



32D04SW0316 63.4026 BOSTON

010

DIAMOND DRILL PROGRAM  
ON VEINS 1 AND 2  
DURING APRIL AND MAY, 1981  
IN BOSTON TOWNSHIP  
FOR  
MARSHALL BOSTON IRON MINES LIMITED

OM 81-6-c-104

*copy 2*

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Report No. 427  
July 2, 1981

Toronto, Ontario



32D04SW0316 63.4026 BOSTON

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## SUMMARY

Marshall Boston Iron Mines Limited holds a group of 29 contiguous claims for precious metals in Boston Township, Larder Lake Mining Division, Ontario. The property is bisected by the Adams Mine Spur line located north of the village of Boston Creek.

Occurring in a northwest trending belt of intermediate to basic volcanics, previous work on claim L26692 has outlined two gold-bearing structures designated as veins 1 and 2. The gold occurs in quartz-bearing shear zones.

A 10-hole diamond drill program, totalling 3,346 feet, was completed between April 13 and May 16, 1981, on claims L26692 and L5341. Each diamond drill hole was inclined to intersect these vein structures on the 200 or 300 foot level. Two drill holes were carried out at each site with the exception of hole 81-1 and three holes at 81-8 to 81-10. The drill sites are spaced 100 and 150 feet apart along a line parallel to the vein structure.

Grade and tonnage were calculated using the diamond drill intersections on the 200 and 300 foot levels combined with previous surface channel samples. The program has shown potential reserves of 143,000 tons grading 0.143 oz. gold per ton above the 400 foot level. Within this tonnage, discrete shoot contains 56,000 tons grading 0.257 oz. gold per ton. The shoot is open to the south and at depth. Drill intersections within this shoot graded as high as .60 oz. gold per ton over 2.62 feet, 1.8 oz. gold per ton over 1.15 feet, and .26 oz. gold

per ton over 2.41 feet. The veins are also open to the north.

Additional sampling of the core is warranted adjacent to these high values which may widen the zones. A 4,500 foot program of diamond drilling is recommended to further test the veins along strike and at depth. The cost estimate of this program is \$127,143.

PROPERTY

Marshall Boston Iron Mines Limited holds a group of contiguous claims for precious metals in Boston Township, Larder Lake Mining Division, Ontario. The claims may be separated into a north group locally known as the Hildas Lake claims consisting of eight leased claims, one gravel file, one staked claim and a south claim group locally known as the Tipper-McCrea claims, consisting of twelve patented claims held under an agreement to purchase and seven staked claims. The claims may be more particularly described as follows:

NORTH GROUP

Leased Claims

L72596  
L72597  
L72598  
L72599  
L72600  
L72601  
L72602  
L72603

Gravel File

L72595

Staked Claims

L579083

Date Recorded

October, 1980

<u>Staked Claims</u>	<u>Date Recorded</u>	<u>Work Extension</u>
L550001	January 22, 1980	October 30, 1981
L550002	January 22, 1980	October 30, 1981
L550004	January 31, 1980	
L550005	January 22, 1980	
L548998	January 22, 1980	
L584999	January 22, 1980	
L549000	January 22, 1980	October 30, 1981

<u>Patented Claims</u>	<u>Patented Claims</u>
L26690	L26555
L26691	L26556
L26692	L26557
L26552	L5340
L26553	L5341
L26554	L5378

The diamond drill program took place in the south claim group, on claims L26692 and L5341.

LOCATION & ACCESS

The claim group is directly ten miles south-southeast of the town of Kirkland Lake in the township of Boston. The claims are bisected by the Adams Spur Line.

The south claim group can be readily reached from the village of Boston Creek. From Boston Creek, a bush road leads northerly for approximately 1.5 miles where it intersects the Adams Spur Line. The spur line enters claim 26692 approximately 3/4 of a mile to the north. From this point, a trail 100 feet long leads to the trenches on claim 26692.

The north claim group can be easily reached from the Adams Mine Road (Highway #650) south along the spur line. One-quarter mile south of where the road crosses the spur line, the railway enters the claims.

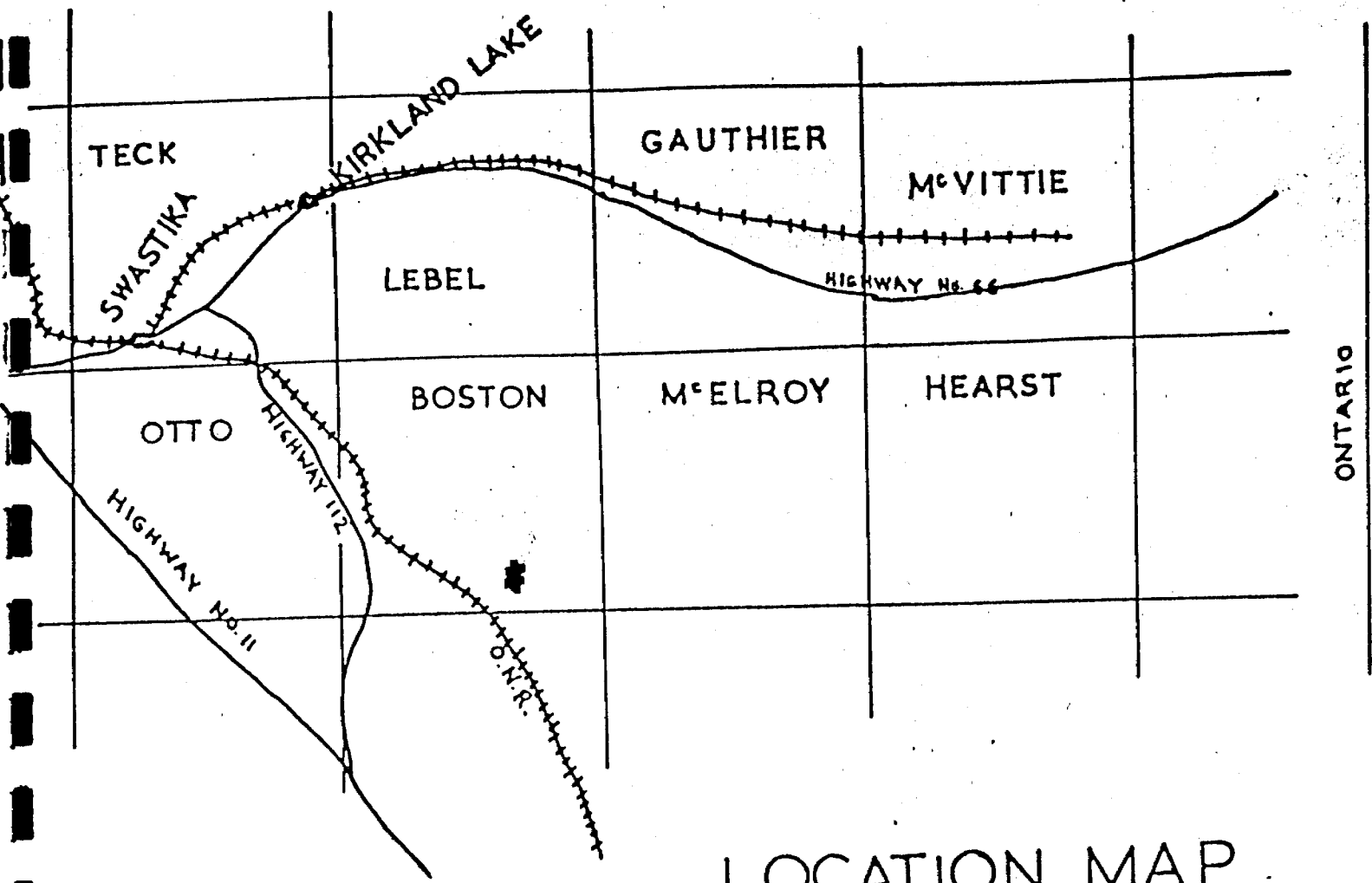
HISTORY OF THE PROPERTY - SOUTH GROUP

1937 - Extensive work on the south group showed the presence of gold in two veins. An average assay value calculated from previous sampling data in company files showed 0.23 oz Au per ton over 1.63 feet through a length of 440 feet on the No. 1 vein and an average value of 0.559 oz Au per ton across 1.42 feet through a length of 188 feet on the No. 2 vein.

- Old reports also describe a strong shear lying 18 feet east and parallel to the No. 1 vein from which a value of 0.14 oz Au per ton was reported over 2.3 feet; additionally, a vein is reported 150 feet west of the No. 2 vein on which some work was reportedly completed but for which no records are available.

1972 - Marshall Boston Iron Mines Limited carried out limited surface sampling of the old trenches, followed by the drilling of two shallow holes.

- The trenches were check sampled (total of 22 samples) to test the reliability of previous sampling. An average assay based on previous sampling results of the No. 1 (easternmost) vein gave 0.23 oz. of gold over an average width of 1.63 feet through a length of 440 feet. Check



LOCATION MAP  
MARSHALL BOSTON IRON MINES LT  
A.C.A. HOWE INTERNATIONAL LTD.  
Scale 1" = 4 miles

sampling of this vein (four samples) yielded an average assay of 0.541 oz. gold across an average width of 1.32 feet through a length of 106 feet.

- An average assay of previous sampling on the No. 2 (westernmost) vein yielded 0.559 oz. of gold across an average width of 1.42 feet, through a distance of 188 feet. A weighted assay based on check sampling (18 samples) of this vein yielded an average assay of 0.623 oz. gold across an average width of 0.80 feet through a distance of 131 feet.
- Following completion of the check sampling, two diamond drill holes were spotted to test the underground continuation of the two auriferous veins. The first hole 72-G-1 was spotted 100 feet east of the No. 1 vein approximately 170 feet north of the south claim line (26692) inclined at  $-60^{\circ}$  with an azimuth of  $282^{\circ}$ . This hole picked up the two veins at vertical depths of 95 feet and 171 feet across true widths of 4.2 feet in each vein. The intersection on the No. 1 vein yielded an average assay of 0.070 oz. Au and 0.130 oz. of Ag across a core length of 5 feet 1 inch, from 104 feet 4.5 inches to 109 feet 5.5 inches, the highest value in this section was across a core distance of one foot from 106 feet to 107 feet which assayed 0.22 oz. Au and 0.13 oz. Ag. The second intersection in the same hole (vein No. 2) yielded average assays of 0.011 oz. Au and 0.022 oz. Ag across a core length of 5 feet 3 inches, from 188 feet 10 inches to 194 feet one inch.



- A second hole 72-G-2 was spotted 199 feet east of the No. 1 vein approximately 325 feet north of the south claim line (claim 26692) and 155 feet north of 72-G-1, inclined at  $-50^{\circ}$  with an azimuth of  $282^{\circ}$ . The No. 1 vein appears to have been incorporated in a contact zone between a feldspar porphyry and mafic volcanic rock; however, a siliceous section picked up at a vertical depth of 85 feet corresponds with the projected position of the No. 1 vein. The No. 2 vein was intersected at a vertical depth of 153 feet across a true width of 1.6 feet. Negligible values in gold and silver were returned upon assaying of this intersection.

#### HISTORY OF THE PROPERTY - NORTH GROUP

- 1908 - The original work on claims 72595 and 72600 (in the North Group) was performed by Jack Miller. A syenite porphyry dike largely replaced by quartz has been trenched and stripped for a length of 1200 feet. Scattered patches of pyrite and molybdenite mineralization give erratic values in gold.
- 1954 - Shunsby Gold Mines Limited owned part of what now forms the Marshall claims. This company carried out trenching, test-pitting, and diamond drilling on claims 72600 and 72595, revealing minor amounts of gold mineralization.
- 1964 - Charles Marshall acquired nine claims around Hildas Lake covering the old showings. The original trenches

were cleaned out and additional sections blasted along the quartz replacement zone discovered by Miller in 1908. Patches of pyrite and molybdenite with some coarse-free gold were revealed by this work. This activity was followed by a limited drilling program, the core from which has since been discarded.

#### GENERAL GEOLOGY

The geology of Boston Township and part of Pacaud Township has been described in a report by K. D. Lawton, Ontario Department of Mines, Vol. LXVI, Part V, 1957. The following is an abstract from this report:

"The consolidated rocks of the area are Pre-Cambrian in age, consisting mainly of Archean volcanics, sediments and intrusives. Late diabase dikes intrude the Archean rocks and are the sole representatives of the Proterozoic era in the area.

"Members of the Keewatin series of early Pre-Cambrian rocks are the dominant formations outcropping in Boston Township. They consist of lava flows, volcanic fragmented rocks and sedimentary rock. A small area of Timiskaming clastic sedimentary rocks outcrops in the northeast corner of Boston Township. Here the Keewatin and Timiskaming series are in faulted contact. Field relationships of nearby townships, however, indicate that the rocks of Timiskaming age stratigraphically overlie the Keewatin series. In the Kirkland Lake area, Thomson<sup>1</sup> has shown that a great structural unconformity separates the Timiskaming series from the underlying Keewatin rocks.

"There are two groups of basic intrusives of post-Keewatin age. The older of the two is composed of diorite and metadiorite, whereas the younger includes serpentinite, hornblendite, diorite and minor diorite porphyry.

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<sup>1</sup>J. E. Thomson, "The Keewatin Timiskaming Unconformity in the Kirkland District", Transaction, Royal Soc. Can., Section IV, Third Series Vol. XL 1946, pp. 113-122.

"The Keewatin, Timiskaming and post-Keewatin rocks are folded and faulted, and intruded by a variety of igneous rocks classified as Algoman in age. The Algoman series includes rocks of the following composition: granite, syenite, porphyries, diorite and lamprophyre.

"Much of the bedrock is covered by a mantle of unconsolidated clay, sand and gravel, laid down during the period of Pleistocene glaciation that affected this area.

"The rock classification used in this report conforms generally,<sup>2</sup> but with some revision to that adopted by Abraham<sup>2</sup> for McElroy Township and the eastern part of Boston Township. In the following table of formations, the members range from oldest at the bottom of the list to youngest at the top, though the rocks within a given group are not necessarily arranged in chronological order."

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<sup>2</sup>E. M. Abraham, "Geology of McElroy and Part of Boston Townships", Ontario Department of Mines, Vol. LIX 1950, Part 6, p. 8.

6.0 TABLE OF FORMATIONS

CENOZOIC

RECENT AND  
PLEISTOCENE:

Clay, sand, gravel and boulders.

Great Unconformity

PRECAMBRIAN

KEWEENAWAN OR  
MATACHEWAN:

Diabase.

Intrusive Contact

ALGOMAN:

Basic syenite; syenite and porphyritic syenite; syenite porphyry; quartz porphyry; granite (dykes and small stocks); lamprophyre; diorite and metadiorite; quartz-feldspar porphyry; felsite.

Batholithic granite (Round Lake batholith)

Intrusive Contact

HAILEYBURIAN:  
(?)

Diorite; gabbro; hornblendite; serpentinite; diorite porphyry.

Intrusive Contact

TIMISKAMING:

Fine-grained sedimentary rocks; greywacke; arkose; quartzite; slate.

Conglomerate; conglomerate with some inter-bedded arkose, slate, and greywacke.

Great Unconformity

POST-KEEWATIN:  
(?)

Diorite and metadiorite

Intrusive Contact

KEEWATIN:

Basic and Intermediate Volcanics:  
Greenstone; brecciated and carbonate-veined greenstone; andesite, basalt, and pillow lava; dioritic, diabasic, and gabbroic lava; amphibolite; sheared basic lava; fragmental lava; basic lava containing horizons of tuff; injection gneisses, and metamorphosed basic lava and tuff adjacent to the Lebel and Otto syenite stocks; variolitic lava.

KEEWATIN:

Intermediate and Acid Volcanics:

Fragmental volcanics, generally porphyritic; porphyritic andesite, dacite, and rhyolite, containing horizons of acid and cherty tuff; dacite, andesite, occasionally fragmental.

Iron formation, including banded silica rock ("lean iron formation").

Acid volcanics, Tuff, Quartzite, etc: Rhyolite; acid tuff and cherty tuff; agglomerate conglomerate; tuffs, and sediments interbedded with volcanic rocks; tuff and iron formation; tuff, tuffaceous sediments, and their altered equivalents; cherty quartzite.

GEOLOGY IN THE VEIN AREA

The area is predominantly underlain by Keewatin volcanics of Precambrian time. The rocks consist of basic and intermediate volcanics consisting of andesite, basaltic, pillow, dioritic, gabbroic, and diabasic lavas. A number of dikes intrude the volcanic sequence. Present are feldspar porphyry dikes, lamprophyre dikes and biotite porphyry dikes. The biotite porphyry dikes are a cross between the former two dikes, having more biotite grains and less feldspar, particularly as phenocrysts.

Two prominent dikes have been identified. The first, a hornblende-feldspar dike at the north end of the number 1 vein, cuts across the vein striking N36°W and dipping 76°NE. Near its contacts, the dike is more feldspar rich, exhibiting distinct feldspar phenocrysts. A central 5.3 feet of the dike yields .011 oz. gold per ton and trace silver. The second, a feldspar-biotite porphyry dike was encountered in drilling. Varying

in thickness from 15 to 19 feet it strikes  $N78^{\circ}E$  and dips  $30^{\circ}N$ . Part of the dike has been silicified with a brownish quartz containing abundant pyrite. Its contact zones are usually more silicified than the central portions and may be totally replaced by silica with up to 15% pyrite. The feldspar-biotite porphyry usually contains nil gold and trace silver; however, the siliceous zones contain up to 0.008 oz. gold per ton and 0.1 oz. silver per ton. Diamond drill hole 81-8 intersected vein number 2 immediately adjacent to the siliceous zone which assayed .067 oz. gold per ton and trace silver. (See attached cross-sections).

Previous trenching on claim L26692 has exposed veins 1 and 2 as two narrow irregular parallel auriferous quartz veins in intermediate to basic volcanics. The strike of the veins vary in direction ranging from  $N18^{\circ}E$  in the north to  $N3^{\circ}E$  in the south. The dip of the veins lessens with depth. Vein 1 dips from  $65^{\circ}E$  near surface to  $55^{\circ}E$  at 300 feet. Vein 2 dips from  $60^{\circ}E$  near surface to  $50^{\circ}E$  at depth. The veins appear to be joining at depth particularly in the south. On surface the veins, where trenched, are separated by 93 feet at the northern exposure which narrows to 30 feet to the south. In diamond drill holes 81-8, 81-9 and 81-10, the veins appear to have joined in a wide shear zone. This shear zone contains vein quartz, calcite, chlorite, pyrite, and high gold values. (See Table 1).

The veins are usually composed of greyish quartz filling shear zones. Gold values are higher where the veins are more

sheared. Pyrite is abundant in the veins. Chlorite and calcite are also present in varying amounts.

#### REGIONAL STRUCTURAL GEOLOGY

Aside from late Precambrian diabase dikes, Archean bedrock underlies the Boston Township map area. These rocks have been affected by various orogenic episodes which have left them tilted at steep angles, folded, faulted and cut by magmatic intrusion.

The most salient structural feature on the Marshall Boston Iron Mines Limited property is the Boston Fault. Beyond the property boundary to the northeast of Hildas Lake, the Boston Fault has an average strike of S45°W. Southwest of Hildas Lake, the Boston Fault splits into two branches which cross the property in a southwesterly direction. Shearing adjacent to the fault dips vertically or at steep angles.

Many of the formations in the area are quite massive. However, a regional schistosity, which strikes northwest, about parallel to the rock formations is recognized. Wherever recognized, the schistosity dips at steep angles.

Locally, schistosity is developed in Keewatin country rocks adjacent to large Algonian intrusive masses. In these cases, the schistosity is nearly vertical in attitude and strikes parallel to the contact of the intrusive.

Intermediate to acid volcanics may be quite schistose noticeably in the area west of Hildas Lake, and are traversed by a number of narrow shear zones. Extensive fracturing also characterizes these rocks in this area.

Schistosity is locally developed in all rock types where they are traversed by or lie adjacent to faults and sheared zones.

#### MINERALIZATION

Gold mineralization was reported during 1914 by A. G. Burrows and P. E. Hopkins<sup>1</sup> who mapped the area and classified the gold as occurring as native gold occasionally associated with tellurium, in quartz and veinlets in the Keewatin greenstones and later intrusions of granite and porphyry.

The quartz veins are also well mineralized with pyrite, chalcopyrite and molybdenum. The diamond drill program encountered only minor silver values usually in the nil to trace range, however, one sample assayed .3 Ag oz/ton.

Within quartz veins, gold mineralization frequently occurs with the sulphides and with chlorite streaks. Certain areas of country rock consisting of greenstones and porphyry have been brecciated and partly replaced by quartz and carbonates forming replacement veins.

#### DIAMOND DRILL PROGRAM

Ten diamond drill holes, designated 81-1 through 81-10 were completed, totalling 3,346 feet. Two drill holes were put down at each site with the exception of only one hole at 81-1 and three holes at 81-8 to 81-10. (See Surface Assay Plan for diamond drill hole locations). The sites are spaced 100 and 150 feet apart along a line parallel to the vein structure.

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<sup>1</sup>A. G. Burrows and P.E. Hopkins, Boston-Skead Gold Area, Ontario Department of Mines, Vol. XXX, 1921, Part 6, pp. 9-10.



Drill hole direction is N72°W with the exception of 81-10 with a direction of S75°W. Each diamond drill hole was inclined so as to intersect the veins at the 200 or 300 foot level. (See attached cross-sections).

#### RESULTS OF THE DIAMOND DRILLING

The diamond drill program encountered both veins 1 and 2 increasing the known length by 100 feet into claim L5341. Where trenched on surface, the veins are separated by 93 feet in the north and 30 feet in the south. Drilling has shown that vein 1 dips from 65°E near surface to 55°E at 300 feet and vein 2 dips from 60°E near surface to 50°E at 300 feet. Drilling to date has indicated that the veins are widening and drawing closer together at depth. In fact, the veins appear to have joined near the 200 foot level where intersected by diamond drill holes 81-8 to 81-10. Here, the vein structures are highly sheared and gold values are better than in earlier holes, grading over true widths of 2.41 feet of 0.26 oz. gold per ton to 2.62 feet of 0.6 oz. gold per ton. These gold intersections occur in a wider mineralized shear zone giving rise to a lower but ore grade intersection while increasing the tonnage. Since initial sampling took only the better-looking core sections, additional adjacent sampling is warranted where the shearing still persists in the zone.

A discrete shoot was encountered towards the southern end of veins where some true widths and assays of the zone are 0.78 feet of 0.41 oz. gold per ton, 1.15 feet of 1.8 oz. gold per ton,

2.41 feet of .26 oz. gold per ton, and 4.49 feet of .37 oz. gold per ton (this intersection contains 2.62 feet of 0.6 oz. gold per ton). (See Table 1). These intersections appear to define a discrete designated the Marshall Zone. The surface expression of this shoot contains good gold values delineated in previous channel sampling on both veins. (See attached Surface Assay Plan and Table 2). Additional drilling is necessary to delineate this shoot which is open to the south and at depth.

Grades and tonnages in Tables 3 and 4 were calculated using the surface channel samples and the diamond drill intersections at the 200 and 300 foot levels. The potential reserves were calculated to the -400 foot level. A discrete zone (the Marshall zone) delineated by surface channel samples on vein 1 of 0.426 oz. Au per ton over 1.86 feet through a length of 140 feet and on vein 2 of 0.584 oz. Au per ton over 1.26 feet through a length of 110 feet (See Table 2) and diamond drill intersections in holes 81-1 to 81-5 and 81-8 to 81-10 yields 56,000 tons at a grade of 0.257 oz. Au per ton over a three foot width. The overall grade of the veins computed from all surface channel samples and diamond drill intersections is 0.143 oz. Au per ton for a total of 143,000 tons. This tonnage is present in two veins through a length of 540 feet, width of 3 feet and depth of 400 feet.

#### CONCLUSIONS AND RECOMMENDATIONS

The diamond drill program was successful in intersecting mineralized structures numbered veins 1 and 2 and extending their known length to 540 feet. Very encouraging gold values were found

in quartz veins in shear zones and in the shear zones themselves. Initial sampling took only those core sections for assay which showed visible quartz or sulfide mineralization. Additional adjacent sampling is necessary over all sheared areas, especially in holes 81-8 to 81-10.

The two veins, previously investigated on surface, appear to be the result of branching of a single structure first found in diamond drill hole 81-8 at approximately the 200 foot level. Some of the best gold intersections were encountered where this single vein branches which is an area of greater shearing.

The recent drilling has established lateral and vertical persistence of the known mineralized structure, has evidenced a degree of zoning of gold values, and has demonstrated the possibility of vein widening. Further igneous intrusions have been identified which carry gold mineralization, although of minor amounts.

These are positive and encouraging results and, consequently, additional work is warranted to delineate the extent and significance of the gold-bearing structures.

As the silver values are low, only gold need be assayed for at the present time. The following program of additional sampling and diamond drilling is therefore recommended.

Table 1

## SUMMARY OF DIAMOND DRILL INTERSECTIONS

Vein	DDH#	DDH Intersection	Core Width	True Width	Assay	
					Au Oz/Ton	Ag Oz/Ton
1	81-2	251'2"-252'4"	1'2"	1.00'	Tr.	Nil
1	81-3	297'9"-300'	2'3"	1.95'	.13	Tr
1	81-4	267'8"-269'5½"	1'9½"	1.67'	.17	Tr
1	81-5	306'9"-310'10"	4'1"	3.53'	.051	Tr
1	81-6	301'7"-302'1"	6"	.4'	Nil	Tr
1	81-7	250'5"-252'10"	2'5"	2.31'	Nil	Tr
1+2 *1	81-8	236'8"-239'2"	2'6"	2.41'	.26 (high grade)	Nil
1+2	81-9	264'1"-269'1" *2	5'0"	4.49'	.37 (high grade)	Tr
		272'2"-275'6"	3'4"	2.99'	.054	Tr
1+2	81-10	287'7"-288'9"	1'2"	.86'	.41 (high grade)	Tr
2	81-1	13'10"-15'	14"	1.15'	1.8 (high grade)	.3
2	81-2	304'9"-307'2"	2'5"	2.42'	.088	Tr
2	81-3	328'1"-328'11"	10"	.78'	.14	Tr
2	81-4	333'6"-336'6"	3'	2.92'	.023	Tr
2	81-5	367'10"-369'2"	1'4"	1.22'	.035	Tr
2	81-6	366'11"-368'7"	1'8"	1.49'	.002	Tr
2	81-7	330'3"-333'3"	3'	2.9'	.006	Tr

\*1 Veins 1 and 2 joined at depth.

\*2 A 2'11" section between 264'1"-267' (2.62' true width) assayed .6 Au. oz/ton and Trace silver.

Table 2

## SURFACE GRADES ALONG THE VEINS

<u>Vein#</u>	<u>Length of Adjacent Intervals Along Strike</u>	<u>Average Width</u>	<u>Average Grade (Au oz/ton)</u>
1	160'	1.75'	.28
1	140'	1.86'	.426 (high grade)
1	150'	1.26'	.111
2	110'	1.28'	.584 (high grade)
2	110'	.9'	.128

Table 3

## HIGH GRADE SHOOT

<u>Width</u>	<u>Tonnage</u>	<u>Au Oz/Ton</u>
1.72' *1	32,000	.448
3.00' *2	56,000	.257

Table 4

## OVERALL GRADE AND TONNAGE

<u>Width</u>	<u>Tonnage</u>	<u>Au Oz/Ton</u>
1.68' *1	80,000	.255
3.00' *2	143,000	.143

\*1 Average true width of veins.

\*2 Grade & tonnage when diluted to 3 feet.

COST ESTIMATE FOR THE RECOMMENDED PROGRAM

Additional Sampling of Core in Holes 81-1 to 81-10

Geological assistant for two weeks	-	\$ 1,500
Rent and Board	-	365
Mobilization - Toronto for one man	-	200
Supervision plus Onsite Visits	-	350
Vehicle (rental and fuel)	-	300
Assaying (Au only) and Shipping	-	<u>900</u>
SUB TOTAL	-	\$ 3,615

Diamond Drill Program

Diamond Drilling - 4500 feet	-	90,000
Assay Allowance (Au only)	-	5,000
Geologist - two months	-	6,000
Accommodation - Rent at \$275/month	-	450
Board at \$18/day/man	-	1,620
Vehicle (rental and fuel)	-	2,200
Mobilization - Toronto	-	200
Supervision plus Onsite Visits	-	5,000
Miscellaneous (taxi,	-	<u>1,500</u>
SUB TOTAL	-	\$111,770
+ Contingencies of 10%	-	<u>1,177</u>
TOTAL		<u>\$122,947</u>

Respectfully submitted by

A. C. A. HOWE INTERNATIONAL LTD.



T. P. MacMichael, B.Sc.

CERTIFICATE

I, Terence P. MacMichael, of 19-1975 Memory Lane, Pickering, Ontario, hereby certify that:

1. I am and have been employed since 1979 as a geologist by A. C. A. Howe International Limited Mining and Geological Consultants with offices at Suite 826, 159 Bay Street, Toronto, Ontario M5J 1J7.
2. I am a graduate of Dalhousie University, Halifax, Nova Scotia with a Bachelor of Science (1975) Honours degree in geology.
3. I have practiced my profession in excess of six years.
4. I have no interest in Marshall Boston Iron Mines Limited or in the property discussed in this report, nor do I anticipate such interest.
5. This report is based on a diamond drilling program I supervised during April 13 to May 16, 1981.



T. P. MacMichael, B.Sc.



**A. C. A. HOWE INTERNATIONAL LTD.**

*Mining and Geological Consultants*

August 25, 1981  
Updated October 26, 1981

Marshall Boston Iron Mines Ltd.  
Suite 826, 159 Bay Street  
Toronto, Ontario M5J 1J7

SUMMARY REPORT

**SUBJECT: Second Phase of Diamond Drilling in Veins 1 and 2.**

Gentlemen:

The following is a summary report on the second phase of diamond drilling on the numbers 1 and 2 gold-bearing veins of Marshall Boston Iron Mines Ltd. Work to date has been contained on claims L26692 and L5341 in a 29 contiguous claim group. Phase I encompassed a 10-hole diamond drill program totalling 3,346 feet completed between April 13 and May 16, 1981. See A.C.A. Howe International Ltd. Report No. 426 for details. Phase II was an addition to Phase I of 6 diamond drill holes totalling 2,185 feet completed between July 6 and August 7, 1981.

In the immediate vicinity of the veins, the property is underlain by intermediate to basic volcanics intruded by feldspar porphyry and lamprophyre dikes. The veins occur within shear zones containing abundant calcite and chlorite with disseminated and streaks of pyrite. Diamond drilling indicates the shear zones are increasing in width to the south and with depth. Gold mineralization occurs within quartz veins in the shear zones often associated with the sulfides and chlorite streaks. The quartz veins usually contain grey quartz, calcite, chlorite, pyrite and sheared volcanic material. In the adjacent sheared rock to the veins, gold values, although not as high as in the quartz veins, also occur.

Veins 1 and 2 have joined towards the south and at depth as can be seen on the accompanying map. Levels 200' and 300' have been plotted on the map and illustrate the situation. In close proximity to the junction of the veins, some of the best gold inter-sections have been encountered.

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A. C. A. HOWE INTERNATIONAL LIMITED



<u>Hole No.</u>	<u>True Width (feet)</u>	<u>Assay (Au oz/ton)</u>
81-8	2.48	.26
81-9	2.62	.6
81-10	1.06	.41
81-11	.91	.13
81-12	2.28	.11
81-16	1.20	.95

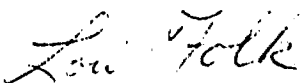
Consistent high values have been encountered in diamond drill intersections in the vicinity where veins 1 and 2 join. It appears an ore shoot is following this junction which plunges steeply to the northeast. Further diamond drilling is warranted to prove this zone at depth.

Drill indicated tonnage to the 500 feet level in this ore shoot is 89,000 tons grading .237 Au oz/ton. Drilling has also been completed on either side of this ore shoot. Overall drill indicated grade and tonnage as seen in all sixteen holes is 220,000 tons grading .126 Au oz/ton down to the 500 foot level. The vein structures are open to the north, south and at depth. Tonnage is based on a 3 foot mining width.

As can be seen on the map, close-spaced channel sampling has produced erratic gold values. When the weighted average of these values are calculated, high-grade pods are seen to occur. Therefore, due to the spotty occurrence of mineralization, diamond drilling may miss significant gold intersections. Bulk sampling is necessary to substantiate drill indicated grade and tonnage. Further diamond drilling and underground exploration is warranted as the next phase of the program.

Sincerely,

A. C. A. HOWE INTERNATIONAL LTD.



per T. P. MacMichael  
Chief Geologist

TPM/lf

APPENDIX I  
DIAMOND DRILL LOGS

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines Ltd - Tipper Claims  
 HOLE NO. 81-1 LENGTH 200'  
 LOCATION 17' East of Vein #2  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 45°  
 STARTED April 15, 1981 FINISHED April 16, 1981

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
200'	46°				

HOLE NO. 81-1 SHEET NO. 1  
 REMARKS 2 sheets

LOGGED BY Terry MacMichael

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	oz/TON	oz/TON
					FROM	TO	TOTAL				
0	11'	Casing									
11'	13'10"	Intermediate - Basic metavolcanics- generally a grey to green coloured rock with irregular mottled and epidotized zones. Stringers (< 1/16"- a few inches) of + calcite + quartz+ chlorite+ pyrite + are evident throughout . Pyrite is generally present throughout the greenstone in amounts up to 1%.									
		13'13"- an irregular and discontinuous calcite stringer with minor brecciation. 45° C.A. Hanging wall to Vein #2.	7501		12'10"	13'10"	1'			.002	Nil
13'10"	15"	Vein #2- grey quartz vein with calcite and 10-15% pyrite 30° to C.A.	7502		13'10"	15"	14"			1.8	.3
15'	133'8"	Intermediate- Basic metavolcanics - contains small (1/8 - 1/4") patches of calcite.									
		15'-16' footwall to Vein #2	7503		15'	16'	1'			.015	Tr
			1478		16'	17'6"	1'6"			<.01	
			1479		17'6"	18'8"	1'2"			<.01	
		18'8" - 19' - sheared or flow zones containing calcite and pyrite	7504		18'8"	19'	3"			.004	Tr
		25'8" - 26'8" - sheared or flow zones containing calcite and pyrite 35° C.A.	7505		25'8"	26'8"	1'			.001	Tr
		29'10" - 30'9" - a sheared or flow zone containing calcite and pyrite between grey and green greenstone. 35° C.A.	7506		29'10"	30'9"	11"			Tr	Nil

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-1

SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
		67'2" - a shear at this point produced irregular bleaching and veining. 35° C.A.	7507		67'	67'8"	8"			Au Nil	Ag Nil
		102'5" - 102'11" - contains a ½" quartz vein and a ¼" chlorite - calcite-pyrite 40° C.A.	7508		102'5"	102'11"	6"			.001	Nil
133'8"	134'9"	Lamprophyre with 1" hanging wall and 1½" footwall border veins containing calcite-pyrite-chlorite									
		133'7"-133'10" - border zone 25° C.A.	7509		133'7"	133'10"	3"			Nil	Nil
		134'7" - 134'10" border zone 30° C.A.	7510		134'7"	134'10"	3"			Nil	Nil
134'9"	171'3"	Intermediate -basic metavolcanics									
171'3"	172'8"	Breccia zone containing jasper, eipidote, quartz and minor zinc	7511		171'3"	172'8"	1'5"			.002	Nil
172'8"	200'	Intermediate - basic metavolcanics									
		END OF HOLE									

# DIAMOND DRILL RECORD

OME P81-6-C-104

NAME OF PROPERTY Marshall Boston Iron Mines Ltd.-Tipper Claim  
 HOLE NO. 81-2 LENGTH 331'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 45°  
 STARTED April 20 FINISHED April 22/81

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
288'	39°				

HOLE NO 81-2 SHEET NO. 1  
 REMARKS 3 sheets

LOGGED BY Terry MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON		
					FROM	TO	TOTAL						
0'	14'	Casing - 12' of casing left in hole											
14'	15'5"	Intermediate to Basic Metavolcanics											
15'5"	26'6½"	Diabase Top contact 35° C.A. Bottom contact 25° C.A.										Au	Ag
26'6½"	34'9"	Intermediate to Basic Metavolcanics - generally a grey to green coloured rock with irregular mottled and epidotized zones. Stringers (< 1/16" - a few inches) of + calcite+ quartz+ chlorite+pyrite are evident throughout. Pyrite is generally present throughout the greenstone in amounts up to 1%.  30'5" - < 1" quartz calcite-pyrite stringer 45° C.A.  30'8"- < 1" quartz calcite-pyrite stringer 20° C.A.											
34'9"	36'8"	Biotite-Feldspar Porphyry- 7% Biotite grains ~ 1/10" 1% Feldspar grains ~ 1/8" also contains two quartz-calcite stringers 1/8" and 1/16" respectively at 30° C.A.	7512		30'2"	30'9"	7"					Nil	Nil
36'8"	42'9"	Intermediate to Basic Metavolcanics	7513		34'9"	36'8"	1'11"					Nil	Nil
42'9"	44'5"	Feldspar-Biotite Porphyry-10% Feldspar phenocrysts up to 1/8" 7% Biotite grains	7514		42'9"	44'5"	1'6"					Nil	Nil

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# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.  
 NAME OF PROPERTY Tipper Claims

HOLE NO. 81-2 SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS					
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON	
					FROM	TO	TOTAL					
		298-299 - shear with calcite and pyrite 65° C.A.	7528		298'	299'	1'			Au	Ag	
		303'9"-304'9"- hanging wall to Vein #2	7529		303'9"	304'9"	1'			.001	Nil	
304'9"	307'2"	Vein #2 - dark grey quartz vein with minor calcite and chlorite stringers and 15% finely disseminated pyrite in stringers and 1-2% cubic pyrite 54° C.A.	7530		304'9"	307'2"	2'5"			.088	Tr	
307'2"	315'		Intermediate to Basic Metavolcanics									
		307'2"-308'7" - footwall to Vein #2	7531		307'2"	308'7"	1'5"			.006	Tr	
		309'8"-310'7" - zone containing 2 pyrite stringers 3/16" wide and 1 calcite-chlorite vein 1½" wide 60° C.A.	1480		308'7"	309'8"	1'1"			<.01		
			7532		309'8"	310'7"	11½"			.002	Tr	
			1481		310'7"	312'9"	2'2"			<.01		
			1482		312'9"	315'	2'3"			<.01		
315'	315'8½"	Quartz vein with 30% fine pyrite in stringers and 30% calcite and chlorite in stringers in grey quartz 50° C.A.	7533		315'	315'8½"	8½"			.004	Nil	
				1483		315'8½"	318'	2'3½"			<.01	
				1484		318'	320'3"	2'3"			<.01	
315'8½"	331'	Intermediate to Basic Metavolcanics										
END OF HOLE												

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines-Tipper Claims  
 HOLE NO. 81-3 LENGTH 394'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288 DIP 67°  
 STARTED April 22 FINISHED April 24, 1981

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
377'	65°				

HOLE NO 81-3 SHEET NO. 1  
 REMARKS 5 sheets

LOGGED BY T.P. MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS			
FROM	TO		NO.	% SULPHIDES	FOOTAGE		%	%	OZ/TON	OZ/TON
				FROM	TO	TOTAL				
0'	10'	Casing - 8' of casing left in hole							Au	Ag
10'	26'6"	Intermediate to Basic Metavolcanics- generally grey to green coloured rock with irregular mottled and epidotized zones. Stringers (< 1/16" to a few inches) of + calcite+ quartz+ chlorite+ pyrite are evident throughout Pyrite is generally present throughout the greenstone in amounts up to 1%.								
26'6"	31'2"	Diabase - lower contact 28° C.A.								
31'2"	36'4"	Intermediate to Basic Metavolcanics								
36'4"	37'	Feldspar - Biotite Porphyry - 2-3% feldspar phenocrysts up to 1/8" in diameter 60° C.A.	7534		36'4"	37'	8"		Nil	Tr
37'	39'7"	Intermediate to Basic Metavolcanics								
39'5"	42'8"	Feldspar - Biotite Porphyry - 2-3% feldspar phenocrysts up to 1/8" in diameter, 1-2% pyrite cubes and 7% biotite grains.	7535		39'5"	42'8"	3'3"		Nil	Nil
42'8"	51'5"	Intermediate to Basic Metavolcanics								
51'5"	53'6"	Feldspar - Biotite Porphyry- no pyrite observed	7536		51'5"	53'6"	2'1"		Nil	Tr
53'6"	191'	Intermediate to Basic Metavolcanics								
		87'4" - 1 3/4" shear filled with quartz-calcite-pyrite and chlorite. Rock darker on either side of shear.	7537		87'	87'8"	8"		Tr	Nil

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# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claim

HOLE NO. 81-3 SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
191'	194'	Epidotized zone								Au	Ag
		191'-191'5½" - epidotized vein	7538		191'	191'5½"	5½"			Nil	Nil
194'	215'	Biotite Porphyry- dark grey in colour, no feldspar phenocrysts or quartz veining.									
215'	237'7"	Intermediate - Basic Metavolcanics	7539		222'	222'10"	10"			.004	Nil
		222'-222'10" - a darkened moderately sheared zone containing pyrite, calcite and chlorite .									
237'7"	235'8"	Intermediate - Basic Metavolcanics- darker green in colour.									
		233'-235' - contains a few calcite stringers <1/16" in thickness. At 233'5" is a ½" quartz vein (55° C.A.)	7540		233'	235'	2'			Nil	Nil
		235'-237' - the top 8" contains calcite-stringers and from 235'8" - 237' the rock contains 30% massive brown quartz in feldspar- Biotite porphyry containing 3-5% pyrite cubes.	7541		235'	237'	2'			Tr	Nil
235'8"	251'4"	Feldspar- Biotite Porphyry Content of eldspar phenocrysts varies from 1 to 5%. Grain boundaries are usually hazy although a few have sharp outlines. 15% biotite is present. Areas of the rock have been replaced by brown quartz and pyrite 55° C.A.									

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claim

HOLE NO. 81-3 SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
		237'-239' contains minor brown quartz	7542		237'	239'	2'			Au	Ag
		239'-243' minor feldspar phenocrysts and pyrite	7543		239'	241'	2'			Nil	Tr
			7544		241'	243'	2'			Nil	Nil
		243'-245' - minor amount of brown quartz and 1% pyrite	7545		243'	245'	2'			Tr	Nil
		245'-247' - 2% pyrite and 4 calcite + pyrite stringers	7546		245'	247'	2'			Nil	Nil
		247'-251' 8" - 10% brown quartz, 3% pyrite and 4 calcite stringers.	7547		247'	249 1/4"	2' 4"			.002	Nil
			7548		249 1/4"	251' 8"	2' 4"			Nil	Nil
251' 8"	254' 4"	Border zone- 25% feldspar - biotite porphyry and 75% brown quartz containing 7% pyrite cubes and 20 stringers containing + calcite + pyrite + quartz 45° C.A.	7549		251' 8"	254' 4"	2' 8"			Nil	Nil
254' 4"	271' 2"	Intermediate - Basic Metovolcanics								.003	Tr
271' 2"	289' 5"	Shear zone- Moderately sheared hanging wall to vein #1 40-45° C.A. Grey to green banding. Numerous stringers and irregular veining of calcite + pyrite + chlorite. Overall pyrite < 1%.	7550		271'	273'	2'			Nil	Nil
			7551		273'	275'	2'			Nil	Nil
			7552		275'	277'	2'			Nil	Nil
			7553		277'	279'	2'			Nil	Nil
			7554		279'	281'	2'			Nil	Tr
			7555		281'	281 1/2"	10 1/2"			Nil	Nil
			7556		281 1/2"	283'	1' 1"			Nil	Nil
			7557		283'	283 11/16"	11"			Tr	Tr

LANGRIDGES - TORONTO - 366-1188

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-3 SHEET NO. 4

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS					
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ./TON	OZ./TON	
					FROM	TO	TOTAL					
289'5"	300'	Vein #1- sheared greenstone almost completely replaced by calcite, chlorite and 2-3% pyrite. Some grey quartz veining.	7558		285'8"	287'	1'4"			Au	Ag	
										.001	Tr	
			7559		287'	289'5"	2'5"			Tr	Tr	
			7560		289'5"	291'10"	2'5"			.067	Tr	
			7561		291'10"	294'6"	2'8"			Tr	Tr	
			7562		294'6"	295'5"	11"			.16	Tr	
		294'6"-295'5"- 90% grey quartz containing 10% massive pyrite stringers. 50° C.A.	7563		295'5"	297'9"	2'4"		.001	Tr		
		297'9"-300'- 40% grey quartz containing 7% massive pyrite	7564		297'9"	300'	2'3"		.13	Tr		
300'	307'	Shear zone- Moderately sheared footwall to Vein #1 30-38° C.A.	7565		300'	301'	8"		.001	Tr		
			1460		301'1"	303'9"	2'8"		<.01			
			1461		303'9"	305'9"	2'		<.01			
			1462		305'9"	307'5"	1'8"		<.01			
			1463		307'5"	309'6"	2'1"		<.01			
			1464		309'6"	312'4"	2'1"		<.01			
			1465		312'4"	314'3"	1'11"		<.01			
			1466		314'3"	316'8"	2'5"		<.01			
			1467		316'8"	318'	1'4"		<.01			
			1468		318'	319'8"	1'8"		<.01			
			1469		319'8"	320'8"	1'		<.01			
			1470		320'8"	322'	1'4"		<.01			
			1471		322'	323'8"	1'8"		<.01			
			1472		323'8"	325'7"	1'11"		<.01			
307'	326'7"	Intermediate - Basic Metavolcanics	7566		325'7"	326'7"	1'		Tr.	.13		
326'7"	328'11"	Vein #2 - 326'7"-328'1" irregular calcite + chlorite +1% pyrite veining replacing greenstone.	7567		326'7"	328'1"	1'6"		.001	Tr		

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-3 SHEET NO. 5

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
		328'1"-328'11" - grey quartz + 7% pyrite + minor chlorite and calcite	7568		328'1"	328'11"	10"			.14	Tr
328'11"	347'	Intermediate - Basic Matavolcanics	7569		328'11"	330'11"	2'			.003	Nil
			1473		330'11"	332'5"	1'6"			.01	
			1474		332'5"	333'7"	1'2"			.01	
			1475		333'7"	336'2"	2'7"			.01	
			1476		336'2"	338'11"	2'9"			.01	
			1477		338'11"	341'3"	2'4"			.01	
			7570		346'	347'	1'			Nil	Tr
347'	352'	Shear zone									
		347'-349' - 5% calcite+chlorite stringers and 2% copper coloured pyrite stringers. Minor chalcopryite. 30° C.A.	7571		347'	349'	2'			Nil	Tr
		349'-352' - 50% calcite + chlorite stringers and 7% copper coloured pyrite. Minor chalcopryite. 30°C.A.	7572		349'	352'	3'			Nil	Tr
			7574								
			7575		390'	390'8"	8"			Nil	Tr
		END OF HOLE									

LANGRIDGES - TORONTO - 366-1168

OMEP 81-6-C-104

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines Ltd. - Tipper Claims  
 HOLE NO. 81-4 LENGTH 343'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 45°  
 STARTED April 27/81 FINISHED April 28/81

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
340'	43°				

HOLE NO. 81-4 SHEET NO. 1  
 REMARKS 3 sheets

LOGGED BY T.P. MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON		
					FROM	TO	TOTAL						
0'	12'	Casing - 10' of casing left in hole											
12'	75'9"	Intermediate-Basic Metavolcanics - generally a grey to green coloured rock with irregular mottled and epidotized zones. Stringers (< 1/16"- a few inches) of + calcite + quartz + chlorite + pyrite are evident throughout. Pyrite in amounts up to 1% present throughout the greenstone.											
		20'7"- 1/8" quartz vein with pyrite. 45° C.A.	7576		20'5"	21'3"	10"			Nil	Tr		
		21'- 1" quartz vein with pyrite 35° C.A.											
		the greenstone enclosing the veins is a darker green in colour.											
		62'6"- 3/8" quartz + pyrite + chlorite vein in a darkened zone 40° C.A.	7577		62'1"	62'9"	8"			Nil	Tr		
		69'2"- 1/2" quartz vein with pyrite 40° C.A.	7578		68'11"	69'5"	6"			Nil	Tr		
75'9"	79'	Vein- a darkened altered zone with 10-15% irregular grey quartz veining and 3% pyrite cubes. Upper and lower contacts are 45° C.A. with a foliation of 30° C.A. Fractures containing calcite-quartz-pyrite have a 15-20° C.A.	7579		75'9"	79'	3'3"			Nil	Tr		

LANGRIDGES - TORONTO - 368-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claim

HOLE NO. 81-4 SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
79'	120'8"	Intermediate-Basic Metavolcanics								Au	Ag
		100'2" - 1/2" quartz-pyrite-calcite vein with a darkened zone enclosing it 50° C.A.	7580		100'	100'3 1/2"	3 1/2"			Tr	Tr
			7581		120'2"	120'8"	6"			Nil	Tr
120'8"	122'8"	Vein- 80% greyish brown quartz + 10% cubic pyrite with abundant calcite and chlorite 55° C.A. also contains a few biotite grains	7582		120'8"	122'8"	2'			Nil	Nil
122'8"	267'8"	Intermediate-Basic Metavolcanics									
		191'3"-1" quartz-pyrite vein with calcite and chlorite 45° C.A.	7583		191'	191'6"	6"			Nil	Tr
		218'- 3/4" quartz-calcite-chlorite-pyrite vein 40° C.A.	7584		217'11"	218'2"	3"			Nil	Nil
		239'9"-1 1/4" calcite-quartz-chlorite-pyrite vein 53° C.A.	7585		239'6"	239'10"	4"			Nil	Nil
			7586		266'8"	267'8"	1'			Tr	Tr
267'8"	270'10"	Vein #1									
		267'8"-269'5 1/2"- 30% grey quartz and 30% fine disseminated bands of pyrite with lesser calcite and chlorite	7587		267'8"	269'5 1/2"	1'9 1/2"			.17	Tr
		269'5 1/2"-270'10"- 50% irregular calcite and chlorite veining with minor grey qtz. 1% pyrite	7588		269'5 1/2"	270'10"	1'4 1/2"			.001	Tr
270'10"	334'10"	Intermediate- Basic Metavolcanics	7589		270'10"	273'4"	2'6"			Nil	Nil
		273'4"-274'5"- irregular calcite and chlorite veining	7590		273'4"	274'5"	1'1"			Nil	Nil
		293'4"-1" quartz-calcite-chlorite pyrite vein 50° C.A.	7591		294'1"	294'4"	3"			Nil	Nil

LANGRIDGES - TORONTO - 366-1188

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-4 SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
		295'9"-297'1" - contains a ¼" quartz + pyrite stringer 7° C.A.	7592		295'9"	297'1"	1'4"			Au	Ag
			1485		323'	325'	2'			Nil	Nil
			1486		325'	326'9"	1'9"			<.01	
			1487		326'9"	328'11"	2'2"			<.01	
			1488		328'11"	331'3"	2'4"			<.01	
			1489		331'3"	333'6"	2'3"			<.01	
		333'6"-334'10" - hanging wall to Vein #2. 2% pyrite cubes	7593		333'6"	334'10"	1'4"			.011	Nil
334'10"	336'6"	Vein #2 - grey quartz veining with lesser amounts of pyrite, calcite and chlorite banding 62° C.A.	7594		334'10"	336'6"	1'8"			.033	Tr
336'6"	343'	Intermediate - Basic Metavolcanics	7595		336'6"	337'6½"	1'1½"			Tr	Nil
			1490		337'6½"	338'11"	1'4½"			<.01	
			1491		338'11"	340'6"	1'7"			<.01	
		340'6"-342' - moderate shear with 10% grey quartz-pyrite veining with minor calcite and chlorite	7596		340'6"	342'	1'6"			Tr	Nil
			1492		342'	343'2"	1'2"			<.01	
		END OF HOLE									

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines Ltd-Tipper Claims  
 HOLE NO. 81-5 LENGTH 402'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 66°  
 STARTED April 29/81 FINISHED April 30/81

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
390'	65°				

HOLE NO. 81-5 SHEET NO. 1  
 REMARKS 4 sheets  
 LOGGED BY T.P. MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON		
					FROM	TO	TOTAL						
0'	8'	Casing - 6' of casing left in the hole											
8'	284'2"	Intermediate -Basic Metavolcanics- generally a grey to green coloured rock with irregular mottled and epidotized zones. Stringers (< 1/16"- a few inches) of + calcite + quartz + chlorite + pyrite are evident throughout. Pyrite in amounts up to 1% are present throughout the greestone.											
		55'7"-1/2" quartz vein containing chlorite stringers with pyrite borders and a darkened zone on either side of the vein. 47° C.A.	7597		55'3"	56'	9"			Nil	Nil		
		93'11"- 1 1/2" quartz vein with pyrite in a darker green greenstone. 76° C.A.	7598		93'5"	94'5"	1'			Nil	Nil		
		140'2"-1/8" quartz vein with chalcoppyrite and pyrite. 58° C.A.											
		141' - 1" quartz vein with chlorite and minor pyrite. 61° C.A.	7599		139'11"	141'4"	1'5"			Nil	Nil		
		151'-2" quartz vein with minor pyrite	7600		150'8"	151'6"	10"			Nil	Nil		
		227'6"-1" quartz vein with pyrite 20° C.A.	7601		228'1"	228'10"	9"			Nil	Nil		
		231'-231'11" altered darkened zone with quartz and pyrite.	7602		231'	231'11"	11"			Nil	Nil		



# DIAMOND DRILL RECORD

Marshall Boston Iron Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-5

SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
284'2"	285'11"	Siliceous Biotite Porphyry - 20% brown quartz +1 % pyrite . Top contact 45° C.A. Bottom contact 35° C.A. Contains nine 1/8" quartz veins 48° C.A.	7603		284'2"	285'11"	1'9"			Au	Ag
285'11"	287'9"	Intermediate - Basic Metavolcanics- moderately sheared. 52° C.A.	7604		285'11"	287'9"	1'10"			Nil	Tr
287'9"	305'	Silicified Biotite Porphyry									
		287'9"-288'11"- 60% brown quartz, 7-10% pyrite and some pinkish feldspar in stringers. Foliation 75° C.A. and 42° C.A. towards 288'.	7605		287'9"	288'11"	1'2"			.003	Nil
		288'11"-294'4"- 25% brown quartz giving the rock a mottled appearance due to the replacement of the porphyry with quartz. Contains brown quartz veins with pyrite and feldspar forming a stockwork.	7606		288'11"	291'7"	2'8"			.001	Nil
			7607		291'7"	294'4"	2'9"			Tr	Nil
		294'4"-297'-55% brown quartz and 5% pyrite cubes. some reddish feldspar.	7608		294'4"	297'	2'8"			.002	Tr
		297'-298'4"- biotite prophyry- not silicified	7609		297'	298'4"	1'4"			Nil	Nil
		298'4"-301'7"-40% brown quartz and 5% pyrite 55° C.A.	7610		298'4"	301'7"	3'3"			.001	Nil

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.  
Tipper Claims

NAME OF PROPERTY \_\_\_\_\_

HOLE NO. 81-5

SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
		301'7"-302'9" biotite porphyry - not silicified	7611		301'7"	302'9"	1'2"			Au	Ag
		302'9"-304'1" 85% brown quartz and 7% pyrite upper contact 56° C.A., lower contact 47° C.A.	7612		302'9"	304'1"	1'4"			Nil	Tr
		304'1"-305' grey quartz vein material 3% pyrite 51° C.A.	7613		304'1"	305'	11"			.002	Nil
305'	306'9"	Intermediate - Basic Metavolcanics - slightly sheared 1-2% pyrite	7614		305'	306'9"	1'9"			Nil	Tr
306'9"	310'10"	Vein #1- 80% greyish brown quartz containing 5% pyrite	7615		306'9"	308'9"	2'			.004	Tr
		308'9"-310'10" - 10% pyrite as bands up to ½" wide	7616		308'9"	310'10"	2'1"			.039	Tr
310'10"	367'10"	Intermediate - Basic Metavolcanics								.062	Tr
		310'10" - 312'5"- moderate shearing with some grey quartz.	7617		310'10"	312'5"	1'7"			.002	Tr
			1500		312'5"	314'7"	2'2"			<.01	
			1301		314'7"	316'10"	2'3"			<.01	
			1302		316'10"	318'10"	2'			<.01	
			1303		318'10"	320'	1'2"			<.01	
		330'8"-331'5" breccia filled by quartz and minor pyrite	7618		330'8"	331'5"	7"			Nil	Tr
		352'3"-353'6" - moderate shear with calcite vein- lets and minor pyrite 47° C.A.	7619		352'3"	353'6"	1'3"			Tr	Nil
			7620		357'3"	357'6"	3"			Nil	Tr
		357'3"-357'6" - ½" quartz vein with pyrite 50° C.A.	7621		366'10"	367'10"	1'			Nil	Tr
367'10"	369'2"	Vein #2 - 35% grey quartz, 35% calcite + chlorite veining with minor pyrite binding. 5% pyrite overall.	7622		367'10"	369'2"	1'4"			.035	Tr

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-5 SHEET NO. 4

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS					
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON	
					FROM	TO	TOTAL					
369'2"	402'	Intermediate - Basic Metavolcanic	7623		369'2"	370'2"	1			Au	Ag	
			1498		370'2"	372'8"	2'6"			<.01	Tr	
			1499		372'8"	374'3"	1'7"			<.01		
				374'3"-375'1" - moderate shear	7624		374'3"	375'1"	10"		Nil	Tr
				381'6"-382'6" - moderate shear	7625		381'6"	382'6"	1'		Nil	Tr
					1315		397'1"	398'8½"	1'7½"		<.01	
					1314		398'8½"	401'1"	2'4½"		<.01	
				401'1"-401'6" - irregular calcite - chlorite pyrite veinlets	7626		401'1"	401'6"	5"		Nil	Tr
				END OF HOLE								

LANGRIDGES - TORONTO - 366-1168

MEPBI-6-C-104

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines - Tipper Claims  
 HOLE NO. 81-6 LENGTH 399'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 66°  
 STARTED May 4, 1981 FINISHED May 6, 1981

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
395'	65°				

HOLE NO. 81-6 SHEET NO. 1  
 REMARKS 4 sheets

LOGGED BY T. P. MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON		
					FROM	TO	TOTAL						
0'	8	Casing - 6' of casing left in hole											
8'	97'7"	Hornblende-Feldspar Porphyry - lime green to dark green to grey-green in colour. 10-15% hornblende phenocrysts 1/8" in diameter, mostly altered to chlorite. Feldspar grains are present with an indistinct crystal boundary. Contains an average of 1% pyrite. Foliation 50° C.A. Some free quartz present.											
		18'1½"-18'4½" - a siliceous vein containing calcite + chlorite + 1% pyrite. 65° C.A.	7627		17'	18'7"	1'7"			Au	Ag		
			1329		8'	12'	4'			<.001	Tr		
			1330		12'	17'	5'			<.01			
			1331		18'7"	22'	3'5"			<.01			
			1332		22'	27'	5'			<.01			
			1333		27'	32'	5'			<.01			
			1334		32'	37'	5'			<.01			
			1335		37'	42'	5'			<.01			
		46'1"-49'5" - a grey porphyry with a 1" reddish vein containing 20% chalcopyrite.	7628		46'1"	49'5"	3'4"			Nil	Tr		
			1336		42'	46'1"	4'1"			<.01			
			1337		49'5"	56'	6'7"			<.01			
			1338		56'	61'	5'			<.01			
			1339		61'	66'	5'			<.01			
			1340		66'	71'	5'			<.01			
			1341		71'	76'	5'			<.01			
			1342		76'	80'	4'			<.01			
			1343		80'	85'	5'			<.01			
			1344		85'	90'	5'			<.01			
			1345		90'	95'	5'			<.01			
			1346		95'	99'10"	'10"			<.01			

LANGRIDGES - TORONTO - 366-1188

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-6 SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS			
FROM	TO		NO.	% SULPH IDES	FOOTAGE		%	%	OZ/TON	OZ/TON
					FROM	TO				
97'7"	100'9"	Feldspar-Hornblende Porphyry-Greyish green in colour. Slightly less hornblende with 15% prominent feldspar phenocrysts, averaging 1/16" in diameter, with sharp grain boundaries. Contact with metavolcanics 47° C.A.								
		100'1"-100'2" - a veinlet containing quartz, calcite and 2% pyrite 70° C.A.	7629		99'10"	100'9"			.001	Tr
100'9"	207'7"	Intermediate - Basic Metavolcanics - generally a grey to green coloured rock with irregular mottled and epidotized zones. The rock is fine to medium grained and highly carbonatized in places. Stringers (<1/16"-a few inches) of + calcite + quartz + chlorite + pyrite are evident throughout. Pyrite is generally present throughout the greenstone in amounts up to 1%. 35° C.A.								
		107'5"-108'6" - contains three stringers 1/2", 5/8" & 1/8" composed of calcite, chlorite and pyrite.	7630		107'5"	108'6"	1'1"		.014	Tr
		173'4"-175' - irregular quartz vein <1" thick subparallel to C.A. Pyrite on vein contacts.	7631		173'4"	175'	2'8"		.002	Tr
		182'4"-185'1" - irregular calcite-quartz-chlorite 1% pyrite vein subparallel to C.A.	7632		182'4"	185'1"	2'9"		Nil	Tr
207'7"	215'4"	Biotite Porphyry - dark grey with 1% pyrite. Contact zones are composed of 1/2" quartz-calcite-chlorite-pyrite veinlets. Upper contact 20° C.A. Lower contact 35° C.A.	7633		207'7"	213'5"	5'10"		Nil	Tr
			7634		213'5"	215'4"	1'11"		Nil	Tr
215'4"	220'8"	Intermediate - Basic Metavolcanics								
220'8"	224'10"	Vein - 25-30% quartz-calcite-pyrite (3%) in metavolcanics. Veins range in size from 1/16" to 1". Both bright yellow and coppery coloured pyrite present. 24-35° C.A.	7635		220'8"	224'10"	4'2"		Nil	Tr

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-6 SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE					ASSAYS			
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
224'10"	242'8"	Intermediate-Basic Matavolcanics								Au	Ag
242'8"	245'4"	Biotite Porphyry - Upper contact 17° C.A. Lower contact 40° C.A.	7636		242'8"	245'4"	2'8"			Nil	Tr
			1316		287'	289'10"	2'10"			<.01	
			1317		289'10"	292'1"	2'3"			<.01	
			1318		292'1"	294'10"	2'9"			<.01	
			1319		294'10"	297'3"	2'6"			<.01	
			1320		297'3"	299'10"	1'7"			<.01	
			1321		299'10"	301'7"	1'9"			<.01	
245'4"	301'7"	Intermediate - Basic Metavolcanics									
301'7"	302'1"	Vein #1? shear containing 30% calcite and 1% pyrite	7637		301'7"	302'1"	6"			Nil	Tr
			1322		302'1"	304'3"	2'2"			<.01	
			1323		304'3"	307'1"	2'10"			<.01	
			1324		307'1"	309'3"	2'2"			<.01	
			1325		309'3"	310'8"	1'5"			<.01	
			1326		310'8"	314'3"	3'8"			<.01	
			1327		314'3"	315'11"	8"			<.01	
			1328		315'11"	317'11"	2'			<.01	
302'1"	357'9"	Intermediate - Basic Metavolcanics									
357'9"	366'11"	Siliceous Porphyry - Porphyry is almost totally replaced by brown quartz and 10 - 15% cubic pyrite. A number of calcite stringers (< 1/16") are present generally parallel with the foliation of 45-50° C.A.									
		357'9"-362'4" - Massive brown quartz with no more than 1% remnant porphyry.	7638		357'9"	360'4"	2'7"			.008	.10
			7639		360'4"	362'4"	2'			.009	Tr
		362'4"-366'11" - massive brown quartz with 20% remnant porphyry.	7640		362'4"	364'4"	2'			.005	Tr
			7641		364'4"	366'11"	2'7"			.002	Tr
366'11"	368'7"	Vein #2 - grey and some brown quartz with minor calcite and 2% cubic pyrite.	7642		366'11"	368'7"	1'8"			.002	Tr

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-6 SHEET NO. 4

FOOTAGE		DESCRIPTION	SAMPLE					ASSAYS			
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ./TON	OZ./TON
					FROM	TO	TOTAL				
368'7"	380'3"	Feldspar-Biotite Porphyry - 10% feldspar phenocrysts and 10% biotite grains.	7643		368'7"	375'3"	6'8"			Au	Ag
380'3"	399'	Intermediate to Basic Metavolcanics	7644		375'3"	380'3"	5'			Nil	Tr
			1347		394'	396'8"	2'8"			<.01	
			1348		396'8"	399'	2'4"			<.01	
		END OF HOLE									

OMEP 81-6-C-104

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines Lte-Tipper Claims  
 HOLE NO. 81-7 LENGTH 340'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 45°  
 STARTED May 6/81 FINISHED May 8/81

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
340'	43°				

HOLE NO. 81-7 SHEET NO. 1  
 REMARKS 3 sheets

LOGGED BY T.P. MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON		
					FROM	TO	TOTAL						
0'	8'	Casing - 4' of casing left in hole											
8'	61'	Hornblende-Feldspar Porphyry- Lime green to dark green to grey-green in colour. 10-15% hornblende phenocrysts 1/8" in diameter, mostly altered to chlorite. Feldspar grains are present with an indistinct crystal boundary. Contains < 1% pyrite. Foliation 41-46° C.A. Some free quartz present.	7645		8'	18'	10'			Nil	Tr		
			7646		18'	24'3"	6'3"			Nil	Tr		
			7647		24'3"	29'	4'9"			Nil	Tr		
			7648		29'	33'7"	4'7"			.002	Tr		
			7649		33'7"	38'4"	5'9"			Tr	Tr		
			7650		38'4"	43'1"	4'9"			.010	Tr		
			7651		43'1"	48'	4'11"			.012	Tr		
			7652		48'	53'	5'			.002	Tr		
			7653		53'	58'	5'			.001	Tr		
			7654		58'	62'9"	4'9"			.004	Tr		
		7655		62'9"	67'5"	4'8"			Nil	Tr			
		7656		67'5"	72'2"	4'9"			Nil	Tr			
		7657		72'2"	77'	4'10"			Nil	Tr			
		7658		77'	79'11"	2'11"			Nil	Tr			
61'	79'11"	Feldspar- Hornblende Prophyry- 10-15% feldspar phenocrysts with sharp crystal outlines. 10-15% hornblende. Contact with the above unit is gradational. Contact with metavolcanics 53° C.A.											

LANGRIDGES - TORONTO - 366-1168



# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-7

SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
79'11"	118'6"	Intermediate to Basic Metavolcanics - generally a grey green coloured rock with irregular mottled and epidotized zones. The rock is fine to medium grained and highly carbonated in places. Stringers (<1/16"- a few inches) of + calcite + quartz + chlorite + pyrite are evident throughout. Pyrite is generally present throughout the greenstone in amounts up to 1%.								Au	Ag
		100'1"-103'- moderate shearing with calcite-pyrite veining plus a 2" calcite vein 35°C.A.	7659		100'1"	103' 2'11"				Nil	Tr
118'6"	120'2"	Vein- an irregular darkened zone with 10% cubic pyrite, abundant calcite and some grey quartz. Also contains a 5" zone of reddish vein stockworks and numerous vugs. 1-2% biotite is evident.	7660		118'6"	120'2" 1'8"				Nil	Tr
120'2"	222'2"	Intermediate- Basic Metavolcanics									
222'2"	232'	Biotite- Feldspar Porphyry- dark grey in colour with 2-3% feldspar phenocrysts and 1% pyrite. Contains numerous calcite-quartz-pyrite stringers with some containing chalcopryite.	7661		222'2"	228'6" 6'4"				Nil	Tr
			7662		228'6"	232'11" 4'5"				.001	Tr
232'	232'11"	Intermediate-Basic Metavolcanics- irregular contacts									
232'11"	237'	Biotite Porporphyry, -dark grey and fine grained. 1% pyrite. 45° C.A.	7663		232'11"	237' 4'1"				.007	Tr

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-7 SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
237'	250'5"	Intermediate- Basic Metavolcanics	1493		248'10"	250'5"				Au	Ag
250'5"	252'10"	Vein #1?-an irregular shear zone containing 20% calcite + chlorite with some grey quartz and 2-3% disseminated pyrite.	7664		250'5"	252'10"	2'5"			<.01	Tr
			1494		252'10"	254'10"	2'			.01	
			1495		254'10"	257'2"	2'4"			<.01	
			1496		257'2"	259'6"	2'4"			<.01	
252'10"	330'3"	Intermediate- Basic Metavolcanics	1497		326'7"	328'10"	2'3"			<.01	
		329' a 1½" vein with 50% pyrite 36° C.A.	7665		328'10"	330'3"	1'5"			.001	Tr
330'3"	333'3"	Vein #2- grey quartz with minor calcite and chlorite. 25% pyrite stringers from haidline to 1" in thickness. 70° C.A.	7666		330'3"	333'3"	3'			.006	Tr
333'3"	340'	Intermediate to Basic Metavolcanics									
		334'8"- a 1" calcite + chlorite vein 70° C.A. and 2% disseminated pyrite and stringers.	7667		333'3"	336'1"	2'10"			Nil	Tr
		335'4"-1" pink calcite vein 51° C.A.									
		336'1"-338'7"- three calcite-chlorite-pyrite veins 1", 1½" and 3½" in thickness 55 C.A.	7668		336'1"	338'7"	2'6"			Tr	Tr
		338'7"-340'-minor shearing and stringers.	7669		338'7"	340'	1'5"			Tr	Tr
END OF HOLE											

# DIAMOND DRILL RECORD

OME P81-6-C-104

NAME OF PROPERTY Marshall Boston Iron Mines Ltd-Tipper Claims  
 HOLE NO. 81-8 LENGTH 308'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 45°  
 STARTED May 11/81 FINISHED May 12/81

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
299'	44°				

HOLE NO. 81-8 SHEET NO. 1

REMARKS 4 sheets

LOGGED BY T.P. MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON		
					FROM	TO	TOTAL						
0'	16'	Casing - 14' of casing left in the hole.											
16'	34'3"	Intermediate- Basic Metavolcanics - generally a grey green coloured rock with irregular mottled and epidotized zones. The rock is fine to medium grained and highly carbonated in places. Stringers (<1/16"- a few inches) of + calcite + quartz + chlorite + pyrite are evident throughout. Pyrite is generally present throughout the greenstone in amounts up to 1%.											
34'3"	35'6"	Lamprophyre dike - 50% biotite with a spinefex texture. < 1% pyrite. Upper contact 33° C.A. Lower contact 43° C.A.											
35'6"	37'7"	Intermediate- Basic Metavolcanics											
37'7"	40'	Lamprophyre dike - same as above. Upper contact 52° C.A. Lower contact 35° C.A.											
40'	56'	Intermediate - Basic Metavolcanics											
56'	59'3"	Lamprophyre dike - same as above. 1% pyrite. 1" border vein at upper contact 50% calcite + chlorite + pyrite (2%) 37° C.A.											

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-8 SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
59'3"	142'2"	- ½" border vein at lower contact. Chlorite with minor clacite and pyrite 37° C.A. Intermediate - Basic Metavolcanics	7670		56'	59'3"	3'3"			Au	Ag
		76'8"- 76'11"- contains a 2½" milky white and grey quartz vein. Some epidote. <1% pyrite 50° C.A.	7671		76'8"	76'11"	3"			Nil	Tr
		95'10"- 96'3"- zone of minor quartz veining and epidotization. 1% cubic pyrite.	7672		95'10"	96'3"	5"			Tr	Tr
		121'9"-122'4"- contains a 3½" milky quartz vein with epidote and chlorite. <1% pyrite. 20° C.A.	7673		121'9"	122'4"	7"			Nil	Tr
142'2"	143'9"	Vein - 30% eipidote + quartz. 40% darkened greenstone with chlorite and 1-2% pyrite and 25% calcite-chlorite-grey quartz containing 5% pyrite 45° C.A.	7674		142'2"	143'9"	1'7"			Tr	Tr
143'9"	167'6"	Intermediate - Basic Metavolcanics									
167'6"	173'7"	Feldspar Porphyry. 7% feldspar phenocrysts up to ¼" in diameter and 4% biotite some of which is altered to chlorite. Lower contact 30° C.A.	7675		167'6"	173'7"	6'1"			Nil	Tr
173'7"	198'	Intermediate - Basic Metavolcanics									
198'	205'3"	Silicified greenstone									
		198'-200' - chloritized and carbonatized 2% pyrite	7676		198'	200'	2'			Tr	Tr
		200'-201'4"- 50% brown quartz. 7% disseminated and cubic pyrite. 47° C.A.	7677		200'	201'4"	1'4"			.005	Tr

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-8 SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
		201'4"- 205'3"- 5% brown quartz banding. 10% calcite banding. 2-3% pyrite 55°C.A.	7678		201'4"	205'3"	3'11"			Au	Ag
205'3"	208'	Brown quartz - 90% brown quartz. 8% disseminated and cubic pyrite. 2% remnant greenstone. Hairline calcite and chlorite stringers forming a stock-work.	7679		205'3"	208'	2'9"			.004	Tr
208'	217'3"	Silicified Biotite - Feldspar Porphyry - 2-3% feldspar phenocrysts and 10% biotite grains and replaced in varying amounts by brown quartz.									
		208' -211'4"- 10% massive brown quartz and pyrite and 30% disseminated brown quartz and pyrite.	7680		208'	211'4"	3'4"			Tr	Tr
		211'4"-213'8"- 70% brown quartz. 5% pyrite Minor veining.	7681		211'4"	213'8"	2'4"			.001	Tr
		213'8"-217'3"- 5% massive and 20% disseminated brown quartz and pyrite. Some veining.	7682		213'8"	217'3"	3'7"			Nil	Tr
217'3"	234'7"	Biotite Feldspar Porphyry- 2-3% feldspar - 10% biotite	7683		217'3"	222'2"	4'11"			Nil	Tr
			7684		222'2"	227'2"	5'			Nil	Tr
			7685		227'2"	232'	4'10"			Nil	Tr
			7686		232'	234'7"	2'7"			Nil	Tr
234'7"	236'6"	Silicified greenstone - 2" and 1" brown quartz veins with 3-4% pyrite. Numerous calcite stringers	7687		234'7"	236'8"	2'1"			067	Tr
236'8"	239'2"	Vein #1- 40% grey quartz +calcite + pyrite with lesser chlorite. Fine pyrite banding 62°C.A.	7688		236'8"	239'2"	2'6"			.260	Nil

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-8 SHEET NO. 4

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
239'2"	308'	Intermediate to Basic Metavolcanics	7689		239'2"	241'3"	2'1"			Au	Ag
		241'3"-243'- darkened zone with hairline pyrite stringers (3%)	7690		241'3"	243'	1'9"			.004	Tr
			1453		243'	245'2"	2'2"			.002	Tr
			1454		245'2"	246'7"	1'5"			<.01	
		246'7"-246'11" - bands of greenstone bleached by calcite and minor pyrite banding	7691		246'7"	246'11"	4"			.003	Tr
			1455		246'11"	249'	2'1"			<.01	
			1456		249'	250'5"	1'5"			<.01	
			1457		250'5"	252'5"	2'			<.01	
			1458		252'5"	254'4"	1'11"			<.01	
			1459		254'4"	256'	1'8"			<.01	
		298'8"-299'8" - contains a milky quartz vein with lesser calcite and epidote. Chalcopyrite is also present.	7692		298'8"	299'8"	1'			Nil	Tr
		END OF HOLE									

0MEP81-6-C-104

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines Ltd.-Tipper Claims  
 HOLE NO. 81-9 LENGTH 322'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 70°  
 STARTED May 12/81 FINISHED May 13/81

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
307'	68°				

HOLE NO. 81-9 SHEET NO. 1  
 REMARKS 3 sheets  
 LOGGED BY T.P. MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON	
					FROM	TO	TOTAL					
0'	10'	Casing- 10' of casing left in hole										
10'	54'3"	Intermediate to Basic Metavolcanics - generally a grey-green coloured rock with irregular mottled and epidotized zones. The rock is fine to medium grained and highly carbonated in places. Stringers (<1/16" - a few inches) of + calcite + quartz + chlorite + pyrite are evident throughout. Pyrite is generally present throughout the greenstone in amounts up to 1%.										
		25'9" - 26'8"- a milky quartz and pinkish feldspar vein subparallel to C.A. 1-2% pyrite	7693		25'9"	26'8"	11"			.002		Tr
54'3"	58'2"	Lamprophyre dike - spinefex texture. The dike has narrow border zones composed of quartz-calcite-chlorite and 1-2% pyrite 45-50 C.A.	7694		54'3"	54'8"	5"			Tr		Tr
			7695		57'4"	57'2"	10"			Tr		Tr
58'2"	136'9"	Intermediate - Basic Metavolcanics.										
136'9"	138'11"	Silicified Biotite - Feldspar Porphyry . 85% brown quartz with 7% disseminated and cubic pyrite. Some stockwork.	7696		136'9"	138'11"	2'2"			.004		Tr
138'11"	154'2"	Biotite- Feldspar Porphyry- 10% biotite, 5-7% feldspar 5% silicified. 1-2% pyrite. Some stockwork	7697		138'11"	143'6"	4'7"			Tr		Tr
		152'-154'2"- 30% brown quartz	7698		143'6"	148'4"	4'10"			Nil		Tr
			7699		148'4"	152'1"	3'9"			Nil		Tr

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-9

SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
										Au	Ag
154'2"	154'9"	Vein- milky quartz	7700		152'1"	154'2"	2'1"			.003	Tr
154'9"	157'	Silicified greenstone. Numerous calcite stringers 57° C.A. 20% brown quartz and pyrite.	1401		154'2"	154'9"	7"			Nil	Tr
157'	205'	Intermediate - Basic Metavolcanics	1402		154'9"	157'	2'3"			.002	Tr
		157'-158'3" - darkened zone. 1% pyrite	1403		157'	158'3"	1'3"			Tr	Tr
205'	213'3"	Feldspar Porphyry- 7-10% feldspar phenocrysts up to ¼" in diameter. Contact 30° C.A.									
213'3"	264'1"	Intermediate to Basic Metavolcanics									
		201'7"-202'- contains a 2" shear filled with calcite + chlorite + 2% pyrite aggregates up to 3/16" in diameter and minor grey quartz 42° C.A.	1404		210'7"	202'5"	5"			Nil	Tr
		254'-254'8"- 1" shear similar to above 34° C.A.	1405		254'	254'8"	8"			Nil	Tr
264'1"	267'	Vein #1- 55% grey quartz banding, 5% pyrite banding and 20% calcite and chlorite banding 45° C.A.	1436		261'8"	262'11"	1'3"			Tr	
			1437		262'11"	264'1"	1'2"			Tr	
			1406		264'1"	267'	2'11"			.600	Tr
267'	274'3"	Intermediate - Basic Metavolcanics	1407		267'	268'5"	1'5"			.003	Tr
		268'5"-269'1"- Moderate shear with 10% calcite + chlorite veins and 3% pyrite banding 33-53° C.A.	1408		268'5"	269'1"	8"			.160	Tr
			1431		269'	270'9"	1'8"			Tr	
			1432		270'9"	272'2"	1'5"			.003	Tr
		272'2"-274'3"- Moderate shear 55° C.A.	1409		272'2"	274'3"	2'1"			.140	Tr
274'3"	275'6"	Vein #7 - 50% grey quartz. 3% banded and cubic pyrite. 10% calcite and chlorite. 55° C.A.	1410		274'3"	275'6"	1'3"				
			1438		275'6"	276'2"	8"			Tr	

LANGRIDGES - TORONTO - 366-1168



# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-9

SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
275'6"	276'2"	Intermediate - Basic Metavolcanics	1438		275'6"	276'2"	8"			Au	Ag
276'2"	282'5"	Diabase - upper contact 50° C.A., lower contact 35° C.A.	1439		276'2"	279'4"	3'2"			<.01	
			1440		279'4"	281'9"	2'5"			<.01	
282'5"	322'	Intermediate- Basic Metavolcanics	1441		281'9"	283'	1'3"			<.01	
		283'-284'4"- moderate shear with 20% calcite+chlorite banding +2% pyrite banding	1411		283'	284'4"	1'4"			.085	Tr
			1442		284'4"	287'5"	3'1"			<.01	
			1443		287'5"	290'3"	2'10"			<.01	
			1444		290'3"	292'9"	2'6"			<.01	
			1445		292'9"	294'8"	1'11"			<.01	
			1446		294'8"	296'6"	1'10"			<.01	
			1308		296'	297'10"	1'10"			<.01	
			1309		297'10"	299'6"	1'8"			<.01	
			1310		299'6"	301'6"	2'			<.01	
		309'4"-310' - contains 2 irregular quartz + calcite + chlorite + epidote + chalcopyrite veins.	1412		309'4"	310'	6"			.003	Tr
		END OF HOLE									

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines Ltd-Tipper Claims  
 HOLE NO. 81-10 LENGTH 307'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 255° DIP 70°  
 STARTED May 14/81 FINISHED May 15/81

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
307'	66°				

HOLE NO. 8-10 SHEET NO. 1  
 REMARKS 3 sheets

LOGGED BY T. P. MacMichael

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON		
					FROM	TO	TOTAL						
0'	10'	Casing - 10' of casing left in hole											
10'	69'6"	Intermediate - Basic Metavolcanics- generally a grey-green coloured rock with irregular mottled and epidotized zones. The rock is fine to medium grained and highly carbonated in places. Stringers (<1/10" - a few inches) of + calcite + quartz + chlorite + pyrite are evident throughout. Pyrite is generally present throughout the greenstone in amounts up to 1%.											
		42'6"-43'- milky quartz + calcite + pink feldspar + 1% pyrite. 51 C.A.	1413		42'6"	43'	6"			Tr	Tr		
69'6"	70'5"	Lamprophyre dike - lower contact has a 1" border vein of calcite + chlorite + 2% pyrite and minor quartz											
70'5"	124'2"	Intermediate - Basic Metavolcanics											
124'2"	125'5"	Silicified greenstone - 5% brown quartz. 40% calcite as stringers and disseminations. 7% pyrite 70°C.A.	1414		124'2"	125'5"	1'3"			.001	Tr		
125'5"	139'6"	Biotite Porphyry - 10-15% biotite. 1-2% feldspar Phenocrysts - ~ 50% silicified by brown quartz.											

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd

NAME OF PROPERTY

Tipper Claims

HOLE NO. 81-10

SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPHIDES	FOOTAGE		%	%	OZ/TON	OZ/TON	
					FROM	TO					TOTAL
		125'6"-126'11"- Biotite Porphyry	1415		125'6"	126'11"	1'5"			Au	Ag
		126'11"-128'10"- Biotite Porphyry with 3 greyish-milky quartz veins with minor pink feldspar (½", 1" 1¼") and 12 1/16" stringers with brown quartz haloes. 3% pyrite. 55°C.A.	1416		126'11"	128'10"	2'11"			Nil	Tr
		128'10"-130'3"- Similar to 1416 but with 30% brown quartz. 4% pyrite.	1417		128'10"	130'3"	1'5"			Tr	Tr
		130'3"-133'6"- 50% brown quartz. 5% pyrite with minor stockwork of chlorite + quartz + feldspar stringers.	1418		130'3"	133'6"	3'3"			.002	Tr
		133'6"-135'4"- Similar to 1416	1419		133'6"	135'4"	1'10"			.003	Tr
		135'4"-138'1"- Similar to 1416 with 30% brown quartz 3% pyrite	1420		135'4"	138'1"	2'9"			.002	Tr
		138'1"-139'6"- milky quartz vein with minor pyrite and 2 brown quartz bands (20%) containing 50% pyrite.	1421		138'1"	139'6"	1'5"			.005	Tr
139'6"	141'8"	Silicified greenstone. Darker green in colour. 40% brown quartz. 3% pyrite 66°C.A.	1422		139'6"	141'8"	2'2"			.003	Tr
141'8"	287'7"	Intermediate - Basic Metavolcanics									
		161'1"- 162'5"- milky quartz + calcite vein with minor chlorite, epidote and pyrite 15°C.A.	1423		161'1"	162'5"	1'4"			Nil	Tr
		228'11"-230'3"- 1" wide band of a finedusting of pyrite and 5" of irregular calcite & chlorite banding 50°C.A.	1426		228'11"	230'3"	1'5"			.006	Tr
		245'6"-246' - grey quartz vein with lesser calcite + chlorite + 1-2% pyrite. 60°C.A.	1424		245'6"	246'	6"			Tr	Tr

# DIAMOND DRILL RECORD

Marshall Boston Iron Mines Ltd.

NAME OF PROPERTY Tipper Claims

HOLE NO. 81-10

SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ./TON	OZ./TON
					FROM	TO	TOTAL				
		267'9"-268'1" - 7% calcite + chlorite + minor pyrite veining	1425		267'9"	268'1"	4"			Au	Ag
			1311		268'1"	270'2"	2'1"			<.01	
			1312		270'2"	272'4"	2'2"			<.01	
			1313		272'4"	274'	1'8"			<.01	
			1447		224'	276'5"	2'5"			<.01	
			1448		276'5"	279'4"	2'11"			<.01	
			1449		280'8"	283'6"	2'10"			<.01	
		283'6"-284'11" - moderate shear 50% calcite & chlorite banding with some grey quartz. 2% pyrite.	1427		283'6"	284'11"	1'5"			.025	Tr
		284'11"-287'7" - moderate shear with 10% calcite + chlorite banding + 5% pyrite banding. 50° C.A.	1428		284'11"	287'7"	2'8"			.003	Tr
287'7"	288'9"	Vein #? - 75% grey quartz, 7% pyrite banding, 10% calcite + chlorite banding. 45° C.A.	1429		287'7"	288'9"	1'2"			.410	Tr
288'9"	307'	Intermediate - Basic Metavolcanics									
		288'9"-290'7" - Moderate shear	1430		288'9"	290'7"	1'10"			.004	Tr
			1450		290'7"	293'4"	2'9"			<.01	
			1451		293'4"	295'10"	2'6"			<.01	
			1452		295'10"	297'	1'2"			<.01	
			1304		297'	299'8"	2'8"			<.01	
			1305		299'8"	301'11"	2'3"			<.01	
			1306		301'11"	304'10"	2'11"			<.01	
			1307		304'10"	307'	2'2"			<.01	
		END OF HOLE									

0MEP 81-6-C-104

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS  
 HOLE NO. 81-11 LENGTH 260'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 255° DIP 41°  
 STARTED 6<sup>th</sup> July FINISHED 8<sup>th</sup> July

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
260'	41°				

HOLE NO. 81-11 SHEET NO. 1.  
 REMARKS 4 sheets

LOGGED BY D. Kalicharran

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE		%	%	OZ/TON	OZ/TON	
				FROM	TO	TOTAL					
0	14'	Casing (14' casing left in hole)								Au	
14'	95'	Intermediate-Basic Metavolcanics generally grey-green in colour with irregular mottled and epidotized zones; highly carbonated in some areas, the rock is fine to medium grained. Stringers of + quartz + chlorite + calcite + pyrite (<1/10"-few inches) at angles 38°-40° C.A. disseminated sulphides (pyrite) are generally present throughout the greenstone in amounts up to 1%									
95'	103.8'	Lamprophyre- grey-green in colour, medium grain, crystalline texture, 15-20% biotite, 1% sulphides. Upper contact 1/4" calcite + chlorite vein 30° CA. 104' 8" - 105' sheared } fractured 106' 5" - 106' 8" sheared }									
103.8'	119.2'	Metavolcanics with diabasic texture; mottled green-grey colour; medium to coarse grained calcite + quartz + chlorite + 3% sulphides. Stringers (<1/10-1/4" at 30°-40° CA)									
119.2'	151.8'	Intermediate-Basic Metavolcanic 148.1'-149.5' -50% porphyry with biotite; 50% metavolcanic with mineralized stringers. Overall 2% sulphides + 5% calcite + quartz + chlorite.  149.5'-151.8' -Intermediate to Basic metavolcanic with mineralized stringers -4% sulphides + 6% quartz + calcite + chlorite	1349		148.1'	149.5'	1.4'			4.01	
			1350		149.5'	151.8'	2.3'			4.01	

LANGRIDGES - TORONTO - 366-1168

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD.  
 HOLE NO 81-11 TIPPER CLAIMS SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
151.8'	153.9'	Altered Intermediate-Basic Metavolcanics; upper contact to porphyry Highly mineralized vein -15% disseminated sulphides + 30% calcite + quartz + chlorite, darkened zone.	1351		151.8'	153.9'	2.1'			Au	
										<.01	
153.9'	169.5'	Biotite Porphyry mottled texture; grey colour; fine to medium grained. 15% biotite 1-2% feldspar 50% silicated + biotite.	1352		153.9'	158.5'	4.6'			<.01	
			1353		158.5'	163.5'	5.0'			<.01	
			1354		163.5'	168.3'	4.8'			<.01	
			1355		168.3'	169.5'	1.2'			.01	
169.5'	170.8'	Altered Intermediate-Basic Metavolcanics. Lower contact of porphyry (darkened zone) mineralized stringers ( < 1/10"-1/8"0	1356		169.5'	170.8'	1.3'			0.01	
170.8'	184.0'	Intermediate-Basic Metavolcanic: grey-green in colour with fine-medium grained texture. Stringers of < 1/10-1/4" at 25-35° CA.									
184.0'	185.5'	Vein with 10-12% disseminated sulphides; 1/3" quartz + calcite + chlorite stringer at 10° CA.	1357		184.0'	185.5'	1.5'			<.01	
185.5'	196.0'	Intermediate-Basic Metavolcanic minor shearing with stringers of calcite + quartz + chlorite + 1% sulphides ( 1/10" - 1/4" at 30° CA)									
196.0'	226.6'	Mineralized shear zone with veins 1/4" - 1.5" that are mineralized with 2-4% sulphides, 5-50% calcite + chlorite + quartz									
		196.0'-197.5' vein with 3% sulphides, 30% calcite + quartz + chlorite - stringers 40-50° CA.	1358		196.0'	197.5'	1.5'			<.01	
		197.5'-199.3' sheared with 5% calcite + chlorite + quartz + 1% sulphides.	1359		197.5'	199.3'	1.8'			<.01	

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHAL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-11

SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ./TON	OZ./TON
				FROM	TO	TOTAL					
		199.3'-201.2' sheared 10% chlorite + calcite + quartz + 2% sulphides	1360		199.3'	201.2'	1.9'			Au	
		201.2'-202.5' 12% calcite + chlorite + quartz + 2% sulphides stringers 1/8" at 40° CA.	1361		201.2'	202.5'	1.3'			4.01	
		202.5'-206.0' sheared 10% chlorite + calcite + quartz + 2% sulphides stringers 1/10"-1/8" at 20° and 30° CA.	1362		202.5'	204.2'	1.7'			4.01	
			1363		204.2'	206.0'	1.8'			4.01	
		206.0'-207.2' sheared 20% calcite + chlorite + quartz + 4% sulphides; veining at 40° CA.	1364		206.0'	207.2'	1.2'			4.01	
		207.2'-208.9' sheared 8% chlorite + calcite + quartz + 2% sulphides; 1/8" stringers at 30° CA.	1365		207.2'	208.9'	1.7'			<.01	
		208.9'-210.4' highly sheared 20% calcite + chlorite + quartz + 4% sulphides.	1366		208.9'	210.4'	1.5'			.02	
		210.4'-212.5' moderately sheared 5% calcite + quartz + chlorite + 1% sulphides; stringers at 30% CA.	1367		210.4'	212.5'	2.1'			<.01	
		212.5'-215.3' highly sheared 20% calcite + chlorite + quartz + 4% sulphides; stringers 30% CA.	1368		212.5'	215.3'	2.8'			<.01	
		215.3'-216.4' vein 50% calcite + chlorite + quartz + 5% sulphides - fine disseminated sulphides.	1369		215.3'	216.4'	1.1'			.13	
		216.4'-223.9' moderately sheared 5% calcite + chlorite + quartz + 1% sulphides; stringers 1/10" at 30% CA.	1370		216.4'	218.5'	2.1'			4.01	
			1371		218.5'	220.4'	1.9'			4.01	
			1372		220.4'	222.0'	1.6'			4.01	
			1373		222.0'	223.9'	1.9'			4.01	

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-11

SHEET NO. 4

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS			
FROM	TO		NO.	% SULPHIDES	FOOTAGE		%	%	OZ/TON	OZ/TON
					FROM	TO				
		223.9'-226.6' highly sheared - vein 40% calcite + chlorite + quartz + 4% sulphides (end of shear zone)	1374		223.9'	226.6'	2.7'			Au .08
226.6'	239.7'	Intermediate-Basic Metavolcanic mineralized stringers 1/10"-1/4" at 25-30° CA.								
		226.6'-228.3' moderately sheared 5% calcite + quartz + chlorite + 1% sulphides.	1375		226.6'	228.3'	1.7'			<.01
		228.3'-230.4' sheared 7% calcite + quartz + chlorite + 1% sulphides; stringers 30° CA.	1376		228.3'	230.4'	2.1'			<.01
		236.0'-237.1' moderately sheared 5% calcite + chlorite + quartz + 1% sulphides approx. vertical stringers CA.	1377		236.0'	237.1'	1.1'			<.01
		237.1'-238.5' sheared 15% calcite + quartz + chlorite + 2% sulphides 0.2' vein.	1378		237.1'	238.5'	1.4'			<.01
		238.5'-239.7' moderately sheared 4% calcite + quartz + chlorite + 1% sulphides.	1379		238.5'	239.7'	1.2'			<.01
239.7'	240.6'	Contact Zone of lamprophyre sheared 15% calcite + chlorite + quartz + 2% sulphides	1380		239.7'	240.6'	0.9'			<.01
240.6'	245.1'	Lamprophyre - mottled colour of grey-green 30% biotite. Stringers < 1/10" at 30° CA of calcite + quartz + chlorite + sulphides.								
245.1'	260.0'	Intermediate-Basic Metavolcanic 252.4'-253.4' veins of calcite + chlorite + quartz + red haematite? + 3% sulphides.	1381		252.4'	253.4'	1.0'			<.01
END OF HOLE										

LANGRIDGES - TORONTO - 366-1168



O.M.E.P.B. 6-C-104

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS  
 HOLE NO. 81-12 LENGTH 356'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 273° DIP 45°  
 STARTED 10<sup>th</sup>. July FINISHED 15<sup>th</sup>. July

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
320'	43°				

HOLE NO. 81-12 SHEET NO. 1.  
 REMARKS 4 sheets

LOGGED BY D. Kalicharran

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS			
FROM	TO		NO.	% SULPHIDES	FOOTAGE		%	%	OZ/TON	OZ/TON
		FROM			TO	TOTAL				
0	12'	Casing ( 10' casing left in hole)								
12'	135'	Intermediate to Basic Metavolcanic generally grey-green in colour with irregular mottled and epidotized zones; highly carbonated in some areas. The rock is fine to medium grained - stringers of + quartz + chlorite + calcite + (pyrite) sulphides ( 1/10"-1/2", at 15-30° C.A.) Disseminated sulphides (pyrite) are generally throughout the greenstone in amount to 1%.								
135'	146.1'	Shear zone with 30% calcite + quartz + chlorite + 1% sulphides at approx. 45° CA throughout. Green-grey with stringers of white; fine-medium grained rock								
		135'-138.3' moderately sheared with 8% chlorite + calcite + quartz + 1% sulphides	1382		135'	136.2'	1.2'			<.01
			1383		136.2'	138.3'	1.9'			<.01
		138.3'-143.5' sheared 15% calcite + quartz + chlorite + 1% sulphides.	1384		138.3'	140.1'	1.8'			<.01
			1385		140.1'	142.3'	2.2'			<.01
			1386		142.3'	143.5'	1.2'			<.01
		143.5'-145.5' highly sheared; vein? 30% calcite + chlorite + quartz + 2% sulphides	1387		143.5'	145.5'	2.0'			<.01
		145.5'-146.1' moderately sheared 8% chlorite + calcite + quartz + 1% sulphides.	1388		145.5'	146.1'	0.6'			<.01
146.1'	148.9'	Intermediate to Basic Metavolcanics								

LANGRIDGES - TORONTO - 368-1168



# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

81-12

3.

HOLE NO. \_\_\_\_\_

SHEET NO. \_\_\_\_\_

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE		%	%	OZ./TON	OZ./TON		
					FROM	TO					TOTAL	
281'	297.4'	263.5'-265.1' vein - sheared; 50% calcite + chlorite + quartz + 5% sulphides.	4601		263.5'	265.1'	1.6'			Au .01		
		Intermediate to Basic Metavolcanics Heavy shearing with mineralized stringers and lenses at intervals.										
		265.1'-267.4' little shearing, 2% calcite + chlorite + quartz + <1% sulphides.	4602		265.1'	267.4'	2.3'			4.01		
		267.4'-277' moderately sheared with 5% calcite + chlorite + quartz + 1% sulphides.	4603		267.4'	269.6'	2.2'			4.01		
			4604		269.6'	272.4'	2.8'			4.01		
			4605		272.4'	274.8'	2.4			4.01		
			4606		274.8'	277'	2.5'			4.01		
		277'-279.3' sheared with 8% calcite + chlorite + quartz + 5% sulphides. Also 0.15' of phenocryst of feldspar.	4607		277'	279.3'	2.3'			.11		
			279.3'-281' sheared 10% calcite + chlorite + quartz + 4% sulphides	4608		279.3'	281'	1.7'			.03	
		281'-287' moderately sheared with 5% calcite + chlorite + quartz + sulphides.	4609		281'	282.8'	1.8'			4.01		
			4610		282.8'	285.2'	2.4'			4.01		
			4611		285.2'	287'	1.8'			4.01		
			4612		287'	289.2'	2.2'			4.01		
		287'-289.2' moderately sheared with 0.2' calcite + quartz (solid vein) 1% sulphides.										
		289.2'-291.3' moderately sheared with 5% calcite + chlorite + quartz + 1% sulphides.	4613		289.2'	291.3'	2.1'			4.01		
			291.3'-297.4' sheared 8% calcite + chlorite + quartz + 1% sulphides.	4614		291.3'	293.4'	2.1'			4.01	
4615				293.4'	295.5'	2.1'			4.01			
4616		295.5'	297.4'	1.9'			4.01					

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-12

SHEET NO. 4.

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
297.4'	298'	Lamprophyre - mottled with 30% biotite; medium grain; crystalline; dark grey in colour.									
298'	356'	Intermediate to Basic Metavolcanics									
		298'-301.5' moderately sheared with 5% calcite + chlorite + quartz + 2% sulphides.	4617		298'	300.1'	2.1'				0.01
			4618		300.1'	301.5'	1.4'				4.01
		315.4'-317' vein - sheared 20% calcite + chlorite + quartz + 2% sulphides.	4619		315.4'	317'	1.6'				4.01
		318.5'-319.5' sheared with 15% fine disseminated sulphides; mineralized stringers $\frac{1}{8}$ " at 25' CA.	4620		318.5'	319.5'	1'				4.01
		END OF HOLE									

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS  
 HOLE NO. 81-13 LENGTH 358'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION 15 July AZIMUTH 20 July DIP 70°  
 STARTED \_\_\_\_\_ FINISHED \_\_\_\_\_

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
350'	65°				

HOLE NO. 81-13 SHEET NO. 1.  
 REMARKS 4 sheets

LOGGED BY D. Kalicharran

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON	
					FROM	TO	TOTAL					
0	8'	Casing ( 8' of casing left in hole )										
8'	107'	Intermediate-Basic Metavolcanic Generally green-grey in colour with irregular mottled and epidotized zones. The rock is fine to medium grain and highly carbonated in places. Stringers ( <1/10"-a few inches at 45° C.A.) of + calcite + chlorite + quartz + pyrite. Pyrite is generally present throughout the greenstone in amounts to 1%.										
		98'-98.8' vein - sheared with 20% calcite + quartz + chlorite + red hematite + 3% disseminated pyrite.	4621		98'	98.8'	.8'			<.01		
107'	140.5'	Sheared zone with 50% calcite + chlorite + quartz + 3% sulphides at approx. 30% C.A. throughout. Mottled with green crystals of chlorite in grey matrix - fine to medium grained rock										
		107'-109.7' Highly sheared 40% chlorite + quartz + calcite + 7% disseminated sulphides.	4622		107'	109.7'	2.7'			<.01		
		109.7'-140.5' Sheared with veins (approx. 0.5') at random, stringers of calcite + chlorite + quartz + hematite (<1/10"-1/4" at 15-30° C.A.)	4623 4624		109.7' 110.8'	110.8' 113.6'	1.1' 2.8'			<.01 <.01		

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-13

SHEET NO. 2.

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
			4625		113.6'	115.4'	1.8'			Au	
			4626		115.4'	118.0'	2.6'			<.01	
			4627		118'	120.8'	2.8'			<.01	
			4628		120.8'	122.9'	2.1'			<.01	
			4629		122.9'	124.2'	1.3'			<.01	
			4630		124.2'	126.1'	1.9'			<.01	
			4631		126.1'	128.3'	1.2'			<.01	
			4632		128.3'	130.4'	2.1'			<.01	
			4633		130.4'	132.5'	2.1'			<.01	
			4634		132.5'	134.7'	2.2'			<.01	
		134.7'-137.3' sheared with white stringers at 55° C.A. of 10% calcite + chlorite + quartz + 2% sulphides	4635		134.7'	137.3'	2.6'			<.01	
		137.3'-139.5' heavily sheared, end of zone 15% calcite + quartz + chlorite + 2% sulphides; darker in colour	4636		137.3'	139.5'	2.5'			<.01	
		139.5'-140.5' moderately sheared with 5% calcite + chlorite + quartz + 1% sulphides.	4637		139.5'	140.5'	1.0'			<.01	
140.5'	158'	Intermediate-Basic Metavolcanics									
158'	163.5'	Sheared with 5%-10% calcite + chlorite + quartz + 2% sulphides. A darker grey rock in colour and fine to medium grained. Stringers (1/10"-1/2" at 45° C.A.)	4638		158'	159.9'	1.9'			<.01	
			4639		159.9'	161.9'	2'			<.01	
			4640		161.9'	163.5'	1.6'			<.01	
163.5'	310'	Intermediate to Basic Metavolcanics									
		308.4'-310.2' moderately sheared; green-grey in colour, 4% calcite + quartz + chlorite + 1% sulphides	4641		308.4'	310.2'	1.8'			<.01	
310.2'	340.8'	Mineralized shear zone with 10%-50% calcite + chlorite + quartz + 3%-8% sulphides varying throughout. Veins of 0.2"-0.5" wide occur at intervals. The rock is of darker grey matrix; fine to medium grained. Stringers 1/10" - a few inches at 45° C.A.									

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-13

SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
		310.2'-314.4' sheared - 15% calcite + chlorite + quartz + 5% sulphides. Mineralized stringers 1/10"-1/2" at 45° C.A.	4642		310.2'	312'	1.8'			Au	
			4643		312'	313.5'	1.5'			<.01	
			4644		313.5'	314.4'	0.9'			<.01	
		314.4'-315.5' vein -strongly sheared 40% calcite + chlorite + quartz + 4% sulphides.	4645		314.4'	315.5'	1.1'			<.01	
		315.5'-323.4' sheared 10%-15% calcite + chlorite + quartz + 2% sulphides	4646		315.5'	317.6'	2.1'			<.01	
			4647		317.6'	318.9'	1.3'			<.01	
			4648		318.9'	320.7'	1.8'			<.01	
			4649		320.7'	323.4'	2.7'			<.01	
		323.4'-324.2' vein -strongly sheared 50% calcite + chlorite + quartz + 4% sulphides.	4650		323.4'	324.2'	0.8'			<.01	
		324.2'-328' sheared with 15% calcite + chlorite + quartz + 2% sulphides.	4651		324.2'	326.8'	2.6'			<.01	
			4652		326.8'	328'	1.2'			<.01	
		328'-329.8' strongly sheared - 0.5' wide vein, 40% chlorite + calcite + quartz + 4% sulphides.	4653		328'	329.8'	1.8'			<.01	
		329.8'-331.4' strongly sheared with 0.3' vein 20% calcite + chlorite + quartz + 4% sulphides.	4654		329.8'	331.4'	1.6'			<.01	
		331.4'-333' strongly sheared with 20% calcite + chlorite + quartz + 3% sulphides.	4655		331.4'	333'	1.6'			<.01	
		333'-335.6' sheared with 15% calcite + chlorite + quartz + 1% sulphides with mineralized stringer of 1/10"-1/2" at 45° C.A.	4656		333'	335.6'	2.6'			<.01	
		335.6'-337.6' strongly sheared with veins 0.4' & 0.3' wide, 50% calcite + chlorite + quartz + 5% sulphides.	4657		335.6'	337.6'	2.0'			<.01	
		337.6'-340.8' sheared with 15% calcite + chlorite + quartz + 3% sulphides. Stringers of 1/10"-1/2" at 45° C.A.	4658		337.6'	339.3'	1.7'			<.01	
			4659		339.3'	340.8'	1.5'			0.04	

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-13

SHEET NO. 4.

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
340.8'	357.2'	Intermediate-Basic Metavolcanics 340.8'-347.2' moderately sheared with 10% calcite + chlorite + quartz + 1% sulphides. Green-grey in colour-fine grained rock.	4660		340.8'	342.8'	2.0'			Au	
			4661		342.8'	345.2'	2.4'			<.01	
			4662		345.2'	347.2'	2.0'			<.01	
		350.4'-351.5' vein ½" 90° C.A. of calcite + quartz + 4% fine disseminated sulphides (calcite crystals are present)	4663		350.4'	351.5'	1.1'			<.01	
357.2'	358'	Lamprophyre									
		END OF HOLE									



0MEP81-6-C-104

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS  
 HOLE NO. 81-14 LENGTH 287'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 273° DIP 50°  
 STARTED 21 July FINISHED 24 July

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
280'	49°				

HOLE NO. 81-14 SHEET NO. 1  
 REMARKS 3 sheets

LOGGED BY D. Kalicharran

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPHIDES	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TOTAL	%	%	OZ/TON	OZ/TON
0'	10'	Casing (8' of casing left in hole)									
10'	141.6'	Intermediate-Basic Metavolvanics Generally green-grey in colour with irregular mottled and epidotized zones. The rock is fine to medium grained and highly carbonated at places. Mineralized stringers (1/10" to a few inches at 45° C.A.) of calcite + quartz + chlorite + sulphides are evident throughout. Sulphides are generally present throughout the greenstone in amounts up to 1%.									
141.6'	157.1'	Altered zone with mottled green-grey colour; medium grained with stringers (<1/10"-1/2" at 45° C.A.) of calcite + quartz + chlorite + <1% sulphides.									
157.1'	235.8'	Intermediate to Basic Metavolvanics 227.9'-235.8' Altered with shearing 10% calcite + chlorite + quartz + 1% sulphides. Mottled green-grey coloured rock.	4664		227.9'	229.7'	1.8'			<.01	
			4665		229.7'	232'	2.3'			<.01	
			4666		232'	234.6'	2.6'			<.01	
			4667		234.6'	235.8'	1.2'			<.01	
235.8'	261.9'	Mineralized shear zone. The rock is of a darker grey matrix with stringers of 15%-50% calcite + chlorite + quartz + 2%-5% sulphides + red haematite stain varying throughout. Angle of shear is approx. 45° C.A. Vein of width 0.2'-1.0' are evident at intervals. Biotite is evident in more highly sheared zones.									

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-14

SHEET NO. 2.

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ./TON	OZ./TON
				FROM	TO	TOTAL					
		235.8'-237' vein - sheared (crushed) 40% calcite + chlorite + quartz + 3% sulphides + hematite.	4668		235.8'	237'	1.2'			Au	<.01
		237'-242' sheared 15% calcite + chlorite + quartz + 1% sulphides.	4669		237'	238.8'	1.8'			<.01	
			4670		238.8'	240.4'	1.6'			<.01	
			4671		240.4'	242'	1.6'			<.01	
		242'-243.2' vein -strongly sheared with 40% calcite + chlorite + 3% sulphides. 1/2" stringer at 20° C.A.	4672		242'	243.2'	1.2'			<.01	
		243.2'-245.7' sheared with 15% calcite + chlorite + quartz + 2% sulphides, lenses of calcite + quartz throughout.	4673		243.2'	244.8'	1.6'			<.01	
			4674		244.8'	245.7'	1.9'			<.01	
		245.7'-247.7' vein same as 4672.	4675		245.7'	247.7'	2.0'			<.01	
		247.7'-250.4' sheared 20% calcite + chlorite + quartz + 2% sulphides.	4676		247.7'	249.3'	1.6'			<.01	
			4677		249.3'	250.4'	1.1'			<.01	
		250.4'-252.2' vein sheared 50% calcite + chlorite + quartz + hematite + 5% sulphides.	4678		250.4'	252.2'	1.8'			<.01	
		252.2'-254.7' sheared 25% calcite + chlorite + quartz + 4% sulphides. Irregular stringers throughout.	4679		252.2'	253.7'	1.5'			<.01	
			4680		253.7'	254.7'	1.0'			<.01	
		254.7'-256.6' vein same as 4678.	4681		254.7'	256.6'	1.9'			<.01	
		256.6'-260.4' sheared 25% calcite + chlorite + quartz + 3% sulphides with irregular stringers and mineralized lenses.	4682		256.6'	258.3'	1.7'			<.01	
			4683		258.3'	259.3'	1.0'			<.01	
			4684		259.3'	260.4'	1.1'			<.01	
		260.4'-261.9' vein same as 4678.	4685		260.4'	261.9'	1.5'			<.01	
261.9'	287.0'	Intermediate-Basic Metavolcanics	4686		261.9'	262.5'	0.6'			<.01	
		Strong shearing in places.	4687		262.5'	263.9'	1.4'			<.01	
		5-15% calcite + chlorite + quartz + 1% sulphides.	4688		265.8'	267.3'	1.5'			<.01	

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-14 SHEET NO. 3.

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
		276.7'-277.6' vein.	4689		271.3'	273.3	2.0'			Au	
			4690		276.7'	277.6'	0.9'			<.01	
			4691		277.6'	279.7'	2.1'			<.01	
			4692		280.9'	282.7'	1.8'			<.01	
			4693		284.7'	287.0'	2.3'			<.01	
		END OF HOLE									

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS  
 HOLE NO. 81-15 LENGTH 407'  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 273° DIP 74°  
 STARTED 24 July FINISHED 29 July

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
395'	73°				

HOLE NO. 81-15 SHEET NO. 1.  
 REMARKS 4 sheets

LOGGED BY D. Kalicharran

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON	
					FROM	TO	TOTAL					
0'	8'	Casing (4' casing left in hole)										
8'	9.2'	Intermediate to Basic Metavolcanics										
9.2'	11.4'	Lamprophyre										
11.4'	184'	Intermediate to Basic Metavolcanics generally grey-green in colour with irregular mottled and epidotized zones; highly carbonated in some areas. The rock is fine to medium Stringers of quartz + chlorite + calcite + sulphides (<1/10"-1/2" at 15-30° C.A.) Disseminated sulphides (pyrite) are generally throughout the greenstone in amounts to 1%. Irregular occurrence of altered zones - mottled green-gey in colour.  178'-184' moderately sheared 10% calcite + chlorite + quartz + 1% sulphides.	4694		178'	180.8'	2.8'			<.01		
			4695		180.8'	182.7'	1.9'			<.01		
			4696		182.7'	184'	1.3'			<.01		
184'	197.4'	Shear zone - 15-30% calcite + quartz + chlorite + 15% biotite + 3% sulphides varying throughout. A darker grey rock with stringers at angle 45° C.A.; mottled, medium grained.	4697		184'	185.2'	1.2'			<.01		
			4698		185.2'	187'	1.8'			<.01		
			4699		187'	189.1'	2.1'			<.01		
			4700		189.1'	191.1	2.0'			<.01		
			4701		191.1'	193.4'	2.3'			<.01		
			4702		193.4'	195.5'	2.1'			<.01		
			4703		195.5'	196.4'	0.9'			<.01		
			4704		196.4'	197.4'	1.0'			<.01		

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS

HOLE NO. 81-15

SHEET NO. 2.

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
197.4'	201.6'	Quartz vein - 95% milky quartz + 2% sulphides + 3% calcite + chlorite spots + red hematite stains.	4705		197.4'	199.1'	1.7'			Au	
			4706		199.1'	200.5'	1.4'			<.01	
			4707		200.5'	201.6'	1.1'			<.01	
201.6'	211.1'	Shear zone 20-30% calcite + chlorite + quartz + 3% sulphides + 15% biotite. Veins at 0.2'-0.5' wide at intervals  205.7'-207' vein 50% quartz + calcite + chlorite + 3% sulphides	4708		201.6'	203.3'	1.7'			<.01	
			4709		203.3'	204.7'	1.4'			<.01	
			4710		204.7'	205.7'	1.0'			<.01	
			4711		205.7'	207.0'	1.3'			<.01	
			4712		207.0'	208.7'	1.7'			<.01	
			4713		208.7'	209.8'	1.1'			<.01	
			4714		209.8'	211.1'	1.3'			<.01	
211.1'	214.0'	Intermediate to Basic Metavolcanics - mottled green-grey in colour; fine to medium grained; smooth.									
214.0'	218.8'	Shear zone with 20%-30% calcite + chlorite + quartz + 3% sulphide stringers.	4715		214.0'	215.3'	1.3'			<.01	
			4716		215.3'	216.4'	1.1'			<.01	
			4717		216.4'	217.8'	1.2'			<.01	
			4718		217.8'	218.8'	1.0'			<.01	
218.8'	255.0'	Intermediate-Basic Metavolcanics 218.8'-222.2' moderately sheared 7% calcite + chlorite + quartz + 1% sulphides.	4719		218.8'	320.2'	1.4'			<.01	
			4720		220.0'	222.2'	2.0'			<.01	
255.0'	261.8'	Lamprophyre - coarse grained mottled grey-crystalline texture with 15% biotite.									
261.8'	271.0'	Intermediate-Basic Metavolcanics									
271.0'	273.3'	Lamprophyre - 20% biotite									
273.3'	362.4'	Intermediate-Basic Metavolcanics with irregular altered zones.									

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHAL BOSTON IRON MINES LTD. TIPPER CLAIMS  
 HOLE NO. 81-15 SHEET NO. 3.

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
362.4'	367.8'	Coarse grained lamprophyre 20% biotite, 30% feldspar, mottled grey-crystalline texture, 1% sulphides.									Au
367.8'	370.3'	Intermediate-Basic Metavolcanics 268.0'-269.8' moderately sheared, 7% calcite + chlorite + quartz + < 1% sulphides.	4721		268.0'	269.8'	1.8'				<.01
370.3'	394.5'	Mineralized shear zone with 15-40% calcite + chlorite + quartz + 2-5% sulphides. Shearing at angle of 30° C.A. Irregular occurrence of veins ½'-2' wide at intervals.									
		370.3'-374.9' sheared at angle of 30° C.A., 20% calcite + chlorite + quartz + 2% sulphides forming stringers.	4722		370.3'	371.7'	1.4'				<.01
			4723		371.7'	373.6'	1.9'				<.01
			4724		373.6'	374.9'	1.3'				<.01
		374.9'-376.1' sheared vein 35% calcite + chlorite + quartz + 3% sulphides.	4725		374.9'	376.1'	1.2'				<.01
		376.1'-385.8' sheared, 20% calcite + chlorite + quartz + 2% sulphides. Stringers 1/10"-1.0" and randomly oriented.	4726		376.1'	378.0'	1.9'				<.01
			4727		378.0'	379.8'	1.8'				<.01
			4728		379.8'	381.6'	1.8'				<.01
			4729		381.6'	383.1'	1.5'				<.01
			4730		383.1'	384.6'	1.5'				<.01
			4731		384.6'	385.8'	1.2'				<.01
		385.8'-387.7' vein sheared with 35% calcite + chlorite + quartz + 3% sulphides + red hematite stain among granular textured stringers.	4732		385.8'	387.7'	1.9'				<.01
		387.7'-389.5' sheared 20% calcite + chlorite + 2% sulphides, randomly oriented stringers.	4733		387.7'	389.5'	1.6'				<.01

# DIAMOND DRILL RECORD

NAME OF PROPERTY MARSHALL BOSTON IRON MINES LTD. TIPPER CLAIMS  
 HOLE NO. 81-15 SHEET NO. 4.

FOOTAGE		DESCRIPTION	SAMPLE			ASSAYS					
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ./TON	OZ./TON
					FROM	TO	TOTAL				
		389.5'-391.3' vein sheared, 40% calcite + chlorite + quartz + 5% sulphides.	4734		389.5'	391.3'	1.8'			Au	
		391.3'-394.5' sheared	4735		391.3'	393.2'	1.9'			<.01	
		20% calcite + chlorite + quartz + 2% sulphides. Stringers randomly oriented.	4736		393.2'	394.5'	1.3'			<.01	
			4737		394.5'	397	2.5'			<.01	
			4738		397	399.2	2.2'			<.01	
394.5'	407.0'	Intermediate-Basic Metavolcanics 394.5'-399.2' moderately sheared, 7% calcite + chlorite + quartz + 1% sulphides.									
		END OF HOLE									

0 ME P 81-6-C-104

# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines Ltd. - Tipper Claims  
 HOLE NO. 81-16 LENGTH 517  
 LOCATION \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DEPARTURE \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ AZIMUTH 288° DIP 22°  
 STARTED July 31, 1981 FINISHED August 7, 1981

FOOTAGE	DIP	AZIMUTH	FOOTAGE	DIP	AZIMUTH
470	76°				

HOLE NO. 81-16 SHEET NO. 1  
 REMARKS 3 sheets

LOGGED BY D. Kalicharran

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS						
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON		
					FROM	TO	TOTAL						
0'	4'	Casing (											
4'	118'	Intermediate - Basic Metavolcanic generally grey-green in colour with irregular mottled and epidotoze zones. The rock is fine to medium grained and highly carbonated in places. Stringers (<1/10" to a few inches at 45° C.A.) of + calcite + quartz + chlorite + sulphides are evident throughout. Sulphides are generally present throughout the greenstone in amounts up to 1%.											
118'	120.5'	Brown quartz vein - 50% quartz + 5% disseminated sulphides + shockwork of chlorite + feldspar. Stringers randomly oriented.	4739		118	119.5	1.5			<.01			
			4740		119.5	120.5	1			<.01			
120.5	132.3	Biotite Feldspar Porphyry - mottled coarse grained - 15% biotite + 5% pink feldspar +50% silicates + 1% sulphides. A patch of coarse grained quartz + pink feldspar.											
132.3	135	Brown Quartz Vein - 50% quartz + 5% disseminated sulphides + stockwork of chlorite + feldspar. Stringers are randomly oriented.	4741		132.3	133.6	1.3			<.01			
			4742		133.6	135	1.4			<.01			
135	187.1	Intermediate to Basic Metavolcanics											
187.1	193.4	Lamprophyre - medium grained 15% biotite, 7% calcite + chlorite quartz + 1% sulphide. Mottled grey with shearing at areas.											
		187.1-189.2 } sheared	4743		187.1	189.5	2.1			<.01			
		192.2-193.4 }	4744		192.2	195.4	1.2			<.01			

LANGRIDGES - TORONTO - 366-1168



# DIAMOND DRILL RECORD

NAME OF PROPERTY Marshall Boston Iron Mines - Tipper Claims

HOLE NO. 81-16

SHEET NO. 2

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPH IDES	FOOTAGE			%	%	OZ./TON	OZ./TON
					FROM	TO	TOTAL				
193.4	405.7	Intermediate to Basic Metavolcanic. Mostly altered - mottled green.									
		275.8-276.5 - 20% quartz + calcite + chlorite + 2% sulphides. Randomly oriented stringers.	4745		275.8	276.5	0.7			<.01	
405.7	412.9	Feldspar Porphyry - white-grey with phenocrysts of feldspar - twining & zoning - forming a spotted coarse grained rock. 10% feldspar + 5% biotite < 1% sulphides.									
412.9	472.3	Intermediate - Basic Metavolcanic.									
		444.4-472.2 - moderately sheared with 10% quartz + calcite + chlorite + 1% sulphides throughout. Stringers (1/10" - 3" at 45° C.A.) Shearing at 30° C.A.	4746		444.4	445.8	1.4			<.01	
			4747		445.8	447.6	1.8			<.01	
			4748		447.6	449.7	2.1			<.01	
			4749		449.7	452.2	2.5			<.01	
			4750		452.2	453.9	1.7			<.01	
			4751		453.9	455.6	1.7			<.01	
			4752		455.6	457.7	2.1			<.01	
			4753		457.7	460.0	2.3			<.01	
			4754		460.0	462.3	2.3			<.01	
			4755		462.3	463.7	1.4			<.01	
			4756		463.7	465.5	1.8			<.01	
			4757		465.5	467.3	1.8			<.01	
			4758		467.3	469.1	1.8			<.01	
			4759		469.1	470.9	1.8			<.01	
			4760		470.9	472.2	1.3			<.01	
472.2	481	Mineralized shear zone. Darker grey matrix with stringers and shearing at angle 30° C.A. 50% calcite + quartz + chlorite + 7% disseminated sulphides veins - 0.3' & 1.5'.									
		472.2-473.7 - 0.3' vein sheared with 25% calcite + chlorite + quartz + 3% sulphides throughout.	4761		472.2	473.7	1.5			<.01	
		473.7-475.8 - Sheared with 15% calcite + quartz + chlorite + 2% sulphides.	4762		473.7	475.1	1.4			<.01	

# DIAMOND DRILL RECORD

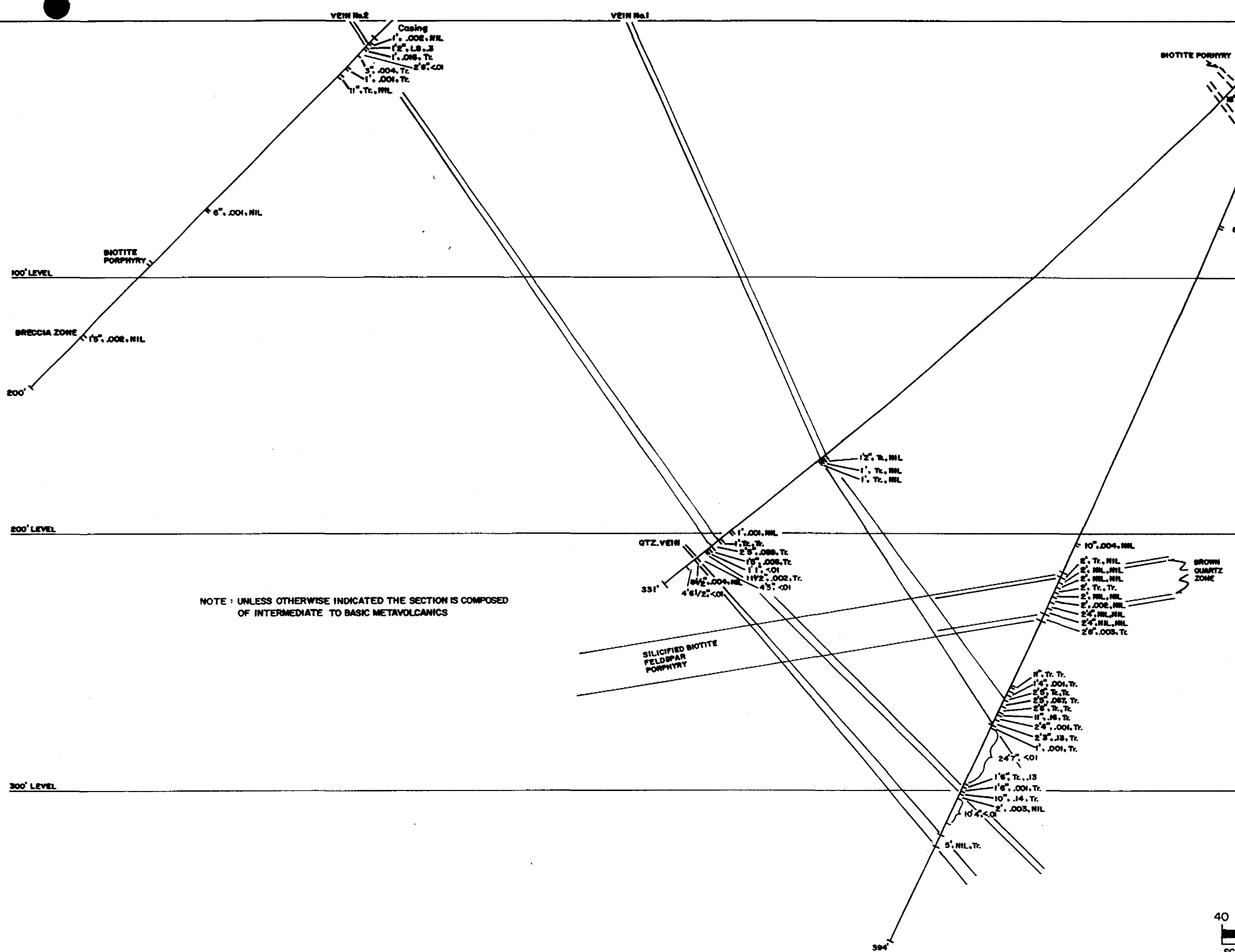
NAME OF PROPERTY Marshall Boston Iron Mines - Tipper Claims

HOLE NO. 81-16

SHEET NO. 3

FOOTAGE		DESCRIPTION	SAMPLE				ASSAYS				
FROM	TO		NO.	% SULPHIDES	FOOTAGE			%	%	OZ/TON	OZ/TON
					FROM	TO	TOTAL				
481	517	475.8-477.3 - Vein (.4') sheared with 25% calcite + quartz + chlorite + 4% sulphides.	4763		475.1	476.7	1.6			Au <.01	
		476.7-478 - Same as 4762.	4764		476.7	478	1.3			<.01	
		478-479.7 - Vein (1.7') sheared 50% calcite + chlorite + quartz + 7% sulphides. Lenses of disseminated sulphides.	4765		478	479.7	1.7			.95	
		479.7-481 - Same as 4762.	4766		479.7	481	1.3			<.01	
		Intermediate to Basic Metavolcanic. Moderately sheared with intervals of intense shearing. Stringers are randomly oriented. 5-10% calcite + chlorite + quartz + 1% sulphides + pink feldspar throughout.	4767		481	483	2.0			<.01	
			4768		483	485.3	2.3			<.01	
			4769		485.3	486.6	1.3			<.01	
			4770		486.6	487.9	2.3			<.01	
		487.9-493.6 - Altered zone.									
		495.5-497.3 - Sheared with 10% calcite + chlorite + quartz + 1% sulphides.	4771		495.5	497.3	1.8			<.01	
		498.4-500.9 - Same as 4771.	4772		498.4	500.9	2.5			<.01	
		508.5-511.7 - Same as 4771.	4773		508.5	511.7	3.2			<.01	
		511.7-517 - Moderately sheared with 8% calcite + chlorite + quartz + 1% sulphides. Pink feldspar among stringers.	4774		511.7	514.3	2.6			<.01	
			4775		514.3	517.0	2.7			<.01	
		END OF HOLE									

APPENDIX II  
CROSS-SECTIONS



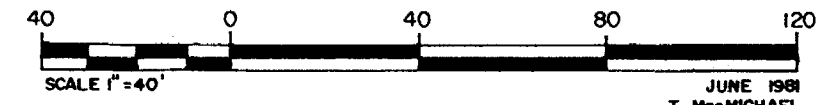
NOTE: UNLESS OTHERWISE INDICATED THE SECTION IS COMPOSED OF INTERMEDIATE TO BASIC METAVOLCANICS

INTERSECTION EXAMPLE:

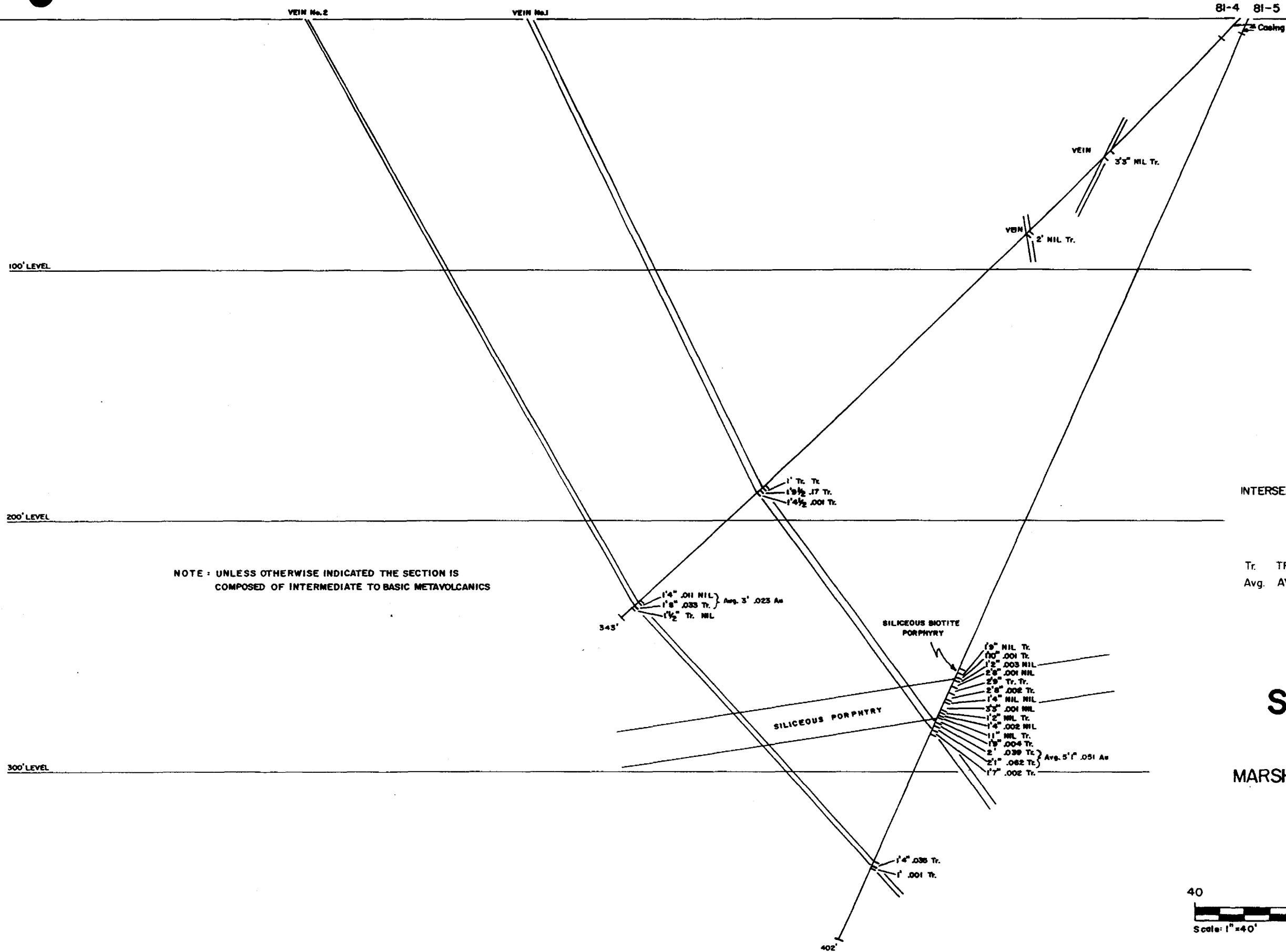
23" .13 Tr.  
CORE LENGTH Ag oz/ton  
Au oz/ton

Tr TRACE

**SECTION 81-1/2/3**  
FOR  
**MARSHALL-BOSTON IRON MINES LTD.**  
BY  
**ACA. HOWE INTERNATIONAL LTD.**

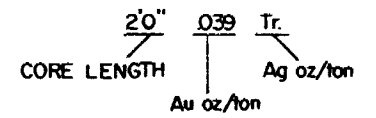


JUNE 1981  
T. MacMICHAEL



NOTE: UNLESS OTHERWISE INDICATED THE SECTION IS COMPOSED OF INTERMEDIATE TO BASIC METAVOLCANICS

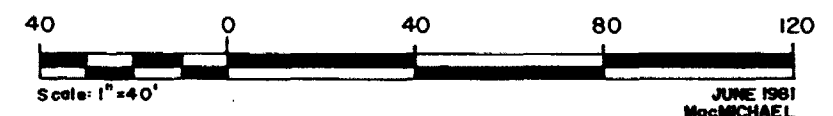
INTERSECTION EXAMPLE:



Tr. TRACE  
Avg. AVERAGE

# SECTION 81-4/5

FOR  
MARSHALL-BOSTON IRON MINES LTD.  
BY  
A.C.A. HOWE INTERNATIONAL LTD.



JUNE 1981  
MacMICHAEL

VEIN No. 2

VEIN No. 1

81-7 81-6

100' LEVEL

200' LEVEL

300' LEVEL

NOTE: UNLESS OTHERWISE INDICATED THE SECTION IS COMPOSED OF INTERMEDIATE TO BASIC METAVOLCANICS

340' 1'9" .004 Tr.  
3'0" .006 Tr. (Re-run .02 Au)  
2'10" NIL. Tr.

BIOTITE-FELDSPAR PORPHYRY  
6'4" NIL. Tr.  
6'5" .004 Tr.  
4'1" .007 Tr.  
1'7" .01  
2'8" NIL. Tr.  
2' .01

BIOTITE PORPHYRY  
7'9" NIL. Tr.  
VEIN 4'2" NIL. Tr.

BIOTITE PORPHYRY 2'6" NIL. Tr.

6" NIL. Tr.

BROWN QUARTZ  
SILICEOUS PORPHYRY  
FELDSPAR-BIOTITE PORPHYRY

2'7" .008 .00  
2' .007 Tr.  
2' .006 Tr.  
2'7" .002 Tr.  
1'8" .002 Tr.  
6'8" NIL. Tr.  
5' NIL. Tr.

FELDSPAR-HORNBLende PORPHYRY

VEIN 1'8" NIL. Tr.

2'8" .002 Tr.

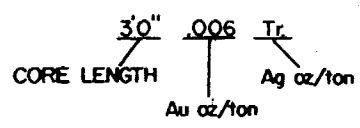
5' .001 Tr.  
4'9" .004 Tr.  
4'9" NIL. Tr.  
4'9" NIL. Tr.  
4'10" NIL. Tr.  
2'11" NIL. Tr.

11" .006 Tr.  
1'1" .014 Tr.

HORNBLende-FELDSPAR PORPHYRY

Casing  
10' NIL. Tr.  
6'3" NIL. Tr.  
4'9" NIL. Tr. 1'7" .001 Tr.  
4'9" .002 Tr.  
5'9" Tr. Tr.  
4'9" .04 Tr.  
4'11" .022 Tr. Avg. 5'8" .011 Au  
5' .002 Tr.  
3'4" NIL. Tr.

INTERSECTION EXAMPLE:

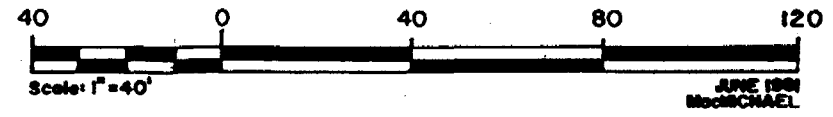


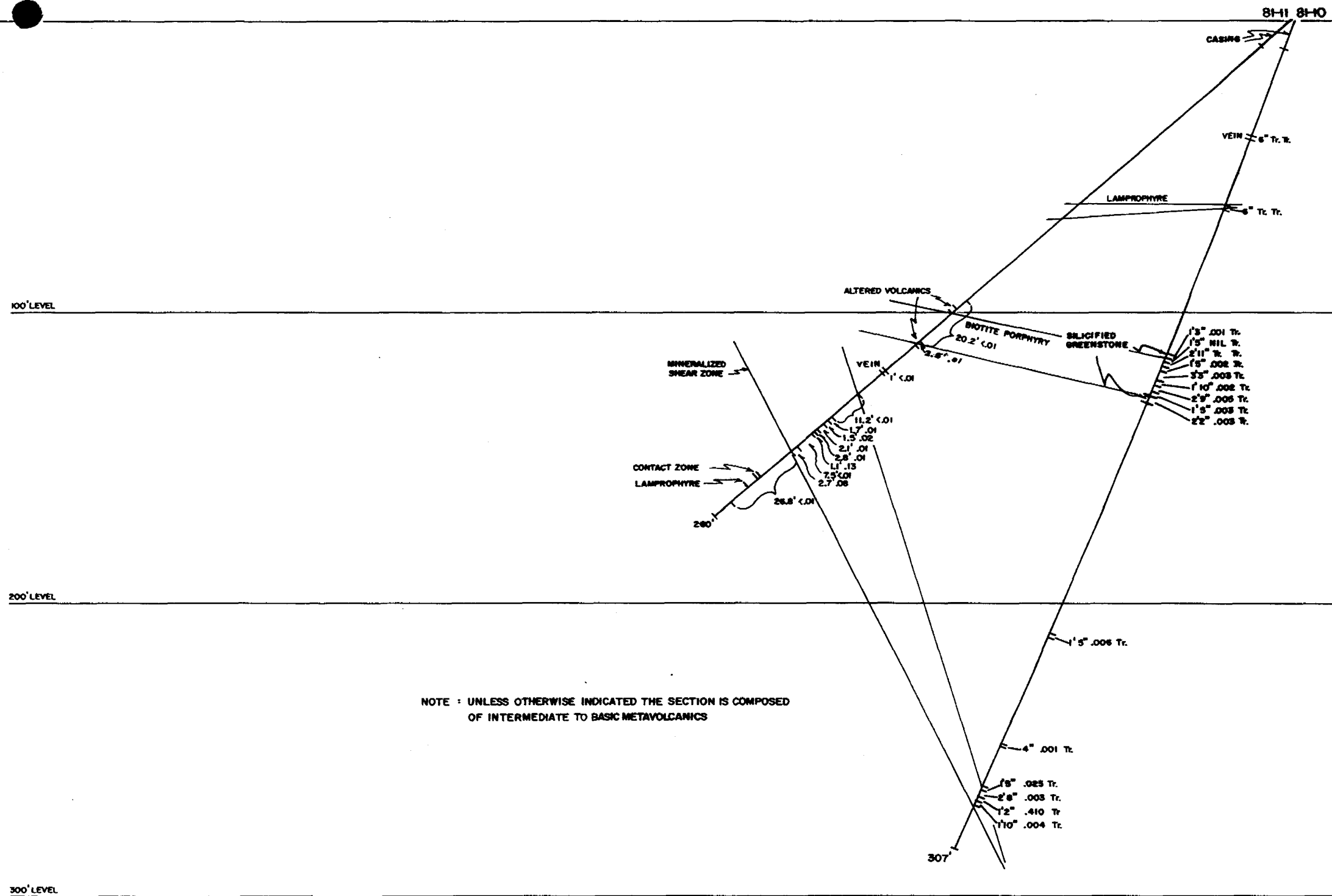
Tr. TRACE  
Avg. AVERAGE

# SECTION 81-7/6

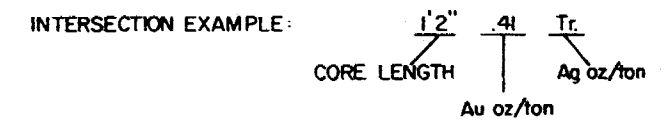
FOR  
MARSHALL-BOSTON IRON MINES LTD.

BY  
ACA. HOWE INTERNATIONAL LTD.



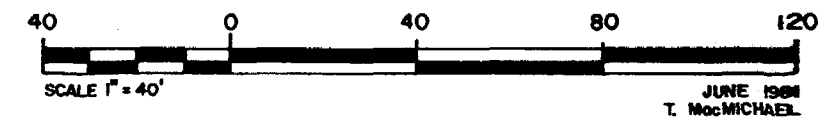


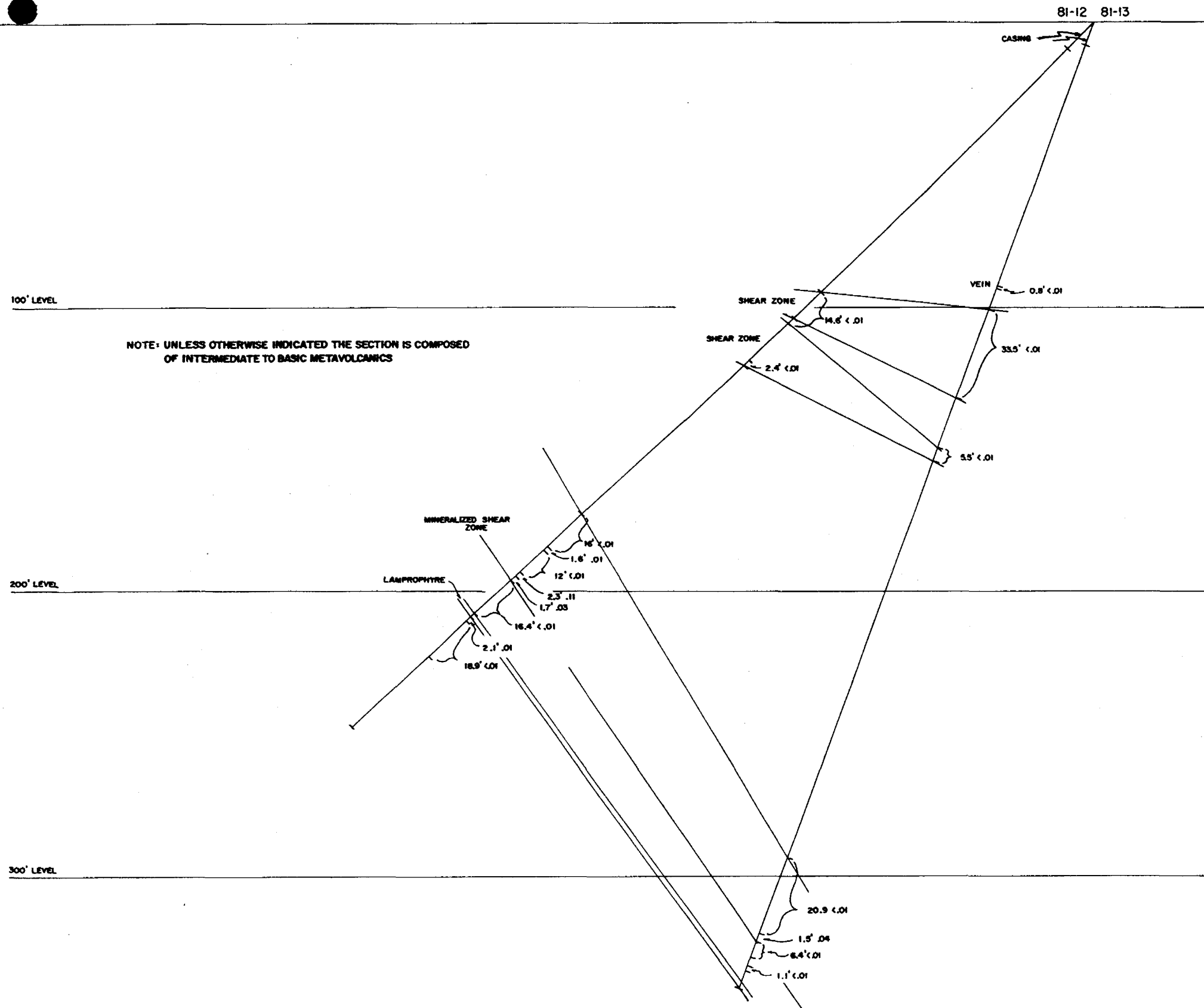
NOTE : UNLESS OTHERWISE INDICATED THE SECTION IS COMPOSED OF INTERMEDIATE TO BASIC METAVOLCANICS



# SECTION 81-10/11

FOR  
 MARSHALL-BOSTON IRON MINES LTD.  
 BY  
 A.C.A. HOWE INTERNATIONAL LTD.





NOTE: UNLESS OTHERWISE INDICATED THE SECTION IS COMPOSED OF INTERMEDIATE TO BASIC METAVOLCANICS

81-12 81-13

CASING

VEIN 0.8' < .01

SHEAR ZONE 14.6' < .01

SHEAR ZONE 2.4' < .01

5.5' < .01

33.5' < .01

MINERALIZED SHEAR ZONE

LAMPROPHYRE

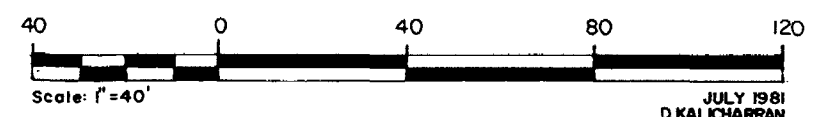
INTERSECTION EXAMPLE:  $\frac{2.3'}{0.11}$   
CORE LENGTH Au oz/ton

Tr. TRACE  
Avg. AVERAGE

# SECTION 81-12/13

FOR  
MARSHALL-BOSTON IRON MINES LTD.

BY  
A.C.A. HOWE INTERNATIONAL LTD.



JULY 1981  
D. KALICHARRAN



81-14 81-15

CASING  
LAMPROPHYRE

100' LEVEL

ALTERED ZONE

200' LEVEL

MINERALIZED  
SHEAR ZONE  
18.5' <.01  
1.9' .01  
1.7' <.01  
2.8' <.01  
VEIN  
.9' <.01

SHEAR ZONE 15.4' <.01  
VEIN 4.2' <.01  
SHEAR ZONE 9.8' <.01  
SHEAR ZONE 4.6' <.01

LAMPROPHYRE

300' LEVEL

LAMPROPHYRE

19.2' <.01  
1.8' .04  
3.2' <.01

NOTE: UNLESS OTHERWISE INDICATED THE SECTION IS COMPOSED OF INTERMEDIATE TO BASIC METAVOLCANICS

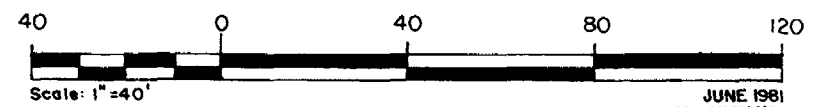
INTERSECTION EXAMPLE:

2'11" CORE LENGTH  
.6 Au oz/ton  
Tr. Ag oz/ton

Tr. TRACE  
Avg. AVERAGE

# SECTION 81-14/15

FOR  
MARSHALL-BOSTON IRON MINES LTD.  
BY  
A.C.A. HOWE INTERNATIONAL LTD.



JUNE 1981  
MacMICHAEL  
D.KALICHARRAN 1981 (JULY)

APPENDIX IV

ASSAYS

HOLES 1 - 10

Marshall Boston

X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET, DON MILLS, ONTARIO M3B 3J4

PHONE 416-445-5755

TELEX 06-986947

HOLES 1 - some of 21

CERTIFICATE OF ANALYSIS

TO: A. C. A. HOWE INTERNATIONAL LIMITED,  
ATTN: T. MACMICHAEL  
SUITE 826, 159 BAY ST.,  
TORONTO, ONTARIO.  
MSJ 1J7

CUSTOMER NO. 2

DATE SUBMITTED  
30-APR-81

REPORT 11271

REF. FILE 7028-H5

63 SAMPLES

WERE ANALYSED AS FOLLOWS:

	UNITS	METHOD	DETECTION LIMIT
AU	OZ/TON	FA	0.001
CU	%	XRF	0.010
ZN	%	XRF	0.010
AG	OZ/TON	FA	0.100
PB	%	XRF	0.010

X-RAY ASSAY LABORATORIES LIMITED

DATE 21-MAY-81

CERTIFIED BY 

\*\*\* UNLESS INSTRUCTED OTHERWISE WE WILL DISCARD REJECTS \*\*\*  
30 DAYS AND PULPS 180 DAYS FROM DATE OF THIS REPORT

SAMPLE	AU OZ/TON	CU %	ZN %	AG OZ/TON	PB %
7501	0.002	--	--	NIL	--
7502	1.80	--	--	0.30	--
7503	0.015	--	--	TRACE	--
7504	0.004	--	--	TRACE	--
7505	0.001	--	--	NIL	--
7506	TRACE	--	--	NIL	--
7507	NIL	--	--	NIL	--
7508	0.001	--	--	NIL	--
7509	NIL	--	--	NIL	--
7510	NIL	--	--	NIL	--
7511	0.002	TRACE	0.01	NIL	TRACE
7512	NIL	--	--	NIL	--
7513	NIL	--	--	NIL	--
7514	NIL	--	--	NIL	--
7515	NIL	--	--	NIL	--
7516	NIL	--	--	NIL	--
7517	NIL	--	--	NIL	--
7518	NIL	--	--	NIL	--
7519	NIL	--	--	NIL	--
7520	NIL	--	--	NIL	--
7521	NIL	--	--	NIL	--
7522	TRACE	--	--	NIL	--
7523	TRACE	--	--	NIL	--
7524	TRACE	--	--	NIL	--
7525	NIL	--	--	NIL	--
7526	NIL	--	--	NIL	--
7527	NIL	--	--	TRACE	--
7528	0.001	--	--	NIL	--
7529	TRACE	--	--	TRACE	--
7530	0.088	--	--	TRACE	--
7531	0.006	--	--	TRACE	--
7532	0.002	--	--	TRACE	--
7533	0.004	--	--	NIL	--
7534	NIL	--	--	TRACE	--
7535	NIL	--	--	NIL	--
7536	NIL	--	--	TRACE	--
7537	TRACE	--	--	NIL	--
7538	NIL	--	--	NIL	--
7539	0.004	--	--	NIL	--
7540	NIL	--	--	NIL	--
7541	TRACE	--	--	NIL	--
7542	NIL	--	--	TRACE	--
7543	NIL	--	--	NIL	--
7544	TRACE	--	--	NIL	--
7545	NIL	--	--	NIL	--
7546	0.002	--	--	NIL	--
7547	NIL	--	--	NIL	--
7548	NIL	--	--	NIL	--
7549	0.003	--	--	TRACE	--
7550	NIL	--	--	NIL	--
7551	NIL	--	--	NIL	--
7552	NIL	--	--	NIL	--
7553	NIL	--	--	NIL	--
7554	NIL	--	--	TRACE	--
7555	NIL	--	--	NIL	--

SAMPLE	AU OZ/TON	CU %	ZN %	AG OZ/TON	PB %
7556	NIL	--	--	NIL	--
7557	TRACE	--	--	TRACE	--
7558	0.001	--	--	TRACE	--
7559	TRACE	--	--	TRACE	--
7560	0.067	--	--	TRACE	--
7561	TRACE	--	--	TRACE	--
7562	0.160	--	--	TRACE	--
7563	0.001	--	--	TRACE	--

X-RAY ASSAY LABORATORIES LIMITED

*Marshall - Boston*

1885 LESLIE STREET, DON MILLS, ONTARIO M3B 3J4

PHONE 416-445-5755

TELEX 06-986947 *Notes - some of 4-5*

CERTIFICATE OF ANALYSIS

TO: A. C. A. HOWE INTERNATIONAL LIMITED,  
ATTN: TERRY MACMICHAEL  
SUITE 826, 159 BAY ST.,  
TORONTO, ONTARIO.  
M5J 1J7

CUSTOMER NO. 2

DATE SUBMITTED  
7-MAY-81

REPORT 11270

REF. FILE 7098-C5

63 SAMPLES

WERE ANALYSED AS FOLLOWS:

	UNITS	METHOD	DETECTION LIMIT
AU.	OZ/TON	FA	0.001
AG	OZ/TON	FA	0.100

DATE 21-MAY-81

X-RAY ASSAY LABORATORIES LIMITED

CERTIFIED BY 

\*\*\* UNLESS INSTRUCTED OTHERWISE WE WILL DISCARD REJECTS \*\*\*  
30 DAYS AND PULPS 180 DAYS FROM DATE OF THIS REPORT

SAMPLE	AU OZ/TON	AG OZ/TON
--------	-----------	-----------

7564	0.130	TRACE
7565	0.001	TRACE
7566	TRACE	0.13
7567	0.001	TRACE
7568	0.140	TRACE
7569	0.003	NIL
7570	NIL	TRACE
7571	NIL	TRACE
7572	NIL	TRACE
7573	NIL	TRACE
7574	NIL	TRACE
7575	NIL	TRACE
7576	NIL	TRACE
7577	NIL	TRACE
7578	NIL	TRACE
7579	NIL	TRACE
7580	TRACE	TRACE
7581	NIL	TRACE
7582	NIL	NIL
7583	NIL	TRACE
7584	NIL	NIL
7585	NIL	NIL
7586	TRACE	TRACE
7587	0.170	TRACE
7588	0.001	TRACE
7589	NIL	NIL
7590	NIL	NIL
7591	NIL	NIL
7592	NIL	NIL
7593	0.011	NIL
7594	0.033	TRACE
7595	TRACE	NIL
7596	TRACE	NIL
7597	NIL	NIL
7598	NIL	NIL
7599	NIL	NIL
7600	NIL	NIL
7601	NIL	NIL
7602	NIL	NIL
7603	NIL	TRACE
7604	0.001	TRACE
7605	0.003	NIL
7606	0.001	NIL
7607	TRACE	NIL
7608	0.002	TRACE
7609	NIL	NIL
7610	0.001	NIL
7611	NIL	TRACE
7612	0.002	NIL
7613	NIL	TRACE
7614	0.004	TRACE
7615	0.039	TRACE
7616	0.062	TRACE
7617	0.002	TRACE
7618	NIL	TRACE



SAMPLE	AU OZ/TON	AG OZ/TON
7619	TRACE	NIL
7620	NIL	TRACE
7621	NIL	TRACE
7622	0.035	TRACE
7623	0.001	TRACE
7624	NIL	TRACE
7625	NIL	TRACE
7626	NIL	TRACE

X-RAY ASSAY LABORATORIES LIMITED  
1885 LESLIE STREET, DON MILLS, ONTARIO M3B 3J4  
PHONE 416-445-5755 TELEX 06-986947

*Marshall-Boston*

*Holes 6-10*

CERTIFICATE OF ANALYSIS

TO: A.C.A. HOWE INTERNATIONAL LIMITED,  
ATTN: TERRY MACMICHAELS  
SUITE 826, 159 BAY ST.,  
TORONTO, ONTARIO.  
M5J 1J7

CUSTOMER NO. 2

DATE SUBMITTED  
20-MAY-81

REPORT 11415

REF. FILE 7195-S5

104 S. CORES

WERE ANALYSED AS FOLLOWS:

	UNITS	METHOD	DETECTION LIMIT
AU	OZ/TON	FA	0.001
AG	OZ/TON	FA	0.100

X-RAY ASSAY LABORATORIES LIMITED

DATE 05-JUN-81

CERTIFIED BY .....

\*\*\* UNLESS INSTRUCTED OTHERWISE WE WILL DISCARD REJECTS \*\*\*  
30 DAYS AND PULPS 180 DAYS FROM DATE OF THIS REPORT

SAMPLE AU OZ/TON AG OZ/TON

SAMPLE	AU OZ/TON	AG OZ/TON
1401	NIL	TRACE
1402	0.002	TRACE
1403	TRACE	TRACE
1404	NIL	TRACE
1405	NIL	TRACE
1406	0.600	TRACE
1407	0.003	TRACE
1408	0.160	TRACE
1409	0.003	TRACE
1410	0.140	0.01
1411	0.085	0.08
1412	0.003	TRACE
1413	TRACE	TRACE
1414	0.001	TRACE
1415	NIL	TRACE
1416	TRACE	TRACE
1417	0.002	TRACE
1418	0.003	TRACE
1419	0.002	TRACE
1420	0.005	TRACE
1421	0.003	TRACE
1422	0.003	TRACE
1423	NIL	TRACE
1424	TRACE	TRACE
1425	0.001	TRACE
1426	0.006	TRACE
1427	0.025	TRACE
1428	0.003	TRACE
1429	0.410	TRACE
1430	0.004	TRACE
7627	0.001	TRACE
7628	NIL	TRACE
7629	0.001	TRACE
7630	0.014	TRACE
7631	0.002	TRACE
7632	NIL	TRACE
7633	NIL	TRACE
7634	NIL	TRACE
7635	NIL	TRACE
7636	NIL	TRACE
7637	NIL	TRACE
7638	0.008	0.10
7639	0.007	TRACE
7640	0.005	TRACE
7641	0.002	TRACE
7642	0.002	TRACE
7643	NIL	TRACE
7644	NIL	TRACE
7645	NIL	TRACE
7646	NIL	TRACE
7647	NIL	TRACE
7648	0.002	TRACE
7649	TRACE	TRACE
7650	0.010	TRACE
7651	0.012	TRACE

SAMPLE AU OZ/TON AG OZ/TON

SAMPLE	AU OZ/TON	AG OZ/TON
7652	0.002	TRACE
7653	0.001	TRACE
7654	0.004	TRACE
7655	NIL	TRACE
7656	NIL	TRACE
7657	NIL	TRACE
7658	NIL	TRACE
7659	NIL	TRACE
7660	NIL	TRACE
7661	NIL	TRACE
7662	0.001	TRACE
7663	0.007	TRACE
7664	NIL	TRACE
7665	0.001	TRACE
7666	0.006	TRACE
7667	NIL	TRACE
7668	TRACE	TRACE
7669	TRACE	TRACE
7670	0.004	TRACE
7671	NIL	TRACE
7672	TRACE	TRACE
7673	NIL	TRACE
7674	TRACE	TRACE
7675	NIL	TRACE
7676	TRACE	TRACE
7677	0.005	TRACE
7678	0.004	TRACE
7679	0.005	TRACE
7680	TRACE	TRACE
7681	0.001	TRACE
7682	NIL	TRACE
7683	NIL	TRACE
7684	NIL	TRACE
7685	NIL	TRACE
7686	NIL	TRACE
7687	0.067	TRACE
7688	0.260	NIL
7689	0.004	TRACE
7690	0.002	TRACE
7691	0.003	TRACE
7692	NIL	TRACE
7693	0.002	TRACE
7694	TRACE	TRACE
7695	TRACE	TRACE
7696	0.004	TRACE
7697	TRACE	TRACE
7698	NIL	TRACE
7699	NIL	TRACE
7700	0.003	TRACE

SAMPLE

AU OZ/TON AG OZ/TON

SAMPLE	AU OZ/TON	AG OZ/TON
7652	0.002	TRACE
7653	0.001	TRACE
7654	0.004	TRACE
7655	NIL	TRACE
7656	NIL	TRACE
7657	NIL	TRACE
7658	NIL	TRACE
7659	NIL	TRACE
7660	NIL	TRACE
7661	NIL	TRACE
7662	0.001	TRACE
7663	0.007	TRACE
7664	NIL	TRACE
7665	0.001	TRACE
7666	0.006	TRACE
7667	NIL	TRACE
7668	TRACE	TRACE
7669	TRACE	TRACE
7670	0.004	TRACE
7671	NIL	TRACE
7672	TRACE	TRACE
7673	NIL	TRACE
7674	TRACE	TRACE
7675	NIL	TRACE
7676	TRACE	TRACE
7677	0.005	TRACE
7678	0.004	TRACE
7679	0.005	TRACE
7680	TRACE	TRACE
7681	0.001	TRACE
7682	NIL	TRACE
7683	NIL	TRACE
7684	NIL	TRACE
7685	NIL	TRACE
7686	NIL	TRACE
7687	0.067	TRACE
7688	0.260	NIL
7689	0.004	TRACE
7690	0.002	TRACE
7691	0.003	TRACE
7692	NIL	TRACE
7693	0.002	TRACE
7694	TRACE	TRACE
7695	TRACE	TRACE
7696	0.004	TRACE
7697	TRACE	TRACE
7698	NIL	TRACE
7699	NIL	TRACE
7700	0.003	TRACE



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CHECK ASSAYS

Report Number  
B 13431

Geoservices Laboratory Report

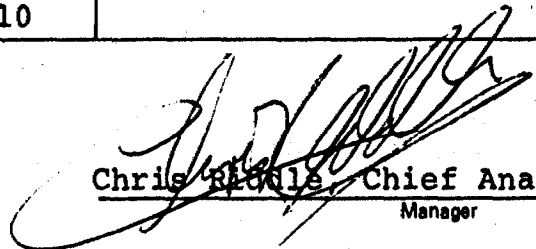
Date May 28, 1981

Ordered To: T. MacMichael, A.C.A. Howe Int., Suite 826, 159 Bay Street, Toronto,  
M5J 1J7

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
7502	1.76		0.36
7520	Trace <.01		Trace <.10
7521	Trace <.01		Trace <.10
7522	0.01		Trace <.10
7523	Trace <.01		Trace <.10
7530	0.10		Trace <.10
7531	0.01		Trace <.10
7560	0.08		Trace <.10
7561	Trace <.01		Trace <.10
7562	0.11		Trace <.10
7563	0.01		Trace <.10
7564	0.15		Trace <.10
7566	Trace <.01		Trace <.10
7587	0.20		Trace <.10
7593	0.01		Trace <.10

Fees Received

\$165.00  
Rec. # C169564



Chris Riddle, Chief Analyst  
Manager

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qualifying remarks made by this ministry with reference to any sample.



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**Geoservices Laboratory Report**

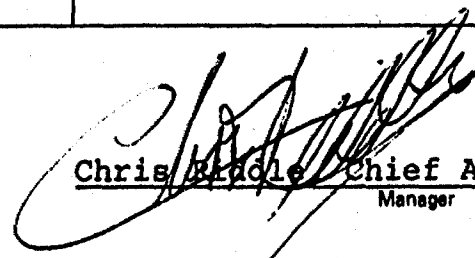
Date May 29, 1981

Issued To: T. MacMichael, A.C.A. Howe Int., Suite 826, 159 Bay Street, Toronto,

M5J 1J7

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
7594	0.01		Trace <.10
7608	0.04		Trace <.10
7610	Trace .01		Trace <.10
7613	Trace .01		Trace <.10

Fees Received \$44.00  
Rec. # C169564

  
Chris Biddle Chief Analyst  
Manager

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ADDITIONAL SAMPLING

OF

HOLES 1 - 10





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Report Number  
B 13492

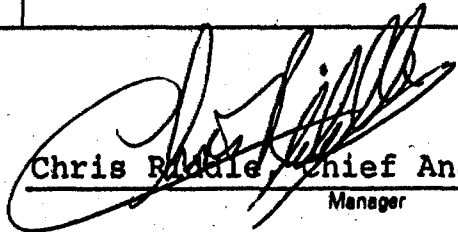
**Geoservices Laboratory Report**

Date June 30, 1981

Issued To: A.C.A. Howe Inter., Suite 826, 159 Bay Street, Toronto, Ontario, M5S 1J7

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1431	Trace <.01		
1432	Trace <.01		
1433	Trace <.01		
1434	Trace <.01		
1435	Trace <.01		
1436	Trace <.01		
1437	Trace <.01		
1438	Trace <.01		

Fees Received \$57.00 Rec. # C169595

  
Chris Riddle, Chief Analyst  
Manager

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Report Number  
B 13527

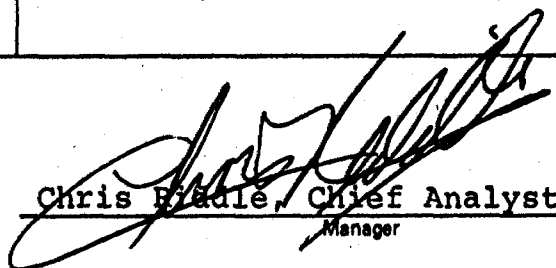
Geoservices Laboratory Report

Date July 6, 1981

Issued To: A. C. A. Howe, Suite 826, 159 Bay Street, Toronto, Ontario, M5J 1J7

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1439	Trace <.01		
1440	Trace <.01		
1441	Trace <.01		
1442	Trace <.01		
1443	Trace <.01		
1444	Trace <.01		
1445	Trace <.01		
1446	Trace <.01		
1447	Trace <.01		
1448	Trace <.01		
1449	Trace <.01		
1450	Trace <.01		

Fees Received \$102.00 Rec. # C169603

  
Chris Bradie, Chief Analyst  
Manager

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Report Number  
B 13528

**Geoservices Laboratory Report**

Date July 6, 1981

Issued To: A.C.A. Howe, Suite 826, 159 Bay Street, Toronto, Ontario, M5J 1J7

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1451	Trace <.01		
1452	Trace <.01		
1453	Trace <.01		
1454	Trace <.01		
1455	Trace <.01		
1456	Trace <.01		
1457	Trace <.01		
1458	Trace <.01		
1459	Trace <.01		

Fees Received \$76.50 Rec. # C169603

Chris Riddle, Chief Analyst  
Manager

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Report Number  
B 13531

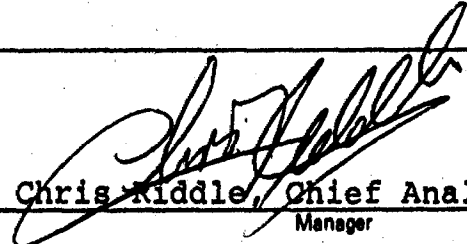
**Geoservices Laboratory Report**

Date July 10, 1981

Issued To: A. C. A. Howe International, Suite 826, 159 Bay Street, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1460	Trace <.01		
1461	0.01		
1462	Trace <.01		
1463	Trace <.01		
1464	Trace <.01		
1465	Trace <.01		
1466	Trace <.01		
1467	Trace <.01		
1468	Trace <.01		
1469	Trace <.01		
1470	Trace <.01		
1471	Trace <.01		

Fees Received \$102.00  
Rec. # C169609

  
Chris Kiddle, Chief Analyst  
Manager

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Report Number  
B 13532

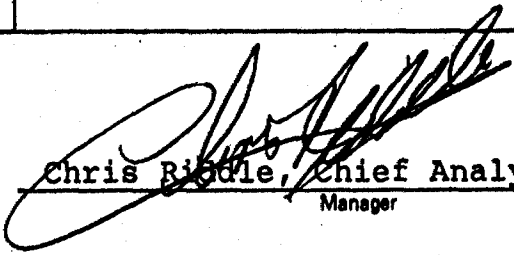
Geoservices Laboratory Report

Date July 10, 1981

Issued To: A.C.A. Howe International, Suite 826, 159 Bay Street, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1472	Trace <.01		
1473	Trace <.01		
1474	Trace <.01		
1475	Trace <.01		
1476	Trace <.01		
1477	Trace <.01		
1478	0.01		
1479	Trace <.01		
1480	Trace <.01		
1481	Trace <.01		
1482	Trace <.01		
1483	Trace <.01		

Fees Received \$102.00  
Rec. # C169609

  
Chris Biddle, Chief Analyst  
Manager

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qualifying remarks made by this ministry with reference to any sample.



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Toronto, Ontario

Tel: 965-1337

Report Number  
B 13533

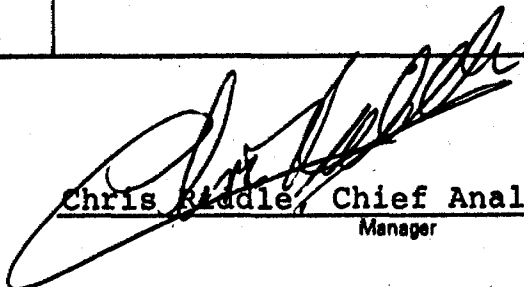
Geoservices Laboratory Report

Date July 10, 1981

Issued To: A.C.A. Howe International, Suite 826, 159 Bay Street, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1484	Trace <.01		
1485	Trace <.01		
1486	Trace <.01		
1487	Trace <.01		
1488	Trace <.01		
1489	Trace <.01		
1490	Trace <.01		
1491	Trace <.01		
1492	Trace <.01		
7666	0.02		

Fees Received \$85.00  
Rec. # C169609

  
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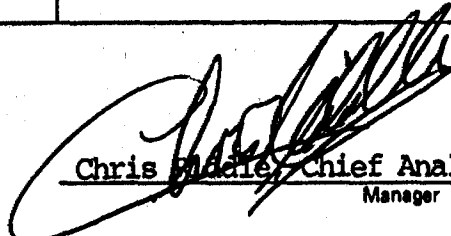
Date July 15, 1981

Issued To: A.C.A. Howe Inter. Ltd., 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1321	Trace <.01		
1322	Trace<.01		
1323	Trace<.01		
1324	Trace<.01		
1325	Trace<.01		
1326	Trace<.01		
1327	Trace<.01		
1328	Trace<.01		
1493	0.01		
1494	0.01		
1495	Trace<.01		
1496	Trace<.01		
1497	Trace<.01		
1498	Trace<.01		
1499	Trace<.01		
1500	Trace<.01		
1301	Trace<.01		
1302	Trace<.01		
1303	Trace<.01		
1304	Trace<.01		
1305	Trace<.01		
1306	Trace<.01		
1307	Trace<.01		
1308	Trace<.01		

Fees Received

Paid \$204.00 Rec. No. C169612

  
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B 13539

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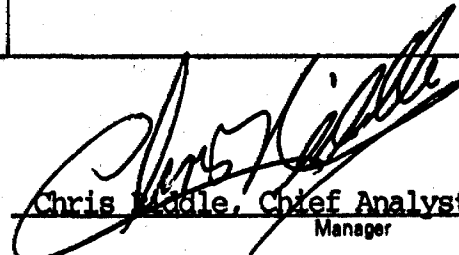
Date July 15, 1981

Issued To: A.C.A. Howe Inter. Ltd., 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1309	0.01		
1310	Trace<.01		
1311	Trace<.01		
1312	Trace<.01		
1313	Trace<.01		
1314	Trace<.01		
1315	0.01		
1316	Trace<.01		
1317	Trace<.01		
1318	Trace<.01		
1319	Trace<.01		
1320	Trace<.01		

Fees Received

Paid \$ 102.00 Rec. No. C169612

  
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B 13540

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Date July 15, 1981

Issued To: A.C.A. Howe Inter. Ltd., 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1329	Trace <.01		
1330	Trace <.01		
1331	Trace <.01		
1332	Trace <.01		
1333	Trace <.01		
1334	Trace <.01		
1335	Trace <.01		
1336	Trace <.01		
1337	Trace <.01		
1338	Trace <.01		
1339	Trace <.01		
1347	Trace <.01		
1341	Trace <.01		
1342	Trace <.01		
1343	Trace <.01		
1344	Trace <.01		
1345	Trace <.01		
1346	Trace <.01		
1347A	Trace <.01		
1348	Trace <.01		

ees Received

Paid \$170.00

Receipt. No. C169614

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B 13566

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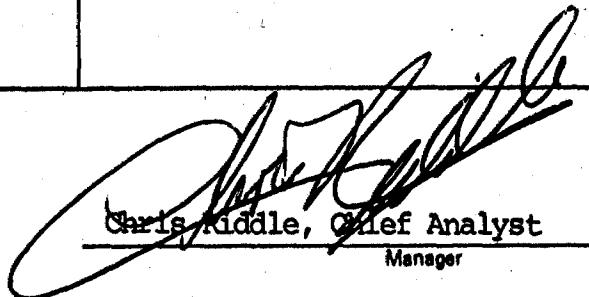
Date July 28, 1981

Issued To: A.C.A. Howe, 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1349	Trace <0.01		
1350	0.01		
1351	Trace < 0.01		
1352	Trace <0.01		
1353	Trace < 0.01		
1354	Trace <0.01		
1355	0.01		
1356	0.01		
1357	0.01		
1358	Trace <0.01		
1359	Trace <0.01		
1360	Trace <0.01		
1361	Trace <0.01		
1362	Trace <0.01		
1363	Trace <0.01		
1364	Trace <0.01		
1365	0.01		
1366	0.02		
1367	0.01		
1368	0.01		
1369	0.13		
1370	Trace <0.01		

Fees Received

Paid \$187.00  
Rec.No. C165151

  
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Report Number  
B 13567

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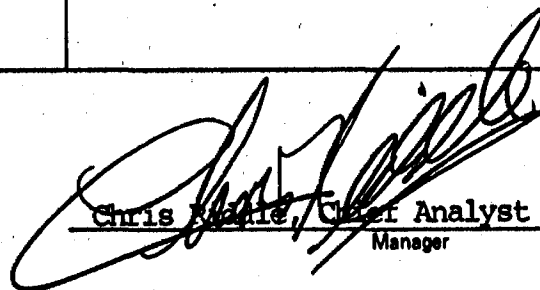
Date July 29, 1981

Issued To: A.C.A. Howe, 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1371	Trace <0.01		
1372	Trace <0.01		
1373	Trace <0.01		
1374	0.08		
1375	Trace <0.01		
1376	Trace <0.01		
1377	Trace <0.01		
1378	Trace <0.01		
1379	Trace <0.01		
1380	Trace <0.01		
1381	Trace <0.01		

Fees Received

Paid \$ 93.50  
Rec. No. C165151

  
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DDH 12  
Report Number  
B 13576

**Geoservices Laboratory Report**

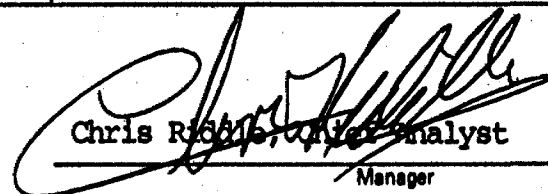
Date July 30, 1981

Issued To: **A.C.A. Howe , 159 Bay Street, Suite 826, Toronto, Ontario**

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
1382	Trace<0.01		
1383	Trace<0.01		
1384	Trace<0.01		
1385	Trace<0.01		
1386	Trace<0.01		
1387	Trace<0.01		
1388	Trace<0.01		
1389	Trace<0.01		
1390	Trace<0.01		
1391	Trace<0.01		
1392	Trace<0.01		
1393	Trace<0.01		
1394	Trace<0.01		
1395	Trace<0.01		
1396	Trace<0.01		
1397	Trace<0.01		
1398	Trace<0.01		
1399	Trace<0.01		
1400	Trace<0.01		

Fees Received

Paid \$161.50  
Rec. No. C169624

  
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DDH 12

Report Number  
B 13577

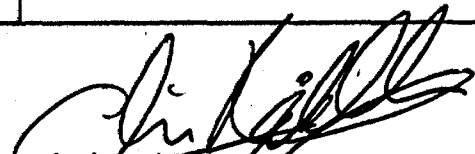
Geoservices Laboratory Report

Date July 30, 1981

Issued To: A.C.A. Howe, 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4601	0.01		
02	Trace < 0.01		
03	Trace < 0.01		
04	Trace < 0.01		
05	Trace < 0.01		
06	Trace < 0.01		
07	0.11		
08	0.03		
09	Trace < 0.01		
10	Trace < 0.01		
11	Trace < 0.01		
12	Trace < 0.01		
13	Trace < 0.01		
14	Trace < 0.01		
15	Trace < 0.01		
16	Trace < 0.01		
17	0.01		
18	Trace < 0.01		
19	Trace < 0.01		
Fees Received	20	Trace < 0.01	

Paid \$150.50  
Rec. No C169624  
Owing \$19.50

  
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DDH 13  
Report Number  
B 13581

### Geoservices Laboratory Report

Date Aug. 6, 1981

Issued To: A.C.A. Howe Int., Suite 826, 159 Bay Street, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4621	Trace<0.01		
4622	Trace<0.01		
4623	Trace<0.01		
4624	Trace<0.01		
4625	Trace<0.01		
4626	Trace<0.01		
4627	Trace<0.01		
4628	Trace<0.01		
4629	Trace<0.01		
4630	Trace<0.01		
4631	Trace<0.01		
4632	Trace<0.01		
4633	Trace<0.01		
4634	Trace<0.01		
4635	Trace<0.01		
4636	Trace<0.01		
4638A	Trace<0.01		
4638B	Trace<0.01		
4639	Trace< 0.01		
4640	Trace< 0.01		
4641	Trace< 0.01		
4642	Trace< 0.01		
4643	Trace< 0.01		
4644	Trace< 0.01		
4645	Trace< 0.01		

Fees Received

Paid \$212.50  
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DDH 13

Report Number

B 13582

Geoservices Laboratory Report

Date August 6, 1981

Issued To: A.C.A. Howe Int., Suite 826, 159 Bay Street, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4646	Trace<0.01		
4647	Trace< 0.01		
4648	Trace< 0.01		
4649	Trace< 0.01		
4650	Trace<0.01		
4651	Trace< 0.01		
4652	Trace< 0.01		
4653	Trace< 0.01		
4654	Trace< 0.01		
4655	Trace< 0.01		
4656	Trace< 0.01		
4657	Trace< 0.01		
4658	Trace< 0.01		
4659	0.04		
4660	Trace< 0.01		
4661	Trace< 0.01		
4662	Trace< 0.01		
4663	Trace< 0.01		

Fees Received

Paid \$152.00

Rec. No. C165154

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DDH 14

Report Number  
B 13591

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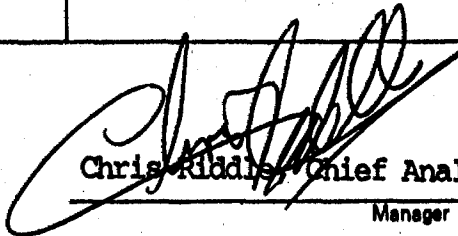
Date August 11, 1981

Issued To: A.C.A. Howe Inter., 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4664	Trace < 0.01		
4665	Trace < 0.01		
4666	Trace < 0.01		
4667	Trace < 0.01		
4668	Trace < 0.01		
4669	Trace < 0.01		
4670	Trace < 0.01		
4671	Trace < 0.01		
4672	Trace < 0.01		
4673	Trace < 0.01		
4674	Trace < 0.01		
4675	Trace < 0.01		
4676	Trace < 0.01		
4677	Trace < 0.01		
4678	Trace < 0.01		
4679	Trace < 0.01		
4680	Trace < 0.01		
4681	0.01		
4682	Trace < 0.01		
4683	0.01		
4684	Trace < 0.01		
4685	Trace < 0.01		
4686	Trace < 0.01		
4687	Trace < 0.01		

Fees Received

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Rec.No. C165159

  
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Date August 11, 1981

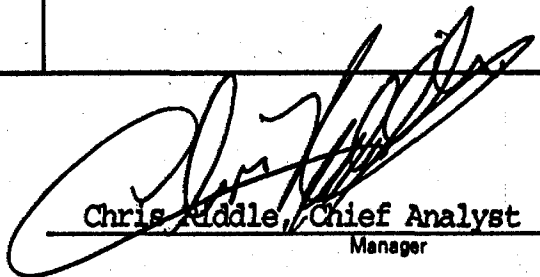
Issued To: A.C.A. Howe Inter., 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4688	Trace <0.01		
4689	Trace < 0.01		
4690	Trace < 0.01		
4691	Trace < 0.01		
4692	Trace < 0.01		
4693	Trace <0.01		

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DDH 15

Report Number  
B 13597

Geoservices Laboratory Report

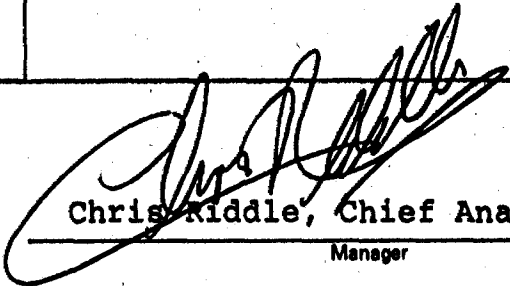
Date August 12, 1981

Issued To: A.C.A. Howe, 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4694	Trace<0.01		
4695	Trace<0.01		
4696	Trace<0.01		
4697	Trace<0.01		
4698	Trace<0.01		
4699	Trace<0.01		
4700	Trace<0.01		
4701	Trace<0.01		
4702	Trace<0.01		
4703	Trace<0.01		
4704	Trace<0.01		
4705	Trace<0.01		
4706	Trace<0.01		
4707	Trace<0.01		
4708	Trace<0.01		
4709	Trace<0.01		
4710	Trace<0.01		
4711	Trace<0.01		
4712	Trace<0.01		
4713	Trace<0.01		
4714	Trace<0.01		
4715	Trace<0.01		
4716	Trace<0.01		
4717	Trace<0.01		

Fees Received

Paid \$204.00  
Rec. No. C165165



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Report Number  
B 13598

**Geoservices Laboratory Report**

Date Aug. 12, 1981

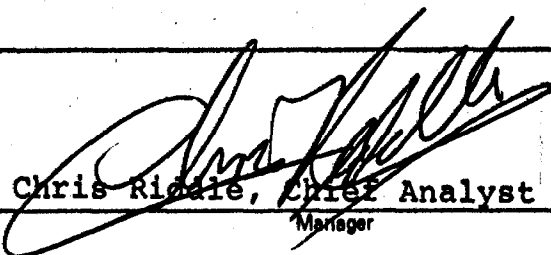
Issued To: A.C.A. Howe, 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4718	Trace< 0.01		
4719	Trace< 0.01		
4720	Trace< 0.01		
4721	Trace< 0.01		
4722	Trace< 0.01		
4723	Trace<0.01		
4724	Trace< 0.01		
4725	Trace< 0.01		
4726	Trace< 0.01		
4727	Trace< 0.01		
4728	Trace< 0.01		
4729	Trace< 0.01		
4730	Trace< 0.01		
4731	Trace< 0.01		
4732	Trace<0.01		
4733	Trace< 0.01		
4734 "	0.04		
4735	Trace<0.01		
4736	Trace<0.01		
4737	Trace<0.01		
4738	Trace<0.01		

Fees Received

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Rec. No. C165165

  
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B 13611

Geoservices Laboratory Report

Date August 14, 1981

Issued To: A.C.A. Howe, 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4739	Trace<0.01		
4740	Trace<0.01		
4741	Trace<0.01		
4742	Trace<0.01		
4743	Trace<0.01		
4744	Trace<0.01		
4745	Trace<0.01		
4746	Trace<0.01		
4747	Trace<0.01		
4748	Trace<0.01		
4749	Trace<0.01		
4750	Trace<0.01		
4751	Trace<0.01		
4752	Trace<0.01		
4753	Trace<0.01		
4754	Trace<0.01		
4755	Trace<0.01		
4756	Trace<0.01		
4757	Trace<0.01		
4758	Trace<0.01		
4759	Trace<0.01		
4760	Trace<0.01		
4761	Trace<0.01		
4762	Trace<0.01		
4763	Trace<0.01		

Fees Received

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Report Number  
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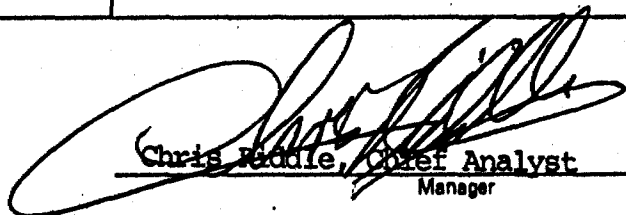
Date August 14, 1981

Issued To: A.C.A. Howe, 159 Bay Street, Suite 826, Toronto, Ontario

Sample Number	Gold Oz. Per Ton	Gold Value Per Ton	Silver Oz. Per Ton
4764	Trace<0.01		
4765	0.95		
4766	Trace<0.01		
4767	Trace<0.01		
4768	Trace<0.01		
4769	Trace<0.01		
4770	Trace<0.01		
4771	Trace<0.01		
4772	Trace<0.01		
4773	Trace<0.01		
4774	Trace<0.01		
4775	Trace<0.01		

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Rec.No. C165166

  
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32D04SW0316 63.4026 BOSTON

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REPORT ON THE MAX-MIN II SURVEY  
CONDUCTED ON THE BASE METAL CLAIMS IN  
BOSTON TOWNSHIP

FOR  
MARSHALL MINERALS LIMITED

OM 81-6-C-104

copy 2.

137 Huron Heights Drive  
Newmarket, Ontario  
L3Y 4Z6

BY

A.C.A. HOWE INTERNATIONAL LTD.  
Suite 801, 159 Bay Street  
Toronto, Ontario  
M5J 1J7

T.P. MacMichael, B.Sc., F.G.A.C.

Report No. 439  
October 19, 1982

Toronto, Ontario



32D04SW0316 63.4026 BOSTON

020C

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SUMMARY

Marshall Boston Iron Mines Ltd. holds a group of 41 contiguous claims for iron and base metals in Boston Township, Ontario. On nine of these claims, a Max-Min II survey was completed.

In 1979 an Airborne Electromagnetic Survey was completed for the Ontario Geological Survey. The data was published on Preliminary Map P2270. A number of electromagnetic anomalies (conductors) were located on Marshall Boston Iron Mines Ltd. property. A comparison of their plotted locations with previous diamond drilling showed that most of these conductors had not been tested. As a result of this and the fact that previous diamond drilling had encountered base metal mineralization, a Radem VLF-EM survey was undertaken in March, 1981, to locate the conductors on the ground. The ground geophysical survey delineated six near-vertical conductors, some of which are coincident with the airborne anomalies.

A Max-Min II survey was conducted in February, 1982 to provide better depth definition and filter out barren faults and/or fracture zones.

Interpretation of the survey results by Paterson, Grant & Watson Ltd., Consulting Geophysicists, revealed five significant conductors, four of which are coincident with VLF-EM conductors delineated in the March, 1981 survey.

Correlation of the Max-Min results with existing drilling and geophysical data was recommended prior to proceeding with a new drilling programme.

The property has potential for gold and base metal mineralization.

PROPERTY

Marshall Boston Iron Mines Ltd. holds a group of contiguous claims for iron and base metals in Boston Township, Larder Lake Mining Division, Ontario. Marshall Boston controls 41 leased claims, of which 13 are owned and 28 are held under option, 2 patented, and 1 staked claim. These claims may be more particularly described as:

<u>LEASED CLAIMS (Owned)</u>	<u>LEASED CLAIMS (Optioned)</u>	
L72990	L56467	L71473
L72991	L56468	L71474
L72993	L56502	L71475
L73002	L56503	L71471
L73068	L56504	L71477
L73069	L56505	L71478
L73070	L56506	L72986
L73124	L56507	L72987
L74842	L65200	L73003
L74843	L65363	L77287
L74844	L65364	L101539
L74845	L67559	L104740
L91027	L67560	L213495
	L71472	L213496
<u>PATENTED CLAIMS</u>	<u>STAKED CLAIM</u>	<u>DATE RECORDED</u>
L36693	L579084	Oct. 22/80
L39083		

CLAIMS SURVEYED

The Max-Min II survey was conducted over six leased claims, two patented claims and one staked claim (See Drawing No. 1). The claims may be more particularly described as follows:

<u>LEASED CLAIMS</u>	<u>PATENTED CLAIMS</u>	<u>DATE RECORDED</u>
L71472	L36693	Oct. 22/81
L71476	L39083	
L71477		
L71478	<u>STAKED CLAIM</u>	
L77287	L579084	
L213495		

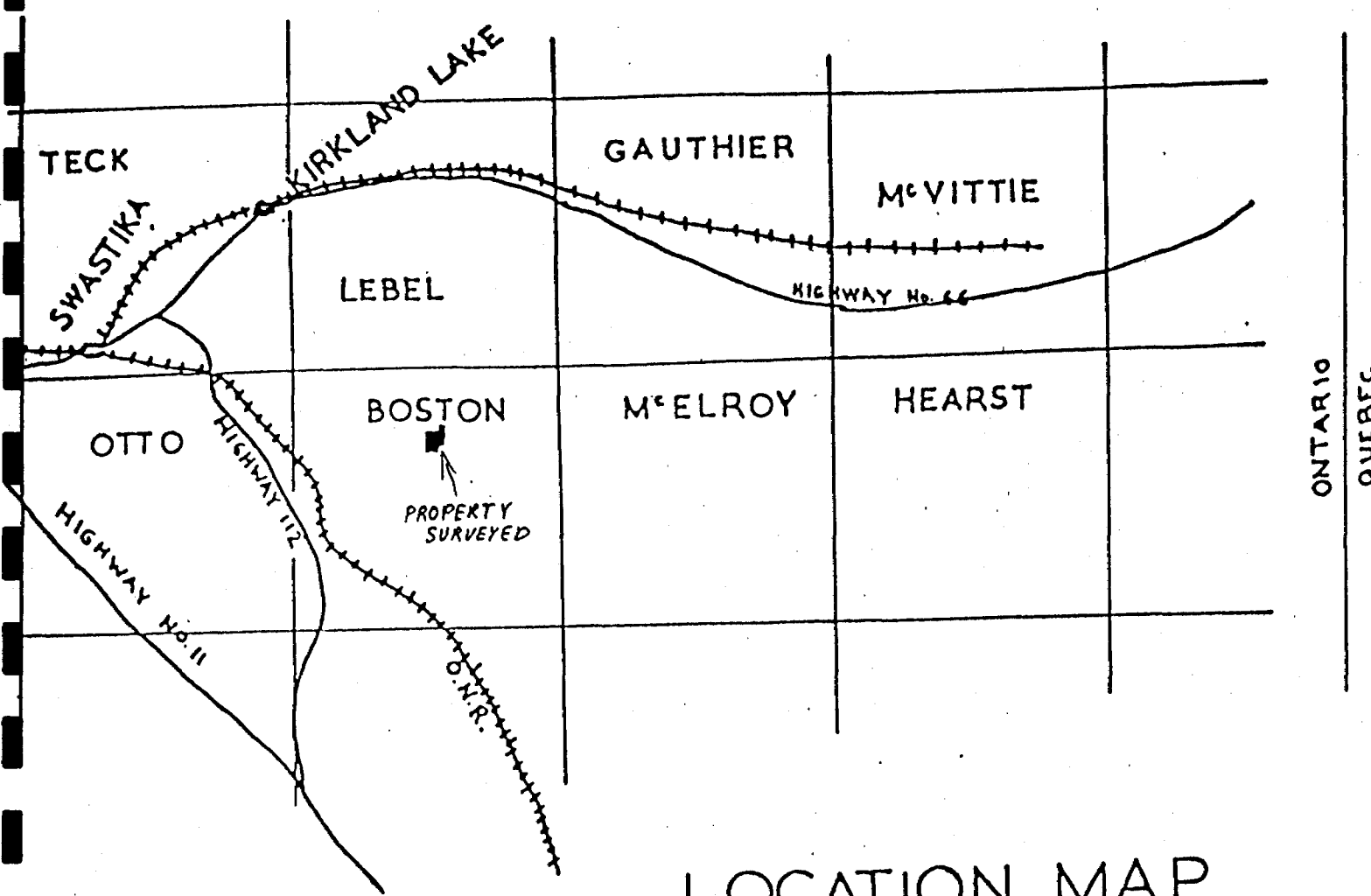
LOCATION & ACCESS

The Marshall Boston Iron Mines Limited iron and base metal property is located immediately north of the Adams Mine Road (#650) between Dane townsite and the Adams Mine. Highway #650 can be reached from Kirkland Lake on highway #112.

TOPOGRAPHY

The topography of the property may be described as having moderately high rock ridges with differences in elevation not exceeding 100 feet.

Outcrops are usually restricted to higher ground where the light overburden, consisting chiefly of peat, moss and immature soils rarely exceed one foot in thickness.



LOCATION MAP  
MARSHALL BOSTON IRON MINES LTD  
A.C.A. HOWE INTERNATIONAL LTD.  
Scale 1" = 4 miles

In the low-lying regions, the swampy terrain has accumulated to thicknesses in the order of twenty feet.

The majority of the trees on the property consist of conifers of which the pines and spruces dominate, while the deciduous varieties appear to be restricted to poplars and birch. Alders are abundant in the low-lying swampy areas.

#### HISTORY OF THE PROPERTY

In 1951, Dominion Gulf Company acquired the Boston Iron range and sold it to Jones and Laughlin Steel Corporation. The Adams Mine is now located on this ground.

Previous to their acquisition, the main property held by Marshall Boston Iron Mines Ltd. underwent a history of exploration related to exploration of the Boston Iron range. Past holders of portions of the claim group include Charles Marshall, Sr., Mike Lunge, E.R. Ostrom, Norman Evoy and Fred Healy. A complete history of these ownerships, development activities and general geology can be found in a report entitled "Geology of Boston Township and Part of Pacaud Township", Ontario Department of Mines, Volume LXVI, Part 5, 1947, by K.D. Lawton.

In 1951, Dominion Gulf Company Limited held options on the Lunge claims and portions of the Marshall claims, but subsequently dropped them after conducting ground geological and magnetometer surveys.

Early development of the main property was directed to the determination of iron ore potential. During July of 1964, a magnetometer survey of claims L73002, L72990, L72991 was conducted under the direction of G.E. Moody. The resulting report exists in company files and will not be detailed at present.

Considerable work in the form of diamond drilling, stripping and trenching was performed in 1965 and 1966. The greater portion of this work was concentrated on claims L72990 and L72991.

During 1967 and 1968 work was confined to that portion of the northeast grid covered by claims L71472, L71473 and patented claim L39083. Occurrences of pyrite, pyrrhotite, sphalerite, and minor chalcopyrite were located. These were further explored in November of 1967 by a limited electro-magnetic survey in an attempt to locate mineral concentrations. Further work consisted of exploratory diamond drilling which encountered disseminations and blebs of sphalerite, after which it was decided that additional geological and geophysical information was required. In October of 1968 a reconnaissance geochemical survey for copper and zinc was conducted on the above claims and anomalous conditions for copper and zinc were encountered. It was recommended that further work of the same nature be carried out.

In his report dated August 17, 1970, Dr. W.D. Beaton outlined the results of a program of trenching, stripping, and geological

mapping which, combined with information obtained from geophysical surveys (located in company files) led him to indicate several zones of promising potential. Based on conclusions from that phase of activity, Dr. Beaton made several recommendations for further exploration of the northeast grid.

During the period of March 9th to March 20th, 1971, electromagnetic and magnetic surveys were conducted by Shield Geophysics over the north and south grids. Reports indicating results of this work can be found in the company files.

More recently, Marshall Boston Iron Mines Limited engaged L.G. Hobbs, P.Eng. to supervise trenching, geological mapping, diamond drilling and geophysical work, and to explore the property's base metal and iron potential. The results of this work are summarized in reports dated October 1, 1971, and October 29, 1971, respectively which can be located in the company files.

Marshall Boston Iron Mines Limited engaged A. C. A. Howe International Limited to supervise a diamond drilling program between December, 1971, and April, 1972, recommended as a result of previous work on the property. In this program, diamond drilling has been carried out on the northeast, south and north grids. Numerous progress reports on this activity are available from the company files.



In 1979, the Ontario Geological Survey published an Airborne Electromagnetic Survey of Boston Township, preliminary map P2270. A number of good conductors were delineated on Marshall Boston's base metal claims. Most of the airborne anomalies plotted do not coincide with previous drilling. A radem VLF-EM survey was conducted in March, 1981, to confirm their locations compared with the previous drilling. The Radem survey verified the fact that a number of good conductors have not been investigated by surface exploration or diamond drilling. Six east to northeast finding conductors were delineated.

## GENERAL GEOLOGY OF THE AREA

The geology of Boston Township and part of Pacaud Township have been described in a report by K.D. Lawton, Ontario Department of Mines, Volume LXVI, Part V, 1957. The following is an abstract from this report:

The consolidated rocks of the area are Precambrian in age, consisting mainly of Archean volcanics, sediments, and intrusives. Late diabase dikes intrude the Archean rocks and are the sole representatives of the Proterozoic era in the area.

Members of the Keewatin series of early Precambrian rocks are the dominant formations outcropping in Boston Township. They consist of lava flows, volcanic fragmental rocks, and sedimentary rocks. A small area of Timiskaming clastic sedimentary rocks outcrops in the northeast corner of Boston Township. Here, the Keewatin and Timiskaming series are in faulted contact. Field relationships in nearby townships, however, indicate that the rocks of Timiskaming age stratigraphically overlie the Keewatin series. In the Kirkland Lake area, Thomson<sup>1</sup> has shown that a great structural unconformity separates the Timiskaming series from the underlying Keewatin rocks.

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<sup>1</sup>J.E. Thomson, "The Keewatin-Timiskaming Unconformity in the Kirkland District," Transactions, Royal Soc. Can., Sect. IV, Third Series, Vol. XL, 1946, pp. 113-122.

There are two groups of basic intrusives of post-Keewatin age. The older of the two is composed of diorite and meta-diorite, whereas the younger includes serpentinite, hornblende, diorite, and minor diorite porphyry.

The Keewatin, Timiskaming, and "post-Keewatin" rocks are folded and faulted, and intruded by a variety of igneous rocks classified as Algoman in age. The Algoman series includes rocks of the following composition: granite, syenite, porphyries, diorite, and lamprophyre.

Much of the bedrock is covered by a mantle of unconsolidated clay, sand, and gravel, laid down during the period of Pleistocene glaciation that affected this area.

The rock classification used in this report conforms generally, but with some revision, to that adopted by Abraham<sup>2</sup> for McElroy Township and the eastern part of Boston Township. In the following table of formations, the members range from oldest at the bottom of the list to youngest at the top, though the rocks within a given group are not necessarily arranged in chronological order.

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<sup>2</sup>E.M. Abraham, "Geology of McElroy and Part of Boston Townships," Ontario Department of Mines, Vol. LIX, 1950, pt. 6, p. 8.

TABLE OF FORMATIONS

CENOZOIC RECENT AND PLEISTOCENE:	Clay, sand, gravel, and boulders.  Great Unconformity
PRECAMBRIAN KEWEENAWAN OR MATACHEWAN:	Diabase.  Intrusive Contact
ALGOMAN:	Basic syenite; syenite and porphyritic syenite; syenite porphyry; quartz porphyry; granite (dikes and small stocks); lamprophyre; diorite and metadiorite; quartz-feldspar porphyry; felsite. Batholithic granite (Round Lake batholith).  Intrusive Contact
HAILEYBURIAN: (?)	Diorite; gabbro; hornblendite; serpentinite diorite porphyry.  Intrusive Contact
TIMISKAMING:	Fine-grained sedimentary rocks; greywacke; arkose; quartzite; slate. Conglomerate; conglomerate with some inter- bedded arkose, slate, and greywacke.  Great Unconformity
POST- KEEWATIN (?):	Diorite and metadiorite.  Intrusive Contact
KEEWATIN:	Basic and Intermediate Volcanics: Greenstone; brecciated and carbonate-veined greenstone; andesite, basalt, and pillow lava; dioritic, diabasic, and gabbroic lava; amphibolite; sheared basic lava; fragmental lava; basic lava containing horizons of tuff; injection gneissés, and metamorphosed basic lava and tuff adjacent to the Lebel and Otto syenite stocks; variolitic lava.

TABLE OF FORMATIONS - Cont'd

KEEWATIN: Intermediate and Acid Volcanics: Fragmental volcanics, generally porphyritic; porphyritic andesite, dacite and rhyolite, containing horizons of acid and cherty tuff; dacite; andesite, occasionally fragmental.  
 Iron formation, including banded silica rock ("lean iron formation").  
 Acid volcanics, Tuff, Quartzite, etc:  
 Rhyolite; acid tuff and cherty tuff; agglomerate conglomerate; tuffs, and sediments interbedded with volcanic rocks; tuff and iron formation; tuff, tuffaceous sediments, and their altered equivalents; cherty quartzite.

GEOLOGY OF THE PROPERTY

The claim group is underlain by Precambrian rocks consisting chiefly of the syenitic members of the Algomian series and the basic to intermediate volcanics of the Keewatin series.

The Algomian syenites are present as xenoliths, originating probably from the Lebel syenite stock located to the north of the property.

The Keewatin volcanics are present chiefly in the form of andesites, dacites, basalts, diorites and tuffs.

A pronounced east-west structural strike is present within this series which is readily visible in the iron formation that is found as irregularly distributed sections within the Keewatin. The iron formation for the most part is composed of alternating layers of siliceous magnetite, massive magnetite, sugary quartzite, and cherty quartzite with individual bandings usually not exceeding about  $\frac{1}{2}$  inch in width.

Although the formational strike of the Keewatin volcanics is east-west, the structural strike within the property has a pronounced north-south, north-north-west--south-south-east trend with the Boston Creek-Long Lake fault being the most salient structural feature. This fault strikes S15°W, follows the valley of Boston Creek, and is considered as being an off-shoot of the Boston fault, the major structural feature in Boston Township, located to the south of the main claim group.

#### MINERALIZATION

Three types of mineralization may occur in this area:

- (1) Massive Sulfides. "Remobilized" massive zinc has been observed in north trending shear zones. Mineralization has also been noted in a previous drill hole near anomaly F.
- (2) Gold-bearing Iron Formation. Gold deposits associated with banded iron formation in Archean greenstone belts have been recognized in many parts of the world including Canada.
- (3) Gold-Quartz Veins in Shear and Fracture Zones. Numerous gold showings related to shears and fractures are evident in Boston Township. In addition, greenstones often have gold-bearing quartz veins in fractures parallel to granite contacts. These fractures are caused by the intrusion of the granite plutons.

MAX-MIN GEOPHYSICAL SURVEY

The Max-Min II geophysical survey was undertaken over the base metal claims north of the Dare Road in Boston Township during the period of 24th January to 5th February, 1982. The claims surveyed are more particularly described in the section under "CLAIMS SURVEYED", in this report (see also Drawing No's. 1 and 2).

A grid was established with a baseline measuring 4550 feet in length, bearing  $050^{\circ}$  azimuth and cross lines at 300 foot intervals (see Drawing No. 2).

The survey was conducted with in phase and out of phase readings taken at fifty foot intervals along the cross lines. The results were plotted on a map at a scale of 1" = 300' (see Drawing No. 2), and presented to Patterson, Grant & Watson Ltd. Consulting Geophysicists, for interpretation. Their report including conclusions and recommendations is as follows (see also appendix 1).

" The survey has revealed five significant conductors which we will discuss in turn. These are labelled A, B, C, D and E respectively.

#### Conductor A

This conductor shows the greatest strike length of any of those revealed by the survey and may be traced from Line 3 S with certainty to Line 9 N with a possible extension somewhat off strike on Line 12 N. At all three MAXMIN frequencies the highest conductivity values appear on Line 6 N with Line 9 N and Line 3 N following in order of decreasing conductivities. The anomaly has the form of a narrow almost vertical conductor located at a depth which is no more than a small fraction of the coil separation. Detailed analysis of the anomaly in each of the three frequencies on Line 6 N gave depths in the range of 40 to 60 feet for the top of a vertical plane conductor. The computed conductances for such a body fall in the range of 30 to 40 mhos. There is some slight indication of a displacement of the conductor from a vertical dip towards the grid west i.e. towards true northwest, but this is unlikely to exceed 30 degrees from vertical.

Reference to the geological map provided indicates that this conductor has already been drilled extensively. If, however, a further drillhole is considered necessary, the interpretation of the MAXMIN survey suggests that the hole should be located at 00 + 70 E on Line 9 and be drilled at an angle of 45 degrees towards grid east. The hole should be terminated at a vertical depth of not less than 200 feet indicating a drilled length of hole not less than 280 feet.



Conductor A<sup>1</sup> on Line 12 N is too complex to interpret in detail. It may be either a part of Conductor A upset by faulting between lines 9 N and 12 N or alternatively Conductor A may bend sharply to the south and follow approximately along Line 12 N to the east of Line 9 N. Once again, reference to the geology map indicates that the locality of Conductor A<sup>1</sup> has been extensively drilled in the past and massive pyrite have been encountered in this locality. The results of the present survey do not therefore warrant any additional work on this part of the conductor, even though conductivities here are probably quite high.

#### Conductor B

This conductor appears significantly on only one line, namely 12 N where it is located approximately 600 feet grid west of the baseline. As in the case of Conductor A, the relatively high amplitude of the in-phase anomaly compared with that of the quadrature anomaly indicates that a high conductivity is evident. Again, it is thought that this conductor is of the vertical plane type and probably dips approximately vertically, though some distortion on the west flank precludes an accurate dip determination from the data provided. Interpretation of all three MAXMIN frequencies gave depths to the top of the vertical plane conductor of approximately 80 feet with conductivity values in the range 50 to 70 mhos. All three frequencies indicate conductor location at 05 + 85 W. Optimum intersection of this conductor would therefore be achieved by a drillhole sloping at 45 degrees to grid west located at 04 + 50 W. The vertical depth of the hole should be not less than 200 feet to ensure penetration of the source. Unlike Conductor A, the geology map shows no previous drilling at the locality of Conductor B which would encourage us to select this as a prime target. Against this it is clear that the feature has only very limited strike length since it does not appear on either of the adjacent MAXMIN profiles.

#### Conductor C

This conductor appears most convincing on the highest of the three MAXMIN frequencies where it extends across three adjacent lines. The anomaly becomes progressively less distinct in the lower frequencies. The ratio of in-phase to quadrature anomaly in each case indicates a relatively low conductivity. The highest values probably occurring on Line 18 N at about 350 feet grid west of the baseline. The feature does not appear to have been drilled in the past, but it is not an encouraging target.

#### Conductor D

This is also a single line anomaly located at about 400 feet grid east of the baseline on Line 21 N. The anomaly occurs in all three frequencies but is somewhat distorted and not easily interpreted. Reference to the geology map indicates that this locality too has also been drilled.

Conductor E

This conductor lies in the northern part of the grid and may be traced on the higher frequency data across four grid lines, though it becomes increasingly poorly defined in lower frequencies. In all cases the quadrature anomaly is larger than the in-phase anomaly, indicating a very low conductivity for this feature. For this reason we would only give it a low priority for follow-up at this stage. It does however fall within a zone of known mineralization which has been drilled by a number of holes in the past.

Conclusions

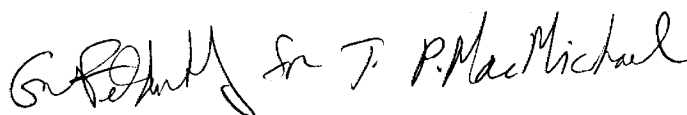
In conclusion, and in response to your request for urgent siting of two drillholes on the basis of these MAXMIN data, we would recommend the drilling of Anomalies A and B on Lines 6 N and L2 N respectively at the localities mentioned above. In the case of Conductor A, however, we would strongly recommend that careful note be taken of the existing drilling results before proceeding with further drilling on this site.

*G. F. [Signature]*  
for  
J. P. MacMichael  
28 Oct 1982

CERTIFICATE

I, TERENCE P. MacMICHAEL, of 19-1975 Memory Lane, Pickering, Ontario, hereby certify that:

1. I am and have been employed since 1979 as a geologist by A.C.A. Howe International Ltd., Mining and Geological Consultants with offices at Suite 801, 159 Bay Street, Toronto, Ontario, M5J 1J7.
2. I am a graduate of Dalhousie University, Halifax, Nova Scotia, with a Bachelor of Science (1975) Honours degree in geology.
3. I am a Fellow of the Geological Association of Canada.
4. I have practiced my profession in excess of six years.
5. I have no interest in Marshall Boston Iron Mines Limited or in the property discussed in this report, nor do I anticipate such interest.
6. This report is based on a Radem VLF-EM geophysical survey I conducted during March 16 - 25, 1981.



T.P. MacMichael, B.Sc., F.G.A.C.



PATERSON, GRANT & WATSON LIMITED/CONSULTING GEOPHYSICISTS

Suite 1214, 111 Richmond Street West, Toronto, Canada M5H 2G4  
Telephone: (416) 868-0888 Telex: 06-22633

February 25, 1982

Marshall Minerals  
Stanford Green Plaza  
Portage Road  
Niagara, Falls, Ontario

Attn: Mr. Marshall

Dear Mr. Marshall,

We have reviewed the three-frequency MAXMIN II survey maps provided for your property in the Boston Township area undertaken by ACA Howe International Limited in February 1982.

The survey has revealed five significant conductors which we will discuss in turn. These are labelled A, B, C, D and E respectively.

Conductor A

This conductor shows the greatest strike length of any of those revealed by the survey and may be traced from Line 3 S with certainty to Line 9 N with a possible extension somewhat off strike on Line 12 N. At all three MAXMIN frequencies the highest conductivity values appear on Line 6 N with Line 9 N and Line 3 N following in order of decreasing conductivities. The anomaly has the form of a narrow almost vertical conductor located at a depth which is no more than a small fraction of the coil separation. Detailed analysis of the anomaly in each of the three frequencies on Line 6 N gave depths in the range of 40 to 60 feet for the top of a vertical plane conductor. The computed conductances for such a body fall in the range of 30 to 40 mhos. There is some slight indication of a displacement of the conductor from a vertical dip towards the grid west i.e. towards true northwest, but this is unlikely to exceed 30 degrees from vertical.

Reference to the geological map provided indicates that this conductor has already been drilled extensively. If, however, a further drillhole is considered necessary, the interpretation of the MAXMIN survey suggests that the hole should be located at 00 + 70 E on Line 9 and be drilled at an angle of 45 degrees towards grid east. The hole should be terminated at a vertical depth of not less than 200 feet indicating a drilled length of hole not less than 280 feet.

Conductor A<sup>1</sup> on Line 12 N is too complex to interpret in detail. It may be either a part of Conductor A upset by faulting between lines 9 N and 12 N or alternatively Conductor A may bend sharply to the south and follow approximately along Line 12 N to the east of Line 9 N. Once again, reference to the geology map indicates that the locality of Conductor A<sup>1</sup> has been extensively drilled in the past and massive pyrite have been encountered in this locality. The results of the present survey do not therefore warrant any additional work on this part of the conductor, even though conductivities here are probably quite high.

#### Conductor B

This conductor appears significantly on only one line, namely 12 N where it is located approximately 600 feet grid west of the baseline.<sup>2</sup> As in the case of Conductor A, the relatively high amplitude of the in-phase anomaly compared with that of the quadrature anomaly indicates that a high conductivity is evident. Again, it is thought that this conductor is of the vertical plane type and probably dips approximately vertically, though some distortion on the west flank precludes an accurate dip determination from the data provided. Interpretation of all three MAXMIN frequencies gave depths to the top of the vertical plane conductor of approximately 80 feet with conductivity values in the range 50 to 70 mhos. All three frequencies indicate conductor location at 05 + 85 W. Optimum intersection of this conductor would therefore be achieved by a drillhole sloping at 45 degrees to grid west located at 04 + 50 W. The vertical depth of the hole should be not less than 200 feet to ensure penetration of the source. Unlike Conductor A, the geology map shows no previous drilling at the locality of Conductor B which would encourage us to select this as a prime target. Against this it is clear that the feature has only very limited strike length since it does not appear on either of the adjacent MAXMIN profiles.

#### Conductor C

This conductor appears most convincing on the highest of the three MAXMIN frequencies where it extends across three adjacent lines. The anomaly becomes progressively less distinct in the lower frequencies. The ratio of in-phase to quadrature anomaly in each case indicates a relatively low conductivity. The highest values probably occurring on Line 18 N at about 350 feet grid west of the baseline. The feature does not appear to have been drilled in the past, but it is not an encouraging target.

#### Conductor D

This is also a single line anomaly located at about 400 feet grid east of the baseline on Line 21 N. The anomaly occurs in all three frequencies but is somewhat distorted and not easily interpreted. Reference to the geology map indicates that this locality too has also been drilled.

.....3



Conductor E

This conductor lies in the northern part of the grid and may be traced on the higher frequency data across four grid lines, though it becomes increasingly poorly defined in lower frequencies. In all cases the quadrature anomaly is larger than the in-phase anomaly, indicating a very low conductivity for this feature. For this reason we would only give it a low priority for follow-up at this stage. It does however fall within a zone of known mineralization which has been drilled by a number of holes in the past.

Conclusions

In conclusion, and in response to your request for urgent siting of two drillholes on the basis of these MAXMIN data, we would recommend the drilling of Anomalies A and B on Lines 6 N and L2 N respectively at the localities mentioned above. In the case of Conductor A, however, we would strongly recommend that careful note be taken of the existing drilling results before proceeding with further drilling on this site."

We return herewith all the materials supplied by you.

Yours sincerely,

PATERSON, GRANT AND WATSON LIMITED

*C. V. Reeves*

C. V. Reeves, M.A., M. Sc., Ph.D.

Encls.  
CVR/rm





PATERSON, GRANT & WATSON LIMITED/CONSULTING GEOPHYSICISTS

Suite 1214, 111 Richmond Street West, Toronto, Canada M5H 2G4.  
Telephone: (416) 868-0888 Telex: 06-22633

March 2, 1982

Marshall Minerals  
Stanford Green Plaza  
Portage Road  
Niagara Falls, Ontario

Attn: Mr. Marshall

Dear Mr. Marshall,

I regret that I have to inform you of an error in the report I sent to you, dated February 25, concerning the location of the drill-hole on conductor 'A'.

The best drill-site for this conductor is on Line 6 at 01 + 50 E and the hole should be drilled at 45° towards grid east. The hole located on Line 9 at 00 + 70 E (described in my letter of Feb. 25) should only be a second choice for this conductor. The depths would be the same in both cases.

I have already explained this by telephone to Mr. Tagliamonte who pointed out my error. I am indeed sorry for the confusion this may have caused, and I hope this is now clarified.

With best wishes.

Yours sincerely,

PATERSON, GRANT AND WATSON LIMITED

C. V. Reeves

CVR/rm



32004SW0316 63.4026 BOSTON

900

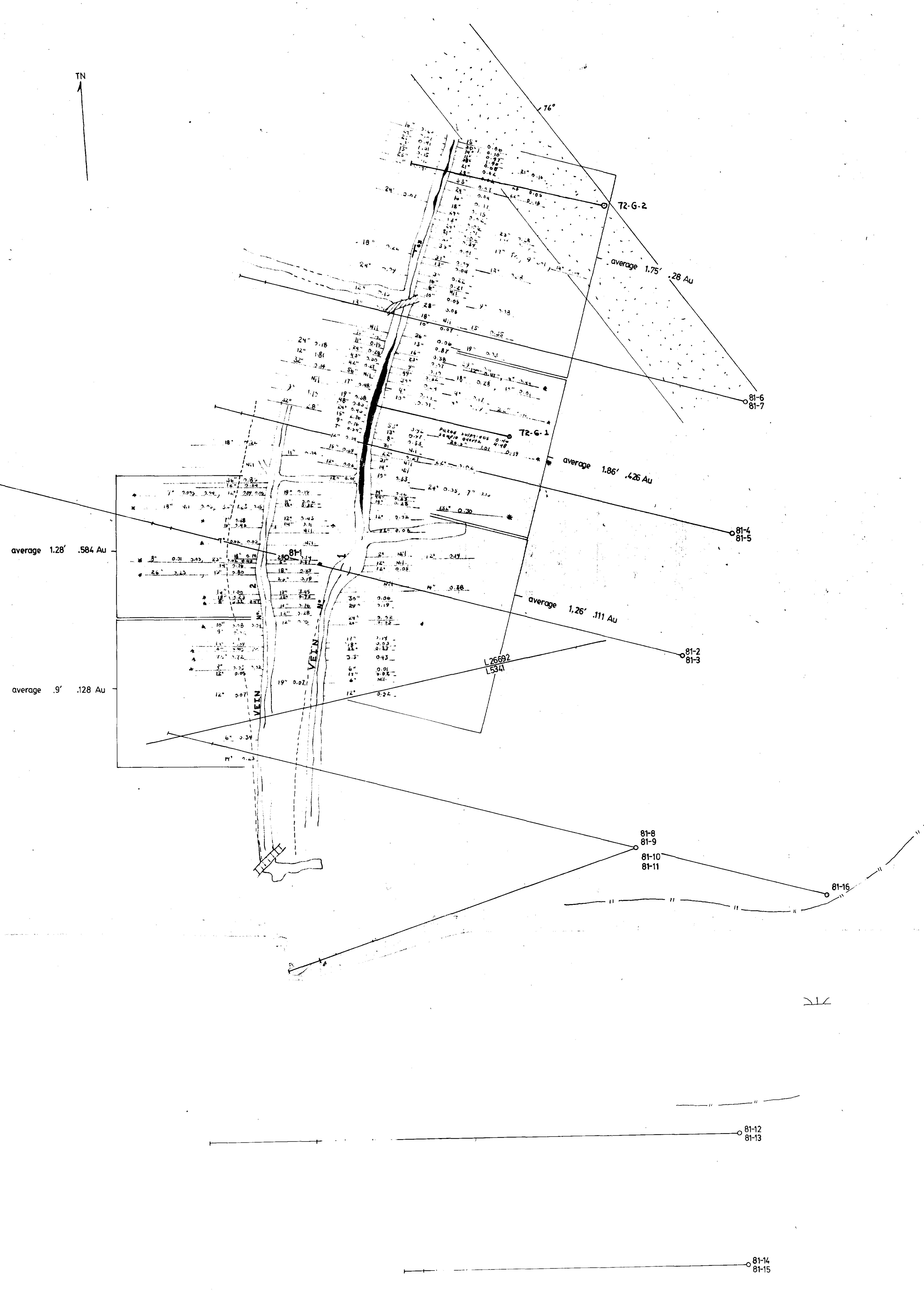
OM 81-6-C-104

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):

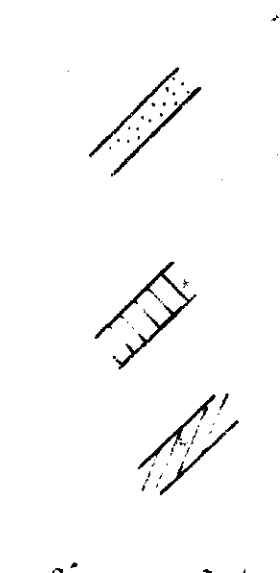
- ① VLF-EM SURVEY ON BASE METAL CLAIMS → Toronto file # 2.4171 (T.P. MacMichael, June 19/81)



TN



Symbol



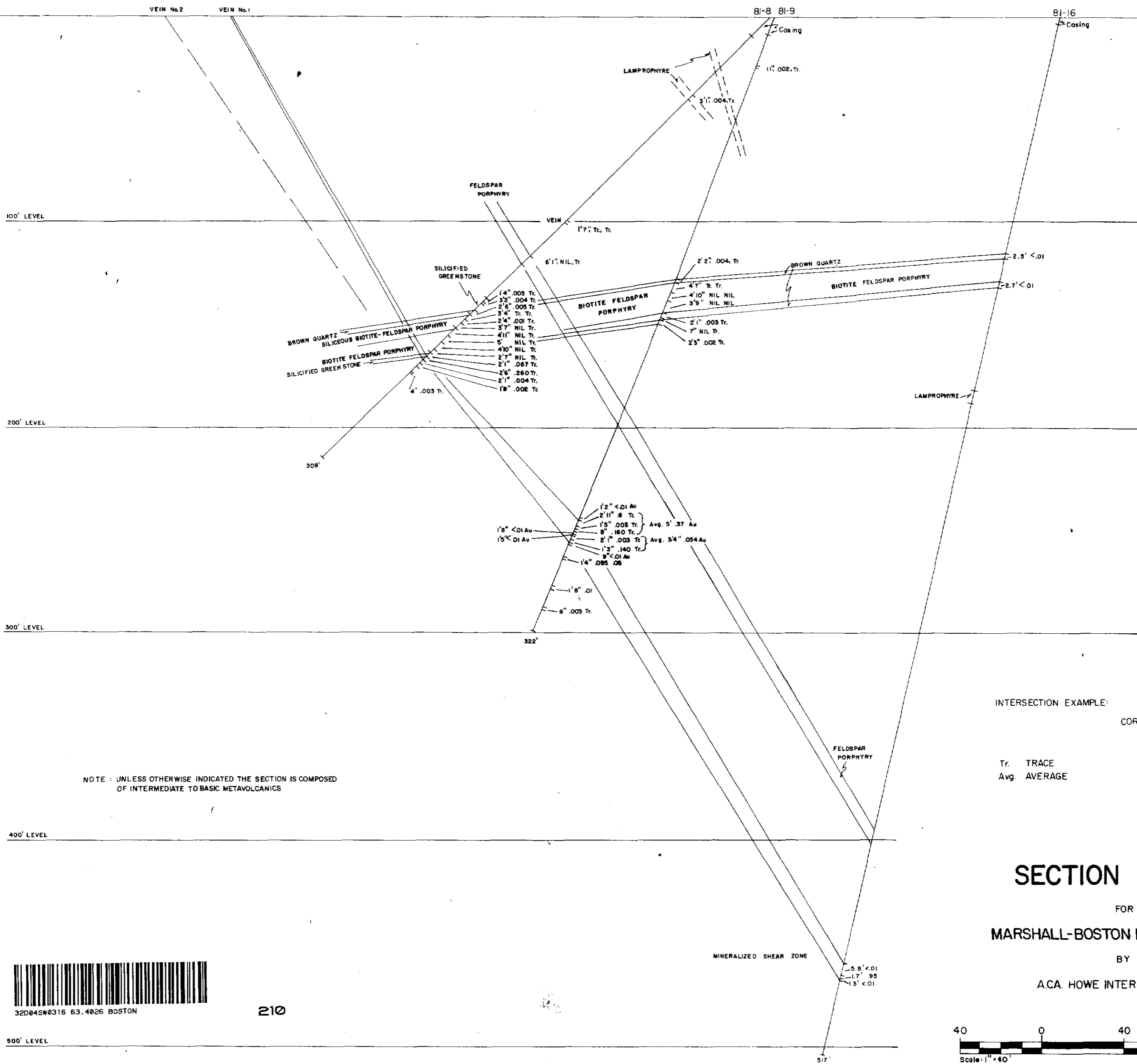
Porphyry  
 Syenite  
 Lamprophyre  
 Width in meters and strike  
 dip is quoted in degrees  
 \* Check on vein taken in 1965, 1970  
 Strike & Dip of vein  
 Position of veins as measured by tape and compass

**SURFACE ASSAY PLAN**  
 for  
**MARSHALL BOSTON IRON MINES LTD.**  
 by  
**A.C.A. HOWE INTERNATIONAL LTD**

63.4026 (1)

Scale 1"=40'  
 August, 1972  
 Revised July, 1981





NOTE: UNLESS OTHERWISE INDICATED THE SECTION IS COMPOSED OF INTERMEDIATE TO BASIC METAVOLCANICS

INTERSECTION EXAMPLE:  $2'11''$   $.6$  Tr.  
 CORE LENGTH Ag oz/ton  
 Au oz/ton

Tr. TRACE  
 Avg. AVERAGE

# SECTION 8I-8/9/16

FOR  
 MARSHALL-BOSTON IRON MINES LTD.

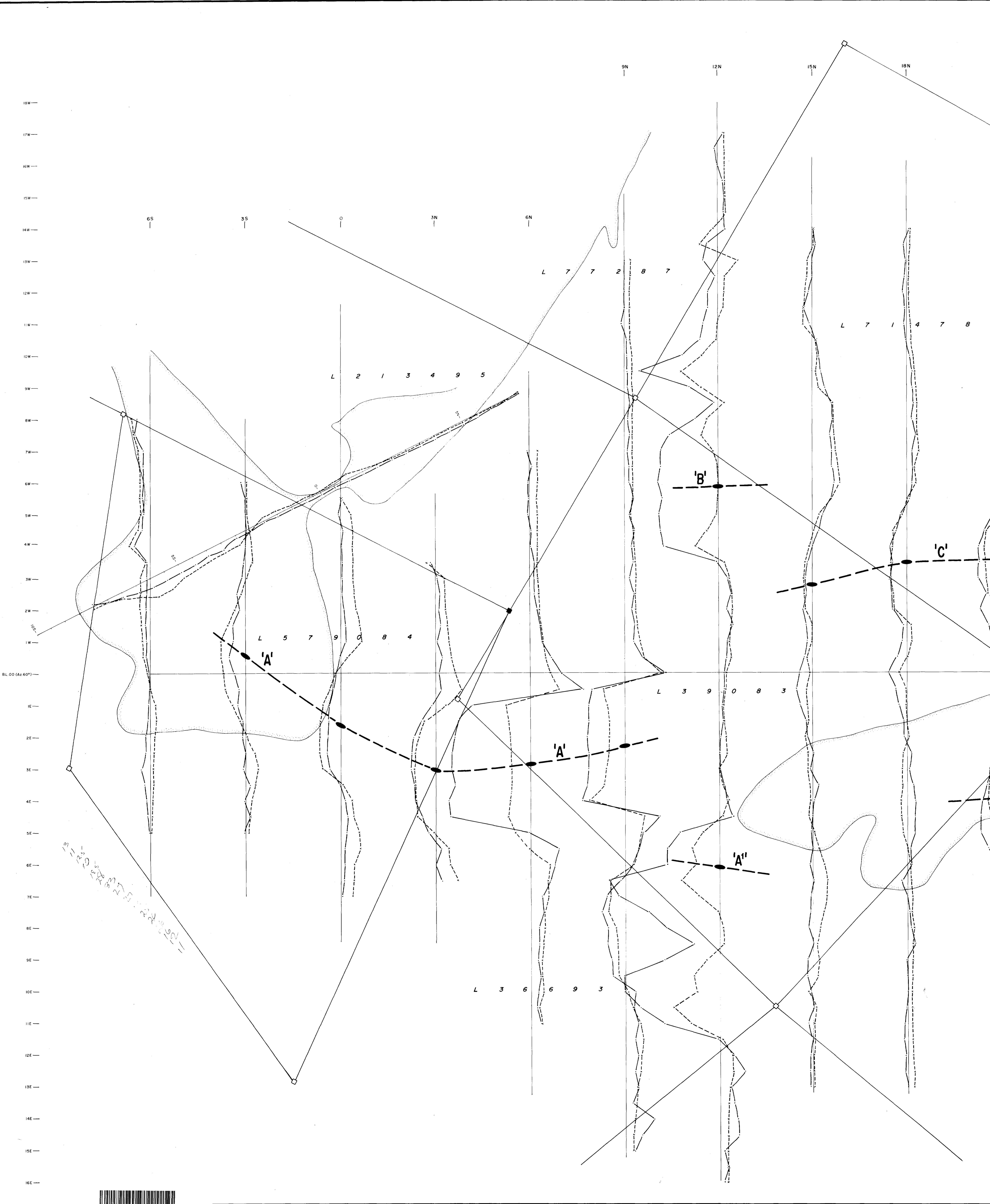
BY  
 A.C.A. HOWE INTERNATIONAL LTD.



320045W0316 63.4026 BOSTON

210





BL 00 (Az 60°)

3-22 22 22 22 22 22



Lebel Twp. G-639

THE TOWNSHIP OF  
OF  
**BOSTON**

DISTRICT OF  
TIMISKAMING

LARDER LAKE  
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES
- CANCELLED

NOTES

400' Surface Rights Reservation  
shores of all Lakes and Rivers

AREAS WITHDRAWN FROM STAKING

S.R.	Order No.	Date	Disp'n	File
43 (R.S.O.1970)		18/4/73	M.R.	58998
43 (R.S.O.1970)	NRW.36/79	30/5/79	S.R.	147035

SAND and GRAVEL

- GRAVEL FILE 27683 & 147035
- GRAVEL FILE 33786

DATE OF ISSUE

SEP 24 1982

Ministry of Natural Resources  
TORONTO

PLAN NO.-M-332

ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH

Otto Twp. M.379

McElroy Twp. M.366

Pacaud Twp. M.380

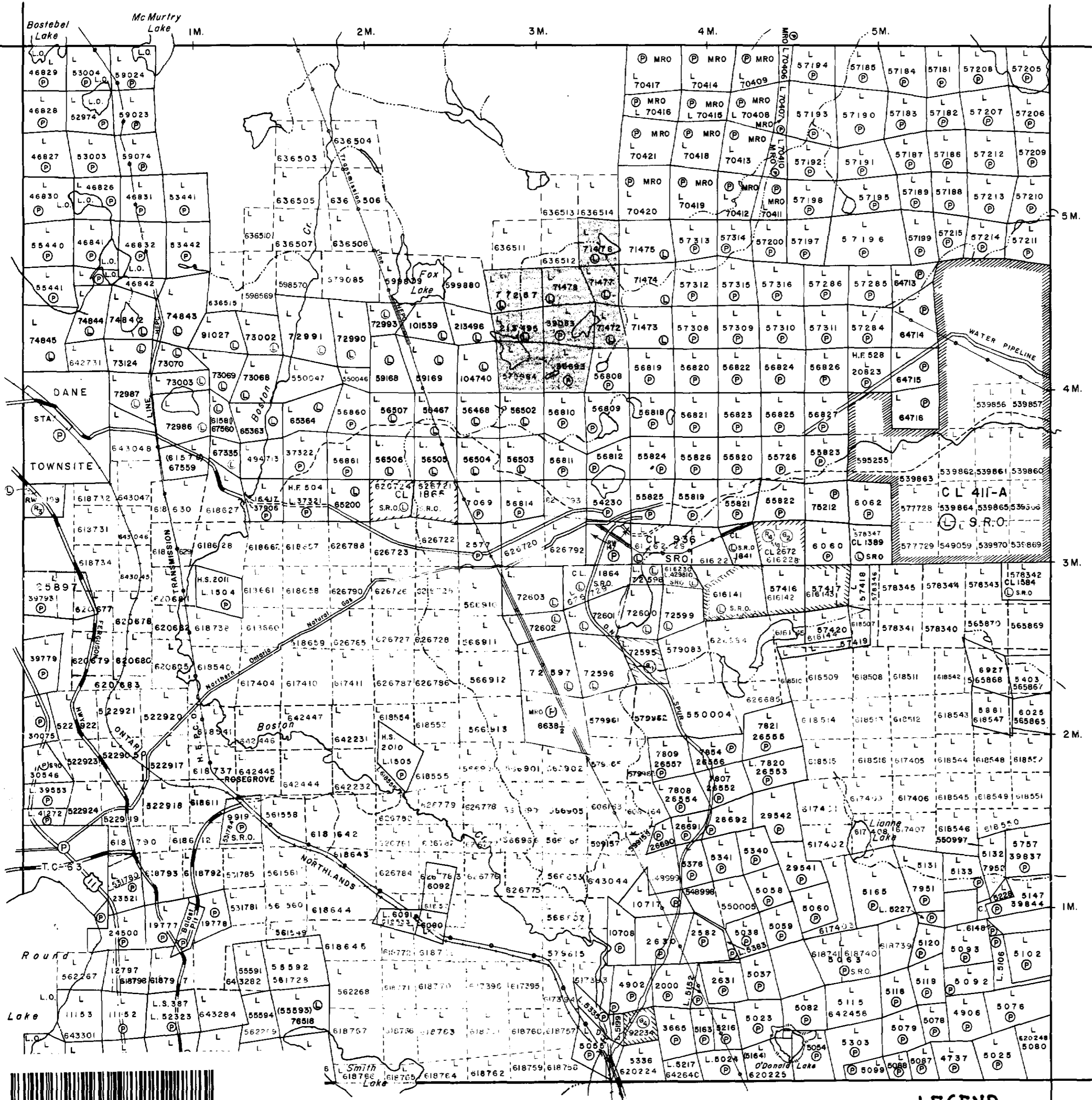
DRAWING NO. 1

230

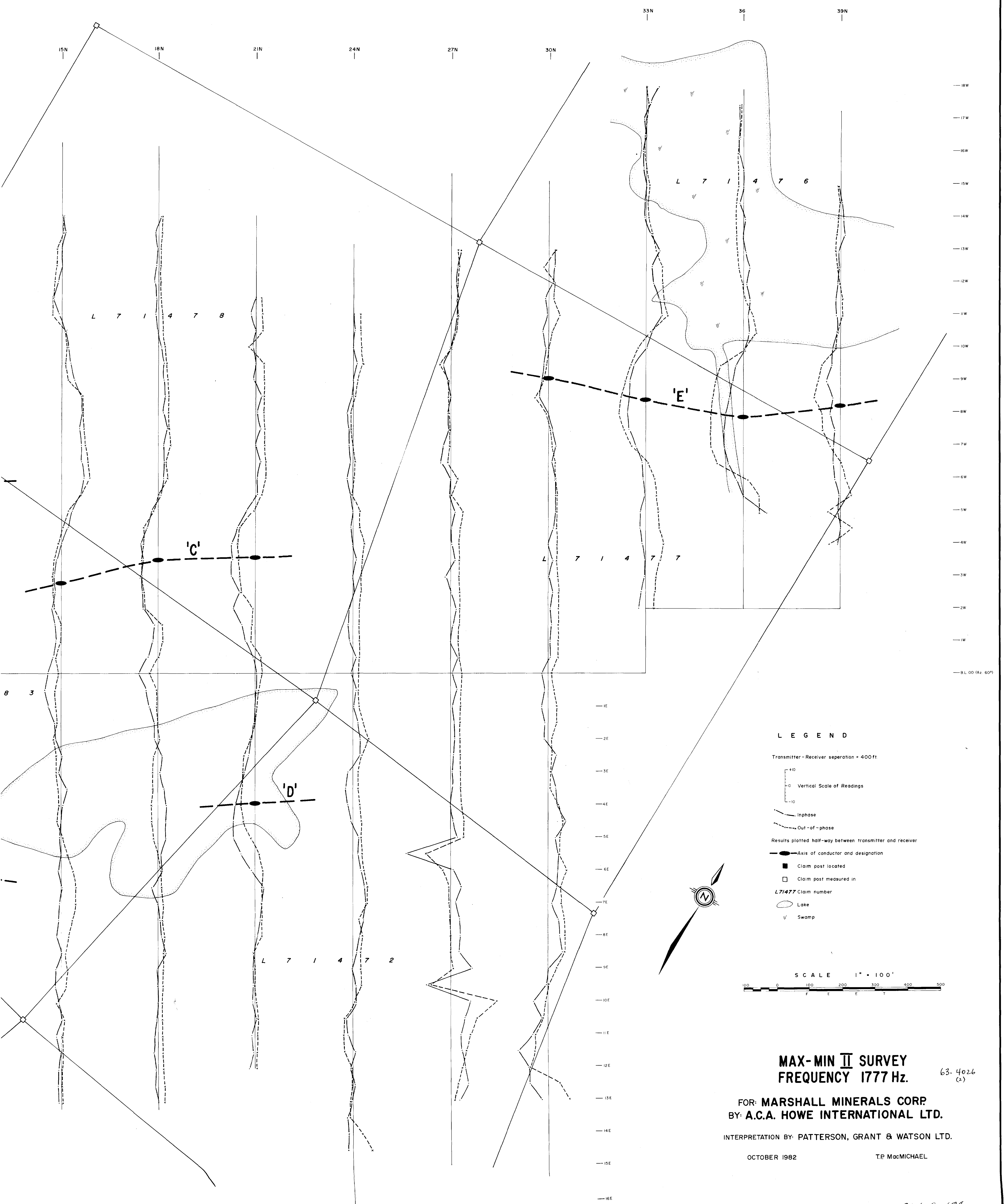
A.C.A. HOWE INT. LTD. - 18 OCT. 82

LEGEND

Claims covered by MAXMIN-II Survey

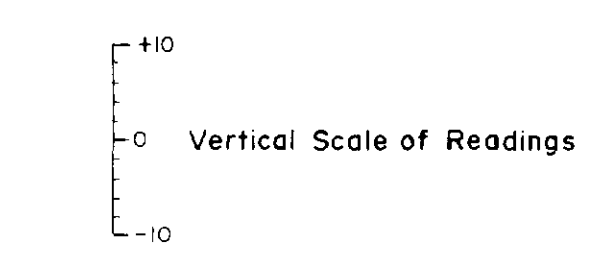


OMEFB  
- 6-C-10  
63.4026  
K. Kalomov



**LEGEND**

Transmitter - Receiver separation = 400 ft.



— Inphase  
- - - Out-of-phase

Results plotted half-way between transmitter and receiver

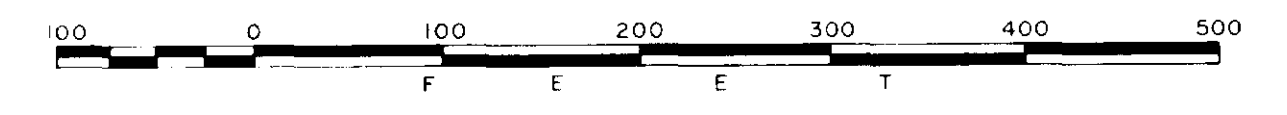
—●— Axis of conductor and designation

■ Claim post located  
□ Claim post measured in

L71477 Claim number

○ Lake  
≡ Swamp

SCALE 1" = 100'



**MAX-MIN II SURVEY  
FREQUENCY 1777 Hz.**

63. 4026  
(2)

FOR: MARSHALL MINERALS CORP  
BY: A.C.A. HOWE INTERNATIONAL LTD.

INTERPRETATION BY: PATTERSON, GRANT & WATSON LTD.

OCTOBER 1982

T.P. MacMICHAEL

OMEP81-6-C-104