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THE MOOSE MOUNTAIN BASE METAL OCCURRENCE

by

Paul C. McLean M.A.Sc.
Consulting Geologist

January 15, 1961.

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THE MOOSE MOUNTAIN BASE METAL OCCURRENCE

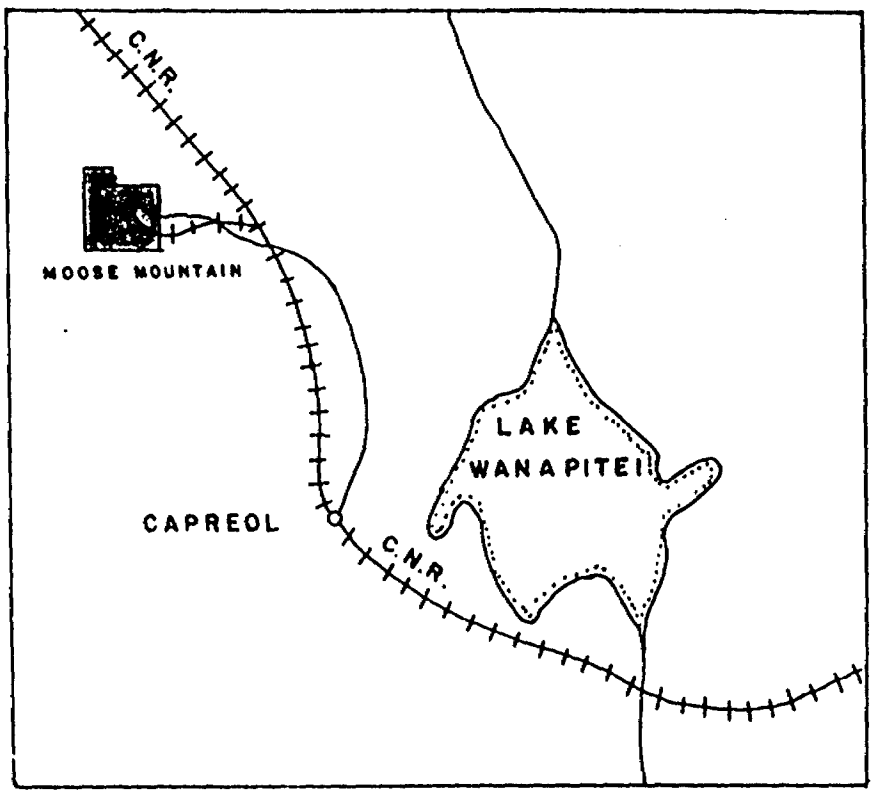
Introduction:

In the course of making a geological examination of the Moose Mountain property in July, 1980, significant zinc mineralization was observed in a sulphide zone, near the northwest corner of No. 2 pit south. As a result of encouraging assays, a limited drilling programme was recommended in order that an assessment of this occurrence could be made.

This drilling programme has recently been completed and the results were very gratifying. Consistent zinc values in 4 holes have indicated an ore shoot which has so far been traced for a length of 168 feet. This structure averages 5% zinc and also contains low copper, lead and silver values over an average true width of 5 feet. The zone has been tested below the open pit to a vertical depth of 300 feet and remains unexplored below this horizon.

In view of the fact that the sulphide zone containing the zinc values has been traced intermittently through No. 2 pit north and No. 2 pit south, for a distance of approximately 3,000 feet, and because of the

encouraging drilling results obtained, a major exploration programme has been recommended. The purpose of this programme is to extend and define the known ore shoot, and to test the sulphide zone along its entire length for additional ore shoots. Details of the proposed programme are to be found within the body of this report.



SCALE 1inch = 8miles

KEY MAP

Location and Means of Access:

The Moose Mountain property is located in Hutton Township, Sudbury Mining Division, Ontario, Canada. The property consists of patent lots and patent claims comprising part of lots 6 and 8, and lots 9, 10 and 11, Con. III lot 7, the south half of lot 8, lots 9, 10, 11 and 12 Con. IV, lots 9, 10, 11 and 12 Con. V, the south half of lots 10 and 11 Con. VI and the patent claims S-95561 to S-95576 inclusive, being the north half of lot 8 Con. IV and the south three quarters of lots 7 and 8 Con. V. These patent lots and claims are contiguous and comprise approximately 5,280 acres.

The property is situated 15 miles northwest of the Town of Capreol and is readily accessible by a paved secondary road. A 5 mile spur line connects the property to the main line of the Canadian National Railroad.

History of the Property:

The presence of iron in the area of the Roberts River was known for many years prior to the turn of the century. Development of the iron showings was initiated by a New York group in 1901. A crushing plant was installed in 1907 and the first ore shipments were made in 1908. The mine was closed down in 1920, following the production of over 400,000 tons of concentrates and briquettes. The iron ore was subsequently leased to Lowphos Ore Limited by Moose Mountain Consolidated Limited, and the lease was transferred to the successor company, National Steel of Canada Limited. The iron mine was re-opened in 1959 and a new mill was built which has a capacity of over 600,000 tons of pellets per year. The operation was shut down in June of 1979 and has remained closed since that time.

General Geology of the Area:

The southern half of Hutton Township is underlain by a large batholith of Algoman granite and granodiorite. The central and north-western section is underlain by Keewatin type lavas which range in composition from basalt to rhyolite. This group also includes tuff and the iron formations. The northern part of the area is underlain by

Huronian sediments which include the Gowganda, Serpent, Bruce and the Mississagi formations.

The area has been disected by frequent faults, and the older Keewatin tpye rocks have been intensly folded.

Geology of the Moose Mountain Property:

The property includes almost all of the Keewatin lava area which is located in the central and northwestern section of the township. The southern part of the group is underlain by Algoman granite, and the northern part is underlain by the Huronian sediments. The Keewatin rocks have been intruded by dykes and sills of granite, pegmatite, diabase and diorite. The iron formation occurs in eleven main lenses and several minor ones. These bodies pinch and swell along strike and are interbedded with lava flows and tuff beds which vary from basalt to rhyolite in composition.

In the vicinity of the No. 2 iron formation, the basic volcanics are overlain by a band of cherty and graphitic sediments which is heavily mineralized with sulphides. Pyrrhotite, pyrite, sphalerite galena, chalcopyrite, and minor arsenopyrite are present within this horizon. These mineralized sediments form most of the west wall of both No. 2 pit south and No. 2 pit north. Drilling to date has indicated that this sulphide rich horizon varies from 10 to 25 feet in width, and that it contains valuable amounts of zinc in the form of sphalerite.

The sulphide rich sediments are overlain by lean iron formation which is in turn overlain by more concentrated iron formation which was the iron ore. The ore was overlain by banded tuff.

All these horizons dip steeply to the east, and lie in a broad fold in which the strike changes from N60°W at the south end to almost north at the north end.

Diamond Drilling:

Following the discovery of zinc mineralization in the sulphide rich horizon, a limited diamond drilling programme was undertaken in order to assess the potential of the occurrence. Because it was not

practical to move the drill into No. 2 pit south, due to the presence of water in the bottom. A series of 4 holes were drilled from the west or footwall side of the pit, and were designed to intersect the sulphide zone below the bottom of the pit. These holes intersected the zone at approximately 50 foot intervals, and were located to avoid drilling through piles of waste rock which were present in the area. The holes were drilled northeast at -45°, and were all collared in basic lava. Upon emerging from the lava, the holes intersected the sulphide rich sediments, and were then completed in the lean iron formation.

Assay results from these holes were as follows:

Hole No.	Footage	Width	% Zinc	% Copper	% Lead	oz/ton Ag.
M-1	396.9-412.0	15.1	7.12	.25	.32	.13
M-2	325.1-330.3	5.2	3.24	.11	.31	.001
M-3	405.0-417.8	12.8	3.12	.08	.35	.07
M-4	314.3-326.7	12.4	5.14	.08	.42	.13

Average grade of zinc:

15.1	x 7.12 =	107.512
5.2	x 3.24 =	16.848
12.8	x 3.12 =	39.936
12.4	x 5.14 =	63.736
45.5		228.032

$\frac{228.032}{45.5}$ = 5.01% zinc

Average core width = $\frac{45.5}{4}$ = 11.4 feet.

Average true width, assuming a dip of 70° to the northeast = 11.4 sine 25°

11.4 x .4226 = 4.82 feet.

Average grade copper:

15.1	x .25 =	3.775
5.2	x .11 =	.572
12.8	x .08 =	1.024
12.4	x .08 =	.992
45.5		6.363

$\frac{6.363}{45.5}$ = .14% copper

Average grade lead:

15.1 x .32	= 4.832		
5.2 x .31	= 1.612		
12.8 x .35	= 4.48		
12.4 x .42	= 5.208		
45.5	16.132	$\frac{16.132}{45.5}$	= .36% lead

Average grade silver:

15.1 x .13	= 1.963		
5.2 x .001	= .0052		
12.8 x .07	= .896		
12.4 x .13	= 1.612		
45.5	4.4762	$\frac{4.4762}{45.5}$	= .098 oz silver

Total of average grades:

Zinc =	5.01% x 20 =	100.2	pounds per ton
copper =	.14% x 20 =	2.8	pounds per ton
lead =	.36% x 20 =	7.2	pounds per ton
silver =	.098 =	.098	oz per ton

Based on current Canadian prices, the gross value would be:

Zinc	100.2 x 48.5¢	per pound	= 48.60
copper	2.8 x 1.07	per pound	3.00
lead	7.2 x 45.5¢	per pound	3.28
silver	.098 x 18.00	per ounce	1.76
			$56.64

It should be noted that this figure does not allow for recovery losses or smelter charges.

Hole M-5 was located 25 feet northwest of hole M-4, and was drilled norheast at -45° to test the structure near the river diversion at the south end of No. 2 pit south. The suplhide zone was intersected from 89.6 to 103.2 feet, and the best values obtained were 1.56% zinc .14% copper, .35% lead and .01 oz per ton silver over 2.5 feet at 93.9 feet. While this material is below ore grade, the hole indicated that the structure continues to the north, and that base metal values are still present.

Conclusions:

The results of the limited drilling programme carried out on the Moose Mountain property must be regarded as highly encouraging. This drilling has indicated an ore shoot at least 168 feet in length and has shown that ore grade zinc mineralization persists to a depth of at least 300 feet below the surface. The geological setting of mineralized cherty and graphitic sediments, at a point where the sequence of lava flows change from basic to more acid types, is considered to be a very favourable environment for the deposition of base metals. Under these conditions, it would appear that there is a good chance for the deposition of a base metal ore body on the Moose Mountain property.

Recommendations:

As a guide to drilling, it is recommended that a mapping programme be carried out in order to accurately locate the edges of the open pits, and the sulphide zone. Mapping should also locate the waste piles so that drill locations can be designed to avoid them. It is suggested that a plane table and stadia rod be employed for the mapping, and that it be done on a scale of 1 inch to 100 feet.

It is also recommended that an airborne electro-magnetic and a magnetic survey be carried out over the entire property. In view of the close association of the sulphides with the No. 2 iron formation and because of the widespread occurrence of other iron formations throughout the property, it is felt that an airborne survey may be of value in locating additional sulphide zones. Any airborne electro-magnetic anomalies indicated by this survey should be located on the ground, and should be tested by drilling.

A major diamond drilling programme should be undertaken in order to further define the zinc ore shoot along strike, and also to depth. In addition, a series of holes should be drilled along the entire known strike length of the sulphide bearing horizon, at 100 foot intervals. The purpose of these holes would be to locate additional shoots which may occur remote from the known shoot. A minimum of 15,000 feet of AW core drilling will be required for this phase of the exploration programme.

Costs:

The estimated cost of the recommended programme will be approximately as follows:

Plane table mapping	4,000.00
Airborne geophysical surveys	5,000.00
Diamond drilling 15,000 feet @ $18.00 per foot	270,000.00
Engineering and assaying 20%	54,000.00
	333,000.00
contingencies 10%	33,300.00
Total cost of the programme	$366,300.00

An additional grant should be applied for under the Ontario Mineral Exploration Act, which could result in a rebate of 25% of the cost of the programme, or $91,575.00. If this grant were obtained, the total cost of the recommended programme would be reduced to $274,725.00.

Respectfully submitted,

Paul C. McLean M.A.Sc.
Consulting Geologist.

APPENDIX

References:

This report was written with reference to the following publications:

Moose Mountain - Wanapitei Area by L.F. Kindle, Ontario Department of Mines Vol XLI, part iv, 1932.

Geology of Hutton and Parkin Townships by H.D. Meyn, Ontario Department of Mines Geological Report 80, 1970.

Maps:

The following maps and sections are included with this report:

1) A plan of the property of Moose Mountain Consolidated Limited, showing the location of the open pits, the iron formations, and the sulphide zone on a scale of 1 inch to 660 feet.

2) A plan of drilling showing the location and geology of holes M-1 to M-5, on a scale of 1 inch to 20 feet.

3) A series of 5 sections of holes M-1 to M-5 on a scale of 1 inch to 20 feet.

Drill Logs:

A copy of the drill logs of holes M-1 to M-5 with assay results included are appended to this report.

Acknowledgements:

The writer wishes to express his thanks to Mr. J. Grant, manager of National Steel Inc. and to Mr. Art Armstrong and the maintenance crew at the property for their excellent cooperation and assistance during the period when drilling was in progress.

CERTIFICATE

I, Paul C. McLean, of the City of North Bay, in the District of Nipissing, do hereby certify as follows:

1. I am a consulting Mining Geologist, residing in the City of North Bay, Ontario, Canada.

2. I am a graduate of the University of Toronto, Faculty of Applied Science and Engineering, in the course of Mining Geology, 1950. I hold the degrees of B.A.Sc. and M.A.Sc. in Mining Geology.

3. I have no direct or indirect interest whatsoever nor do I expect to receive any in the property of Moose Mountain Consolidated Limited or in the securities thereof.

4. The accompanying report is based on the Author's personal knowledge of the property, and was written with reference to government publications.

Dated at North Bay, Ontario

this 15th day of January, 1981.

Paul C. McLean M.A.Sc.
Consulting Geologist.

OMII-PE8-C-80

H-1

LOCATION NW corner #2 pit South.

SECTION

PROPERTY MOOSE MOUNTAIN CONSOLIDATED LIMITED

LATITUDE

DEPARTURE

ELEVATION

STARTED Sept. 13, 1980

COMPLETED October 4, 1980

V.D. H.D.

BEARING N30°E DEPTH 449.0

DIP -45°

GENERAL GEOLOGY	ASSAY		SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE	FEET	NUMBER		
0.0-35.0						
Casing, Gravel, greenstone, some timber						
at 20 feet. Filled area.						
35.0-387.6						
Basalt, dark green, chloritic with local						
seams and small patches of brown biotite						
alteration, also small carbonate grains.						
Quartz and quartz carbonate stringers						
common locally up to 1" at various						
angles to the core						
79.1-89.0						
Altered section, highly carbonatized						
with frequent narrow seams of biotite						
developed.						
125.0 3" white barren quartz						
stringer at 60° to the core.						
131.0-131.6	Ag	Zn				
Irregular white calcite stringers	Nil	.59	0.6	9839	131.0-131.6	Irregular white calcite stringers
with Red sphalerite and some chalco.						with associated red sphalerite and
						some chalco. A few fine specks of
						galena.
[illegible] 1" calcite stringer at 45° to						
the core with ¼" blebs of ZnS.						

Markstay Drillers Ltd.
DRILLING CONTRACTOR

ENGINEER

D.D.H. No. K-1

GENERAL GEOLOGY	ASSAY		SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE	FEET	NUMBER		
142.7	Au.	Ag.				
Irregular narrow carbonate stringer with bleb of ZnS.	.002	Nil	0.7	9840	146.8-147.5	Altered carbonated section, pinkish with good % granular cubical pyrite. Local very fine galena.
158.5- A few grains of chalco and ZnS associated with a narrow carbonate stringer at 30° to the core.						
167.5-168.5 Highly carbonated section, grain of red sphalerite.						
184.3-184.7 Narrow carbonate stringer almost parallel to the core, contains fine chalco and ZnS.						
193.6 Irregular carboonate stringers with considerable ZnS over 1".						
202.8-209.1 Diorite dyke, fine grained green, massive and uniform, narrow carboonate stringers. Disseminated py and po and a few grains of chalco. Top contact at 30° to the core.						
213.9 Very narrow carbonate seams with ZnS.						
226.1 1" carboonate Breccia with pyrrhotite and chalcopyrite.						
226.2-231.9	Cu	Ni				
Diorite dyke, massive and uniform, well mineralized with % po and some chalco.	.02	.01	5.7	9841	226.2-231.9	Diorite dyke, relatively unaltered well mineralized throughout with very fine Po, chalco, some py.

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. M-1

GENERAL GEOLOGY	ASSAY		SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE	FEET	NUMBER		
238.6-242.5 Series of calcite stringers in this section up to ½". Local coarse blebs of ZnS and Chalco in or close to these stringers.						
	Ag	Zn				
242.5-245.4 Basalt, a few narrow carbonate threads contains fine disseminated ZnS and a little chalco throughout.	Nil	.36	3.0	9842	242.4-245.4	Altered lava, contains very narrow calcite stringers. Disseminated fine ZnS throughout, also a little chalcopyrite.
256.9 Specks of ZnS in 1" calcite stringer.						
273.0-273.5 Carbonate breccia with some ZnS and chalco.						
294.2 1" carbonate stringer with some Red ZnS.						
321.0 1" altered section with a quartz-tourmaline stringer included.						
245.4-311.0 Lava becoming coarser grained, gabbroic texture.						
311.0-387.6 Basalt, becoming fine grained, similar to the top of the hole.						
376.1-387.6 Lava contains a little red ZnS, pyrite and pyrrhotite associated with narrow seams, also disseminated. Occasional specs of galena and chalcopyrite.						

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. N-1

GENERAL GEOLOGY	ASSAY OZ.	ASSAY VALUE	SAMPLE FEET	SAMPLE NUMBER	FOOTAGE	ECONOMIC GEOLOGY
387.6-420.5						
Sediments, cherty, reddish brown to grey well bedded in fine bands which vary from 20° to 60° to the core. Sulphides are common throught, 20% to 50% sulphides, pyrrohtite, pyrite, sphalerite, chalco and galena as noted.						
387.6-391.1						
Cherty sediments, contain 20% pyrrhotite in bands and irregular patches up to 1" a little chalco n ted from 388.6 to 389.0.						
391.1-396.9 Pb	Ag	Cu Zn				
Cherty sediments with 30% coarse .07	.03	.13	2.4	9843	391.1-393.5	Cherty sediments, 30% pyrrhotite with some chalco and a little galena.
pyrrhotite in beds and seams and blebs. Some fine galena and a						
little ZnS with the pyrrhotite. .09	.06	.15 .18	3.4	9844	393.5-396.9	Cherty sediments, 20% pyrrhotite with some blebs of chalco and fime galena.
						½" band of sphalerite noted.
396.9-404.0 .32	.13	.12 3.30	3.1	9845	396.9-400.0	Cherty and chloritic sediments with considerable ZnS in bands and
Bedded cherty seds. with a decrease in pyrrhotite and an increase in ZnS. Some chalco and fine galena also present.						filling fractures, and disseminated. Some seams of chalco and fine dissem. galena.
.10	.04	.26 2.24	4.0	9846	400.0-404.0	Very cherty section with frequent seams of ZnS and po. Local seams of chalco, a little galena.
404.0-407.5 .33	.15	.17 21.66	3.5	9847	404.0-407.5	Very heavy red ZnS in cherty seds. Some pyrrhotite and pyrite, local chalco and a few grains of galena.
Very heavy sulphides in cherty seds 60% sulphides, mostly ZnS with some Po and pyrite. Local fine chalco with the ZnS. Specls of PbS. .26	.09	.01 3.20	3.3	9848	407.5-410.0	Cherty sediments, 2% sulphides, Pyrrhotite, ZnS with some Chalco and a little galena.

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. M-1

GENERAL GEOLOGY	ASSAY			SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE		FEET	NUMBER		
Pb	Ag	Cu	Zn				
.25	.62	1.48	.44	1.2	9849	410.8-412.0	Cherty sediments, minor ZnS but fair % chalco associated with po in blebs and stringers.
.06	Nil	.05	.12	5.0	9850	412.0-417.0	Cherty and chloritic sediments, 10% sulphides, mostly po with some py. Locally a little chalco. Minor ZnS.
.21	.02	.07	1.09	3.5	9851	417.0-420.5	Cherty and graphitic sediments, increase in ZnS with Po and Py. Local chalco and a little fine PbS.
.01	Nil	.01	.28	2.3	9852	420.5-422.8	Banded iron formation, 20% magnetite with narrow sulphide seams and disseminated grains of ZnS and a little chalco.

420.5-449.0
Banded iron formation, alternating beds of magnetite up to 1" and cherty and locally chloritic beds. Bedding at 30° to 45° to the core. Very hard drilling due to chery beds.

449.0
End of Hole.

Core is stored at 663 McIntyre St. W North Bay, Ontario.

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. M-2

LOCATION NW corner of No. 2 pit South.

SECTION

PROPERTY MOOSE MOUNTAIN CONSOLIDATED LIMITED

LATITUDE

DEPARTURE

ELEVATION

STARTED October 7, 1980

COMPLETED October 15, 1980

V.D. H.D.

BEARING N30°E DEPTH 340.0

DIP -45°

GENERAL GEOLOGY	ASSAY		SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE	FEET	NUMBER		
0.0-25.0						
Casing, gravel and rock fill.						
25.0-322.5						
Basalt, dark green, fine grained to 28.0 then becoming coarse grained gabbroic in texture. Occasional quartz carbonate stringers. Lava is well altered to chlorite and carbonate.						
88.1-88.5						
Diorite dyke, fine grained, 60° to the core.						
88.7 1" diorite dyklet at 60° to the core.						
	Au					
117.3 3" quartz carbonate stringer at 80° to the core. Some red ZnS.	Nil		0.3	9853	117.3-117.6	Quartz carbonate stringer, some red sphalerite.
125.0 1" carbonate stringer at 30° to the core, some red ZnS.						
177.1-182.5						
Lava with reddish altered carbonate grains in this section.						
211.0						
A little chalco and po in 3/4" carbonate stringer.						

Markstay Drillers Ltd.
DRILLING CONTRACTOR

ENGINEER

D.D.H. No. K-2

GENERAL GEOLOGY	ASSAY OZ.	ASSAY VALUE	SAMPLE FEET	SAMPLE NUMBER	FOOTAGE	ECONOMIC GEOLOGY
271.0-298.4 Diorite dyke, fine grained dark green, fresh and uniform in appearance. The odd narrow carbonate seam.						
	Pb	Ag Cu Zn				
323.5-336.6	.03	Nil .04 .43	1.8	9854	323.4-325.1	Cherty sediments, fair % Po. py with some ZnS and a little PbS and chalcopyrite.
Cherty sediments, dark grey to greenish, well bedded from 30° to 45° to the core. Fair sulphides in bands, blebs and as fracture filling.	.43	.005 .18 4.75	3.0	9855	325.1-328.1	Cherty sediments with 30% sulphides Good% red ZnS in bands and patches. Appreciable chalco. Pyrrhotite. Galena and locally a few grains of arsenopyrite.
	.15	Nil .02 1.18	2.2	9856	328.1-330.3	Cherty and chloritic sediments with fine bands of ZnS, also po and minor chalcopyrite.
	.02	Nil .10 .11	1.9	9857	330.3-332.2	Cherty sediments, 15% sulphides mostly pyrrhotite, a little Zns and chalco. Includes a 3" section with bands of magnetite.
	.02	Nil .29 .03	3.4	9858	332.2-336.6	Cherty sediments, 25% sulphides, mostly pyrrhotite. Local seams and patches of chalco. A little red ZnS.
336.0-340.0 Banded iron formation, alternating beds of magnetite, chert and chloritic beds. Bedding from 45° to parallel to the core.						
340.0 End of Hole.						
Core is stored at 663 McIntyre Street W., North Bay, Ontario.						

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. M-3

LOCATION NW corner of No. 2 Pit South.

SECTION

PROPERTY MOOSE MOUNTAIN CONSOLIDATED LIMITED

LATITUDE

DEPARTURE

ELEVATION

STARTED October 28, 1980

COMPLETED November 1, 1980

V.D. H.D.

BEARING N18°E DEPTH 444.0

DIP -45°

GENERAL GEOLOGY	ASSAY		SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE	FEET	NUMBER		
0.0-25.0 Casing, rock fill and gravel.						
25.0-300.0 Basalt, dark green, chloritic, medium grained. Quartz carbonate stringers up to 3" in some sections.						
133.4 6" white quartz vein, barren.						
215.8-225.5 Diorite dyke, fine grained green. Fine pyrrhotite disseminated throughout. Top contact at 70° to the core. Similar to the dyke encountered in hole M-1.						
300.0-343.0 Basalt as above, with brown biotite increasing in some sections.						
324.7-325.0 3" quartz stringers with patches of red ZnS and some chalco.						
343.0-399.5 Basalt, becoming fine grained, dark green flecked with biotite.						
348.1 5" quartz vein at 45° to core. ½" band of ZnS on lower contact, some chalco.						

Markstay Drillers Ltd.
DRILLING CONTRACTOR

ENGINEER

D.D.H. No. K-3

GENERAL GEOLOGY	ASSAY OZ.	ASSAY VALUE	SAMPLE FEET	SAMPLE NUMBER	FOOTAGE	ECONOMIC GEOLOGY
349.5 Some grains of ZnS over a narrow section.						
373.0-383.0 Diorite dyke, fine grained, greenish relatively fresh and uniform in appearance. Fine po throughout. Lower contact sharp at 30° to the core.						
Po	Ag	Cu Zn				
		.12	3.5	9859	399.5-403.0	Fine grained lava with narrow seams of ZnS throughout, minor chalco.
399.5-427.4 .01 Sediments, cherty and graphitic and black slatey beds. Mineralized throughout with pyrrhotite. Locally good ZnS, some chalco and a little galena. .19 Bedding from 45° to 60° to the core.	Nil	.01 .07	2.0	9860	403.0-405.0	Basalt and cherty sediments. Some fine ZnS in the lava. Po and py with the cherty biotitic sediments.
	.05	.04 1.13	2.8	9861	405.0-407.8	Cherty and graphitic sediments. Pyrrhotite with associated ZnS. Minor chalcopyrite.
.39	.09	.25 2.06	3.0	9862	407.8-410.8	Cherty sediments with 2" bands of po and Dissem ZnS, also some chalco. Locally galena, also some coarse patches of po with associated ZnS.
.54	.07	.03 .98	4.0	9863	410.8-414.8	Cherty sediments, very coarse po in patches, 20% sulphides, mostly po with some ZnS. Some fine PbS and a little chalcopyrite.
.19	.06	.03 8.88	3.0	9864	414.8-417.8	Cherty sediments, contains bands and patches of red ZnS up to 2", also some PbS and chalco and a little arsenopyrite. Po common throughout.
.23	.07	.08 1.05	2.5	9865	417.8-420.3	Cherty sediments. narrow bands and patches of sulphides. Po, ZnS, a little PbS and chalco.

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. M-3

GENERAL GEOLOGY	ASSAY		SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE	FEET	NUMBER		
Pb	Ag	Cu Zn				
.06	.04	.07 .13	3.5	9866	420.3-423.8	Cherty and slatey sediments, well mineralized with 1% po and some minor associated chalco. Minor PbS and ZnS.
.03	.03	.08 .13	3.6	9867	432.8-427.4	Slatey black sediments with 1% po with minor associated chalco. Minor ZnS.
427.4-444.0 Grading to banded iron formation. Bedding is contorted and varies from 30° to 45° to the core.						
444.0 End of hole.						
Core is stored at 663 McIntyre St. W., North Bay, Ontario.						

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. M-4

LOCATION NW corner of No 2 pit South.

SECTION

PROPERTY MOOSE MOUNTAIN CONSOLIDATED LIMITED

LATITUDE

DEPARTURE

ELEVATION

STARTED November 8, 1980

COMPLETED November 25, 1980

V.D. H.D.

BEARING N50°E DEPTH 380.0

DIP -45°

GENERAL GEOLOGY	ASSAY OZ.	ASSAY VALUE	SAMPLE FEET	SAMPLE NUMBER	FOOTAGE	ECONOMIC GEOLOGY
0.0-37.0						
Casing. mostly sand and gravel.						
37.0-314.3						
Basalt, dark green, medium grained. Cut by						
carbonate stringers at various angles.						
Local biotite alteration.						
48.3-48.7						
Quartz carbonate vein at 70° to the core						
speck of chalco.						
158.0 2" white quartz stringer at 80°						
to the core.						
291.0-314.3						
Basalt becoming fine grained near the						
top of the flow.						
293.3 A little disseminated red ZnS						
in a narrow altered, carbonated section.						
296.5 A few grains of ZnS and PbS and						
chalco in a narrow seam.						
298.8 Bleb of chalcopyrite.						
Pb	Ag	Cu Zn				
314.3-337.1 .79	.35	.08 7.70	2.7	9868	314.3-317.0	Cherty sediments with a 2" seam of
Cherty sediments, bedding at 45° to						massive ZnS and some PbS. Fine dissem
the core with some contorted sections.						ZnS throughout. Po, Minor chalco.

Markstay Drillers Limited

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. K-4

GENERAL GEOLOGY	ASSAY		SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE	FEET	NUMBER		
Well mineralized throughout with bands pb	Ag	Cu Zn				
and patches and grains of Sulphides .45	.06	.06 9.58	3.2	9869	317.0-320.2	Cherty sediments, very good ZnS in patches and seams up to 2", also finely disseminated between patches. Considerably po, also fine chalco and galena.
.28	.03	.07 1.96	3.0	9870	320.2-323.2	Cherty sediments, includes a 3" band of massive Zns, also finely dissem. Some coarse po, a little chalco and galena.
.27	.05	.09 .40	1.7	9871	323.2-324.9	Cherty sediments, coarse po with a little associated chalco. Minor ZnS.
.18	.14	.12 3.20	1.8	9872	324.9-326.7	Cherty sediments, coarse patches of po which is intergrown with red ZnS. Fair dissem ZnS as well, also fine chalco.
.11	.08	.08 .71	3.7	9873	326.7-330.4	Cherty sediments, sections well mineralized with very fine ZnS. A little chalco. Some coarse po.
.03	.08	.19 .10	2.2	9874	330.3-332.6	Cherty sediments, 10% po with local blebs of associated chalco. Rare ZnS.
	.02		4.5	9875	332.6-337.1	Cherty sediments. 7% po but no other sulphides noted.
337.1-343.0 Black carbonaceous sediments with approximately 20% pyrrhotite.	.01	.04	5.9	9876	337.1-343.0	Black carbonaceous sediments, 20% po in blebs and patches. A little local chalco with the pyrrhotite.
	.10	.54	2.3	9877	343.0-345.3	Cherty sediments with black carbonaceous beds. Pyrrhotite throughout with appreciable chalco in narrow fractures.

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. K-4

GENERAL GEOLOGY	ASSAY		SAMPLE		FOOTAGE	ECONOMIC GEOLOGY
	OZ.	VALUE	FEET	NUMBER		
343.0-372.8	Ag	Cu				
Alternating cherty and black carbonaceous beds, well mineralized with 10% pyrrhotite disseminated and in patches. Rare grains of chalco.	.08	.11	5.2	9878	345.3-350.5	Cherty sediments, 5% po throughout. Very fine chalcopyrite filling tiney cracks throughout.
372.8-308.0						
Banded iron formation, bedding mostly at 30° to the core.						
380.0						
End of hole.						
Core is stored at 663 McIntyre Street W., North Bay, Ontario.						

DRILLING CONTRACTOR

ENGINEER

D.D.H. No. M-5

LOCATION 30 feet S of River diversion S of No 2 Pit north.

SECTION

PROPERTY MOOSE MOUNTAIN CONSOLIDATED LIMITED

LATITUDE

DEPARTURE

ELEVATION

STARTED December 6, 1980

COMPLETED December 10, 1980

V.D. H.D.

BEARING N50°E DEPTH 142.0

DIP -45°

GENERAL GEOLOGY	ASSAY OZ.	ASSAY VALUE	SAMPLE FEET	SAMPLE NUMBER	FOOTAGE	ECONOMIC GEOLOGY
0.0–22.0						
Casing, rock fill.						
22.0–88.0						
Basalt, fine grained dark green with brown biotite common.						
co Au Pb	Ag	Cu Zn				
88.0–104.0 .085 trace	Nil		1.0	9879	89.6–90.6	Mineralized graphitic sediments and
Sediments, tuffaceous to 90.0, then graphitic and cherty. Mineralized with pyrite and pyrrhotite and local ZnS, PbS and chalco.						cherty seds. 10% sulphides, mostly pyrite, appreciable aspy in this section. Minor ZnS.
.35	.01	.14 1.56	2.5	9880	93.9–96.4	Cherty sediments, fair% red ZnS, also a little PbS, some chalco. Pyrite.
	.02	.02 .18	2.3	9881	96.4–98.7	Cherty sediments, 10% pyrrhotite with a little chalco and fine ZnS.
	Nil	.16	2.3	9882	100.9–103.2	Cherty sediments, 10% po with local narrow seams of chalco. Trace of ZnS.
104.0–142.0						
Banded iron formation, bedding mostly at 30° to the core. Cherty beds alternating with bands of magnetite from 1/8" to 2".						
142.0 End of hole.						
Core is stored at 663 McIntyre Street W., North Bay, Ontario.						

Markstay Drillers Limited
DRILLING CONTRACTOR

ENGINEER

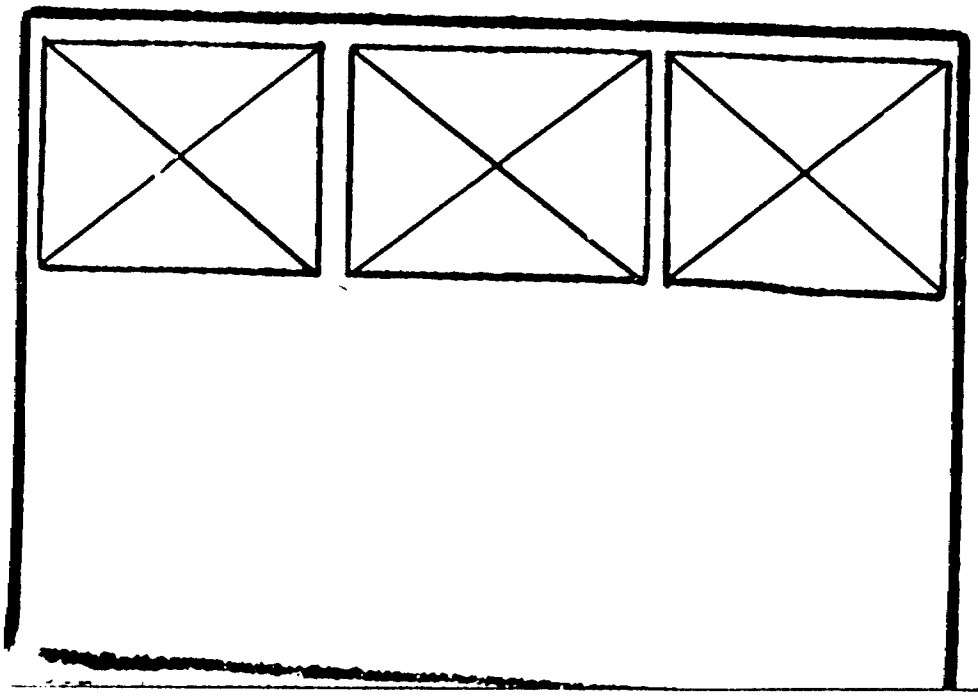
FOR ADDITIONAL INFORMATION SEE MAPS:

HUTTON-0034 #3-8

SEE ACCOMPANYING MAP(S) IDENTIFIED AS

HUITON-0034, #1, #2

LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE (X)



HUTTON-0034, #1

HUTTON TWP

KITCHENER TWP

11 SOUTH PIT

11N

11A

11

10 PIT

ROBERTS RIVER

2 NORTH PIT

2 SOUTH PIT

NATIONAL STEEL

IRON PLANT

N

8

3 PIT

1-A

6

5

9

9-A

9-B

MOOSE MOUNTAIN CONSOLIDATED LTD.

PLAN OF PROPERTY

LEGEND

SCALE:

1 inch = 660 feet

IRON FORMATION

SULPHIDE ZONE

ASSAY VALUES % ZINC OVER WIDTH IN FEET

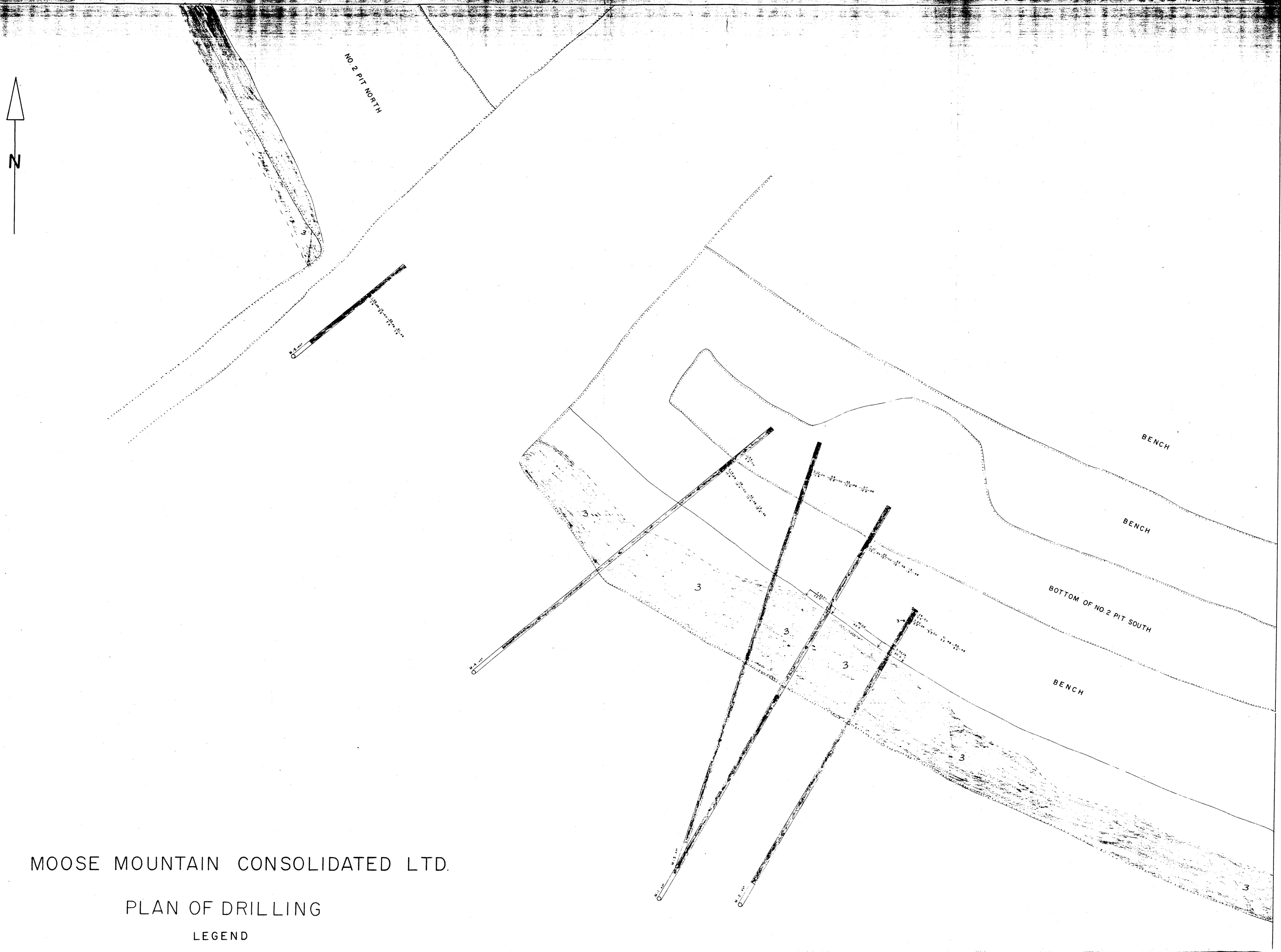
PAUL C. McLEAN AFTER NATIONAL STEEL PLAN JULY 1980

OM11-9E8-C-80 63.3932

41114NE0200 0034 HUTTON

200

HUTTON-0034, #1

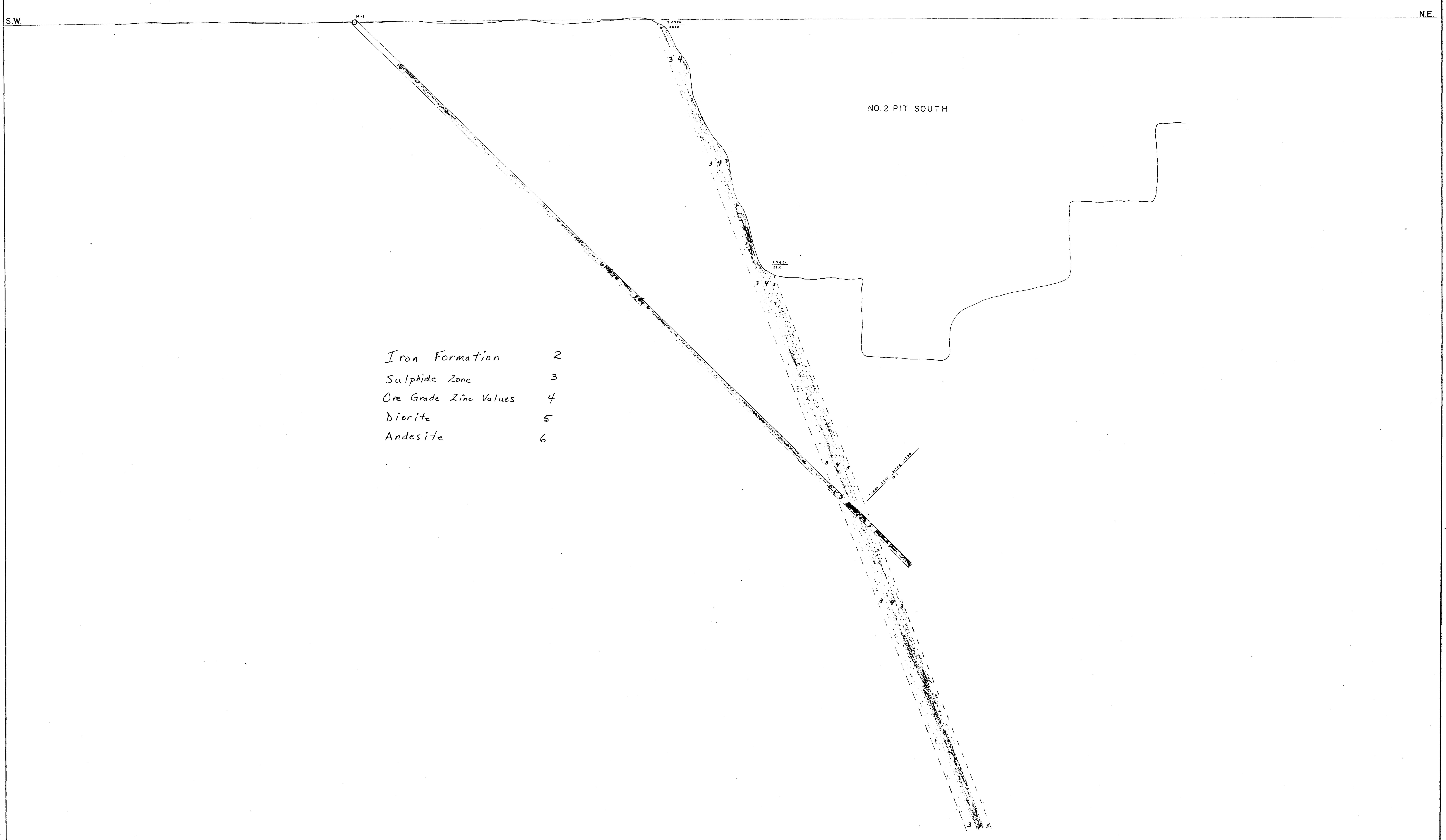


MOOSE MOUNTAIN CONSOLIDATED LTD.

PLAN OF DRILLING

LEGEND

210



MOOSE MOUNTAIN CONSOLIDATED LTD.

SECTION THROUGH HOLE M-1

SCALE: 1inch = 20 feet

PAUL C. McLEAN JANUARY 1961.

41I14NE0200 0034 HUTTON 220

63-3732

OMIL-PER-C-80

HUTTON-0034 #3

S.W.

N.E.

M-2

NO. 2 PIT SOUTH

Iron Formation 2
Sulphide Zone 3
Ore Grade Zinc Values 4
Diorite 5
Andesite 6

MOOSE MOUNTAIN CONSOLIDATED LTD.

SECTION THROUGH HOLE M-2

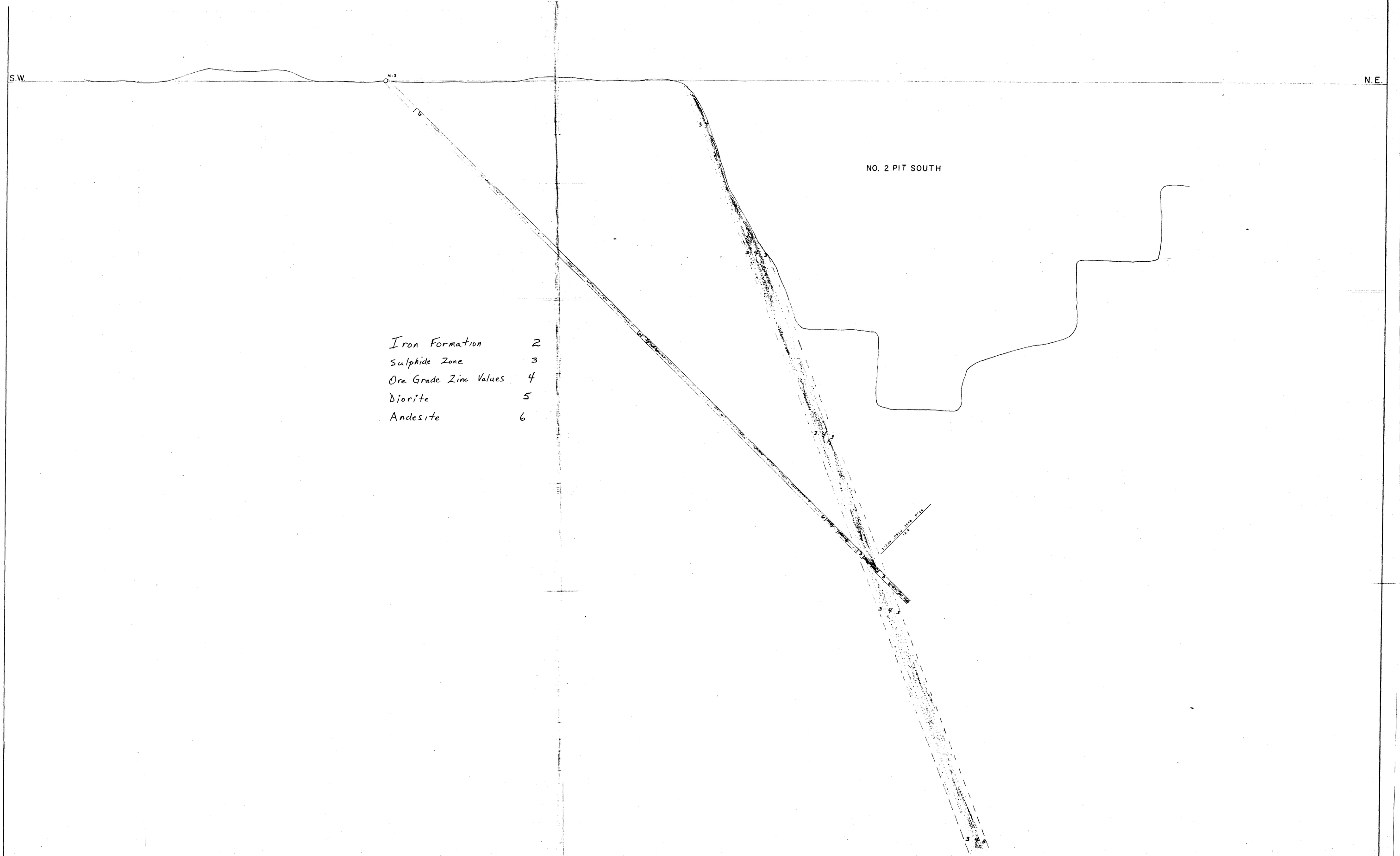
SCALE: 1inch = 20 feet

230

E 3-7932

PAUL C. McLEAN JANUARY 1981.

HUTTON-0034,#4



MOOSE MOUNTAIN CONSOLIDATED LTD.

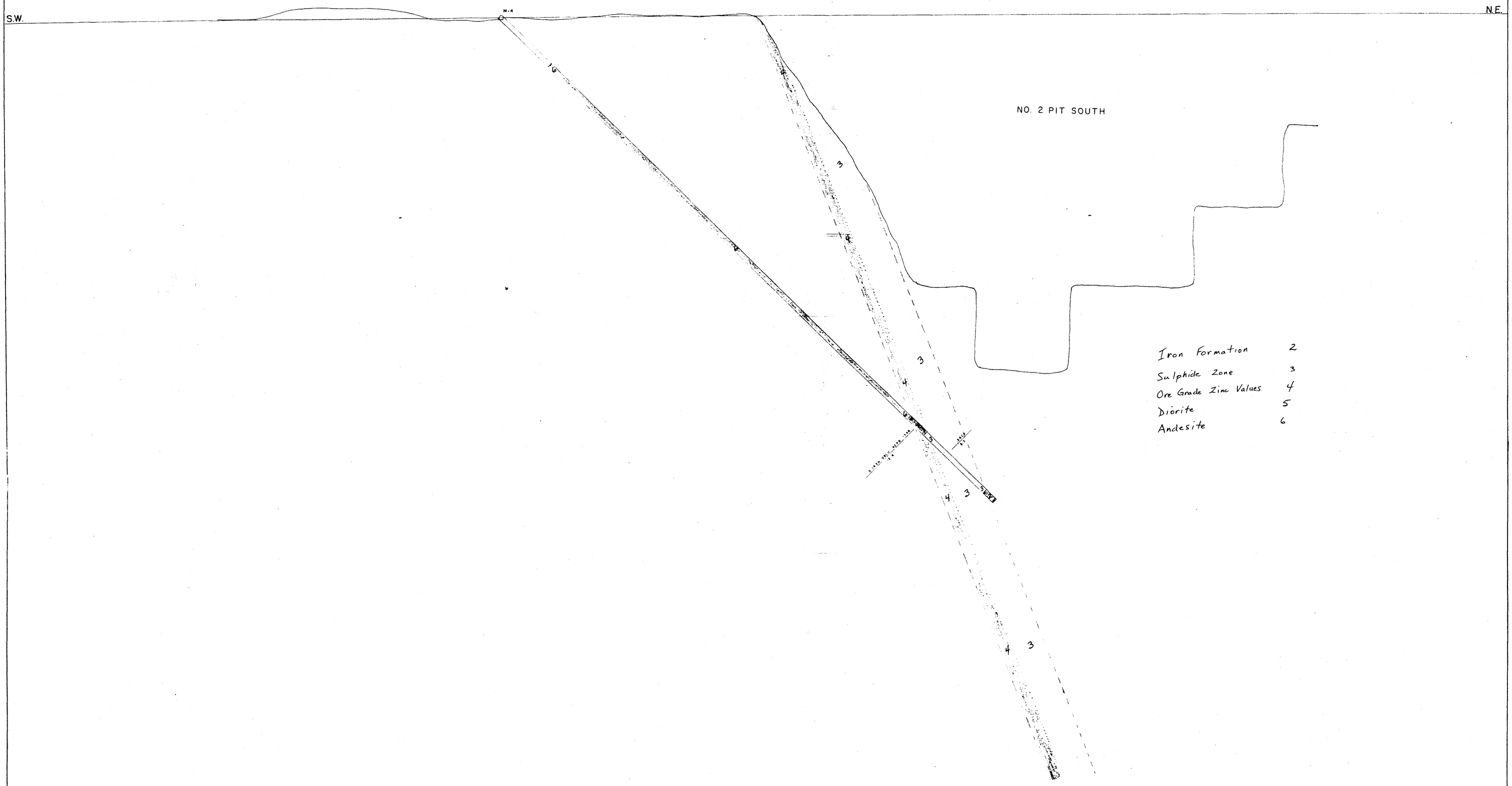
SECTION THROUGH HOLE M-3

SCALE: 1inch = 20 feet

240
63-3932
OM11-PE8-C-80

PAUL C. McLEAN JANUARY 1981.

HUTTON-0034,#5



MOOSE MOUNTAIN CONSOLIDATED LTD.

SECTION THROUGH HOLE M-4

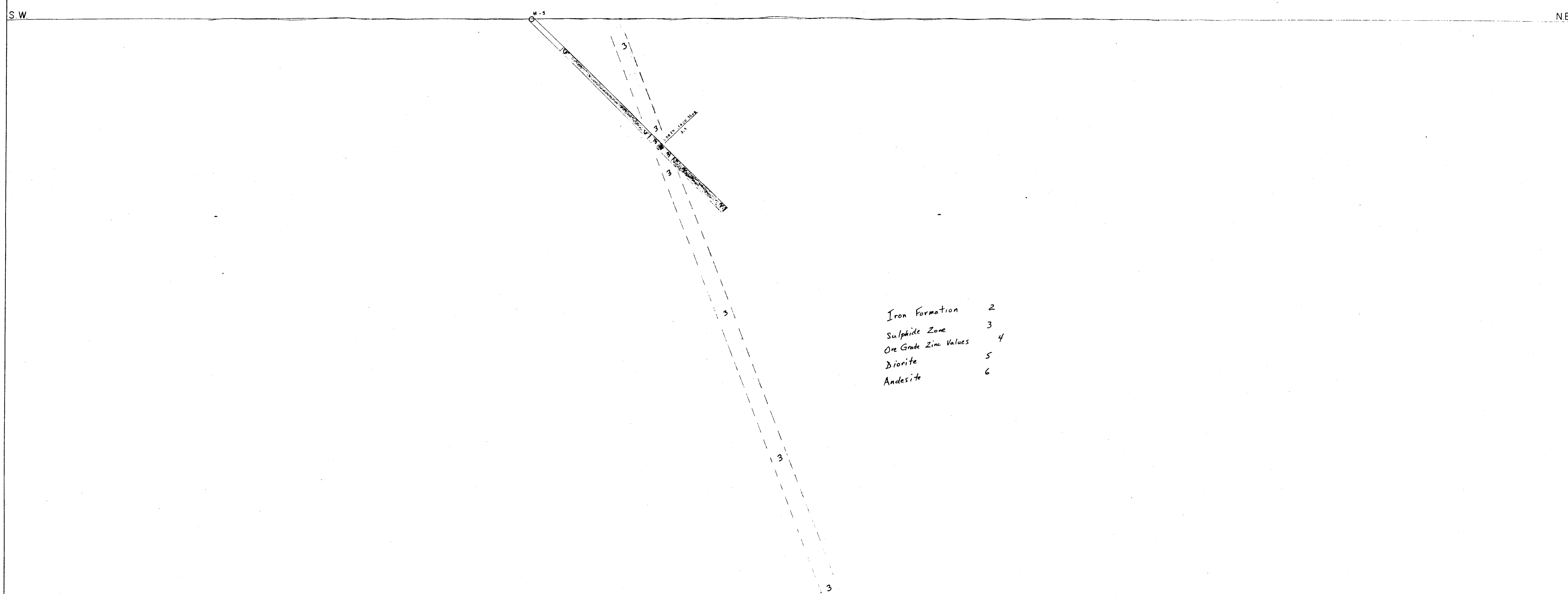
SCALE: 1 inch = 20 feet

★HUTTON-0034,#6

250 2

PAUL C. McLEAN JANUARY 1981.

OM II - PES - C-80



MOOSE MOUNTAIN CONSOLIDATED LTD.

SECTION THROUGH HOLE M-5

SCALE: 1inch = 20 feet

PAUL C. McLEAN JANUARY 1981.

63-3932

260

★HUTTON-0034, #7