LOG NO:	0612	RD.
ACTION:	1	
FILE NO:		

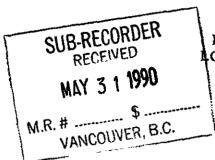
GEOPHYSICAL REPORT

ELECTROMAG (VLF-EM) SURVEY

EML #1 - #6 (65 UNITS) MINERAL CLAIMS, 1989 SEASON

WELLS - BARKERVILLE AREA

CARIBOO MINING DIVISION, B.C.



LATITUDE 53° 08' N ONGITUDE 121° 33' W NTS 93 H / 4E

ELMER A. SPATE ET AL EGH RESOURCES LTD. c/o 1710 - 1177 West Hastings Street Vancouver, B.C. V6E 2L3

WM. HOWARD MYERS, P.Eng. (B.C.), P.Geol. (Alta) Geological - Geophysical Consultant #814 - 602 West Hastings Street Vancouver, B.C.

May 1990

W.M. HOWARD MYERS, P.GEOL., P.ENG.

R H R

C A L E N T

GEOLOGI ASSESSM

TABLE OF CONTENTS

		Page
Abstract		i
Introduction		1
History		4
Geology		5
Stratigraphy		5
Structure		7
Results of Exploration Work to Date		10
Results of VLF-EM16 Su Mineral Claims During 1	rvey of the EML #1 - #6 Inclusive 989 Field Season	14
Pinus Creek Area (Eastern Portion of Claim Block)		14
Line "0"	N-S Baseline near Pinus Creek Pinus Creek is a north-south trending creek in eastern portion of claim block, line run using Hawaii Station NPM	15
Line "0"	N-S Baseline near Pinus Creek run using Cutler Maine Station NAA	15
Line 0+75E	N-S line 75 m east of baseline	15
Line 0+80W	N-S line 80 m west of baseline	15
Line 0+50S	Fifty metres south of Station 0+00 of baseline	16
Line 1+00S-P89	100 m south of 0+00 of baseline	17
Line 4+00S-P89	400 m south of Station 0+00 of baseline	17
Line 5+005-P89	500 m south of Station 0+00 of baseline	18
Line 7+005-P89	700 m south of Station 0+00 of baseline	18

TABLE OF CONTENTS CONTINUED

Page Downey Pass Area (Central Portion of Claim Block) 19 Line 5+00S-D89 E-W line 500 m south of Station 0+00 on Downey Pass baseline 19 Line 7+00S-D89 E-W line 700 m south of 0+00 on Downey Pass baseline 20 Line A7+005-D89 E-W line 700 m south of Station 0+00 on Downey Pass baseline (same locations as 7+00S-D89) 21 Line 5+55(7)-D89 Northeast line starting at 555 metres one line 7+00S-D89 21 21 Conclusions and Recommendations

APPENDIX

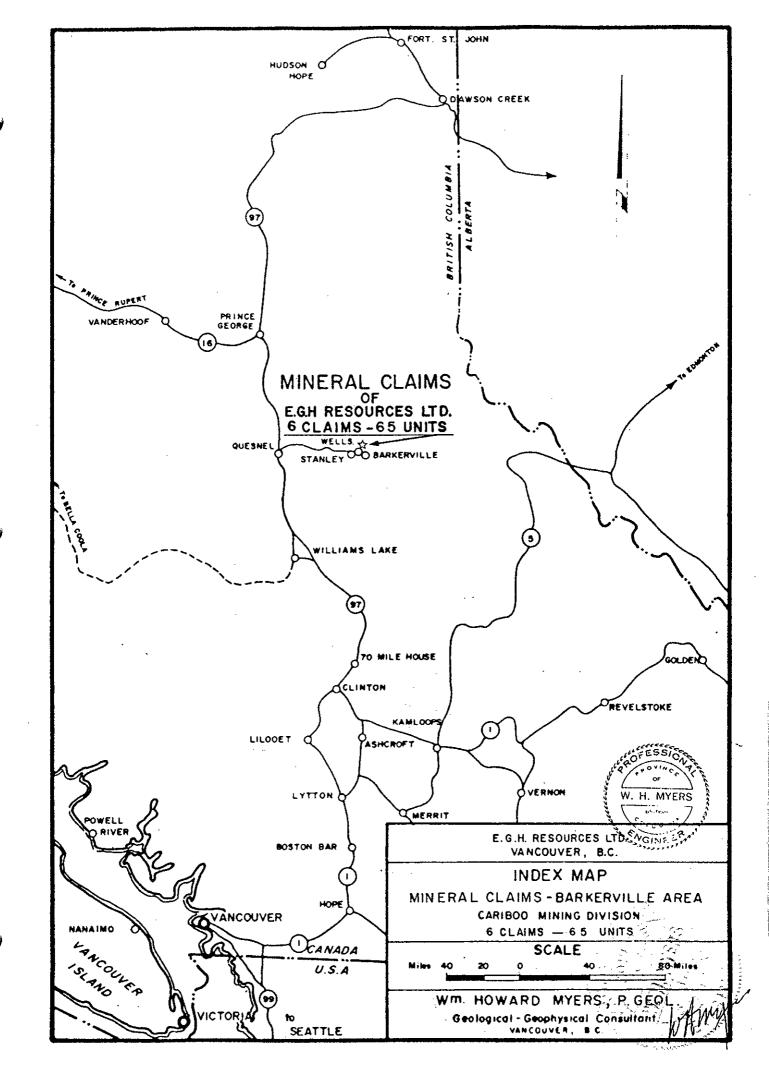
Certificate Bibliography Detail Breakdown of Costs for Work and Report Claim Map VLF-EM Cross-Section Plots; Scale 1 cm = 20 m with in-phase and quadrature values in percentage (13 sections)

ILLUSTRATIONS

Index Map Location Map; Scale 1:10,000 showing geological contacts, drill holes and electromag lines

front

pocket



ABSTRACT

During the 1989 field season some 12.6 kilometres of VLF-EM electromag lines were run on the EML #1 to #6 claim block (65 units). The lines consisted of fill-in and extensive lines on the existing electromag survey together with new electromag lines in the eastern portion of the claim block not covered before. The new lines were run using a north-south baseline located immediately west of the northerly flowing Pinus Creek. The area west Pinus Creek is an active placer mining prospect and bedrock is exposed over an area approximately 150 metres wide and some 700 metres up Pinus Creek on the left bank. In the Downey Pass area near Mugford Gulch near the south-central portion of the claim block, placer testing has exposed numerous quartz veins and abundant fracturing immediately east of Downey Pass Creek along the northerly projection of the Lowhee Fault identified in the original Cariboo Gold Quartz Mine which produced 1.25 million ounces of gold from 1933 to 1967.

The 1989 geophysical work and study of bedrock exposures by placer operations better outlines the potential area of the claim block and warrants more detailed geophysical and geological exploration work.

W.M. HOWARD MYERS, P.GEOL., P.ENG.

GEOPHYSICAL (VLF-EM) SURVEY OF THE EML #1 - #6 MINERAL CLAIMS DURING 1989 FIELD SEASON

INTRODUCTION

The field work and this report on the 1989 work was approved by Mr. Elmer A. Spate, owner of the claim block. The costs of the field work and report were paid for by EGH Resources Ltd. of Vancouver, B.C. EGH Resources Ltd. is a non-reporting company with offices in c/o 1710 - 1177 West Hastings Street, Vancouver, B.C. V6E 2L5, formed to do the work on the EML #1 - #6 claims. The claims are all in the name of Elmer A. Spate of 1220 Motherwell Road N.E., Calgary, Alberta, Canada. A trust agreement has been executed by Elmer A. Spate in favour of EGH Resources Ltd. of Vancouver, B.C. for one hundred percent interest in all six claims.

The claims are identified as the EML #1 through #6 inclusive. EML #1, #2, #3, were staked on March 4, 1983 and the EML #4, #5, and #6 were staked on March 19, 1984. All claims were staked by a professional claim staker as agent for Elmer A. Spate. The claims were all grouped in March 1984 and identified as the EML Group. The EML 1-6 claim block contains a total of 65 units and the claims are tabulated below with record numbers and anniversary dates.

Claim	Units	Record No.	Anniversary Date	Assessment Work Expiry Date
EML #1	10	4682(3)	March 4, 1983	March 4,1991*
EML #2	10	4683(3)	March 4, 1983	March 4, 1991*
EML #3	20	4684(3)	March 4, 1983	March 4, 1991*
EML #4	4	5880(3)	March 19, 1984	March 19, 1991
EML # 5	6	5881(3)	March 19, 1984	March 19, 1991
EML #6	15	5882(3)	March 19, 1984	March 19, 1991
Total units	65			

* report pending

The claims are all in good standing with assessment work filed throughout 1991 as shown. The claims are shown on the enclosed claim location map which represents a portion of the B.C. Department of Mines and Petroleum Resources Map #93H/4E dated November 17, 1988. While in the field doing the electromag survey and geological mapping the writer observed all six legal corner posts with tags attached and they appear to be at the location outlined on Form G.

As far as could be determined there is no privately owned land or surface rights within the claim blocks. A small portion of the southeast corner of EML #6 is reserved for a class "C" park. A small portion of EML #6 and #5 was lost to four existing two post claims when the grid was staked. Both of these areas are shown on the enclosed claim location map.

The claims are all staked on the grid system and each unit is 500 metres square and contains 25 hectares or 61.78 acres. The 65 units would contain a total of (25×65) 1625 hectares or 4015 acres.

The claims are readily accessible via two major logging roads, one from provincial highway #26 between Quesnel and the restored town of Barkerville and the other from the all season improved gravel road to Bowron Lakes. One logging road cuts through the center of the claim block from north to south and the other cuts the north central portion of the claim block. Other secondary logging roads gives access to all portions of the claim block. The enclosed geological and claim map shows all access roads. The property is located three miles (5 kilometers) northnortheast of the village of Wells, B.C. in the Cariboo Mining Division. The north-south logging takes off highway #26 one mile east of the village. The village of Wells is serviced by a stage line and trucking service from Quesnel. The town of Quesnel is linked to Vancouver via air, buses, truck and railroad transportation.

The terrain in the area of the claims is very moderate. Elevations vary from a low of 1200 metres in the south to a high of 1450 metres in the Cornish Mountain area, west of the claim block. The area of the claims is drained to the west by the Big Valley Creek which flows west into the Fraser River. To the east the area is drained by the northerly flowing Sumit Creek which flows into the Bowron River drainage. None of the streams in the area of the claims are encised. The climate in this portion of the Cariboo is moderate to cold. This portion of British Columbia does experience Chinook conditions during the winter months and the climate becomes very moderate for short periods of time. Snowfall in the area varies from moderate to heavy. In the summer heavy rains are experienced in early and late summer with extended dry spells in between.

The only workings of any consequence on the claim block were for placer gold deposits in the Downey Pass, Thistle Pit, Eight Mile Lake, and Summit Creek areas as shown on the enclosed geological map. Placer Gold operations on Summit Creek and in the Eight Mile Lake area are still being operated. So far as known there has been no bedrock mining for gold in the area of the claim block.

There are no known ore bodies on any of the claims.

The only buildings on the claims are old log cabins used by the placer miners, most of which are now down or destroyed.

Information for this report is from published and unpublished maps and reports on this portion of the Cariboo together with my own personal work both in the field and review of all the literature over the past twenty-five years. Published maps and reports used in the preparation of this report are tabulated in the Bibliography of the report. My personal experience on this portion of the Cariboo is outlined in the certificate in the Appendix of the report.

During the past seven years I have carried out numerous geological and geophysical studies and surveys in the area of the claim block. The first geological studies of reconnaissance nature were carried out in 1981 on the original two post EHP claims in the Downey Pass area where bedrock has been exposed by placer gold operations. The field work identified a strong northerly trending fault which can be correlated with the Lowhee Fault to the south in the Lowhee Creek area and in the underground workings of the Cariboo Gold Quartz Mine. Mechanical equipment was also used to expose fresh surfaces in the fault zone. Reconnaissance type electromag lines or profiles were run across the major faults mapped on the claims. The refraction seismograph was also used to determine bedrock depths in areas

covered with glacial drift. During the past two field seasons additional exploration work in the form of limited diamond and percussion drilling was carried out on the claim block as shown on the geological map. The percussion drilling was designed to obtain bedrock chip samples for geochemical ICP analysis across the extension of the Lowhee and Rainbow fault zones near the centre of the claim block. The diamond drill was unable to core the broken mineralized zone. Geochemical ICP analysis were run on the percussion cuttings. Significant base metal values were obtained in the analysis. All work has been filed in assessment reports tabulated in the Bibliography.

HISTORY

The Wells-Barkerville area of central British Columbia is well known for its production of both placer and lode gold. The majority of the placer gold was produced during the gold rush which started around 1861 and tapered off substantially near 1898 when the gold rush started in the Yukon. Placer gold was discovered around 1900 in the Eight Mile Lake area in the northern portion of the claim block. Within the claim block there are four separate areas which have produced substantial placer gold. These areas as well as smaller placer operations are outlined on the enclosed geological claim map. Three separate placer gold operations are still operating within the area of the claim block.

All of the lode gold production in this portion of the Cariboo has come from the three underground mines near the village of Wells, B.C. some four kilometres south-southwest of the EML #1 - #6 claim block. Lode gold production started in 1933 from the Cariboo Gold Quartz Mine located at the south edge of the village of Wells, B.C. The Cariboo Gold Quartz Mine took over the Island Mountain Mines on the other side of the Jack of Clubs Lake, and during the period January 10, 1933 through April 15, 1967, when the mine was closed down, some 2,929,246 tons of ore grading an average of 0.4 oz. of gold per ton, produced a total of 1,253,683 ounces of gold. The most recent lode mine, identified as the Mosquito Creek Mine, adjoins the old Island Mountain Mine on the northwest and produced gold up until recently.

- 4 -

There is no record of any lode gold production from the EML #1 - #6 mineral claims. There is no record of any previous exploration work for lode gold on the claim block. The only evidence found of work in the field was a short incline on a quartz vein outcrop on Mugford Gulch near the southern boundry of the claim block. Samples of the quartz with pyrite on the dump contained a trace of gold.

Lode gold exploration work in the area of the claim block was started by the writer in 1981 on the original two post claims in the Downey Pass and Eight Mile Lake areas. The original claims worked on were the EHP #1 - #8 inclusive mineral claims in the name of Elmer A. Spate of Calgary, Canada. The original exploration work consisted of detail geological mapping of bedrock exposed by placer operations in the Downey Pass area. Fresh bedrock surfaces in the area of the strong northerly trending fault were exposed with mechanical equipment. Reconnaissance type electromag (input system) profiles were also run across the fault zone to determine the effectiveness of this geophysical tool. Three separate areas have now been outlined for further testing with the drill. During the summer months from 1981 to 1987 inclusive the writer has carried out or supervised exploration work on the EML #1 - #6 claim block as outlined in the introduction. Most of this work is reported in assessment reports tabulated in the Bibliography.

GEOLOGY

The area of the EML claims, located in the Wells-Barkerville area, is not unlike other areas of the Cariboo, where bedrock is covered with a mantle of glacial debris. Bedrock outcrops only along sharp breaks in slope road cuts and in old placer gold workings.

STRATIGRAPHY

The Cariboo Group of rocks which underlies the area of the EML #1 - #6 mineral claims, is composed of clastic rocks with lesser amounts of carbonate rocks. The rocks have been subjected to low-grade regional metamorphism and fairly intensive deformation. The deformation has impressed a marked secondary foliation on almost all of the clastic rocks and some of the carbonate rocks. Despite the

effects of deformation and regional metamorphism, the rocks still commonly show original bedding and other sedimentary features. Many of the rocks are difficult to name accurately because of their original sedimentary variation and subsequent. metamorphic character. Many of the clastic rocks of the Cariboo groups are composed of poorly sorted sediments and commonly have a small percentage of grains much larger than the average. It is very difficult to assign a name to this type of rock even if not metamorphosed. Most of the clastic rocks, and even some of the limestones, are schistose, however, in any one unit the degree of schistosity may vary depending on structural position. For example, an argillaceous rock may range from an argillite through phyllite to a true schist or graphitic schist as it is traced from an open fold to a tight fold or its proximity to the northerly trending fault structures. In many places along the northerly trending fault zones, as mapped by different geologists, argillites are changed to a very soft and possibly pure graphitic schist. The areas of graphitic schist along the northerly trending fault zones and areas of tight folding described above can easily be mapped with the electromag due to the conductivity of the graphite.

- 6 -

The thickness of the formatons of the Cariboo group cannot be measured directly due to the few and poor outcrops together with the intricacy of structure. The folding is known in general but the details are very rarely recognizable and measurements are liable to include duplications. According to A. Southerland Brown in Bulletin No. 38 (B.C. Department of Mines) the thickness is deemed to be less than 1200 metres.

The age of the Cariboo Group is now determined to be early Cambrian and younger. Earlier publications by Bowman, Johnston and Uglow and George Hanson placed the age of the Cariboo Series (Cariboo Group) as Pre-Cambrian. No fossils have been found in the group within the general area and the age is assigned on the basis of archaeocythids and trilobites collected at Turks Nose Mountain, Kemball Creek and others localities within a thick limestone. This limestone has been traced through a major plunging syncline into the Cunningham limestone in the vicinity of Roundtop Mountain. This same limestone has been traced into the north central portion of the claim block (Eight Mile Lake area) by Brown and others. <u>The</u> <u>Cunningham limestone is the basal formation of the Cariboo Group</u>. The other younger members of the Cariboo Group outcrop in the southern portion of the claim block. Intrusive rocks in the form of dykes and sills outcrop in the central portion of the claims along Shepherd Creek.

STRUCTURE

The general structure in the area of the claims is a broad northwesterly plunging anticline with local minor but sharp folding on the northeast limb. The antiformal axis, as mapped by most observers, is situated some seven miles southwest of the claim block near the top of Mt. Burns, Mt. Amador and Mt. Nelson, with a N 50° -60° west bearing. In the main, the folding within the area of the claims seems simple, but in some places minor folds can be observed where the dip changes to 45° and some local evidence of overturning to the southwest. In this general area, the Cariboo Group has been folded at least twice. The more intense folding took place before the younger Slide Mountain group was laid down. Immediately south of Eight Mile Lake in the northern portion of the claim block, Southerland Brown in B.C. Department of Mines Bulletin No. 38 maps a northwesterly trending overturned anticline within the Cunningham Limestone Formation. Outcrops in the area of the claim block are too scarce to confirm this structure, however, to the southeast, where there are more outcrops, this complex structure can be identified. Immediately southwest of this overturned axis, G. Hanson in G.S.C. Map 336A (east half) and others map a fault contact between the Cunningham Limestone and the overlying schist, argillite, slate and quartzite of the Yankee Belle Formation of the Cariboo Group. There is some possible evidence of this fault contact in the adit at Thistle Pit some 400 metres south of the overturned anticlinal axis. Other contacts between the various members of the Cariboo Group as mapped by Brown, Hanson and others, in the area of the claim block, are very difficult to identify in the field due to the scarce and poor outcrops.

Other major structural trends identified on the claims are both northerly and northeasterly trending faults. A possible extension of the northerly trending Lowhee Fault, located along Lowhee Creek and, also mapped, the underground workings of the Cariboo Gold Quartz Mine to the south, can be observed along the Downey Pass road near the center of the claims. There are numerous outcrops of broken and altered argillite, phyllite, schist and slate with quartz viens and some pyrite along the road cuts. The second major northerly trending fault mapped in the mine area and located some 700 metres west of the Lowhee fault, identified as the Rainbow fault, does not outcrop in the area of the claims. There is abundant quartz float on the hillside some 700 metres west of the Downey Pass road and the electromag profiles all have a strong anomaly in the same area. All of the above described conditions could well indicate a possible extension of this fault also into the claim block.

The strong and continuous northeast trending fault zone in the Summit Creek area in the northeast portion on the claim block has been mapped by several different geologists in the field. The fault was mapped by the writer in the bed of Summit Creek when exposed by placer gold operations in 1982. Bedrock outcrops in and near the canyon of Summit Creek immediately north of the claim block were used to identify the fault in this area. This strong fault is also indicated on the electromag profiles crossing this portion of the claim block. Other northeast trending faults have been mapped in the bedrock outcrops immediately north of the claim block and have been projected into the area of the claims. The fairly strong and continuous northeast trending fault (EML Fault) near the northwest end of Eight Mile Lake, very possibly projects into the Mosquito Creek Mine area. In the area of the intersection of the Downey Pass Fault zone (Lowhee Fault) and the northeast trending EML Fault, near the north central portion of the claim block, extremely strong conductive zones were recorded of the electromag profiles (lines numbers 3, 4, 5, 6, 7). This area of strong electromag anaomalies and favourable geology has been targeted as the No. 1 drilling prospect of the three areas outlined for testing with the drill. Other possible northeast trending faults are indicated on the electromag profiles south of Eight Mile Lake.

Mineralization and Origin of Ore Deposits

The earliest quartz mineralization seen in this general area in the Cariboo group, is in the form of narrow bed veins formed mainly or entirely by the replacement of narrow bands of rock. They are known to be early because they are folded with the strata. Other bands of silicified clastic sediments are very similar to these veins

- 8 -

but they are clearly silicified rock <u>bands</u> and <u>not</u> quartz veins. They are cut by transverse quartz veins and the silicification shows no relation to them, suggesting that the silicified rock bands are definitely earlier than the veins cutting them.

After the formation of the early bed veins and the silicification of some beds, the rocks were subjected to fracturing and the fractures were mineralized with quartz to form the transverse and diagonal veins. The fractures in which the transverse and diagonal veins occur were formed after the rocks were folded and sheared. The shapes and pattern of the fractures indicate that they were formed by compression, tension and also torsion. The wall rock of the veins contains a great deal of coarsely crystalline pyrite. Pyrite cubes occur many feet from any vein also, but a great many examples serve to show that pyrite is more plentiful near veins, therefore there seems little doubt that the pyrite was formed from constituents moving outward from the vein fractures. All of the placer gold operations in the area of the claims reported heavy pyrite concentraton in the sluice boxes. The transverse and diagonal veins produced the majority of the ore in the Cariboo Gold Quartz Mine. The strike and bed veins are not too munerous and so far has known, have produced much lower gold values than the normal pyritic transverse and diagonal veins. Only a few bed veins have been observed. The bed veins are guite thin, composed of guartz and contain no pyrite or gold. Some ore shoots were mined on the strike vein, known as the B.C. Vein. Gold values were lower than in the transverse and diagonal veins. Other strike veins will have to be worked before this type of vein can be called non-commercial.

The other main type of lode gold deposit in the Cariboo group is one formed by the replacement of limestone. The ore is typically a solid mass of fine grained pyrite. This type of deposit was first recognized in the Cariboo in 1933. The largest of this type of deposit was found in the Island Mountain Mine. The presently producing Mosquito Creek Mine produces a great deal of its gold from this type of deposit. The ore in this type is in general, higher in gold values than the transverse and diagonal veins. The highest gold values are obtained from these massive fine grained pyrite replacement type ore bodies. Gold values as high as 5 ounces per ton are obtained from these massive fine grained pyrite deposits. The ore is massive but commonly contains bands of ore separated by bands of grey ankerite or

-9-

phyllite. Near the fringes of the ore bodies, ankerite becomes dominant and pyrite becomes more sporadic and coarser grained. <u>There may be some silicification also</u> <u>near the fringes of the ore body with minor amounts of galena, sphalerite,</u> <u>arsenopyrite and scheelite.</u> Minor amounts of galena and arsenopyrite were found in the Downey Pass area near the center of the claim block.

The gold mineralization is believed to be later than the formation of the quartz veins. <u>The quartz veins are later than most of the northerly trending faults</u> because they are concentrated beside or near the northerly faults, they occur in a conjugate set of fractures related to the faults and in some instances, actually occur within the fault. The gold mineralization is believed to be older than the gold bearing Terfiary gravels. This would date the gold mineralization in this area between the Carboniferous and Early Tertiary.

RESULTS OF EXPLORATION TO DATE

The results of the exploration to date on the EML #1-6 mineral claims are considered to be very favourable. The VLF electromag surveys were able to map the extension of the northerly trending faults mapped in the underground workings of the Cariboo Gold Quartz Mine into the area of the claims. The electromagnetic survey was also able to map some fairly strong and continuous northeast trending anomalies corresponding to northeast trending faults mapped in the general area by government publications. The anomalies or conductive zones mapped by the electromag are no doubt due to the alteration of the argillite to graphite or graphitic schist in proximity to the faulting. The intersection of the major faults produces sizeable areas of alteration and mineralization. Lithogeochem samples across these zones indicate significant base metal mineralization, together with gold and silver.

In the 1986 diamond drill programme on the EML #1-#6 claims, the more potential and better mineralized areas could not be cored due to the broken bedrock with chert fragments. Three angle holes were located to intersect the mineralized zone some 200 to 300 feet below the surface. The zone could not be penetrated due to caving in the hole near the contact. These better zones will have to be drilled with the reverse circulation type drill as recommended in the report.

- 10 -

One hole drilled during the 1986 diamond drill programme (DDH #1) produced some very interesting and possibly significant data. The hole was located on the down dropped side of a fault contact between the Cunningham limestone and the overlying quartzose phyllites of the Yankee Bell Formation. The hole was drilled at a -60° angle with a S50°W bearing to intersect the nearly vertical fault mapped by Southerland Brown in B.C.D.M. Bulletin 38, some 350 feet below the surface. Subsequent work in this area by L.C. Struik of the GSC, maps this fault as a low angle thrust fault placing the Cariboo terrane over the Barkerville Terrane. The 580 foot hole with a vertical penetration of 500 feet and 300 feet horizontally encountered dark gray to black quartz-muscovite phyllite cut by quartz-dolomitepyrite veins with low grade gold mineralization varying from a low of 0.002 oz/T to 0.014 oz/ton over some 400 feet of the core. The hole had to be abandoned due to broken ground and caving conditions. Intervals selected for assay averaged some 10 feet in length. One sample (#A12-86) was hand picked from 6" core of quartz containing less than 20% massive and cube pyrite, assayed 0.196 oz/T gold and 0.12 oz/T silver. The 10 foot assayed interval which contained this 6" sample assayed only 0.002 oz/T gold. Thirteen of the 16 samples assayed were split core over an average of 10 feet assayed 0.002 oz/T gold and 0.01 oz/ton silver. Samples #A-14-86 and A-14-A-86, were "chips" or pieces of core over two 10 foot intervals of badly broken core of similar rock type with more gouge and graphite in the last 20 feet of the hole from -540 to -560. The samples assayed 0.014 oz/T Au, 0.07 oz/T Ag and 0.010 oz/T Au, 0.25 oz/T Ag respectively. As stated earlier the hole had to be abandoned at -580 feet due to caving. Thin section studies of the core by Geotex Consultants Ltd. identified the rock as a, quartz-muscovite phyllite cut by guartz-dolomite-pyrite veins. The studies divided the veins into three types based on age of formation. The early quartz veins of quartz-dolomite-pyrite developed during deformation and metamorphism of the rock. The intermediate quartz dolomite with no sulphides probably were formed during metamorphism. The late quartz-dolomite pyrite veins which cut the intermediate veins and are oriented sub-parallel to bedding were developed after folding and metamorphism of the rocks. This area warrants further exploration work as recommended in the report.

The 1987 shallow down hole hammer drilling was designed to get bedrock samples across the two northerly trending faults near the center of the claim block. Seven holes from 60 to 100 feet deep were drilled over the 800 meter distance. Holes Nos. one through four are spaced 50 metres apart across the northerly projection of the Lowhee Fault. Hole #6 (600 metres west) is located near the northerly projection of the Rainbow Fault and the intersection with the northeast-southwest trending EML Fault. In the area of hole #6 numerous quartz boulders were encountered in the overburden. Twenty-three 10 foot samples were selected for assay for gold and ICP 30 element analysis. Most of the gold assays varied from .002 to .003 oz/T gold. Two samples #1113 and #1114 from holes number 4A and 5 assayed .007 oz/T gold. The holes are located on the west side of the Lowhee Fault Zone.

The ICP geochemical assays of the 23 samples contains some very significant conclusions which are tabulated below:

- 1. Holes #1 through #6 had samples with copper values in excess of 150 ppm.
- 2. Holes #1 through #6 had samples with zinc values in excess of 200 ppm.
- 3. All seven holes had samples which assayed at least 1.3 ppm silver. The highest silver values of 4.1 ppm were encountered in hole #1.

The predominant rock type in all 23 samples was a dark gray to black argillite highly fractured with varying amounts of quartz and pyrite mineralization. In many samples there was varying amounts of graphite and in some samples chert was encountered in the argillite. A detail log of all seven holes which includes a description of each of the 23 samples is included in the Appendix of the assessment report by the writer dated May, 1988.

- 12 -

The exploration field work over the past seven years, in the area of the EML #1 -#6 claim block, has confirmed the presence of both northerly and northeasterly trending faults as shown on government publications of the area. Detail field studies of outcrops along the northerly trending Downey Creek fault, near the center of the claims, indicates numerous areas of quartz veins, altered argillite, gold-pyrite mineralization, severe brecciation and oxidation of pyrite. The entire area of the fault contains abundant pyrite. This fault zone along Downey Creek appears to be and probably does represent the northerly extension of the Lowhee fault mapped in the underground workings at the Cariboo Gold Quartz Mine to the south. The other northerly trending fault mapped in the mine area and located approximately 700 meters west of the Lowhee fault was not mapped in the area of the claims due to the scarcity of outcrops. It was noted in the field that there was a abundant quartz float in the glacial drift about 700 metres west of the Downey Creek fault. Electromag profiles showed strong conductive zones or anomalies also in the area some 700 metres west of Downey Creek. The northeast trending faults were mapped in outcrops immediately north of the claim block. The strong northeast fault along Summit Creek was identified in placer gold operation in the creek bed by the writer in 1982. The fault zone was very similar to the Downey Creek fault in that there was a high degree of brecciation of the argillite, some alteration to graphitic schist and abundent pyrite. The other strong northeast trending fault located near the northwest end of Eight Mile Lake and called the EML fault has been identified on the electromag work south of the lake. In this area where the northerly trending Downey Creek or Lowhee fault would intersect the northeast trending EML fault, the electromag profiles recorded very strong conductive zones or anomalies. The stronger and more persistent anomalies showed a north-south trend.

RESULTS OF 1989 VLF-EM SURVEY

The VLF-EM lines run during the 1989 field season in areas of active placer gold operations in both the Downey Pass and Pinus Creek areas of the EML claim block produced some very interesting and potential data. In the Downey Pass area there appears to be a correlation between anomalies on the VLF-EM lines and areas of large and abundant quartz veins. In the Pinus Creek area, several well defined and persistent possible structural trends were identified on the VLF-EM lines. The more important trends identified are: North 49° to 53° West; North 27° to 33° West; North 10° to 15° West and a strong northeast trend of North 36° to 40° East. These trends are all parallel to the structural trends shown on the base maps taken from various government publications identified in the legend of the maps. Some of the alignments are also parallel to the northwest-southeast trending geological contacts also identified on the map. The low angle thrust fault mapped by L.C. Struik in G.S.C. Open File #858 publication is present in the area of the trends from the VLF-EM work.

The individual lines run during the 1989 field season in both areas are detailed below:

Pinus Creek Area

Recent placer mining in the Pinus Creek area has exposed bedrock along the west side of the northerly flowing creek. The cleared area extends some 150 metres west of the creek. Bedrock within this area has been exposed and cleaned by the existing placer operations. Three north-south VLF-EM lines were run within the cleared including the baseline some 50-75 metres west of the creek. The baseline runs some 1.1 km south of the confluence of Shepherd and Pinus Creeks. Other lines were run east and west from the baseline as shown on the enclosed map. The N-S baseline was run using both Cutler, Maine NAA and Hawaii NPM transmitters. The correlation of the in-phase and quadrature curves from both stations is very good. The east-west lines were all run using Seattle, Washington transmitter NLK 24.8 kHz. The details for each line or profile are tabulated below.

Line 0 (N-S Baseline) (Hawaii NPM 23.4 kHz)

This is the first line run in the area while the Cutler Maine transmitter was down for repairs. The angle to the station is quite large but the results appear to be very good compared with the same profile run using Cutler main at the proper or close to right angles.

The surface terrain in the area of the line is moderate with very little relief. Both profiles indicate a sharp and well defined cross-over or anomaly near Station 5+00 and at Station 325. Both profiles have abnormally high quadrature values near Station 220. The cross-overs or anomalies are designated on the cross-section as F or C which stands for fault or contact for short. The conductor in both cases is fairly shallow and probably within 50 or 75 metres of the surface. The abnormally high quadrature values may be due to a possible deep channel which is covered with bedrock from low angle thrust faulting in this general area described by L.C. Struik of the Geological Survey of Canada (Canadian Journal of Earth Sciences Volume 23, Number 8, 1986) (and G.S.C. Open File 858, 1981).

N-S Line 0+75E

This north-south line is located some 50 to 75 metres east of the baseline nearer to Pinus Creek. The line is located along an access road so there is little or no relief. The line was run using the Cutler Main NAA transmitter. Station spacing is 15 metres and read facing north in all cases. The cross-over near Station 4+00 south is very sharp and well defined with good relief. The in-phase curve indicates a possible two conductor bodies. It is possible that the conductor or conductors are some 120 metres deep. There appears to be a shallow fault near Station 4+75 south. Higher than normal quadrature readings are recorded near Station 2+40 south.

N-S Line 0+80W

This north-south line is located some 60 to 90 metres west of the baseline in the areas where bedrock is exposed by recent placer gold operations. The line is located along a topographic break (east-west). The line contains very little relief

with an access road along the north-south break. The line was run using the Cutler Main NAA transmitter reading north with a station spacing of 15 metres. Very pronounced cross-overs or anomalies were recorded at Stations 1+65 south, 3+25 south, 5+00 south and Station 6+10 south where the line is offset some 50 metres east. There appears to be two conductors in the anomaly at Station 3+25 south. The conductors could also be some 100 metres below the surface. Near the north end of the line there is a very pronounced increase in amplitude of the out of phase or quadrature curve. The increase starts near Station 1+50 south with a strong and continuous increase to the north at Station 0+00 which is the end of the line. As noted on the cross-section, this is 50 metres south of the start of the baseline. Extreme terrain at the north end of Line 0+80W prevented further survey to the north. This abnormal increase in the quadrature was noted on the other two northsouth lines in the immediate area. When plotted on the base map the alignment of the trend is N36°W or parallel to the geologic contacts of the various formations as shown on the base map and nearly parallel to some of the fault rends also shown on the base map. The abnormally high quadrature values recorded on the VLF-EM survey could be related either to structure or stratigraphy.

E-W Line 0+50S

This east-west line is located approximately 50 metres south of the confluence of Pinus and Shepherd Creeks near the north end of the Pinus Creek baseline. The western portion of the line trends to the southwest following the south rim of the Canyon formed by the easterly flowing Shepherd Creek. The south rim has heavy brush but not too much relief. The eastern portion is along the access road to the placer camp with little or no relief.

The western portion of the line contains very little useful electromag data. There is a possibility of increased overburden in the area of from 400 to 500 metres west with a possible fault or contact near Station 300W. The eastern portion of the line has substantial relief on the in-phase curve. The in-phase curve has fairly high amplitude near Summit Creek some 600 metres east of the baseline. In this area there are two fairly large outcrops of quartz and limestone with iron oxide staining. The argillite bedrock in the placer gold test pit in the bed of Summit Creek is highly fractured and contains abundant pyrite in local areas. This portion of Summit Creek produced substantial placer gold in the early 1960's using a floating washing plant and 3 cu.yd. dragline. The gold came from a false bedrock on hard pan and clay some 15-20 feet below the surface of the creek. There appears to be a fairly wide fault zone between 275 and 375 metres east of the baseline. The conductors in the fault zone could be some 150 to 175 metres deep.

E-W Line I+00S

This line is located north of Shepherd Creek and the steep terrain along this portion of the creek. The line is not tied to the baseline due to this steep terrain. Station 0+00 is located at a sharp bend in the access and logging road and shows on the photo mosaic from which the base map was prepaid. Station 0+00 on Line 1+00S is located 100 metres south of the start of Pinus Creek baseline and 250 metres west of the baseline as shown on the cross-section. The line has very little relief and follows along a trail o the north rim of the Shepherd Creek Canyon. All east-west lines were run using Seattle, Washington transmitter NLK reading east.

The VLF-EM data indicates two fairly strong fault zones near Stations 3+50W and 5+00 West. Both zones could be fairly wide (60 metres) with conductors from 50 to 100 metres below the surface.

E-W Line 4+00S

The line is located 400 metres south of Station 0+00 on Pinus Creek baseline. To the west the surface rises sharply from the cleared area to a topographic high near Station 3+00 West. The underbrush and downfall are also very heavy. There is some relief into Pinus Creek on the east portion of the line but not too severe and underbrush is moderate.

The VLF-EM data indicates a possible fault near the baseline. There is a very sharp and well defined fault zone indicated near Station 2+75 West or near the top of the topographic high at station 3+00 West. The strong negative in-phase (-60%) near Station 4+00 West could be due to deep overburden or a deep water filled fault zone. Further exploration work in this area is strongly recommended with surface clearing for further detail input electromag surveys. The present VLF-EM line should be extended to the west. The higher amplitude on the in-phase curve near Stations 1+00 East could be due to the greater quartz and limestone in this general area east of Pinus Creek fault zone.

E-W Line 5+00S

The only steep terrain on this line is from 100 to 200 metres west of the baseline. The terrain is steep immediately west of the area cleared for placer gold operations. The western portion of the line has abundant underbrush and downfall making for slow progress. There is some relief to the east in the area of Pinus Creek but not too steep. To the east the downfall and brush are less abundant.

The VLF-EM data on this line is not as good as lines run before and after this traverse. The amplitude on the in-phase curve is below average. The negative values on the in-phase curve near the western portion of the line west of the steep surface terrain near Station 2+00 West and also a possible fault at Station 2+25 West, may be due to increased overburden in the area of the topographic high similar to Line 4+00S, 100 metres to the north. The data indicates a fault or fault zone near Pinus Creek. There is also a possible fault near Station 2+50 East. East of this fault zone, the overburden may be thicker based on surface conditions and negative values on the in-phase curve. The higher amplitude on the in-phase curve near Station 6+00 East may be due to the increase in quartz and limestone found on Line 0+50S some 450 metres to the north.

E-W Line 7+00S

This line is located some 700 metres south of the confluence of Shepherd and Pinus Creeks. To the west of the baseline the surface terrain goes up quite steeply similar to the other east-west lines described earlier. East of the baseline the terrain is much less severe with only slight relief near Pinus Creek. Immediately south of this area, Pinus creek splits into two separate branches trending southeast and southwest respectively.

The VLF-EM data on this line is very good with a great deal of relief on the inphase curve. Immediately west of the baseline from 0+50 metre west to 2+00 metres there appears to be a broad fracture zone. Near the west side of the zone at Station 1+50 West, the surface goes up very sharply. There are no outcrops in this area and the underbrush is guite thick. This relief could be the result of faulting or possibly to a glacial deposit found throughout this general area. The abnormally negative values on the in-phase curve (-64%) near Station 3+00 West could be due to increased overburden. Further west, near the top of the topographic high near Station 5+50 West there could be a deep fault with the conductor some 175 metres below the surface. The west end of the line near Station 6+50 West falls in an area of numerous guartz outlined by placer gold exploration work from the Downey Pass area. This general area west of the end of the line contains numerous quartz boulders in the overburden and outcrops contain abundant quartz veins. The sharp increase in amplitude of the in-phase curve from Station 3+00 West to the end of the line may represent the increase in quartz near Station 6+50 West, the end of Line 7+00S.

Downey Pass Area

Line 5+00S-89D

Line is located near the centre of the claim block. The northern projection of the Lowhee Fault follows in general the Downey Pass Creek on the N-S logging road through the claim block. Station 0+00 on Line 5+00 is located on this Downey Pass road some 500 metres south of the east-west trending Shepherd Creek. The line has some fairly sharp surface relief in the western portion of the line as shown on the cross-section. The section crosses a very sharp north-south trending depression some 300 metres east of the Downey Pass baseline and road which is also in the area of the northern projection of the Lowhee Fault in the old Cariboo Gold Quartz mine near the town of Wells. Other VLF-EM profiles in the general area have identified a possible fault zone in the area of the baseline. Outcropping along the road some 400 metres to the south are highly broken argillite with fractured quartz veins and oxidized pyrite. The cross-section shows possible faulting on both sides of the steep depression near Station 3+00. Outcrops and overburden in the first 300 metres of the line contains abundant quartz veins and quartz boulders. The road bed near the start of the line at Station 0+00 also contains quartz veins in the argillite with local limonite staining. The steep slope into the sharp ravine near Station 3+00 also contains quartz vein and fragments of quartz with limonite. The high amplitude of the in-phase readings in the area could correlate with the increased quartz veins. The correlation of high amplitude and quartz veins is very pronounced to the south on Line 7+00S-D89. The quartz veins in this latter area have been exposed by recent placer gold operations. The eastern portion of the line located near the top of the ridge could contain some deep overburden.

Line 7+00S-89D

This line is located seven hundred metres south of Station 0+00 on the Downey Pass baseline where Shepherd Creek crosses the Downey Pass Creek and road. The line has only moderate relief compared to the strong relief on Line 5+00 located some 200 metres to the north.

The east-west profile indicates a possible fault zone from 225 metres to 375 metres east of the baseline. Exposed bedrock in a road cut near Station 390 metres shows strong brecciation and leaching. The high amplitude of the in-phase curve at Stations 200, 465 and 660 correspond with abundant quartz in the bedrock and quartz boulders in the overburden near the lake at Station 7+10. Quartz boulders up to 1 metre in diameter were absent on the lakeshore. The sharp negative quadrature (out of phase curve) near Station 6+35 may be due to local sulfide concentration in the quartz veins exposed by recent placer gold operations in the area. The east end of the line could contain thick or deep overburden.

Line A7+00S-89D

This line is located in the same area as Line 7+00S-89D except that it was run using Hawaii NPM station instead of Seattle, Washington NLK, which was off for several weeks for maintenance. The angle of direction for Hawaii is approaching the critical angle of reception for this type of equipment. The stations are at the same location on the ground but the data does not correspond well enough to use this station. The possible fault zone from Station 2+25 to 3+75 on Line 7+00S-89D using Seattle station, does not show up on this profile using Hawaii. The high amplitude on the in-phase curve which corresponds with quartz veins on the surface does not show up using Hawaii. The only structural conditions shown on the Hawaii profile is a possible deep fault near Station 5+50 to 6+00 East.

Line 5+55 (northeast from Station 5+55 on Line 7+00S)

The surface relief on the entire line is very moderate and is along a bulldozer trail through the bush near test pits or placer gold. The high amplitude of the in-phase curve corresponds to the same curve on Line 7+00S-89D near Station 6+60. In this general area there is abundant quartz veins in the altered and leached argillite. The negative quadrature between 300 and 400 metres, Line 5+55 correlates with similar conditions on Line 7+00S-89D near Station 6+35.

CONCLUSIONS AND RECOMMENDATIONS

Additional input type of electromag work should be carried out in both areas. This type of work can be done when more of the area has been cleared by placer gold testing and production. Test drilling should also be done in the areas of intersection of major trends in the Pinus Creek area. The drilling could also identify a possible channel of the old drainage below the high ground some 300 to 400 metres west of Pinus Creek.

W. H. MYERS

May 1990

Respectfully submitted,

Wm. Howard Myers, P.Eng., P.Geol. Geological-Geophysical Consultant Vancouver, B.C.

APPENDIX

W.M. HOWARD MYERS, P.GEOL., P.ENG.

CERTIFICATE

I, William Howard Myers, do hereby certify that I am an independent geologicalgeophysical consultant with offices at Suite #814 - 602 West Hastings Street, Vancouver, B.C., V6B 1P3, British Columbia. I have been actively engaged in my profession as an independent consultant in both oil and mining since 1952. I am a professional geologist, P.Geol., member #16704 of the Association of Professional Engineers, Geologists and Geophysicists of Alberta. I am also a member P.Eng., #14056, of the Professional Engineers of British Columbia. I also hold a Life Membership in both Societies.

I graduated from Fresno State College, Fresno, California in 1939 with high honors and a B.Sc. degree in Geology. I did graduate work at Stanford University, Stanford California for M.Sc. degree in Geology, 1939-1941. After graduating I spent three years as a field geologist for the U.S. Geological Survey and eleven years working in the field and management of a company engaged in geophysical exploration work for both oil and minerals before entering the consulting field in 1952.

Since 1964 the majority of my time has been spent in the exploration for both placer and lode gold deposits in the Cariboo Region of British Columbia. During the past five years I have carried extensive geological and geophysical surveys for lode gold deposits in the general Wells-Barkerville area including the Barkerville Gold Belt. In 1980 I was successful in organizing and supervising a helicopter electromagnetic-magnetic survey of the Wells-Barkerville region for one of my clients. The survey covered some 75 square miles with 240 miles of line flown on a quarter mile line spacing. Other ground electromagnetic surveys using such input systems as Max-Min II and VLF Systems have been carried out in the general area with very good results in mapping geological contacts and the more prominent fault trends. The shallow refraction seismograph has also been used to identify types and conditions of bedrock as well as the depth to bedrock.

During the summer months of 1989, I spent 17 days in the field on the EML #1 - #6 mineral claims running VLF-EM profiles. Most of the lines were run east-west using Seattle, WA transmitter NLK - 24.8 kHz. The north-south baseline west of Pinus Creek was run using both Cutler Main transmitter NAA - 24.0 kHz and Hawaii transmitter NPM - 23.4 kHz. Both stations gave good correlative results. All lines were run using a VLF-EM16 manufactured by Geonics Limited.

Five days were spent examining and mapping bedrock which was exposed by placer operations in the Downey Pass and Pinus Creek areas in the central and eastern portion of the claim block.



Wm. Howard Myers P.Eng. (B.C.) P.Greol. (Alta)

Geological-Geophysical Consultant Vancouver, B.C.

May 1990

BIBLIOGRAPHY

British Columbia Department of Mines:

Bulletin #3	Doublas Lay, 1940
Bulletin #11	Douglas Lay, 1941
Bulletin #26	Stuart Holland, 1948
Bulletin #38	A. Southerland Brown, 1957
Annual Report I	967, p. 459-460, A. Southerland Brown

Geological Survey of Canada, Department of Mines Memoir 181, 1935, G. Hanson
Bulletin 149, 1926, Johnson & Unglow
Paper 72-35, 1973, J.R. Campbell & Others
Annual Report 1887-1888, VIII, Amos Bowman
Map 335A, Willow River (west half), 1933, G. Hanson
Bulletin 280, R.W. Boyle, 1979, The Geochemistry of Gold and its
Deposits.
Open File 858, L.C. Struik
Canadian Journal of Earth Sciences Vol. 18, No. 12, 1981

Assessment Reports:

Geological Geophysical Report on EML #1 - #3 Inclusive Lode Mineral Claims, William Howard Myers, P.Eng., P.Geol., March 1984.

Geophysical Report (VLF-EM Surveys) EML #4 - #6 Inclusive Mineral Claims, William Howard Myers, P.Eng., P.Geol., April 1985.

Geophysical Report Electromag (VLF-EM) Geochemical ICP Analysis of Selected Bedrock Samples EML #1 - #6 Mineral Claims, William Howard Myers, P.Eng., P.Geol., April 1986

Geological Report and Logs of Seven Diamond Drill Holes, October 3rd to October 28, 1986 on EML #1-6 Mineral Claims, Wm. Howard Myers, P.Eng., P.Geol., May 1987.

Geological Report and Logs of Seven Percussion Drill Holes during period of August 12th to September 1st, 1987, EML #1-6 Mineral Claims, Wm. Howard Myers, P.Eng., P.Geol., Consultant, May 1988.

DETAIL BREAKDOWN OF COSTS FOR VLF-EM SURVEY

EML #1 - #6 MINERAL CLAIMS, 1989 SEASON

DAILY COSTS

Geophysicist

\$ 250.00 per day 50.00 per day 25.00 per day 45.00 per day 20.00 per day
\$ 390.00
\$ 6,630.00
900.00
2,725.00
\$10,255.00

Assessment Work of \$8,000 Filed Feb 27, 1990

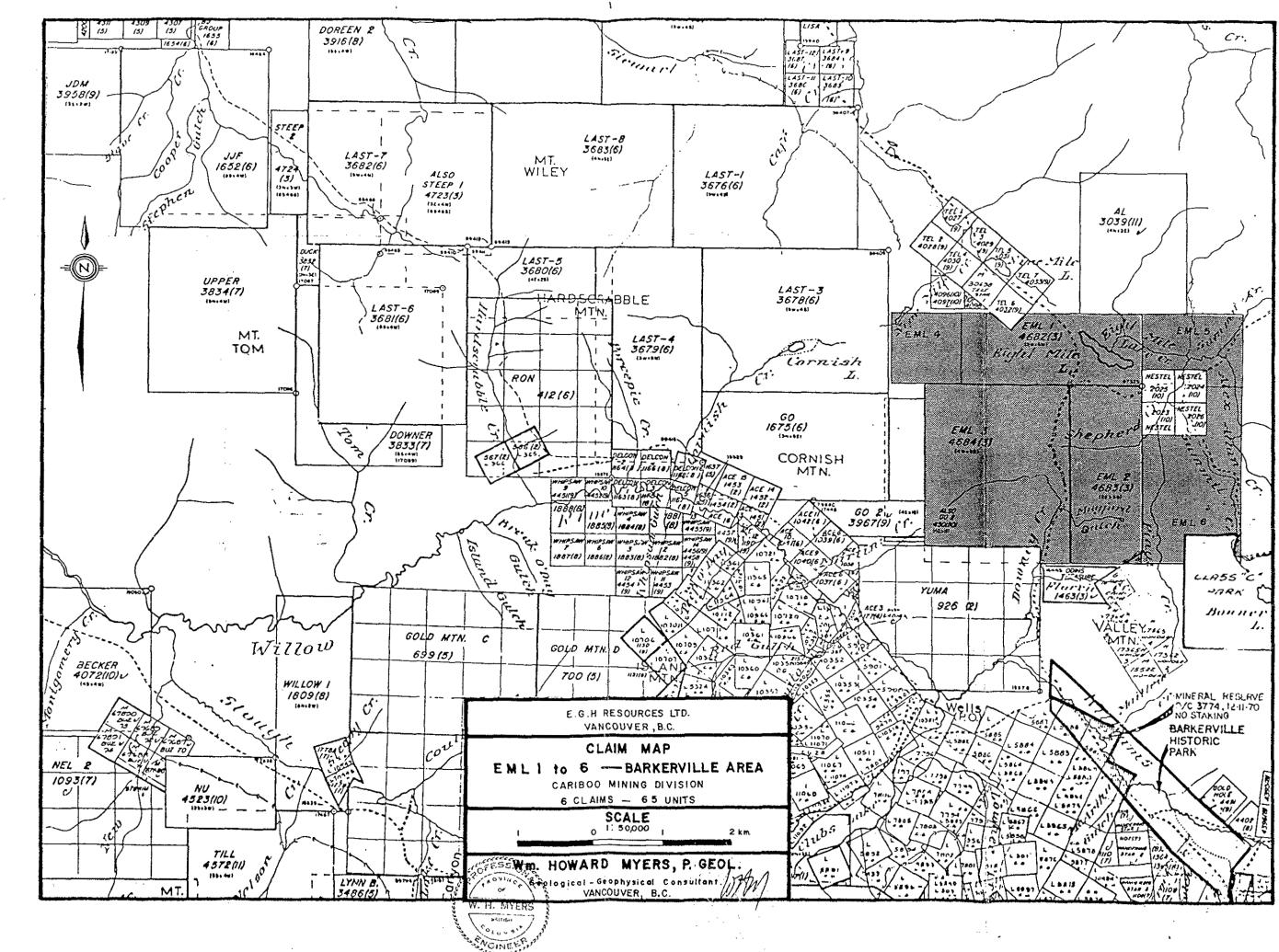
13 km of line run Cost per km = \$579.23 including mobilization and demobilization and report

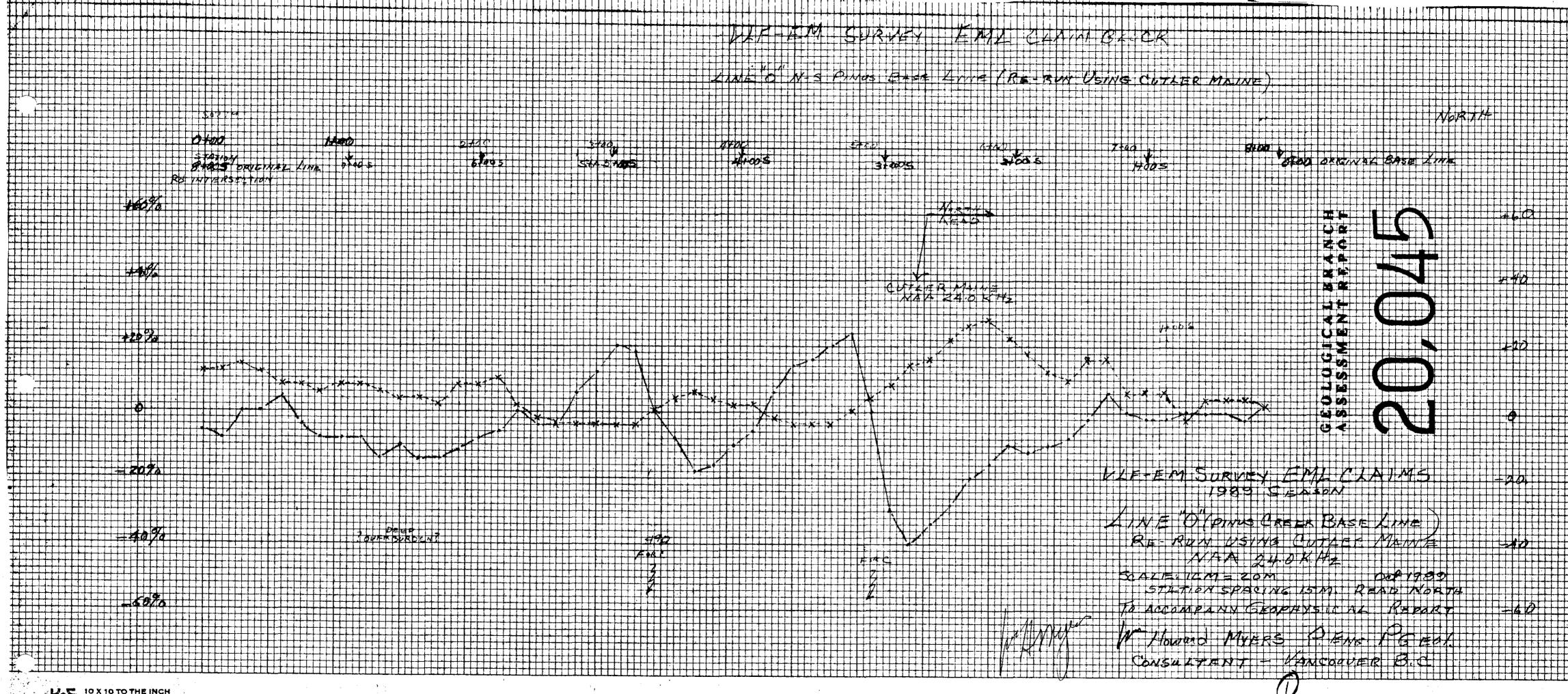


Wm. Howard Myers, P.Eng. 18

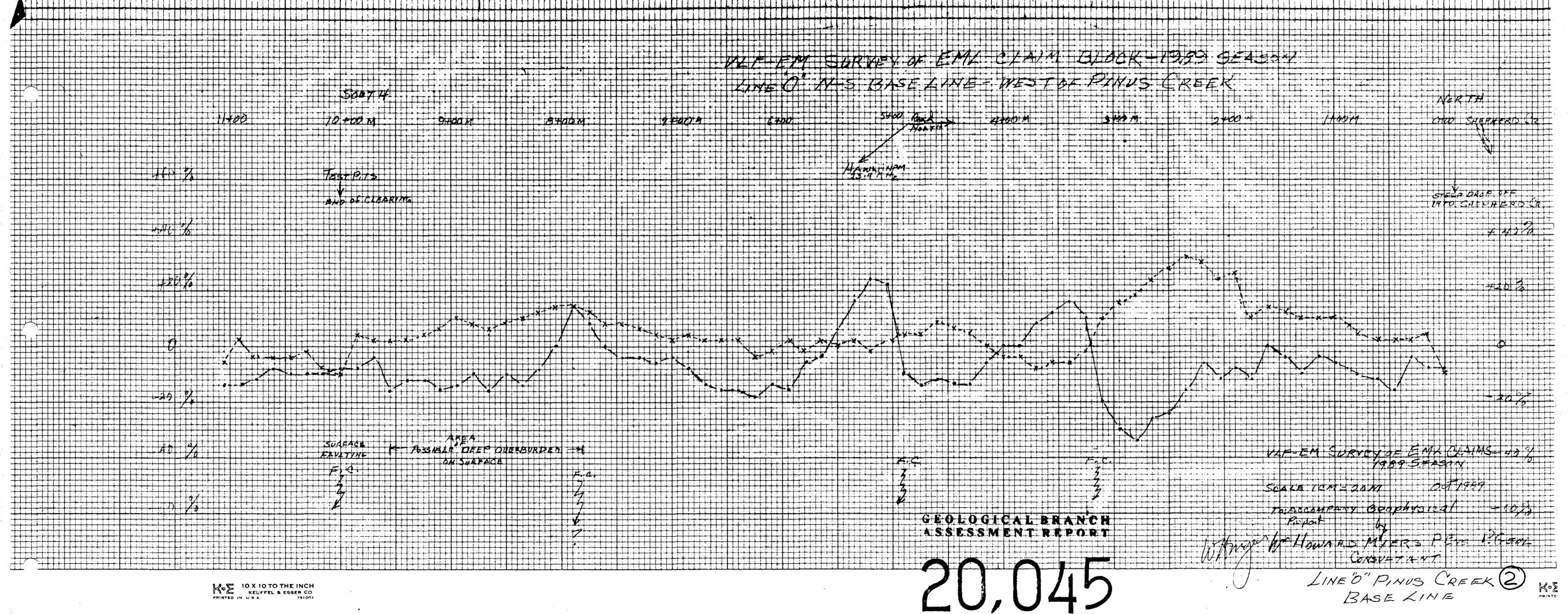
P.Geol. (Alta) Geological-Geophysical Consultant Vancouver, B.C.

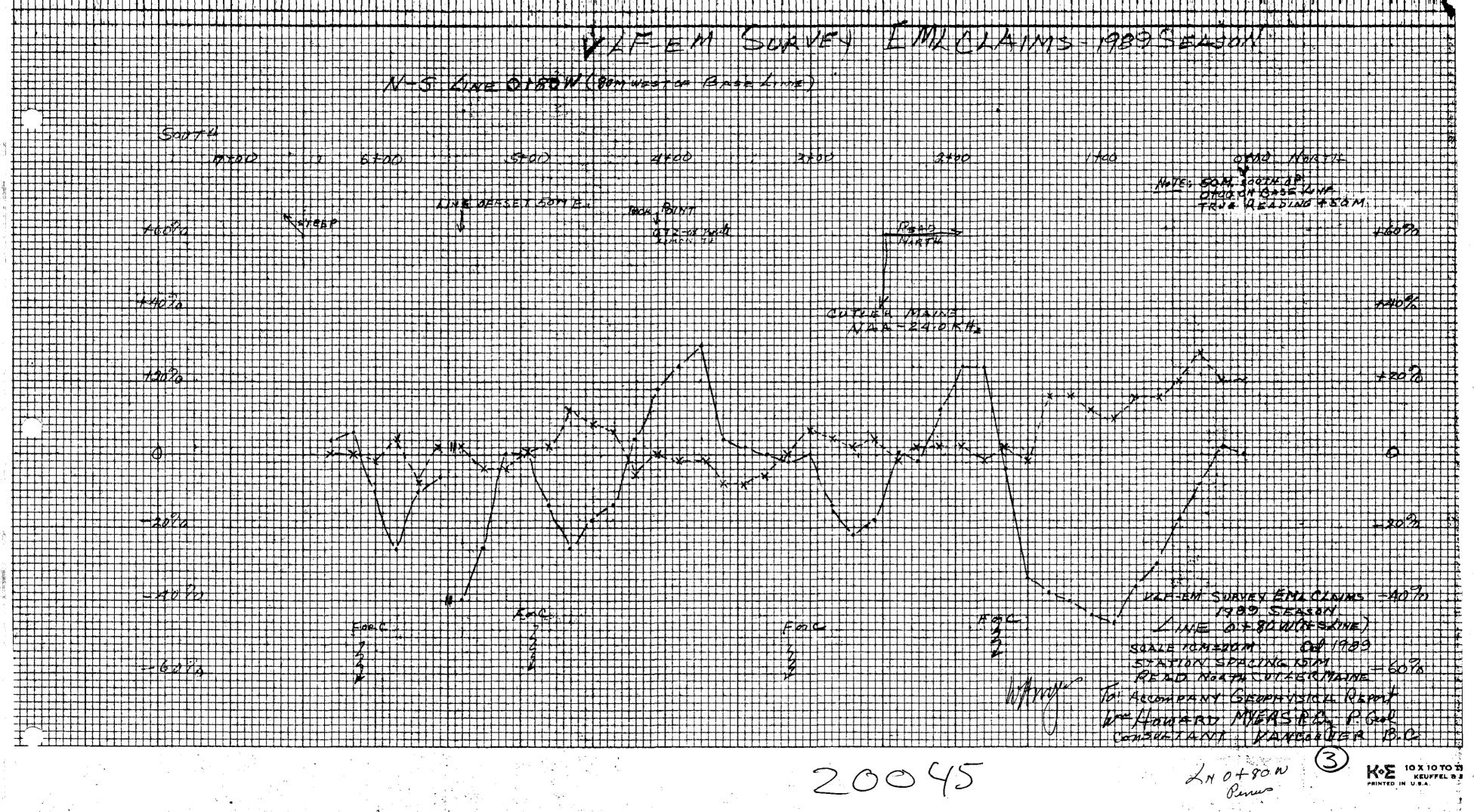
May 1990

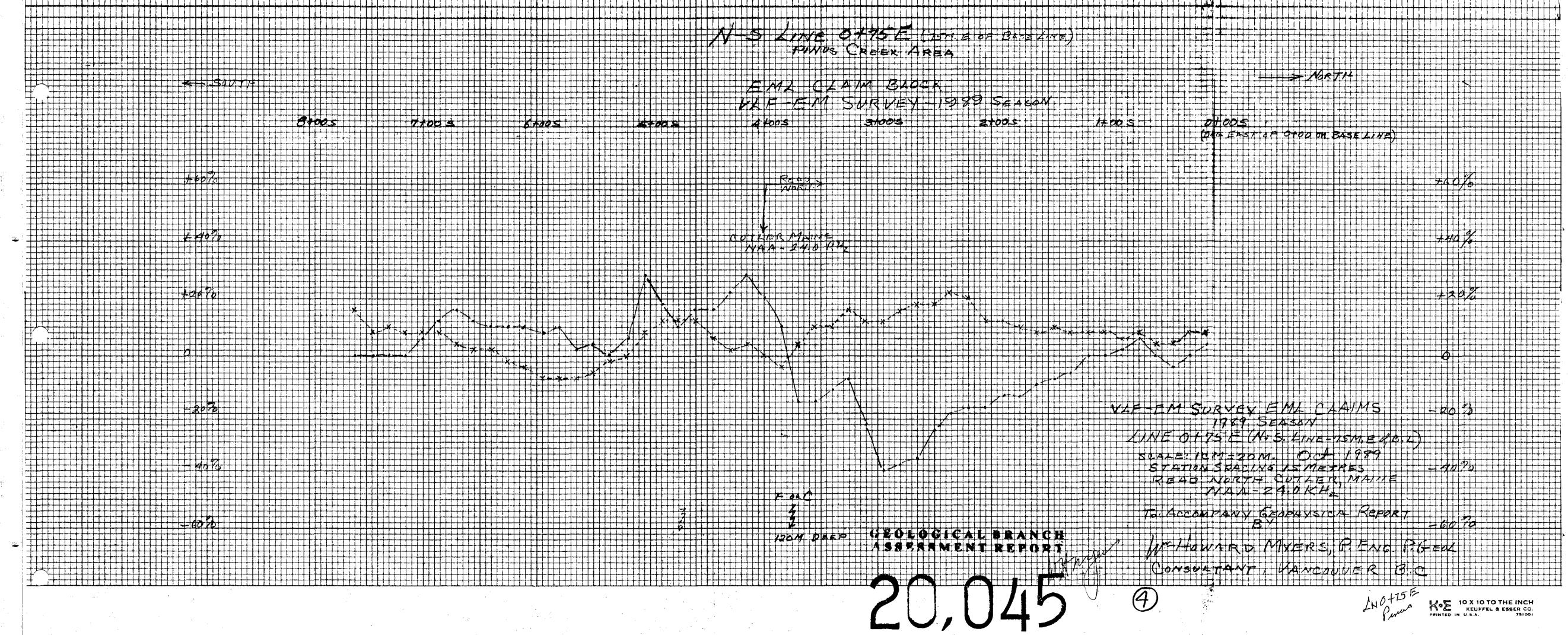


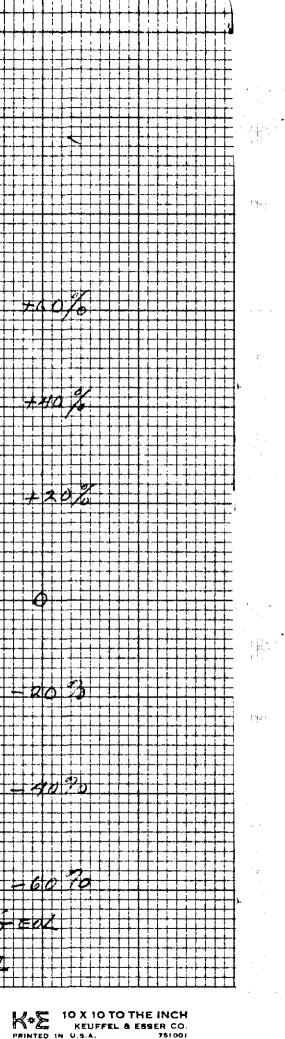


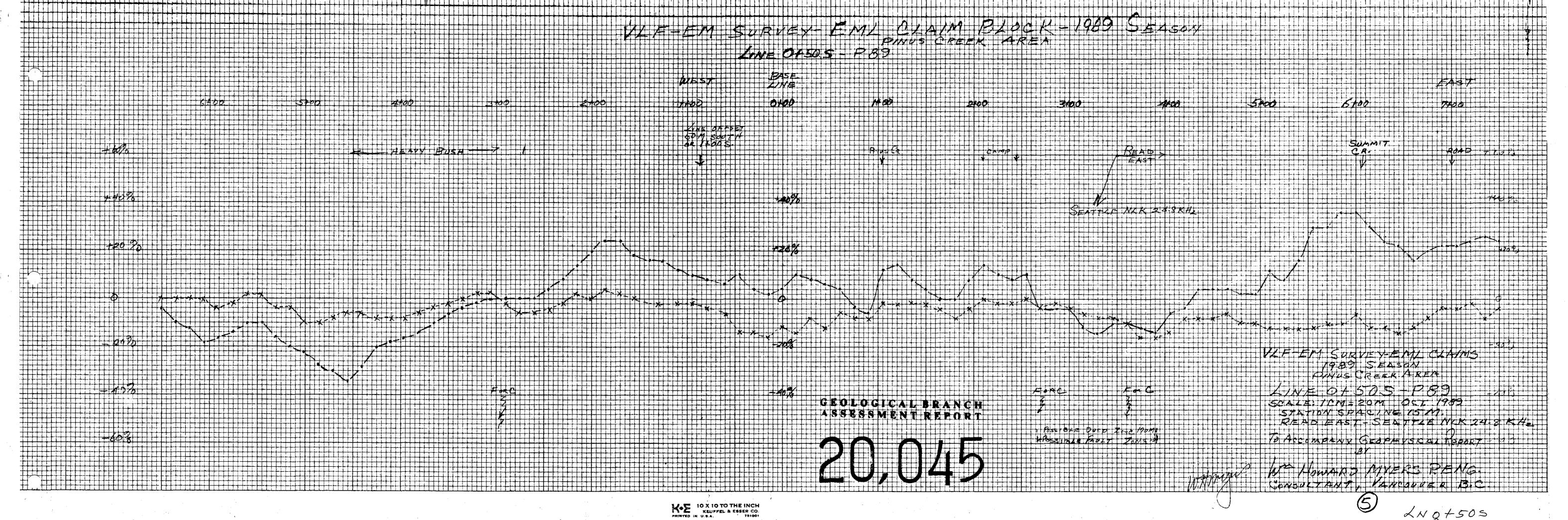
KEUFFEL & ESSER CO. PRINTED IN U.S.A. 751001

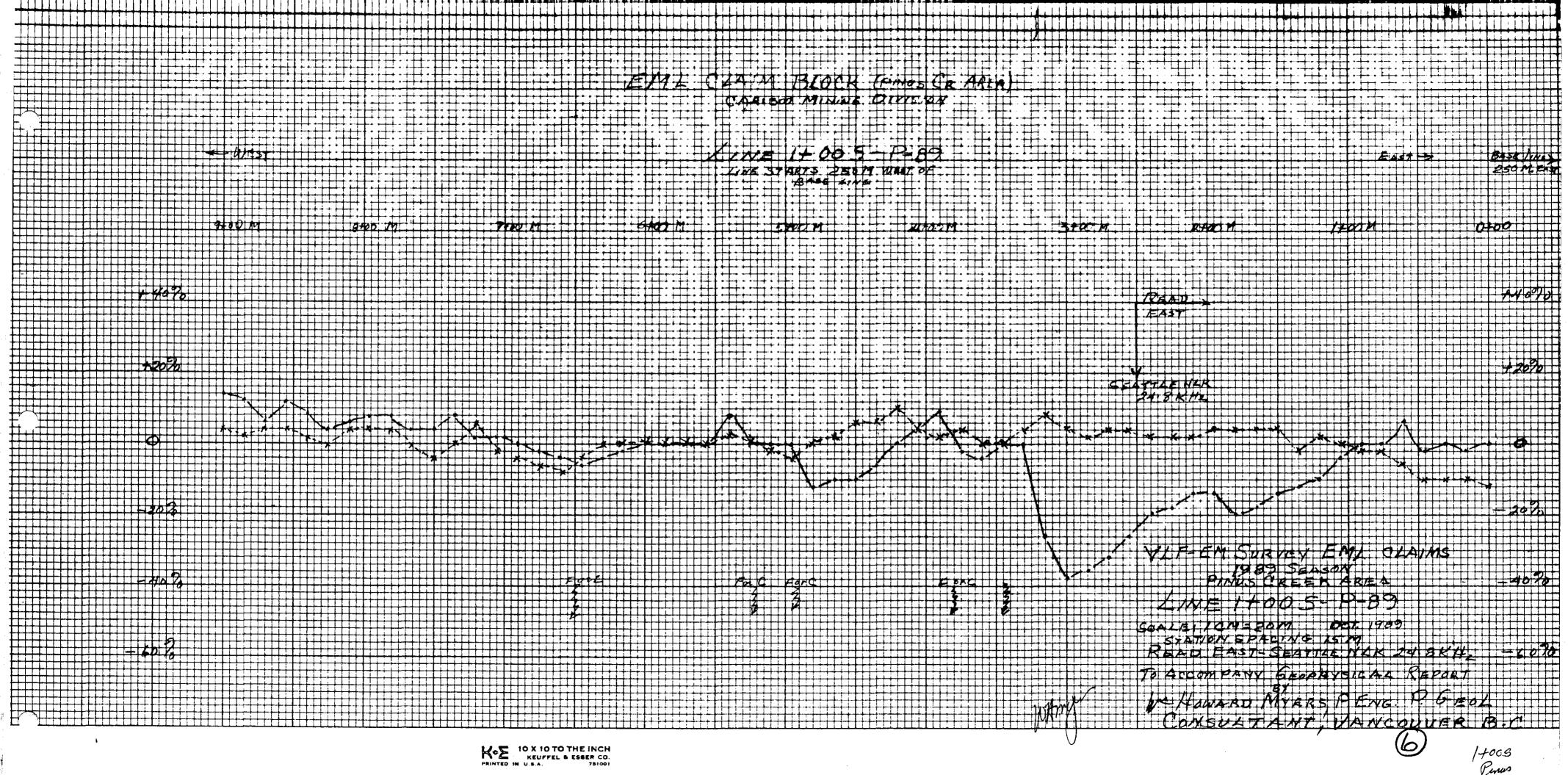


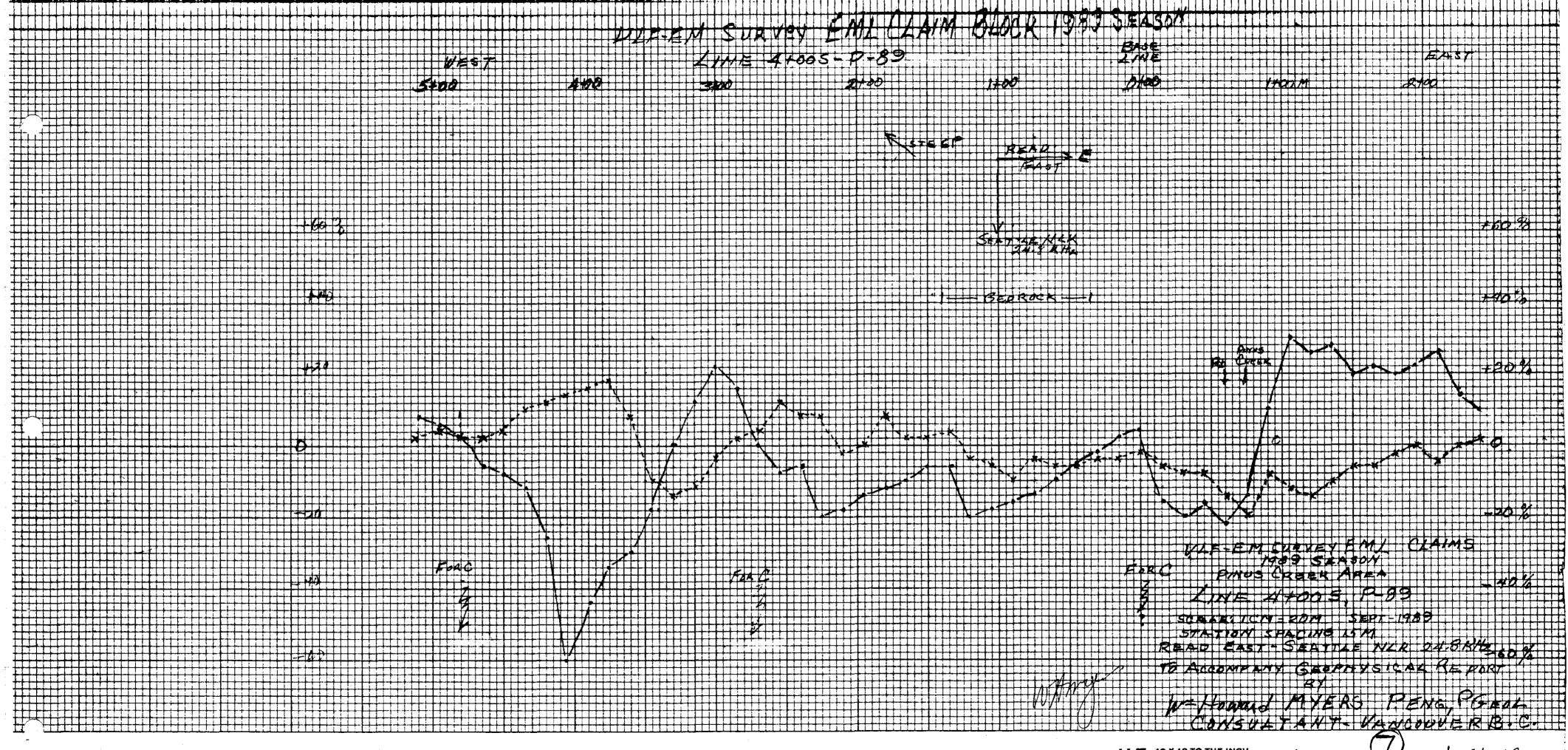












HOX 10 TO THE INCH KEUFFEL & ESSER CO. PRINTED IN U.S.A. 781001

LAI 47005 Primes

