



WELCOME NORTH MINES LTD. (N.P.L.)
1027-470 Granville St., Vancouver, B.C. V6C 1V5 Telephone (604) 687-1658

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

SUN 1-16 AND DM 1-12 CLAIMS

N.T.S. 105F-10

Longitude 132°40'W

Latitude 61°35'N

WATSON LAKE MINING DISTRICT

YUKON TERRITORY

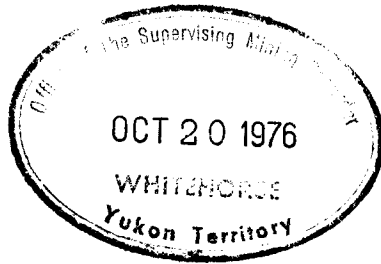
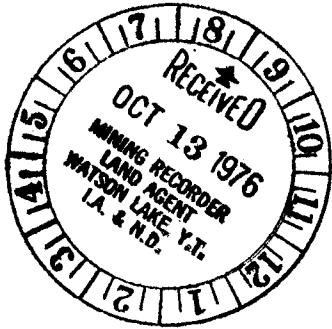
During the Period Sept. 10-16, 1976



September 21, 1976.

G.F. McArthur

070133



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 2800.00

2800

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~~Resident Geologist or~~
~~Resident Mining Engineer~~

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

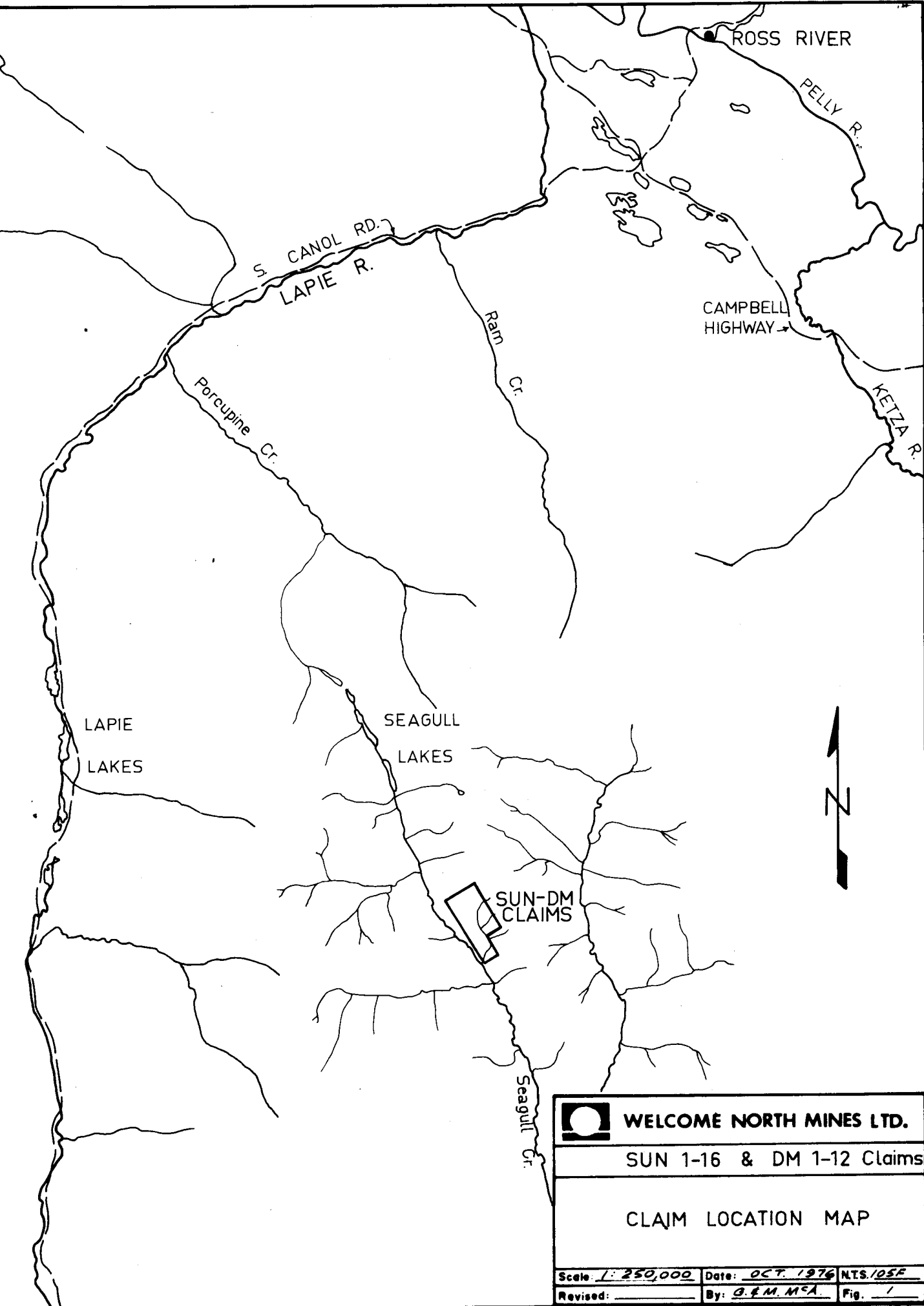
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B.R. BAXTER
Supervising Mining Recorder

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Commissioner of Yukon Territory

TABLE OF CONTENTS

	Page
SUMMARY AND CONCLUSIONS	1
INTRODUCTION	2
MINERAL CLAIMS	2
LOCATION AND ACCESS	2
PHYSIOGRAPHY AND VEGETATION	2
REGIONAL GEOLOGY	3
GEOLOGY	3
GEOCHEMICAL SURVEY	4
1. Method of Survey	4
2. Method of Analysis	4
3. Treatment of Data	4
5. Interpretation of Results	5
RECOMMENDATIONS	5
APPENDICES	
APPENDIX A	Assay Results
APPENDIX B	Bibliography
APPENDIX C	Writer's Certificate
APPENDIX D	Statement of Costs
APPENDIX E	Affidavit Supporting Statement of Costs
APPENDIX F	Personnel
FIGURES	
1. Location Map	Frontispiece
2. Claim Map	
MAPS	
1. Plate I	Copper Geochemistry SUN-DM Claims
2. Plate II	Lead Geochemistry SUN-DM Claims
3. Plate III	Zinc Geochemistry SUN-DM Claims



ROSS RIVER

PELLY R.

S. CANOL RD.
LAPIE R.

CAMPBELL
HIGHWAY →

KETZA R.

Porcupine Cr.

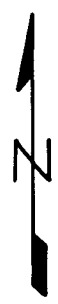
Ram Cr.

LAPIE
LAKES

SEAGULL
LAKES

SUN-DM
CLAIMS

Seagull Cr.



WELCOME NORTH MINES LTD.

SUN 1-16 & DM 1-12 Claims

CLAIM LOCATION MAP

Scale: 1:250,000 Date: OCT. 1976 NTS.105F

Revised: By: G.F.M. MCA Fig. 1

SUMMARY AND CONCLUSIONS

1. The property consists of 28 full-sized claims, the SUN 1-16 and DM 1-12 claims. It is located 28 air miles south of Ross River in the Pelly Mountains.
3. Mineralized float consisting of arsenopyrite, lead and zinc in phyllites was discovered on the claims. No previous work is known to have been done on the area covered by the SUN-DM claim groups.
3. The claim area is underlain by late Paleozoic phyllites after intermediate pyroclastic, volcanoclastic and sedimentary rocks.
4. Three areas of anomalous soil geochemistry have been outlined in the reconnaissance geochemical sampling.

Further detailed exploration is warranted to fully delineate the anomalous geochemical areas.



WELCOME NORTH MINES LTD.

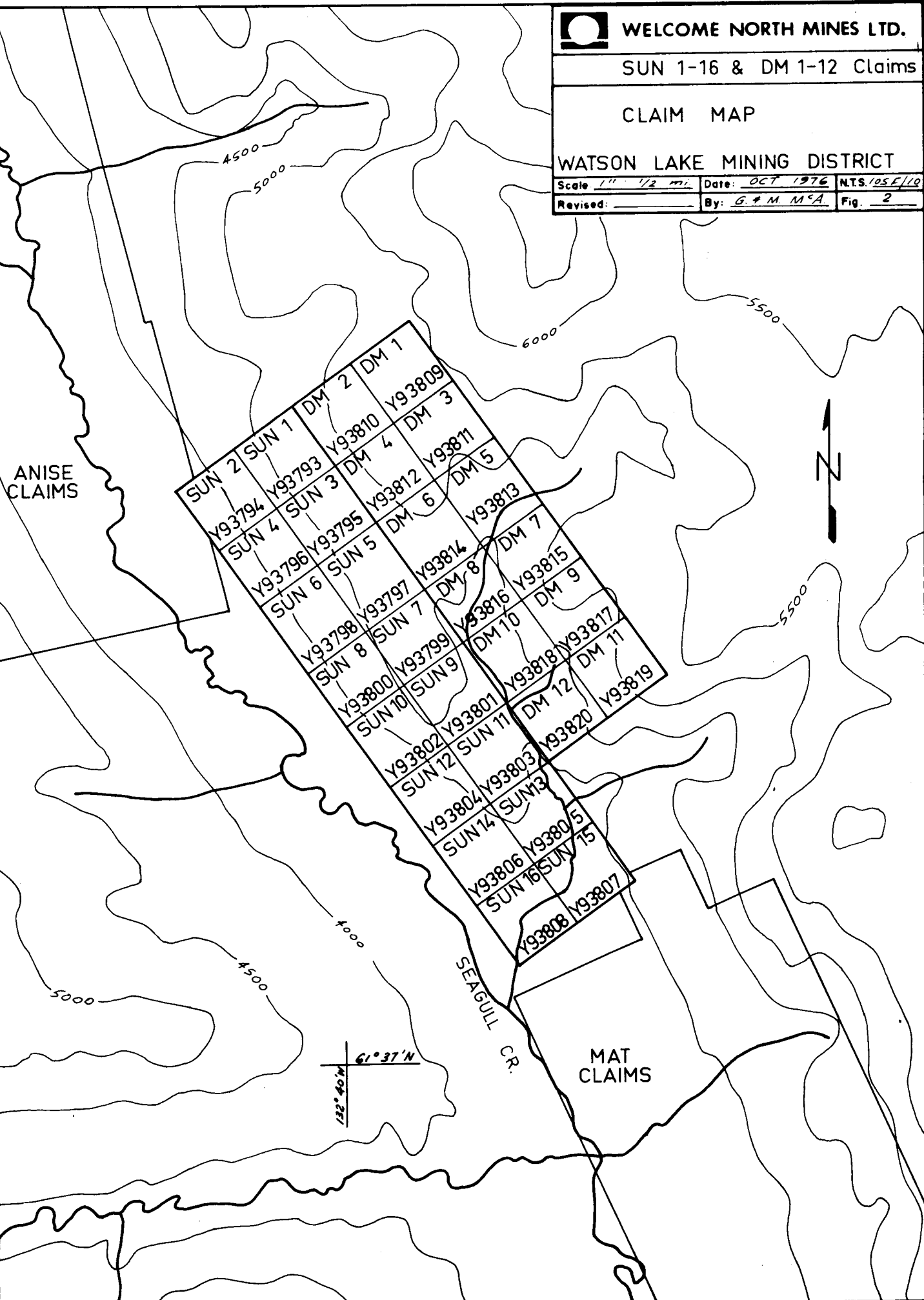
SUN 1-16 & DM 1-12 Claims

CLAIM MAP

WATSON LAKE MINING DISTRICT

Scale 1" = 1/2 mi. Date: OCT 1976 N.T.S. 105E/10

Revised: By: G & M MSA Fig. 2



SUN 2	SUN 1	DM 2	DM 1
Y93794	Y93793	Y93810	Y93809
SUN 4	SUN 3	DM 4	DM 3
Y93796	Y93795	Y93812	Y93811
SUN 6	SUN 5	DM 6	DM 5
Y93798	Y93797	Y93814	Y93813
SUN 8	SUN 7	DM 8	DM 7
Y93800	Y93799	Y93816	Y93815
SUN 10	SUN 9	DM 10	DM 9
Y93802	Y93801	Y93818	Y93817
SUN 12	SUN 11	DM 12	DM 11
Y93804	Y93803	Y93820	Y93819
SUN 14	SUN 13		
Y93806	Y93805		
SUN 16	SUN 15		
Y93808	Y93807		

ANISE CLAIMS

MAT CLAIMS

SEAGULL CR.

132° 40' W
61° 37' N

INTRODUCTION

This report describes the results of geological and geochemical exploration on the SUN-DM claims, held under an option agreement by Welcome North Mines Ltd. (N.P.L.). No previous recorded work has been carried out on these claims.

MINERAL CLAIMS

The property consists of two blocks of claims, the SUN 1-16 claims and the DM 1-12 claims.

<u>CLAIM NAME</u>	<u>RECORD & TAG NO.</u>	<u>LOCATION DATE</u>	<u>RECORDING DATE</u>
SUN 1-16 incl.	Y93793-Y93808 incl.	Sept. 17, 1975	October 8, 1975
DM 1-12 incl.	Y93809-Y93820 incl.	Sept. 17, 1975	October 8, 1975

LOCATION AND ACCESS

The claims are located 28 air miles south of Ross River and roughly 100 miles northeast of the city of Whitehorse. The approximate location of the claims is 61°35' north latitude and 132°40' west longitude. The South Canal Highway between Ross River and Johnson's Crossing on the Alaska Highway is located 14 miles west of the property.

Access to the property is possible by helicopter from Ross River or by 4x4 truck from the South Canal via the Groundhog Creek tote trail to Seagull Creek.

PHYSIOGRAPHY AND VEGETATION

The claim groups occupy portions of the westerly slope of a north-northwesterly trending ridge. Topography on both properties is moderate and elevations vary from 4,000 to 5,500 feet above sea level with grass, moss and minor dwarf birch above this elevation.

REGIONAL GEOLOGY

Within the Pelly Mountain region (N.T.S. 105F - Quiet Lake) Mississippian to Permian acid to intermediate submarine explosive volcanic rocks have been mapped by the Geological Survey of Canada. The volcanic centres would appear to be located in and to the north of the Seagull Creek area and the whole pile (900 meters plus) is composed of a number of coalescing sheets of ejecta extruded from several centres. Further to the north and southwest a thinner (100 meter) sequence of volcanoclastic and sedimentary rocks are facies equivalents of the units described above. Syenites, presumably a subvolcanic relative of the extrusive rocks, occur as several small plugs within the volcanic pile.

These rocks are underlain by 500 meters of Devonian to Mississippian black siliceous slate and minor wacke representing quiet deeper water sedimentation.

Overlying the volcanic sequence are several hundred meters of laminated strongly bioturbated shales and siltstones which are in turn overlain by 500 meters of Middle to Upper Triassic silty sandy medium grey, thin-bedded limestones.

GEOLOGY

Outcrop within the claim block is limited to areas of local steep relief and road cut exposures.

There would appear to be two related rock types found on the property:

- 1) A non-calcareous, lustrous grey-green strong foliated quartz-chlorite-sericite phyllite possibly after felsic to intermediate volcanic tuff or volcanoclastic rocks with minor interbedded porphyritic (andesites) volcanic flow rocks;
- 2) A non-calcareous grey strongly foliated sericite phyllite after shales and greywacke. These rock types are found to the south and

TABLE OF FORMATIONS

ERA	PERIOD OR EPOCH	FORMATION & THICKNESS		LITHOLOGY
MESOZOIC	MID TO UPPER TRIASSIC	8	500M	Silty sandy, medium grey thin-bedded limestone
	PERMIAN MISSISSIPPIAN	6b,6c	200M	Laminated strongly bioturbated shale and siltstone
			100M	Orange weathering, thin-bedded, pale green tuffaceous chert
			900M	Acid to intermediate volcanic and volcanoclastic rocks and shale
MISSISSIPPIAN DEVONIAN	5	500M	Black siliceous slate with minor greywacke and barite	
PALEOZOIC	LOWER TO UPPER DEVONIAN		2400+	Dolomite and orthoquartzite dolomitic mudstone
	UNCONFORMITY			
	LOWER TO MIDDLE SILURIAN	4	1000M	Laminated thin-bedded dolomite siltstone. Crinoidal packstone and wackestone, dolomite
	LOWER TO UPPER ORDOVICIAN	3	1000M	Fissile black graptolitic slate. Thin-bedded orthoquartzite. Dolomitized mudstone.
			1500-2000M	Medium grey noncalcareous phyllites and volcanic rocks
	UPPER CAMBRIAN	2	1000M	Calcareous slate, phyllite and argillaceous limestone
	UNCONFORMITY			
LOWER CAMBRIAN	1c	1500+M	Orthoquartzite, slate and phyllite, limestone and dolomite.	
UNCONFORMITY				
PROTEROZOIC	HADRYNIAN	1b,1a	700+M	Green argillite, fine-grained, thin-bedded crosslaminated greenish argillaceous quartzite

west on the SUN claims. These rocks are strongly foliated at 130° to 160° with variable dips 10E to 10W. Rusty pyritic non-calcareous grey lustrous sericite phyllite, silty wavy-banded limestone and argillite with minor interbedded quartz pebble conglomerate appear to be in fault contact with quartz sericite phyllites at the northeast end of the DM claims.

All rocks exposed on the property are mapped by the Geological Survey of Canada as Mississippian volcanic and associated volcanoclastic and sedimentary rocks (105F - Quiet Lake).

GEOCHEMICAL SURVEY

1. Method of Survey

Sampling was confined to grid lines which were survey-controlled by compass, 'Topofill' chain and altimeter.

All soil samples were obtained with a prospector's grub hoe from the 'B' horizon below a white volcanic ash layer.

2. Method of Analysis

All samples were analyzed by Bondar-Clegg Limited at Whitehorse, Yukon. The samples received were dried, screened to -100 mesh, weighed out to 0.5 grams and digested in hot aqua regia. Samples were then diluted, clarified for 20 hours and tested for copper, lead, and zinc on an atomic absorption spectrophotometer.

Accuracy of the instrument ideally is 1 percent of the amount of metal present. Individual cathode lamps are used for each element determined and a direct readout in parts per million are given.

3. Treatment of Data

All results of the geochemical soil samples were treated statistically to determine background-threshold-anomalous values. Values are present in Appendix 'A' and on Plates 1, 2 and 3. Values are colour coded on the maps to aid in distinguishing anomalous areas.

4. Interpretation of Results

Geochemical soil sampling has revealed three zones of anomalous values.

The largest area, 2000 x 1400 feet, centered between lines 0S to 20S and stations 16E to 30E is of maximum anomalous response (720 ppm lead, 2700 ppm zinc) and should be further sampled on a closer spaced sampling interval.

The second area, 1000 x 1400 feet, centered on lines 40S and 50S and stations 28E to 40E, appears to represent downslope migration from a potential mineralized source to the north and should also be sampled on a closer spaced interval.

The third area consists of only a few high values on the upper road, line 80S, 12E to 16E. Some importance is attached to these samples due to the occurrence of porphyritic volcanic flow rocks interbedded with the quartz-sericite phyllites in this area.

RECOMMENDATIONS

Based on the delineation of several zones of anomalous geochemical values which are underlain by quartz-sericite phyllites, further work is warranted:

- 1) More detailed soil sampling of a geochemical grid (200 feet x 100 feet) over already defined anomalous areas.
- 2) Detailed geophysical follow up involving magnetic and electromagnetic surveys.
- 3) Contingent on the results of 1) and 2) above, gravimetric surveys.

Trenching and diamond drilling would be required, contingent on the results obtained from these surveys.

BONDAR-CLEGG & COMPANY LTD.

764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5

PHONE: 237-3110

Geochemical Lab Report

Extraction HNO₃-HCl
 Method A.A.
 Fraction Used -80 Soils

Report No. 46-100
 From Welcome North Mines
 Date September 24 19 76

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm		SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	
3-000S	33	125	295		DM 0S-20E	30	40	87	
5-000S	16	40	87		22E	23	51	177	
10-000S	21	58	195		24E	10	17	26	
15-000S	10	30	98		26E	54	29	125	
20-000S	14	32	120		28E	17	22	85	
25-000S	17	70	105		30E	48	39	440	
30-000S	26	136	104		32E	No Sample			
35-000S	20	51	101		DM 10S-2E	25	151	177	
40-000S	27	51	82		4E	18	22	80	
45-000S	24	40	89		6E	12	13	44	
50-000S	33	47	112		8E	24	46	110	
55-000S	33	38	54		10E	24	36	97	
60-000S	34	60	78		12E	19	44	119	
65-000S	32	37	105		14E	30	40	121	
70-000S	23	52	93		16E	31	127	326	
75-000S	21	41	80		18E	40	310	960	
80-000S	23	37	77		20E	46	128	920	
85-000S	20	39	89		22E	80	45	154	
90-000S	31	36	87		24E	57	720	2400	
95-000S	31	45	105		26E	52	105	90	
100-000S	22	39	127		28E	123	29	88	
105-000S	22	38	102		30E	33	39	480	
110-000S	25	39	80		32E	NO Sample			
DM 0S-4E	32	27	75		20S-10E	19	34	39	
6E	51	31	43		12E	34	49	142	
8E	24	40	124		14E	23	38	52	
10E	24	45	177		16E	14	24	29	
12E	20	48	166		18E	50	23	80	
14E	24	41	155		20E	25	43	82	
16E	27	68	245		22E	29	16	48	
18E	22	136	212		24E	21	22	107	

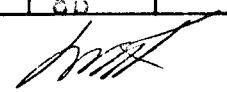
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Geochemical Lab Report

Report No. 46-100

Page No. 2

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm		SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	
DM 20S-20E	12	133	269		DM 40S-26E	45	29	109	
20E	4	8	12		20E	51	31	216	
30E	11	37	16		30E	59	50	236	
32E	27	26	110		32E	68	50	222	
34E	48	70	149		34E	27	28	41	
36E	32	16	49		36E	10	45	70	
38E	8	16	38		38E	18	39	274	
40E	3	4	10		40E	14	55	143	
50S-10E	56	40	60		42E	66	144	246	
12E	22	32	51		44E	29	70	144	
14E	26	36	75		46E	30	50	125	
16E	27	110	93		50S- 2E	23	44	60	
18E	54	48	165		4E	15	33	56	
20E	21	38	110		6E	17	49	62	
22E	20	30	81		8E	22	34	47	
24E	17	34	107		10E	17	26	32	
26E	32	36	140		12E	17	37	68	
28E	32	35	132		14E	13	27	54	
30E	41	37	160		16E	15	31	58	
32E	48	56	142		18E	24	33	60	
34E	30	21	51		20E	21	56	69	
36E	11	19	50		22E	26	50	88	
38E	32	22	46		24E	20	70	171	
40E	28	23	121		26E	20	61	76	
40S- 2E	22	36	45		28E	19	39	83	
4E	22	35	88		30E	30	39	148	
6E	54	34	65		32E	31	60	125	
8E	24	31	39		34E	26	59	142	
10E	24	12	19		36E	32	40	107	
12E	25	59	120		38E	33	42	121	
14E	11	23	67		40E	170	67	248	
16E	3	39	25		42E	30	34	150	
18E	12	33	150		44E	40	30	148	
20E	19	32	52		46E	58	23	107	
22E	26	27	166		60S- 2E	13	34	71	
24E	37	36	185		4E	23	47	86	

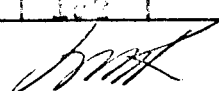


Geochemical Lab Report

Report No. 42-100

Page No. 3

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm		SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm
DM 30S-0E	24	36	60		DM 70S-40E	32	56	129
0E	29	30	50		42E	20	90	250
10E	21	27	41		44E	18	57	95
20E	30	32	72		46E	12	44	100
30E	35	24	38		80S- 8E	16	30	36
40E	14	13	12		10E	13	21	37
50E	12	34	37		12E	25	37	36
60E	17	39	37		14E	21	25	30
70E	19	39	64		16E	20	38	22
80E	19	57	59		18E	64	99	48
90E	24	45	77		20E	19	26	47
00E	22	50	36		22E	6	39	24
10E	19	67	67		24E	10	41	74
20E	13	30	39		26E	No Sample		
30E	21	49	127		28E	43	46	200
40E	Not Received				30E	33	47	120
50E	38	39	150		32E	20	29	100
60E	30	41	76		34E	22	46	150
70E	32	95	150		36E	36	22	37
80E	52	38	203		38E	19	29	40
90E	No Sample				40E	12	60	41
70S-30E	17	27	43		42E	21	34	55
0E	20	45	60		44E	Not Received		
10E	21	30	118		46E	No Sample		
20E	17	14	40		90S- 2E	20	37	76
30E	38	23	49		4E	29	40	31
40E	18	23	42		6E	31	33	31
50E	20	32	55		8E	22	33	30
60E	12	29	32		10E	10	30	35
70E	22	30	77		12E	20	32	51
80E	26	23	264		14E	24	33	105
90E	32	42	69		16E	30	36	109
00E	24	43	39		18E	16	26	40
10E	24	42	71		20E	16	38	44
20E	30	51	127		22E	25	32	90
30E	Not Received				24E	40	49	100



Geochemical Lab Report

Report No. 46-100

Page No. 4

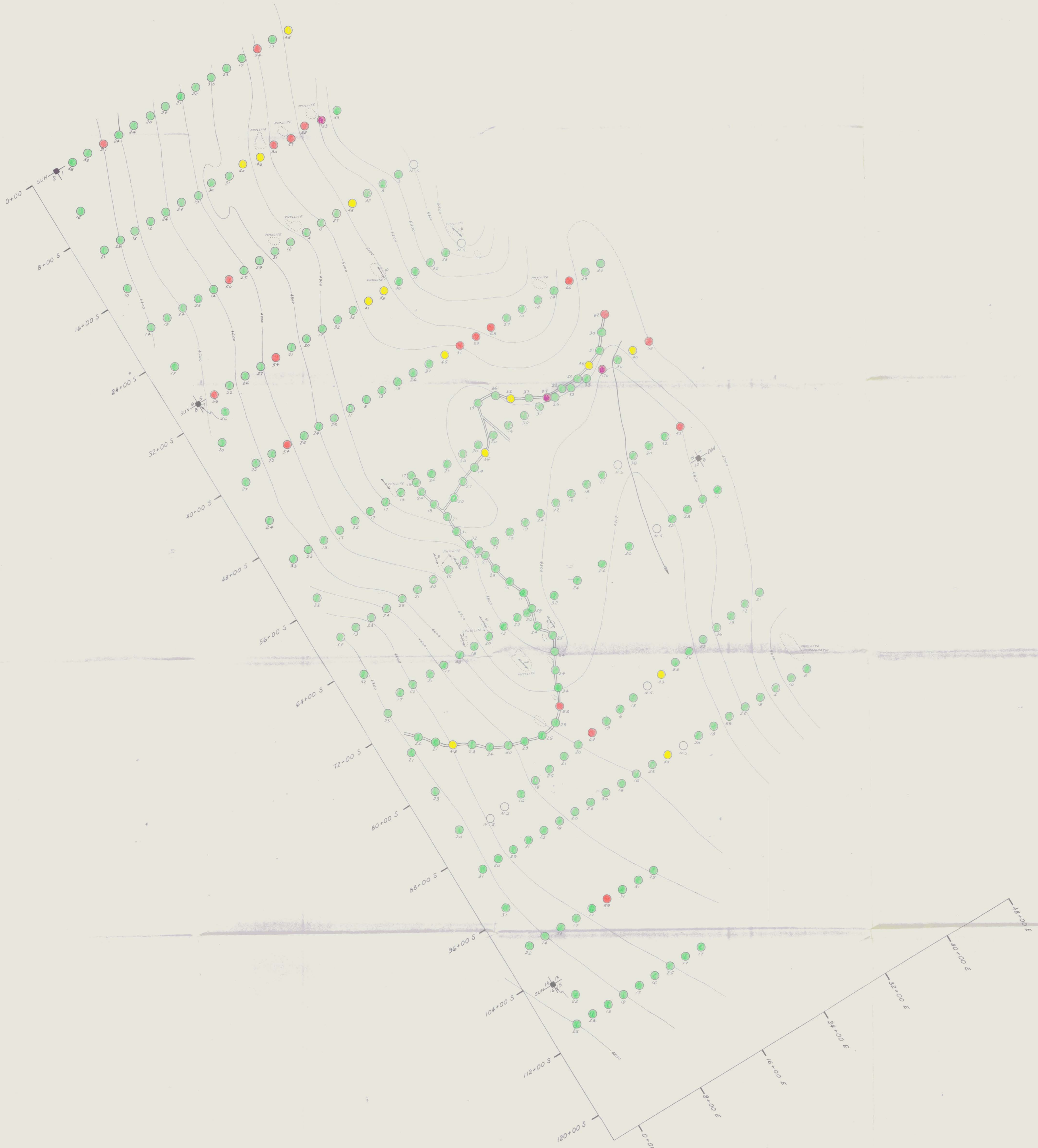
SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm		SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	
DN 900-20E	Not Received				U.Rd. 22+00E	34	53	60	
20E	20	29	131		24+00E	24	115	31	
30E	18	19	60		26+00E	34	39	70	
32E	39	95	147		28+00E	25	27	70	
34E	25	16	24		30+00E	24	49	71	
36E	18	39	107		32+00E	38	22	60	
38E	4	12	36		34+00E	11	31	67	
40E	10	23	36		36+00E	10	23	61	
42E	8	23	20		38+00E	23	33	79	
44E	No Sample				40+00E	21	35	50	
1000- 2E	14	36	79		42+00E	32	49	107	
4E	24	34	107		44+00E	37	37	60	
6E	17	23	62		46+00E	21	45	60	
8E	17	33	129		48+00E	18	36	67	
10E	39	34	62		50+00E	24	47	71	
12E	31	38	99		52+00E	17	34	65	
14E	31	41	121		54+00E	20	39	64	
16E	25	30	63		56+00E	27	66	80	
1100- 2E	23	28	70		58+00E	19	60	80	
4E	13	27	120		60+00E	45	82	125	
6E	13	28	75		62+00E	19	45	102	
8E	17	30	68		64+00E	36	30	125	
10E	16	24	46		66+00E	42	136	177	
12E	25	32	153		68+00E	37	120	410	
14E	17	27	72		70+00E	97	45	60	
16E	17	23	72		72+00E	22	50	76	
18+00E	23	43	151		74+00E	20	53	112	
20+00E	21	42	92		76+00E	45	55	240	
22+00E	40	37	60		78+00E	21	73	146	
24+00E	23	41	150		80+00E	30	60	100	
26+00E	24	41	69		82+00E	62	70	150	
28+00E	30	34	55						
30+00E	29	37	72						
32+00E	25	362	169						
34+00E	29	49	76						
36+00E	53	56	980						

AMK

APPENDIX B

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LEGEND

- Road
- Creek
- Outcrop
- Claim post
- Soil sample site with ppm
- Strike & dip of foliation (inclined, horizontal)

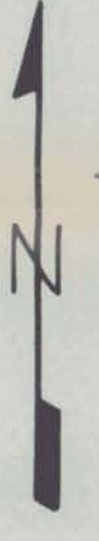
	ppm Cu
green	< 40
yellow	40 - 50
red	51 - 90
purple	> 90

WELCOME NORTH MINES LTD.

ARCTIC RED PROJECT

SUN 1-16 & DM 1-12 CLAIMS
GEOLOGY & COPPER GEOCHEM

Scale: 1 inch = 400 ft Date: Sept 1976 NTS: 105/11
Revised: By: S & M MCA Plate:



LEGEND

- Road
- Creek
- Outcrop
- Claim post
- Soil sample site with ppm
- Strike & dip of foliation (inclined, horizontal)

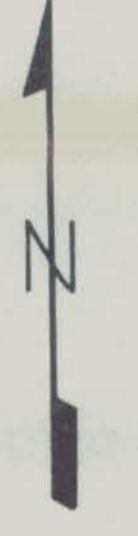
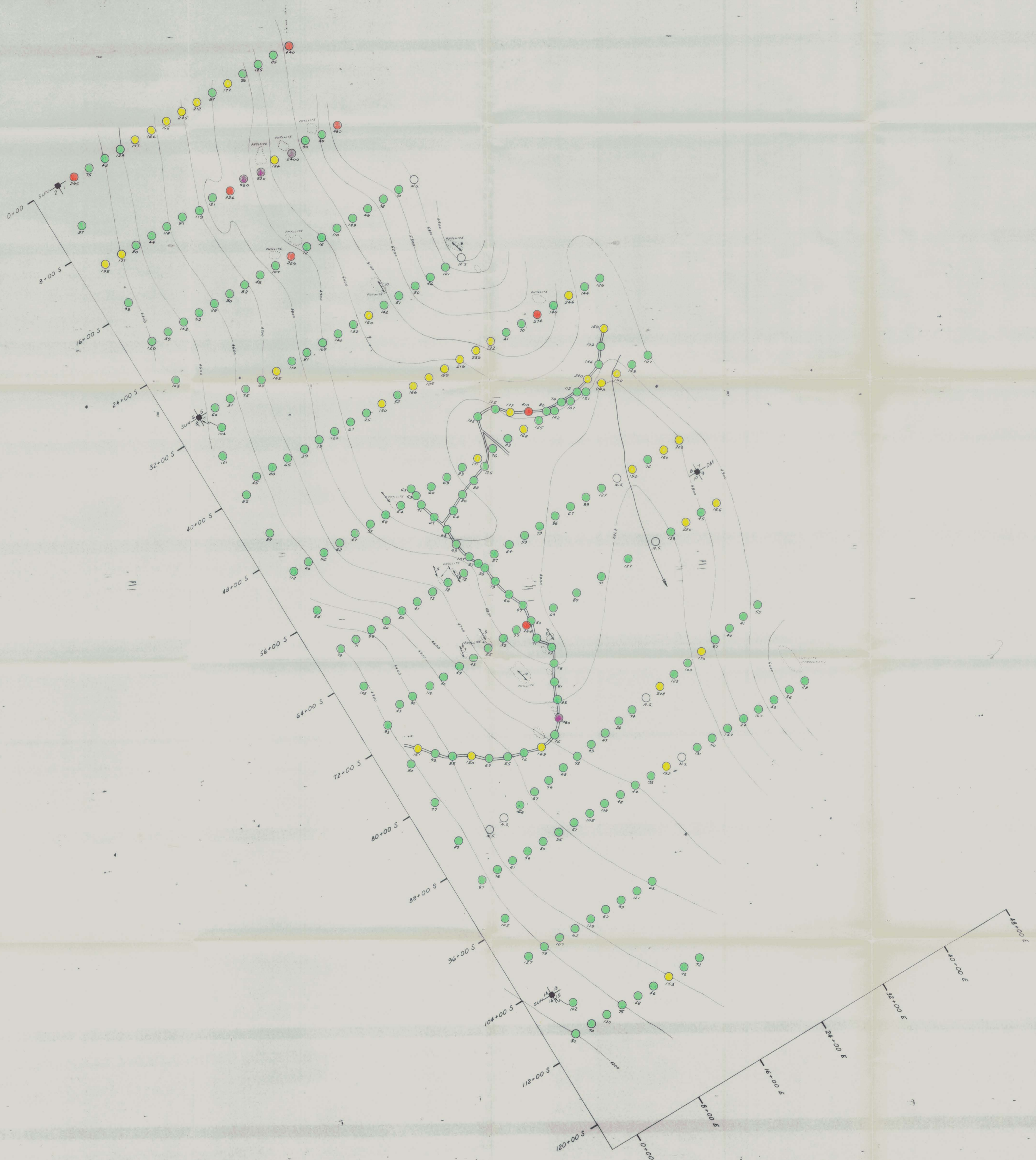
	ppm Pb
green	< 78
yellow	78 - 90
red	91 - 170
purple	> 170

WELCOME NORTH MINES LTD.

ARCTIC RED PROJECT

SUN 1-16 & DM 1-12 CLAIMS
GEOLOGY & LEAD GEOCHEMISTRY

Scale: 1 inch = 400 ft Date: Sept. 1976 NTS 105/10
Revised: By: G. M. M. A. Plate 2



LEGEND

- Road
- Creek
- Outcrop
- Claim post
- Soil sample site with ppm
- Strike & dip of foliation (inclined, horizontal)

	ppm Zn
green	< 150
yellow	150 - 250
red	251 - 550
purple	> 550