	24.08	-	25.60	15.0	
ML-89-50	3714	45.42	-	46.94	65.0	
ML-89-50	3715	51.51	-	53.04	2600.0	
ML-89-50	3716	53.04	-	54.56	560.0	
ML-89-50	3717	54.56	-	56.08	540.0	
ML-89-50	3718	56.08	-	57.61	90.0	
ML-89-50	3719	57.61	-	58.83	260.0	
ML-89-50	3720	74.37	-	75.90	90.0	
ML-89-50	3721	85.04	-	86.56	25.0	
ML-89-50	3722	94.18	-	95.71	30.0	
ML-89-50	3723	97.23	-	98.76	45.0	
ML-89-50	3724	98.76	-	99.67	35.0	
ML-89-50	3725	99.67	-	01.19	2.5	
ML-89-50	3726	118.57	-	20.09	10.0	
ML-89-50	3727	124.66	-	26.19	2.5	
ML-89-50	3728	126.19	-	27.71	15.0	
ML-91-52	2901	10.37	-	11.90		62.5
ML-91-52	2902	36.78	-	38.31		62.5
ML-91-52	2903	44.99	-	46.36		62.5
ML-91-52	2904	48.65	-	50.17		62.5
ML-91-52	2905	62.43	-	63.14		62.5
ML-91-52	2929	63.14	-	64.11		62.5
ML-91-52	2906	64.11	-	65.64		62.5
ML-91-52	2907	65.64	-	67.10		62.5
ML-91-52	2908	67.10	-	68.17		62.5
ML-91-52	2909	68.17	-	69.54		62.5
ML-91-52	2910	69.54	-	71.07		62.5
ML-91-52	2911	71.07	-	72.32		62.5
ML-91-52	2912	72.32	-	72.90		250.0
ML-91-52	2913	72.90	-	73.81		62.5

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-91-52	2914	73.81	-	75.34		62.5
ML-91-52	2915	75.34	-	75.95		312.5
ML-91-52	2916	75.95	-	77.47		62.5
ML-91-52	2917	77.47	-	79.00		62.5
ML-91-52	2918	79.00	-	82.05		375.0
ML-91-52	2919	82.05	-	83.27		62.5
ML-91-52	2920	83.27	-	85.10		250.0
ML-91-52	2921	85.10	-	86.62		62.5
ML-91-52	2922	86.62	-	88.15		62.5
ML-91-52	2923	88.15	-	89.52		62.5
ML-91-52	2924	89.52	-	90.95		62.5
ML-91-52	2925	90.95	-	92.69		62.5
ML-91-52	2926	92.69	-	93.30		62.5
ML-91-52	2927	93.30	-	93.73		62.5
ML-91-52	2928	93.73	-	95.25		62.5
ML-91-53	2930	40.66	-	41.45		62.5
ML-91-53	2931	41.45	-	42.98		62.5
ML-91-53	2932	42.98	-	44.50		62.5
ML-91-53	2933	52.64	-	53.64		62.5
ML-91-53	2934	53.64	-	54.71		62.5
ML-91-53	2935	54.71	-	56.24		62.5
ML-91-53	2936	59.65	-	61.17		62.5
ML-91-53	2937	63.83	-	65.35		62.5
ML-91-53	2938	65.35	-	66.75		62.5
ML-91-53	2939	66.75	-	68.28		62.5
ML-91-53	2940	71.32	-	72.85		62.5
ML-91-53	2941	75.90	-	77.42		62.5
ML-91-53	2942	80.47	-	81.99		62.5
ML-91-53	2943	81.99	-	83.52		62.5
ML-91-53	2944	83.52	-	84.92		62.5
ML-91-53	2945	84.92	-	85.31	44.0	187.5
ML-91-53	2946	85.31	-	86.44	225.0	62.5
ML-91-53	2947	86.44	-	88.00	10.0	62.5
ML-91-53	2948	88.00	-	89.00	37.0	187.5
ML-91-53	2949	89.00	-	90.07	167.0	62.5
ML-91-53	2950	90.07	-	91.01	93.0	62.5
ML-91-53	2951	91.01	-	92.54		62.5
ML-91-53	2952	92.54	-	94.12		62.5
ML-91-53	2953	100.92	-	02.44		62.5
ML-91-53	2954	104.49	-	06.01		62.5
ML-91-53	2955	106.01	-	07.53		62.5
ML-91-53	2956	107.53	-	09.06		62.5
ML-91-53	2957	109.06	-	09.97		156.3
ML-91-53	2958	109.97	-	11.07		62.5
ML-91-53	2959	111.07	-	12.47		62.5
ML-91-53	2960	155.33	-	55.87		62.5
ML-91-53	2961	157.28	-	58.80		62.5
ML-91-53	2962	158.80	-	59.50		62.5
ML-91-53	2963	159.50	-	61.03		62.5
ML-91-53	2964	185.01	-	86.54		62.5

H_ID	SAMPLE	A_FROM	A_TO	AU	LEACH
ML-91-54	2965	14.64 -	15.95		62.5
ML-91-54	2966	46.97 -	48.50		62.5
ML-91-54	2967	48.50 -	50.02		62.5
ML-91-54	2968	50.02 -	51.55		62.5
ML-91-54	2969	51.55 -	53.07		62.5
ML-91-54	2970	53.07 -	54.60		62.5
ML-91-54	2971	54.60 -	55.05		187.5
ML-91-54	2976	55.05 -	56.05	18.0	
ML-91-54	2977	56.05 -	57.64	1401.0	
ML-91-54	2978	57.64 -	58.67	5995.0	
ML-91-54	2979	58.67 -	59.65	12920.0	
ML-91-54	2980	59.65 -	61.42	375.0	
ML-91-54	2982	61.42 -	61.72	5113.0	
ML-91-54	2983	61.72 -	63.76	101.0	
ML-91-54	2972	63.70 -	66.75	95.0	
ML-91-54	2984	63.76 -	68.28	27.0	
ML-91-54	2973	66.75 -	69.80	73.0	
ML-91-54	2985	68.28 -	69.80		62.5
ML-91-54	2974	69.80 -	72.85	113.0	
ML-91-54	2986	69.80 -	70.56		62.5
ML-91-54	2987	70.56 -	72.09		62.5
ML-91-54	2975	72.85 -	75.90	59.0	
ML-91-55	2988	36.61 -	37.83		62.5
ML-91-55	2989	37.83 -	39.08		62.5
ML-91-55	2990	76.90 -	78.43		62.5
ML-91-55	2991	78.43 -	79.86		62.5
ML-91-55	2992	79.86 -	81.38		62.5
ML-91-55	2993	81.38 -	82.91		125.0
ML-91-55	2994	82.91 -	84.12		62.5
ML-91-55	2995	84.12 -	85.47		62.5
ML-91-55	2996	85.47 -	86.81		62.5
ML-91-55	2997	86.81 -	88.03		62.5
ML-91-55	2998	88.03 -	88.97	153.0	438.0
ML-91-55	2999	88.97 -	89.18	297.0	594.0
ML-91-55	3000	89.18 -	89.86	288.0	344.0
ML-91-55	3001	89.86 -	91.14	255.0	219.0
ML-91-55	3002	91.14 -	92.05		62.5
ML-91-55	3003	92.05 -	92.96		62.5
ML-91-55	3004	92.96 -	94.31		62.5
ML-91-55	3005	94.31 -	95.10		62.5
ML-91-55	3006	95.10 -	96.32		125.0
ML-91-55	3007	96.32 -	97.84		62.5
ML-91-55	3008	97.84 -	99.30		62.5
ML-91-55	3009	99.30 -	00.19		187.5
ML-91-55	3010	100.19 -	01.71		62.5

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-91-56	3011	80.47	-	81.99		62.5
ML-91-56	3012	81.99	-	83.36		62.5
ML-91-56	3013	83.36	-	84.61		62.5
ML-91-56	3014	84.61	-	85.83		62.5
ML-91-56	3015	85.83	-	87.39		62.5
ML-91-56	3016	87.39	-	88.91		62.5
ML-91-56	3017	88.91	-	90.43		62.5
ML-91-56	3018	90.43	-	91.65		62.5
ML-91-56	3019	91.65	-	92.72		62.5
ML-91-56	3020	92.72	-	94.03		62.5
ML-91-56	3021	94.03	-	96.93		62.5
ML-91-56	3022	96.93	-	98.60		62.5
ML-91-56	3023	98.60	-	00.28	1.5	
ML-91-56	3024	100.28	-	01.65		62.5
ML-91-57	3025	22.11	-	24.10	9.0	
ML-91-57	3026	24.10	-	27.15	1.5	
ML-91-57	3027	27.15	-	28.67	3.0	
ML-91-57	3028	59.78	-	61.31	4.0	
ML-91-57	3029	61.31	-	62.83	11.0	
ML-91-57	3030	62.83	-	63.78	11.0	
ML-91-57	3031	63.78	-	64.84	6.0	
ML-91-57	3032	64.84	-	65.84	10.0	
ML-91-57	3033	65.84	-	67.18	27.0	
ML-91-57	3034	67.18	-	68.61	2411.0	
ML-91-57	3035	68.61	-	69.80	1093.0	
ML-91-57	3036	69.80	-	71.02	83.0	
ML-91-57	3037	71.02	-	72.21	60.0	
ML-91-57	3038	72.21	-	72.85	20.0	
ML-91-57	3039	72.85	-	75.90	79.0	
ML-91-57	3040	75.90	-	78.27	13.0	
ML-91-57	3041	78.27	-	79.80	5.0	
ML-91-58	3042	57.00	-	58.52	5.0	
ML-91-58	3043	58.52	-	59.44	7.0	
ML-91-58	3055	59.44	-	60.66	4.0	
ML-91-58	3044	60.66	-	62.18	6.0	
ML-91-58	3045	62.18	-	63.55	11.0	
ML-91-58	3046	63.55	-	64.77	5.0	
ML-91-58	3047	64.77	-	67.51	47.0	
ML-91-58	3048	67.51	-	68.15	7.0	
ML-91-58	3049	68.15	-	69.65	677.0	
ML-91-58	3050	69.65	-	70.71	8.0	
ML-91-58	3051	70.71	-	71.93	4.0	
ML-91-58	3052	71.93	-	72.60	16.0	
ML-91-58	3053	72.60	-	74.16	14.0	
ML-91-58	3054	74.16	-	75.68	5.0	
ML-91-59	3056	17.77	-	18.96	4.0	
ML-91-59	3057	30.94	-	32.31	4.0	

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-91-59	3058	32.31	-	33.25	4.0	
ML-91-59	3059	56.08	-	57.61	4.0	
ML-91-59	3060	57.61	-	58.16	5.0	
ML-91-59	3061	58.16	-	59.22	4.0	
ML-91-59	3062	59.22	-	60.14	6.0	
ML-91-59	3063	60.14	-	60.72	12.0	
ML-91-59	3064	60.72	-	61.30	17.0	
ML-91-59	3065	61.30	-	62.21	15.0	
ML-91-59	3066	62.21	-	63.70	15.0	
ML-91-59	3067	63.70	-	64.22	98.0	
ML-91-59	3068	64.22	-	64.62	426.0	
ML-91-59	3069	64.62	-	65.04	122.0	
ML-91-59	3073	65.04	-	66.45	2258.0	
ML-91-59	3071	66.45	-	69.80	100.0	
ML-91-59	3072	69.80	-	72.85	143.0	
ML-91-60	3074	2.74	-	3.81	10.0	
ML-91-60	3075	36.27	-	37.80	3.0	
ML-91-60	3076	37.80	-	39.32	4.0	
ML-91-60	3077	39.32	-	40.84	16.0	
ML-91-60	3078	68.28	-	69.80	5.0	
ML-91-60	3079	69.80	-	71.02	6.0	
ML-91-60	3080	71.02	-	71.93	4.0	
ML-91-60	3081	71.93	-	73.06	3.0	
ML-91-60	3082	73.06	-	74.86	5.0	
ML-91-60	3083	74.86	-	75.77	6.0	
ML-91-60	3084	75.77	-	76.87	44.0	
ML-91-60	3085	76.87	-	77.97	48.0	
ML-91-60	3086	77.97	-	79.40	28.0	
ML-91-60	3087	79.40	-	80.47	45.0	
ML-91-60	3088	80.47	-	81.99	29.0	
ML-91-60	3089	81.99	-	83.52	3.0	
ML-91-60	3090	83.52	-	85.04	17.0	
ML-91-60	3091	85.04	-	86.56	28.0	
ML-91-60	3092	86.56	-	87.78	38.0	
ML-91-60	3093	87.78	-	89.00	5.0	
ML-91-60	3094	92.81	-	94.18	7.0	
ML-91-60	3095	94.18	-	95.71	6.0	
ML-91-60	3096	95.71	-	97.23	17.0	
ML-91-60	3097	97.23	-	98.05	7.0	
ML-91-61	3105	34.65	-	35.32	8.0	
ML-91-61	3106	36.08	-	37.24	9.0	
ML-91-61	3107	39.35	-	39.92	6.0	
ML-91-61	3108	41.94	-	43.01	7.0	
ML-91-61	3109	43.01	-	44.53	10.0	
ML-91-61	3110	44.53	-	46.06	5.0	
ML-91-61	3111	46.06	-	47.58	13.0	
ML-91-61	3112	47.58	-	48.98	6.0	
ML-91-61	3113	48.98	-	50.17	8.0	
ML-91-61	3114	50.17	-	50.48	43.0	

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-91-61	3115	50.48	-	51.91	14.0	
ML-91-61	3116	51.91	-	53.07	6.0	
ML-91-61	3117	53.07	-	54.60	8.0	
ML-91-61	3118	54.60	-	55.48	9.0	
ML-91-61	3119	55.48	-	57.00	10.0	
ML-91-61	3120	57.00	-	57.65	7.0	
ML-91-61	3121	57.65	-	66.80	10.0	
ML-91-61	3099	57.65	-	60.70	48.0	
ML-91-61	3100	60.70	-	63.75	94.0	
ML-91-61	3101	63.75	-	66.80	1291.0	
ML-91-61	3102	66.80	-	69.85	259.0	
ML-91-61	3122	66.80	-	69.78	49.0	
ML-91-61	3123	69.78	-	72.90	8.0	
ML-91-61	3103	69.85	-	72.90	91.0	
ML-91-61	3104	72.90	-	75.95	113.0	
ML-91-62	3124	37.40	-	38.86	18.0	
ML-91-62	3125	38.86	-	40.60	6.0	
ML-91-62	3126	81.23	-	82.75	5.0	
ML-91-62	3127	82.75	-	83.67	49.0	
ML-91-62	3128	83.67	-	84.59	12.0	
ML-91-62	3129	84.59	-	85.50	10.0	
ML-91-62	3130	85.50	-	86.38	1487.0	
ML-91-62	3131	86.38	-	86.93	27.0	
ML-91-62	3132	86.93	-	88.09	1159.0	
ML-91-62	3133	88.09	-	89.00	87.0	
ML-91-62	3134	89.00	-	90.53	31.0	
ML-91-62	3135	90.53	-	92.05	21.0	
ML-91-62	3136	92.05	-	93.02	10.0	
ML-91-62	3137	93.02	-	94.18	14.0	
ML-91-63	3138	35.05	-	36.88	7.0	
ML-91-63	3139	39.32	-	40.23	8.0	
ML-91-63	3140	57.61	-	59.13	10.0	
ML-91-63	3141	59.13	-	60.66	9.0	
ML-91-63	3142	60.66	-	62.18	10.0	
ML-91-63	3143	62.18	-	63.70	7.0	
ML-91-63	3144	63.70	-	64.53	9.0	
ML-91-63	3145	64.53	-	65.38	10.0	
ML-91-63	3146	65.38	-	66.14	1325.0	
ML-91-63	3147	66.14	-	66.90	24.0	
ML-91-63	3148	66.90	-	67.97	957.0	
ML-91-63	3149	67.97	-	68.37	11589.0	
ML-91-63	3150	68.37	-	69.80	141.0	
ML-91-63	3151	69.80	-	72.85	37.0	
ML-91-63	3152	72.85	-	75.89	10.0	
ML-91-63	3153	75.89	-	78.94	16.0	
ML-91-63	3154	78.94	-	80.47	12.0	

NOTE: FA/AA DETECTION LEVEL - >3.0 PPB
CY LEACH DETECTION LEVEL - >125.0 PPB

APPENDIX III
LITHOLOGICAL DESCRIPTIONS

from

"REPORT ON DIAMOND DRILLING WORK"
McVICAR LAKE PROPERTY

by

R.N. THOMAS

FEBRUARY, 1988

(edited by R.G. Bonner, February 1991)

2.2.2 Volcanic Rocks

Basalt and porphyritic basalt underlie the northern part of the grid area and comprise the volcanic rocks observed in the vicinity of the AZ. Basalt is typically dark to light grey - green in colour. It is fine to medium grained, aphyric to feldspar phyric, massive to weakly foliated. There is usually some degree of chlorite, carbonate and/or silica alteration even in areas well removed from the intense alteration and mineralization which characterizes the AZ.

DDH ML.21 situated in the northern part of the new grid (NG) area intersected feldspar porphyry (basalt porphyry) comprising 20% - 30% feldspar phenocrysts (1-2mm; up to 5mm) in a fine grained mafic rich matrix.

All volcanic rocks contain trace to 1% sulphides as fine grained disseminations and fracture coatings, of pyrite (py) although pyrrhotite (po) and trace chalcopyrite (cp) are common. Magnetite as finely disseminated crystals is also a common constituent and is present in concentrations ranging up to 5%.

2.2.3 Sedimentary Rocks

Very few intervals of sedimentary rocks were observed in drill holes. DDH ML.21 intersected a short interval of black chert comprising a weakly magnetic, finely laminated rock within fault gouge. Minor intersections of (siliceous) volcanic mudstone comprising a very fine grained, dark green grey, foliated and fractured rock between an interval of mylonite and brecciated gabbro. In this regard the latter rock's sedimentary character is questionable, however, intervals of banded iron formation are found as xenoliths within gabbro well removed from the margins of the gabbro intrusive.

2.2.4 Early Intrusive Rocks

The gabbroic intrusive underlies the southern part of the grid area. It is mineralogically and texturally variable and ranges from a gabbro to anorthosite in composition. There is much evidence of extensive deuteric alteration with some intervals being completely replaced by silica. Massive magmatic sulphides (po >py >>cp) are common near the contact with the volcanic and the contact would appear to be a broad, east trending diffuse zone (100's metres) of intrusion of gabbro into volcanics and incorporation of dekametre to decimetre (dm) scale volcanic xenoliths within gabbro.

Gabbro senso lato is generally melanocractic ranging from light grey green to dark green to black in colour. It is usually medium grained although both fine and coarse grained varieties are not uncommon. It is generally massive to weakly foliated. Primary magmatic layering is rarely observed where metre (m)-scale feldspar rich (60%) alternate with mafic rich (90%) intervals. Sulphide content ranges from minor (trace - 1%) disseminated py >po to magmatic sulphide segregations as disseminations, veinlets and massive accumulations comprising short (dm scale) intervals of up to 50% sulphides (po >py >>cp). Magnetite content ranges from nil to 5%, to over 50% in some sections. The latter concentration levels usually comprise centimetre (cm) to dm scale bands of magnetite over relatively short (m scale) intervals. They are considered to be a primary magmatic feature.

Anorthositic gabbro is a spectacular looking rock comprising 70%-90% white coarse grained (up to 1 cm) spheroidal feldspar phenocrysts in a fine grained mafic matrix. The feldspar phenocrysts are usually completely replaced by silica and the rock is, therefore, almost completely white in colour and very hard. This type of alteration is considered to be deuteric and not related to silica alteration within or associated with the AZ.

Other observed alteration phenomena observed in gabbro away from the AZ include widespread weak millimetre (mm) to cm scale quartz - carbonate (chlorite) veining, patchy silica replacement associated with quartz veining and less common m-scale replacement zones. The latter are again considered to be of deuteric origin, whereas, the former are probably within the AZ's broad alteration envelope.

2.2.5 Tectonites

The altered zone (AZ) is a northwest trending zone of intense shearing, alteration and mineralization which constituted the target of interest throughout the 1986 and 1987 drill programs. Enveloping the AZ are intervals of brecciation within the various lithogies which are transected by the two structures. The breccia is clearly structural in origin and is the least deformed end member of this group of rocks. It comprises cm scale rock fragments of the host lithology within a carbonate rich matrix. In general the breccia is fragment supported and grades from intensely foliated and crenulated rock which has been subsequently fragmented and rotated adjacent to the AZ to weakly veined rock at the outer margins of the breccia envelope. Although the outer contact of brecciated rock with non-brecciated rock is reasonably sharp there is usually some minor shearing or brecciation near or away from the margins of the breccia envelope.

The Altered Zone which is the principal zone of interest is an extremely complex zone of deformation and intense alteration which is comprised of a number of different lithological elements. On drill sections, it is plotted as one unit, however, reference to the appropriate drill log will show that it is comprised of a number of discrete lithological elements. In 1986, four lithological elements were recognized. They comprise zones of intensely sheared mafic volcanic, abundant green mica, intermediate intrusive and massive to semi-massive quartz. Additional drilling in 1987 south of the gabbro-volcanic contact intersected all four zones (or their gabbroic equivalents) as well as several intervals of quartz-carbonate-sericite schist. The five lithological elements are discussed below.

(i) Sheared (and/or brecciated) basalt/gabbro:

These rocks are characterized by a well developed (intense) foliation and in many instances a recognizable fragmental texture. In some instances fragments may be foliated, crenulated and individually rotated with respect to the principal foliation. The mineralogy of the mm-cm scale fragments ranges from recognizable fragments of protolith to intensely altered and deformed rock. Fragments may comprise up to 30% of the rock in a fine grained quartz-carbonate-chlorite-sericite matrix. Occasional wisps and rare dm scale intervals of apple green mica are also observed. Quartz veins as foliation parallel and foliation oblique mm-cm scale veinlets are common. Occasional cm scale quartz boudins and dm scale quartz veins are observed in some intervals. These rocks usually contain some pyrite, overall concentrations are probably in the order of 1-2% with the bulk of the sulphides associated with quartz and green mica.

(ii) Quartz-Carbonate-Sericite Schist:

This lithology grades into intervals of apple green mica and may in itself contain appreciable amounts of apple green mica. It is considered to be a more progressively altered and deformed variant type of the sheared gabbro or volcanic described above. It is intensely foliated comprising 40-60% mm scale lenticules of quartz-carbonate in a matrix of foliated sericite (+/- green mica). Quartz boudins (dm scale) and foliation parallel cm scale quartz veins and boudins are common. This unit can contain up to 8% finely disseminated pyrite.

(iii)Apple Green Mica Schist:

This is considered to be the end member in the progressive deformation and alteration of the host lithology. In the volcanics the green micas are an intense apple green colour whereas in gabbro intervals of green mica can be more of an emerald green colour. It is largely comprised of green mica although varying amounts of white to yellowish micas, cm scale quartz veins and boudins and weak pervasive carbonate alteration and rare patches of Fe-carbonate alteration give it a variegated appearance. Sulphide content in the interval is typically 3-5% finely disseminated pyrite. Minor disseminated magnetite is noted in DDH ML.34. This rock type is confined to the interior regions of the AZ and is usually in contact with intervals of massive quartz.

(iv) Quartz:

The bulk of the quartz is confined to the central or near-central regions of the AZ. Intervals of quartz can range up to several metres in thickness. Contacts are for the most part foliation parallel, particularly with dm-m scale intervals. Outcrop evidence and small scale structures in drill core indicate that the bulk of the quartz exists as cm-m scale boudins with one of the extension directions in the plane of the AZ parallel or nearly so to its strike.

Quartz can contain up to 90% lithic fragments. These comprise cm-dm scale fragments of the various other tectonites (excluding intermediate intrusive) within the AZ. In general the composition of lithic fragments in any one interval is homogenous. Pyrite mineralization which can range up to 3% is largely as fine grained disseminations within the lithic fragments, particularly fragments of apple green mica schist and sericite carbonate schist, and at fragment margins. Pyrite also occurs within the quartz at contact margins and within the interior as sparse disseminations.

(v) (Altered) Intermediate Intrusive:

This lithology is the most enigmatic of the lithological elements which comprise the AZ. During the 1986 drill program this rock was initially identified as bleached or metasomatized volcanic. As drilling progressed through 1987, it became apparent that the rock has in some instances recognizable intrusive contacts with the other rock types in the AZ.

The rock is aphanitic to fine grained, light tan to buff in colour, massive to weakly foliated with 2-5% fine grained oriented pyrite. In DDH ML.27 it contains inclusions of foliated gabbro. It is usually weakly altered (sericite, carbonate, rare Fe-carbonate) with weak quartz veining (cm scale) associated with weak pervasive carbonate alteration.

2.2.6 Late Intrusive Rocks

A variety of intermediate to felsic intrusive rocks are observed in a number of holes. They are for the most part massive or only weakly foliated. They display sharp intrusive contacts and in some instances aphanitic chill margins.

Tonalite is perhaps the most common of the late intrusive rocks. It is invariably leucocratic and is usually a light yellow grey colour. It is massive, fine grained rocks with a hypidiomorphic-granular texture. It may in some instances be weakly foliated. Quartz content ranges up to 30%, mafics comprise up to 15% amphiboles which are in some instances altered to chlorite. Other alteration is limited to weak fracture controlled carbonate alteration. Pyrite is usually present in amounts of trace to 1% and less commonly 2-3%.

Intermediate intrusive rocks outside of the AZ are in general different that the intermediate intrusive observed in the altered zone. The inadvertent use of the same field term for two different rock types is unfortunate, however, the term is appropriate and the rock is not that common. These rocks, which occur over intervals of 1-2m, are dark green-grey in colour, massive, aphanitic to fine grained and weakly porphyritic. Quartz-carbonate alteration is usually weak and fracture controlled although replacement of feldspar phenocrysts by carbonate is common. Trace pyrite mineralization is confined to fracture surfaces.

Rare intervals of intermediate-felsic intrusive and one interval of felsite dyke are probably variant types of the intermediate intrusive just described. They are dark toffee to dark grey in colour, aphanitic to very fine grained and usually show some degree of conchoidal fracture. Weak fracture controlled carbonate alteration and minor (up to 1%) pyrite on fracture surfaces is common.

APPENDIX IV

ONE THIN SECTION

McVICAR LAKE PROJECT, ONT.

by

Dr. P. Fischer, Ph.D.
March, 1991

McVICAR LAKE NORTH ZONE

THIN SECTION ANALYSIS

SAMPLE # 91-54 -194'

CLASSIFICATION: Shear zone made up of sericite, quartz, carbonate, pyrite. Pyrite encloses traces of gold.

TRANSMITTED LIGHT

MINERALOGY

Major	Sericite 50%, quartz 20-25%
Minor	Carbonate 10%, opaque 10-15%
Accessory	Chlorite 1-3%, leucoxene.

TEXTURE

General: Strong, parallel shear fabric, mm-scale, parallel banding expressed by bands and eyes of quartz-sericite-carbonate, quartz-opaque in a predominant matrix of sericite. Abundant textural signs of strong translatory shear movement. Opaques occur mostly as large, oriented patches that suggest cataclasis, multi-phase growth and recrystallization.

Detailed Description

Grain Size: Matrix 30-100 microns
Clasts 0.1-1.0 mm

Sericite Matrix: Sericite matrix makes up 1/2 of the rock and forms the ground-mass. It hosts lenses, bands and flames of quartz-sericite-carbonate and quartz-opaque material.

Microfabric: Strong parallel orientation of sericite. Sericite flakes are almost in optical continuity. Sericite encloses scattered, small lensoid grains of quartz. Sericite shows flow structures around quartz grains. Stringers of extremely fine grained, 'smeared-out' leucoxene. Rare, fine grained carbonate.

Quartz Clasts: Size 0.1-1 mm, lensoid shape, oriented, scattered grains

Internal Structure:	a) Half of the grains show little strain: Lack of undulatory extinction, optically continuous. b) Half of the grains are recrystallized to a very fine mosaic (30 microns). Scattered very fine opaque grains (30-50 microns).
Carbonate-Quartz Bands	1-5mm thick, forming bands and lenses. Made up of 50% quartz and 50% carbonate and opaques, both very fine grained. Grain size of groundmass 30-100 microns. Texture fairly massive, weakly oriented mosaic of quartz and carbonate. Minor large (1mm) quartz grains showing incipient recrystallization and signs of rotation and quartz pressure shadows. Scattered sickle-shaped, bent, strongly strained quartz grains adjacent to opaque grains indicate continued deformation (rotation) during opaque crystallization. Opaque grains occur as scattered, anhedral grains. They appear to be cataclastic, recrystallized.
Quartz-Opaque Lenses	Make up 10-20% of the rock and are scattered within the sericitic groundmass.
Size	0.1-2.0 mm
Mineralogy	Quartz-opaque (pyrite), minor chlorite, carbonate, sericite.
Texture	Anhedral opaques are surrounded by oriented, blady, strongly strained quartz grains indicating directional crystal growth in pressure shadows. Bending and rotation of oriented quartz blades is common. The shape of opaques is irregular, anhedral, probably indicating cataclasis and recrystallization. Size of opaques is 0.1-2 mm.
Comment	A sheared rock made up of sericite, quartz, carbonate and opaque minerals. There are no unsheared, textural relicts of the previous hostrock. The sericite matrix probably functioned as a ductile element during the shearing. Intense, continued deformation is indicated by quartz which occurs as bent, rotated, blady arrangements in pressure shadows of opaques and by

strained, larger relict grains. Opaques seem to have undergone cataclasis and recrystallization.

REFLECTED LIGHT

MINERALOGY	Estimated abundance of opaques 10-15 modal % = 100%
Major	Pyrite 95-97%
Minor	Ti-oxide 1-2%
Accessory	Tetrahedrite trace - 1%, gold trace

TEXTURE

General

Large, anhedral pyrite grains are scattered in the gangue and show a distinct orientation. Ti-oxides form thin stringers of very fine grains which are parallel to the shear fabric. Trace minerals are enclosed in pyrite.

Detailed Description

Pyrite

Size <0.1-2 mm, shape anhedral, poikilitic, in part cataclastic, wispy. Pyrite is rarely euhedral (small grains).

Orientation

Strongly oriented parallel to shear fabric. Pyrite commonly encloses patches of gangue material, is poikiloblastic. Some grains appear to have formed from a cluster of small, cataclastic grains that recrystallized and grow together.

Tetrahedrite

Forms common traces, occurs only as small blebs (10-15 microns) enclosed in pyrite. These blebs and lensoid grains commonly occur as stringers along microfractures within pyrite. Some tetrahedrite grains are closely associated with small gold grains.

Gold

About 10 gold grains were discovered by a systematic scanning (using a micrometer stage) of the section with a low power lens. A high power oil lens was used for documentation. All gold grains are enclosed within pyrite.

The size of grains ranges mostly between 5 and 15 microns, a few extremely small gold blebs were seen (<1 - 3 microns). The majority of the grains are associated with microfractures in pyrite, possibly with grain boundaries between older (generation I) and younger (generation II) pyrite.

Some gold grains are associated with grains of tetrahedrite within pyrite.

A minority of gold grains occur as round, isolated blebs in pyrite without association with fractures in pyrite. One gold grain was observed adhering to the outside of a pyrite grain, at the contact to gangue.

COMMENT

About 10 gold grains were seen enclosed with pyrite. Most are associated with microfracture or intra-pyrite grain boundaries. Tetrahedrite appears to occupy the same textural position and seems to be associated with gold.

Interpreted Paragenesis:

OLD → YOUNG

Shearing

pyrite I

cataclasis

tetrahedrite + gold

pyrite II

APPENDIX I

DIAMOND DRILL LOGS (ML-91-52...ML-91-63)

APPENDIX II

REPORT OF ANALYSIS

APPENDIX II: GOLD GEOCHEMISTRY - McVICAR LAKE PROPERTY

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-87-21	1388	48.46	-	49.99	10.0	
ML-87-21	1389	49.99	-	51.51	2.5	
ML-87-21	1390	51.51	-	53.04	2.5	
ML-87-21	1391	53.04	-	54.56	205.0	
ML-87-21	1392	54.56	-	56.88	10.0	
ML-87-21	1393	56.88	-	57.39	500.0	
ML-87-21	1394	57.39	-	59.10	5.0	
ML-87-21	1395	59.10	-	60.66	5.0	
ML-87-21	1396	60.66	-	62.64	45.0	
ML-87-21	1397	62.64	-	63.70	15.0	
ML-87-21	1398	63.70	-	65.23	2.5	
ML-87-21	1399	65.23	-	66.75	2.5	
ML-87-21	1400	66.75	-	68.28	2.5	
ML-87-21	1401	68.28	-	69.80	5.0	
ML-87-21	1402	69.80	-	70.13	375.0	
ML-87-21	1403	70.13	-	72.85	415.0	
ML-87-21	1404	72.85	-	75.90	40.0	
ML-87-21	1405	75.90	-	78.94	2.5	
ML-89-50	3713	24.08	-	25.60	15.0	
ML-89-50	3714	45.42	-	46.94	65.0	
ML-89-50	3715	51.51	-	53.04	2600.0	
ML-89-50	3716	53.04	-	54.56	560.0	
ML-89-50	3717	54.56	-	56.08	540.0	
ML-89-50	3718	56.08	-	57.61	90.0	
ML-89-50	3719	57.61	-	58.83	260.0	
ML-89-50	3720	74.37	-	75.90	90.0	
ML-89-50	3721	85.04	-	86.56	25.0	
ML-89-50	3722	94.18	-	95.71	30.0	
ML-89-50	3723	97.23	-	98.76	45.0	
ML-89-50	3724	98.76	-	99.67	35.0	
ML-89-50	3725	99.67	-	01.19	2.5	
ML-89-50	3726	118.57	-	20.09	10.0	
ML-89-50	3727	124.66	-	26.19	2.5	
ML-89-50	3728	126.19	-	27.71	15.0	
ML-91-52	2901	10.37	-	11.90		62.5
ML-91-52	2902	36.78	-	38.31		62.5
ML-91-52	2903	44.99	-	46.36		62.5
ML-91-52	2904	48.65	-	50.17		62.5
ML-91-52	2905	62.43	-	63.14		62.5
ML-91-52	2929	63.14	-	64.11		62.5
ML-91-52	2906	64.11	-	65.64		62.5
ML-91-52	2907	65.64	-	67.10		62.5
ML-91-52	2908	67.10	-	68.17		62.5
ML-91-52	2909	68.17	-	69.54		62.5
ML-91-52	2910	69.54	-	71.07		62.5
ML-91-52	2911	71.07	-	72.32		62.5
ML-91-52	2912	72.32	-	72.90		250.0
ML-91-52	2913	72.90	-	73.81		62.5

H_ID	SAMPLE	A_FROM	A_TO	AU	LEACH
ML-91-52	2914	73.81 -	75.34		62.5
ML-91-52	2915	75.34 -	75.95		312.5
ML-91-52	2916	75.95 -	77.47		62.5
ML-91-52	2917	77.47 -	79.00		62.5
ML-91-52	2918	79.00 -	82.05		375.0
ML-91-52	2919	82.05 -	83.27		62.5
ML-91-52	2920	83.27 -	85.10		250.0
ML-91-52	2921	85.10 -	86.62		62.5
ML-91-52	2922	86.62 -	88.15		62.5
ML-91-52	2923	88.15 -	89.52		62.5
ML-91-52	2924	89.52 -	90.95		62.5
ML-91-52	2925	90.95 -	92.69		62.5
ML-91-52	2926	92.69 -	93.30		62.5
ML-91-52	2927	93.30 -	93.73		62.5
ML-91-52	2928	93.73 -	95.25		62.5
ML-91-53	2930	40.66 -	41.45		62.5
ML-91-53	2931	41.45 -	42.98		62.5
ML-91-53	2932	42.98 -	44.50		62.5
ML-91-53	2933	52.64 -	53.64		62.5
ML-91-53	2934	53.64 -	54.71		62.5
ML-91-53	2935	54.71 -	56.24		62.5
ML-91-53	2936	59.65 -	61.17		62.5
ML-91-53	2937	63.83 -	65.35		62.5
ML-91-53	2938	65.35 -	66.75		62.5
ML-91-53	2939	66.75 -	68.28		62.5
ML-91-53	2940	71.32 -	72.85		62.5
ML-91-53	2941	75.90 -	77.42		62.5
ML-91-53	2942	80.47 -	81.99		62.5
ML-91-53	2943	81.99 -	83.52		62.5
ML-91-53	2944	83.52 -	84.92		62.5
ML-91-53	2945	84.92 -	85.31	44.0	187.5
ML-91-53	2946	85.31 -	86.44	225.0	62.5
ML-91-53	2947	86.44 -	88.00	10.0	62.5
ML-91-53	2948	88.00 -	89.00	37.0	187.5
ML-91-53	2949	89.00 -	90.07	167.0	62.5
ML-91-53	2950	90.07 -	91.01	93.0	62.5
ML-91-53	2951	91.01 -	92.54		62.5
ML-91-53	2952	92.54 -	94.12		62.5
ML-91-53	2953	100.92 -	02.44		62.5
ML-91-53	2954	104.49 -	06.01		62.5
ML-91-53	2955	106.01 -	07.53		62.5
ML-91-53	2956	107.53 -	09.06		62.5
ML-91-53	2957	109.06 -	09.97		156.3
ML-91-53	2958	109.97 -	11.07		62.5
ML-91-53	2959	111.07 -	12.47		62.5
ML-91-53	2960	155.33 -	55.87		62.5
ML-91-53	2961	157.28 -	58.80		62.5
ML-91-53	2962	158.80 -	59.50		62.5
ML-91-53	2963	159.50 -	61.03		62.5
ML-91-53	2964	185.01 -	86.54		62.5

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-91-54	2965	14.64	-	15.95		62.5
ML-91-54	2966	46.97	-	48.50		62.5
ML-91-54	2967	48.50	-	50.02		62.5
ML-91-54	2968	50.02	-	51.55		62.5
ML-91-54	2969	51.55	-	53.07		62.5
ML-91-54	2970	53.07	-	54.60		62.5
ML-91-54	2971	54.60	-	55.05		187.5
ML-91-54	2976	55.05	-	56.05	18.0	
ML-91-54	2977	56.05	-	57.64	1401.0	
ML-91-54	2978	57.64	-	58.67	5995.0	
ML-91-54	2979	58.67	-	59.65	12920.0	
ML-91-54	2980	59.65	-	61.42	375.0	
ML-91-54	2982	61.42	-	61.72	5113.0	
ML-91-54	2983	61.72	-	63.76	101.0	
ML-91-54	2972	63.70	-	66.75	95.0	
ML-91-54	2984	63.76	-	68.28	27.0	
ML-91-54	2973	66.75	-	69.80	73.0	
ML-91-54	2985	68.28	-	69.80		62.5
ML-91-54	2974	69.80	-	72.85	113.0	
ML-91-54	2986	69.80	-	70.56		62.5
ML-91-54	2987	70.56	-	72.09		62.5
ML-91-54	2975	72.85	-	75.90	59.0	
ML-91-55	2988	36.61	-	37.83		62.5
ML-91-55	2989	37.83	-	39.08		62.5
ML-91-55	2990	76.90	-	78.43		62.5
ML-91-55	2991	78.43	-	79.86		62.5
ML-91-55	2992	79.86	-	81.38		62.5
ML-91-55	2993	81.38	-	82.91		125.0
ML-91-55	2994	82.91	-	84.12		62.5
ML-91-55	2995	84.12	-	85.47		62.5
ML-91-55	2996	85.47	-	86.81		62.5
ML-91-55	2997	86.81	-	88.03		62.5
ML-91-55	2998	88.03	-	88.97	153.0	438.0
ML-91-55	2999	88.97	-	89.18	297.0	594.0
ML-91-55	3000	89.18	-	89.86	288.0	344.0
ML-91-55	3001	89.86	-	91.14	255.0	219.0
ML-91-55	3002	91.14	-	92.05		62.5
ML-91-55	3003	92.05	-	92.96		62.5
ML-91-55	3004	92.96	-	94.31		62.5
ML-91-55	3005	94.31	-	95.10		62.5
ML-91-55	3006	95.10	-	96.32		125.0
ML-91-55	3007	96.32	-	97.84		62.5
ML-91-55	3008	97.84	-	99.30		62.5
ML-91-55	3009	99.30	-	00.19		187.5
ML-91-55	3010	100.19	-	01.71		62.5

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-91-56	3011	80.47	-	81.99		62.5
ML-91-56	3012	81.99	-	83.36		62.5
ML-91-56	3013	83.36	-	84.61		62.5
ML-91-56	3014	84.61	-	85.83		62.5
ML-91-56	3015	85.83	-	87.39		62.5
ML-91-56	3016	87.39	-	88.91		62.5
ML-91-56	3017	88.91	-	90.43		62.5
ML-91-56	3018	90.43	-	91.65		62.5
ML-91-56	3019	91.65	-	92.72		62.5
ML-91-56	3020	92.72	-	94.03		62.5
ML-91-56	3021	94.03	-	96.93		62.5
ML-91-56	3022	96.93	-	98.60		62.5
ML-91-56	3023	98.60	-	00.28	1.5	
ML-91-56	3024	100.28	-	01.65		62.5
ML-91-57	3025	22.11	-	24.10	9.0	
ML-91-57	3026	24.10	-	27.15	1.5	
ML-91-57	3027	27.15	-	28.67	3.0	
ML-91-57	3028	59.78	-	61.31	4.0	
ML-91-57	3029	61.31	-	62.83	11.0	
ML-91-57	3030	62.83	-	63.78	11.0	
ML-91-57	3031	63.78	-	64.84	6.0	
ML-91-57	3032	64.84	-	65.84	10.0	
ML-91-57	3033	65.84	-	67.18	27.0	
ML-91-57	3034	67.18	-	68.61	2411.0	
ML-91-57	3035	68.61	-	69.80	1093.0	
ML-91-57	3036	69.80	-	71.02	83.0	
ML-91-57	3037	71.02	-	72.21	60.0	
ML-91-57	3038	72.21	-	72.85	20.0	
ML-91-57	3039	72.85	-	75.90	79.0	
ML-91-57	3040	75.90	-	78.27	13.0	
ML-91-57	3041	78.27	-	79.80	5.0	
ML-91-58	3042	57.00	-	58.52	5.0	
ML-91-58	3043	58.52	-	59.44	7.0	
ML-91-58	3055	59.44	-	60.66	4.0	
ML-91-58	3044	60.66	-	62.18	6.0	
ML-91-58	3045	62.18	-	63.55	11.0	
ML-91-58	3046	63.55	-	64.77	5.0	
ML-91-58	3047	64.77	-	67.51	47.0	
ML-91-58	3048	67.51	-	68.15	7.0	
ML-91-58	3049	68.15	-	69.65	677.0	
ML-91-58	3050	69.65	-	70.71	8.0	
ML-91-58	3051	70.71	-	71.93	4.0	
ML-91-58	3052	71.93	-	72.60	16.0	
ML-91-58	3053	72.60	-	74.16	14.0	
ML-91-58	3054	74.16	-	75.68	5.0	
ML-91-59	3056	17.77	-	18.96	4.0	
ML-91-59	3057	30.94	-	32.31	4.0	

H_ID	SAMPLE	A_FROM	A_TO	AU	LEACH
ML-91-59	3058	32.31 -	33.25	4.0	
ML-91-59	3059	56.08 -	57.61	4.0	
ML-91-59	3060	57.61 -	58.16	5.0	
ML-91-59	3061	58.16 -	59.22	4.0	
ML-91-59	3062	59.22 -	60.14	6.0	
ML-91-59	3063	60.14 -	60.72	12.0	
ML-91-59	3064	60.72 -	61.30	17.0	
ML-91-59	3065	61.30 -	62.21	15.0	
ML-91-59	3066	62.21 -	63.70	15.0	
ML-91-59	3067	63.70 -	64.22	98.0	
ML-91-59	3068	64.22 -	64.62	426.0	
ML-91-59	3069	64.62 -	65.04	122.0	
ML-91-59	3073	65.04 -	66.45	2258.0	
ML-91-59	3071	66.45 -	69.80	100.0	
ML-91-59	3072	69.80 -	72.85	143.0	
ML-91-60	3074	2.74 -	3.81	10.0	
ML-91-60	3075	36.27 -	37.80	3.0	
ML-91-60	3076	37.80 -	39.32	4.0	
ML-91-60	3077	39.32 -	40.84	16.0	
ML-91-60	3078	68.28 -	69.80	5.0	
ML-91-60	3079	69.80 -	71.02	6.0	
ML-91-60	3080	71.02 -	71.93	4.0	
ML-91-60	3081	71.93 -	73.06	3.0	
ML-91-60	3082	73.06 -	74.86	5.0	
ML-91-60	3083	74.86 -	75.77	6.0	
ML-91-60	3084	75.77 -	76.87	44.0	
ML-91-60	3085	76.87 -	77.97	48.0	
ML-91-60	3086	77.97 -	79.40	28.0	
ML-91-60	3087	79.40 -	80.47	45.0	
ML-91-60	3088	80.47 -	81.99	29.0	
ML-91-60	3089	81.99 -	83.52	3.0	
ML-91-60	3090	83.52 -	85.04	17.0	
ML-91-60	3091	85.04 -	86.56	28.0	
ML-91-60	3092	86.56 -	87.78	38.0	
ML-91-60	3093	87.78 -	89.00	5.0	
ML-91-60	3094	92.81 -	94.18	7.0	
ML-91-60	3095	94.18 -	95.71	6.0	
ML-91-60	3096	95.71 -	97.23	17.0	
ML-91-60	3097	97.23 -	98.05	7.0	
ML-91-61	3105	34.65 -	35.32	8.0	
ML-91-61	3106	36.08 -	37.24	9.0	
ML-91-61	3107	39.35 -	39.92	6.0	
ML-91-61	3108	41.94 -	43.01	7.0	
ML-91-61	3109	43.01 -	44.53	10.0	
ML-91-61	3110	44.53 -	46.06	5.0	
ML-91-61	3111	46.06 -	47.58	13.0	
ML-91-61	3112	47.58 -	48.98	6.0	
ML-91-61	3113	48.98 -	50.17	8.0	
ML-91-61	3114	50.17 -	50.48	43.0	

H_ID	SAMPLE	A_FROM		A_TO	AU	LEACH
ML-91-61	3115	50.48	-	51.91	14.0	
ML-91-61	3116	51.91	-	53.07	6.0	
ML-91-61	3117	53.07	-	54.60	8.0	
ML-91-61	3118	54.60	-	55.48	9.0	
ML-91-61	3119	55.48	-	57.00	10.0	
ML-91-61	3120	57.00	-	57.65	7.0	
ML-91-61	3121	57.65	-	66.80	10.0	
ML-91-61	3099	57.65	-	60.70	48.0	
ML-91-61	3100	60.70	-	63.75	94.0	
ML-91-61	3101	63.75	-	66.80	1291.0	
ML-91-61	3102	66.80	-	69.85	259.0	
ML-91-61	3122	66.80	-	69.78	49.0	
ML-91-61	3123	69.78	-	72.90	8.0	
ML-91-61	3103	69.85	-	72.90	91.0	
ML-91-61	3104	72.90	-	75.95	113.0	
ML-91-62	3124	37.40	-	38.86	18.0	
ML-91-62	3125	38.86	-	40.60	6.0	
ML-91-62	3126	81.23	-	82.75	5.0	
ML-91-62	3127	82.75	-	83.67	49.0	
ML-91-62	3128	83.67	-	84.59	12.0	
ML-91-62	3129	84.59	-	85.50	10.0	
ML-91-62	3130	85.50	-	86.38	1487.0	
ML-91-62	3131	86.38	-	86.93	27.0	
ML-91-62	3132	86.93	-	88.09	1159.0	
ML-91-62	3133	88.09	-	89.00	87.0	
ML-91-62	3134	89.00	-	90.53	31.0	
ML-91-62	3135	90.53	-	92.05	21.0	
ML-91-62	3136	92.05	-	93.02	10.0	
ML-91-62	3137	93.02	-	94.18	14.0	
ML-91-63	3138	35.05	-	36.88	7.0	
ML-91-63	3139	39.32	-	40.23	8.0	
ML-91-63	3140	57.61	-	59.13	10.0	
ML-91-63	3141	59.13	-	60.66	9.0	
ML-91-63	3142	60.66	-	62.18	10.0	
ML-91-63	3143	62.18	-	63.70	7.0	
ML-91-63	3144	63.70	-	64.53	9.0	
ML-91-63	3145	64.53	-	65.38	10.0	
ML-91-63	3146	65.38	-	66.14	1325.0	
ML-91-63	3147	66.14	-	66.90	24.0	
ML-91-63	3148	66.90	-	67.97	957.0	
ML-91-63	3149	67.97	-	68.37	11589.0	
ML-91-63	3150	68.37	-	69.80	141.0	
ML-91-63	3151	69.80	-	72.85	37.0	
ML-91-63	3152	72.85	-	75.89	10.0	
ML-91-63	3153	75.89	-	78.94	16.0	
ML-91-63	3154	78.94	-	80.47	12.0	

NOTE: FA/AA DETECTION LEVEL - >3.0 PPB
CY LEACH DETECTION LEVEL - >125.0 PPB

APPENDIX III
LITHOLOGICAL DESCRIPTIONS

from

"REPORT ON DIAMOND DRILLING WORK"
McVICAR LAKE PROPERTY

by

R.N. THOMAS

FEBRUARY, 1988

(edited by R.G. Bonner, February 1991)

2.2.2 Volcanic Rocks

Basalt and porphyritic basalt underlie the northern part of the grid area and comprise the volcanic rocks observed in the vicinity of the AZ. Basalt is typically dark to light grey - green in colour. It is fine to medium grained, aphyric to feldspar phyric, massive to weakly foliated. There is usually some degree of chlorite, carbonate and/or silica alteration even in areas well removed from the intense alteration and mineralization which characterizes the AZ.

DDH ML.21 situated in the northern part of the new grid (NG) area intersected feldspar porphyry (basalt porphyry) comprising 20% - 30% feldspar phenocrysts (1-2mm; up to 5mm) in a fine grained mafic rich matrix.

All volcanic rocks contain trace to 1% sulphides as fine grained disseminations and fracture coatings, of pyrite (py) although pyrrhotite (po) and trace chalcopyrite (cp) are common. Magnetite as finely disseminated crystals is also a common constituent and is present in concentrations ranging up to 5%.

2.2.3 Sedimentary Rocks

Very few intervals of sedimentary rocks were observed in drill holes. DDH ML.21 intersected a short interval of black chert comprising a weakly magnetic, finely laminated rock within fault gouge. Minor intersections of (siliceous) volcanic mudstone comprising a very fine grained, dark green grey, foliated and fractured rock between an interval of mylonite and brecciated gabbro. In this regard the latter rock's sedimentary character is questionable, however, intervals of banded iron formation are found as xenoliths within gabbro well removed from the margins of the gabbro intrusive.

2.2.4 Early Intrusive Rocks

The gabbroic intrusive underlies the southern part of the grid area. It is mineralogically and texturally variable and ranges from a gabbro to anorthosite in composition. There is much evidence of extensive deuteric alteration with some intervals being completely replaced by silica. Massive magmatic sulphides (po >py >>cp) are common near the contact with the volcanic and the contact would appear to be a broad, east trending diffuse zone (100's metres) of intrusion of gabbro into volcanics and incorporation of dekametre to decimetre (dm) scale volcanic xenoliths within gabbro.

Gabbro senso lato is generally melanocractic ranging from light grey green to dark green to black in colour. It is usually medium grained although both fine and coarse grained varieties are not uncommon. It is generally massive to weakly foliated. Primary magmatic layering is rarely observed where metre (m)-scale feldspar rich (60%) alternate with mafic rich (90%) intervals. Sulphide content ranges from minor (trace - 1%) disseminated py >po to magmatic sulphide segregations as disseminations, veinlets and massive accumulations comprising short (dm scale) intervals of up to 50% sulphides (po >py >>cp). Magnetite content ranges from nil to 5%, to over 50% in some sections. The latter concentration levels usually comprise centimetre (cm) to dm scale bands of magnetite over relatively short (m scale) intervals. They are considered to be a primary magmatic feature.

Anorthositic gabbro is a spectacular looking rock comprising 70%-90% white coarse grained (up to 1 cm) spheroidal feldspar phenocrysts in a fine grained mafic matrix. The feldspar phenocrysts are usually completely replaced by silica and the rock is, therefore, almost completely white in colour and very hard. This type of alteration is considered to be deuteric and not related to silica alteration within or associated with the AZ.

Other observed alteration phenomena observed in gabbro away from the AZ include widespread weak millimetre (mm) to cm scale quartz - carbonate (chlorite) veining, patchy silica replacement associated with quartz veining and less common m-scale replacement zones. The latter are again considered to be of deuteric origin, whereas, the former are probably within the AZ's broad alteration envelope.

2.2.5 Tectonites

The altered zone (AZ) is a northwest trending zone of intense shearing, alteration and mineralization which constituted the target of interest throughout the 1986 and 1987 drill programs. Enveloping the AZ are intervals of brecciation within the various lithogies which are transected by the two structures. The breccia is clearly structural in origin and is the least deformed end member of this group of rocks. It comprises cm scale rock fragments of the host lithology within a carbonate rich matrix. In general the breccia is fragment supported and grades from intensely foliated and crenulated rock which has been subsequently fragmented and rotated adjacent to the AZ to weakly veined rock at the outer margins of the breccia envelope. Although the outer contact of brecciated rock with non-brecciated rock is reasonably sharp there is usually some minor shearing or brecciation near or away from the margins of the breccia envelope.

The Altered Zone which is the principal zone of interest is an extremely complex zone of deformation and intense alteration which is comprised of a number of different lithological elements. On drill sections, it is plotted as one unit, however, reference to the appropriate drill log will show that it is comprised of a number of discrete lithological elements. In 1986, four lithological elements were recognized. They comprise zones of intensely sheared mafic volcanic, abundant green mica, intermediate intrusive and massive to semi-massive quartz. Additional drilling in 1987 south of the gabbro-volcanic contact intersected all four zones (or their gabbroic equivalents) as well as several intervals of quartz-carbonate-sericite schist. The five lithological elements are discussed below.

(i) Sheared (and/or brecciated) basalt/gabbro:

These rocks are characterized by a well developed (intense) foliation and in many instances a recognizable fragmental texture. In some instances fragments may be foliated, crenulated and individually rotated with respect to the principal foliation. The mineralogy of the mm-cm scale fragments ranges from recognizable fragments of protolith to intensely altered and deformed rock. Fragments may comprise up to 30% of the rock in a fine grained quartz-carbonate-chlorite-sericite matrix. Occasional wisps and rare dm scale intervals of apple green mica are also observed. Quartz veins as foliation parallel and foliation oblique mm-cm scale veinlets are common. Occasional cm scale quartz boudins and dm scale quartz veins are observed in some intervals. These rocks usually contain some pyrite, overall concentrations are probably in the order of 1-2% with the bulk of the sulphides associated with quartz and green mica.

(ii) Quartz-Carbonate-Sericite Schist:

This lithology grades into intervals of apple green mica and may in itself contain appreciable amounts of apple green mica. It is considered to be a more progressively altered and deformed variant type of the sheared gabbro or volcanic described above. It is intensely foliated comprising 40-60% mm scale lenticules of quartz-carbonate in a matrix of foliated sericite (+/- green mica). Quartz boudins (dm scale) and foliation parallel cm scale quartz veins and boudins are common. This unit can contain up to 8% finely disseminated pyrite.

(iii)Apple Green Mica Schist:

This is considered to be the end member in the progressive deformation and alteration of the host lithology. In the volcanics the green micas are an intense apple green colour whereas in gabbro intervals of green mica can be more of an emerald green colour. It is largely comprised of green mica although varying amounts of white to yellowish micas, cm scale quartz veins and boudins and weak pervasive carbonate alteration and rare patches of Fe-carbonate alteration give it a variegated appearance. Sulphide content in the interval is typically 3-5% finely disseminated pyrite. Minor disseminated magnetite is noted in DDH ML.34. This rock type is confined to the interior regions of the AZ and is usually in contact with intervals of massive quartz.

(iv) Quartz:

The bulk of the quartz is confined to the central or near-central regions of the AZ. Intervals of quartz can range up to several metres in thickness. Contacts are for the most part foliation parallel, particularly with dm-m scale intervals. Outcrop evidence and small scale structures in drill core indicate that the bulk of the quartz exists as cm-m scale boudins with one of the extension directions in the plane of the AZ parallel or nearly so to its strike.

Quartz can contain up to 90% lithic fragments. These comprise cm-dm scale fragments of the various other tectonites (excluding intermediate intrusive) within the AZ. In general the composition of lithic fragments in any one interval is homogenous. Pyrite mineralization which can range up to 3% is largely as fine grained disseminations within the lithic fragments, particularly fragments of apple green mica schist and sericite carbonate schist, and at fragment margins. Pyrite also occurs within the quartz at contact margins and within the interior as sparse disseminations.

(v) (Altered) Intermediate Intrusive:

This lithology is the most enigmatic of the lithological elements which comprise the AZ. During the 1986 drill program this rock was initially identified as bleached or metasomatized volcanic. As drilling progressed through 1987, it became apparent that the rock has in some instances recognizable intrusive contacts with the other rock types in the AZ.

The rock is aphanitic to fine grained, light tan to buff in colour, massive to weakly foliated with 2-5% fine grained oriented pyrite. In DDH ML.27 it contains inclusions of foliated gabbro. It is usually weakly altered (sericite, carbonate, rare Fe-carbonate) with weak quartz veining (cm scale) associated with weak pervasive carbonate alteration.

2.2.6 Late Intrusive Rocks

A variety of intermediate to felsic intrusive rocks are observed in a number of holes. They are for the most part massive or only weakly foliated. They display sharp intrusive contacts and in some instances aphanitic chill margins.

Tonalite is perhaps the most common of the late intrusive rocks. It is invariably leucocratic and is usually a light yellow grey colour. It is massive, fine grained rocks with a hypidiomorphic-granular texture. It may in some instances be weakly foliated. Quartz content ranges up to 30%, mafics comprise up to 15% amphiboles which are in some instances altered to chlorite. Other alteration is limited to weak fracture controlled carbonate alteration. Pyrite is usually present in amounts of trace to 1% and less commonly 2-3%.

Intermediate intrusive rocks outside of the AZ are in general different that the intermediate intrusive observed in the altered zone. The inadvertent use of the same field term for two different rock types is unfortunate, however, the term is appropriate and the rock is not that common. These rocks, which occur over intervals of 1-2m, are dark green-grey in colour, massive, aphanitic to fine grained and weakly porphyritic. Quartz-carbonate alteration is usually weak and fracture controlled although replacement of feldspar phenocrysts by carbonate is common. Trace pyrite mineralization is confined to fracture surfaces.

Rare intervals of intermediate-felsic intrusive and one interval of felsite dyke are probably variant types of the intermediate intrusive just described. They are dark toffee to dark grey in colour, aphanitic to very fine grained and usually show some degree of conchoidal fracture. Weak fracture controlled carbonate alteration and minor (up to 1%) pyrite on fracture surfaces is common.

APPENDIX IV

ONE THIN SECTION

McVICAR LAKE PROJECT, ONT.

by

Dr. P. Fischer, Ph.D.
March, 1991

McVICAR LAKE NORTH ZONE

THIN SECTION ANALYSIS

SAMPLE # 91-54 -194'

CLASSIFICATION: Shear zone made up of sericite, quartz, carbonate, pyrite. Pyrite encloses traces of gold.

TRANSMITTED LIGHT

MINERALOGY

Major	Sericite 50%, quartz 20-25%
Minor	Carbonate 10%, opaque 10-15%
Accessory	Chlorite 1-3%, leucoxene.

TEXTURE

General: Strong, parallel shear fabric, mm-scale, parallel banding expressed by bands and eyes of quartz-sericite-carbonate, quartz-opaque in a predominant matrix of sericite. Abundant textural signs of strong translatory shear movement. Opaques occur mostly as large, oriented patches that suggest cataclasis, multi-phase growth and recrystallization.

Detailed Description

Grain Size: Matrix 30-100 microns
Clasts 0.1-1.0 mm

Sericite Matrix: Sericite matrix makes up 1/2 of the rock and forms the ground-mass. It hosts lenses, bands and flames of quartz-sericite-carbonate and quartz-opaque material.

Microfabric: Strong parallel orientation of sericite. Sericite flakes are almost in optical continuity. Sericite encloses scattered, small lensoid grains of quartz. Sericite shows flow structures around quartz grains. Stringers of extremely fine grained, 'smeared-out' leucoxene. Rare, fine grained carbonate.

Quartz Clasts: Size 0.1-1 mm, lensoid shape, oriented, scattered grains

Internal Structure:	a) Half of the grains show little strain: Lack of undulatory extinction, optically continuous. b) Half of the grains are recrystallized to a very fine mosaic (30 microns). Scattered very fine opaque grains (30-50 microns).
Carbonate-Quartz Bands	1-5mm thick, forming bands and lenses. Made up of 50% quartz and 50% carbonate and opaques, both very fine grained. Grain size of groundmass 30-100 microns. Texture fairly massive, weakly oriented mosaic of quartz and carbonate. Minor large (1mm) quartz grains showing incipient recrystallization and signs of rotation and quartz pressure shadows. Scattered sickle-shaped, bent, strongly strained quartz grains adjacent to opaque grains indicate continued deformation (rotation) during opaque crystallization. Opaque grains occur as scattered, anhedral grains. They appear to be cataclastic, recrystallized.
Quartz-Opaque Lenses	Make up 10-20% of the rock and are scattered within the sericitic groundmass.
Size	0.1-2.0 mm
Mineralogy	Quartz-opaque (pyrite), minor chlorite, carbonate, sericite.
Texture	Anhedral opaques are surrounded by oriented, blady, strongly strained quartz grains indicating directional crystal growth in pressure shadows. Bending and rotation of oriented quartz blades is common. The shape of opaques is irregular, anhedral, probably indicating cataclasis and recrystallization. Size of opaques is 0.1-2 mm.
Comment	A sheared rock made up of sericite, quartz, carbonate and opaque minerals. There are no unsheared, textural relicts of the previous hostrock. The sericite matrix probably functioned as a ductile element during the shearing. Intense, continued deformation is indicated by quartz which occurs as bent, rotated, blady arrangements in pressure shadows of opaques and by

strained, larger relict grains. Opaques seem to have undergone cataclasis and recrystallization.

REFLECTED LIGHT

MINERALOGY	Estimated abundance of opaques 10-15 modal % = 100%
Major	Pyrite 95-97%
Minor	Ti-oxide 1-2%
Accessory	Tetrahedrite trace - 1%, gold trace

TEXTURE

General — Large, anhedral pyrite grains are scattered in the gangue and show a distinct orientation. Ti-oxides form thin stringers of very fine grains which are parallel to the shear fabric. Trace minerals are enclosed in pyrite.

Detailed Description

Pyrite — Size <0.1-2 mm, shape anhedral, poikilitic, in part cataclastic, wispy. Pyrite is rarely euhedral (small grains).

Orientation — Strongly oriented parallel to shear fabric. Pyrite commonly encloses patches of gangue material, is poikiloblastic. Some grains appear to have formed from a cluster of small, cataclastic grains that recrystallized and grow together.

Tetrahedrite — Forms common traces, occurs only as small blebs (10-15 microns) enclosed in pyrite. These blebs and lensoid grains commonly occur as stringers along microfractures within pyrite. Some tetrahedrite grains are closely associated with small gold grains.

Gold — About 10 gold grains were discovered by a systematic scanning (using a micrometer stage) of the section with a low power lens. A high power oil lens was used for documentation. All gold grains are enclosed within pyrite.

The size of grains ranges mostly between 5 and 15 microns, a few extremely small gold blebs were seen (<1 - 3 microns). The majority of the grains are associated with microfractures in pyrite, possibly with grain boundaries between older (generation I) and younger (generation II) pyrite.

Some gold grains are associated with grains of tetrahedrite within pyrite.

A minority of gold grains occur as round, isolated blebs in pyrite without association with fractures in pyrite. One gold grain was observed adhering to the outside of a pyrite grain, at the contact to gangue.

COMMENT

About 10 gold grains were seen enclosed with pyrite. Most are associated with microfracture or intra-pyrite grain boundaries. Tetrahedrite appears to occupy the same textural position and seems to be associated with gold.

Interpreted Paragenesis:

OLD ... YOUNG

Shearing
pyrite I
cataclasis
tetrahedrite + gold
pyrite II

900

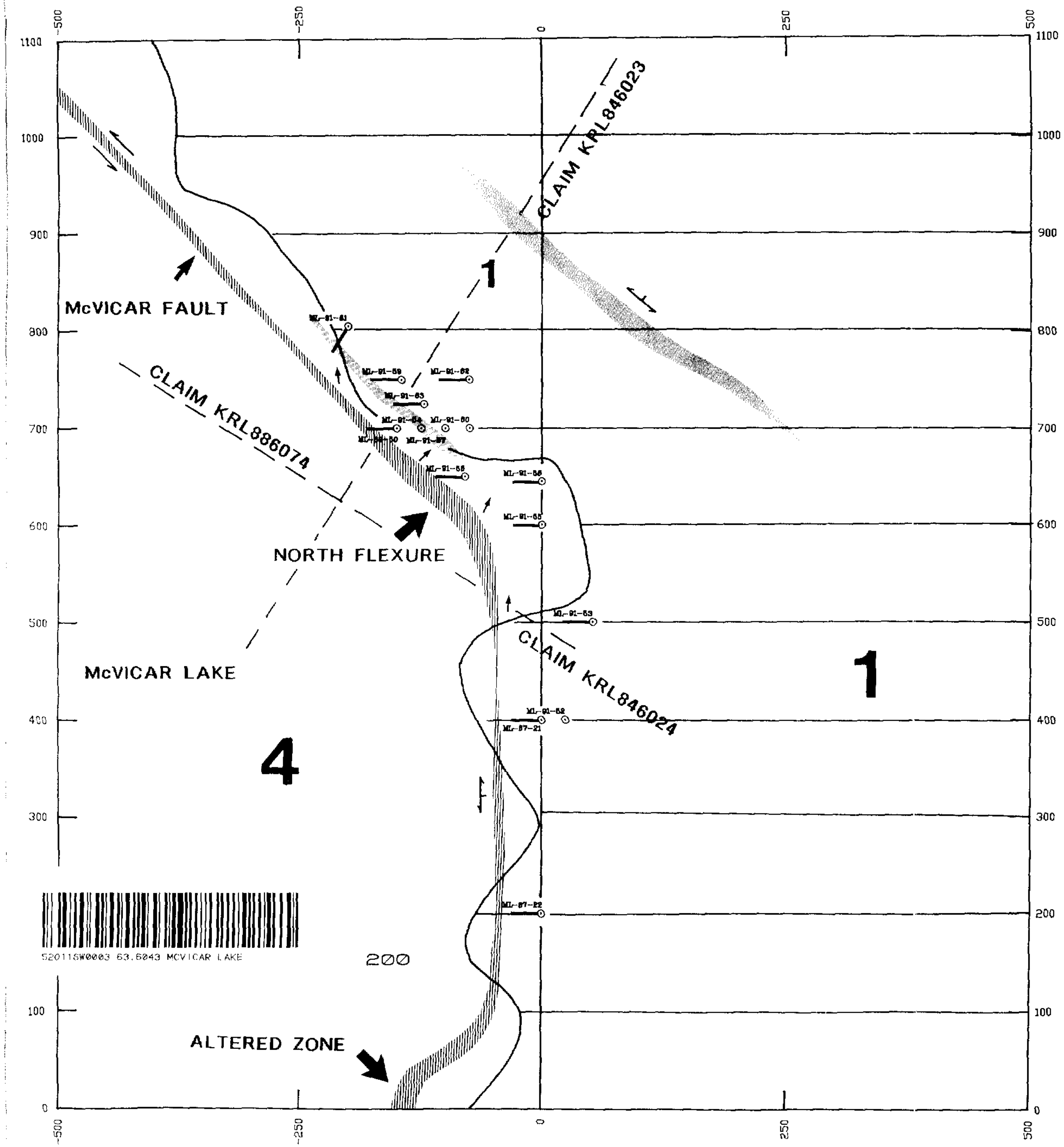
#03.6043

OM 90-112

THIS SUBMITTAL CONSISTED OF VARIOUS REPORTS, SOME OF WHICH HAVE BEEN CULLED FROM THIS FILE. THE CULLED MATERIAL HAD BEEN PREVIOUSLY SUBMITTED UNDER THE FOLLOWING RECORD SERIES (THE DOCUMENTS CAN BE VIEWED IN THESE SERIES):

2.14173 (W. 9130-065) CONTAINS CERTIFICATES OF ANALYSIS INVOICES, DDH LOGS (ML-91-52 to ML-91-63)

McVICAR REPORT # 10 - (W.9130-056) - CONTAINS DDH LOGS ML-91-52 to ML-91-63



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LEGEND

LATE INTRUSIVES

- 12 – TONALITE
- 11 – INTERMEDIATE INTRUSIVE
  - 11a – PORPHYRITIC

McVICAR TECTONITES

- 10 – NORTH ZONE (ALTERED)
  - 10a – QUARTZ VEIN
- 9 – FAULT GOUGE
- 8 – BRECCIATED/SHEARED GABBRO
  - 8a – SHEARED GABBRO
  - 8b – BRECCIATED GABBRO
- 7 – BRECCIATED/SHEARED ANORTHOSITIC GABBRO
  - 7a – SHEARED ANORTHOSITIC GABBRO
- 6 – BRECCIATED/SHEARED BASALT
  - 6a – SHEARED BASALT
  - 6b – BRECCIATED BASALT
- 5 – BRECCIATED PORPHYRITIC BASALT
  - 5a – SHEARED PORPHYRITIC BASALT

EARLY INTRUSIVE

- 4 – GABBRO
  - 4a – ANORTHOSITIC

SEDIMENTS

- 3 – IRONSTONE (OXIDE)
- 2 – MUDSTONE

MAFIC VOLCANICS

- 1 – BASALT
  - 1a – PORPHYRITIC

SYMBOLS

- DRILL COLLAR
- FOLIATION
- SLIP LINEATION
- APPARENT MOVEMENT
- SURFACE TRACE – McVICAR FAULT

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EXPLORATION DEPARTMENT

GEOLOGY

and

DDH LOCATIONS
McVICAR LAKE PROPERTY

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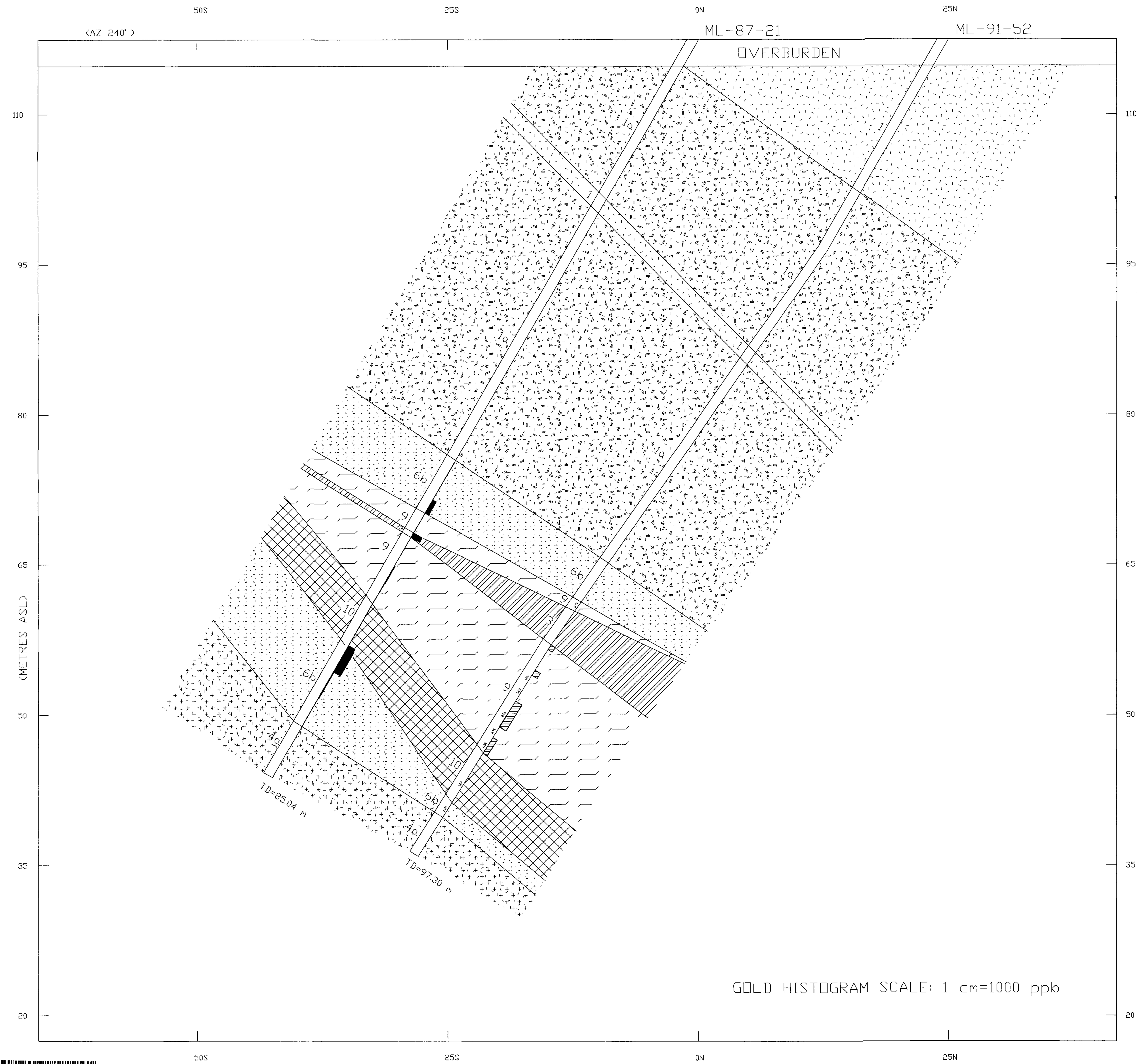

LEGEND

LATE INTRUSIVES

- 12 - TONALITE
- 11 - INTERMEDIATE INTRUSIVE
  - 11a - PORPHYRITIC

McVICAR TECTONITES

- 10 - NORTH ZONE (ALTERED)
  - 10a - QUARTZ VEIN
- 9 - FAULT GOUGE
- 8 - BRECCIATED/SHEARED GABBRO
  - 8a - SHEARED GABBRO
  - 8b - BRECCIATED GABBRO
- 7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
  - 7a - SHEARED ANORTHOSITIC GABBRO
- 6 - BRECCIATED/SHEARED BASALT
  - 6a - SHEARED BASALT
  - 6b - BRECCIATED BASALT
- 5 - BRECCIATED PORPHYRITIC BASALT
  - 5a - SHEARED PORPHYRITIC BASALT

EARLY INTRUSIVE

- 4 - GABBRO
  - 4a - ANORTHOSITIC

SEDIMENTS

- 3 - IRONSTONE (OXIDE)
- 2 - MUDSTONE

MAFIC VOLCANICS

- 1 - BASALT
  - 1a - PORPHYRITIC

DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY

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ML-91-52
McVICAR LAKE PROPERTY

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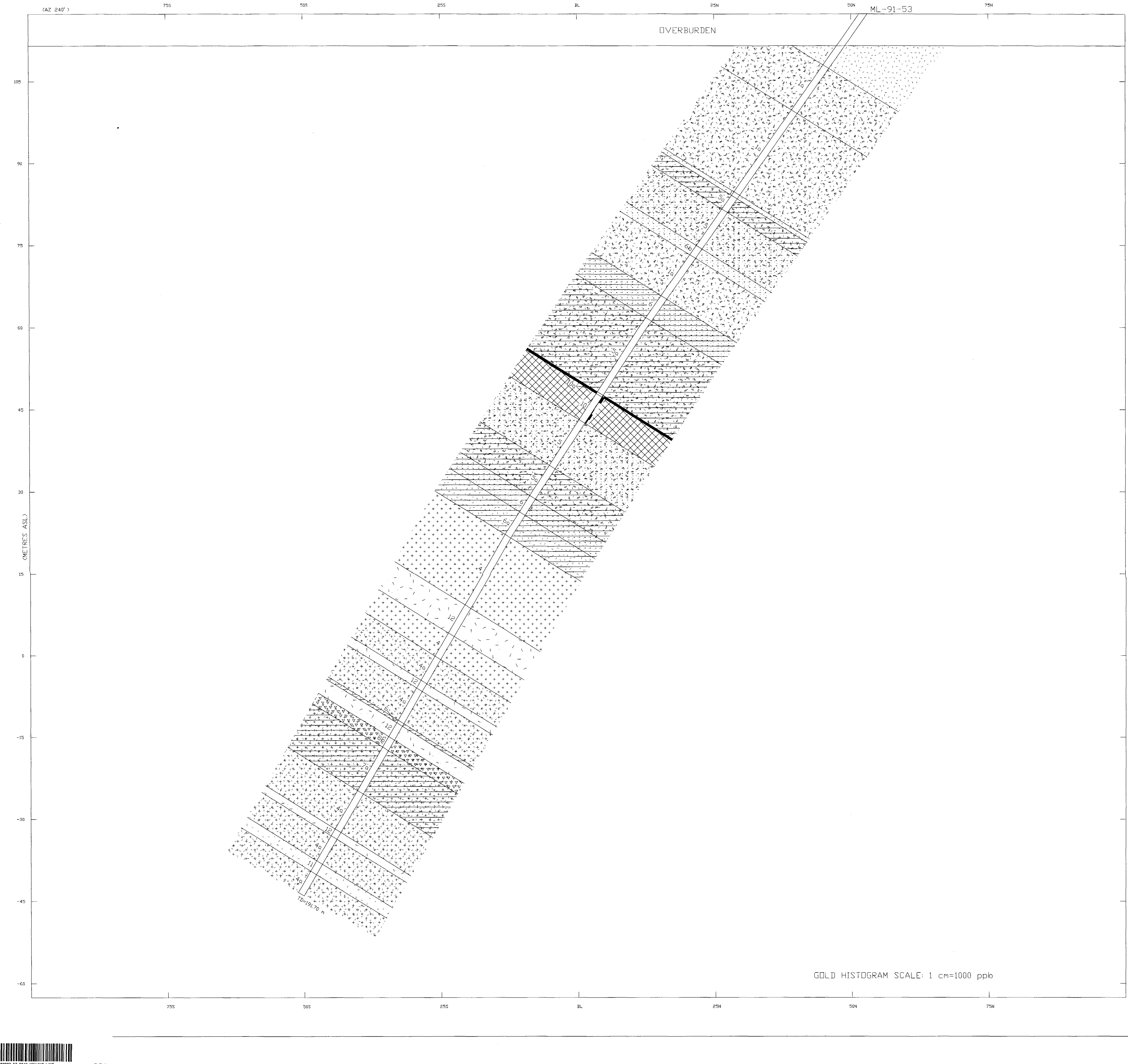

LEGEND

LATE INTRUSIVES

- 12 - TONALITE
- 11 - INTERMEDIATE INTRUSIVE
  - 11a - PORPHYRITIC

McVICAR TECTONITES

- 10 - NORTH ZONE (ALTERED)
  - 10a - QUARTZ VEIN
- 9 - FAULT GOUGE
- 8 - BRECCIATED/SHEARED GABBRO
  - 8a - SHEARED GABBRO
  - 8b - BRECCIATED GABBRO
- 7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
  - 7a - SHEARED ANORTHOSITIC GABBRO
- 6 - BRECCIATED/SHEARED BASALT
  - 6a - SHEARED BASALT
  - 6b - BRECCIATED BASALT
- 5 - BRECCIATED PORPHYRITIC BASALT
  - 5a - SHEARED PORPHYRITIC BASALT

EARLY INTRUSIVE

- 4 - GABBRO
  - 4a - ANORTHOSITIC

SEDIMENTS

- 3 - IRONSTONE (OXIDE)
- 2 - MUDSTONE

MAFIC VOLCANICS

- 1 - BASALT
  - 1a - PORPHYRITIC

DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY

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ML-91-53

McVICAR LAKE PROPERTY

DATE	DRAWN	CHECKED	REVISED	NTS	FILE	MAP
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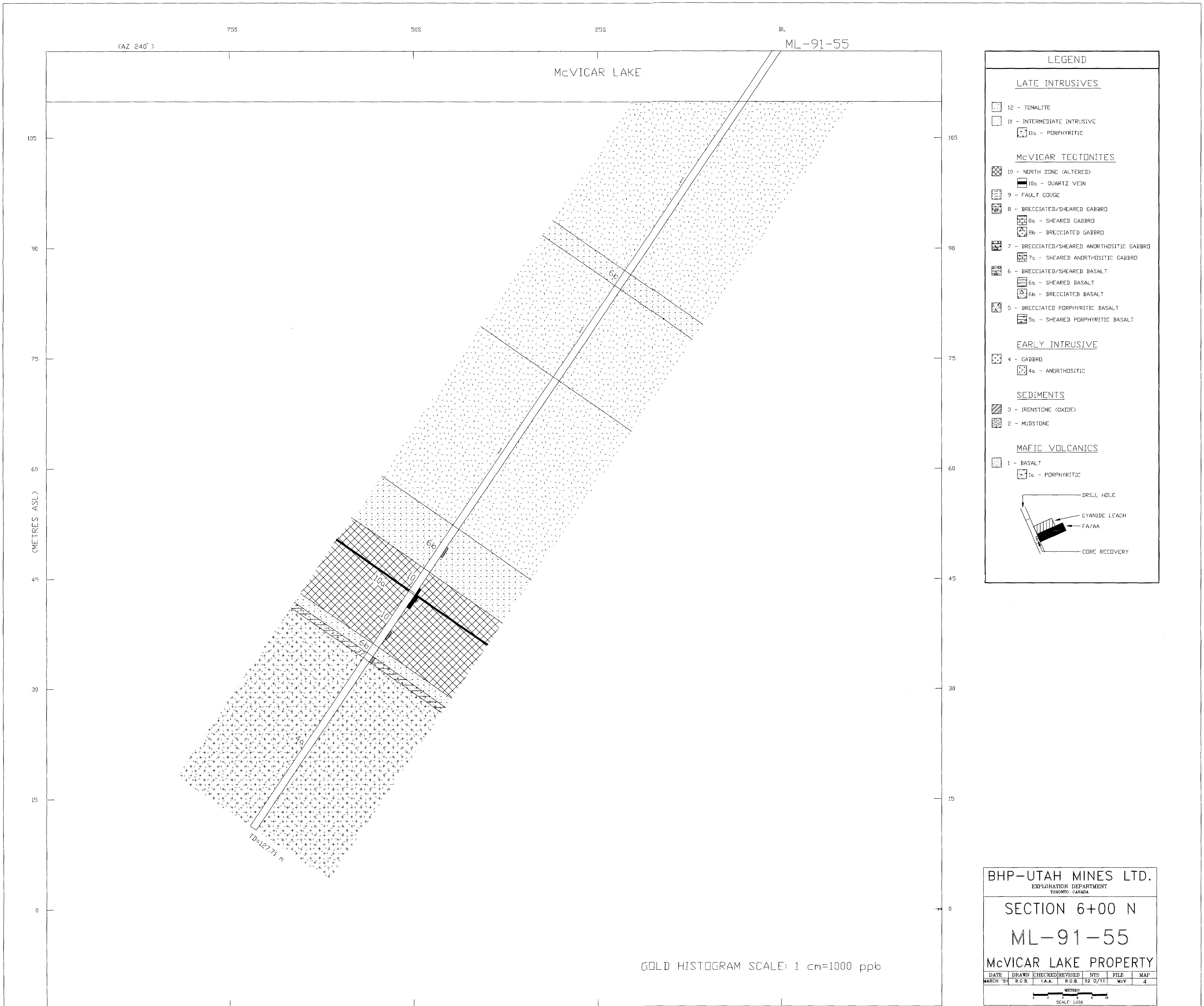

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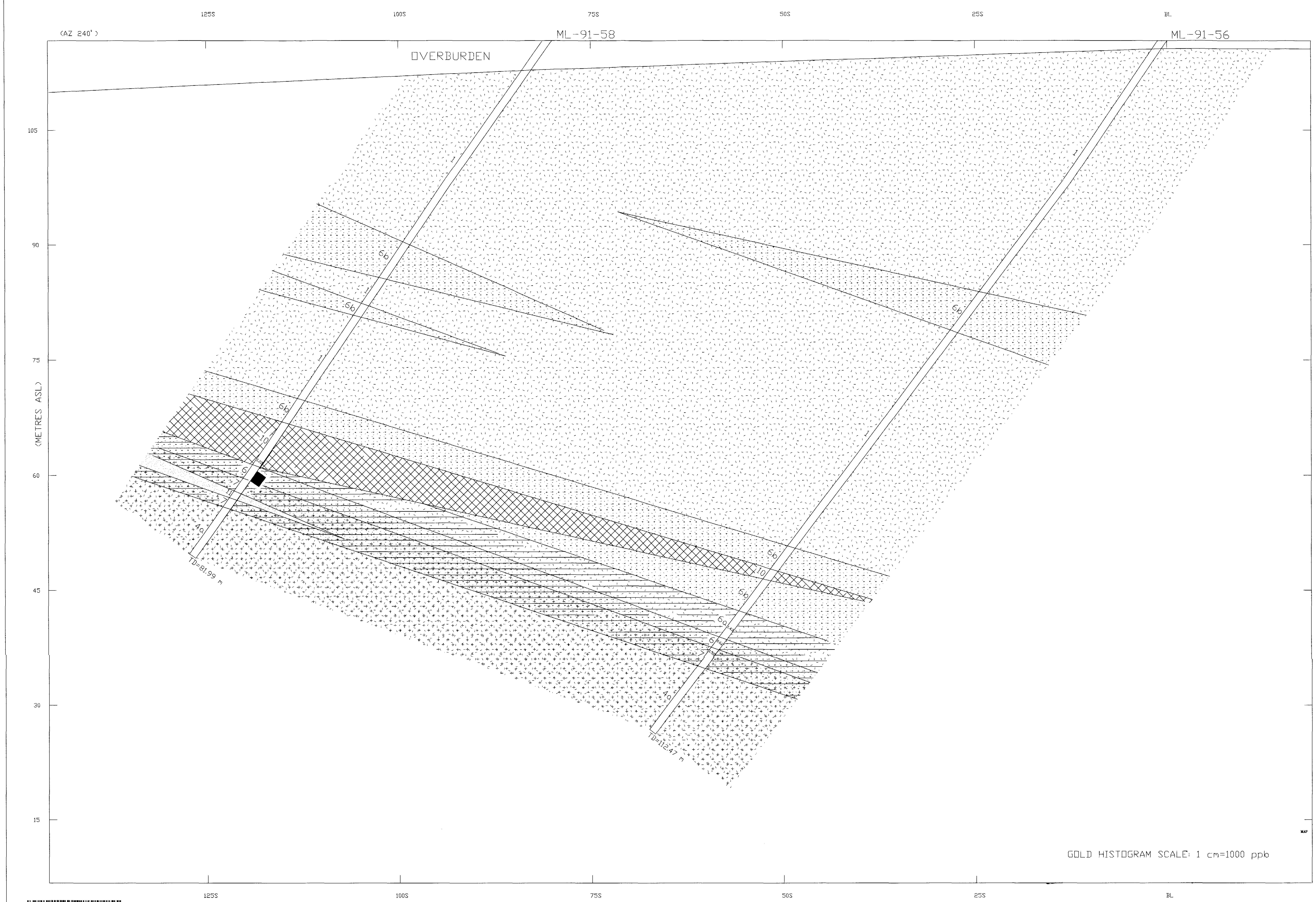

LEGEND

LATE INTRUSIVES

12 - TONALITE
11 - INTERMEDIATE INTRUSIVE
11a - PORPHYRITIC

McVICAR TECTONITES

10 - NORTH ZONE (ALTERED)
10a - QUARTZ VEIN
9 - FAULT GOUGE
8 - BRECCIATED/SHEARED GABBRO
8a - SHEARED GABBRO
8b - BRECCIATED GABBRO
7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
7a - SHEARED ANORTHOSITIC GABBRO
6 - BRECCIATED/SHEARED BASALT
6a - SHEARED BASALT
6b - BRECCIATED BASALT
5 - BRECCIATED PORPHYRITIC BASALT
5a - SHEARED PORPHYRITIC BASALT

EARLY INTRUSIVE

4 - GABBRO
4a - ANORTHOSITIC

SEDIMENTS

3 - IRONSTONE (OXIDE)
2 - MUDSTONE

MAFIC VOLCANICS

1 - BASALT
1a - PORPHYRITIC

DRILL HOLE
CYANIDE LEACH
FA/AA
CORE RECOVERY

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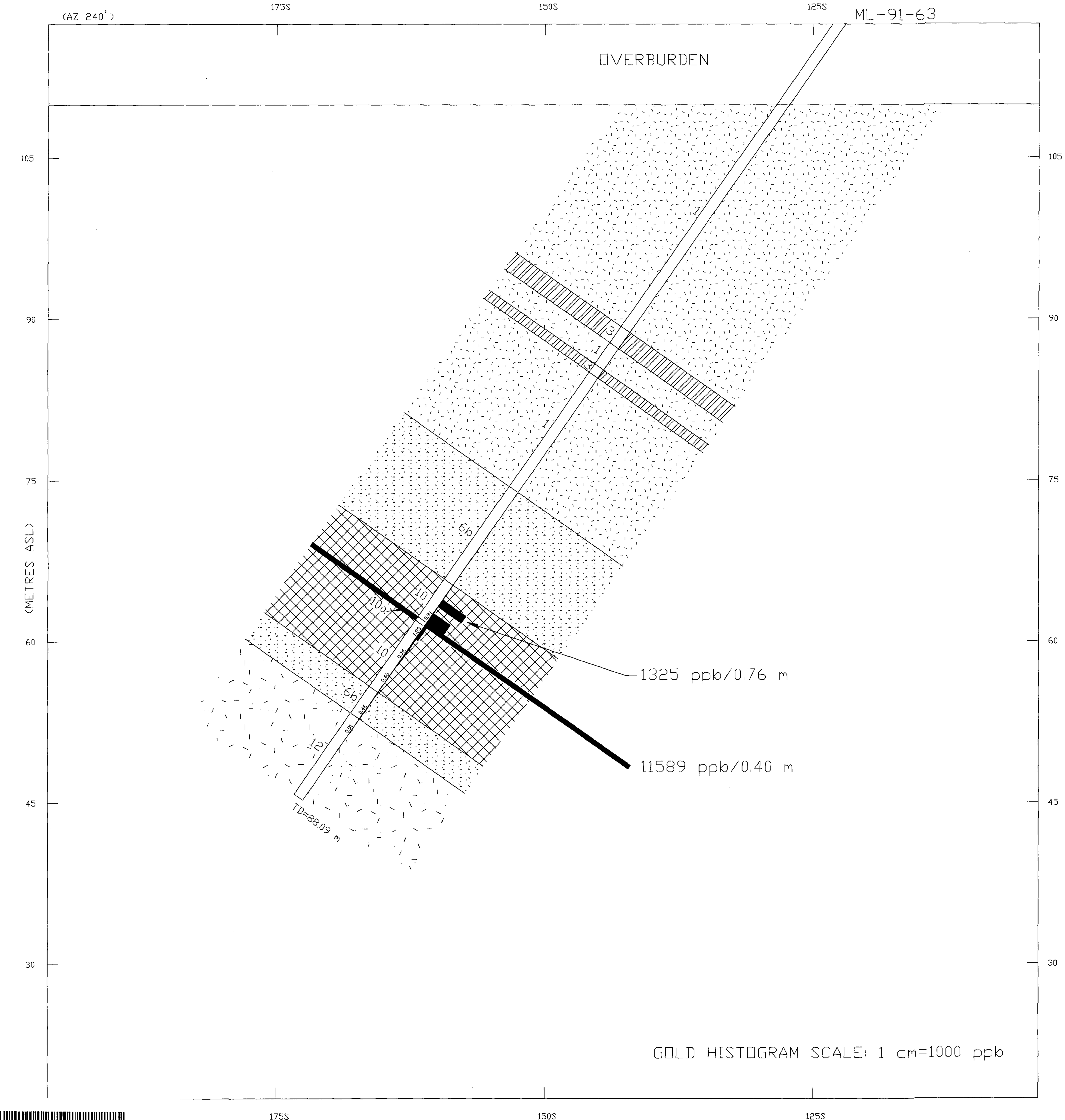


LEGEND

LATE INTRUSIVES

- 12 - TONALITE
- 11 - INTERMEDIATE INTRUSIVE
  - 11a - PORPHYRITIC

McVICAR TECTONITES

- 10 - NORTH ZONE (ALTERED)
  - 10a - QUARTZ VEIN
- 9 - FAULT GOUGE
- 8 - BRECCIATED/SHEARED GABBRO
  - 8a - SHEARED GABBRO
  - 8b - BRECCIATED GABBRO
- 7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
  - 7a - SHEARED ANORTHOSITIC GABBRO
- 6 - BRECCIATED/SHEARED BASALT
  - 6a - SHEARED BASALT
  - 6b - BRECCIATED BASALT
- 5 - BRECCIATED PORPHYRITIC BASALT
  - 5a - SHEARED PORPHYRITIC BASALT

EARLY INTRUSIVE

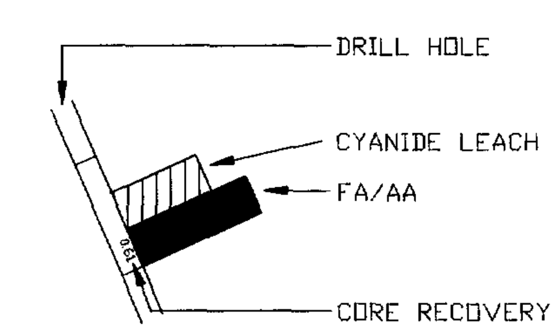
- 4 - GABBRO
  - 4a - ANORTHOSITIC

SEDIMENTS

- 3 - IRONSTONE (OXIDE)
- 2 - MUDSTONE

MAFIC VOLCANICS

- 1 - BASALT
  - 1a - PORPHYRITIC



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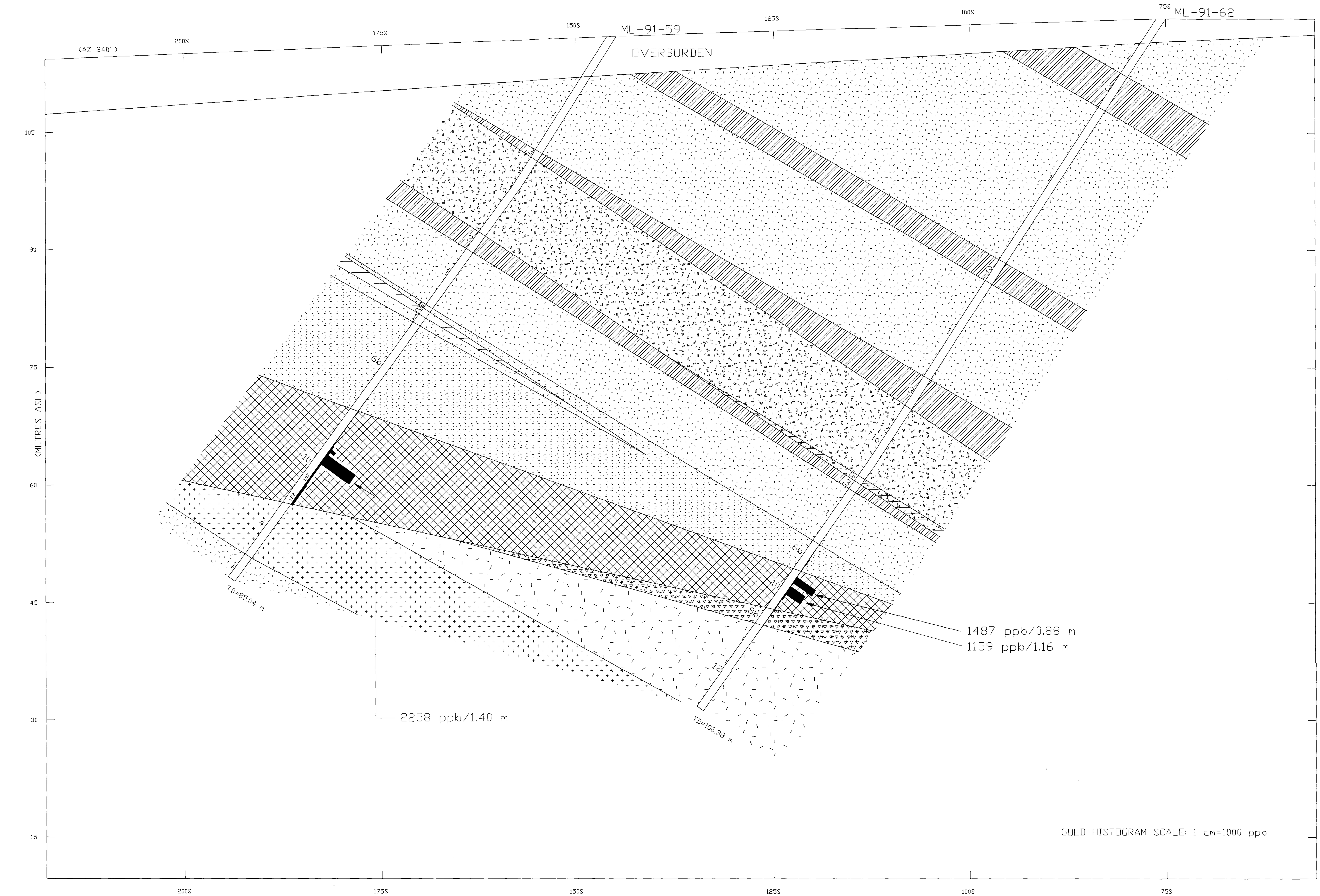


LEGEND

LATE INTRUSIVES

- 12 - TONALITE
- 11 - INTERMEDIATE INTRUSIVE
  - 11a - PORPHYRITIC

McVICAR TECTONITES

- 10 - ALTERED ZONE (NORTHERN FLEXURE)
  - 10a - QUARTZ VEIN
- 9 - FAULT GOUGE
- 8 - BRECCIATED/SHEARED GABBRO
  - 8a - SHEARED GABBRO
  - 8b - BRECCIATED GABBRO
- 7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
  - 7a - SHEARED ANORTHOSITIC GABBRO
- 6 - BRECCIATED/SHEARED BASALT
  - 6a - SHEARED BASALT
  - 6b - BRECCIATED BASALT
- 5 - BRECCIATED PORPHYRITIC BASALT
  - 5a - SHEARED PORPHYRITIC BASALT

EARLY INTRUSIVE

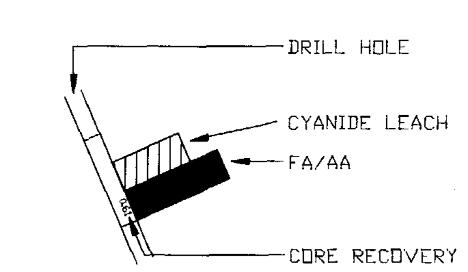
- 4 - GABBRO
  - 4a - ANORTHOSITIC

SEDIMENTS

- 3 - IRONSTONE (OXIDE)
- 2 - MUDSTONE

MAFIC VOLCANICS

- 1 - BASALT
  - 1a - PORPHYRITIC



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EXPLORATION DEPARTMENT
TORONTO, CANADA

SECTION 7+50 N

ML-91-59, 62

McVICAR LAKE PROPERTY

DATE	DRAWN	CHECKED	REVISED	NTS	FILE	MAP
MARCH '91	R.G.B.	I.A.A.	R.G.B.	52 O/11	McV	8

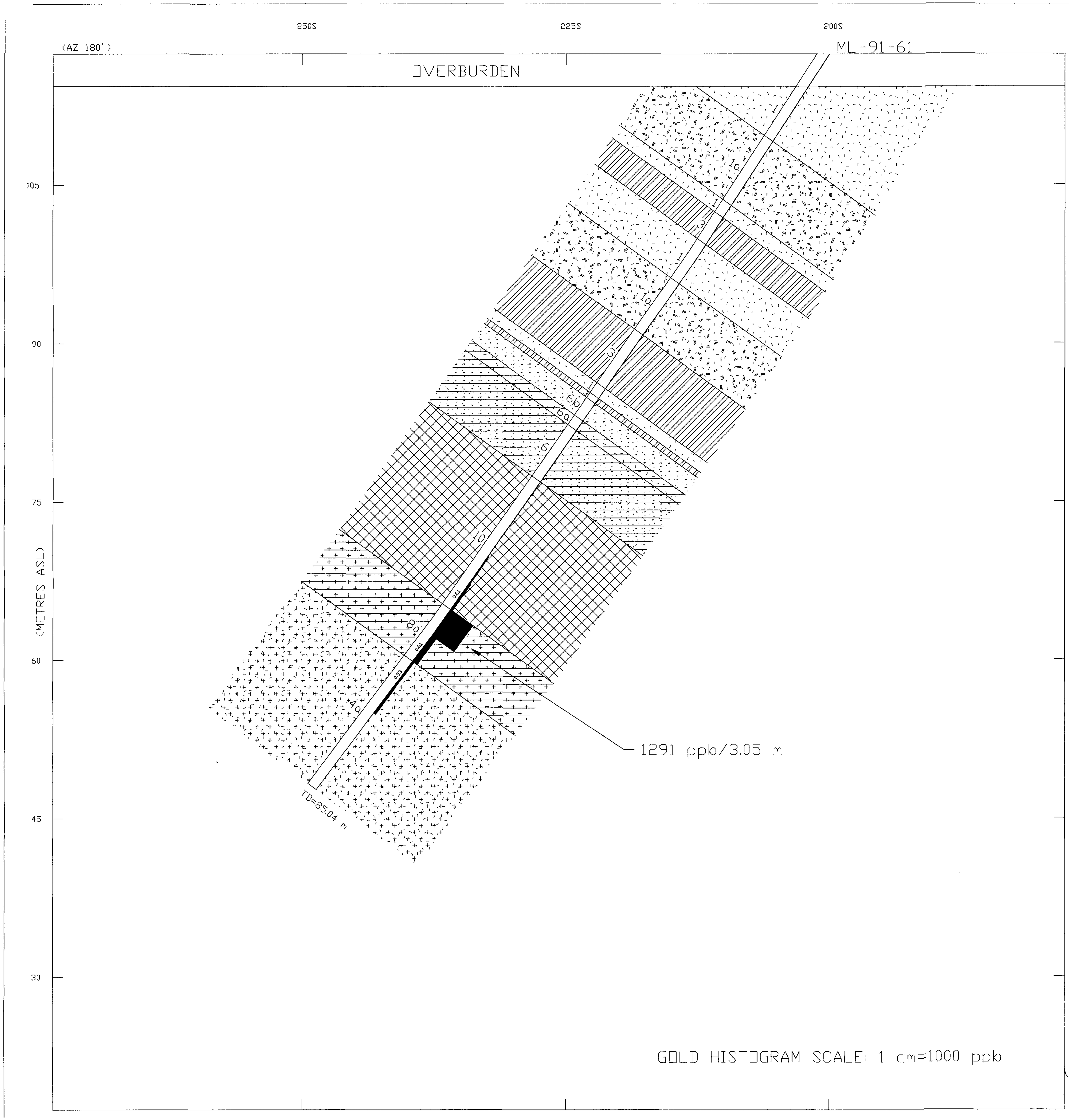
METRES

SCALE 1:200

63.6043

260

52011SW0003 63.6043 MCVICAR LAKE



LEGEND

LATE INTRUSIVES

- 12 - TONALITE
- 11 - INTERMEDIATE INTRUSIVE
  - 11a - PORPHYRITIC

McVICAR TECTONITES

- 10 - NORTH ZONE (ALTERED)
  - 10a - QUARTZ VEIN
- 9 - FAULT GOUGE
- 8 - BRECCIATED/SHEARED GABBRO
  - 8a - SHEARED GABBRO
  - 8b - BRECCIATED GABBRO
- 7 - BRECCIATED/SHEARED ANORTHOSITIC GABBRO
  - 7a - SHEARED ANORTHOSITIC GABBRO
- 6 - BRECCIATED/SHEARED BASALT
  - 6a - SHEARED BASALT
  - 6b - BRECCIATED BASALT
- 5 - BRECCIATED PORPHYRITIC BASALT
  - 5a - SHEARED PORPHYRITIC BASALT

EARLY INTRUSIVE

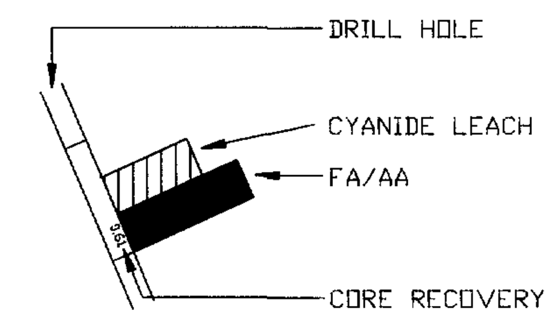
- 4 - GABBRO
  - 4a - ANORTHOSITIC

SEDIMENTS

- 3 - IRONSTONE (OXIDE)
- 2 - MUDSTONE

MAFIC VOLCANICS

- 1 - BASALT
  - 1a - PORPHYRITIC



BHP-UTAH MINES LTD.

EXPLORATION DEPARTMENT
TORONTO, CANADA

SECTION 8+00 N
(OFF SECTION)

ML-91-61

McVICAR LAKE PROPERTY

DATE	DRAWN	CHECKED	REVISED	NTS	FILE	MAP
MARCH '91	R.G.B.	I.A.A.	R.G.B.	52 O/11	McV	9

METRES
SCALE: 1:200

63.6043