REPORT ON THE SOIL SURVEY AND DIAMOND DRILLING OF THE BIGMARSH LAKE PROPERTY

CARSCALLEN TOWNSHIP, ONTARIO

NTS: 42A-5

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PLANS (Back Pouch)

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1.0 SUMMARY

The Bigmarsh Lake Property is comprised of 7 contiguous claims that contains a total of 93 units. It is located approximately 20 km west of the city of Timmins, Ontario. The area is underlain by Archean rhyolitic to andesitic flows and volcaniclastics. There are also a few late intrusive N-S diabase dikes that intrude through the claims. All lithologies have been metamorphosed to greenschist facies. The property was staked primarily for it's base metal potential as the rhyolites in the area are ideal for VMS style deposits.

Between October and November 1993, a reconnaissance-style soil geochemistry survey was performed on the property. Some Airborne EM Anomalies were located on the ground using UTM coordinates (Universal Transverse Mercator) and lines were flagged through the bush so as to cover the anomalies with survey lines. B-Horizon and Humus samples were taken at 25m stations along the lines where they were available. The results indicate that there is a geochemical signature over some of the anomalies. A more detailed follow up program of soil sampling along the present grid to attain a better sense of control over the results is warranted.

During the period April 17 to 21st, 1993 one NQ diamond drill hole was completed to a depth of 236m. This program was designed to test an EM conductor found on the property as the result of a survey conducted by BHP Minerals Canada Ltd. in February 1993. The conductor was explained by the intersection of pyrite-graphite argillaceous zones that were found to be sufficiently conductive. Anomalous assays were returned from these units. The assays from 61.4m to 61.4m were in the order of 445 ppb Au, 276ppm Co, 737 ppm Cu and 283 ppm Ni. The true width of the zone is unknown as this unit showed evidence of strong grinding. The assays from 140.5m to 141.5m were 773 ppm Cu, 118 ppm Co, 413 ppm Ni and 2372 ppm Zn. The assays from 141.5m to 142.6m were 409 ppm Cu and 872 ppm Zn.

2.0 CONCLUSIONS AND RECOMMENDATIONS

1. The drill target (EM conductor) was explained by the intersection of pyrite-graphite argillitic horizons. These zones returned some anomalous values in gold and base metals; 445 ppb Au, 276ppm Co, 737 ppm Cu, 283 ppm Ni over 5cm; 773 ppm Cu, 118 ppm Co, 413 ppm Ni, 2372 ppm Zn over 1m and 409 ppm Cu and 872 ppm Zn over 1.1m.

2. The soil survey conducted on the property indicated that the airborne anomalies provide a geochemical signature and it is recommended that a more detailed survey be conducted over the anomalies again using the grid that now covers these claims.

3. There are many previously outlined anomalous intersection in the deformation zone located in the southern portion of the claim group. This area warrants further investigation and provides additional impetus to conduct a more detailed soil survey over the new grid.

3.0 INTRODUCTION

This report covers a small soil survey and a diamond drilling program by BHP Minerals Canada Ltd. during the period between October 1992 and April 1993. The Bigmarsh Lake Property is located in Carscallen Township within the Porcupine Mining Division of Northeastern Ontario.

In October of 1992 a small soil sampling program was undertaken. Humus and B-Horizon geochemical samples were collected on 5 flagged 300 and 500 metre lines. From 81 possible sample sites, 34 B-Horizon and 70 humus samples were taken. The samples were then analyzed for a suite of 9 elements using Chemex Labs' ICP package. Some results obtained were found to be anomalous based on the calculation of two standard deviations above the mean. The survey was carried out on claims 1189842 and 1189844.

Diamond drilling was conducted between April 16 and 24th 1993 on mining claim 1189844. The hole was drilled to test an EM conductor in the northern portion of the property.

4.0 LOCATION AND ACCESS

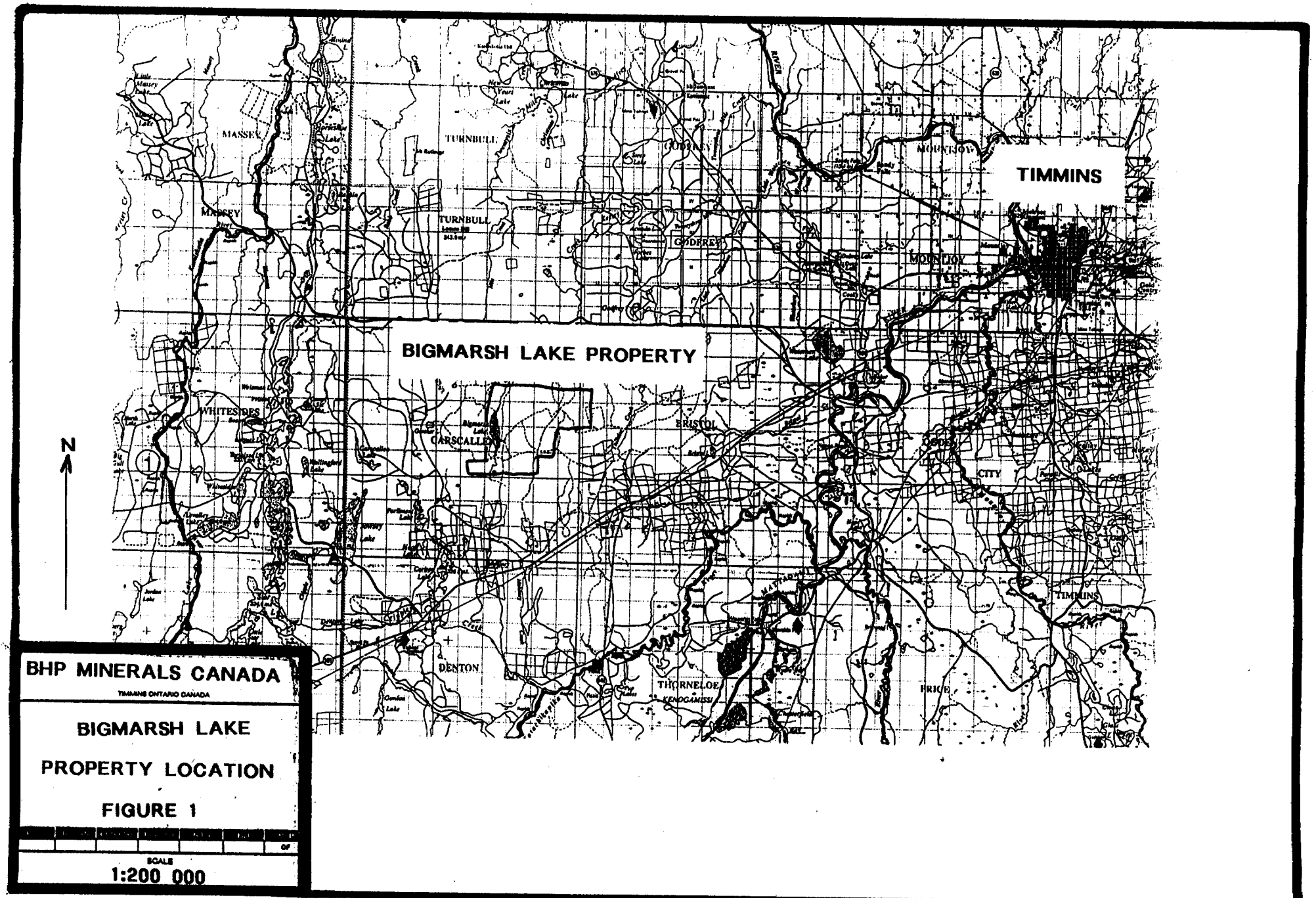
The property is located in the northeast corner of Carscallen Township, approximately 20 km west of Timmins, Ontario (Figure 1). Access is offered by secondary logging roads extending north from Highway 101. A few of these roads are maintained as groomed skidoo trails through the winter. Access directly to the claims is made difficult in the summer by a beaver dam located on the main access road. A four-wheel cycle is the best means of access after the dam on the trails throughout the property.

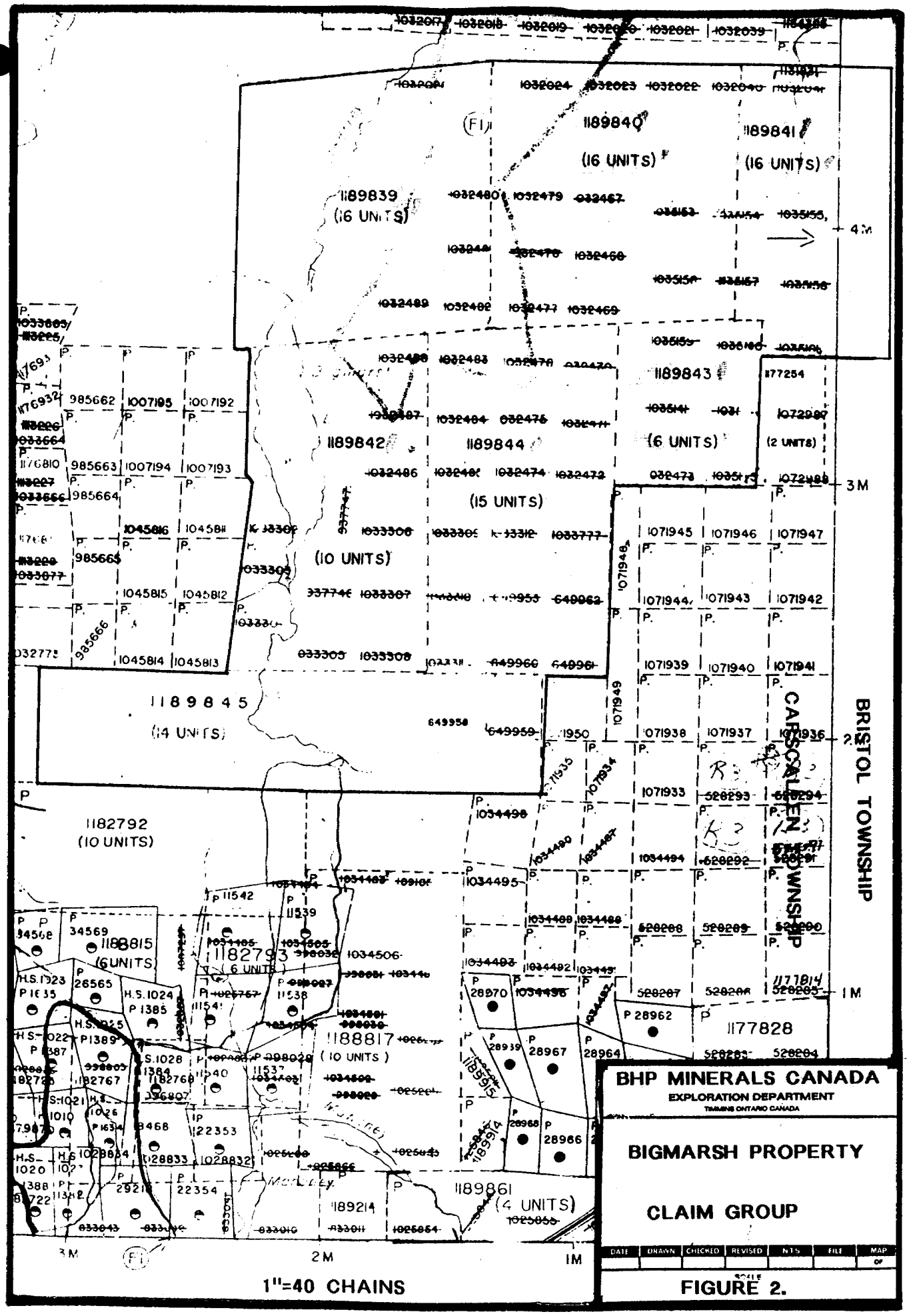
5.0 PROPERTY INFORMATION

The soil sampling was conducted on claims 1189842 and 1189844 and the drilling was located exclusively on claim 1189844.

The claims that make up the Bigmarsh Lake Property are as follows:

P1189839	(16 units)
P1189840	(16 units)
P1189841	(16 units)
P1189842	(10 units)
P1189843	(6 units)
P1189844	(15 units)
P1189845	(14 units)
(7 claims)	(93 units)


TIMMINS
BIGMARSH LAKE PROPERTY
MASSEY
TURNBULL
GODFREY
MOUNTJOY
WHITESIDES
CARSCALLEN
BRISTOL
DENTON
THORNELOE
KENOGAMISIS
N
BHP MINERALS CANADA
TIMMINS ONTARIO CANADA
BIGMARSH LAKE
PROPERTY LOCATION
FIGURE 1
SCALE
1:200 000


1189840
(16 UNITS)
1189841
(16 UNITS)
1189839
(16 UNITS)
1189843
(6 UNITS)
(2 UNITS)
1189842
1189844
(15 UNITS)
(10 UNITS)
1189845
(14 UNITS)
1182792
(10 UNITS)
1188815
(6 UNITS)
1182793
(6 UNITS)
1188817
(10 UNITS)
1189861
(4 UNITS)
1189214
1177828
BRISTOL TOWNSHIP
CARSCALLEN TOWNSHIP
4M
3M
2M
1M
1"=40 CHAINS
BHP MINERALS CANADA
EXPLORATION DEPARTMENT
TIMMINS ONTARIO CANADA
BIGMARSH PROPERTY
CLAIM GROUP
DATE
DRAWN
CHECKED
REVISED
NTS
FILE
MAP
SCALE
FIGURE 2.

The claims are found in the Porcupine Mining Division and they are held by BHP Minerals Canada Ltd. of 569 Moneta Ave., Timmins, Ontario, P4N 7X1. The claim configuration is presented in Figure 2 and they may be found on claim map G 3040.

6.0 TOPOGRAPHY AND VEGETATION

The topography in this area is generally flat. There is a good sized lake on the western boundary of the property called Bigmarsh Lake. The southern claims have been clear-cut and subsequently reforested and the northern claims are covered with predominantly spruce, jackpine and poplar. There is a seasonal north-south trending stream/cedar swamp through the eastern part of the property.

The overburden depths on the claims average between 14m and 30m thick with no outcrop having ever been reported within the claim group.

7.0 PREVIOUS WORK

Between May and June 1959 Hollinger Mines (T-674) conducted an Em survey in the Southeast corner of the township and then subsequently drilled 14 diamond drill holes into the best conductors. The holes intersected graphitic argillite units in variably altered (sericite-silica) felsic to intermediate volcanics. Holes C5 and C6 were drilled within the present claim boundaries at the southern end of Bigmarsh Lake.

In 1946, Carscor Porcupine Gold Mines (T-674-A) drilled 15 holes just outside the present claim group in the south-eastern corner. The drilling intersected a series of east south east striking, strongly sheared, sericitized and silicified rhyolites. The more significant gold results include (oz/ton) 1.23/0.4m, 0.95/0.3m, 0.75/0.6m, 0.18/0.9m, 0.18/0.8m and 0.14/0.6m. Polished sections from core samples revealed the presence of very minor amounts of sphalerite.

In 1946, Alwyn Porcupine Gold Mines (T-674-B) drilled seven holes located within the south east corner of BHP Minerals Canada Ltd present claim group. They were probably testing the western extension of the shear zone that Carscor Porcupine Gold Mines was drilling. Their results were disappointing. In 1983 Cleyo Resources (T-2628) also drilled this immediate area following an electromagnetic survey. The rocks were identified as both silicified sediments and as rhyolites that are locally sericitized and carbonatized. The Em conductors were explained by the intersection of pyrite-graphite argillites. The highest assays obtained were 0.030 oz/ton over 4 ft and 0.035 oz/ton over 3 ft.

In 1965, INCO (T-914) drilled two holes in the central portion of the property. These holes intersected intermediate to felsic breccias, graphitic tuffs and undifferentiated rhyolites.

From 1970 to 1972, Noranda Exploration (T-528) conducted some drilling outside of the property boundary in the very southwest corner, just inside the northern claim line and in the central part of the claim block. In the central part and the southwest corner of the property the holes intersected massive and brecciated rhyolites that are silicified and contain weak to 5% pyrite and minor sphalerite, chalcopyrite and graphite. Along the northern claim boundary they intersected sericitized rhyolitic tuffs with trace to 1% pyrite.

Conwest Exploration (T-1658) drilled a hole in the north portion of the property in 1977. Conwest intersected rhyolitic tuffs and lapilli tuffs with 2 graphitic argillites. No significant assays were returned.

In May 1985, ASARCO Exploration (T-3228) drilled fifteen overburden holes along two bands of EM conductors that trend east-west across the claim group. ASARCO intersected predominantly intermediate to rhyolitic tuffs. Two holes intersected pyrite and graphite argillite. No assay results were provided.

Placer Dome (T-3271) drilled three holes outside of the western property boundary in 1989. These holes intersected felsic to intermediate volcanics with graphitic argillites. No assays were furnished with the report.

8.0 PROPERTY GEOLOGY

The Bigmarsh Lake Property is underlain by Archean supracrustal volcanic rocks. After a review of the regional geophysics, the geological mapping of the surrounding outcrop and the drilling found in the assessment files, the following observations are made about the property geology. The property is underlain by a south-east trending package of steeply dipping rhyolitic to dacitic flows and volcaniclastics. There appears to be a east south-east trending shear zone through the southern portion of the claim block. Through this zone there was found to be various rock type showing weak to intense alteration towards sericite and silica. Some anomalous gold assays were recovered from this zone by Carscor Porcupine Gold Mines in 1946 that may warrant further investigation. The whole package of rocks is intruded by late N-S diabase intrusives.

The metamorphic grade is greenschist. Weak to intensely developed foliations are known to occur within chloritic and sericitic lithologies.

9.0 SOIL SURVEY

The survey was carried out on a reconnaissance basis to test for a geochemical signature in the soil over some airborne EM anomalies. The anomaly locations were obtained from the Ontario Geological Survey's Map 81084 (Airborne Electromagnetic and Total Intensity Survey of Carscallen Township), translated to UTM coordinates and were then located on the ground using a Magellan GPS instrument. Five north-south lines, varying in length between 300m and 500m, were flagged and sampled. Out of a possible 81 sample sites, 34 B-horizon samples and 70 humus samples were obtained.

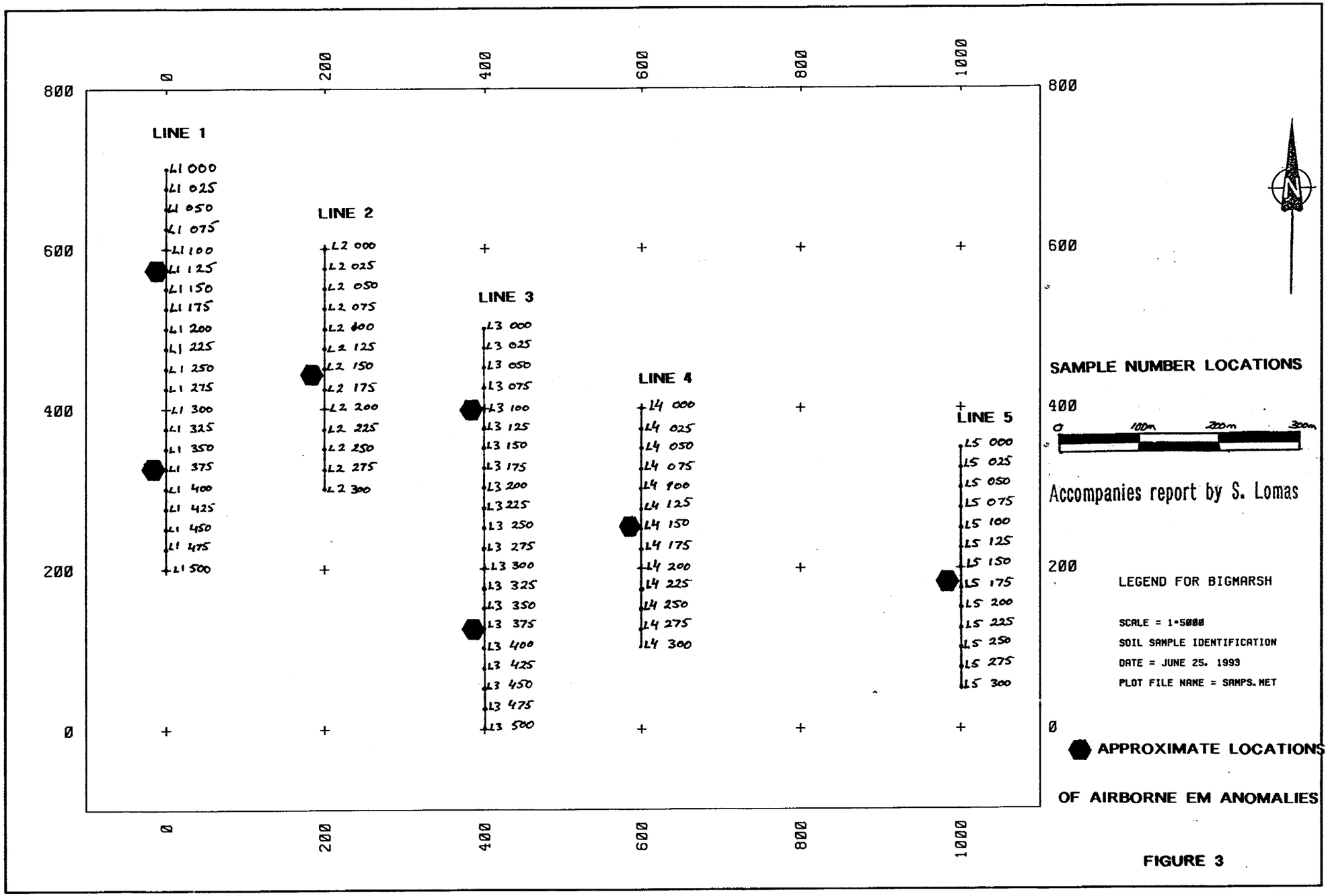
The area of sampling was variously clearcut to the south and covered with moss and jackpine to the north. Overburden depths vary from 14m to 30m with 5m to 10m wide clay rich horizons noted in the overburden (ASARCO T-3228). Plan 1 illustrates the location of the survey lines on the property and Figure 3 shows the sample locations on these lines.

The samples were sent for analysis to Chemex Labs where they were dried and sieved to -80 mesh and analyzed using their 9 element ICP package (Ag, Co, Cu, Fe, Mn, Mo, Ni, Pb and Zn).

Arithmetically anomalous samples were calculated as any value greater than the mean of all the samples for that element plus two times the standard deviation. The results of these calculations are found in Tables 1 and 2. Figures 4 through 9 are plots of the Copper and Zinc results obtained in numerical value and as profiles at a scale of 1:5000. The Reports of Analysis are included as Appendix II.

The following samples were found to be arithmetically anomalous:

Sample Type	Line #	South (m)	Copper (ppm)	Zinc (ppm)
B-Horizon	1	250	35	84
Anomalous Threshold			17.6	60.5
Humus	1	225	50	100
	1	300	43	66
	1	475	21	364
Anomalous Threshold			26.2	142.5


0
200
400
600
800
1000
800
600
400
200
0
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L1 000
L1 025
L1 050
L1 075
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L1 125
L1 150
L1 175
L1 200
L1 225
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L1 275
L1 300
L1 325
L1 350
L1 375
L1 400
L1 425
L1 450
L1 475
L1 500
LINE 2
L2 000
L2 025
L2 050
L2 075
L2 100
L2 125
L2 150
L2 175
L2 200
L2 225
L2 250
L2 275
L2 300
LINE 3
L3 000
L3 025
L3 050
L3 075
L3 100
L3 125
L3 150
L3 175
L3 200
L3 225
L3 250
L3 275
L3 300
L3 325
L3 350
L3 375
L3 400
L3 425
L3 450
L3 475
L3 500
LINE 4
L4 000
L4 025
L4 050
L4 075
L4 100
L4 125
L4 150
L4 175
L4 200
L4 225
L4 250
L4 275
L4 300
LINE 5
L5 000
L5 025
L5 050
L5 075
L5 100
L5 125
L5 150
L5 175
L5 200
L5 225
L5 250
L5 275
L5 300
N
SAMPLE NUMBER LOCATIONS
0
100m
200m
300m
Accompanies report by S. Lomas
LEGEND FOR BIGMARSH
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SOIL SAMPLE IDENTIFICATION
DATE = JUNE 25, 1993
PLOT FILE NAME = SAMPS.MET
APPROXIMATE LOCATIONS
OF AIRBORNE EM ANOMALIES

FIGURE 3

BIGMARSH LAKE PROPERTY

SOIL SAMPLING RESULTS
B-HORIZON

SAMPLE LOCATIONS LINE #	SOUTH	IDEALIZED GRID EAST (M)	NORTH (M)	Ag (ppm)	Co (ppm)	Cu (ppm)	Fe (%)	Mn (ppm)	Mo (ppm)	Ni (ppm)	Pb (ppm)	Zn (ppm)
1	000	000	700	0.5	5	6	1.09	80	1	14	4	24
1	025	000	675	0.5	4	7	1.00	110	1	12	4	24
1	050	000	650	0.5	3	2	0.79	230	1	6	6	30
1	075	000	625	0.5	8	13	4.08	105	1	21	10	32
1	100	000	600	0.5	2	1	1.67	50	1	5	6	16
1	125	000	575	0.5	2	1	1.31	45	1	6	4	12
1	150	000	550	0.5	7	6	3.00	135	1	18	6	34
1	175	000	525	0.5	5	7	2.97	100	1	12	6	30
1	200	000	500	0.5	6	3	2.01	75	1	15	2	26
1	225	000	475	0.5	3	3	0.74	120	1	7	2	12
1	250	000	450	0.5	20	35	4.18	595	1	51	4	84
1	275	000	425	0.5	3	4	0.78	75	1	11	2	18
1	325	000	375	0.5	9	11	2.66	115	1	19	6	76
1	350	000	350	0.5	3	1	1.09	80	1	9	4	24
1	375	000	325	0.5	9	10	3.39	220	1	17	12	56
1	400	000	300	0.5	5	10	2.00	75	1	15	14	46
1	425	000	275	0.5	8	7	1.42	140	1	14	4	18
1	450	000	250	0.5	2	1	1.50	85	1	4	4	20
1	475	000	225	0.5	4	3	2.00	95	1	9	4	28
1	500	000	200	0.5	3	3	1.52	120	1	6	6	22
2	000	200	600	0.5	5	3	1.54	90	1	12	4	28
2	025	200	575	0.5	5	4	0.90	70	1	13	4	16
2	050	200	550	0.5	4	2	0.86	85	1	12	2	16
2	075	200	525	0.5	4	3	0.82	115	1	9	4	12
2	125	200	475	0.5	3	7	0.83	130	1	9	2	20
2	150	200	450	0.5	7	7	1.43	165	1	15	4	30
2	250	200	350	0.5	3	3	0.90	60	1	10	4	16
4	125	600	400	0.5	4	3	1.18	65	1	12	6	24
4	175	600	350	0.5	2	4	0.67	80	1	7	12	22
5	125	1000	225	0.5	2	1	0.73	50	1	7	2	8
5	150	1000	200	0.5	2	1	0.77	45	1	7	4	12
5	175	1000	175	0.5	5	6	2.97	75	1	16	6	38
5	200	1000	150	0.5	1	1	0.92	35	1	4	4	12
5	275	1000	75	0.5	3	3	0.99	60	1	13	4	20
	MEAN			0.50	4.74	5.35	1.61	111.03	1.00	12.26	5.06	26.65
	STANDARD DEVIATION			0.00	3.43	6.12	0.99	96.20	0.00	8.14	2.92	16.90
	2 TIMES STANDARD DEVIATION PLUS THE MEAN			0.50	11.60	17.60	3.59	303.43	1.00	28.54	10.89	60.46

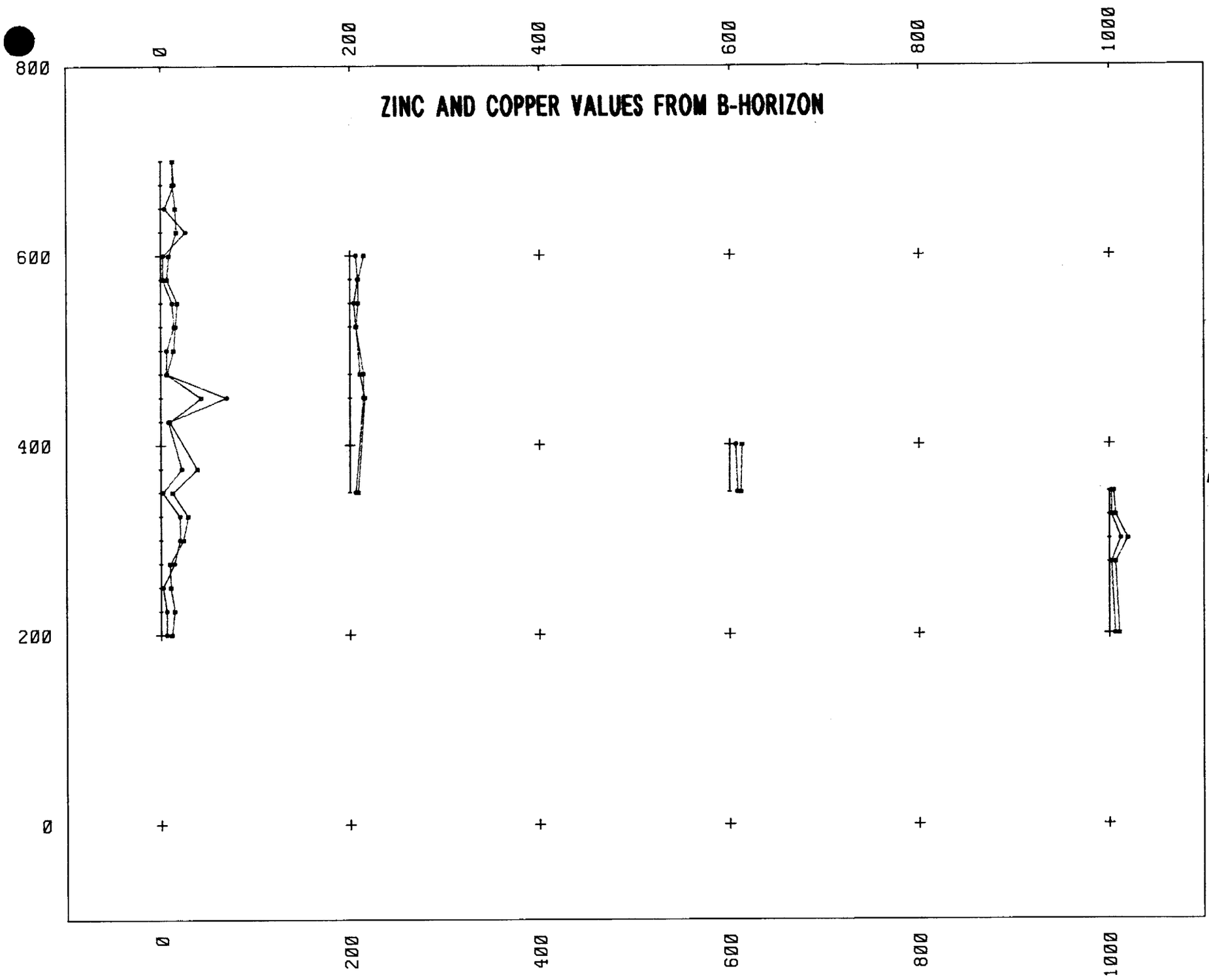
TABLE 1

BIGMARSH LAKE PROPERTY

SOIL SAMPLING RESULTS
HUMUS

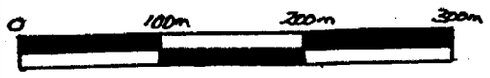
SAMPLE LINE #	LOCATIONS SOUTH	IDEALIZED GRID EAST (M)	NORTH (M)	Ag (ppm)	Co (ppm)	Cu (ppm)	Fe (%)	Mn (ppm)	Mo (ppm)	Ni (ppm)	Pb (ppm)	Zn (ppm)
1	000	000	700	0.5	1	4	0.87	40	1	5	4	12
1	025	000	675	0.5	1	10	0.95	330	1	12	6	38
1	050	000	650	0.5	38	17	5.54	6095	1	12	16	112
1	075	000	625	0.5	2	8	0.86	175	1	6	4	20
1	100	000	600	0.5	1	4	0.64	265	1	4	12	32
1	125	000	575	0.5	1	6	0.48	195	1	4	20	38
1	225	000	475	0.5	1	50	0.28	1605	1	13	68	100
1	275	000	325	0.5	1	16	0.32	330	1	7	48	100
1	300	000	400	0.5	2	45	2.69	1845	1	66	6	66
1	375	000	325	0.5	1	9	0.51	2205	1	7	36	100
1	400	000	300	0.5	1	11	0.80	270	1	8	4	54
1	450	000	250	0.5	1	6	1.18	240	1	7	8	40
1	475	000	225	0.5	1	21	0.28	4110	1	7	8	364
1	050	200	550	0.5	1	11	0.24	290	1	6	32	68
1	075	200	525	0.5	1	16	0.37	180	1	10	66	60
1	100	200	500	0.5	1	6	0.71	175	1	8	8	28
1	125	200	475	0.5	1	3	0.46	145	1	3	12	24
1	175	200	425	0.5	1	10	0.46	550	1	7	6	42
1	200	200	400	0.5	1	10	0.54	195	1	9	6	66
1	225	200	375	0.5	1	13	0.30	200	1	8	6	66
1	250	200	350	0.5	1	13	0.21	95	1	10	4	68
1	275	200	325	0.5	1	14	0.45	55	1	6	8	66
1	300	200	300	0.5	1	10	0.34	140	1	8	6	76
1	000	400	500	0.5	1	15	0.84	220	1	10	8	48
1	025	400	475	0.5	1	12	0.71	150	1	9	10	42
1	050	400	450	0.5	1	10	1.36	135	1	12	10	38
1	075	400	425	0.5	10	13	0.81	840	1	9	10	42
1	100	400	400	0.5	1	14	1.12	385	1	13	12	52
1	125	400	375	0.5	1	10	0.15	175	1	6	10	84
1	150	400	350	0.5	1	11	0.87	350	1	9	10	52
1	175	400	325	0.5	1	11	1.19	385	1	13	14	58
1	200	400	300	0.5	1	17	1.01	225	1	10	10	56
1	225	400	275	0.5	1	13	1.50	620	1	14	10	62
1	250	400	250	0.5	1	10	1.16	310	1	11	12	50
1	275	400	225	0.5	1	9	0.91	250	1	9	12	44
1	300	400	200	0.5	1	9	1.07	190	1	12	14	36
1	325	400	175	0.5	1	5	0.46	85	1	5	20	32
1	350	400	150	0.5	1	15	1.14	565	1	12	20	58
1	375	400	125	0.5	10	10	1.23	900	1	12	16	40
1	400	400	100	0.5	1	9	1.15	690	1	12	18	54
1	425	400	75	0.5	1	13	1.09	970	1	13	18	52
1	450	400	50	0.5	1	9	1.01	225	1	12	6	42
1	475	400	25	0.5	1	9	1.00	225	1	11	4	36
1	500	400	0	0.5	10	15	1.05	3565	1	10	46	72
1	000	600	400	0.5	1	16	0.53	1035	1	9	10	44
1	025	600	375	0.5	1	12	0.39	180	1	8	18	56
1	050	600	350	0.5	1	19	1.60	425	1	11	12	54
1	075	600	325	0.5	1	11	1.39	145	1	15	10	54
1	100	600	300	0.5	1	9	0.50	60	1	7	8	22
1	125	600	275	0.5	1	12	0.27	160	1	8	12	74
1	150	600	250	0.5	1	16	0.40	1330	1	11	44	58
1	175	600	225	0.5	1	4	0.85	120	1	10	44	200
1	200	600	200	0.5	1	17	0.35	40	1	9	14	22
1	225	600	175	0.5	1	4	0.56	185	1	7	14	28
1	250	600	150	0.5	1	6	0.67	70	1	8	12	28
1	275	600	125	0.5	1	4	0.61	100	1	7	12	20
1	300	600	100	0.5	1	10	0.25	45	1	7	12	44
1	000	1000	350	0.5	1	5	0.78	75	1	7	14	30
1	025	1000	325	0.5	1	7	0.17	90	1	9	12	46
1	050	1000	300	0.5	1	4	0.32	100	1	7	16	60
1	075	1000	275	0.5	1	3	0.34	75	1	4	16	22
1	100	1000	250	0.5	1	2	0.38	60	1	4	8	18
1	125	1000	225	0.5	1	2	0.24	30	1	3	10	14
1	150	1000	200	0.5	1	2	0.30	30	1	3	12	12
1	175	1000	175	0.5	1	2	0.95	30	1	4	16	24
1	200	1000	150	0.5	1	12	0.48	135	1	10	56	82
1	225	1000	125	0.5	14	14	1.94	4185	2	9	38	108
1	250	1000	100	0.5	1	10	0.16	130	1	6	44	88
1	275	1000	75	0.5	1	4	0.38	35	1	4	8	18
1	300	1000	50	0.5	1	7	0.36	80	1	7	22	48
	MEAN			0.50	4.36	10.90	0.78	573.14	1.04	9.24	21.57	53.49
	STANDARD DEVIATION			0.00	5.73	7.64	0.74	1081.18	0.27	7.49	14.99	44.53
	2 times standard deviation plus the mean:			0.50	15.82	26.18	2.26	2735.51	1.57	24.23	51.56	142.54

TABLE 2



Copper(green)1cm=50ppm

Zinc (red) 1cm=200ppm



Accompanies report by S. Lomas

LEGEND FOR BIGMARSH

SCALE = 1•5000

PLOT FILE NAME = B_CUZN.MET

PROFILE OF TABLE SOIL
FIELD = B_CU
GRID LINES = 0 IN PROFILE
SCALE FOR B_CU = 25 PER CM.

PROFILE OF TABLE SOIL
FIELD = B_ZN
GRID LINES = 0 IN PROFILE
SCALE FOR B_ZN = 100 PER CM.

FIGURE 4

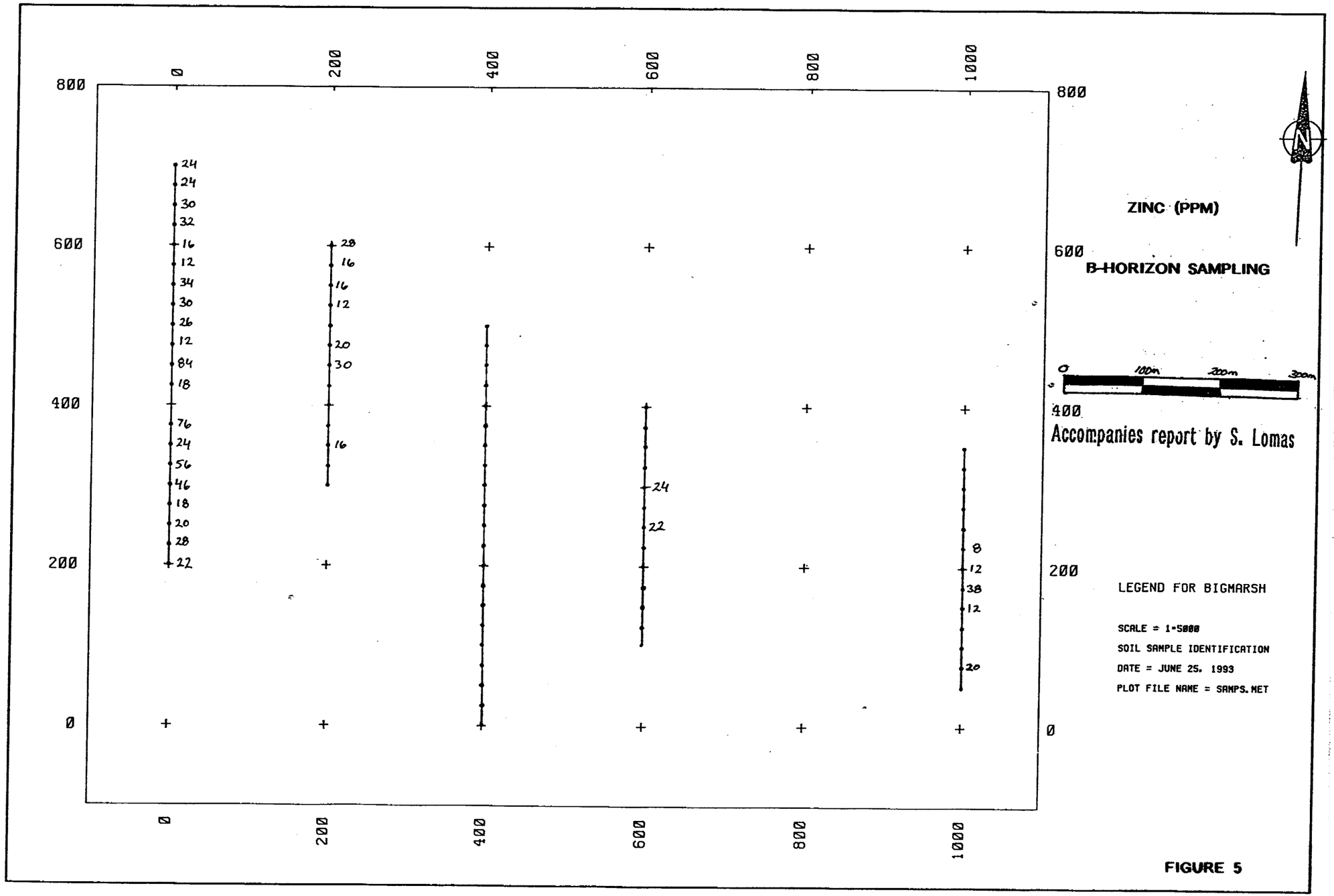

0
200
400
600
800
1000
800
600
400
200
0
24
24
30
32
16
12
34
30
26
12
84
18
76
24
56
46
18
20
28
22
28
16
16
12
20
30
16
24
22
8
12
38
12
20
ZINC (PPM)
B-HORIZON SAMPLING
0
100m
200m
300m
Accompanies report by S. Lomas
LEGEND FOR BIGMARSH
SCALE = 1=5000
SOIL SAMPLE IDENTIFICATION
DATE = JUNE 25, 1993
PLOT FILE NAME = SAMPS.MET

FIGURE 5

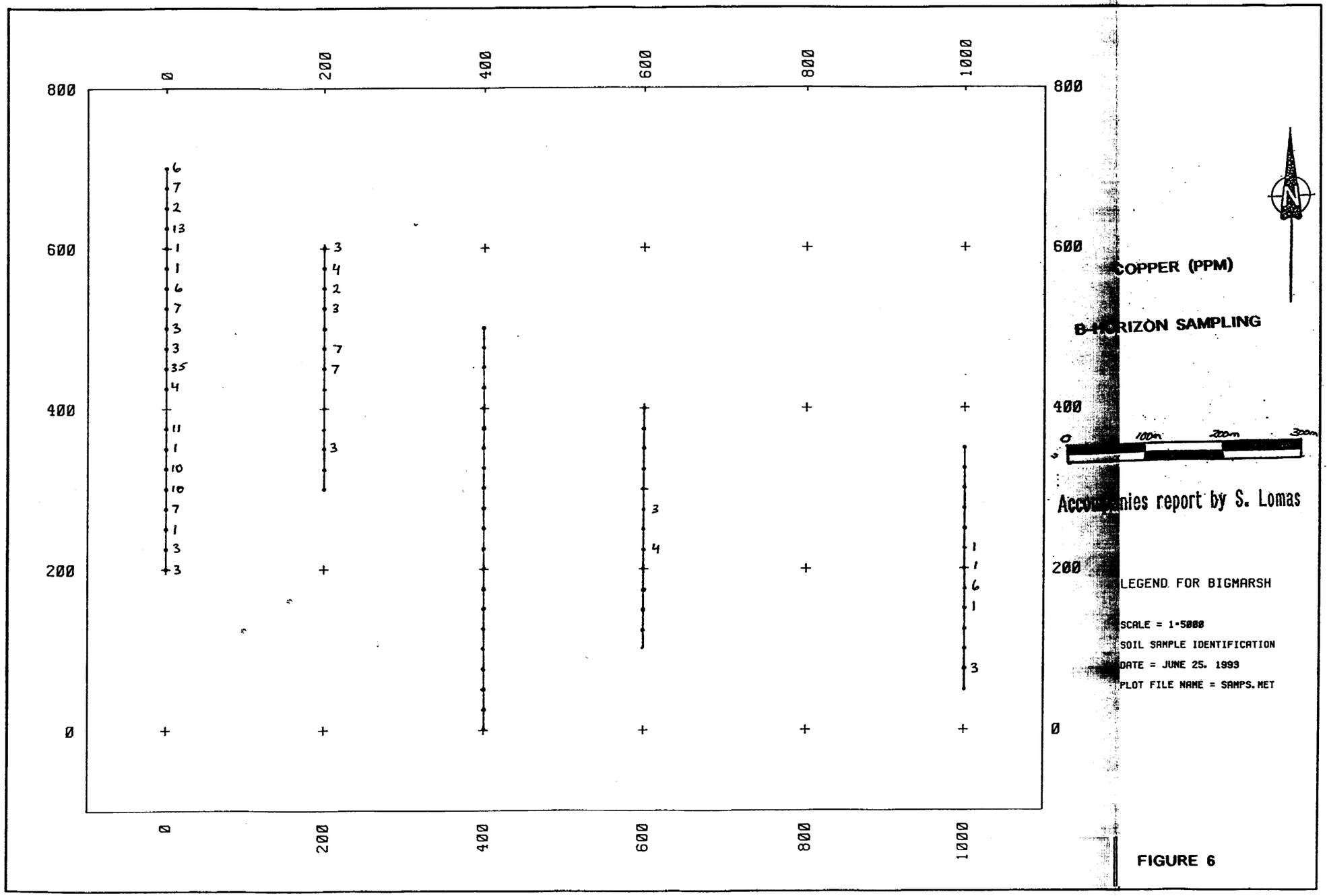
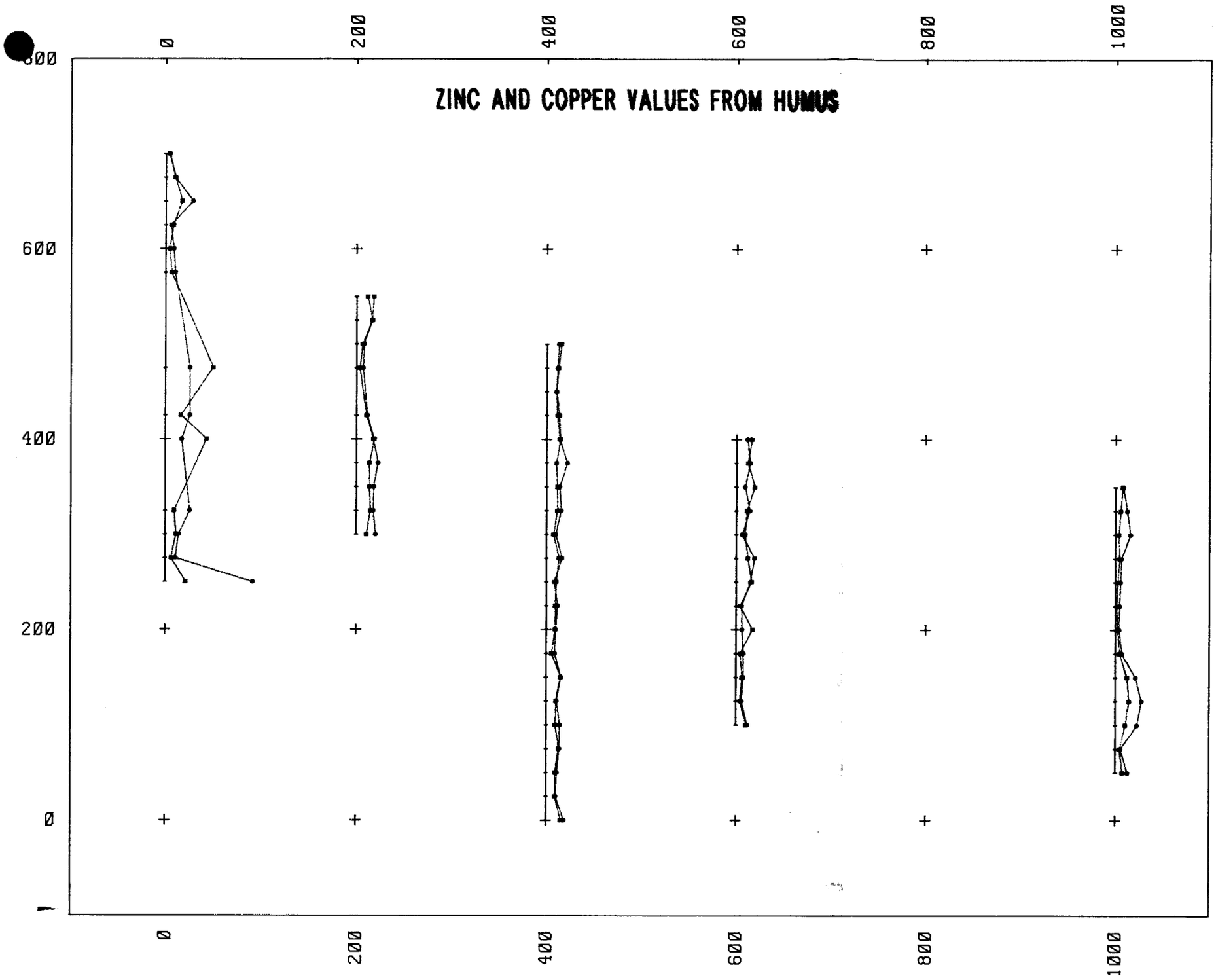

0
200
400
600
800
1000
800
600
400
200
0
6 7 2 13 1 1 6 7 3 3 35 4
11 1 10 10 7 1 3 3
3 4 2 3 7 7
3 3
3 4
1 1 6 1 3
COPPER (PPM)
B-HORIZON SAMPLING
0 100m 200m 300m
Accompanies report by S. Lomas
LEGEND FOR BIGMARSH
SCALE = 1-5000
SOIL SAMPLE IDENTIFICATION
DATE = JUNE 25, 1993
PLOT FILE NAME = SAMPS.MET

FIGURE 6

ZINC AND COPPER VALUES FROM HUMUS



Copper(green)1cm=50ppm

Zinc (red) 1cm=200ppm

0 100 200 300 400 500m

Accompanies report by S. Lomas

LEGEND FOR BIGMARSH

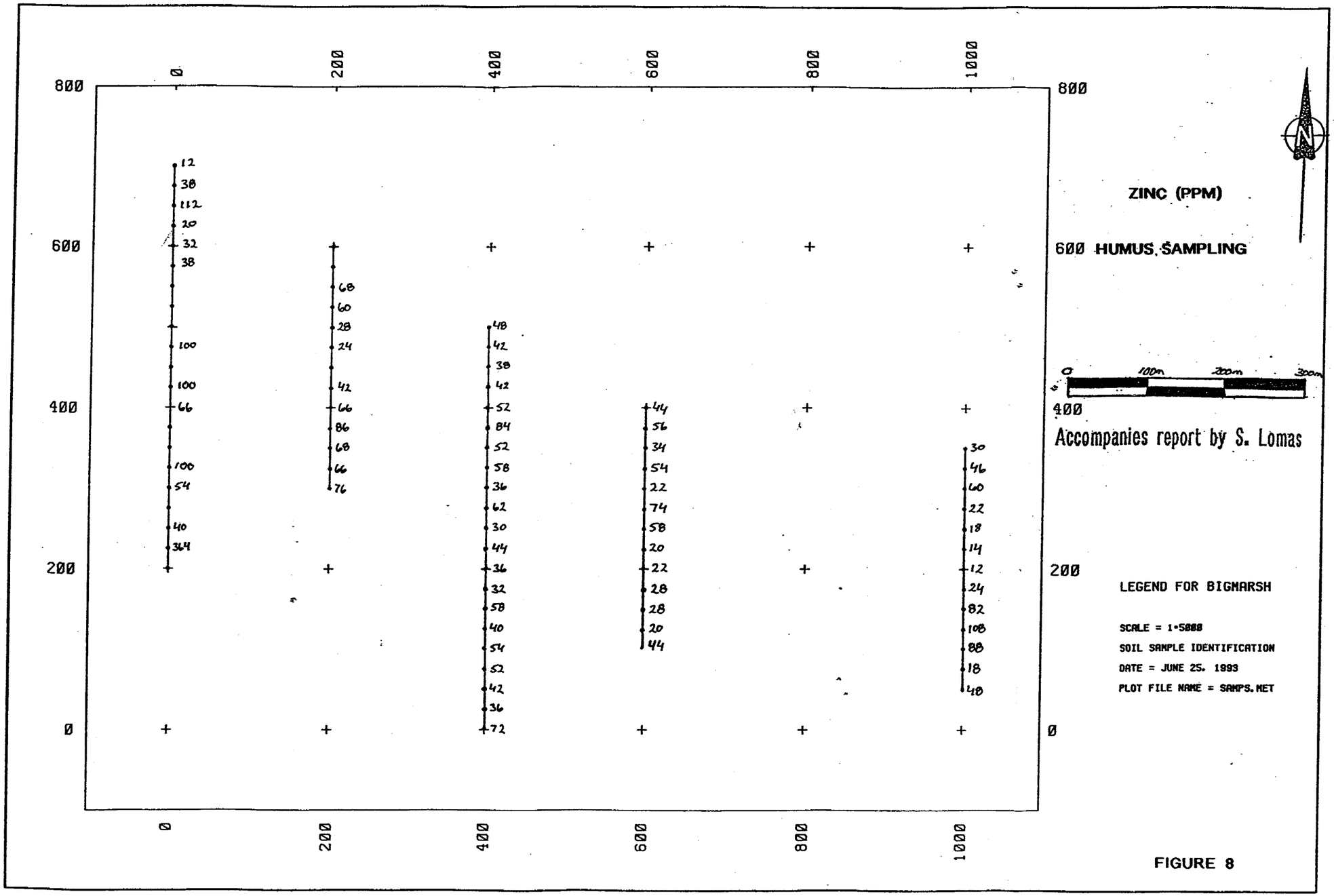
SCALE = 1-5000

PLOT FILE NAME = H_ZNCU.MET

PROFILE OF TABLE HUMUS
FIELD = H_ZN
GRID LINES = 0 IN PROFILE
SCALE FOR H_ZN = 200 PER CM.

PROFILE OF TABLE HUMUS
FIELD = H_CU
GRID LINES = 0 IN PROFILE
SCALE FOR H_CU = 50 PER CM.

FIGURE 7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200
400
600
800
1000
800
600
400
200
0
12
38
112
20
32
38
100
100
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54
40
364
68
60
28
24
42
66
86
68
66
76
48
42
38
42
52
84
52
58
36
62
30
44
36
32
58
40
54
52
42
36
72
44
56
34
54
22
74
58
20
22
28
28
20
44
30
46
60
22
18
14
12
24
82
108
88
18
40
ZINC (PPM)
HUMUS SAMPLING
0
100m
200m
300m
Accompanies report by S. Lomas
LEGEND FOR BIGMARSH
SCALE = 1:5000
SOIL SAMPLE IDENTIFICATION
DATE = JUNE 25, 1993
PLOT FILE NAME = SAMPS.MET

FIGURE 8

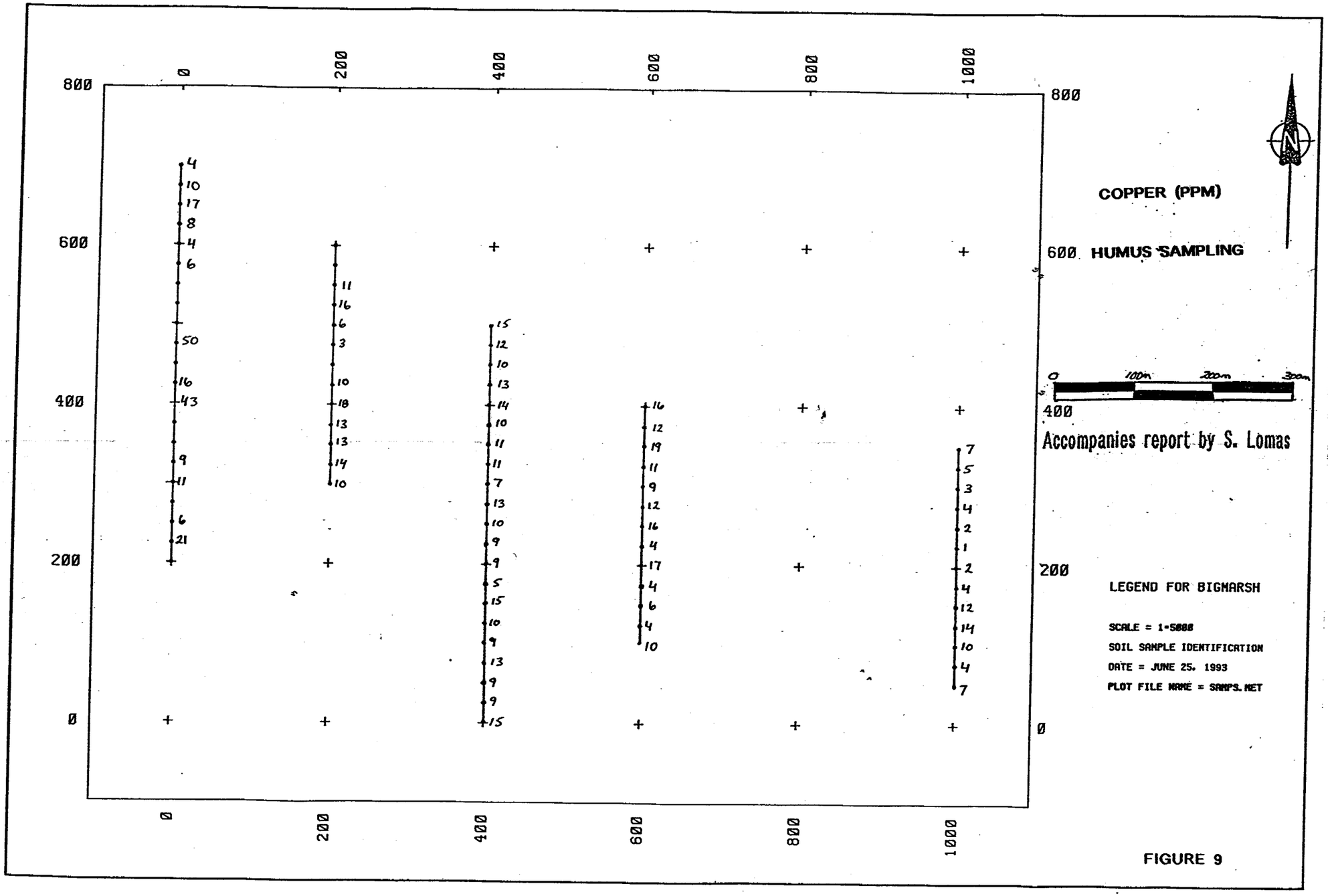

800
600
400
200
0
0
200
400
600
800
1000
4 10 17 8 4 6 50 16 43 9 11 6 21
11 16 6 3 10 18 13 13 14 10
15 12 10 13 14 10 11 11 7 13 10 9 9 5 15 10 9 13 9 9 15
16 12 19 11 9 12 16 4 17 4 6 4 10
7 5 3 4 2 1 2 4 12 14 10 4 7
COPPER (PPM)
HUMUS SAMPLING
0 100m 200m 300m
Accompanies report by S. Lomas
LEGEND FOR BIGMARSH
SCALE = 1-5000
SOIL SAMPLE IDENTIFICATION
DATE = JUNE 25, 1993
PLOT FILE NAME = SAMPS.MET

FIGURE 9

All the arithmetically anomalous results were obtained on Line 1, the most westerly survey line that contained two EM anomalies. There is a copper and zinc anomaly in both the humus and B-horizon samples at 225m S and 250m S. At 300m S there is a copper anomaly in the humus and at 475m S a very strong zinc anomaly in the humus (364ppm). Unfortunately this was the last humus sample possible before the end of the line.

This soil survey was originally a reconnaissance survey to test for a geochemical signature in the soil of the Airborne Em Anomalies. The property has since been gridded and an inhouse geophysical survey has been performed. The soil survey can be deemed a success in that there were positive geochemical results obtained in the area of the EM anomalies. But there is a degree of uncertainty built into the survey as to the exact locations of the geophysical anomalies relative to the flagged soil survey lines. It is now recommended that a soil survey be done over the cut grid lines for greater accuracy in the locations of the samples relative to the EM anomalies found by the geophysical survey. A survey covering the northern band of airborne EM anomalies was not possible at the time of this survey so it is also recommended that these anomalies also be geochemically tested.

10.0 DRILL PROGRAM

Diamond drill hole 93-BMD-001 was drilled on claim 1189844 after the completion of an in-house geophysics survey. The objective of the hole was to test an EM conductor that was observed on the Ontario Geological Survey's Map 81084 and confirmed by BHP Mineral's own survey. A 1:5000 drill hole location plan is provided at the back of the report as Plan 1.

Diamond drilling services were provided by SGS Associates. Coring size is NQ and drill core is stored at the BHP office in Timmins. The drill hole (93-BMD-001) was collared at L6600 N and 5600 E . The hole was drilled towards grid north (azimuth 035°) and had a dip of -50°. A lithological summary is presented below and a drill section at a scale of 1:1000 is provided as Plan 2 at the back of the report. The complete diamond drill log is included in Appendix I.

The drill core was selectively split and shipped to Chemex Labs, Ltd. All samples were analyzed for trace elements (Au, Ag, Co, Cu, Fe, Mn, Mo, Ni, Pb and Zn) and whole rock data was requested for selected samples (Al_2O_3, CaO, Cr_2O_3, FeO, MgO, K_2O, MnO, NaO, P_2O_5, SiO_2, Ba, Nb, Rb, Sr, Y and Zr). The Report of Analysis are included as Appendix III.

10.1 SUMMARY LOG

FROM (m)	TO (m)	LITHOLOGICAL UNIT
0	36	Overburden
36	41	Diabase Intrusive
41	46.9	Andesitic Tuff
46.9	56.6	Rhyolitic Tuff
56.6	61.2	Rhyodacitic Tuff
61.2	64.6	Rhyolitic Lapilli Tuff
64.6	72.2	Rhyolitic Ash Tuff (Graphitic Segments)
72.2	82.2	Rhyodacitic Tuff
82.2	83.6	Volcanic Breccia
83.6	93.4	Rhyodacitic to Dacitic Tuff
93.4	104.2	Rhyodacitic Flow (Graphitic Breccia)
104.2	111.3	Rhyolitic Lapilli Tuff
111.3	128.9	Rhyodacitic Flow
128.9	130.3	Rhyodacitic Tuff
130.3	140.0	Rhyodacitic Flow
140.0	142.6	Graphitic Argillite(Strongly Conductive)
142.6	150.6	Rhyodacitic Flow
150.6	151.0	Graphitic Argillite
151.0	202.1	Rhyolitic Flow
202.1	206.0	Dacitic Flow
206.0	224.6	Rhyodacitic Flow
224.6	236.0	Rhyolitic Lapilli Tuff

10.2 ROCK DESCRIPTIONS

The volcanics encountered in the drill hole are predominantly of rhyolitic to dacitic composition and range texturally from massive flows to volcaniclastics. Other rock types include a diabasic intrusive and pyrite-graphite argillites.

The flow volcanics are found to be rhyolitic to rhyodacitic with one minor occurrence of a dacitic flow. They are massive, contain minor quartz eyes and are locally porphyritic with fine feldspar phenocrysts. They range in colour from light brown grey to pale green and are found to be very fine grained. The rhyolitic flow found between 151.0m to 202.1m contains up to 5% chloritic fracture filling with 1-2cm wide chlorite alteration haloes around each fracture. Unfortunately none of the samples taken in this zone show any significant mineralization. The rhyodacitic flow found between 93.4m and 104.2m contains a strongly brecciated segment that hosts graphitic argillite as the matrix. This unit appears to be a flow top breccia indicating that the stratigraphy is upright and tops are to the south. This zone shows an anomalous

elevation in gold returns (40 to 45 ppb) but no anomalies in any of the base metals.

The results from a Jensen Plot (Jensen, 1979), (Presented as Figure 10) of the whole rock data from these flow rocks are tabulated below:

Sample #	Logged as:	Jensen Plot Range
29536	Rhyodacitic	Tholeiitic Andesite
29547	Rhyolitic	Tholeiitic Rhyolite
29548	Rhyolitic	Tholeiitic Rhyolite
29549	Rhyolitic	Tholeiitic Rhyolite
29550	Rhyolitic	Tholeiitic Rhyolite
29551	Rhyolitic	Tholeiitic Rhyolite
29552	Dacitic	High-Iron Tholeiite
29553	Dacitic	High-Iron Tholeiite
29554	Rhyodacitic	Tholeiitic Rhyolite
29555	Rhyodacitic	Tholeiitic Rhyolite

The volcaniclastic rocks have a textural range between ash tuffs and lapilli tuffs. They range chemically from rhyolitic to andesitic. They are foliated parallel to the bedding at 50° to the core axis. The ash tuffs are very fine grained, with minor fine quartz eyes. The lapilli tuffs are courser grained with some fragments as large as 1 cm. Some fine banding contains graded bedding where the fragments become coarser down the hole. This could indicate that the stratigraphic tops are upright and to the south. As a general observation, the volcaniclastics tend to be more susceptible to sericite and carbonate alteration.

BIGMARSH PROPERTY - 93-BMD-001

Cation %

Jensen 1976

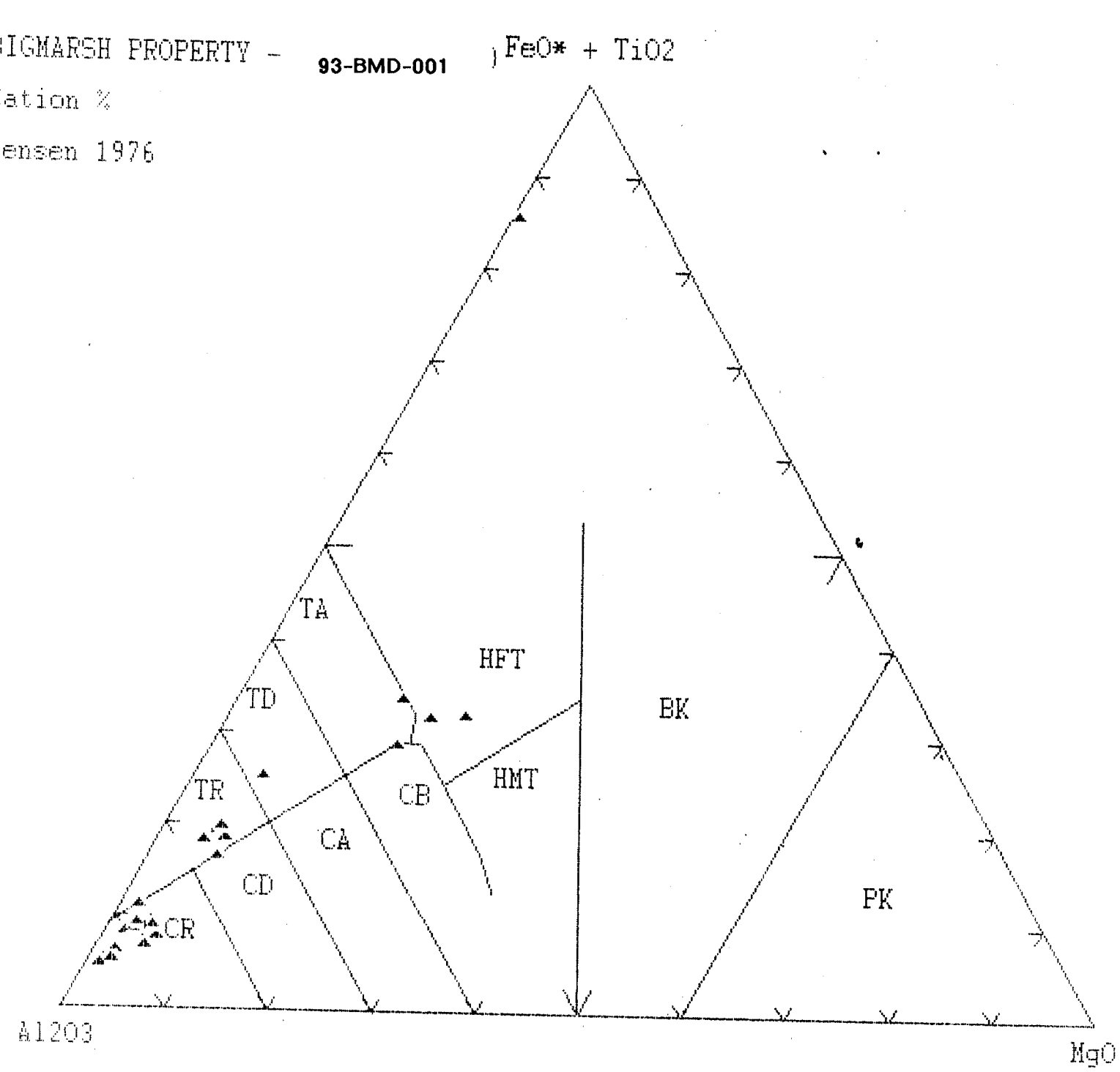


FIGURE 10

Jensen Plots of the volcaniclastics are tabulated below:

Sample #	Logged as:	Jensen Plot
29501	Andesitic	High-Iron Tholeiite
29502	Andesitic	Tholeiitic Dacite
29504	Rhyolitic	Calc-Alkalic Rhyolite
29505	Rhyolitic	Calc-Alkalic Rhyolite
29506	Rhyolitic	Calc-Alkalic Rhyolite
29507	Rhyolitic	Calc-Alkalic Rhyolite
29508	Rhyolitic	Calc-Alkalic Rhyolite
29509	Rhyolitic	Calc-Alkalic Rhyolite
29510	Rhyodacitic	Calc-Alkalic Rhyolite
29511	Rhyolitic	Calc-Alkalic Rhyolite
29513	Rhyolitic	Calc-Alkalic Rhyolite
29520	Rhyolitic	Tholeiitic Andesite
29558	Rhyolitic	Calc-Alkalic Rhyolite
29559	Rhyolitic	Calc-Alkalic Rhyolite
29560	Rhyolitic	Calc-Alkalic Rhyolite
29561	Rhyolitic	Calc-Alkalic Rhyolite
29562	Rhyolitic	Calc-Alkalic Rhyolite
29563	Rhyolitic	Calc-Alkalic Rhyolite
29564	Rhyolitic	Calc-Alkalic Rhyolite
29565	Rhyolitic	Calc-Alkalic Rhyolite
29566	Rhyolitic	Calc-Alkalic Rhyolite
29567	Rhyolitic	Calc-Alkalic Rhyolite

The remaining rock type is the pyrite-graphite argillites. The two most interesting occurrences of this are from 61.4m to 61.45m and from 140.0m to 142.6m.

The first occurrence is associated with a rhyolitic lapilli tuff. There is 2.0 m of core missing from this segment. Many of the pieces of core contain evidence of heavy grinding which appears to indicate a loss of much of this interesting zone. The argillite is dark grey to black, very fine grained and contains 10% to 20% disseminated pyrite. The only sample available of the argillite from this segment returned the highest gold assay for this hole; 445 ppb.

The second occurrence of argillite is associated with a rhyodacitic flow and is strongly conductive in all directions along the core axis. It is very fine grained, dark grey to black, banded(1-4cm wide) with localized slumping discernable and an average of 10% to 15% py as bands and as a very fine grained disseminate. This unit returned anomalous copper and zinc assays; 773 ppm Cu, 413 ppm Ni, 2378 ppm Zn from 1.0m and the next sample returned 409 ppm Cu and 872 ppm Zn over 1.1 m.

10.3 LITHOGEOCHEMICAL ANALYSIS

Selected segments of the core were split and shipped to Chemex Labs, Ltd. All samples were analyzed for trace elements (Au, Ag, Co, Cu, Fe, Mn, Mo, Ni, Pb and Zn) and whole rock data was requested for some samples (Al_2O_3, CaO, Cr_2O_3, FeO, MgO, K_2O, MnO, NaO, P_2O_5, SiO_2, Ba, Nb, Rb, Sr, Y and Zr). The Report of Analysis are included as Appendix III.

The analysis for trace elements did not return any economic intersections from this hole. There are however some anomalous intervals that are mentioned in the previous section of this report. Two plots are provided to illustrate the trace element profiles recovered from the core (Figures 13 and 14). Figure 13 includes a plot of the zinc content of the samples and in Figure 14 this was eliminated to better represent the remaining elements.

The following calculations were made using the whole rock data to determine the degree of alteration of the rocks and the degree of favourability for mineralization of the rhyolites encountered. The results of these calculations are presented in Table 3 and graphic downhole representations are provided in Figures 11 and 12.

HASHIMOTO INDEX:- This index is derived from the ratio of those oxides expected to be enriched due to alteration with respect to the total alkali content. As the K_2O and the MgO content of the rock increases then the Hashimoto Index approaches 100.

$$\text{Index} = \frac{MgO+K_2O}{CaO+Na_2O+K_2O+MgO} * 100$$

Samples 29501(93.1), 29502(96.4), and 29510(89.0) have Hashimoto Indexes that approach 100 but do not exceed it. 29501 and 29502 plotted in the high-Fe tholeiite and tholeiitic dacite field in the Jensen Plot. Sample 29510 remains interesting as it plotted as a calc-alkalic rhyolite. Fuchsitic alteration is noted to occur in this segment but once again most of the unit was ground away during the drilling.

SPITZ RATIO:- This calculation compares the Na_2O content against the Al_2O_3 content. The alumina is assumed to be fairly immobile thereby emphasising any sodium depletion. Values greater than 30 are considered to be highly altered.

$$\text{Spitz Ratio} = \frac{Al_2O_3}{Na_2O}$$

Samples 29501 (59.7), 29502 (178.0), 29510 (60.97) and 29520 (141.1) have anomalous results. The first three were mentioned previously but sample 29520 was logged as a volcaniclastic and plotted as a tholeiitic andesite on a Jensen Plot.

BIGMARSH PROPERTY - 93-BMD-001

ALTERATION INDICES

SAMPLE	FROM (M)	TO (M)	SPITZ RATIO	SERITIZATION	HASHIMOTO INDEX	Rb/Sr	Na2O/K2O	Zr/Y
29501	45.00	46.00	59.66	0.47	93.10	0.57	1.12	6.10
29502	46.00	46.90	178.00	0.97	96.44	3.85	0.03	3.63
29503	46.90	48.00	3.89	0.33	35.70	1.15	2.07	5.26
29504	48.00	49.00	5.32	0.41	43.03	1.68	1.46	3.89
29505	50.00	51.00	5.02	0.42	45.87	0.79	1.39	3.67
29506	51.00	52.00	4.42	0.38	40.58	1.21	1.61	2.47
29507	52.00	53.00	5.67	0.43	45.13	1.10	1.32	3.75
29508	53.00	54.00	3.82	0.36	37.66	0.75	1.78	3.64
29509	56.00	56.60	4.32	0.38	39.53	1.00	1.65	3.56
29510	56.60	58.00	60.97	0.94	89.01	1.12	0.07	2.32
29511	61.20	61.40	7.13	0.60	61.78	1.53	0.66	3.64
29512	61.40	61.45	6.72	0.56	53.85	0.93	0.80	19.83
29513	61.45	62.20	2.96	0.28	29.54	0.76	2.61	7.06
29520	70.00	71.00	141.11	0.98	48.25	1.00	0.02	5.43
29536	132.20	133.20	6.89	0.53	38.04	0.43	0.88	4.94
29547	155.30	156.30	3.85	0.41	34.67	0.41	1.44	3.63
29548	156.03	157.30	3.71	0.40	31.13	0.53	1.49	4.46
29549	157.30	158.30	3.34	0.36	29.71	0.45	1.78	4.91
29550	158.30	159.30	3.14	0.32	27.79	0.51	2.11	4.66
29551	159.30	160.00	3.05	0.32	30.19	0.37	2.08	4.58
29552	203.00	204.00	4.86	0.22	34.27	0.09	3.49	4.41
29553	204.00	205.00	4.64	0.22	32.94	0.11	3.53	4.62
29554	208.00	209.00	2.99	0.32	30.08	0.65	2.12	4.49
29555	209.00	210.00	2.89	0.33	29.04	0.55	2.08	4.60
29558	226.30	227.00	4.04	0.58	48.55	0.94	0.71	1.12
29559	227.00	228.00	4.56	0.63	60.85	1.93	0.58	1.24
29560	228.00	229.00	6.15	0.71	68.39	2.62	0.40	1.18
29561	229.00	230.00	4.59	0.64	54.10	1.29	0.56	1.18
29562	230.00	231.00	3.63	0.56	54.26	2.49	0.79	1.15
29563	231.00	232.00	4.83	0.64	58.50	2.07	0.57	1.16
29564	232.00	233.00	4.06	0.58	52.95	2.22	0.71	1.28
29565	233.00	234.00	5.26	0.66	60.66	2.48	0.51	1.20
29566	234.00	235.00	4.83	0.63	57.24	2.39	0.58	1.27
29567	235.00	236.00	5.06	0.65	53.42	1.38	0.54	1.19

TABLE 3

BIGMARSH PROPERTY – 93–BM–001

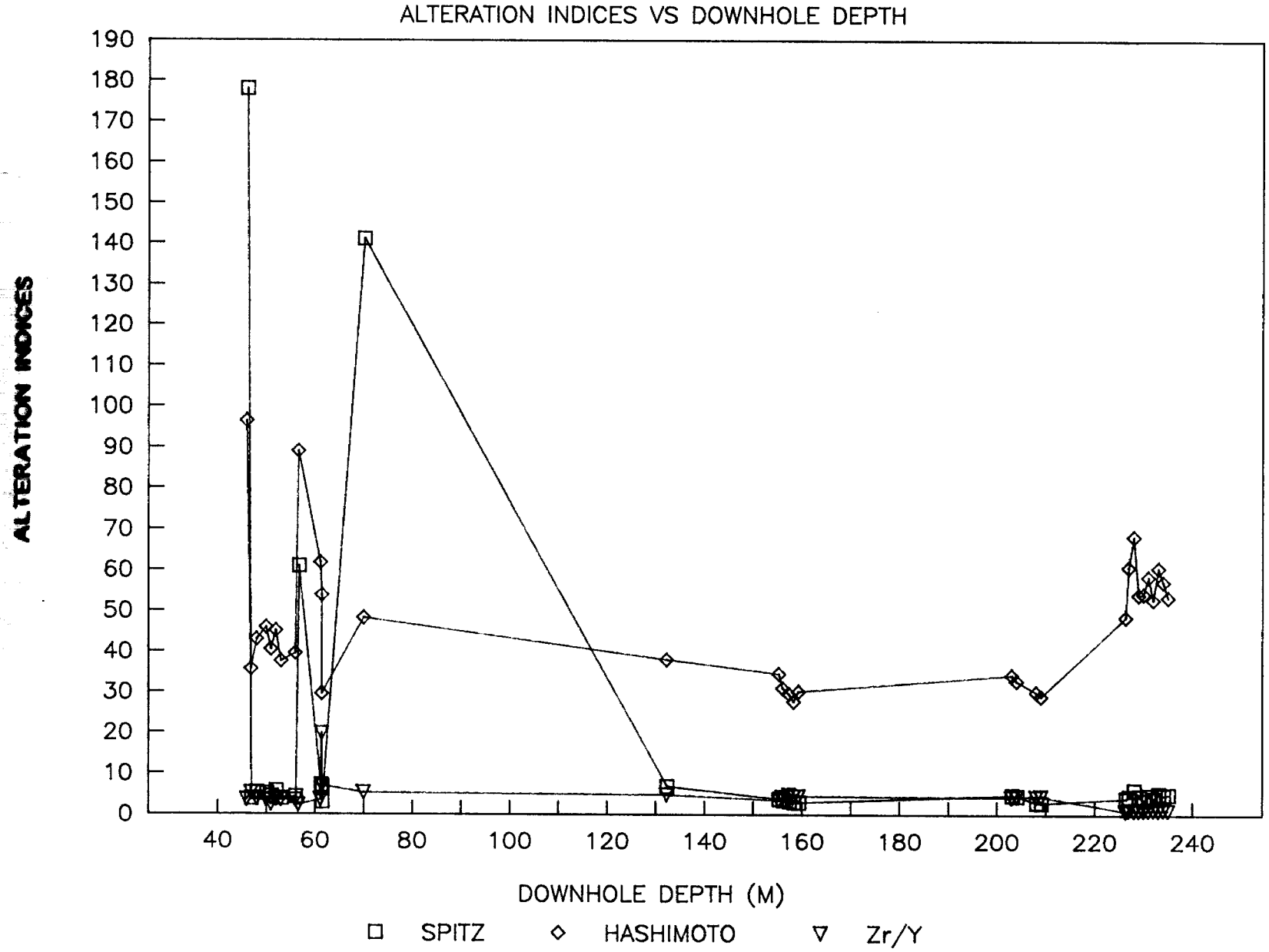


FIGURE 11

BIGMARSH PROPERTY – 93-BM-001

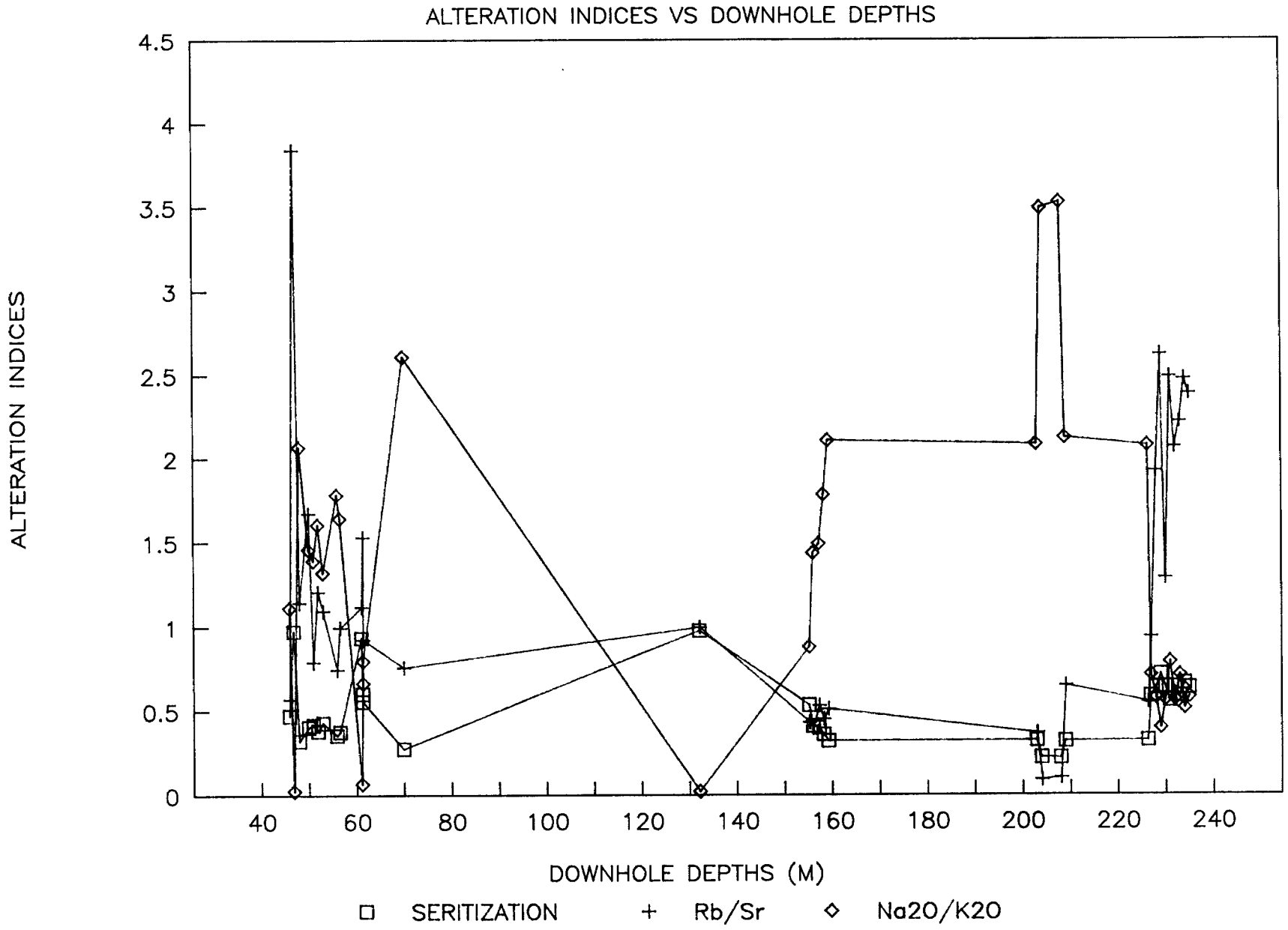


FIGURE 12

BIGMARSH PROPERTY – 93–BM–001

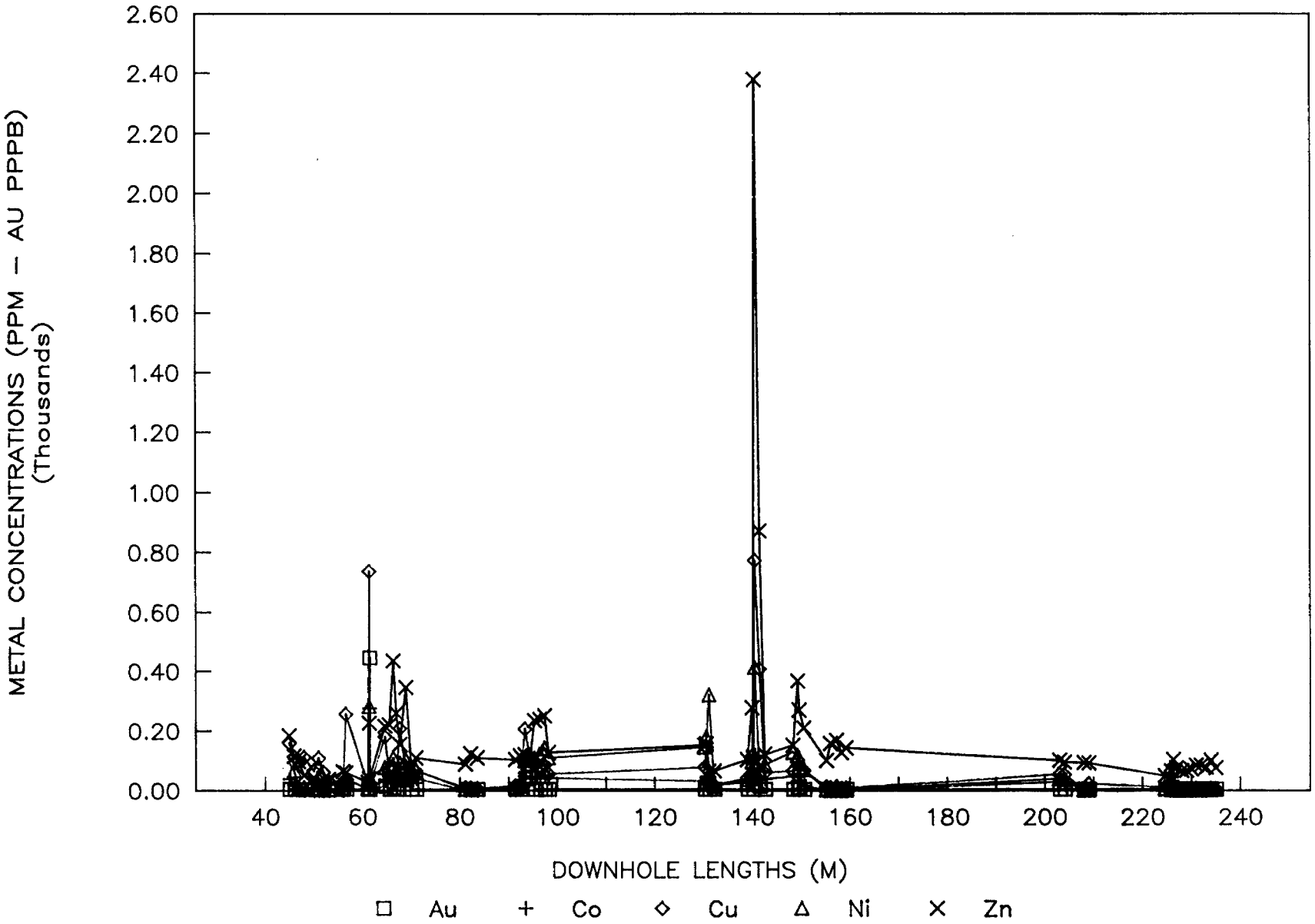


FIGURE 13

BIGMARSH PROPERTY – 93–BM–001

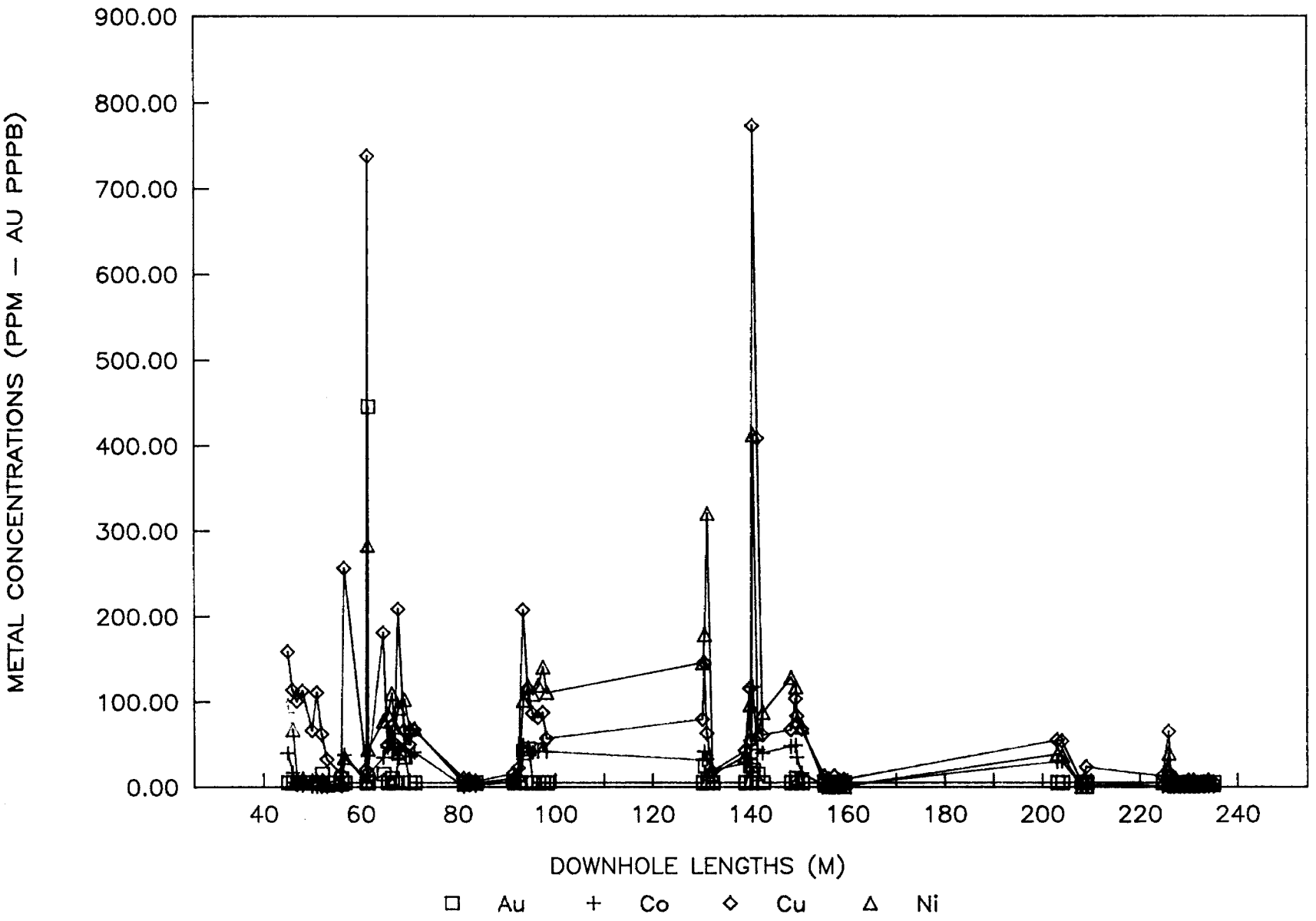


FIGURE 14

SERITIZATION INDEX:- This calculation indicates the degree of seritization the rock has undergone. Values that are greater than 1 are considered highly altered.

$$\text{Seritization Index} = \frac{K_2O}{Na_2O+K_2O}$$

Samples 29502 (0.97), 29510 (0.94) and 29520 (0.98) returned results that are just below 1.0 and they are all described on the previous page.

Rb/Sr RATIO:- This ratio is calculated under the presumption that hydrothermal alteration proximal to VMS Deposits is exhibited by depletion in CaO and subsequent enrichment in K_2O. We can substitute Rb for the K_2O and Sr for the CaO contents. If the ratio is calculated to be greater than 10 then the rock is considered to be strongly altered and if it is between 4 to 10 it is considered moderately altered.
Only sample 29502 (3.9) returned an interesting result which indicates that it is moderately altered.

Na_2O/K_2O RATIO:- Hydrothermal alteration can be indicated by this ratio as the Na_2O is depleted the K_2O is enriched. The stronger altered samples will return a value between 0.0 to 0.10 and moderately altered will be from 0.10 to 0.25.
Samples 29502 (0.03), 29510 (0.07) and 29520 (0.02) once again returned the only anomalous results.

Zr/Y RATIO:- The Y content of a rock can be a measure of the Yb content and Zr behaves like a light REE element so that the Zr/Y ratio can be a measure of the La/Yb ratio. It has been found that Y is enriched in ore associated rhyolites (Y=15-200ppm) and barren units generally have contents of Y between 5 and 50 ppm. Therefore rhyolites associated with ore were found to have Zr/Y ratios between 2 and 10 and barren ones were found to have rations between 4 and 30.
Many of the samples towards the top of the hole returned ratios between 2 and 4 which is the ideal range for rhyolites associated with mineralization. This would include samples 29504(3.89), 29505(3.67), 29506(2.47), 29507(3.75), 29508(3.64), 29509(3.56), 29510(2.32), 29511(3.64) and 29547(3.63).

Most of the results indicate very weak to minor alteration of the rocks found in the drilling program. One can see that there are intervals that have interesting alteration indices but unfortunately the trace element analysis of these zones did not indicate sufficient base metal content to warrant any further drilling in this immediate area. This does not however eliminate this claim group completely for any future considerations as the alteration indices for these rocks are indicating the potential for mineralization that is found elsewhere to be associated with VMS deposits.

REFERENCES

ONTARIO GEOLOGICAL SURVEY
1988: Airborne Electromagnetic and Total Intensity Survey. Timmins Area, Carscallen Township, Districts of Cochrane and Timiskaming Ontario; by Geoterrex Limited, for Ontario Geological Survey. Geophysical/Geochemical Series Map 81084. Scale 1:20 000. Survey and compilation from March 1987 to October 1987.

L.S. JENSEN, 1976
A new cation plot for classifying subalkaline volcanic rocks, Ontario Department of Mines, Miscellaneous Paper 66.

CERTIFICATION

I, Susan Lomas of Timmins, Ontario certify that:

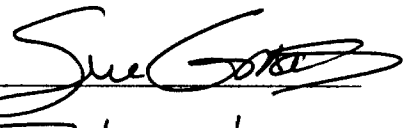
1) I am a geology graduate of Concordia University of Montreal with a BSc (1987).

2) I have been practising my profession in Ontario since 1987.

3) I am currently employed as a geologist by BHP Minerals Canada Ltd.

4) This report is based upon my personal knowledge of the Bigmarsh Lake Property, having performed the work myself or was the direct supervisor.

5) I have no interest, either direct or implied, in the Bigmarsh Lake Property.

Signed: 

Date: July 8/93

APPENDIX I

DIAMOND DRILL LOG (93-BMD-001)

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : NQ SCALE : 1:100 PROJECT : Sigmarsh HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : April 17 1993 PAGE No. 1 of 16

COORDINATES : 5600 N. 6600 E. DATE FINISHED : April 21 1993 REF. TO CLAIM CORNER: 1189844

INCLINATION : -50° AZIMUTH : 035° TOTAL DEPTH : 236 m LOGGED BY : S. Lomas

COMMENTS: Core Stored: BHP Office
Contractor: SGS Drilling
Log completed: April 21 1993
Casing Removed from hole

DEPTH (m)	ALTERATION	FRACTURING	SULPHIDES	GEOLOGY	DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS
0					overburden 0 - 36 m						
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 2 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

DEPTH (m)	ALTERATION	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS
15					Overburden cont'd						
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 3 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

DEPTH (m)	ALTERATION: SERICITE	SILICA	CARBONATE	CHLORITE	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS
30								Overburden cont'd						
31														
32														
33														
34														
35														
36														
37								Diabase Intrusive 36-41m Dark green to moderately fine to med grained, locally strongly magnetic		80%				
38								<1% fine grained disseminated pyrite						
39								Lower contact is obscured by strong fracturing and grinding of core.						
40														
41														
42								Andesitic Tuff 41m - 46.9m light to med grey green, medium grained tuff where fragments average ½mm to 2mm and are composed of plag altered to sericite.		80%				
43								Locally strongly oxidized, especially along fracture planes and at lower contact over 30 cm.						
44														
45								1m core gound <1% fine grained disseminated pyrite		0%				

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMO-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 4 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

DEPTH (m)	ALTERATION: SERICITE	SILICA	CARBONATE	Chlorite	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS: Au ppb	Ag ppm	Cu ppm	Zn ppm
45								Andesitic Tuff cont'd					45				
46								weakly foliated at 40° to core axis		90%	29 501	100%	46	<5	<0.5	159	184
47								Lower grinding contact of core obscured by fracturing and			29 502	100	46.9	<5	<0.5	114	116
48								Rhyolitic Tuff 46.9m - 56.6m			29 503	100	46.9	<5	0.5	101	98
49								very fine grained tuff with 0.1 to 0.3mm sized gray qtz eyes (2-4%) disseminated throughout; matrix completely altered to sericite,		70	29 504	100	48	<5	<0.5	113	52
50								1m ground core — minor qtz fracture filling that appear to cross-cut the chloritic fracture filling. Minor chlorite alt'n for 3-5mm from chloritic fractures that are themselves only <1 to 1mm in width and << 1% very fine grained pyrite		0%		0	49				
51								very fine grained pyrite also found as fine fracture filling and as discrete fragments of 1-2mm in size.		70	29 505	100	50	<5	<0.5	67	38
52											29 506	100	51	<5	0.5	111	28
53											29 507	40%	52	15	<0.5	63	26
54								Lower contact obscured by ground core.			29 508	60%	53	<5	<0.5	33	38
55								2m ground core		0%			54				
56													56				
57								Rhyodacitic Tuff 56.6m - 61.2m			29 509		56.6	10	<0.5	15	64
58								light gray/green, medium grained tuff. Average grain size = 1 to 2mm. <1% elongated qtz lined gas cavities present. minor (1-2%) fracture alteration (light-apple green) found throughout the unit		80%	29 510		58	<5	<0.5	257	60
59										0			59				
60								<1% fine disseminated py + 3.2m of core grinding					60				

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : [redacted] SCALE : [redacted] PROJECT : [redacted] HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: [redacted] GROUND ELEV.: [redacted] DATE STARTED : [redacted] PAGE No. 5 of 16

COORDINATES : [redacted] N. [redacted] E. DATE FINISHED : [redacted] REF. TO CLAIM CORNER: [redacted]

INCLINATION : [redacted] AZIMUTH : [redacted] TOTAL DEPTH : [redacted] m LOGGED BY : [redacted]

DEPTH (m)	ALTERATION: SERICITE	SILICA	CARBONATE	chlorite	Graphite	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL / % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS: Au	Ag	Cu	Zn	Ni
60																			
61									NO CORE Recovered		0%			61.2					
62									Rhyolitic Lapilli Tuff 61.2m – 64.6m light green-yellow, moderately soft, 20-30% 1-2mm round qtz grains in sericitic matrix. Minor Larger fragments of qtz up to 1cm.			29 511		61.4	<5	<0.5	21	28	7
62												29 512		61.45	945	<0.5	737	226	283
63												29 513		62.2	<5	<0.5	17	40	45
64									Core lost to grinding Pyrite occurs as 5-10% coarse cubic and 2% fine disseminated. 4cm wide band of 10-20% py as 1-3mm cubes. Minor qtz filled gas cavities. 3% minor graphite at 61.4m Lower contact observed by grinding		0%								
65									Rhyolitic Ash Tuff (possible flow) 64.6m – 72.2m +20% Qtz					64.6					
66									very fine grained with 10% feldspars, 1-3mm weakly elongated parallel to foliation at 50° to core angle, light brown grey with localized sericite alt'n along foliation planes and weak to moderate overall ankerite alt'n (weak reaction with 10% HCl)			29 514		65.5	15	<0.5	181	216	
67												29 515		66.3	<5	<0.5	50	220	
68												29 516		67	10	<0.5	72	436	
69									→ strong multidirectional conductivity <1% overall, locally 5% fine disseminated pyrite and up to 15% disseminate associated with graphitic zones		80%	29 517		67.7	<5	<0.5	52	260	
70												29 518		68.9	40	1.0	209	154	
71									Lower contact is sharp.			29 519		70	35	<0.5	67	346	
72											WR	29 520		71	<5	<0.5	51	84	
73									Rhyodacitic Tuff (medium grained) 72.2m – 82.2m Much more "tuffaceous" looking rock. light beige/green, qtz fragments 1-2mm, elongated along strong foliation at 55° to CA. 2% overall qtz-ankerite fracture filling, weak sericite + ankeritic alteration and <1% diss py.			29 521		72.2	<5	<0.5	68	110	
74																			
75																			

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 6 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

DEPTH (m)	ALTERATION: Sericite	Silica	Carbonate	Chlorite	Graphite	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL	% CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS Au	Ag	Cu	Zn
75									Rhyodacitic Tuff cont'd										
76																			
77																			
78																			
79																			
80																			
81															81.2				
82													29 5222	100	82.2	<5	0.5	10	90
83									82.2m - 83.6m Volcanic Breccia light green-yellow, wk-mod sericitized. Fragments range from 5mm to 3-5cm and increase in size down hole, minor very fine chl-py fracture filling throughout unit.				29 5223	100	83.6	<5	<0.5	9	124
84									Rhyodacitic to Dacitic Tuff 83.6m - 93.4m				29 5224	100	84.6	<5	<0.5	7	110
85									Light yellow/green/gray, strongly foliated at 50° to CA, fine to medium grained tuff that possibly shows graded bedding where grains become coarser down the hole. Alteration is patchy and assoc with fractures and foliation planes. unaltered areas are medium to light gray.										
86																			
87																			
88									<<1% 1-2mm pyrite disseminated throughout core, increases to 1-3% over 1m from lower contact.										
89																			
90																			

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : | SCALE : | PROJECT : | HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED : | PAGE No. 7 of 16

COORDINATES : N. E. | DATE FINISHED : | REF. TO CLAIM CORNER:

INCLINATION : | AZIMUTH : | TOTAL DEPTH : m | LOGGED BY :

DEPTH (m)	ALTERATION (Sericite, Silica, Carbonate, Chlorite, Graphite)	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS Au	Ag	Cu	Zn
90					Rhyodacitic to Dacitic Tuff cont'd									
91										91.4				
92								29 525		92.4	<5	<0.5	16	104
93								29 526		93.4	<5	<0.5	23	116
93.4					Rhyodacitic Flow 93.4m – 104.2m			29 527		94.4	40	<0.5	208	120
94					Top segment of unit is mod to strongly brecciated with argillite / graphite as matrix; 1 to 10% pyrite assoc with matrix and minor anhydrite and qtz.			29 528		95.4	45	<0.5	116	98
95					Possibly Flow Top down to 98.2m			29 529		96.4	<5	<0.5	87	236
96					then brecciation ends and flow becomes more uniform. graphitic / argillitic segments are only weakly conductive			29 530		97.4	<5	<0.5	82	240
97								29 531		98.2	<5	<0.5	88	252
98					Lower portion of unit is lt brown / gray very fine grained with tr to locally 40-50%, 1-4mm qtz-feldspar filled vesicules (feldspar-outside + qtz in center) Pyrite disseminate increases up to 10% when vesicule content increases			29 532		99.2	<5	<0.5	58	128
99														
100					1-3% small chlorite fracture fillings, 1-2 mm wide.									
101														
102					Lower contact sharp at 70° to CA.									
103														
104														
104.2					Rhyolitic Lapilli Tuff 104.2m – 111.3m									
105					light gray to yellow / green, average lapilli									

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 8 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

DEPTH (m)	ALTERATION: Sericite	Silica	Carbonate	Chlorite	Graphite	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS
105									Rhyolitic Lapilli Tuff is 3-8mm and 10% quartz eyes up to 4mm. moderately foliated at 50° to CA and primary banding visible at same angle. wk pervasive ser + ank altn. no significant sulfides present lower contact is sharp + regular at 70° to CA						
106															
107															
108															
109															
110															
111															
111.3									Rhyodacitic Flow 111.3m - 128.9m (Same as 93.4-104.2) light brown / gray 2 to 30-40% q+f- feld - chl - py filled vesicules, average 2-4mm, round, sequence is inconsistent as to filling order. lower contact is sharp at 65°						
112															
113															
114															
115															
116															
117															
118															
119															
120															

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 9 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

ALTERATION: Sericite, Silica, Carbonate, Chlorite, Graphite

FRACTURING | SULPHIDES | GEOLOGY

COMMENTS:

AVG. REC'Y

DESCRIPTIVE GEOLOGY

DRILLING INTERVAL % CORE RECOVERED

DEPTH (m)	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS Au	Ag	Cu	Zn	Ni
120								
121								
122								
123								
124								
125								
126								
127								
128								
128.9 / 129								
130								
130.3			130.3					
	29 535		130.16	<5	<0.5	80	152	146
	29 534		131.2	25	<0.5	146	156	179
131	29 535		132.2	<5	<0.5	64	66	321
132	29 536	WR	133.2	<5	<0.5	19	66	15
133								
134								
135								

128.9m - 130.3m
Rhyodacitic Tuff light grey, strongly foliated at 60° to CA. Coarse grained Tuff where average grain 1-3mm, minor very fine chlorite seams throughout unit, lower contact sharp at 65° to CA.

130.3m - 140.0m
Rhyodacitic Flow same as above

130.6 - 131.2 graphitic unit, 20% Qtz carb veining, average 1cm wide not very competant core, up to 20% very fine disseminated pyrite moderately to strongly conductive

minor to silicification

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 10 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

ALTERATION: Sericite, Silica, Carbonate, Chlorite, Graphite | FRACTURING | SULPHIDES | GEOLOGY

COMMENTS: AVG. REC'Y

DESCRIPTIVE GEOLOGY

DRILLING INTERVAL & CORE RECOVERED | SAMPLE No. | % SAMPLE RECOVERED | SAMPLE INTERVAL (m) | ASSAYS: Au, Ag, Cu, Zn, Ni

135

136

137

138

139

140

Only 1-4% qtz-chl-cld-py filled vesicles as lower contact is approached, average size is also larger at 2-3mm

<<<1% pyrite as both very fine disseminate and 3-6mm coarse cubes.

Lower contact sharp at 70° to CA.

139.0

29 537 | <5 | <0.5 | 43 | 1011

140.0

Graphitic Argillite 140.0m - 142.6m

very fine grained, dk gray to black, strongly conductive in all core directions, over 50% of the unit, 140.2 - 140.5 30cm size fragment of rhyodacitic flow. Banding averages 1 to 4 cm wide with localized slump features. Banding at 65° to CA. Pyrite present as fracture filling, bedding replacement and as very fine grained disseminate, average 10-15% overall.

slump

29 538 | 140.3 | 25 | <0.5 | 116 | 278

29 539 | 140.5 | <5 | <0.5 | 53 | 112

29 540 | 141.5 | 20 | <5 | 773 | 2380 | 413

29 541 | 142.6 | 15 | <0.5 | 409 | 872

142

142.6

143

Rhyodacite Flow (Same as above) 142.6m - 150.6m

Same as previous units except for presence of brecciated segments

145 - 145.2 Fine Auto breccia, average fragment is 5mm, sub angular, matrix (20%) composed of chlorite + minor py

145.2 - 145.6 Coarse Auto breccia, average fragment is 2-3cm, matrix is (5%) composed of chlorite

149.4 - 149.6 Fine Autobreccia, average frag is 2-4mm, matrix (30%) composed of chl and 2-5% coarse (1-3mm) aggregates of py

29 542 | 143.6 | <5 | <0.5 | 62 | 122

144

145

146

147

148

148.4

29 543 | 149.1 | <5 | <0.5 | 68 | 152

149

29 544 | 149.6 | 10 | <0.5 | 104 | 368

29 545 | <5 | <0.5 | 84 | 270

150

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : | SCALE : | PROJECT : | HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED : | PAGE No. 11 of 16

COORDINATES : N. E. | DATE FINISHED : | REF. TO CLAIM CORNER:

INCLINATION : | AZIMUTH : | TOTAL DEPTH : m | LOGGED BY :

COMMENTS:

AVG. REC'Y

DESCRIPTIVE GEOLOGY

Rhyodacite Flow cont'd

Graphitic Argillite same as previous unit, dk grey to black, finely bedded at 15° to core axis, cross cut by quartz veining

Rhyolitic Flow. 151.0 - 202.1

very fine grained with 5-10% qtz eyes averaging 2-3 mm round. color varies from drab olive green to light green-gray. has an almost translucent look to the rock. Alteration decreases down hole

5% chlorite fracture filling, 1-4 mm wide with a 4 mm wide chloritic alteration halo along contacts.

Pyrite occurs as fine seams (<1%), assoc with chloritic fracture filling (2-20% within fracture) and as a fine disseminate.

Drillers dropped the Box containing contact - not sampled

Fragmental layer of tuff. Increases down hole

Inclusion of creamy banded chert

DEPTH (m)	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	Au	Ag	Cu	Zn
150							
151	29 546		150.6 - 151	<5	<0.5	69	210
			155.3				
	29 547	WR	156.3	<5	<0.5	13	102
	29 548	WR	157.3	<5	<0.5	10	158
	29 549	WR	158.3	<5	<0.5	13	168
	29 550	WR	159.3	<5	<0.5	8	128
	29 551	WR	160	<5	<0.5	9	142

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 12 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

DEPTH (m)	ALTERATION: Sericite, Silica, Carbonate, Chlorite, Graphite	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS: Au	Ag	Cu	Zn
165					Rhyolitic Flow									
166					chloritic fracture filling and alteration decreasing down hole									
167					light gray in color now									
168					- patchy sericite alt'n, overall very weak									
169														
170					- trace coarse cubic pyrite, <<< 1%, average 2 to 10 mm									
171														
172														
173														
174														
175														
176														
177														
178														
179														
180														

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : | SCALE : | PROJECT : | HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: | GROUND ELEV.: | DATE STARTED : | PAGE No. 13 of 16

COORDINATES : N. E. | DATE FINISHED : | REF. TO CLAIM CORNER:

INCLINATION : | AZIMUTH : | TOTAL DEPTH : m | LOGGED BY :

DEPTH (m)	ALTERATION: Sericite	Silica	Carbonate	Chlorite	Graphite	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL % CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS
180									Rhyolitic Flow Cont'd						
181									Same as previous page, very uniform						
182									no significant sulphides						
183															
184															
185															
186															
187															
188															
189															
190															
191															
192															
193															
194															
195															

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

[redacted] SIZE [redacted] : [redacted] SCALE : [redacted] PROJECT : [redacted] HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 14 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

DEPTH (m)	ALTERATION: Sericite / Silica / Carbonate / Chlorite / Graphite	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL & CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS: Au	Ag	Cu	Zn
195					Rhyolitic Flow Contld									
196														
197														
198														
199														
200														
201														
202					Lower contact sharp at 65° to CA.									
202.1					Dacitic Flow 202.1 – 206									
203					medium green, weakly chloritic; 10-25% feldspar phenocrysts, 1-3mm; very fine grained groundmass					203				
204					1-5% fine qtz-calcite fracture and whole unit shows weak to strong reactivity with HCl for calcite alteration; no significant sulfides.			29 552	WR	204	<5	<0.5	56	102
205					Lower contact sharp at 70° to CA.			29 553	WR	205	<5	<0.5	55	96
206					Rhyodacite Flow (possibly Tuff) 206 – 224.6									
207					light grey, very hard to scratch, fine to medium grained, with 20-30% fine smokey grey quartz eyes, average 1-3mm, round;									
208					uniform throughout the unit					208				
209					only minor qtz ± calcite fracture filling			29 554	WR	209	<5	<0.5	6	94
210					no significant sulfides			29 555	WR	210	<5	<0.5	24	92

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

[redacted] SIZE [redacted] : [redacted] SCALE : [redacted] PROJECT :

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED :

COORDINATES : N. E. DATE FINISHED :

INCLINATION : AZIMUTH : TOTAL DEPTH : m

HOLE No. : 93-BMD-001

PAGE No. 15 of 16

REF. TO CLAIM CORNER:

LOGGED BY :

DEPTH (m)	ALTERATION: Sericite	ALTERATION: Silica	ALTERATION: Carbonate	ALTERATION: Chlorite	FRACTURING	SULPHIDES	GEOLOGY	COMMENTS: / DESCRIPTIVE GEOLOGY	AVG. REC'Y	DRILLING INTERVAL & CORE RECOVERED	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	ASSAYS: Au	Ag	Cu	Zn
210								Rhyodacitic Flow (possibly Tuff) cont'd									
211																	
212																	
213																	
214																	
215																	
216																	
217																	
218																	
219																	
220																	
221																	
222																	
223								lower contact with Lapilli Tuff is hard to locate but seems to grade to more coarser lithic fragments present. So unit is possibly a tuff and not a flow.									
224																	
224.6																	
225								Rhyolitic Lapilli Tuff 224.6 – 236			556		224.6	<5	<0.5	13	50

BHP Minerals Canada Ltd. COMPOSITE DRILL LOG

CORE SIZE : SCALE : PROJECT : HOLE No. : 93-BMD-001

CASING COLLAR ELEV.: GROUND ELEV.: DATE STARTED : PAGE No. 16 of 16

COORDINATES : N. E. DATE FINISHED : REF. TO CLAIM CORNER:

INCLINATION : AZIMUTH : TOTAL DEPTH : m LOGGED BY :

ALTERATION: Sericite, Silica, Carbonate, Chlorite, Graphite | FRACTURING | SULPHIDES | GEOLOGY | COMMENTS: | AVG. REC'Y | DRILLING INTERVAL % CORE RECOVERED | SAMPLE No. | % SAMPLE RECOVERED | SAMPLE INTERVAL (m) | ASSAYS: Au, Ag, Cu, Zn

DESCRIPTIVE GEOLOGY

DEPTH (m)	SAMPLE No.	% SAMPLE RECOVERED	SAMPLE INTERVAL (m)	Au	Ag	Cu	Zn
225							
	29 556		225.9	<5	<0.5	13	50
	29 557		226.3	10	<0.5	66	66
	29 558	WR	227	<5	<0.5	15	104
	29 559	WR	228	<5	<0.5	8	76
	29 560	WR	229	<5	<0.5	4	68
	29 561	WR	230	<5	<0.5	5	68
	29 562	WR	231	<5	<0.5	8	72
	29 563	WR	232	<5	<0.5	8	86
	29 564	WR	233	<5	<0.5	4	86
	29 565	WR	234	<5	<0.5	6	78
	29 566	WR	235	<5	<0.5	8	102
	29 567	WR	236	<5	<0.5	6	76

Rhyolitic Lapilli Tuff to Agglomerate

226 — chert layer pale cream

color varies from olive green-brown to dk gray to gray-green.

Lapilli or fragments range in size from 2-3mm up to 3 cm, sub angular to rounded, of variable lithic to monomineralic (qtz) composition, minor porphyritic fragments included (<1%) and one large pyritic-graphitic fragment at 233.65m. (2cm × 5cm in size)

227

228 — olive green/brown

229

Fragment size appears to increase down hole.

230

231

minor qtz-calcite fracture filling, 1-5 mm wide.

232

233 — gray to dk gray

234

235

236 — gray green

EOH @ 236m

Sue Lomas

APPENDIX II

REPORT OF ANALYSIS

SOIL SURVEY

Laboratoires Chemex Ltee.

Essayeurs * Geochimistes * Chimistes Analytique
175 Boul, Industriel C.P. 284, Rouyn,
Quebec, Canada J9X 5C3
PHONE: 819-797-1922

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Project : 1161
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Page Number :1
Total Pages :2
Certificate Date: 24-NOV-92
Invoice No. :19224908
P.O. Number :
Account [redacted]EG

CORRECTED COPY

CERTIFICATE OF ANALYSIS A9224908

SAMPLE	PREP CODE	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
L1 000 SH	201 229	< 0.5	1	4	0.87	40	< 1	5	4	12
L1 025 SH	201 229	< 0.5	7	10	0.95	330	< 1	12	6	38
L1 050 SH	201 229	< 0.5	38	17	5.54	6100	3	12	16	112
L1 075 SH	201 229	< 0.5	2	8	0.86	175	< 1	6	4	20
L1 100 SH	201 229	< 0.5	2	4	0.64	265	< 1	4	12	32
L1 125 SH	201 229	< 0.5	1	6	0.48	195	< 1	4	20	38
L1 225 SH	201 229	< 0.5	3	50	0.28	1605	< 1	13	68	100
L1 275 SH	201 229	< 0.5	1	16	0.32	330	< 1	7	48	100
L1 300 SH	201 229	< 0.5	23	43	2.89	1845	1	66	6	66
L1 375 SH	201 229	< 0.5	2	9	0.51	2210	< 1	7	36	100
L1 400 SH	201 229	< 0.5	2	11	0.80	270	1	8	34	54
L1 450 SH	201 229	< 0.5	3	6	1.18	240	< 1	7	8	40
L1 475 SH	201 229	< 0.5	3	21	0.28	4110	< 1	7	36	364
L2+050 SH	201 229	< 0.5	1	11	0.24	290	< 1	6	32	68
L2+075 SH	201 229	< 0.5	2	16	0.37	180	< 1	10	46	60
L2+100 SH	201 229	< 0.5	3	6	0.71	175	< 1	8	8	28
L2 1+25 SH	201 229	< 0.5	1	3	0.46	145	< 1	3	12	24
L2 1+75 SH	201 229	< 0.5	2	10	0.46	550	< 1	7	36	42
L2 2+00 SH	201 229	< 0.5	3	18	0.54	195	< 1	9	26	66
L2 2+25 SH	201 229	< 0.5	1	13	0.30	200	< 1	8	46	86
L2 2+50 SH	201 229	< 0.5	1	13	0.21	95	1	10	54	68
L2 2+75 SH	201 229	< 0.5	2	14	0.45	55	< 1	8	48	66
L2 3+00 SH	201 229	< 0.5	1	10	0.34	140	< 1	8	26	76
L3 000 SH	201 229	< 0.5	3	15	0.84	220	< 1	10	28	48
L3 025 SH	201 229	< 0.5	3	12	0.71	130	< 1	9	18	42
L3 050 SH	201 229	< 0.5	7	10	1.36	135	< 1	12	10	38
L3 075 SH	201 229	< 0.5	10	13	0.81	840	< 1	9	40	42
L3 100 SH	201 229	< 0.5	9	14	1.12	385	< 1	13	22	52
L3 125 SH	201 229	< 0.5	1	10	0.15	175	< 1	6	30	84
L3 150 SH	201 229	< 0.5	4	11	0.87	330	< 1	9	18	52
L3 175 SH	201 229	< 0.5	7	11	1.19	385	< 1	13	14	58
L3 200 SH	201 229	< 0.5	5	7	1.01	225	< 1	10	10	36
L3 225 SH	201 229	< 0.5	9	13	1.50	620	< 1	14	10	62
L3 250 SH	201 229	< 0.5	6	10	1.16	310	< 1	11	12	30
L3 275 SH	201 229	< 0.5	4	9	0.91	250	< 1	9	14	44
L3 300 SH	201 229	< 0.5	6	9	1.07	190	< 1	12	4	36
L3 325 SH	201 229	< 0.5	2	5	0.46	85	< 1	5	20	32
L3 350 SH	201 229	< 0.5	7	15	1.14	565	< 1	12	20	58
L3 375 SH	201 229	< 0.5	10	10	1.23	900	< 1	12	16	40
L3 400 SH	201 229	< 0.5	8	9	1.15	690	< 1	12	18	54

CERTIFICATION: Thai D Ma

FOR SAMPLES L5 075 SH - L5 300 SH

Laboratoires Chemex Ltee.

Essayeurs * Geochimistes * Chimistes Analytique
175 Boul, Industriel C.P. 284, Rouyn,
Quebec, Canada J9X 5C3
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P.O. Number :
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CERTIFICATE OF ANALYSIS A9224908

SAMPLE	PREP CODE	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
L3 425 SH	201 229	< 0.5	8	13	1.09	970	< 1	13	18	52
L3 450 SH	201 229	< 0.5	5	9	1.01	225	< 1	12	6	42
L3 475 SH	201 229	< 0.5	5	9	1.00	225	< 1	11	4	36
L3 500 SH	201 229	< 0.5	18	15	1.05	3570	1	10	46	72
L4 000 SH	201 229	< 0.5	4	16	0.53	1035	< 1	9	10	44
L4 025 SH	201 229	< 0.5	1	12	0.39	180	< 1	8	18	56
L4 050 SH	201 229	< 0.5	2	19	0.60	425	< 1	11	12	34
L4 075 SH	201 229	< 0.5	7	11	1.39	145	< 1	15	10	54
L4 100 SH	201 229	< 0.5	2	9	0.50	60	< 1	7	8	22
L4 125 SH	201 229	< 0.5	2	12	0.27	180	< 1	8	22	74
L4 150 SH	201 229	< 0.5	4	16	0.40	1330	< 1	11	44	58
L4 175 SH	201 229	< 0.5	3	4	0.85	120	< 1	10	4	20
L4 200 SH	201 229	< 0.5	2	17	0.35	40	< 1	9	14	22
L4 225 SH	201 229	< 0.5	2	4	0.56	185	< 1	7	14	28
L4 250 SH	201 229	< 0.5	3	6	0.67	70	< 1	8	12	28
L4 275 SH	201 229	< 0.5	2	4	0.61	100	< 1	7	14	20
L4 300 SH	201 229	< 0.5	1	10	0.25	45	< 1	7	42	44
L5 000 SH	201 229	< 0.5	3	7	0.78	75	< 1	8	14	30
L5 025 SH	201 229	< 0.5	1	5	0.17	90	< 1	3	12	46
L5 050 SH	201 229	< 0.5	1	3	0.32	100	< 1	7	18	60
L5 075 SH	201 229	< 0.5	1	4	0.34	75	< 1	4	18	22
L5 100 SH	201 229	< 0.5	1	2	0.38	60	< 1	4	8	18
L5 125 SH	201 229	< 0.5	1	1	0.24	30	< 1	3	10	14
L5 150 SH	201 229	< 0.5	< 1	2	0.30	30	< 1	2	12	12
L5 175 SH	201 229	< 0.5	1	4	0.95	30	< 1	4	16	24
L5 200 SH	201 229	< 0.5	1	12	0.48	135	1	10	56	82
L5 225 SH	201 229	< 0.5	14	14	1.94	4190	2	9	38	108
L5 250 SH	201 229	< 0.5	1	10	0.16	130	< 1	6	44	88
L5 275 SH	201 229	< 0.5	< 1	4	0.38	35	< 1	4	8	18
L5 300 SH	201 229	< 0.5	1	7	0.36	80	< 1	7	22	48

CERTIFICATION: Thai D Ma

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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Invoice No. :I9224910
P.O. Number :
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CERTIFICATE OF ANALYSIS A9224910

SAMPLE	PREP CODE	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm	
L1E 00SB	201 229	< 0.5	5	6	1.09	80	< 1	14	4	24	
L1 025SB	201 229	< 0.5	4	7	1.00	110	< 1	12	4	24	
L1 050SB	201 229	< 0.5	3	2	0.79	230	< 1	6	6	30	
L1 075SB	201 229	< 0.5	8	13	4.08	105	1	21	10	32	
L1 100SB	201 229	< 0.5	2	1	1.67	50	< 1	5	6	16	
L1 125SB	201 229	< 0.5	2	< 1	1.31	45	< 1	6	4	12	
L1 150SB	201 229	< 0.5	7	6	3.00	135	< 1	18	6	34	
L1 175SB	201 229	< 0.5	5	7	2.97	100	< 1	12	6	30	
L1 200SB	201 229	< 0.5	6	3	2.01	75	< 1	15	2	26	
L1 225SB	201 229	< 0.5	3	3	0.74	120	< 1	7	2	12	
L1 250SB	201 229	< 0.5	20	35	4.18	595	1	51	4	84	
L1 275SB	201 229	< 0.5	3	4	0.78	75	< 1	11	2	18	
L1 325SB	201 229	< 0.5	9	11	2.66	115	< 1	19	6	76	
L1 350SB	201 229	< 0.5	3	1	1.09	80	< 1	9	4	24	
L1 375SB	201 229	< 0.5	9	10	3.39	220	1	17	12	56	
L1 400SB	201 229	< 0.5	5	10	2.00	75	1	15	14	46	
L1 425SB	201 229	< 0.5	8	7	1.42	140	< 1	14	4	18	
L1 450SB	201 229	< 0.5	2	1	1.50	85	< 1	4	4	20	
L1 475SB	201 229	< 0.5	4	3	2.00	95	< 1	9	4	28	
L1 500SB	201 229	< 0.5	3	3	1.52	120	< 1	6	6	22	
L2+00SB	201 229	< 0.5	5	3	1.54	90	< 1	12	4	28	
L2+25SB	201 229	< 0.5	5	4	0.90	70	< 1	13	4	16	
L2+50SB	201 229	< 0.5	4	2	0.86	85	< 1	12	2	16	
L2+75SB	201 229	< 0.5	4	3	0.82	115	< 1	9	4	12	
L2 1+25SB	201 229	< 0.5	3	7	0.83	130	< 1	9	2	20	
L2 1+50SB	201 229	< 0.5	7	7	1.43	165	< 1	15	4	30	
L2 2+50SB	201 229	< 0.5	3	3	0.90	60	< 1	10	4	16	
L4 125SB	201 229	< 0.5	4	3	1.18	65	< 1	12	6	24	
L4 175SB	201 229	< 0.5	2	4	0.67	80	< 1	7	12	22	
L5 125SB	201 229	< 0.5	2	1	0.73	50	< 1	7	2	8	
L5 150SB	201 229	< 0.5	2	1	0.77	45	< 1	7	4	12	
L5 175SB	201 229	< 0.5	5	6	2.97	75	< 1	16	6	38	
L5 200SB	201 229	< 0.5	1	1	0.92	35	< 1	4	4	12	
L5 275SB	201 229	< 0.5	3	3	0.99	60	< 1	13	4	20	

CERTIFICATION: Thai D Ma

APPENDIX III

REPORT OF ANALYSIS

DIAMOND DRILLING 93-BMD-001

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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Ontario, Canada L4W 2S3
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Invoice No. :I9313749
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CERTIFICATE OF ANALYSIS A9313749

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
29501	205 274	< 5	< 0.5	40	159	9.91	475	< 1	96	12	184
29502	205 274	< 5	< 0.5	17	114	5.03	140	< 1	68	2	116
29504	205 274	< 5	< 0.5	2	113	0.52	20	2	10	2	52
29505	205 274	< 5	< 0.5	1	67	0.34	15	1	7	2	38
29506	205 274	< 5	0.5	1	111	0.42	20	1	7	2	28
29507	205 274	15	< 0.5	1	63	0.28	20	1	5	< 2	26
29508	205 274	< 5	< 0.5	1	33	0.26	15	1	3	< 2	38
29509	205 274	10	< 0.5	2	15	0.35	15	1	4	18	64
29510	205 274	< 5	< 0.5	38	257	0.93	55	1	35	< 2	60
29511	205 274	< 5	< 0.5	8	21	0.49	20	3	7	2	28
29512	205 274	445	< 0.5	276	737	>15.00	180	14	283	86	226
29513	205 274	< 5	< 0.5	14	17	0.69	30	< 1	45	2	40
29520	205 274	< 5	< 0.5	36	51	6.53	1415	< 1	69	14	84
29536	205 274	< 5	< 0.5	20	19	5.05	835	< 1	15	< 2	66
29547	205 274	< 5	< 0.5	2	13	2.26	390	2	3	4	102
29548	205 274	< 5	< 0.5	2	10	2.52	460	1	1	6	158
29549	205 274	< 5	< 0.5	2	13	2.69	515	2	2	6	168
29550	205 274	< 5	< 0.5	1	8	2.52	510	2	2	4	128
29551	205 274	< 5	< 0.5	2	9	2.64	535	2	1	6	142
29552	205 274	< 5	< 0.5	30	56	6.64	1145	< 1	39	10	102
29553	205 274	< 5	< 0.5	30	55	6.51	1165	< 1	37	6	96
29554	205 274	< 5	< 0.5	2	6	2.29	760	< 1	1	4	94
29555	205 274	< 5	< 0.5	2	24	2.04	430	1	1	4	92
29558	205 274	< 5	< 0.5	1	15	0.87	215	1	3	16	104
29559	205 274	< 5	< 0.5	1	8	0.70	170	2	2	12	76
29560	205 274	< 5	< 0.5	1	4	0.73	190	3	2	14	68
29561	205 274	< 5	< 0.5	1	5	0.68	255	2	2	10	68
29562	205 274	< 5	< 0.5	1	8	0.76	200	2	3	12	72
29563	205 274	< 5	< 0.5	< 1	8	0.57	180	1	2	12	86
29564	205 274	< 5	< 0.5	1	4	0.75	280	2	2	12	86
29565	205 274	< 5	< 0.5	1	6	0.60	215	2	3	8	78
29566	205 274	< 5	< 0.5	1	8	0.73	220	2	3	12	102
29567	205 274	< 5	< 0.5	1	6	0.74	270	1	3	14	76

CERTIFICATION: Gert Bichler

Chemex Labs Ltd.

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CERTIFICATE OF ANALYSIS A9313752

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
29514	205	274	15	< 0.5	35	181	5.43	1315	1	78	22	216
29515	205	274	< 5	< 0.5	47	50	7.37	2150	< 1	86	18	220
29516	205	274	10	< 0.5	53	72	5.77	1300	1	110	20	436
29517	205	274	< 5	< 0.5	45	52	6.36	2190	< 1	71	12	260
29518	205	274	40	1.0	34	209	3.49	80	3	93	48	154
29519	205	274	35	< 0.5	51	67	9.26	1830	< 1	103	26	346
29521	205	274	< 5	< 0.5	41	68	6.28	1735	< 1	69	10	110
29522	205	274	< 5	0.5	1	10	0.51	95	2	4	2	90
29523	205	274	< 5	< 0.5	3	9	1.54	440	< 1	7	4	124
29524	205	274	< 5	< 0.5	2	7	1.22	425	< 1	5	4	110
29525	205	274	< 5	< 0.5	6	16	1.46	435	< 1	10	2	104
29526	205	274	< 5	< 0.5	8	23	1.84	560	< 1	14	2	116
29527	205	274	40	< 0.5	50	208	6.31	1180	< 1	102	26	120
29528	205	274	45	< 0.5	46	116	6.95	1285	1	119	30	98
29529	205	274	< 5	< 0.5	41	87	6.67	1500	< 1	109	6	236
29530	205	274	< 5	< 0.5	42	82	7.18	1425	< 1	120	4	240
29531	205	274	< 5	< 0.5	52	88	5.95	990	< 1	141	4	252
29532	205	274	< 5	< 0.5	42	58	7.31	1260	< 1	111	6	128
29533	205	274	< 5	< 0.5	32	80	4.35	1065	< 1	146	6	152
29534	205	274	25	< 0.5	42	146	5.54	560	5	179	20	156
29535	205	274	< 5	< 0.5	33	64	5.83	1080	< 1	321	6	66
29537	205	274	< 5	< 0.5	28	43	6.21	1115	< 1	37	12	104
29538	205	274	25	< 0.5	34	116	4.62	645	11	97	14	278
29539	205	274	< 5	< 0.5	24	55	5.60	990	< 1	58	6	112
29540	205	274	20	< 0.5	118	773	7.05	460	5	413	26	2380
29541	205	274	15	< 0.5	44	409	5.21	465	1	63	12	872
29542	205	274	< 5	< 0.5	40	62	7.86	1135	< 1	88	6	122
29543	205	274	< 5	< 0.5	48	68	5.91	1080	< 1	129	6	152
29544	205	274	10	< 0.5	49	104	7.93	1050	< 1	118	12	368
29545	205	274	< 5	< 0.5	35	84	6.10	920	< 1	78	12	270
29546	205	274	< 5	< 0.5	16	69	2.75	235	2	71	10	210
29556	205	274	< 5	< 0.5	1	13	0.90	160	2	6	14	50
29557	205	274	10	< 0.5	32	66	5.36	1175	< 1	40	12	66

CERTIFICATION: Stuart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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CERTIFICATE OF ANALYSIS A9314350

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm	Co ppm	Cu ppm	Fe %	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
29503	205	274	< 5	0.5	3	101	1.62	40	1	9	4	98

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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Ontario, Canada L4W 2S3
PHONE: 416-624-2806

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Account : EEG

CERTIFICATE OF ANALYSIS A9314351

SAMPLE	PREP CODE		Al2O3 % XRF	CaO % XRF	Cr2O3 % XRF	Fe2O3 % XRF	K2O % XRF	MgO % XRF	MnO % XRF	Na2O % XRF	P2O5 % XRF	SiO2 % XRF	TiO2 % XRF	LOI % XRF	TOTAL %	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Y ppm	Zr ppm
29503	299	--	13.10	0.16	< 0.01	2.62	1.63	0.33	0.02	3.37	0.04	75.40	0.30	2.45	99.40	661	33	47	41	72	379

CERTIFICATION: Adriana Alexandru

Laboratoires Chemex Ltee.

Essayeurs * Geochimistes * Chimistes Analytique
175 Boul, Industriel C.P. 284, Rouyn,
Quebec, Canada J9X 5C3
PHONE: 819-797-1922

To: BHP MINERALS CANADA LTD.

P.O. BOX 1953, 569 MONETA ST.
TIMMINS, ON
P4N 7X1

Project : 1161
Comments: ATTN: PHIL BURT

Page Number :1
Total Pages :1
Certificate Date: 27-MAY-93
Invoice No. : I9313756
P.O. Number :
Account : EEG

CERTIFICATE OF ANALYSIS A9313756

SAMPLE	PREP CODE		Al2O3 % XRF	CaO % XRF	Cr2O3 % XRF	Fe2O3 % XRF	K2O % XRF	MgO % XRF	MnO % XRF	Na2O % XRF	P2O5 % XRF	SiO2 % XRF	TiO2 % XRF	LOI % XRF	TOTAL %	Ba ppm	Nb ppm	Rb ppm	Sr ppm	Y ppm	Zr ppm
29501	299	--	17.30	0.14	0.02	14.80	0.26	5.54	0.08	0.29	0.06	51.80	1.21	7.80	99.30	268	6	12	21	29	177
29502	299	--	17.80	0.09	0.02	8.07	3.74	1.41	0.03	0.10	0.07	62.70	1.41	4.20	99.60	2090	8	100	26	38	138
29504	299	--	14.90	0.02	< 0.01	0.84	1.92	0.21	0.02	2.80	0.04	75.50	0.27	3.05	99.60	584	33	62	37	105	408
29505	299	--	14.60	0.30	< 0.01	1.29	2.09	0.63	0.02	2.91	0.04	74.80	0.29	2.75	99.70	508	35	69	87	110	411
29506	299	--	14.40	0.02	< 0.01	0.93	2.03	0.21	0.02	3.26	0.05	76.50	0.27	2.40	100.10	500	33	69	57	165	413
29507	299	--	14.90	0.02	< 0.01	0.73	1.99	0.19	0.02	2.63	0.05	75.30	0.28	3.00	99.10	431	35	67	61	110	413
29508	299	--	13.30	0.03	< 0.01	0.66	1.95	0.17	0.02	3.48	0.04	77.00	0.27	1.85	98.80	379	31	65	87	105	389
29509	299	--	14.20	0.03	< 0.01	0.74	2.00	0.17	0.02	3.29	0.04	77.50	0.27	2.20	100.50	338	34	67	67	120	420
29510	299	--	18.90	0.28	< 0.01	1.65	4.47	0.31	0.02	0.31	0.33	66.70	2.02	4.55	99.50	673	7	138	123	66	153
29511	299	--	12.70	0.02	< 0.01	0.95	2.68	0.23	0.02	1.78	0.05	78.00	0.28	1.90	98.60	399	29	95	62	100	371
29512	299	--	4.97	0.22	< 0.01	43.40	0.93	0.19	0.03	0.74	0.09	33.00	0.19	17.00	100.80	305	19	38	41	6	119
29513	299	--	17.60	0.30	< 0.01	1.03	2.28	0.34	0.01	5.95	0.18	70.30	0.42	1.75	100.20	502	10	94	124	18	127
29520	299	--	12.70	7.45	< 0.01	10.90	3.85	3.18	0.23	0.09	0.19	46.50	1.24	7.10	93.40	465	9	120	120	28	152
29536	299	--	12.20	6.78	< 0.01	8.37	2.01	3.24	0.14	1.77	0.14	51.70	0.92	12.00	99.30	379	7	71	164	31	153
29547	299	--	12.40	2.66	< 0.01	3.48	2.24	0.88	0.06	3.22	0.04	70.00	0.29	4.15	99.40	371	38	75	181	87	316
29548	299	--	11.90	3.14	< 0.01	3.97	2.15	0.72	0.07	3.21	0.04	69.30	0.24	4.15	98.90	374	30	75	141	81	361
29549	299	--	12.40	2.82	< 0.01	4.19	2.08	0.68	0.08	3.71	0.05	68.70	0.27	3.40	98.40	375	30	70	154	79	388
29550	299	--	12.30	2.81	< 0.01	4.19	1.86	0.73	0.09	3.92	0.05	70.30	0.24	3.45	99.90	339	28	57	111	73	340
29551	299	--	12.20	2.36	< 0.01	3.98	1.92	0.83	0.08	4.00	0.05	69.20	0.29	3.40	98.30	363	30	66	178	80	366
29552	299	--	12.40	8.40	< 0.01	11.30	0.73	4.98	0.19	2.55	0.10	46.90	1.06	9.80	98.40	183	6	22	240	22	97
29553	299	--	12.10	8.79	< 0.01	11.10	0.74	4.86	0.19	2.61	0.10	47.00	1.02	10.30	98.80	168	5	25	238	21	97
29554	299	--	12.50	2.12	< 0.01	4.42	1.97	0.74	0.13	4.18	0.05	70.20	0.25	3.10	99.70	417	33	69	106	87	391
29555	299	--	12.50	2.23	< 0.01	3.89	2.08	0.60	0.07	4.32	0.04	70.80	0.27	3.25	100.00	444	29	77	139	85	391
29558	299	--	11.80	1.87	< 0.01	1.76	4.09	0.43	0.04	2.92	0.02	75.10	0.07	1.75	99.80	817	45	113	120	91	102
29559	299	--	12.50	0.56	< 0.01	1.51	4.75	0.38	0.03	2.74	0.02	75.90	0.08	1.00	99.50	901	45	129	67	86	107
29560	299	--	13.10	0.62	< 0.01	1.58	5.32	0.63	0.03	2.13	0.02	75.30	0.07	1.55	100.40	895	48	152	58	96	113
29561	299	--	12.80	1.74	< 0.01	1.54	4.95	0.39	0.04	2.79	0.02	73.60	0.08	1.80	99.70	802	49	134	104	90	106
29562	299	--	13.00	0.45	< 0.01	1.61	4.53	0.25	0.04	3.58	0.02	74.50	0.07	0.80	98.80	735	53	132	53	99	114
29563	299	--	12.70	0.91	< 0.01	1.58	4.64	0.35	0.03	2.63	0.02	74.90	0.08	1.50	99.30	675	49	151	73	91	106
29564	299	--	12.80	1.16	< 0.01	1.72	4.43	0.42	0.05	3.15	0.02	74.40	0.08	1.75	100.00	708	52	142	64	89	114
29565	299	--	13.00	0.85	< 0.01	1.66	4.80	0.32	0.04	2.47	0.02	75.00	0.09	1.30	99.60	699	51	156	63	93	112
29566	299	--	12.80	0.98	< 0.01	1.79	4.55	0.31	0.04	2.65	0.02	74.00	0.11	1.20	98.40	685	49	153	64	91	116
29567	299	--	12.50	1.95	< 0.01	1.74	4.58	0.49	0.05	2.47	0.02	73.60	0.11	1.80	99.30	642	48	145	105	93	111

CERTIFICATION: Adriana Alexandru

Ontario

Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

Mining Lands Section
Geoscience Approvals Section
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

December 2, 1993

Our File: 2.15107
Transaction #: W9360.00138

Mining Recorder
Ministry of Northern
Development and Mines
60 Wilson Avenue
1st Floor
Timmins, Ontario
P4N 2S7

Dear Sir/Madam:

Subject: APPROVAL OF ASSESSMENT WORK CREDITS ON MINING CLAIMS P1189842 & 1189844 IN CARSCALLEN TOWNSHIP

The 45 day period specified in the Notice of Credit Reduction dated October 12, 1993, has passed.

The assessment work credits for Geochemistry, filed under Section 13 of the Mining Act Regulations have been approved as outlined on the attached Assessment Work Credit Form.

The approval date is November 26, 1993.

If you have any questions regarding this correspondence, please contact Lucille Jerome at (705) 670-5855.

Yours sincerely,

Ron C. Gashinski
Senior Manager, Mining Lands Section
Mining and Land Management Branch
Mines and Minerals Division

LJ/ls

cc: Resident Geologist
Timmins, Ontario

✓ Assessment Files Library
Toronto, Ontario

ASSESSMENT WORK CREDIT FORM

FILE NUMBER: 2.15107
DATE: November 26, 1993
RECORDER'S REPORT NUMBER: W9360.00138

RECORDED HOLDER: BHP Minerals Canada Ltd. **CLIENT NUMBER:**108137

TOWNSHIP OR AREA: Carscallen Township

CLAIM	VALUE OF WORK DONE ON THIS CLAIM	VALUE APPLIED TO THIS CLAIM	VALUE ASSIGNED FROM THIS CLAIM	RESERVE
P1189839	0	1056	0	0
1189840	0	1056	0	0
1189841	0	707	0	0
1189842	1420	0	1420	0
1189844	1399	0	1399	0
1189843	0	0	0	0
1189845	0	0	0	0
	2819	2819	2819	0

Ministry of Northern Development and Mines
Ontario

Report of Work Conducted After Recording Claim

Mining Act

Transaction Number: W9360.00138

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

2.15107

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

Recorded Holder(s): BHP MINERALS CANADA LTD.		Client No.: 108137
Address: 569 MONETA AVE., P.O. BOX 1953, TIMMINS, ONTARIO P4N 7X1		Telephone No.: 705-264-7221
Mining Division: PORCUPINE	Township/Area: CARSCALLEN	M or G Plan No.: G-3040
Dates Work Performed — From: OCTOBER 06, 1992	To: OCTOBER 18, 1992	

Work Performed (Check One Work Group Only)

	Work Group	Type
X	Geotechnical Survey	SOIL GEOCHEMISTRY
	Physical Work, Including Drilling	
	Rehabilitation	
	Other Authorized Work	
	Assays	
	Assignment from Reserve	

RECEIVED JUL 23 1993 MINING LANDS BRANCH

RECORDED JUL 12 1993 Receipt

Total Assessment Work Claimed on the Attached Statement of Costs $ 4,499

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

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

Name	Address
SUSAN LOMAS (AUTHOR)	P.O. BOX 2241, SOUTH PORCUPINE, ONTARIO P0N 1H0
GARY SMITH	394 JAMES AVE., TIMMINS, ONTARIO P4N 5T2
LOUIS PERRON	2519 BOUL. McWATTERS, McWATTERS, P.Q. J9X 5B7

(attach a schedule if necessary)

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

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date	Recorded Holder or Agent (Signature)

Certification of Work Report

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

Name and Address of Person Certifying: SUSAN LOMAS, P.O. BOX 2241, SOUTH PORCUPINE, ONTARIO P0N 1H0

Telepone No.	Date	Certified By (Signature)
705-264-7221	JUNE 30, 1993	Sue Lomas

For Office Use Only

Total Value Cr. Recorded	Date Recorded	Mining Recorder	Received Stamp
$4,499.00	JULY 12th/93	L. White	RECEIVED JUL 16 1993 @ 3:30 pm
	Deemed Approval Date: Oct. 12th/93	Date Approved	
	Date Notice for Amendments Sent		

0241 (03/91)

1ST RECD JULY 12th/93 $00

rk Report mber for pplying leserve	Claim Number (see Note 2)	Number of Claim Units	Value of Assessment Work Done on this Claim	Value Applied to this Claim	Value Assigned from this Claim	Reserve: Work to be Claimed at a Future Date
	1189839	16	0	1,056	0	0
	1189840	16	0	1,056	0	0
	1189841	16	0	1,067	0	0
	1189842	10	2,267	0	2,267	0
	1189844	15	2,232	0	2,232	0
	1189843	6	0	396	0	0
	1189845	14	0	924	0	0
	7		4.499	4.499	4.499	0
	Total Number of Claims		Total Value Work Done	Total Value Work Applied	Total Assigned From	Total Reserve

Credits you are claiming in this report may be cut back. In order to minimize the adverse effects of such deletions, please indicate from which claims you wish to priorize the deletion of credits. Please mark (✓) one of the following:

1. ☐ Credits are to be cut back starting with the claim listed last, working backwards.
2. ☐ Credits are to be cut back equally over all claims contained in this report of work.
3. ☐ Credits are to be cut back as priorized on the attached appendix.

In the event that you have not specified your choice of priority, option one will be implemented.

Note 1: Examples of beneficial interest are unrecorded transfers, option agreements, memorandum of agreements, etc., with respect to the mining claims.

Note 2: If work has been performed on patented or leased land, please complete the following:

I certify that the recorded holder had a beneficial interest in the patented or leased land at the time the work was performed.	Signature	Date

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

Statement of Costs for Assessment Credit
État des coûts aux fins du crédit d'évaluation

Transaction No./N° de transaction: W9360.00138

Mining Act/Loi sur les mines

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

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

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre	3,432	
	Field Supervision Supervision sur le terrain		3,432
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert-conseil	Type CHEMEX LABS	526	
			[illegible]
Supplies Used Fournitures utilisées	Type FIELD SUPPLIES	87	
	OFFICE SUPPLIES	29	
			116
Equipment Rental Location de matériel	Type		
			[illegible]
		Total Direct Costs Total des coûts directs	4,074

2. Indirect Costs/Coûts indirects

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

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type GAS	267	
	MAINTENANCE	158	
			[illegible]25
Food and Lodging Nourriture et hébergement			[illegible]
Mobilization and Demobilization Mobilisation et démobilisation			[illegible]
		Sub Total of Indirect Costs Total partiel des coûts indirects	[illegible]25
Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excédant pas 20 % des coûts directs)			[illegible]25
Total Value of Assessment Credit (Total of Direct and Allowable indirect costs)	**Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles**		[illegible]99

RECORDED
JUL 12 1993
Receipt ______

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

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

Filing Discounts

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

Total Value of Assessment Credit		Total Assessment Claimed
	× 0.50 =	

Remises pour dépôt

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

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

RECEIVED
JUL 12 1993
345 C

Certification Verifying Statement of Costs

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

that as GEOLOGIST I am authorized
(Recorded Holder, Agent, Position in Company)

to make this certification

Attestation de l'état des coûts

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

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

à faire cette attestation.

Signature	Date
(SUSAN LOMAS)	JUNE 30, 1993

0212 (04/91)

Nota : Dans cette formule, lorsqu'il désigne des personnes, le masculin est utilisé au sens neutre.

G-3040

CARSCALLEN TWP

TRIM LINE

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M. + S. – MINING AND SURFACE RIGHTS

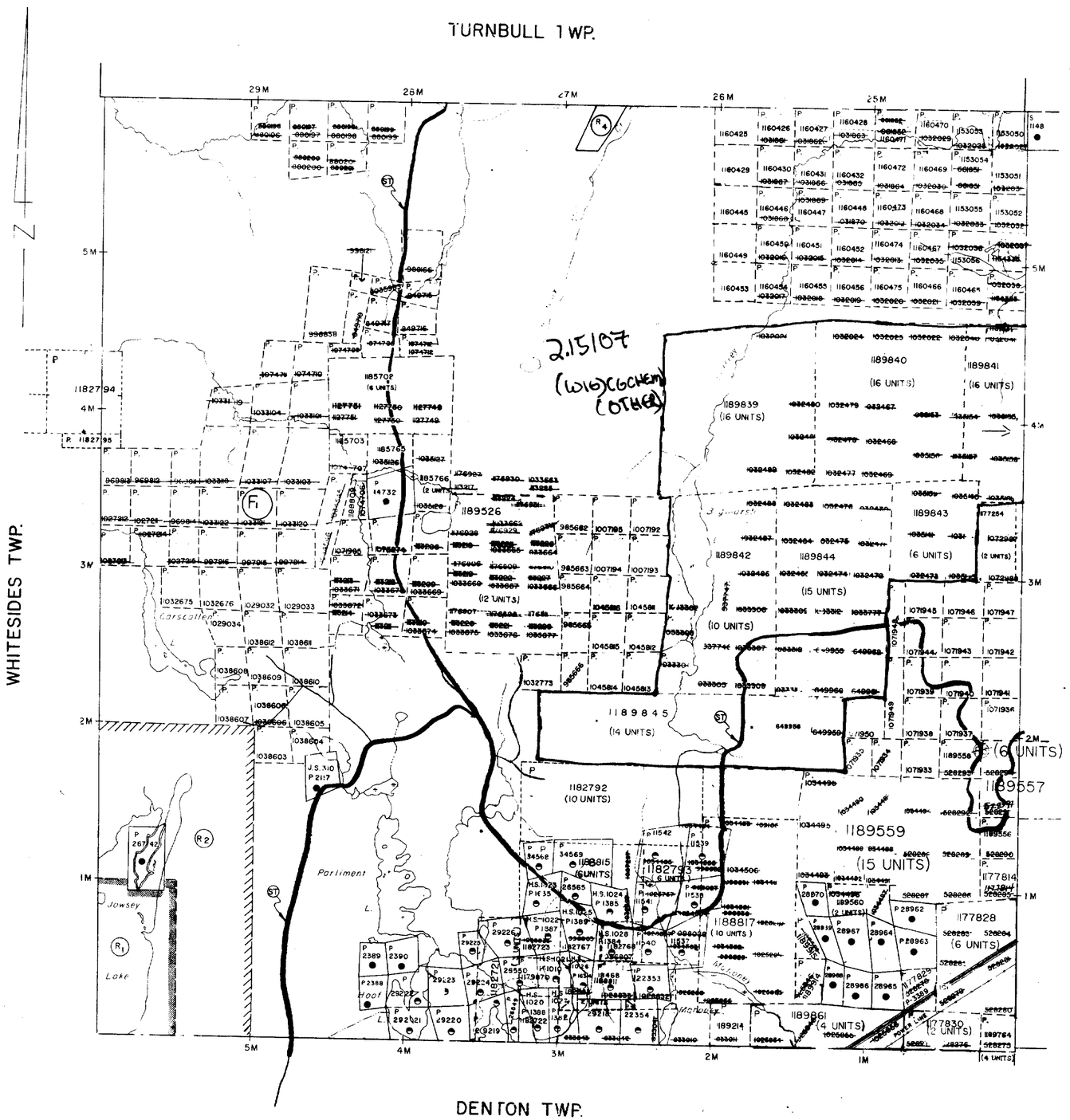
	Description	Order No.	Date	Disposition	File
R1	SEC. 42 (R.S.O. 60)		FEB. 3/66	M. & S.	171506
R2	DANA AND JOESEY LAKES PARK RES.			S.R.O.	171506
	SEC. 36/80	W66/83	NOV.18/83	M.R.O.	

~~R3 MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING, SALE OR LEASE, SECTION 35 OF THE MINING ACT, R.S.O. 1980, ORDER NO. W-86/86 NR DATED 86-OCT-10~~

R3 MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT R.S.O. 1990 ORDER NO. Q-P 30/92 NER DATED 92-NOV-02 AT 7:00 A.M. E.S.T. (CLAIM NOS P-528291 TO P-528294 INCL.)

ST APPLICATION PENDING UNDER THE PUBLIC LANDS ACT NOTICE RECEIVED 92-DEC-21 SNOWMOBILE TRAILS

R4 – AGGREGATE PERMIT – NOTICE RECEIVED JUNE 16, 1993



LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS ETC.
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" , SURFACE RIGHTS ONLY	
" , MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" , SURFACE RIGHTS ONLY	
" , MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER-IN COUNCIL	OC
RESERVATION	R
CANCELLED	C
SAND & GRAVEL	S

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHA. 380, SEC. 63, SUBSEC. 1

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 2000
(1 KM) (2 KM)

PORCUPINE MINING DIVISION
RECEIVED
JUL 15 1993

TOWNSHIP
CARSCALLEN

M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS

MINING DIVISION
PORCUPINE

LAND TITLES / REGISTRY DIVISION
COCHRANE

Ontario Ministry of Natural Resources — Land Management Branch

Date SEPTEMBER, 1994

Number G-3040

IN SERVICE NOV. 28/88

42A05NE8702 2.15107 CARSCALLEN

200

MAP SYMBOLOGY

Aerial Cableway
Boundary
International
Interprovincial
District, Township, Indian Reserve
Agreements
Lot, Concession
Approximate
Park Boundary
Bridge
Road, Railroad
Building
Chimney
Cliff, Pit, Pile
Contours
Interpolated
Approximate
Depression
Control Points
horizontal
vertical
Culvert
Falls
Fence, Hedge, Wall
Feature Outline
Flooded Land
Lock
Marsh or Swamp
Mast
Mine Head Frame
Outcrop

Pipeline (above ground)
Railroad
Single Track
Double Track
Abandoned
Turntable
Road
Highway, County, Township
Access (road of doubtful maintenance or significant driveway)
Trail, Bush Road (portage, etc.)
Rapids
Double line river with multiple rapids
Double line river with multiple rapids
Reservoir
River, Stream, Canal
Approximate boundary
Direction of flow
Rock
Significant
Shoal
Spot Elevation (false elevations)
Tower
Transmission Line
Poles
Pylons
Tunnel
Utility Poles
Wharf, Dock, Pier
Wooded Area

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M. + S. – MINING AND SURFACE RIGHTS

Reservation	Order No.	Date	Disposition	File
(4)			S.R.O.	164584

(S5) ~~MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING, SALE OR LEASE, SECTION 35 THE MINING ACT, RSO 1980, ORDER NO. W-8816 WR DATED 86-OCT-30.~~

(S6) MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT R.S.O. 1990 ORDER NO. O-P-22/92 NER DATED 92-AUG-01 (CLAIM NO.'S P-43541 TO P-43548 INCL. P-453399, P-454000, P-479303 TO P-479506 INCL. AND P-480315 TO P-480317 INCL.)

(S7) ~~MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING, SALE OR LEASE, SECTION 35 OF THE MINING ACT, RSO 1990 ORDER NO. W-5016 DATED 86-MAY-07.~~

(T) THIS TWP. SUBJECT TO FOREST ACTIVITY IN 1992/93. FURTHER INFORMATION AVAILABLE ON FILE.

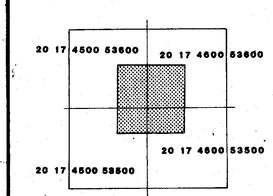
(S8) MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 ORDER NO. O-P-24/92 NER DATED 92-SEP-30 AT 7:00 A.M. E.S.T. (CLAIM NOS. P-528898 TO P-528872 INCL. AND P-528909 TO P-528886 INCL.)

(S9) MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 ORDER NO. O-P 51/92 NER DATED 92-NOV-06 AT 7:00 A.M. E.S.T. (CLAIM NOS P-43834 TO P-43853 INCL.)

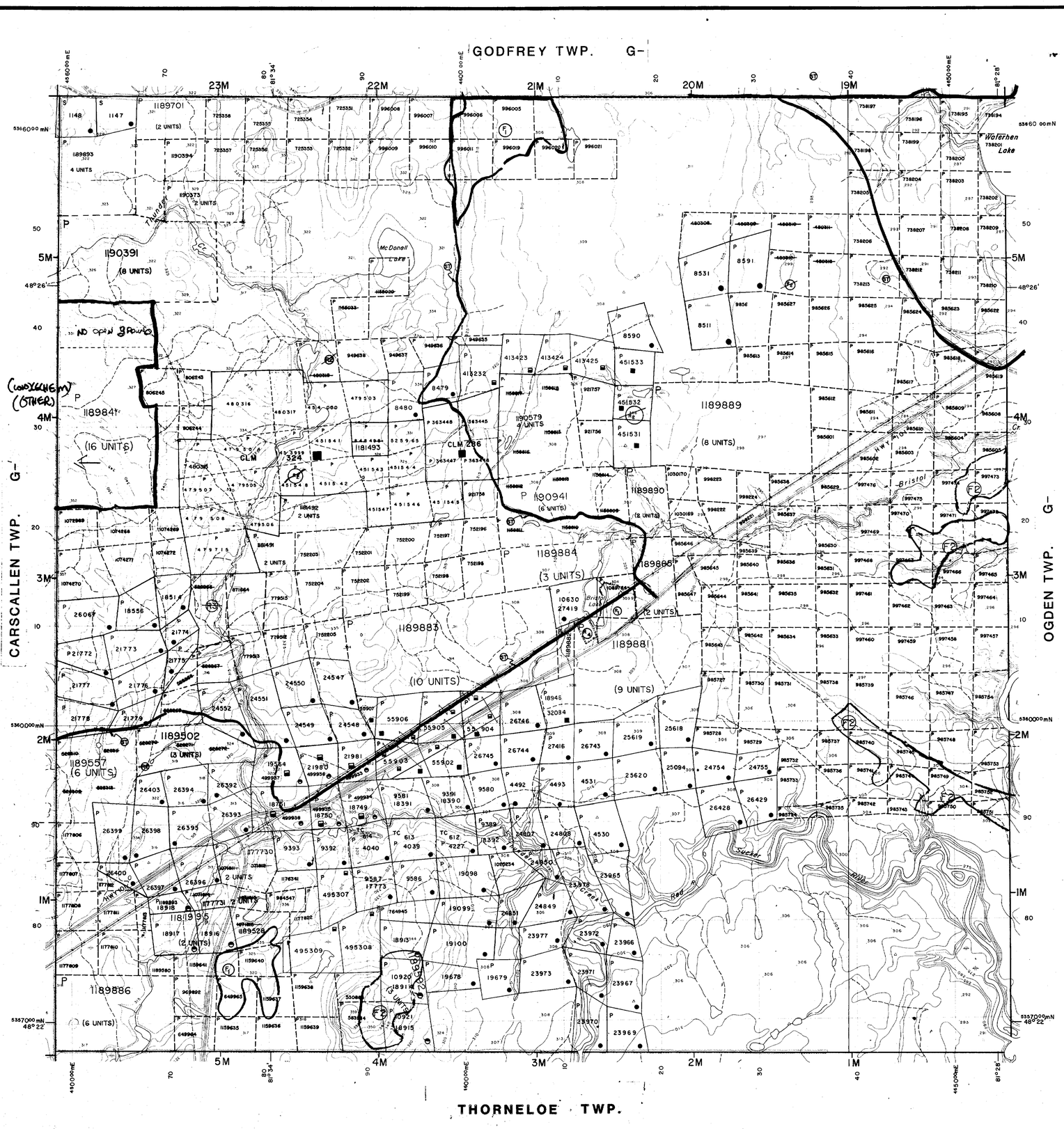
(S10) MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 ORDER NO. O-P 30/92 NER DATED 92-NOV-06 AT 7:00 A.M. E.S.T. (CLAIM NOS P-480308 TO P-480313 INCL. AND P-480318)

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

KEY PLAN
For O.B.M. Map



not to scale



LEGEND

HIGHWAY AND ROUTE No.
OTHER ROADS
TRAILS
SURVEYED LINES:
TOWNSHIPS, BASE LINES, ETC.
LOTS, MINING CLAIMS, PARCELS, ETC.
UNSURVEYED LINES:
LOT LINES
PARCEL BOUNDARY
MINING CLAIMS ETC.
RAILWAY AND RIGHT OF WAY
UTILITY LINES
NON-PERENNIAL STREAM
FLOODING OR FLOODING RIGHTS
SUBDIVISION OR COMPOSITE PLAN
RESERVATIONS
ORIGINAL SHORELINE
MARSH OR MUSKEG
MINES
TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◒
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	◨
" , MINING RIGHTS ONLY	◨
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	(R)
CANCELLED	⊗
SAND & GRAVEL	(S)

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 8, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC 1

500 Metres 0 1000 Metres
10 Chains 0 10 20 30 40 50 60 70 Chains
500 Feet 0 1000 2000 3000 4000 5000 Feet

SCALE 1:20 000
ZONE : 17

(T) APPLICATION PENDING UNDER THE PUBLIC LANDS ACT NOTICE RECEIVED 92-DEC-21 SNOWMOBILE TRAILS

(4) APPLICATION FOR CROWN LAND UNDER THE PUBLIC LANDS ACT NOTICE RECEIVED 93-MAY-4 C88 EXCAVATION TOP SOIL HOLDING STORAGE ETC.

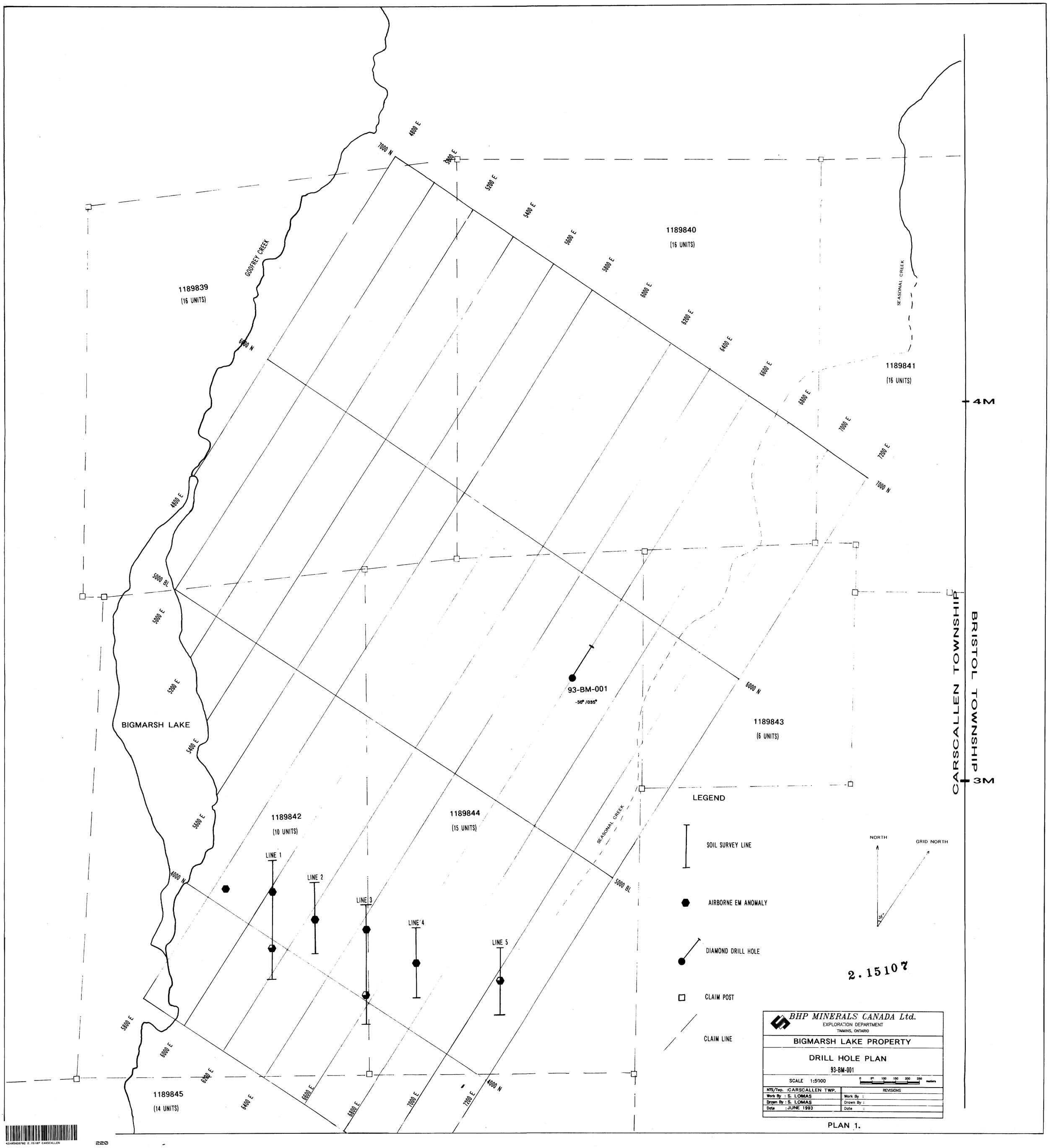
(F2) THIS TWP. SUBJECT TO FOREST ACTIVITY IN 1993/94. FURTHER INFORMATION AVAILABLE ON FILE.

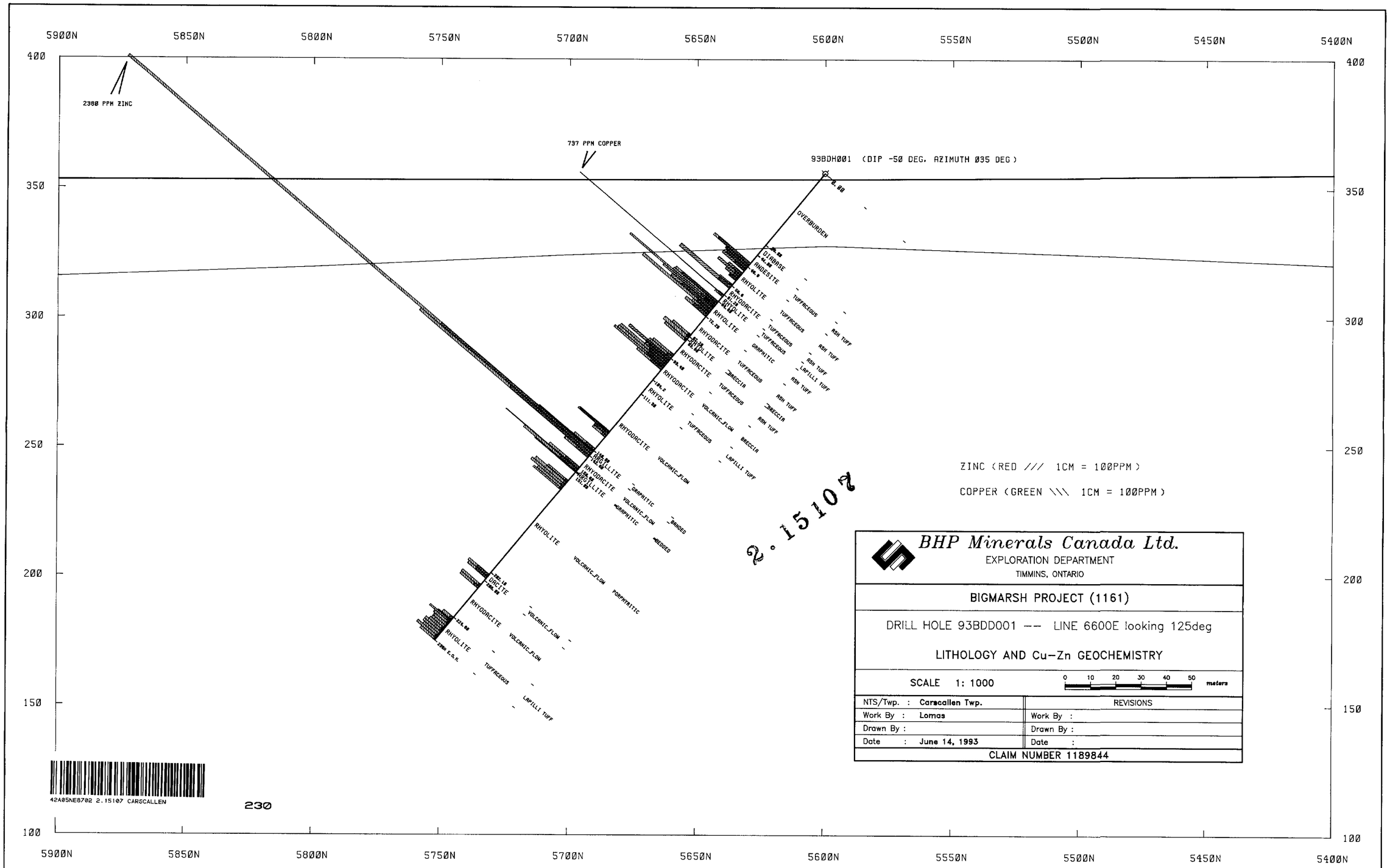
TOWNSHIP
BRISTOL
M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE

Ministry of Natural Resources — Land Management Branch
Ontario

ORIGINAL COMPILATION JULY 1984
ACTIVATED JULY 13, 1992 BY D.C
REVISED :
CHECKED BY G.W.

Number G-3998




5900N
5850N
5800N
5750N
5700N
5650N
5600N
5550N
5500N
5450N
5400N
400
350
300
250
200
150
100
2380 PPM ZINC
737 PPM COPPER
93BDH001 (DIP -50 DEG. AZIMUTH 035 DEG)
0.00
OVERBURDEN
DIABASE
ANDESITE
RHYOLITE
RHYODACITE
TUFFACEOUS
ASH TUFF
LAPILLI TUFF
BRECCIA
GRAPHITIC
VOLCANIC_FLOW
BANDED
REDUED
PORPHYRITIC
ZINC (RED /// 1CM = 100PPM)
COPPER (GREEN \\\ 1CM = 100PPM)
2.15107
BHP Minerals Canada Ltd.
EXPLORATION DEPARTMENT
TIMMINS, ONTARIO
BIGMARSH PROJECT (1161)
DRILL HOLE 93BDD001 -- LINE 6600E looking 125deg
LITHOLOGY AND Cu-Zn GEOCHEMISTRY
SCALE 1: 1000
0 10 20 30 40 50 meters
NTS/Twp. : Carscallen Twp.
Work By : Lomas
Drawn By :
Date : June 14, 1993
REVISIONS
Work By :
Drawn By :
Date :
CLAIM NUMBER 1189844
42A05NE8702 2.15107 CARSCALLEN
230