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LOG NO: 0220	RD.
ACTION:	
FILE NO:	

GEOPHYSICAL REPORT
 on the
BAYONNE, JOHN AND LYNN CLAIMS
 (JOHN CLAIM GROUP)

Nelson Mining Division - British Columbia

N.T.S. 82F/2W

Lat. 49° 09' N.

Long. 116° 58' N.

for

SUNSTEEL RESOURCES INC.

SUB-RECORDER RECEIVED
FEB 14 1990
M.R. # \$..... VANCOUVER, B.C.

by

E. Sykes, B.A.Sc.

and

Donald G. Allen, P. Eng. (B.C.)

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

19,670

February 13, 1990

Vancouver, B.C.

INTRODUCTION

Goldrich Resources Inc. and F.H. Critchlow hold the Bayonne, John and Lynn claims in the Nelson Mining Division of southeastern British Columbia. The claims surround the Crown Grant claims of the Bayonne Mine, also held by Goldrich Resources Inc. The Bayonne Mine, was a significant gold producer with a recored past production of 85000 tons averaging 0.47 ounces per ton gold and 1.12 ounces per ton silver.

This report summarizes results of VLF-electromagnetic surveys conducted by F. Critchlow on the behalf of Gunsteel Resources Inc. during the period November 6 to 15, 1989. Purpose of this work was to attempt to determine the possible westerly extension of the known veins on the Bayonne property. Unfortunately, the presence of areas covered with thick slide alder and fresh heavy snowfalls resulted in low productivity. A total of 5.1 kilometres of lines were established and 3.7 line kilometres of VLF-surveying was completed. Also summarized in this report is the general geology of the Bayonne Mine area.

LOCATION, ACCESS, PHYSIOGRAPHY

The Bayonne Mine area is situated 24 kilometres east of Salmo and 32 kilometres west northwest of Creston (Figures 1 and 2). The property is accessible via Highway 3 between Salmo and Creston. A 10 kilometre gravel road leads northerly from the highway at a point 32 kilometres west of Creston and 50 kilometres eas of Salmo.

The John claim group covers the slopes of John Bull Mountain at the headwaters of Bayonne, Bluebird and Next Creeks. Elevations range from about 1525 to 2225 metres (5,000 to 7,300 feet). Slopes are covered with a forest cover of larch and balsam fir. Local slide areas are covered with a thick tangle of slide alder.



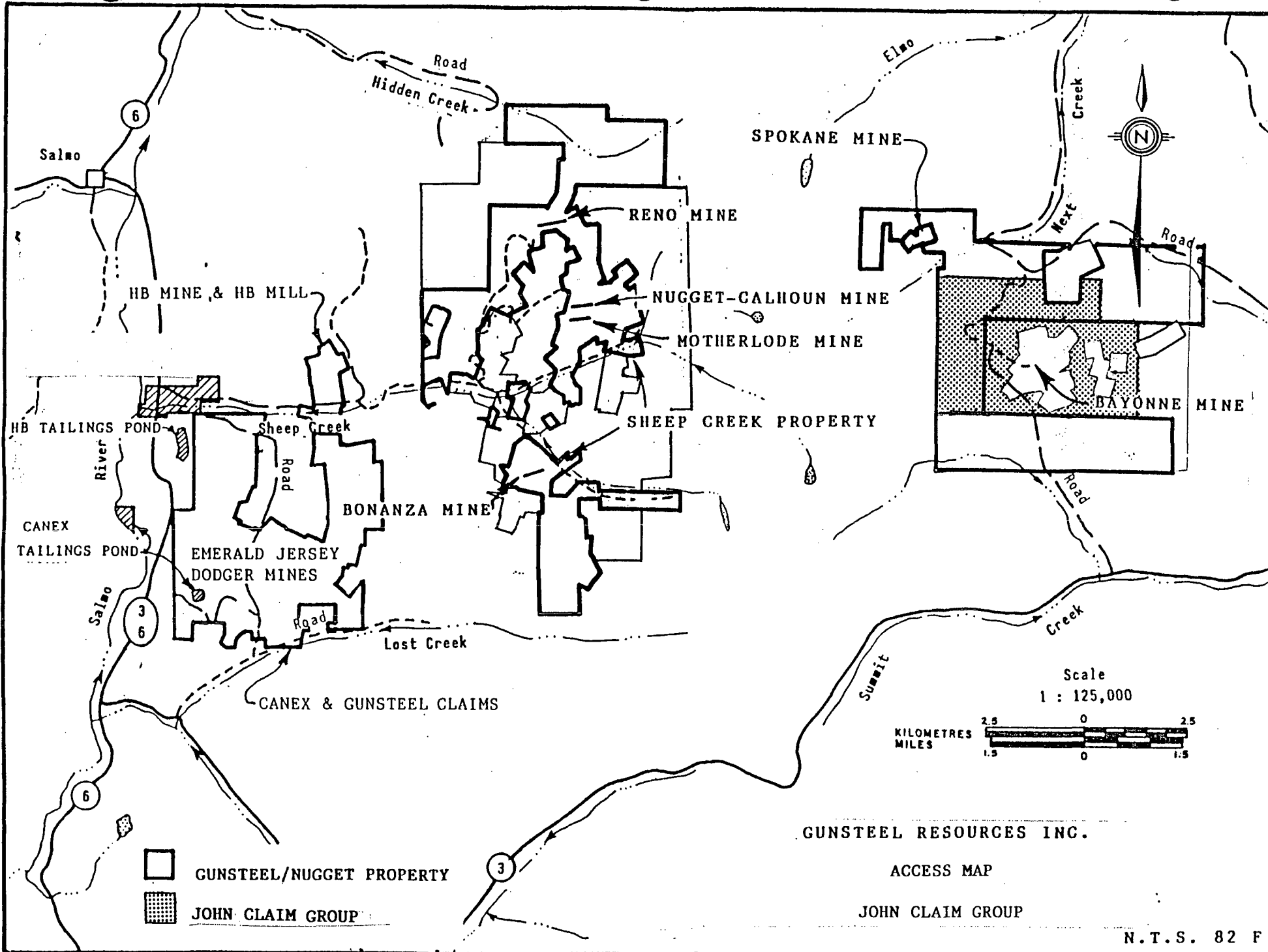
LOCATION MAP

SCALE 200 0 200 KILOMETRES
100 0 100 MILES



JOHN CLAIM GROUP

FIGURE - I



N.T.S. 82 F

FIGURE 2

CLAIM DATA

The JOHN group comprises 66 claims and claim units as follows (see Figure 3):

<u>Claim Name</u>	<u>Type</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Expiry Date</u> *
Bayonne 1	Mod. Grid	20	2503	November 17, 1990
Bayonne 2	Mod. Grid	20	2504	November 17, 1990
John 3	Mod. Grid	10	5689	May 19, 1991
Lynn 1-4	2-post	4	5543-5546	March 16, 1991
Lynn 7-18	2-post	12	5547-5558	March 16, 1991

The Bayonne claims are held by Goldrich Resources Inc. and the John and Lynn claims by F. Critchlow.

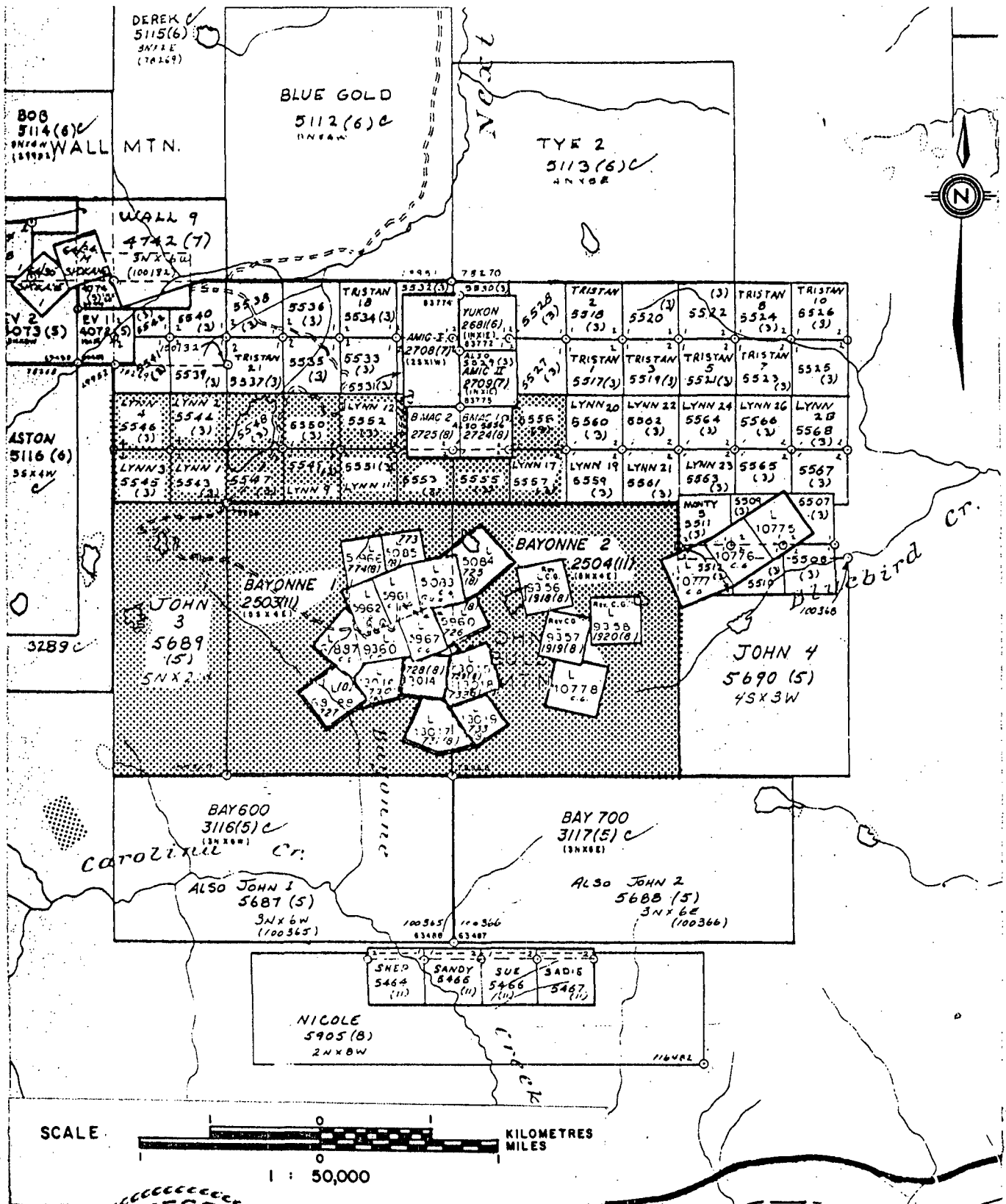
*Assuming that this report is accepted for assessment purposes.

HISTORY

The history of the Bayonne Mine area, as summarized by Wells and O'Grady (1984) is as follows:

"The earliest recorded history of the Bayonne property was in 1901 when the Bayonne and Echo claims received some attention. Early work consisted of numerous trenches and three short adits on the 1st, 6th and 8th levels developing the original vein exposures. Very little work was carried out between 1915 and 1935 when the 17 original Crown grant claims including the Bayonne and Echo claims were acquired by Bayonne Consolidated Mines, Ltd. Underground development and mining began and a 60 ton cyanide concentrator was constructed, coming into full production in 1936. Production was slowed down in 1939 in favour of an extensive development program and then continued unabated up to 1942. An appreciable amount of diamond drilling was done between 1936 and 1941 but, unfortunately the records are not available. Most of these holes were drilled horizontally in an effort to locate parallel veins.

The mine closed in 1942 and remained dormant until the end of the war. In 1945 the mine was re-opened but the high cost of maintaining



N.T.S. 82F/2W

GUNSTEEL RESOURCES INC.

CLAIM MAP
JOHN CLAIM GROUP

Nelson Mining Division - British Columbia

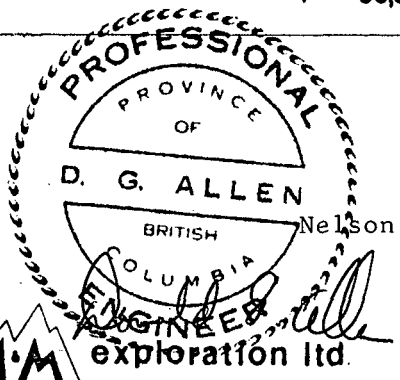


Figure 3

labour combined with the postwar material shortage forced a closure in 1946. Production ore was still available when the mine ceased operations. Between 1947 and 1951 minor tonnages were produced by leasees.

In 1963 Torwest Resources Ltd. optioned the property and carried out rehabilitation work, diamond drilling and a resampling program. Up until 1963 access to the property was via a 37 kilometer gravel road from Tye siding on the west side of Kootenay Lake. Completion of the Provincial Salmo-Creston highway enabled Torwest to greatly improve access by constructing a 10 kilometer gravel road from the highway to the mine in 1964.

Torwest Resources carried out sufficient work to their satisfaction to justify construction of a new concentrator. Reserves were considered to be 12,450 tons averaging 0.79 oz. Au per ton. Site preparation for the new 50 ton per day mill was commenced, two 300 ton ore bins were constructed and the main haulage way (5 level) was retracked when Torwest dropped their interest (and their option) in favour of other exploration properties.

Total production is reported as being 85,000 tons averaging 0.47 oz. Au and 1.12 oz Ag. This includes shipments made by leasees in 1947-1951 that totalled 673 tons averaging 0.67 oz Au, 4.75 oz Ag, 4.4% Pb, and 2.3% Zn.

In June, 1968 the property was optioned by Liberty Mines Ltd. but no work was carried out other than an examination by G.L. Mill, P. Eng.

In early 1980 Goldrich Resources Inc., acquired the property. Work carried out that year included rehabilitation of the 8 and 8A Level portals, snowshed construction and track extension from the 8A portal to a dump area. Four surface diamond drill holes were collared; three in the vicinity of the North Vein and one near the 8A portal. A trial stope on the 8 Level was begun and a shipment of 43 tons averaging 0.15 oz. Au, 1.2 oz. Ag, 0.4% Pb, 0.2% Zn and 78.3% SiO₂ was made to the Cominco Smelter at Trail."

In 1987 Lightning Mines Inc. optioned the Goldrich claims and conducted geochemical and geophysical surveys, trenching and sampling.

GEOLOGY

The Bayonne property is in the Nelson map area, the geology of which has been described by Rice (1941). The following geological summary has been taken mainly from Phendler (1982) Wells and O'Grady (1984) and Hitchins (1987).

The mine area lies near the southwest end of the Bayonne batholith, a northeast trending, 60 kilometre-long body of granodiorite. This body averages about 16 kilometres in width is generally irregular and has numerous small outliers.

The JOHN group and the entire Bayonne property is underlain by the phase termed by Rice (1941) as the Mine Stock, which intrudes clastic and carbonate rocks of the late Proterozoic Horsethief Creek series. The mine stock is composed of medium-grained equigranular granodiorite containing about 20% biotite and hornblende. Locally present are fine-grained, porphyritic, or gneissic phases. According to Hitchins (1987) the stock contains numerous gneissic xenoliths, less than 30 centimetres in diameter, which are most abundant near the periphery of the stock. It is intruded by narrow one centimetre to one metre wide aplite dikes and scattered biotite and hornblende lamprophyryre dikes.

The principal known mineralized structures are the Bayonne main vein, which strikes at an azimuth of 080 degrees, and the A-vein which branches off the Bayonne vein. Less well known is the relatively unexplored North vein which lies about 100 metres to the north of and is parallel to the Bayonne vein. The Bayonne vein is exposed over a length of 750 metres and the A-vein over a length of 550 metres. They are nearly vertical and on surface are very linear with a mild sinuosity. Vein material is quartz, ranging in width from 5 centimetres to 3 metres in a shear zone ranging up to 5 metres. The veins are heavily oxidized to a depth of 140 metres. Above this level gold is associated with limonite in vuggy honey-combed quartz and below, it is associated with pyrite, galena,

chalcopyrite and sphalerite. The wallrock, according to Wells and O'Grady, is typically altered to a talc-carbonate rock for a distance of up to one metre on either side of the vein.

The Bayonne vein system has been developed by 8 levels about 30 metres apart. Reserves estimated by Wells and O'Grady are 32,700 tons proven, grading 0.37 ounces per ton gold and 58,000 ton inferred, grading 0.47 ounces per ton gold in the Bayonne and A veins; and 46,000 tons inferred, grading 0.35 ounces per ton gold in the North vein.

VLF-ELECTROMAGNETIC SURVEY

Method and Instrumentation

A total of 3.7 kilometres of VLF-electromagnetic survey was conducted on the Bayonne 1 and John 3 claims. Readings were taken at 25 metre intervals on lines spaced a maximum of 100 metres apart. The survey was conducted using Seattle, Washington (24.8 kilohertz) as the transmitting station.

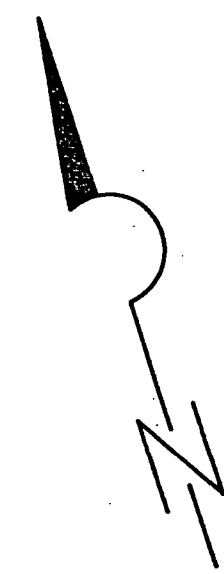
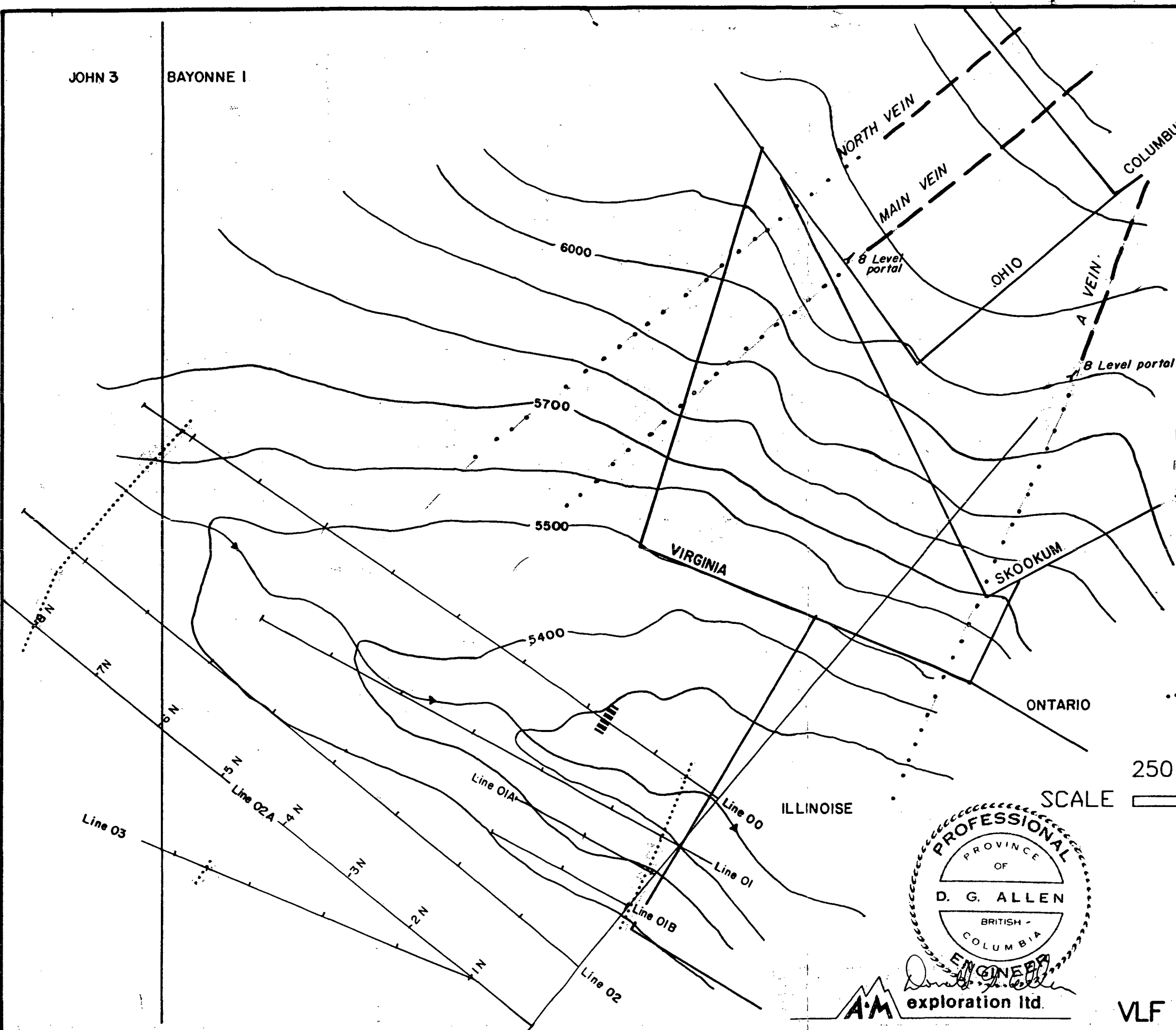
The VLF-electromagnetic method utilizes an electromagnetic field transmitted from radio stations in the 12 to 24 kilohertz range (long range submarine communication signal). The magnetic field transmitted from the station will be horizontal. Conductive bodies (such as the presence of massive sulphides or fault structures) in the earth's crust, will create a secondary magnetic field. By measuring various parameters of the vertical component of the secondary field, conductive zones can be located and to a degree, evaluated.

An EM-16 VLF-electromagnetic instrument manufactured by Geonics Limited was used for the survey. This instrument measures the in-phase and quad-phase of a vertical magnetic field as a percentage of the horizontal primary field. The instrument has a resolution of 1%.

The in-phase percentage has been converted to a dip angle (the arctangent of the in-phase percentage divided by 100) and then filtered by a technique described by Fraser (1969 - Geophysics Vol. 34, No. 6, pp. 958-967). The in-phase and quadrature percentage along with the Fraser filtered dip angle are presented in profile form on Figure 5. Conductive

JOHN 3

BAYONNE I



LEGEND

- VLF - ELECTROMAGNETIC ANOMALY
 - STRONG
 - MODERATE
 - WEAK
- SURVEY GRID LINE
- CLAIM LINE
- TOPOGRAPHIC CONTOURS;
CONTOUR INTERVAL 100 FEET
- VEIN PROJECTION



1 : 5,000



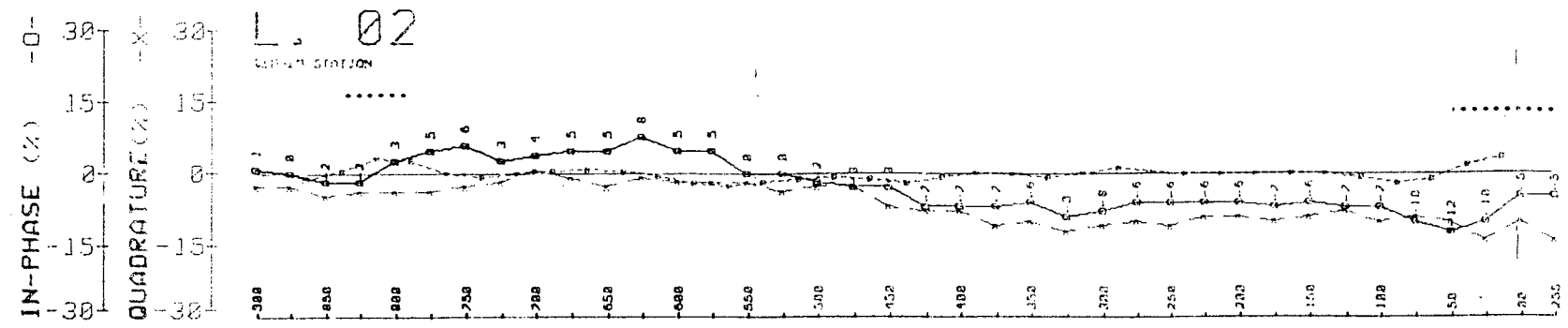
A.M. exploration ltd.

GUNSTEEL RESOURCES INC.
JOHN CLAIM GROUP

VLF - ELECTROMAGNETIC MAP

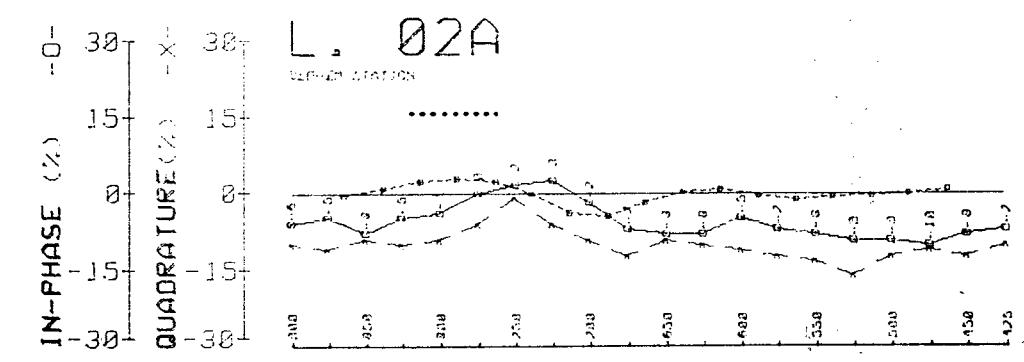
LINE 02

STNE	IN-PHASE(%)	QUAD. (%)	F. FILTER
300	1	-2	2
350	2	-3	1
400	3	-4	1
450	4	-5	1
500	5	-6	1
550	6	-7	1
600	7	-8	1
650	8	-9	1
700	9	-10	1
750	10	-11	1
800	11	-12	1
850	12	-13	1
900	13	-14	1
950	14	-15	1
1000	15	-16	1
1050	16	-17	1
1100	17	-18	1
1150	18	-19	1
1200	19	-20	1
1250	20	-21	1
1300	21	-22	1
1350	22	-23	1
1400	23	-24	1
1450	24	-25	1
1500	25	-26	1
1550	26	-27	1
1600	27	-28	1
1650	28	-29	1
1700	29	-30	1
1750	30	-31	1
1800	31	-32	1
1850	32	-33	1
1900	33	-34	1
1950	34	-35	1
2000	35	-36	1
2050	36	-37	1
2100	37	-38	1
2150	38	-39	1
2200	39	-40	1
2250	40	-41	1
2300	41	-42	1
2350	42	-43	1
2400	43	-44	1
2450	44	-45	1
2500	45	-46	1
2550	46	-47	1
2600	47	-48	1
2650	48	-49	1
2700	49	-50	1
2750	50	-51	1
2800	51	-52	1
2850	52	-53	1
2900	53	-54	1
2950	54	-55	1
3000	55	-56	1
3050	56	-57	1
3100	57	-58	1
3150	58	-59	1
3200	59	-60	1
3250	60	-61	1
3300	61	-62	1
3350	62	-63	1
3400	63	-64	1
3450	64	-65	1
3500	65	-66	1
3550	66	-67	1
3600	67	-68	1
3650	68	-69	1
3700	69	-70	1
3750	70	-71	1
3800	71	-72	1
3850	72	-73	1
3900	73	-74	1
3950	74	-75	1
4000	75	-76	1
4050	76	-77	1
4100	77	-78	1
4150	78	-79	1
4200	79	-80	1
4250	80	-81	1
4300	81	-82	1
4350	82	-83	1
4400	83	-84	1
4450	84	-85	1
4500	85	-86	1
4550	86	-87	1
4600	87	-88	1
4650	88	-89	1
4700	89	-90	1
4750	90	-91	1
4800	91	-92	1
4850	92	-93	1
4900	93	-94	1
4950	94	-95	1
5000	95	-96	1
5050	96	-97	1
5100	97	-98	1
5150	98	-99	1
5200	99	-100	1
5250	100	-101	1
5300	101	-102	1
5350	102	-103	1
5400	103	-104	1
5450	104	-105	1
5500	105	-106	1
5550	106	-107	1
5600	107	-108	1
5650	108	-109	1
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5800	111	-112	1
5850	112	-113	1
5900	113	-114	1
5950	114	-115	1
6000	115	-116	1
6050	116	-117	1
6100	117	-118	1
6150	118	-119	1
6200	119	-120	1
6250	120	-121	1
6300	121	-122	1
6350	122	-123	1
6400	123	-124	1
6450	124	-125	1
6500	125	-126	1
6550	126	-127	1
6600	127	-128	1
6650	128	-129	1
6700	129	-130	1
6750	130	-131	1
6800	131	-132	1
6850	132	-133	1
6900	133	-134	1
6950	134	-135	1
7000	135	-136	1
7050	136	-137	1
7100	137	-138	1
7150	138	-139	1
7200	139	-140	1
7250	140	-141	1
7300	141	-142	1
7350	142	-143	1
7400	143	-144	1
7450	144	-145	1
7500	145	-146	1
7550	146	-147	1
7600	147	-148	1
7650	148	-149	1
7700	149	-150	1
7750	150	-151	1
7800	151	-152	1
7850	152	-153	1
7900	153	-154	1
7950	154	-155	1
8000	155	-156	1
8050	156	-157	1
8100	157	-158	1
8150	158	-159	1
8200	159	-160	1
8250	160	-161	1
8300	161	-162	1
8350	162	-163	1
8400	163	-164	1
8450	164	-165	1
8500	165	-166	1
8550	166	-167	1
8600	167	-168	1
8650	168	-169	1
8700	169	-170	1
8750	170	-171	1
8800	171	-172	1
8850	172	-173	1
8900	173	-174	1
8950	174	-175	1
9000	175	-176	1
9050	176	-177	1
9100	177	-178	1
9150	178	-179	1
9200	179	-180	1
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9450	184	-185	1
9500	185	-186	1
9550	186	-187	1
9600	187	-188	1
9650	188	-189	1
9700	189	-190	1
9750	190	-191	1
9800	191	-192	1
9850	192	-193	1
9900	193	-194	1
9950	194	-195	1
10000	195	-196	1



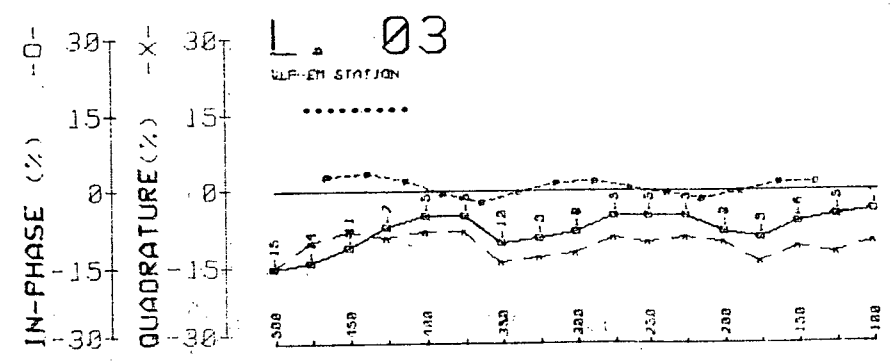
LINE 02A

STNE	IN-PHASE(%)	QUAD. (%)	F. FILTER
300	16	-13	2
350	15	-11	1
400	14	-10	1
450	13	-9	1
500	12	-8	1
550	11	-7	1
600	10	-6	1
650	9	-5	1
700	8	-4	1
750	7	-3	1
800	6	-2	1
850	5	-1	1
900	4	0	1
950	3	1	1
1000	2	2	1
1050	1	3	1
1100	0	4	1
1150	-1	5	1
1200	-2	6	1
1250	-3	7	1
1300	-4	8	1
1350	-5	9	1
1400	-6	10	1
1450	-7	11	1
1500	-8	12	1
1550	-9	13	1
1600	-10	14	1
1650	-11	15	1
1700	-12	16	1
1750	-13	17	1
1800	-14	18	1
1850	-15	19	1
1900	-16	20	1
1950	-17	21	1
2000	-18	22	1
2050	-19	23	1
2100	-20	24	1
2150	-21	25	1
2200	-22	26	1
2250	-23	27	1
2300	-24	28	1
2350	-25	29	1



LINE 03

STNE	IN-PHASE(%)	QUAD. (%)	F. FILTER
300	-15	-15	2
350	-14	-14	1
400	-13	-13	1
450	-12	-12	1
500	-11	-11	1
550	-10	-10	1
600	-9	-9	1
650	-8	-8	1
700	-7	-7	1
750	-6	-6	1
800	-5	-5	1
850	-4	-4	1
900	-3	-3	1
950	-2	-2	1
1000	-1	-1	1
1050	0	0	1
1100	1	1	1
1150	2	2	1
1200	3	3	1
1250	4	4	1
1300	5	5	1
1350	6	6	1
1400	7	7	1
1450	8	8	1
1500	9	9	1
1550	10	10	1
1600	11	11	1
1650	12	12	1
1700	13	13	1
1750	14	14	1
1800	15	15	1
1850	16	16	1
1900	17	17	1
1950	18	18	1
2000	19	19	1
2050	20	20	1
2100	21	21	1
2150	22	22	1
2200	23	23	1
2250	24	24	1
2300	25	25	1
2350	26	26	1
2400	27	27	1
2450	28	28	1
2500	29	29	1
2550	30	30	1



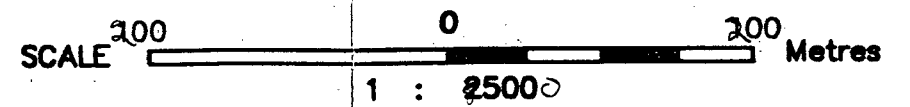
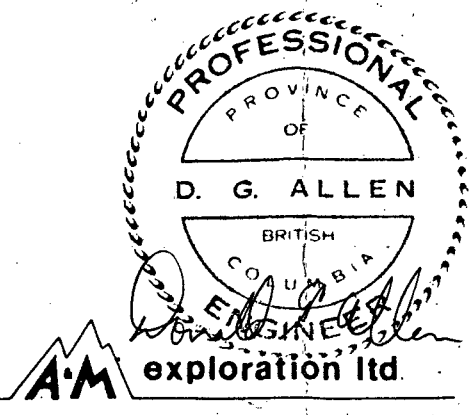
LEGEND

- o- In phase component (percent)
- x- Quadrature component (percent)
- o- Fraser filter

INTERPRETED CONDUCTOR STRENGTH

- █ Strong
- ▒ Moderate
- Weak

Instrument: Geonics EM-16
 Survey date: November, 1989
 Transmitter station: Seattle, Washington



JOHN CLAIM GROUP
 VLF - ELECTROMAGNETIC PROFILES
 LINES 02,02A,03

Figure 5b

zones are interpreted to underlie the point on a traverse line where changes in in-phase and quadrature percentage occur. The Fraser filtered values will show high positive values at this point.

Results

The VLF-electromagnetic survey revealed four distinct, though generally weak anomalies. Two of the anomalies appear to be continuous throughout the survey area while the remaining two appear only on one line.

The most southerly of the anomalies is continuous across lines 00 to 02 and lies near the baseline. This anomaly is proximal to the projected location of the "A" vein. The shearing associated with this vein is likely responsible for this weak to moderate anomaly.

The most northerly anomaly appear to be continuous across the survey area, however the 200 metre spacing between lines 00 and 02 makes this impossible to confirm. This anomaly is approximately 200 metres northeast of the projected location of the "North" vein. It could reflect an unknown vein or alternatively might reflect the "North" vein which has veered from its projected strike.

The remaining two one line anomalies are both weak. One is located on line 00 at station 200N, the other is located on line 03 at station 450N. Both these anomalies are likely due to short shears associated with the known shears.

CONCLUSION

Because of the uniform nature of the bedrock and the apparent east-northeast trend of the anomalies, it is concluded that at least two of the defined anomalies may reflect vein structures. Additional VLF-electromagnetic surveys are warranted to fully define the anomalies.



Allen

REFERENCES

- Hitchins, A. (1987). Assessment Report on the Bayonne Claim Group. British Columbia Ministry of Mines, Energy and Petroleum Resources. Assessment Report for Goldrich Resources Inc.
- Rice, H.M.A. (1941). Nelson Map-Area East Half. Geological Survey of Canada. Memoir 228.
- Phendler, R.G. (1982). Report on the Bayonne Property. Private report for Goldrich Resources Inc.
- Wells, R.A. and O'Grady, F (1984). Exploration and Development Proposal Bayonne Mine Property. Private report for Goldrich Resources Inc.

CERTIFICATE

I, Evan Sykes, certify that:

1. I am a geophysicist residing at 6331 Azure Road, Richmond, British Columbia.
2. I am a graduate of the University of British Columbia with a degree in Geological Engineering (B.A.Sc., 1988).
3. I have practised my profession in British Columbia since 1986.
4. This report is based on fieldwork conducted by F. Critchlow and on information listed under References.

February 13, 1990
Vancouver, B.C.



Evan Sykes,
Geophysicist

CERTIFICATE

I, Donald G. Allen, certify that:

1. I am a Consulting Geological Engineer, at A & M Exploration Ltd., with offices at Suite 704, 850 West Hastings Street, Vancouver, British Columbia, V6C 1E1.
2. I am a graduate of the University of British Columbia with degrees in Geological Engineering (B.A.Sc., 1964; M.A.Sc., 1966).
3. I have been practising my profession since 1964 in British Columbia, the Yukon, Alaska and various parts of the Western United States.
4. I am a member in good standing of the Association of Professional Engineers of British Columbia.
5. This report is based on fieldwork conducted by F. Critchlow and on information listed under References.

February 13, 1990
Vancouver, B.C.



Donald G. Allen
Donald G. Allen
P. Eng. (B.C.)

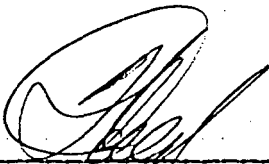
CERTIFICATE

I, Fredric H. Critchlow, certify that;

- (1) I am a prospector, free miners certificate #280908 (1989), #294865 (1990), and reside at 523-105th Street, Castlegar, B.C. VIN 3G7.
- (2) I have been practicing my profession, including prospecting, geochem, and geophysics since 1963, largely by contract basis with various companies in British Columbia.
- (3) This work was carried out by myself with the help of Dennis Llewellyn.
- (4) I have no interests in any of the company properties.

*Instrument used for this survey was a VLF-EM, and the station used was Seattle.

Dated at Salmo, B.C.
on



Fredric H. Critchlow

AFFIDAVIT OF EXPENSES

This will certify that VLF-electromagnetic surveys were carried out on the Bayonne 1 claim, Nelson Mining Division, British Columbia during the period November 6 to 15, 1989 to the value of the following:

Mobilization and Fieldwork

Salaries

F. Critchlow	10 days @ \$300/day	\$3,000.00
Vehicle rental	10 days @ \$50/day	500.00
VLF rental	10 days @ \$15/day	150.00
Travel cost, expenses		125.00

Report

F. Critchlow	1 day @ \$200/day	200.00
D.G. Allen	1 day @ \$400/day	400.00
E. Sykes	2 days @ \$300/day	600.00
Typing, draughting, compilation	10 hours @ \$22/hr	220.00
Map reproduction, photocopying, stationery		<u>65.00</u>
TOTAL		\$5,260.00

