

SILVER SPRING MINES LTD.

North and Star Claim Groups

Lat. 64° 02'N, Long. 135° 20'W

Mayo, M.D., Yukon Territory

GEOCHEMICAL REPORT

by

T. Sadlier-Brown, Geologist
P.H. Sevensma Consultants Ltd.

November 18, 1968.

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SILVER SPRING MINES LTD.
North and Star Claim Groups
Lat. 64° 02'N, Long. 135° 20'W
Mayo M.D., Yukon Territory

GEOCHEMICAL REPORT

1. INTRODUCTION

Early in the spring of 1968, the firm of P.H. Sevensma Consultants prepared an assessment of the Company's mineral claim holdings. The results of this study are embodied in a report issued May 4, 1968.

Work on the property commenced early in July and continued until late September when weather conditions forced postponement of further work.

The initial eighteen claim group was extended by staking to cover a total of sixty claims. All claims have been duly transferred to the Company.

2. PROPERTY

A list of the Mt. Haldane Area Claims is as follows:

<u>Claim</u>	<u>Record No's.</u>	<u>Renewal Date*</u>
Star No. 1 & 2	83556 & 83557	July 31, 1972
" " 3 - 6 incl.	Y14966 - Y14969	June 12, 1969
" " 7 - 10 incl.	Y14974 - Y14977	June 12, 1969
" " 11 - 14 incl.	Y14978 - Y14981	July 25, 1969
" " 15 - 22 incl.	Y14958 - Y14965	June 22, 1969
" " 23 - 30 incl.	Y14982 - Y14989	June 12, 1969
" " 31 & 32	Y26895 & Y26896	Aug. 21, 1969
" " 33 & 34	Y26944 & Y26945	Aug. 29, 1969
" " 39 - 42 incl.	Y14970 - Y14973	June 12, 1969
" " 43 - 48 incl.	Y27227 - Y27232	June 26, 1969
North No. 1 - 7 incl.	Y6359 - Y6365	July 25, 1969
" " 8 - 16 incl.	Y6539 - Y6547	Sept. 19, 1969

* As at November 13, 1968, and subject to approval of work as submitted under requirements of the Yukon Quartz Act.

A number of claim posts were observed in the course of geological examinations, but further surveys would be required to ascertain the exact boundaries of this group of claims.

3. LOCATION AND ACCESS

The claim group covers the central and southeastern parts of Mt. Haldane, a prominent mountain 18 miles north of Mayo, Yukon and about 260 miles due north of Whitehorse, Yukon (see NTS Sheet 105-M-13). It can be reached by a reasonably good dirt road leading northwest from the highway between Mayo and Elsa at a point near the Halfway Lakes. Most roads within the claim group itself, however, could only be used by four-wheel drive vehicles at the time of the writer's visit:

Two access roads have been built up the south part of the mountain. The most northerly follows the valley of Fortune Creek to an elevation of about 4,000 feet. The other leads up to the ridge between the heads of Fortune and Aldis Creeks, at an elevation of about 5,000 feet. Four areas where trenching and stripping has been done were accessible from the two roads at the time of the present examination.

4. PREVIOUS WORK

Exploration and development work has been in progress in the general vicinity of the claims for many years. Aside from some conventional prospecting, however, and a limited amount of hand trenching on an occurrence of arsenopyrite, little seems to have been done in the area of present interest until the commencement of the 1968 program of Silver Spring Mines.

Geochemical sampling was carried out on a reconnaissance basis using topographical contours for control.

A Ronka EM 16 unit was used to test for conductivity in one of the gossan areas but the extent of the work was very limited.

5. GEOLOGY

General Statement

The claims are underlain by a series of greenstones, thick bedded quartzite, graphitic schist, and minor limestone, all except the greenstone, being of permian and/or triassic age. The greenstone was observed apparently underlying the quartzites but with an appreciable covered interval between the two. The metamorphic rocks near the head of Fortune Creek are cut by a large dike or sill of porphyritic granite or granodiorite which appears to lie between the two areas of interest. Apparently associated with this body are several smaller offshoots or satellite bodies similar in composition but generally finer grained and more distinctly porphyritic.

Evidence of faulting is fairly common in the area, mostly in the form of sheared zones filled with rusty gouge and broken rock. They vary in width from a few inches to several feet and seem to have no preferred orientation.

Geochemical Reconnaissance

A reconnaissance geochemical traverse was conducted at an elevation of 5,000 feet following a contour in the valley at

the head of Fortune Creek. Soil samples were collected at 100 foot intervals and tested for lead and zinc by the atomic absorption method at the Whitehorse Assay Office, Whitehorse, Yukon. Two series of anomalous lead values were detected near the head of the valley. Highest Pb. value was 370 PPM at the north end of a series of three values greater than 100 PPM, indicating an anomalous area stretching across the slope for over 200 feet. About 700 feet north is another anomalous area with a peak value of 290 PPM, and stretching for about 600 feet across the slope.

The second area also coincides with a series of high Zn. values with a maximum of over 3,000 PPM. zinc.

Both anomalous areas warrant more detailed work including geochemical and conventional prospecting. A series of geochemical traverses on this slope would be useful in establishing trends. Accuracy in plotting sample locations is stressed and might be best served by using enlarged aerial photographs for control. The steep and irregular topography would probably make a grid impractical in the vicinity of the known geochem highs. A detailed grid on the comparatively level ridge would however, probably give good results.

The grid area would then be accessible by the south Cat. road and stripping could be carried out on any geochem highs.

Bulldozer Trenching and Geological Investigation

On September 9th, 1968, the writer, accompanied by J. McDiarmid and J. Strebchuk of Silver Spring Mines, visited the

property and examined the trenched areas. Assay results are from samples No. 1 to 7 submitted for spectrochemical analysis by Mr. McDiarmid.

The first area visited is located roughly 1,000 feet south of Fortune Creek on a gentle easterly slope near the base of the more steeply sloping part of the mountain. A road suitable for four-wheel drive vehicles has been put in and an area about 200 feet by 200 feet cleared and stripped to a depth of from 2 to 6 feet in rusty clay and silt. Bedrock was not observed but sample No. 1 of the gossan material was taken over 50 feet in a north-south direction. Results are as follows: Au: nil, Ag: tr., Cu: 0.55%.

An estimated 1,500 feet southwest of the above and some 500 feet higher in elevation is another Cat trench in which a considerable amount of rusty material occurs. The trench cuts a hard, dark greenstone containing disseminated pyrite and minor chalcopyrite. Shearing has produced zones of rusty gouge from which samples 2 and 3 were taken. Number 4 is fresh greenstone. Results are as follows:

<u>No.</u>	<u>Description</u>	<u>Width</u>	<u>Cu.</u>	<u>Au.</u>	<u>Ag.</u>
2	Gossan	Grab	.02	tr.	tr.
3	Gossan	30 ft.	.07	tr.	tr.
4	Greenstone	Grab	.02	nil	tr.

At an elevation of about 3,800 feet on the ridge about 800 feet south of Fortune Creek is another gossan which has been stripped by bulldozer. Sheared greenstone similar to that described above was uncovered here. Shear zones are extremely rusty and tend to be flat lying or nearly so. Sample No. 5 is of fairly fresh

greenstone and No. 6 is a 6 foot section of rusty gouge in greenstone about 200 feet south of No. 5. Results are as follows:

<u>No.</u>	<u>Description</u>	<u>Width</u>	<u>Cu.</u>	<u>Au.</u>	<u>Ag.</u>
5	Greenstone	Grab	.08	nil	tr.
6	Rusty Gouge	6 feet	.02	tr.	tr.

The final locality visited is a vein or vein-like zone about 5 feet wide cutting steeply dipping graphitic schists about 300 feet south of their contact with the quartzites which outcrop in the valley of Fortune Creek. The vein filling is partly earthy residual material consisting of limonite, manganese stain, some crumbling calcite and a few stringers of white quartz. Sample No. 7 across 5 feet of this material ran Cu: tr., Au: tr., Ag: nil.

On October 2, 1968, the trenched area was visited by the Mining Inspector, Mr. G. Needham and Messrs. Aikins and Strebchuk. Four samples of soil and limonitic gossan taken at this time were analyzed by the Whitehorse Assay Office using atomic absorption after digestion in perchloric acid. Sample location and results are as follows:

<u>Sample No.</u>	<u>PPM. Cu.</u>	<u>PPM. Pb.</u>	<u>PPM. Zn.</u>	<u>Location</u>
H.S.A. #1	180	10	20	Greenstone exposure - lower trench
H.S.A. #2	176	8	20	Ridge above Fortune Creek
H.S.A. #3	900	18	100	200 ft. below #2 above
H.S.A. #4	415	16	14	Clearing on Lower Road

6. SUMMARY:

Work done to date has not exposed sulphide mineralization of sufficient quantity or quality to be of immediate economic interest. In several of the areas, however, geochemical soil results are high enough to warrant additional investigation. This could be most

efficiently conducted by a reconnaissance geochemical sampling program.

Bulldozer work would only be required to expose bedrock in areas where anomalous metal values exist in the overlying soil.

The extensive gossan zone is at this point more suggestive of an extensive, possibly disseminated, zone of low to moderate grade sulphide than of a vein deposit. Further encouragement, particularly in locating copper-bearing minerals, may well warrant some geophysical work employing induced polarization.

7. RECOMMENDATIONS

A reconnaissance soil sampling program using airphotos and altimeter control should be initiated at the earliest possible date in the 1969 field season. A five hundred foot vertical interval with two hundred foot spacing along the line of traverse is suggested as being adequate for initial work. Anomalous areas detected by this survey should then be delineated by closer spacing of a survey grid for sampling and mapping purposes. Existing access should prove adequate for the work envisioned. Any subsequent work would be contingent on the success of this phase of the program.

The following cost estimate is based on the availability of suitable personnel and equipment employed by Silver Spring Mines in the Mayo area.


Cost EstimateStage 1 (firm)

Soil sampling, field costs, 1,000 samples @ \$3.00	\$ 3,000.00
, assay charges " " @ \$2.50	2,500.00
Consulting fees, map preparation, expenses	500.00
Contingency allowance (15%)	1,000.00
	<hr/>
Sub Total	\$ 7,000.00


Stage 2 (provisional)

Bulldozer trenching and road construction:	
150 hours @ \$35.00 per hour	\$ 5,250.00
Geophysical survey (method subject to review)	6,000.00
Contingencies and overhead (estimated)	1,750.00
	<hr/>
Sub Total	\$13,000.00
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Recommended Budgetary Provision	\$20,000.00
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Approved: 
P.H. Sevensma, Ph.D., P.Eng.

Respectfully submitted,


T. Sadlier-Brown,
Geologist,
P.H. Sevensma Consultants Ltd.



November 18, 1968.

TABLE 1

Analytical Report on Geochemical Samples
taken in Fortune Creek Basin on Mount Haldane

1. Stream Silts and Colluvial Fines

<u>Sample No.</u>	<u>Pb.</u>	<u>Zn.</u>	<u>Sample No.</u>	<u>Pb.</u>	<u>Zn.</u>
FS 1	48	40	FS 5	44	140
FS 2	40	760	FS 6	12	100
FS 3	88	640	FS 7	56	300
FS 4	69	1400			

2. Residual Soil from traverse at 5,000 feet elevation

<u>Sample No.</u>	<u>Pb.</u>	<u>Zn.</u>	<u>Sample No.</u>	<u>Pb.</u>	<u>Zn.</u>
FS 8	56	56	FS 25	290	3000
FS 9	32	116	FS 26	64	280
FS 10	28	350	FS 27	140	3840
FS 11	52	80	FS 28	32	216
FS 12	120	144	FS 29	216	3240
FS 13	116	48	FS 30	44	200
FS 14	370	216	FS 31	28	76
FS 15	56	440	FS 32	14	60
FS 16	88	160	FS 33	24	72
FS 17	42	200	FS 34	18	84
FS 18	52	200	FS 35	76	240
FS 19	40	216	FS 36	24	168
FS 20	83	300	FS 37	13	88
FS 21	NS*	NS*	FS 38	12	100
FS 22	200	140	FS 39	20	132
FS 23	58	280	FS 40	12	215
FS 24	280	300			

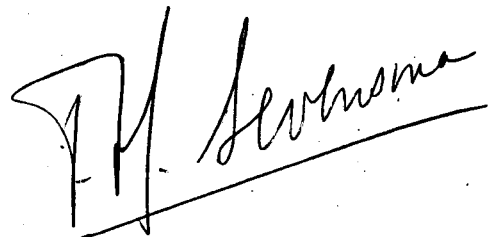
* No sample

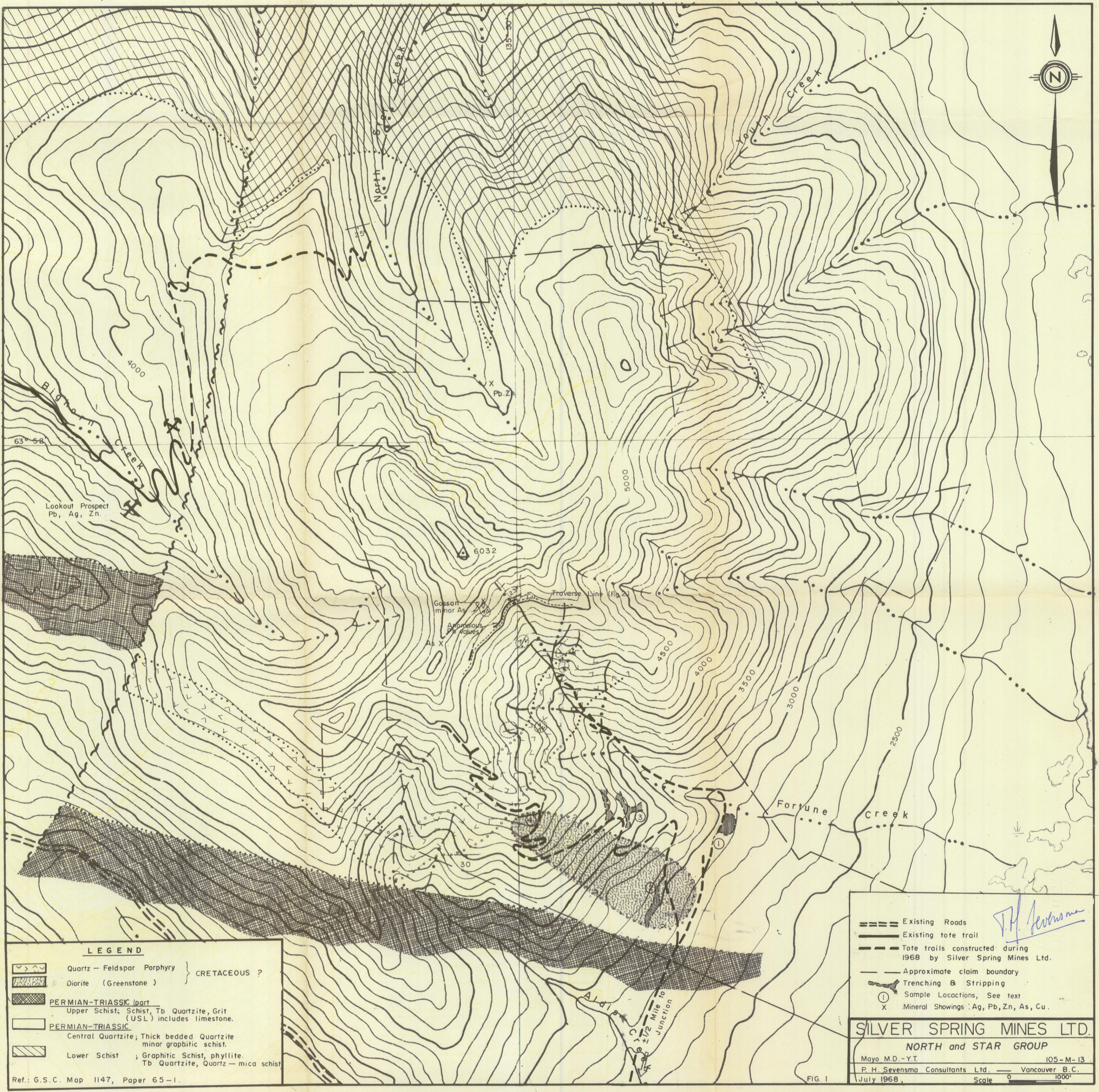
Sampled by: P.H. Sevensma Consultants Ltd. (B.C. Fulcher in charge).

Analyzed by: Whitehorse Assay Office. Report A-88-44.

Method: Total Extraction on -80 mesh fraction; A.A. analysis.

All values in parts per million.





LEGEND

	Quartz - Feldspar Porphyry	} CRETACEOUS ?
	Diorite (Greenstone)	
	PERMIAN-TRIASSIC (part)	
	Upper Schist; Schist, Tb Quartzite, Grit (USL) includes limestone.	
	PERMIAN-TRIASSIC	
	Central Quartzite; Thick bedded Quartzite minor graphitic schist.	
	Lower Schist ; Graphitic Schist, phyllite. Tb Quartzite, Quartz - mica schist	

P.H. Sevensma

	Existing Roads
	Existing tote trail
	Tote trails constructed during 1968 by Silver Spring Mines Ltd.
	Approximate claim boundary
	Trenching & Stripping
	Sample Locations, See text
	Mineral Showings : Ag, Pb, Zn, As, Cu.

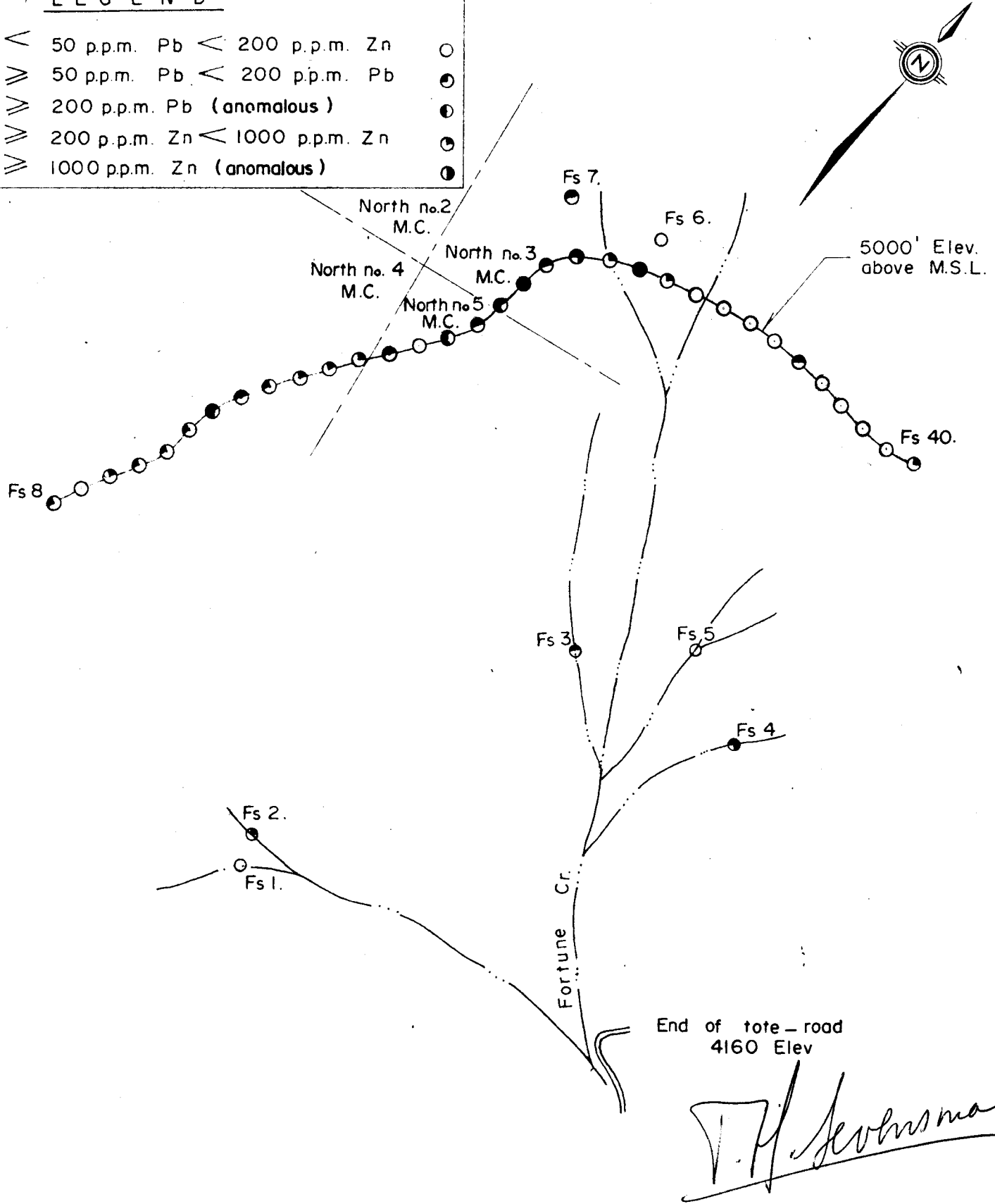
SILVER SPRING MINES LTD.
NORTH and STAR GROUP
 Mayo M.D.-Y.T. 105-M-13
 P. H. Sevensma Consultants Ltd. Vancouver B.C.
 July 1968, Scale 0 1000'

Ref.: G.S.C. Map 1147, Paper 65 - 1.

FIG. 1

LEGEND

- < 50 p.p.m. Pb < 200 p.p.m. Zn ○
- > 50 p.p.m. Pb < 200 p.p.m. Pb ●
- > 200 p.p.m. Pb (anomalous) ◐
- > 200 p.p.m. Zn < 1000 p.p.m. Zn ◑
- > 1000 p.p.m. Zn (anomalous) ◒



See Table I for values.

FIG. 2

SILVER SPRING MINES LTD.	
GEOCHEMICAL SURVEY NORTH & STAR	
Mayo M.D.-Y.T.	105-M-13
P.H. Sevensma Consultants Ltd. Vancouver B.C.	
November 1968,	Scale: