

'80 # 237 # 8834

GEOLOGICAL, GEOCHEMICAL
AND
GEOPHYSICAL REPORT

SANDIFER PEAK PROSPECT
127°48'23" W, 53°29'33" N
SKEENA MINING DIVISION
BRITISH COLUMBIA
N.T.S. MAP AREA 93-E-5W

prepared for
GOLDEN RULE RESOURCES LTD.
CALGARY, ALBERTA

by
M. FOX, P.Geol.
TAIGA CONSULTANTS LTD.
CALGARY, ALBERTA

NOVEMBER 1980

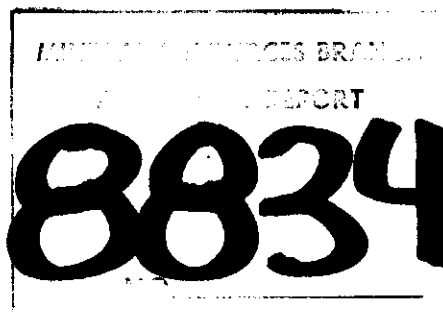


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C E R T I F I C A T E

I, the undersigned, do hereby certify that:

1. I am a practising professional geologist with an office at #100-1300 8th Street S.W., Calgary, Alberta;
2. I am a graduate of the University of British Columbia with a B.Sc. in Geology (1974) and that I have been practising my profession since that date;
3. I am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta;
4. I have personally worked on the claims and supervised the exploration work carried out there;

Respectfully submitted

A handwritten signature in black ink, appearing to read "Michael Fox", written in a cursive style.

Michael Fox, P.Geol.

October 1980

SUMMARY

The following report describes geological, geochemical and geophysical work carried out on the Sandifer Peak precious metals prospect during the period July 10-16, 1980. The property, also known as the Smith-Nash prospect, presently consists of four 10-unit mineral claims situated in west central British Columbia approximately 12 km southeast of the community of Kemano.

The claims are underlain by a metamorphosed assemblage of intermediate to felsic volcanic and volcanosedimentary rocks that are cut by pegmatitic bodies and numerous quartz veins. This assemblage occurs as a large pendant completely enclosed by igneous rocks of the Coast Ranges plutonic complex. Previous work, carried out on the property in the 1950's and 1960's was reported to have outlined 106,238 tonnes (117,000 tons) of ore averaging 31.54 g/tonne (0.92 oz/ton) gold over a 2.2 m (7.2 feet) vein width.

Work carried out in 1980 consisted of 1:5,000 scale property mapping and limited geochemistry and ground VLF-EM surveying in areas of interest. Attempts to relocate the previously reported vein structure were unsuccessful.

INTRODUCTION

Property, Location, and Access

The Sandifer Peak prospect presently consists of four 10-unit mineral claims with a common Legal Corner Post situated at the approximate geographic coordinates 127°48'23" West longitude and 53°29'33" North latitude (Figure.1).

Access to the property is presently afforded only by helicopter. The closest permanent helicopter base is located in Terrace, approximately 124 km to the northwest. A logging road connecting the west end of Tahtsa Lake with port facilities at Kemano passes over the southeastern corner of the claim block. However, this route is not connected with the main network of British Columbia highways and secondary roads.

Ownership

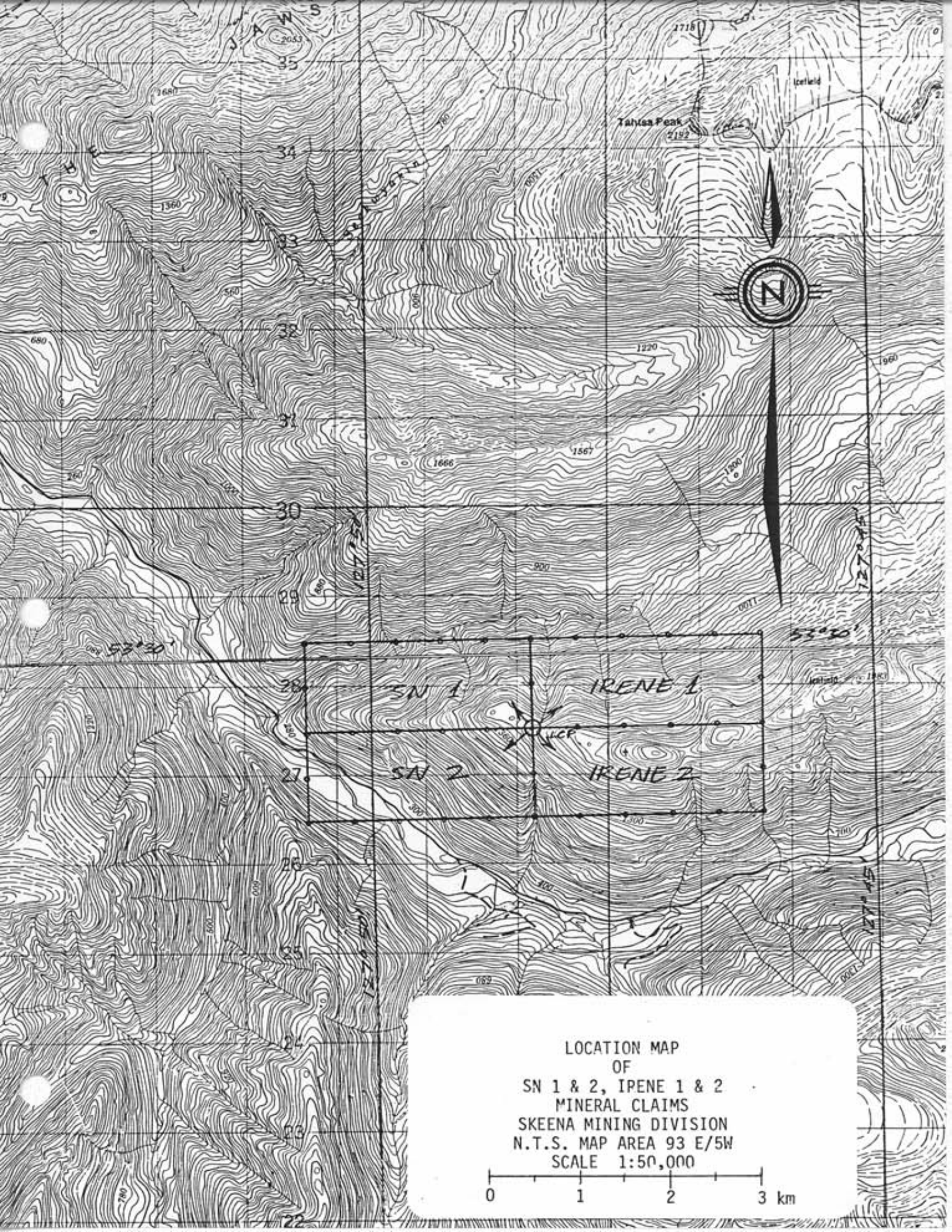
The four 10-unit mineral claims are entirely owned by and registered in the name of Golden Rule Resources Ltd., of Calgary, Alberta. The claims are described more specifically as follows:

<u>Claim Name</u>	<u>No. of Units</u>	<u>Tag Number</u>	<u>Record Number</u>	<u>Date of Record</u>
SN #1	10	45386	1857	November 9, 1979
SN #2	10	45387	1858	November 9, 1979
IRENE #1	10	45388	1859	November 9, 1979
IRENE #2	10	43970	1860	November 9, 1979

The claim blocks total 1,000 hectares in area and lie within the Skeena Mining Division.

Physiography

The Sandifer Peak prospect is situated within the Coast Mountains region, an intensely glaciated, entirely mountainous region of fjords, narrow crested ridges, horns, cirques, serrated peaks, and deeply cut valleys containing glacial deposits and Recent alluvium. Hanging valleys frequently terminate



LOCATION MAP
OF
SN 1 & 2, IPENE 1 & 2
MINERAL CLAIMS
SKEENA MINING DIVISION
N.T.S. MAP AREA 93 E/5W
SCALE 1:50,000



several hundred metres above the main valley floors, and the lower slopes of mountains commonly form several hundred metre high sheer cliff faces, scoured clean by late Pleistocene alpine glaciation.

The thick coastal undergrowth below treeline combined with the innumerable cliff faces effectively restricts access on foot to the crests and upper flanks of ridges, and the margins of the numerous permanent icefields in the area. Topographic relief on the property is extreme, ranging from 250 metres ASL to 1830 metres ASL.

REGIONAL GEOLOGY

The environs of the property have been briefly described in GSC Memoir 299, "Whitesail Lake Map Area, British Columbia", by S. Duffell, published in 1957. GSC Map 1064A, published at a scale of 1:253,440, presents a good overview of the regional geology, which has been updated by GSC Open File 708, published in 1980. The latter publication, however, adds little new information in the vicinity of the property and is much generalized in the immediate area of the claims.

The property is situated over a large pendant of metamorphic rocks that are completely enveloped by plutonic rocks of the Coast Ranges crystalline complex. Woodsworth (Open File 708) includes these rocks as part of the Central Gneiss complex of probable Paleozoic age. The rocks are now metamorphosed to granitoid gneiss, migmatite, migmatitic plutonic rocks, and amphibolite, with lesser plutonic rock, schist, marble, and skarn. Originally, they most likely formed part of a volcanic pile of intermediate to acidic flows, fine-grained tuffs, and volcanosedimentary rocks.

PROPERTY GEOLOGY

Rocks underlying the claims consist predominantly of fine-grained, thinly bedded greenstones and minor, narrow, banded, more felsic horizons, cut by quartz-rich pegmatoid injections ranging from narrow pygmatic veinlets to sills and dykes of substantial thickness. The general degree of metamorphism is upper greenschist facies. Virtually all rocks have been recrystallized and silicified. The most common mineral assemblage in the greenstones is quartz-feldspar(albite?)-chlorite-biotite. Epidote is more abundant in zones of intense small amplitude folding and occurs as highly deformed injected(?) bands, mostly concordant with the compositional layering of the enclosing rocks. Pyritic beds are abundant in the greenstones that occur adjacent to more felsic beds. Fine-grained disseminated and banded pyrite constitutes up to 15% of the volume of these horizons. Compositional layering closely reflects the original bedding of the rocks. Aside from local small scale deformation and crenulations related to metamorphism, the rocks are little folded and exhibit northwesterly strikes and southwesterly dips ranging from 25° to 55° in a broad homoclinal structure. Minor, small amplitude drag folding occurs near faults and shears of substantial displacement. These shears are filled with northwesterly striking, northeasterly dipping quartz veins. Other zones of flexure in very broad open folds developed in the homoclinal structure have undergone tensional dilation and are filled with massive limonite-stained lenses of pure, coarsely crystalline quartz ranging in thickness from 6 to 15 metres, and ranging in length from several tens to several hundreds of metres. The quartz lenses strike northwesterly and exhibit steep northeasterly dips.

One of the objectives of the work carried out in 1980 was to map and resample the previously worked vein described in detail in the following section of this report. Extremely poor weather conditions on three occasions prevented locating the old workings from the air. The thick undergrowth and rugged terrain prevented any effective ground search for the workings in the time available. As a consequence, the vein was not located, mapped, or sampled.

The reported attitude of the previously worked vein (northwesterly striking and southwesterly dipping) is different to that of the shears and quartz lenses mapped during 1980, and is suggestive of a concordant

zone in the metamorphosed volcanic and metasedimentary section. The Sandifer Peak prospect has potential as a favorable setting for volcanogenic gold deposits. The (andesitic?) greenstones and frequently intercalated felsic zones suggest numerous episodes of cyclic volcanism, although no major sequences of differentiation were mapped. Although the available descriptions of the vein definitely convey the impression that it is a vein structure, its reported attitude raises some doubts in the writer's mind. Future work on the property should investigate the possibility that it may actually be a concordant, stratiform zone.

ECONOMIC GEOLOGY, PREVIOUS WORK

The first record of exploration on the property dates back to 1952, when several limonite-stained quartz veins were seen by two prospectors flying over Sandifer Peak. A group of 14 two-post claims was subsequently staked, and prospecting and sampling carried out. The property was originally referred to as the Smith-Nash prospect, so named after its two discoverers.

The following description of the prospect is excerpted from GSC Memoir 299:

Smith-Nash Group

In the late summer of 1952 George Smith and Fred Nash of Vancouver staked a group of fourteen claims and one fraction on the steep south slope of the southwest extension of Sandifer Peak. The claims cover several limonite stained quartz veins seen by the stakers while flying over the area. They subsequently hired a helicopter from nearby Kemano and landed near one of the veins, taking several samples of highly pyritized material. Assay returns on this material showed a gold content as high as 6 ounces in one sample. They later returned to the showings via Sandifer Lake and staked the fourteen claims.

As these claims are in a part of the area difficult to reach and were staked at the end of the writer's last season of field work, they were not visited. However, R. A. Stuart of the British Columbia Department of Mines, who was stationed at Kemano visited the showings with Smith and Nash and reported in the British Columbia Minister of Mines Annual Report for 1952, as follows:

The veins are near the eastern contact of the Coast Range batholith on an anticlinal structure. The country rock on the east side of the group consists of interbedded greenstones and gneissic quartzites on the west; nearer the batholith it consists of granitic gneisses containing numerous pegmatite bands and dykes and occasional barren quartz veins.

The only vein examined occupies a shear zone striking northwest and dipping southwest. It outcrops continuously between elevations 4,500 feet and 5,000 feet in a steep shear-controlled gully on the northeasternmost claim of the group. At the top of the gully the vein, which is here about 4 feet wide, disappears beneath talus on a small bench and could not be located in the bluffs above. At the 4,500 foot elevation the only place where the vein is accessible, it swells to a width of about 15 feet then pinches out abruptly. The sheared zone, about 8 feet in width, continues below the pinch-out of the quartz but flattens in dip and swings to a more easterly strike.

The only visible metallic mineral is pyrite, which occurs as disseminated blebs and stringers in the quartz. Several stringers of massive granular pyrite from 2 to 6 inches wide occur on the hanging wall and footwall of the lowest seen part of the vein, and in the sheared zone below the quartz pinch-out. The sheared wall rock is only slightly mineralized.

The following type samples were taken by Stuart.

	Gold (ounces per ton)	Silver (ounces per ton)
Mineralized vein quartz	0.39	0.28
Massive pyrite from a 5-inch stringer	2.9	1.5
Sheared wall-rock	0.09	0.1

A sample of the highly pyritized material given to the writer by George Smith, one of the stakers, gave an assay of 3.14 ounces of gold a ton.

Some development work was done on the claims during 1953 but results were disappointing. The writer met Mr. Smith during the 1954 season and was told that only one vein was auriferous.

The following description of the prospect is excerpted from Energy, Mines and Resources Mineral Policy Sector File #503831:

British Columbia

NTS AREA 93 E/5

HISTORY OF EXPLORATION AND DEVELOPMENT

This property is located on the steep south slope of a ridge extending southwest from Sandifer Peak, some 6 miles southwest of Tahtsa Lake.

A group of 14 claims and one fractional claim was located on the showings by G. Smith and F. Nash, of Vancouver, in September 1952. One vein was examined and sampled during 1952. Some development work was done on the claims during 1953 but results were disappointing.

Silver Standard Mines Limited optioned the property in about 1960. From limited surface work the company estimated reserves at 117,000 tons averaging 0.92 ounce gold per ton over a 7.2 foot vein width (NM 13/07/72).

In 1975 the company held an option on one claim, the Smith No. 1.

GEOCHEMISTRY

A total of 68 soil samples were collected from the two grid areas, 24 rock samples were collected from quartz veins, quartz lenses, pyritized zones, and other features of geologic interest on the property. Analyses of these samples were not completed at the time of writing this report. As a result, it is not possible to draw any conclusions concerning the distribution of mineralization on the property or its relationship to mapped geology.

GROUND ELECTROMAGNETIC SURVEYING

A dip angle VLF-EM survey was carried out over approximately 2km of grid lines divided into two small grid areas on the property. A Crone Radem VLF-EM unit, utilizing the Seattle, Washington (18.6 khz) frequency was used. Topography on the grids is severe and the data as presented are unfiltered. No significant conductivity is apparent in the results, and cross overs seem to be related to topographic effects. No further VLF-EM surveying is recommended.

CONCLUSIONS AND RECOMMENDATIONS

The reported grades and widths of the mineralized vein at the Sandifer prospect constitute an exploration target warranting further work. A field program of additional geological mapping and sampling is recommended, in conjunction with detailed channel sampling of exposures of the vein. In areas where overburden cover is minimal, trenching and blasting should be carried out to augment detailed sampling of the vein. Contingent upon sufficiently encouraging results in this recommended phase of exploration (in terms of grade and continuity of structure), a drilling program should be carried out to test the character of the mineralized zone at depth.

SANDIFER PEAK (GR-BC-1)

SUMMARY OF EXPENDITURES

PROFESSIONAL SERVICES

Project Geologist

June 16,17	Project planning	2 days @ \$150	300.00	
July 10-16	Field work	7 days @ \$240	1,680.00	
Aug. 6, 7	Data Compilation	2 days @ \$150	300.00	
Nov. 3- 5	Report writing	3 days @ \$150	450.00	
			<u>2,730.00</u>	

Senior Prospector/Geophysical Operator

July 10-16	Field Work	7 days @ \$175	1,225.00	
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Junior Prospector

July 10-16	Field Work	7 days @ \$145	<u>1,015.00</u>	
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4,970.00

CAMP & ACCOMMODATION

Food	21 man days @ \$17/man day	357.00	
Camp equipment	21 man days @ \$10/man day	<u>210.00</u>	

567.00

TRANSPORTATION

Helicopter	July 11/80	2.5 hours	1,067.50	
	July 15/80	0.9 hours	398.10	
	July 15/80	1.9 hours	908.58	
			<u>2,374.18</u>	

3/4-ton 4x4 truck	7 days @ \$35/day	<u>245.00</u>	
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2,619.18

FUEL (gas)

56.85

TRAVEL EXPENSES

M. Fox	171.50	
T. Nelson	<u>26.25</u>	

197.75

OFFICE EXPENSES

Maps, airphotos, telephone, photocopying, reproductions.	492.03	
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<u>SERVICE CHARGE</u> on all third-party invoices	<u>293.28</u>	
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TOTAL \$ 9,196.09

REFERENCES

B.C. Minister of Mines, Ann.Rept. 1952, p.97.

Duffel, S., 1959: Whitesail Lake Map-Area, British Columbia (also GSC Map 1064A); Geological Survey of Canada Memoir 299.

Energy, Mines and Resources, Department of: Mineral Policy Sector
File No. 503831

Northern Miner, The, edition published July 13, 1972.

GSC Open File 708, G.J. Woodsworth, 1980.

880

1100

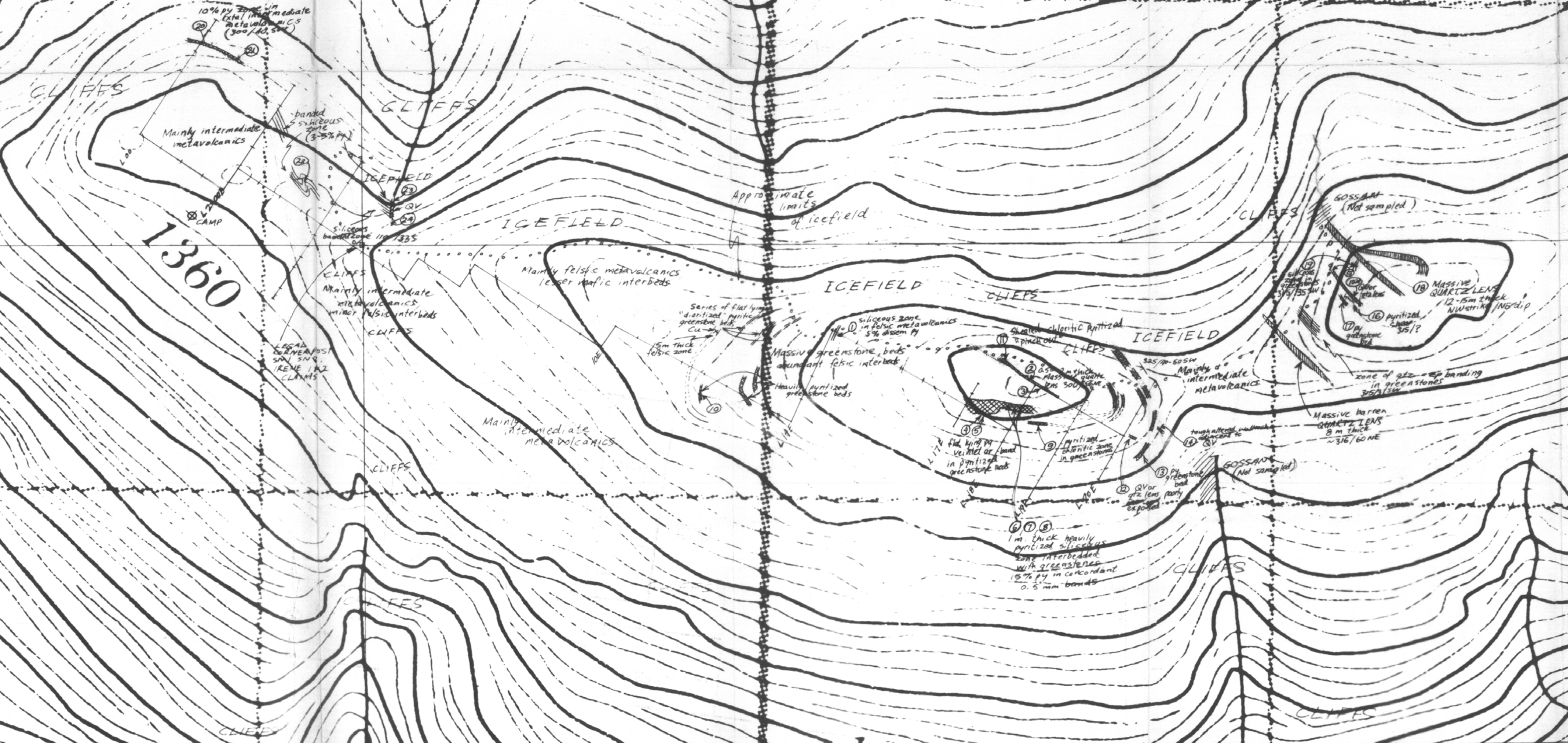
Icefield

1983

1360

300

1300



Legend

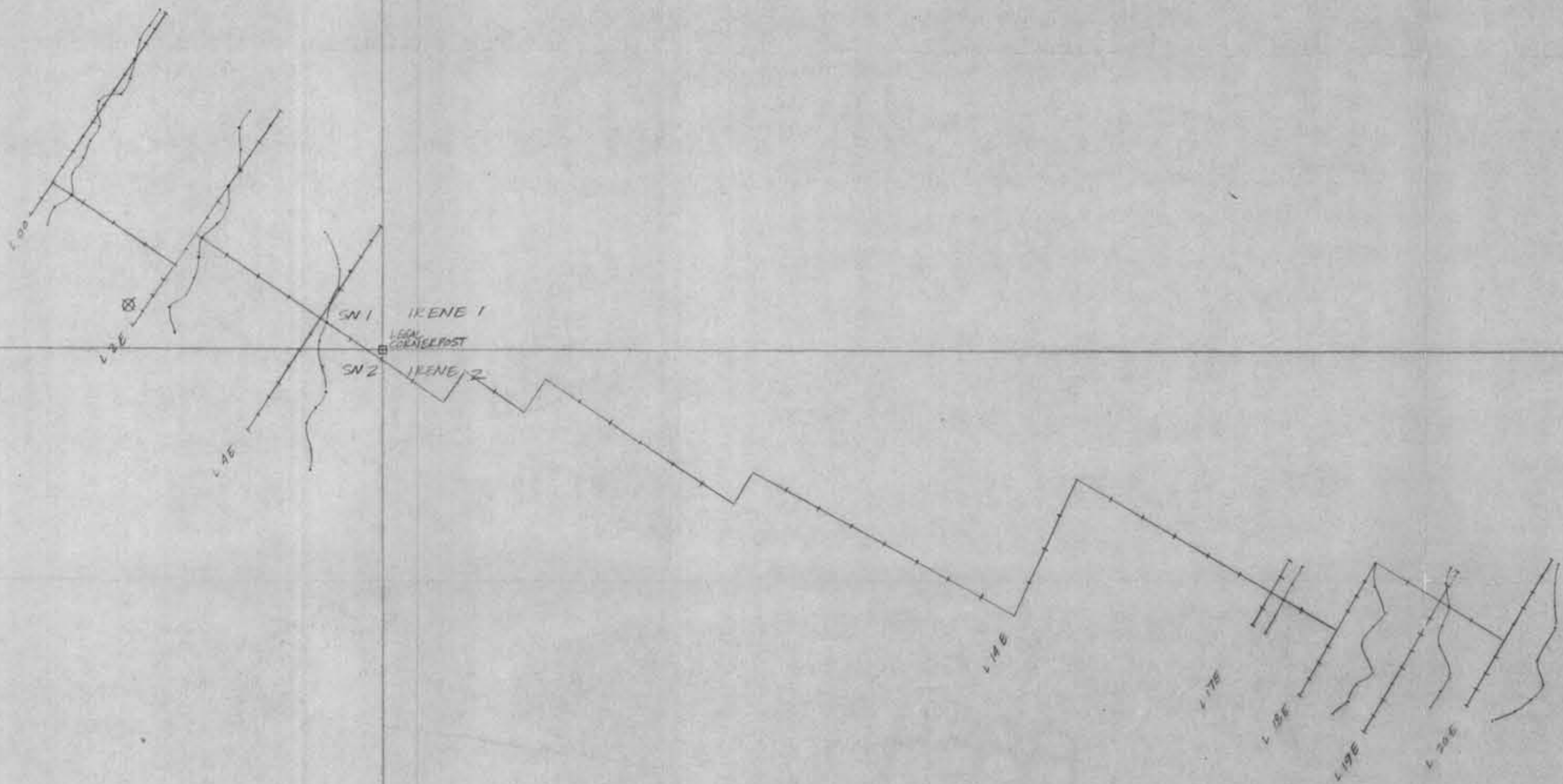
- Geological contact
- Definition, oriented, shaded
- Strike and Dip
- Boundary of Icefield
- Massive quartz lens
- Location mentioned name
- Location
- Rock sample location

Abbreviations

- quartz vein
- quartz
- pyrite
- recrystallized
- greenstone
- entire

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8834
NO.





INSTRUMENT: CRONE RADEN VLF-EM
 PROFILE SCALE: 1mm : 1° DIP ANGLE
 TRANSMITTER: SEATTLE (18.6 KHz)
 DIRECTION TO TRANSMITTER: 140° AZ.
 *° DIP ANGLES PLOTTED ON SE SIDE OF GRID LINES

MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
8834
 NO.

GOLDEN RULE RESOURCES LTD.
 GROUND ELECTROMAGNETIC SURVEY
 SANDIFER PEAK PROJECT SR-BC-1
 NOVEMBER, 1980

SCALE: 1:5,000
 0 100 200 300 400 500 METRES