86-183-14087

GEOPHYSICAL REPORT
on the
BIRD 1 to 5 MINERAL CLAIMS

N.T.S. 82F/6W
Latitude 49°~~28'~~ North 25.8'
Longitude 117°29.6' West
Nelson Mining Division
British Columbia

March 24, 1986

for
Owner/Operator: REX SILVER MINES LTD.
Calgary, Alberta

by
C. H. Aussant, P. Geol.
TAIGA CONSULTANTS LTD.
#100, 1300 - 8th Street S.W.
Calgary, Alberta T2R 1B2

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CERTIFICATE

I, Claude Henry Aussant, of 31 Templebow Way N.E. in the City of Calgary in the Province of Alberta, do hereby certify that:

1. I am a Consulting Geologist with the firm of Taiga Consultants Ltd. with offices at Suite 100, 1300 - 8th Street S.W., Calgary, Alberta.

2. I am a graduate of the University of Calgary, B. Sc. Geology (1976).

3. I have practised my profession continuously since graduation.

4. I am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

5. I did not receive and do not expect to receive any interest, directly or indirectly, in the property described herein, nor in the securities of Rex Silver Mines Ltd. or its affiliates, in respect of services rendered in the preparation of this report.

DATED at Calgary, Alberta, this 24rd day of March, A.D. 1986.

Respectfully submitted,

Claude H. Aussant, B.Sc., P.Geol.

PROFESSIONAL GEOLOGIST ALBERTA
CLAUDE H AUSSANT

PERMIT TO PRACTICE
TAIGA CONSULTANTS LTD.
Signature
Date 18/86
PERMIT NUMBER: P 2399
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

INTRODUCTION

Taiga Consultants Ltd. was contracted by Rex Silver Mines Ltd. to carry out a reconnaissance exploration program on the Bird mineral claims, located 14 km west-southwest of Nelson, British Columbia.

During the period January 16 to 19, 1986, a total of 13 man days were spent exploring the property. A reconnaissance flag-and-compass grid was emplaced on the Bird 5 claim, over an area in which abundant sulphides were found during 1984 property exploration. Magnetometer and VLF-EM surveys were completed over the grid lines.

Location and Access

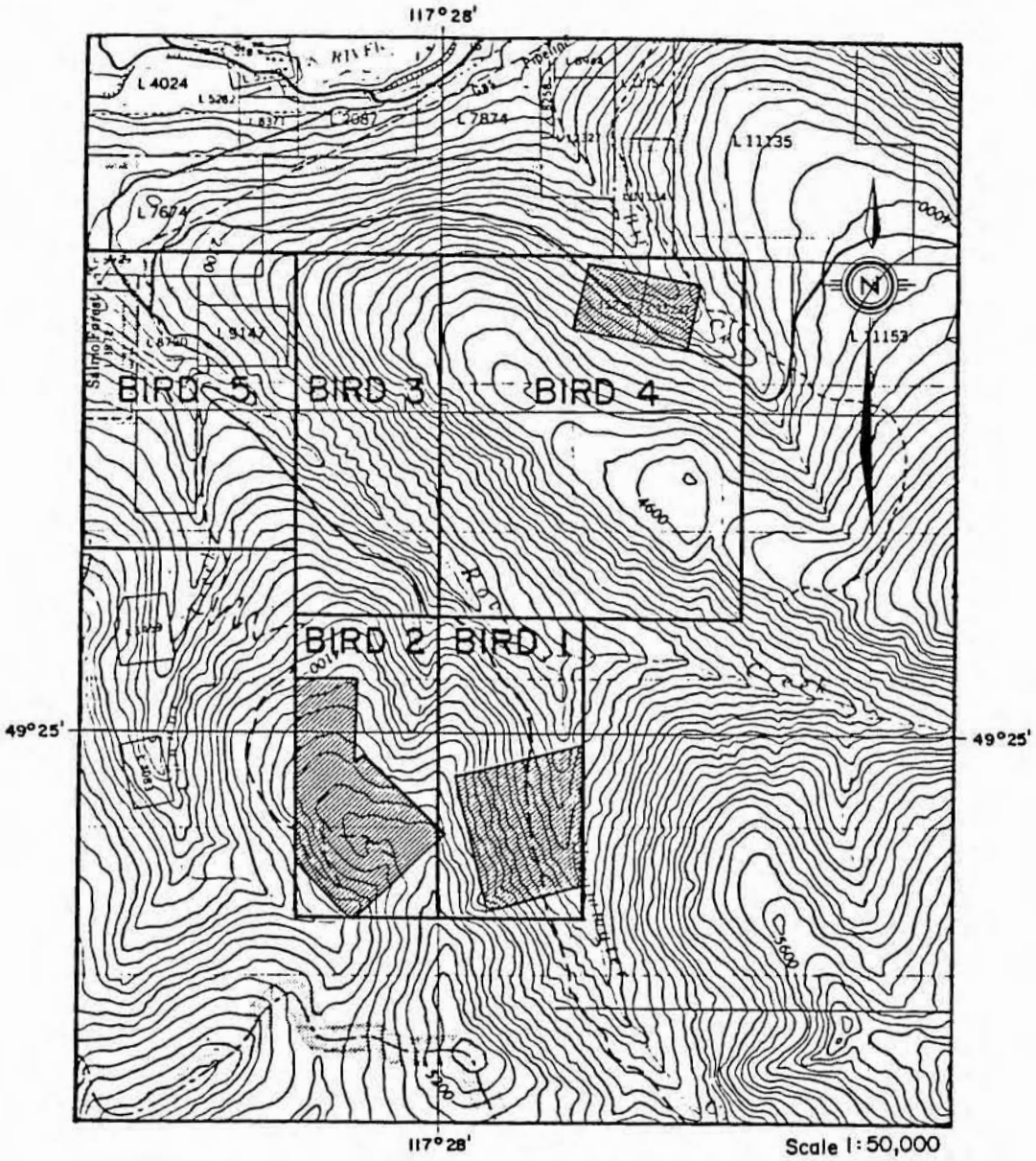
The claim group is situated in southern British Columbia (Figure 1), 14 km west-southwest of Nelson, astride the placer gold producing reaches of Snowwater Creek, at approximately 49°26' North latitude and 117°29' West longitude, in N.T.S. 82F/6, Nelson Mining Division.

Access to the property is via a gravel logging road off B.C. Highway 3A, along the western arm of Kootenay Lake. Four-wheel-drive vehicles are not necessary but would be an asset.

Property and Ownership

The property consists of five mineral claims all staked under the modified grid system, and registered in the name of Rex Silver Mines Ltd. The exact location of the claims is illustrated on Figure 1.

The Bird 1, 2, and 4 mineral claims encompass pre-existing mineral claims and Crown grants which are currently in good standing. These areas have been exlcluded from the Bird claims, and are depicted on Figure 1 by hatchured pattern.



Areas excluded from Bird Claims due to pre-existing mineral claims in good standing

Figure 1

PROPERTY LOCATION MAP
BIRD 1-5 CLAIMS

0 1000 2000
METRES

Claim	Size	No.of Units	Record Number	Date of Record	Expiry Date
Bird 1	2 x 4	8	3005)		
Bird 2	2 x 4	8	3006)		
Bird 3	2 x 5	10	3007)	March 25, 1983	March 25, 1986
Bird 4	5 x 4	20	3008)		
Bird 5	4 x 3	12	3009)		
		58 units			
		(1450 hectares)			

Physiography and Glaciation

The claim group is located within the Bonnington Range of the Selkirk Mountains which form an imposing mountain barrier in the area, breached only by Kootenay River. The range is transected by the valley of Beaver Creek which provides access to the Salmo River valley and the town of Nelson. The southern part of the range, which is underlain by volcanic rocks, contains wooded rounded mountains; but the northern part, which is underlain predominantly by granite, contains higher more pointed peaks.

The claims are situated near the northwest portion of the range, astride Rover and Snowwater Creeks. and are underlain by a metamorphic assemblage of schists and gneisses. Granitic rocks of the Nelson Batholith occur directly south of the claim group.

The country is rugged but sub-alpine in character with predominantly V-shaped stream-eroded valleys. The topography has considerably influenced by Cordilleran glaciation evidenced in the form of transported material and erratics found everywhere. A heterogeneous boulder drift forms 30 m banks at about 850 m ASL on Bird Creek. No continuous terraces border Kootenay River, but extensive alluvial deposits occur in the vicinity of Tagham, and old fans mark the mouths of larger tributary creeks. Parts of Nelson are built on deltas of Cottonwood and Anderson Creeks. A drift veneer mantles the greater part of the area, supporting a thick growth of timber and bush. The movement of the glacial ice sheet southerly has been recorded by many measurements of glacial striae and a few rouches moutonée. Valley glaciation appears to have been on a small scale and confined to the headwaters of some of the streams rising at higher elevations.

Much of the claim group is covered with overburden, and overlies the steep slopes of Bird, Rover and Snowwater Creeks. Exposures are remarkably poor considering the relief and steepness of these slopes. The exposures are usually small in area, confined to road cuts, tops of ridges, and along the trough-like creeks which drain the property. Elevations within the claim group range from 670 m ASL along the lower reaches of Rover Creek, steadily rising to 1680 m ASL in the southernmost portion of the property.

At one time, the area was heavily forested with white pine, Douglas fir, spruce, hemlock, and cedar, but forest fires and logging operations have for the most part obliterated any stands of large trees. Consequently, the claims are largely covered by a secondary growth of small timber and bush.

The climate of the area is pleasant with moderate winters and fairly hot summers. Snow has almost entirely disappeared by the first of June, except for small areas on the higher summits, and does not interfere with prospecting until late in October.

REGIONAL GEOLOGY

The oldest rocks in the area are those of the Archibald Formation/Ymir Group, a thick succession of nonfossiliferous sediments, the base of which is not exposed. These are overlain with apparent conformity by predominantly volcanic rocks of the Elise Formation. Towards the north, the Archibald Formation displays increasing proportions of argillaceous and calcareous rocks resembling the Slocan Group which lies north of the Nelson Batholith. For this reason, the Archibald Formation/Ymir Group is assumed to be partly of Triassic age, and because it underlies the Elise Formation, the upper part is believed to be early Jurassic. These rocks lie on the western limb of a structurally complex synclinorium which is the principal feature of the Rossland Group in the map-area.

A large body of dioritic rocks, termed psuedodiorite, straddles the Kootenay River west of Tagham bridge. The pseudodiorite appears to be concordant with bedded rocks and nowhere shows crosscutting relationships. This pseudodiorite is cut by late Jurassic Nelson granodiorite and thus, with little doubt, is Jurassic.

A large body of granodiorite of the Nelson Intrusives is centered about Siwash and Grassy Mountains with small peripheral bodies of granodiorite to the north and east. These intrusions show sharp contacts and distinct crosscutting relationships to the folded rocks of the region. Faults have probably been instrumental in controlling the emplacement of this large central batholithic wedge as well as the small peripheral bodies.

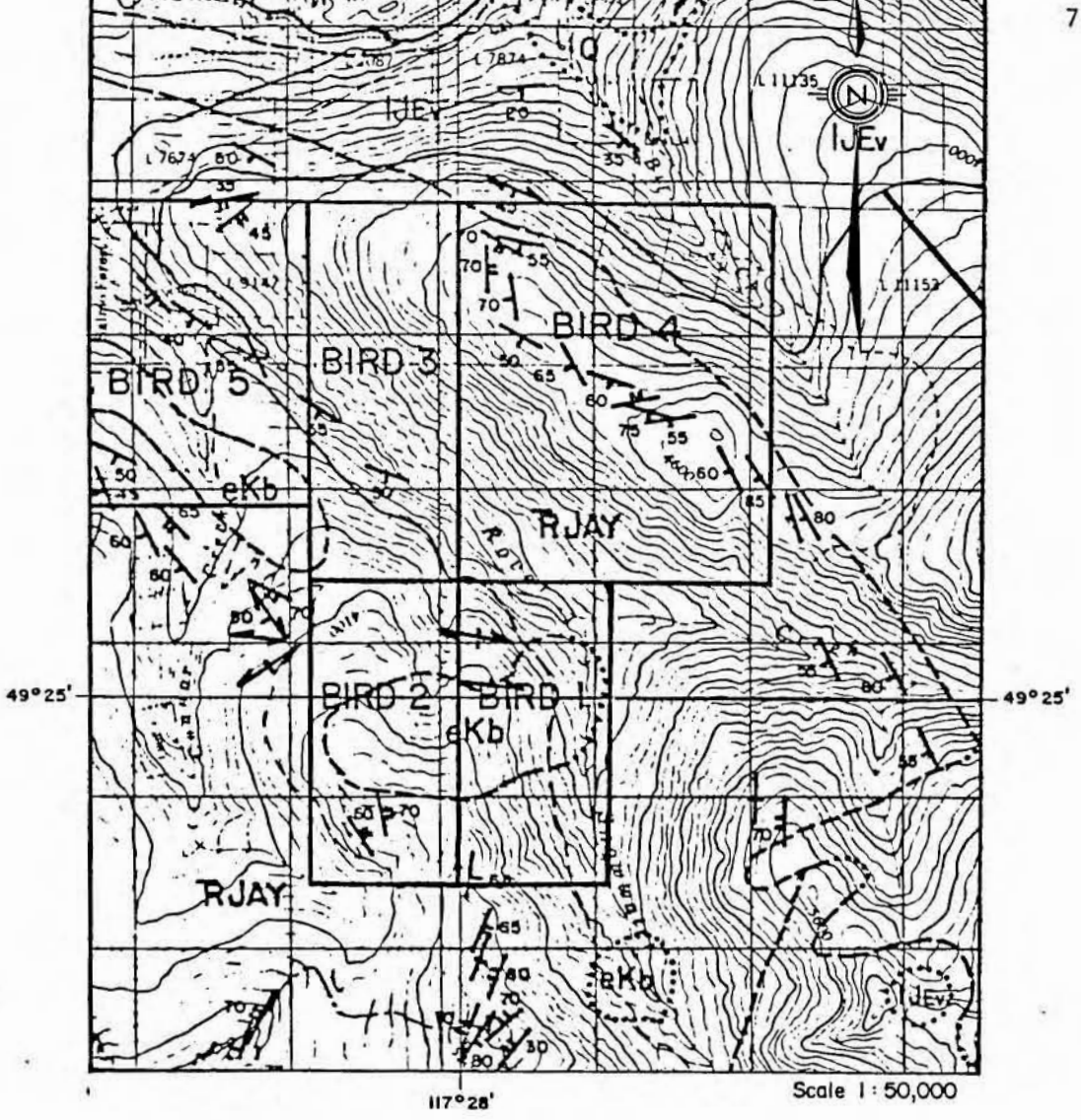
The most common granitic rock type in the area is a massive, coarsely jointed, grey, medium-crystalline granodiorite, but variations range all the way from a true granite to quartz diorite. Radiometric ages of the Nelson Intrusives indicate late Jurassic, with possible plutonic activity extending into the early Cretaceous.

Numerous dykes of syenite porphyry, granite porphyry, quartz porphyry, lamprophyre, and aplite of Tertiary age have invaded all of the rocks above described. Some of these cut the vein deposits and some occupy post-mineral faults.

Small bodies of biotite monzonite are scattered throughout the area. These are part of the Coryell Intrusions of Middle Eocene age.

Considering the severity of deformation to which the bedded rocks of the area have been subjected, remarkably few faults on a mappable scale have been recognized. Small-scale faults have been observed in many places, and the abundance of mineralized fissure veins testifies to the presence of others. Both pre- and post-ore faults have been described from many of the mines in the area. It can only be concluded that post-intrusive faulting has been limited to small-scale local movements.

Metamorphism increases northward in the map-area. Greenschist facies is noted toward the south. In the north, metasomatic processes apparently have converted volcanic rocks of the Elise Formation into pseudodiorite, and limestone of the Ymir Group into marble. The regional geology is depicted on Figure 2. Table 1 summarizes the geological succession of the area.



Q	Quaternary alluvium and drift
eTc	Coryell intrusions; syenite, qtz. monzonite, minor granite, pulaskite, biotite-augite monz.
eKb	Early Cretaceous intrusions: non-porphyritic granite to granodiorite
IJEv	Elise Fm.; flow breccia, massive andesites and basalts, agglomerate, tuff, breccia, siltstone
RJAY	Archibald Fm. and Ymir Gp.; tuffaceous siltstone, arenaceous arg., arg. qtzite; slate, minor limestone and shale
ATRSMn$_{hf}$	Aphebian (?) to Triassic Shuswap Metamorphic Complex, Monashee Group, undivided, gneiss, hornblende, feldspar

Figure 2

REGIONAL GEOLOGY MAP

0 1000 2000
METRES

Table I. Table of Formations

ERA	PERIOD OR EPOCH	GROUP OR FORMATION		MAP SYMBOL	LITHOLOGY	THICKNESS (metres)
CENOZOIC	QUATERNARY				Till, sand, gravel, silt	
	EOCENE Middle	Coryell Intrusions		eTc	Syenite, quartz monzonite; minor granite, palaskite, and biotite-augite monzonite	
		INTRUSIVE CONTACT				
		Marron Formation		EM	Augite and/or hornblende and/or biotite andesite; trachyandesite	900+
		RELATIONSHIP UNKNOWN, BUT MAY BE FEEDER TO MARRON ANDESITE FLOWS				
		Map-unit Ti		Ti	Hornblende-feldspar and hornblende porphyrys	
		CONFORMABLE(?) CONTACT WITH MARRON FORMATION				
		Kettle River Formation		EKR	Tuffaceous arkose	100+
MESOZOIC	CRETACEOUS Upper	RELATIONSHIP UNKNOWN; UNCONFORMABLE ON HALL FORMATION				
		Sophie Mountain Formation		uKsm	Coarse conglomerate with minor interbeds of siltstone and arenaceous argillite	100+
	JURASSIC AND/ OR CRETACEOUS	RELATIONSHIP UNKNOWN; UNCONFORMABLE ON ELISE FORMATION				
		Map-unit Kqp		Kqp	Quartz-feldspar porphyry	
		RELATIONSHIP UNKNOWN; INTRUSIVE INTO ULTRAMAFIC INTRUSIONS				
		Nelson Intrusions		JN	Granodiorite; minor quartz diorite, and diorite	
		RELATIONSHIP CONTRADICTORY; SEEMS TO BE INTRUSIVE				
		Rossland Monzonite		JNmz	Biotite-hornblende-augite monzonite; mainly medium grained	
	JURASSIC Lower and Middle	INTRUSIVE RELATIONSHIP				
		Rossland Group	Hall Formation	lmJhs	Black, soft carbonaceous shale, buff to brown argillaceous sandstone; some siltstone and minor greywacke	300+
			CONFORMABLE(?) CONTACT			
			Elise Formation	lJev	Flow breccia, massive andesites and basalts, agglomerate, tuff, breccia; black, laminated siltstone (lJes); augite porphyry (lJei)	2,150-3,000
			CONFORMABLE(?) AND INTERDIGITATED CONTACT; UNCONFORMABLE ON MOUNT ROBERTS FORMATION			
			Archibald Formation	RJAY	Black, hard, brittle, laminated siltstone, commonly tuffaceous, and arenaceous argillite	900
PALEOZOIC	PENNSYLVANIAN(?)	INTRUSIVE RELATIONSHIP WITH ROSSLAND GROUP, BUT MAY BE COLD INTRUSION				
		Ultramafic Intrusions		mPum	Serpentinite; some dunite	
		INTRUSIVE CONTACT				
		Mount Roberts Formation		MPmR	Black siltstone and argillaceous quartzite, slate, greywacke, chert, pebble conglomerate, lava flows; limestone (Pmrl); paragneiss (Pmrgn)	1,200-1,500
	CARBONIFEROUS(?)	RELATIONSHIP UNKNOWN				
		Map unit Cs		MPM	Black argillite, slate, phyllite, minor chert and greenstone; grey to black limestone (Csl)	2,100
	AGE UNKNOWN	RELATIONSHIP UNKNOWN				
		Gneiss in Bonnington Pluton		ATRsm	Layered granitoid gneiss and amphibolite	
		RELATIONSHIP UNKNOWN				
		Porphyritic leucogranitic rocks		ATRsm lgd	Porphyritic leucogranite	
		RELATIONSHIP UNKNOWN				
		Castlegar Gneiss		ATRsm	Augen gneiss	
		GRADATIONAL CONTACT				
		Trail Gneiss		ATRsm	Amphibolite and grey biotite gneiss, hornblende gneiss, mica schist, aplite, and pegmatite; mylonitized gneiss (pCtgnm)	1,200
		BASE NOT EXPOSED				

PROPERTY GEOLOGY

The Bird 1-5 mineral claims are underlain by intercalated flows and metasediments of the Archibald Formation/Ymir Group, generally striking northwest and dipping southwest. Complex subsidiary structures are probably present on this western limb of the synclinorium which forms a major structural feature of the Rossland Group in the Bonnington and Ymir map-areas.

These rocks have been metamorphosed to an assemblage of brown quartz biotite schist, green-and-white banded quartz biotite schist, green-banded biotite quartz felspar gneiss, and granite gneiss.

Several small areas of granodiorite of the Nelson Batholith (originally referred to as the Bonnington Complex) intrude these sediments. The rocks of the Archibald Formation/Ymir Group are probably quite thin within the claim group, the degree of metamorphism related to the proximity of the underlying batholithic rocks.

The northeastern corner of the group is underlain by augite porphyry flows, breccias, and tuffs of the Elise Formation.

ECONOMIC GEOLOGY

A number of old workings are present in the vicinity of the claims; at least one of these, located along the lower part of Rover (Snowwater) Creek, is included within the Bird property. Very little is known (documented in the existing literature) about these workings. The Ophir-Good Hope and the Whitewater properties, however, provide a positive indication of the potential of the property. These two are described briefly below.

Ophir-Good Hope

Workings at this former producer consist of three adits which are covered by two Crown grants enclosed within the southern part of the Bird group. The zones of interest are easterly striking 'fissures' hosted by quartz-mica and quartz-mica-chlorite schists, which exhibit foliations parallel to the quartz veins. The 'veins' are bands and lenses of quartz interbanded with pyritic and siliceous schist together reaching widths of up to three feet. Pyrite and chalcopyrite occur in the quartz, and free gold is present in oxidized sections of the mineralized zones. Samples collected over narrow widths (2-10 inches) taken from the footwall vein in the No.3 (lowermost) adit reported assays of 1.8 oz/ton Au, 2.62 oz/ton Ag, and 1% Cu. Production to 1944 was 50 tons which yielded 89 ounces of gold and 80 ounces of silver.

Whitewater

The Whitewater (Columbia, Snowwater) former producer is situated approximately 2 km southeast of the southeastern corner of the claims. Initial work at this property delineated a quartz vein with an attitude of N40°E/60°SE. Results were evidently erratic with some of the better values reported as follows:

Width	Au (oz/ton)	Ag (oz/ton)
66"	0.54	0.7
50"	0.29	1.0
32"	4.08	3.6
30"	0.05	0.8
float	0.37	3.6
float	7.06	37.6
float	0.15	1.7
grab (ore bin)	0.90	0.9
misc. float	3.76	16.3

Considerable effort has been expended in trying to locate the source of the high-grade pyritic quartz float which has a fairly well-defined trend towards the northwest through an overburden-covered area. The source could possibly lie within the Bird claims.

1986 EXPLORATION PROGRAM

The January 1986 exploration of the property consisted of establishing a semi-reconnaissance flag-and-compass grid in the east-central portion of the Bird 5 mineral claim to cover an area in which numerous sulphide occurrences were previously located.

A total of 4.95 km of grid lines were emplaced at 100-metre spacing, with stations established at 25-metre intervals. VLF-EM and magnetometer surveys were completed. The grid location is indicated on Map 1.

VLF-EM Survey

A VLF-EM Survey was completed over the grid lines using a Geonics EM-16 unit employing Cuttler, Maine (24.0 kHz) as the transmitting station. This survey was carried out at 25-metre station intervals along the grid lines. The results are plotted in profile format on Map 2 and in Fraser-filtered contour format on Map 3.

The VLF-EM survey delineated a number of semi-parrallel weak to moderate strength conductors in the northern and eastern portion of the grid. The profiles on Lines 7N and 8N indicate the lines were approaching a very strong conductive zone, directly east of the grid . The grid should be extended to cover this conductive horizon and the area prospected. Conductor A (Map 2) extends across the grid area, decreasing in strength towards the south. Its significance was not obtained.

There is no correlation between the VLF-EM conductors delineated and the magnetometer survey completed over the area.

Magnetometer Survey

A magnetometer survey was conducted using a one-gamma GeoMetrics G826A proton magnetometer. Readings were taken at 25-metre intervals along the grid lines, with the sensor head mounted on a 2.5-metre staff.

Base stations were established along the baseline and magnetic fluctuations corrected by continuously looping back to these stations. Variations during the survey period were negligible, thus eliminating the need for corrections. The raw data have been plotted and contoured on Map 4.

The magnetic signature throughout the grid area is variable, consisting of numerous high-low magnetic bands. Readings varied between 57,800 and 58,700 gammas.

The significance of the magnetometer survey, if any, was not determined.

SUMMARY AND CONCLUSIONS

The Bird mineral claims are located 14 km west-southwest of Nelson, British Columbia, with access provided by numerous logging roads in the area.

The 1986 exploration program included the emplacement of 4.95 km of flag-and-compass grid lines in the east-central portion of the Bird 5 claim, to cover an area in which numerous sulphide occurrences had been located. VLF-EM and magnetometer surveys were completed over the grid.

The VLF-EM survey delineated a number of weak to moderate strength conductors in the northern and eastern portions of the grid area. There is probably a strong conductor directly east of the north end of the grid.

The magnetometer survey was relatively active throughout the grid, exhibiting no direct correlation with the EM conductive trends. The information derived by the magnetometer survey appears to be of limited value in defining mineralized horizons in this area.

RECOMMENDATIONS

Exploration work completed on the property in 1983 and 1984 located narrow mineralized quartz veins in the northern portion of the BIRD 4 claim and a sulphide-rich area in the eastern portion of the BIRD 5 claim. The geophysical surveys completed on the BIRD 5 claims in 1986 delineated a number of conductive zones which may be related to the sulphides occurring in this area. These conductive trends should be investigated as to their significnace. The geophysical coverage should be extended to the east to cover the strong conductor believed to exist directly east of the present grid.

Additional prospecting and geological mapping is required over the entire property, especially over those areas in which occurrences have already been located.

REFERENCES

Aussant, C.H.:

October 1984 "Geological, Geochemical, and Geophysical Report on the BIRD 1-5 mineral claims"; private company report

October 1983 "Geological, Geochemical and GeophysicalReport on the BIRD 1-5 mineral claims"; private company report

APPENDIX

Instrument Specifications

Personnel

Summary of Expenditures

STATION SYSTEM

The Model G-826A system includes complete instrumentation and related accessories for remote base station monitoring and portable field applications:

Converter/Timer Console: Complete signal processing and timing circuitry housed within an aluminum watertight cabinet. Includes "pocket" for the G-826 Portable Magnetometer and recessed mounting of the Rustrak recorder.

Portable Magnetometer Console: Compact instrument slides into "pocket" in Converter/Timer. Includes field accessories: shoulder harness, portable sensor, staff, 2 sets of batteries, signal cables for pouch and staff, and storage container.

Analog Recorder: Rustrak, Model 2146, installed in recessed panel mount in Converter/Timer console. Includes 1 roll chart paper. Recessed panel mount not provided when a different recorder is selected.

Base Station Sensor: Noise cancelling, high-signal sensor for use with long signal cables. Includes mounting stud.

Base Station Cables: Shielded 46 m (150 ft.) sensor cable with connectors attached (92 m, or 300 ft., cable optionally

[illegible] cables, and external recorder connector.

Manuals: Operation manual, and 64-page "Applications Manual for Portable Magnetometers".

SPECIFICATIONS

RESOLUTION
±1 gamma throughout tuning range.

TUNING RANGE
20,000 to 100,000 gammas (world-wide).

TUNING MECHANISM
Multi-position rotary switch with twenty-five overlapping positions. Peak signal amplitude indicator light on readout display.

GRADIENT TOLERANCE
Exceeds 800 gammas/foot (portable applications).

SAMPLING RATE
Base Station Mode:
Six-position rotary switch for automatic sampling every 4, 10, 30 seconds or 1, 2, or 5 min. (time base oscillator stable within 10 seconds/week from 0° to 50° C.).
Portable Mode:
Manual pushbutton; new reading every 5 seconds.

DATA OUTPUTS
Visual (Base Station and Portable):
5-digit illuminated incandescent display directly in gammas—visible even in bright sunlight.
Analog (Base Station):
Potentiometric: Calibrated for 100 mv full-scale, maximum load is 20KΩ.
Galvanometric: Calibrated for 1 ma full-scale into 1500Ω.
Digital (Base Station):
5-BCD characters, 1-2-4-8 code (4 line output).
"0" state = 0 to +0.5V. "1" state = +2.5 to +5V.

EVENT MARKER
Automatic, every 30 minutes (Analog Recorder only).

POWER REQUIREMENTS
Base Station Mode:
External 24V DC or 115/220V, 50/60 Hz AC power (maximum current drain per measurement is 2.18 amps with Rustrak recorder and display on).
Portable Mode:
Internal "D" cell (12 each) universally available flashlight batteries. Charge state or replacement signified by flashing indicator light.

Battery Type	No. of Readings
Alkaline	over 10,000
Premium carbon zinc	over 4,000
Standard carbon zinc	over 1,500

NOTE: Battery life decreases with low temperature operation.

TEMPERATURE RANGE
Consoles and Sensors —40° C. to +85° C.
Analog Recorder (Rustrak) 0° C. to +50° C.
NOTE: For portable operation at temperatures below 0° C., an optional battery belt is recommended.

ACCURACY (TOTAL FIELD)
±1 gamma throughout 0° to +50° C. (±3 gamma from —40° C. to +85° C.).

SENSORS:
Base Station:
High signal, AC noise cancelling for use with long signal cables. Includes threaded aluminum mounting stud.
Portable:
High signal, omnidirectional for use with collapsible staff or in "back pouch" attached to shoulder harness.

GALVANOMETRIC ANALOG RECORDER
Rustrak, Model 2146. Includes 5.1 cm (2 inch) chart width with fixed chart speed of 10.2 cm (4 inch) or 15.2 cm (6 inch) per hour (select), event marker, and inkless writing. Style "N" chart paper (50 divisions f/s), 6.4 cm x 19.2 m (2.5 inch wide x 63 feet long).

SIZE AND WEIGHT

	Size	Kgs.	Lbs.
Converter/Timer Console: (w/o magnetometer or recorder)	23.5 x 41.3 x 40 cm (9¼" x 16¼" x 15¾")	9.5	21.0
Portable Magnetometer: (with batteries)	9.5 x 18 x 27 cm (3¾" x 7" x 10½")	2.5	5.5
Portable Accessories*	2.5 cm dia. x 2.4 m (1" x 8 ft.)	2.8	6.0
Sensors:			
Base Station:	11.4 cm dia. x 17.8 cm (4½" x 7")	2.8	6.0
Portable:	8.9 cm dia. x 12.7 cm (3½" x 5")	1.2	2.5
Sensor Cable:	46 m length (150 ft.)	4.6	10.0
Rustrak Recorder:	13.9 x 8.9 x 11.4 cm (5½" x 3½" x 4½")	1.6	3.5

*Portable Accessories: Includes shoulder harness, batteries, sensor cables, and staff. Only the staff dimensions are shown. Weight shown is for all accessories.

OPTIONS

INCREASED RESOLUTION
Provisions for either 1.0 gamma or 0.25 gamma resolution. Includes internal switch in magnetometer console.

EXTENDED SENSOR CABLE
Special 92 m (300 ft.) shielded sensor signal cable for use with Base Station Sensor.

POTENTIOMETRIC ANALOG RECORDER
Hewlett-Packard, Model 7155B. Includes 12.7 cm (5 inch) chart width, event marker, multiple chart speeds, operation on 24V DC or 115/220V 50/60 Hz AC power.
Calibration: Metric (English optional)
Size: 30.5 x 19.7 x 42 cm (12" x 7¾" x 16½")
Weight: 13.6 kg (30 lbs.)
Temp. Range: —28° to +65° C.

MULTIPLE EVENT MARKS AND ANALOG RESOLUTIONS
Recorder event marks every 0.5 hour, 1 hour and 24 hours (separately coded). Analog outputs (switch selectable) to provide 10, 100 and 1,000 gammas full scale.

BATTERY BELT
Specially designed canvas belt with pockets for 12 "D" cell batteries and appropriate power cables for use with the portable magnetometer in very cold weather (0° to —15° C.).

RACK MOUNTING
Special 48.3 x 26.7 cm (19" x 10½") flush-mount aluminum panel, complete with captive hardware.

RECORDING SUPPLIES
Available upon request for the recorder selected.

geoMetrics 395 JAVA DRIVE SUNNYVALE, CA. 94086 U.S.A. (408) 734-4616 CABLE: "GEOMETRICS" SUNNYVALE TELEX NO: 357-435

GEOMETRICS INTERNATIONAL CORP 80 ALFRED ST., MILSON'S POINT SYDNEY NSW 2061 PHONE: 929-9942

Exploranium DIVISION OF geoMetrics SERVICES (CANADA) LTD 438 LIMESTONE CRESCENT, DOWNSVIEW (TORONTO), ONTARIO, CANADA TELEPHONE: (416) 661-1966 TELEX NO: 06-22694

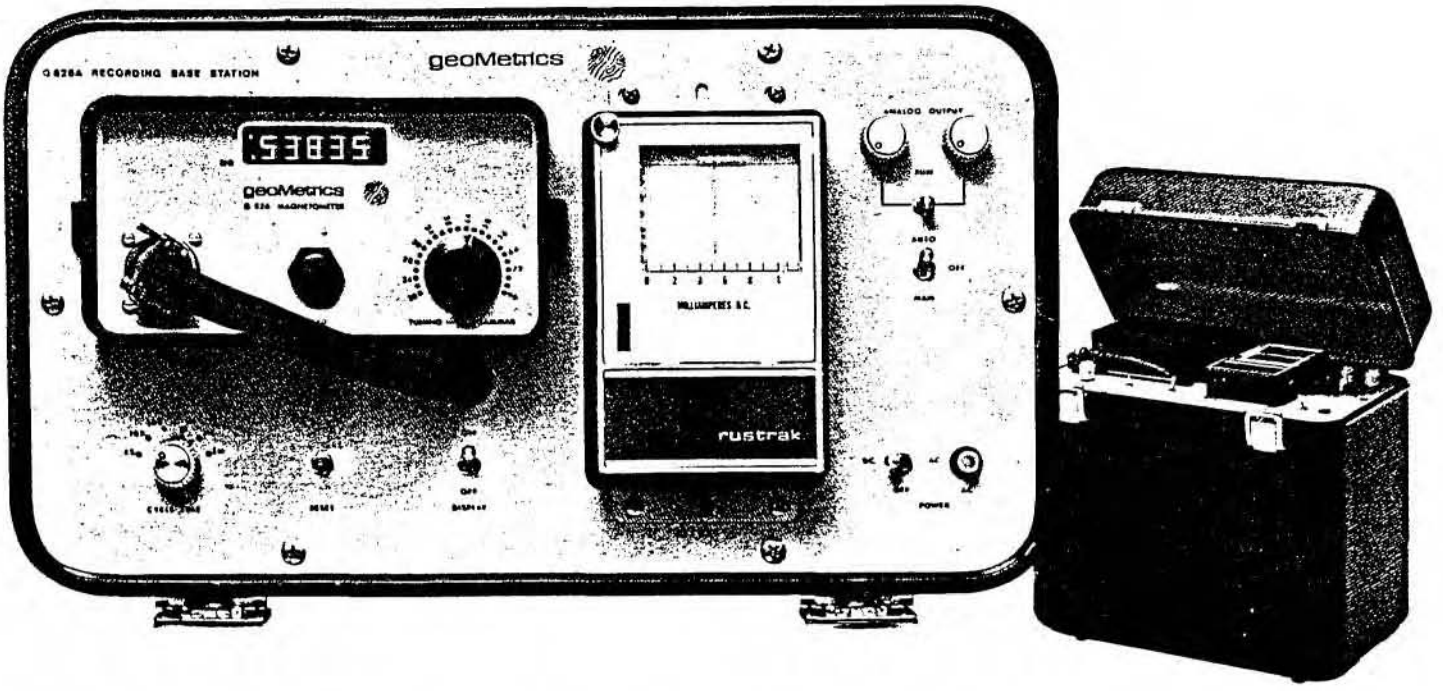
WORLD-WIDE AGENTS: EUROPE • SCANDINAVIA • AUSTRALIA • UNITED KINGDOM • JAPAN • SO. AFRICA • SO. AMERICA

geoMetrics

PROTON MAGNETOMETER

MODEL G-826A

Data Sheet
January 1976



- **Unique Versatility—Both a recording *base station* and a *field portable* proton magnetometer system.**
- **Base Station System—Rugged, self-contained for remote, unattended monitoring from external AC or DC power.**
- **Timed automatic measurements with switch selectable range from 4 seconds to 5 minutes —pushbutton measurements for field portable operation.**
- **1 gamma resolution and repeatability with visual, analog and digital outputs directly in gammas.**
- **Field Portable System — Removable magnetometer console with complete accessories for man-carry surveys — operation from replaceable "D" cell flashlight batteries.**
- **Precise total field measurements—no orientation, no calibration, no leveling, no temperature compensation required—world-wide operation.**

Characterized by unique versatility, the Model G-826A is a high-sensitivity recording base station proton magnetometer system, and a complete man-carry field portable magnetometer for ground exploration. The base station configuration incorporates a Portable Field Magnetometer that measures the earth's total magnetic field including time variations and magnetic storms, and a special Converter/Timer console to record this data in analog or digital form at selectable timed sampling periods. A 5.1 cm (2 in.) galvanometric analog strip chart recorder is normally supplied as an integral part of the system; however, a variety of external analog recorders may also be utilized. For man-carry field surveys, the portable magnetometer can be easily removed from the Converter/Timer console for total field geologic mapping, archaeological exploration, fault analysis, search requirements, and follow-up to larger airborne reconnaissance surveys. As a proton system, the G-826A provides absolute drift-free measurements of the earth's total field directly in gammas with complete freedom from temperature drift, leveling and orientation adjustments. Operation is world-wide, controls are simplified and no previous operator experience or training is necessary. The G-826A is a complete ground magnetics system for all your monitoring and survey requirements.

For other field applications, consider GeoMetrics Models G-816 and G-836 (UniMag™) magnetometers.

EM 16

Pioneered and patented exclusively by Geonics Limited, the VLF method of electromagnetic surveying has been proven to be a major advance in exploration geophysical instrumentation.

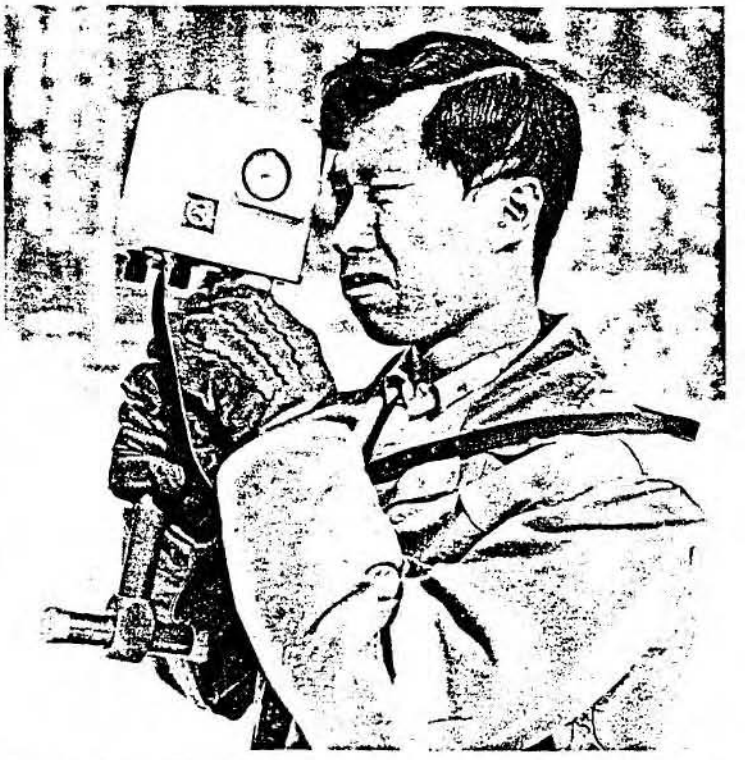
Since the beginning of 1965 a large number of mining companies have found the EM16 system to meet the need for a simple, light and effective exploration tool for mining geophysics.

The VLF method uses the military and time standard VLF transmissions as primary field. Only a receiver is then used to measure the secondary fields radiating from the local conductive targets. This allows a very light, one-man instrument to do the job. Because of the almost uniform primary field, good response from deeper targets is obtained.

The EM16 system provides the *in-phase* and *quadrature* components of the secondary field *with the polarities indicated.*

Interpretation technique has been highly developed particularly to differentiate deeper targets from the many surface indications.

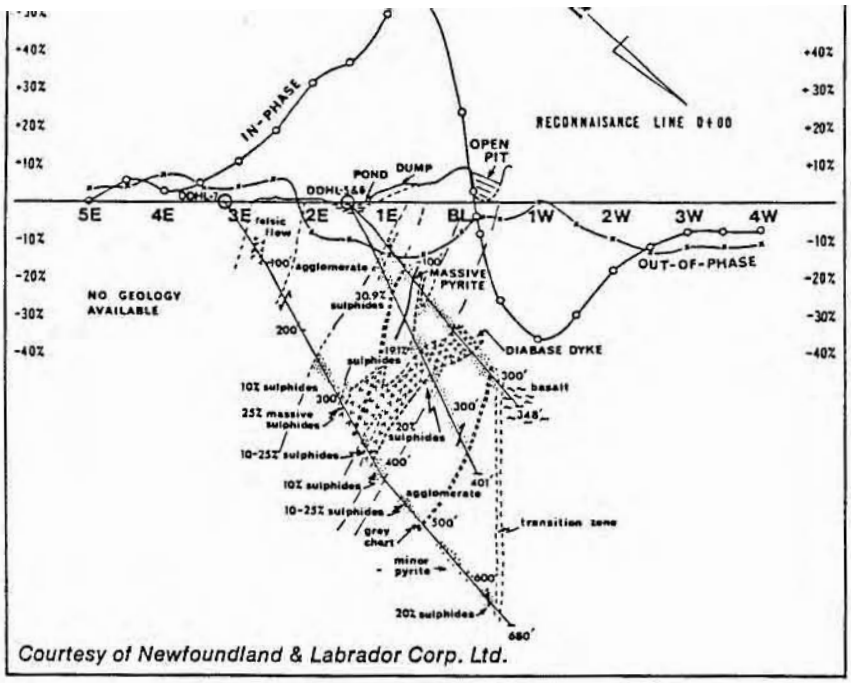
Principle of Operation
The VLF transmitters have vertical antennas. The magnetic signal component is then horizontal and concentric around the transmitter location.



Specifications

Source of primary field	VLF transmitting stations.
Transmitting stations used	Any desired station frequency can be supplied with the instrument in the form of plug-in tuning units. Two tuning units can be plugged in at one time. A switch selects either station.
Operating frequency range	About 15-25 kHz.
Parameters measured	(1) The vertical in-phase component (tangent of the tilt angle of the polarization ellipsoid). (2) The vertical out-of-phase (quadrature) component (the short axis of the polarization ellipsoid compared to the long axis).
Method of reading	In-phase from a mechanical inclinometer and quadrature from a calibrated dial. Nulling by audio tone.
Scale range	In-phase ± 150%; quadrature ± 40%.
Readability	± 1%.
Reading time	10-40 seconds depending on signal strength.
Operating temperature range	—40 to 50° C.
Operating controls	ON-OFF switch, battery testing push button, station selector, switch, volume control, quadrature, dial ± 40%, inclinometer dial ± 150%.
Power Supply	6 size AA (penlight) alkaline cells. Life about 200 hours.
Dimensions	42 x 14 x 9 cm (16 x 5.5 x 3.5 in.)
Weight	1.6 kg (3.5 lbs.)
Instrument supplied with	Monotonic speaker, carrying case, manual of operation, 3 station selector plug-in tuning units (additional frequencies are optional), set of batteries.
Shipping weight	4.5 kg (10 lbs.)

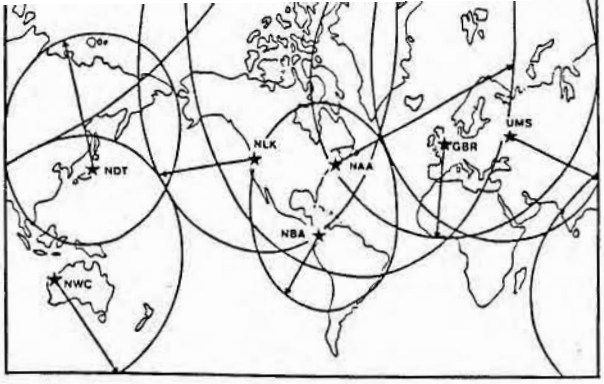
GEONICS LIMITED
Designers & Manufacturers of Geophysical Instruments
1745 Meyerside Drive/ Unit 8
Mississauga/Ontario/Canada
L5T 1C5
Tel: (416) 676-9580
Cables: Geonics



Courtesy of Newfoundland & Labrador Corp. Ltd.

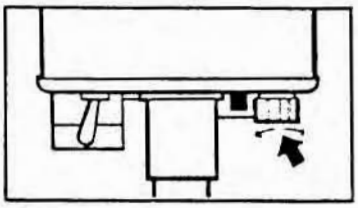
EM 16 Profile over Lockport Mine Property, Newfoundland

Additional case histories on request.



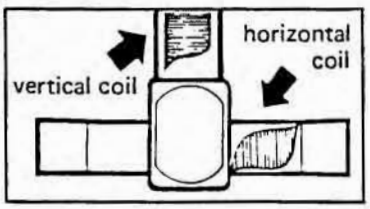
Areas of VLF Signals

Coverage shown only for well-known stations. Other reliable, fully operational stations exist. For full information regarding VLF signals in your area consult Geonics Limited. Extensive field experience has proved that the circles of coverage shown are very conservative and are actually much larger in extent.



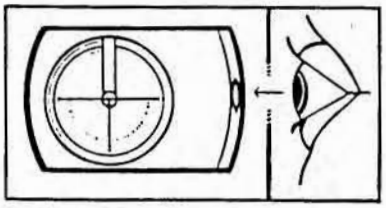
Station Selector

Two tuning units can be plugged in at one time. A switch selects either station.



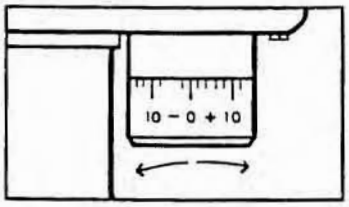
Receiving Coils

Vertical receiving coil circuit in instrument picks up any vertical signal present. Horizontal receiving coil circuit, after automatic 90° signal phase shift, feeds signal into quadrature dial in series with the receiving coil.



In-Phase Dial

shows the tilt-angle of the instrument for minimum signal. This angle is the measure of the vertical in-phase signal expressed in percentage when compared to the horizontal field.



Quadrature Dial

Is calibrated in percentage markings and nulls the vertical quadrature signal in the vertical coil circuit.

By selecting a suitable transmitter station as a source, the EM 16 user can survey with the most suitable primary field azimuth.

The EM 16 has two receiving coils, one for the pick-up of the horizontal (primary) field and the other for detecting any anomalous vertical secondary field. The coils are thus orthogonal, and are mounted inside the instrument "handle".

The actual measurement is done by first tilting the coil assembly to minimize the signal in the vertical (signal) coil and then further sharpening the null by using the reference signal to buck out the remaining signal. This is done by a calibrated "quadrature" dial.

The tangent of the tilt angle is the measure of the vertical in-phase component and the quadrature reading is the signal at right angles to the total field. All readings are obtained in per centages and do not depend on the absolute amplitude of the primary signals present.

The "null" condition of the measurement is detected by the drop in the audio signal emitted from the patented resonance loudspeaker. A jack is provided for those preferring the use of an earphone instead.

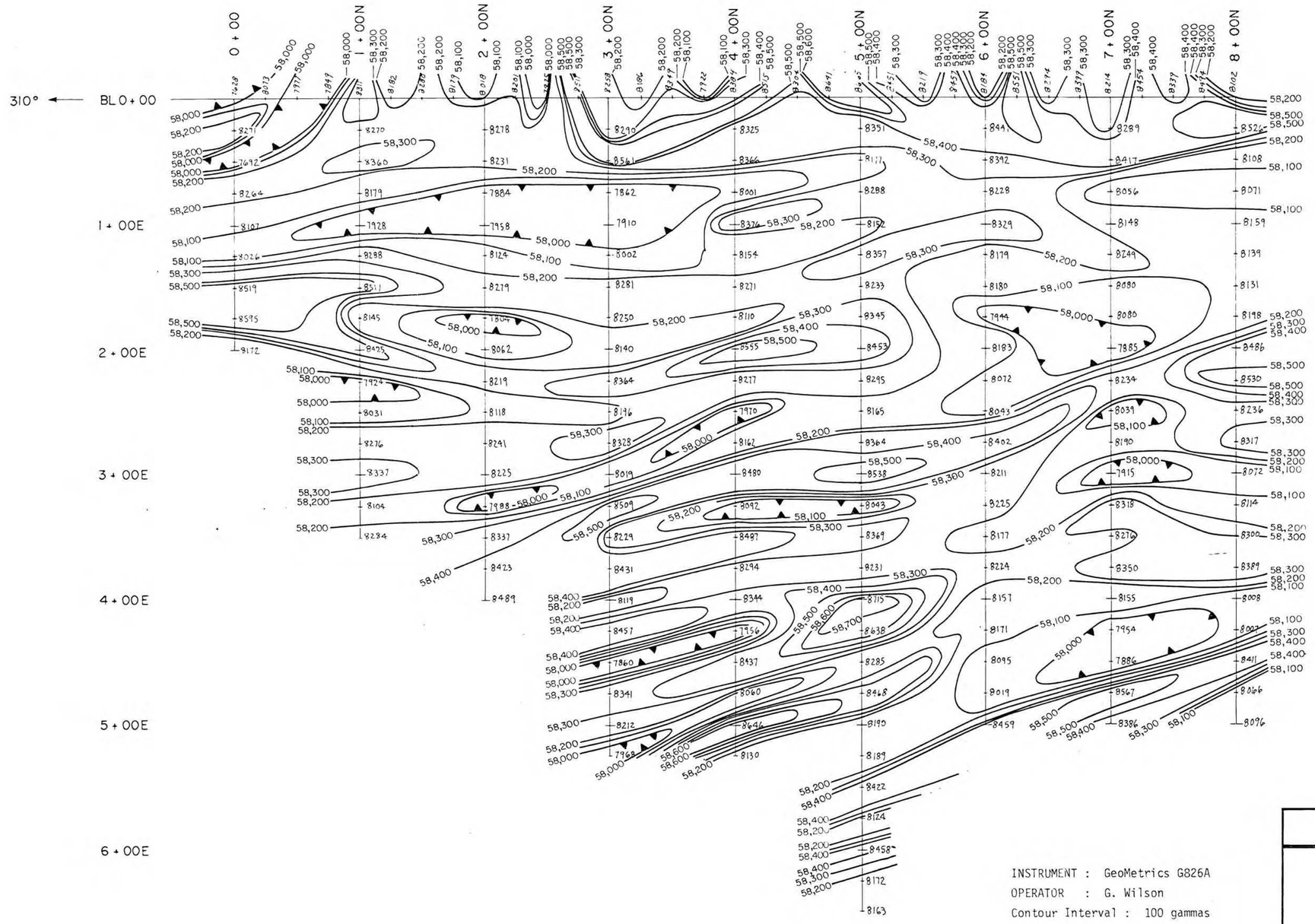
The power for the instrument is from 6 penlight cells. A battery tester is provided.

FIELD PERSONNEL

Name/Address	Position	Dates	Man days
L. J. Nagy 2137 Kaslo Court Kelowna, BC V1Y 8B9	Project Geologist	Jan. 16-18 1986	3
G. L. Wilson 60 Ranchridge Road NW Calgary, Alberta T3G 1Z9	Geophysical Operator	Jan. 16-19	3½
L. A. Barrett 28A Trepanier Road RR #2, Box 9 Peachland, BC V0H 1X0	Assistant	Jan. 16-18	3
D. L. Barrett 28A Trepanier Road RR #2, Box 9 Peachland, BC V0H 1X0	Assistant	Jan. 16-19	3½
			13

SUMMARY OF EXPENDITURES
Bird 1-5 Mineral Claims
Nelson Mining Division
British Columbia

PRE-FIELD				186.84
FIELD PERSONNEL				
Project Geologist	3 man days	@ $300/diem	900.00	
Instrument Operator	3½ man days	@ $150/diem	525.00	
Field Assistants	6½ man days	@ $160/diem	1,040.00	2,465.00
ACCOMMODATION				
Lodging & Food	13 man days	@ $42.03/diem	546.39	
Disposable supples			131.42 *	677.81
TRAVEL EXPENSES				
rental 4x4 truck	4 days	@ $75/diem	300.00	
rental Nissan King Cab	4 days	@ $45/diem	180.00	
Personnel wages			1,155.00	
Fuel			135.17 *	
Crew Meals			240.08 *	2,010.25
EQUIPMENT RENTALS				
VLF-EM-16	5 days	@ $18/diem	90.00	
Proton Magnetometer	5 days	@ $20/diem	100.00	
Mag. base station	5 days	@ $30/diem	150.00	
Chainsaw	5 days	@ $ 6/diem	30.00	
Snowmobile	2 x 4 days	@ $40/diem	320.00	690.00
MISCELLANEOUS				
Maps, publications, reproductions; courier, freight; communications				100.27 *
POST-FIELD				
Data compilation, report writing, secretarial, drafting services				1,249.52
* HANDLING CHARGE on third-party billings 12% of $586.94				70.43
			TOTAL	$7,450.12



INSTRUMENT : GeoMetrics G826A
OPERATOR : G. Wilson
Contour Interval : 100 gammas

GEOLOGICAL BRANCH
ASSESSMENT REPORT

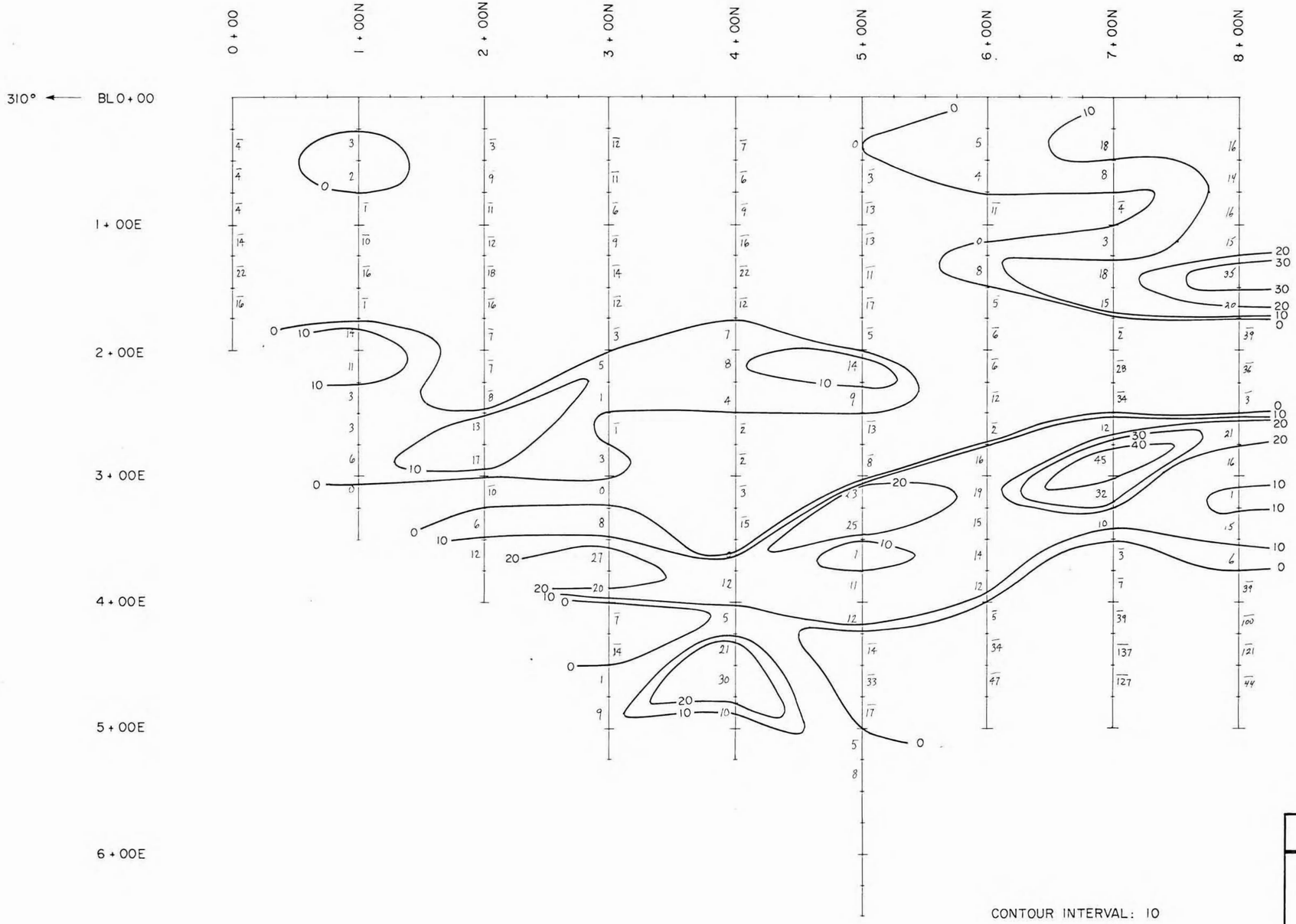
14,990

REX SILVER MINES LTD.

BIRD - 5

MAGNETOMETER SURVEY

DATE JANUARY, 1986	NTS 82 F/6
PROJECT BC-85/6	MAPPED/ L.J. NAGY DRAWN BY C. AUSSANT
SCALE 1 : 2500	0 50 100 m
TAIGA CONSULTANTS LTD	MAP 4



CONTOUR INTERVAL: 10

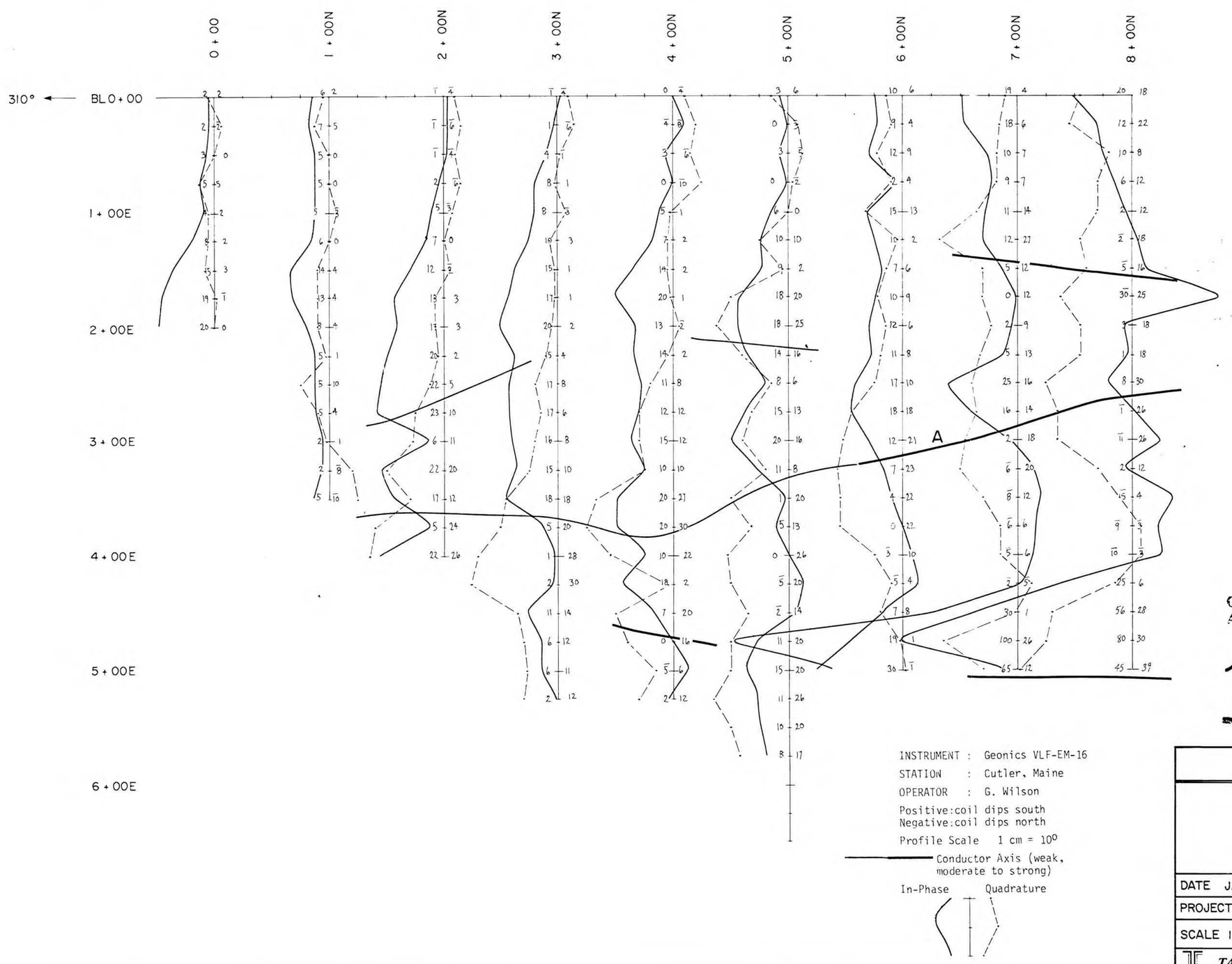
GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,990

REX SILVER MINES LTD.

BIRD - 5
FRASER FILTERED VLF-EM

DATE JANUARY, 1986	NTS 82 F/6
PROJECT BC-85/6	MAPPED/ L.J. NAGY DRAWN BY C. AUSSANT
SCALE 1 : 2500	0 50 100 m
TAIGA CONSULTANTS LTD	MAP 3



INSTRUMENT : Geonics VLF-EM-16
STATION : Cutler, Maine
OPERATOR : G. Wilson
Positive: coil dips south
Negative: coil dips north
Profile Scale 1 cm = 10°
Conductor Axis (weak, moderate to strong)
In-Phase Quadrature

REX SILVER MINES LTD.

BIRD - 5
VLF - EM PROFILES

DATE JANUARY, 1986	NTS 82 F/6
PROJECT BC-85/6	MAPPED/ L.J. NAGY DRAWN BY C. AUSSANT
SCALE 1 : 2500	0 50 100 m
TAIGA CONSULTANTS LTD	MAP 2

117°28'

49°25'

Bird Creek

Logging Trail

Logging Trail

L 14+00W
L 12+00W
L 10+00W
L 8+00W
L 6+00W
L 4+00W
L 2+00W
L 0+00

5+00E
4+00E
3+00E
2+00E
1+00E
0+00 B/L
L 8+00N
L 7+00N
L 6+00N
L 5+00N
L 4+00N
L 3+00N
L 2+00N
L 1+00N
L 0+00
1986 GRID

BIRD 5

BIRD 3

BIRD 4

BIRD 2

BIRD 1

River

Creek

Creek

Connor Creek

Snowwater Creek

49°25'

117°28'

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,990

REX SILVER MINES LTD.	
BIRD 1 - 5 CLAIMS GRID LOCATION MAP	
DATE JANUARY, 1986	NTS 82 F/6
PROJECT BC - 85 - 6	MAPPED/ DRAWN BY C. AUSSANT
SCALE 1:5000	0 50 100 150 200 METRES
TAIGA CONSULTANTS LTD	MAP 1