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ACTION:		
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ASSESSMENT REPORT  
for  
PATHFINDER CLAIM GROUP  
in the  
GREENWOOD MINING DIVISION B.C.  
MAP SHEET NTS 82E/1W  
LAT 49°12'N  
LONG 118°25'W  
FOR  
NIAGARA DEVELOPMENTS  
George Nakade  
BY  
H. KIM, P. GEOL., FGAC  
JANUARY 15, 1993

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**22,772**

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## SUMMARY AND CONCLUSION

Prospecting, exploration and limited mining on the Pathfinder Group has been realized entirely from two types of mineralization: Massive sulphides and quartz veins. Between 1895 and 1920 about 1260 tons, assaying 0.1 - 3.83 oz/ton gold (\$2 - \$77 in 1920 values), 0.5 - 3.9 oz/ton silver and 0.97% copper were mined from the Pathfinder and Little Bertha claims.

Recent work on the property has also concentrated on exploration of the massive sulphide zones and the auriferous quartz veins.

The objectives of the 1992 exploration program was:

1. To determine if there were any extensions of the Little Bertha vein which assayed 0.43 oz/ton Au. and 3.9 oz/ton Ag. This vein appears faulted East/West on the South end.
2. To determine if the massive sulphide zone on the Pathfinder does extend to the East as noted by the writer in 1987 fieldwork for Ber Resources.

The placement of three grids and a VLF (very low frequency) survey on the Little Bertha vein, and the lower Bertha adit was successful in delineating three faulted sections of quartz veins on the lower Bertha grid and a small massive sulphide zone.

The third grid on the Lonestar Fraction also indicated a large quartz vein in excess of 80M and striking 85"E. An old pit, though badly caved, revealed pyritized quartz float but insitu samples were not accessible.

The 1987 exploration program which consisted of trenching, exposed a replacement and fracture filling of the sheared - fractured volcanic rock, which was quite different than the typical Pathfinder mineralization, viz, massive sulphide vein/pod and gold-bearing quartz vein.

SUMMARY AND CONCLUSION cont'd

These two existing trenches were chip sampled for a length of 38M and a total of six samples. In these trenches hornfels and skarn were observed as well as silification zones, which are commonly associated with epithermal precious metal systems and feeder zones in volcanic massive sulphide systems. Mineralization was in the form of pyrrhotite, pyrite and chalcopyrite.

Extensive prospecting and random magnetometer traverses to the East and Southeast indicate that this altered massive sulphide shear zone extends almost 400M to the Southeast ( $120^{\circ}$ SE) where it comes in contact with the East West Hornet Creek Fault. At this contact and in a East West direction and subparallel to Hornet Creek a limey calcite was sporadically traced for 600M West. Because of the heavy forest and overburden programs of geophysics and geochemistry will have to be implimented for future exploration.

The potential for a low to high grade gold deposit in this massive sulphide zone merits an additional exploration program to determine it's economic feasibility.

GENERAL RECOMMENDATIONS

As there has been many exploration programs on the Pathfinder property a geological investigation to correlate the many reports and to segregate geophysics, geochemistry, geological mapping and drilling should be implemented to define targets and reduce duplication.

DETAILED RECOMMENDATIONS

Little Bertha

1. Detailed geological mapping should be carried out in the vicinities of the upper and lower Bertha adits and to the South.
2. Soil sampling at 20M intervals for Gold only and if necessary a magnetometer survey on the lower Bertha grid.
3. If soil and magnetometer anomalies are coincidental with the EM16 results, short hole drilling should proceed.

Lonestar Fraction

1. The grid must be extended both East and West using 40M stations on the baseline and 20M stations on the grid lines as the VLF anomaly is open ended.
2. Geochemistry for Gold only should be carried out as well as more electromagnetics.
3. If satisfactory results are obtained, short hole drilling can proceed.

DETAILED RECOMMENDATIONS cont'd

Pathfinder

1. As the old grid is nonexistent a new grid should be established to include all the working in this area and to the East.
2. Systematic sampling and geological mapping should be implemented.
3. Depending on results, geochemistry and geophysics (either magnetometer or EM16) should be carried out on the grid.
4. Coincidental anomalies from these surveys now may be trenched, mapped, sampled and then restored to its natural surroundings.
5. If the above recommendations are successful diamond drilling should follow.

## INTRODUCTION

This report was prepared at the request of Mr. George Nakade for Niagara Development (Property Holder). The writer has been involved in the planning and implementation of the 1992 exploration program, as well as previous work programs on this property.

The Pathfinder claim group, in the Greenwood Mining Division and located 20 Km North of Grand Forks, has a history that dates back to the 1890's.

The field work for 1992 included the placement of three grids for VLF surveys on the Little Bertha claim (upper grid and lower grid) and Lonestar Fraction.

Extensive prospecting on Path claims 1-8 took place to determine how extensive the massive sulphide zone, found in the 1987 exploration program, was and how far it extended.

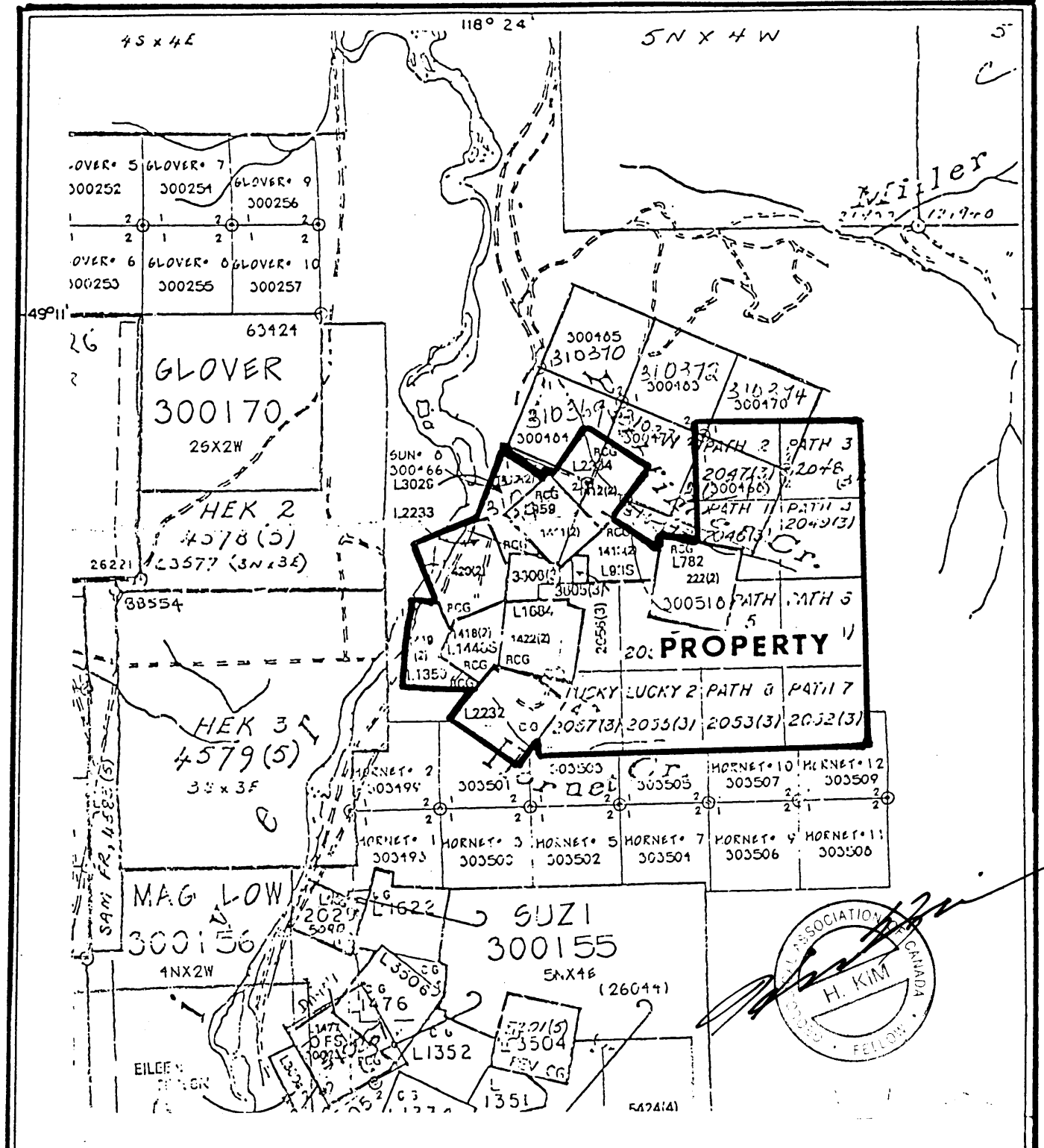
Other work included chip sampling of existing trenches and refencing the existing shafts on the Pathfinder. A total of 25 samples were processed and this report relates to the VLF surveys, chip sampling and prospecting results achieved in 1992 and makes recommendations to develop its potential.



PROPERTY

The property consists of nine reverted crown granted mineral claims and fourteen located two-post claims - all contiguous. Particulars are shown in Figure 2 and listed as follows:

<u>Claim</u>	<u>Lot No.</u>	<u>New Tenure No.</u>	<u>Expiry Date</u>
<u>Reverted Crown Grants</u>			
Pathfinder	782	214128	Feb. 17, 1994
Diamond Hitch	1684	214221	Feb. 28, 1993
Christina	1350	214218	Feb. 23, 1993
Derby	2233	214219	Feb. 23, 1993
Jasper Fr.	3029S	214216	Feb. 23, 1993
Iron Bell Fr.	93S	214215	Feb. 21, 1993
London (Bannock)	2234	214214	Feb. 21, 1993
Little Bertha	959	214213	Feb. 21, 1993
Lonestar Fr.	1446S	214217	Feb. 23, 1993
<u>Two-Post Claims</u>			
Path 1-8		214429 to 214436	Mar. 4, 1993
Lucky 1-4		214437 to 214440	Mar. 4, 1993
Hike 1&2		214661 to 214662	Mar. 14, 1993



H. Kim, P. GEOL., F.G.A.C.				
NIAGARA DEVELOPMENT				
PATHFINDER CLAIM GROUP				
GREENWOOD MINING DIVISION				
Claim Map				
SCALE 1:50,000	DATE January 1993	NTS 82E/1W	DRAWN BY JK	FIG. 2



### LOCATION AND ACCESS

The claims are located 20 km North of Grand Forks, B.C., adjacent and to the East of North of the Granby River. Access is provided by the "North Fork" Highway (Granby River Highway) which parallels the Granby River on the East and passes through the property. The major showings on the property can be conveniently reached via numerous bush roads, built and maintained for exploration, logging and ranching. (Figures 3 & 4)

### PHYSIOGRAPHY

The Pathfinder property is situated in a moderately steep Northwestward facing slope within the Christina Range of the Monashee Mountains, a subdivision of the Columbia Mountain Range. The two prominent topographic features are the Pathfinder Creek on the North and the Hornet Creek on the South, both of which flow Westward and merge into the Southerly flowing Granby River. The topography of the general property area is fairly mature, and most peaks are rounded by glacial action. The Pathfinder Group covers the forested Eastern slopes of the Granby River valley and extending onto portions of the plateau to the East. Elevations range from 550 meters at the Southwest to 1152 meters at the East. The major showings and physical workings are generally located in the following elevations: Pathfinder workings including Trench A 1,000 - 1,050 m, Diamond Hitch Showings 710 - 750 m, Little Bertha workings 625 - 680 m.

### WATER AND POWER

Sufficient water for all phases of exploration and development could be available from Pathfinder Creek in the North or Hornet Creek in the South of the property. Secondary water courses extending from the main creeks could also provide water.

HISTORY

The history of the Pathfinder property dates back to the 1890's. Between 1895 and 1920, approximately 1260 tons of apparent direct smelting ore were shipped from the Pathfinder claim and the Little Bertha claim. Some reports of the Minister of Mines available to the writer show the following respective ore grade of the two claims:

<u>Location</u>	<u>Year</u>	<u>Gold Value Per Ton Ore</u>	<u>*Converted oz/ton Gold</u>	<u>Remarks</u>
Little Bertha	1901	\$45 - \$77	2.17 - 3.72	
Pathfinder	1897	8 - 56	0.39 - 2.70	Also contains 2-12 oz/ton Silver
	1899	15	0.72	Negligible Silver
	1901	15	0.72	Negligible Silver
	1902	17	0.82	Negligible Silver
	1906	2 - 40	0.09 - 1.935	Copper 2.5%

\*Official gold price 1834 - 1900's averaged \$20.67 per ounce. This quotation is from a text book for "Pacer Mining School" by B.C. & Yukon Chamber of Mines - 1982 issue.

Other exploration work indicated by pits and trenches and adits occur in other areas of the property.

In the 1960's, Alwin Mining Co. Ltd. carried out an exploratory work on the property. Most of their work was concentrated on the Little Bertha old workings. The work consisted of reopening of some old workings, trenching and twelve hold diamond drilling. However, the results of this work are not released to the public.

HISTORY cont'd

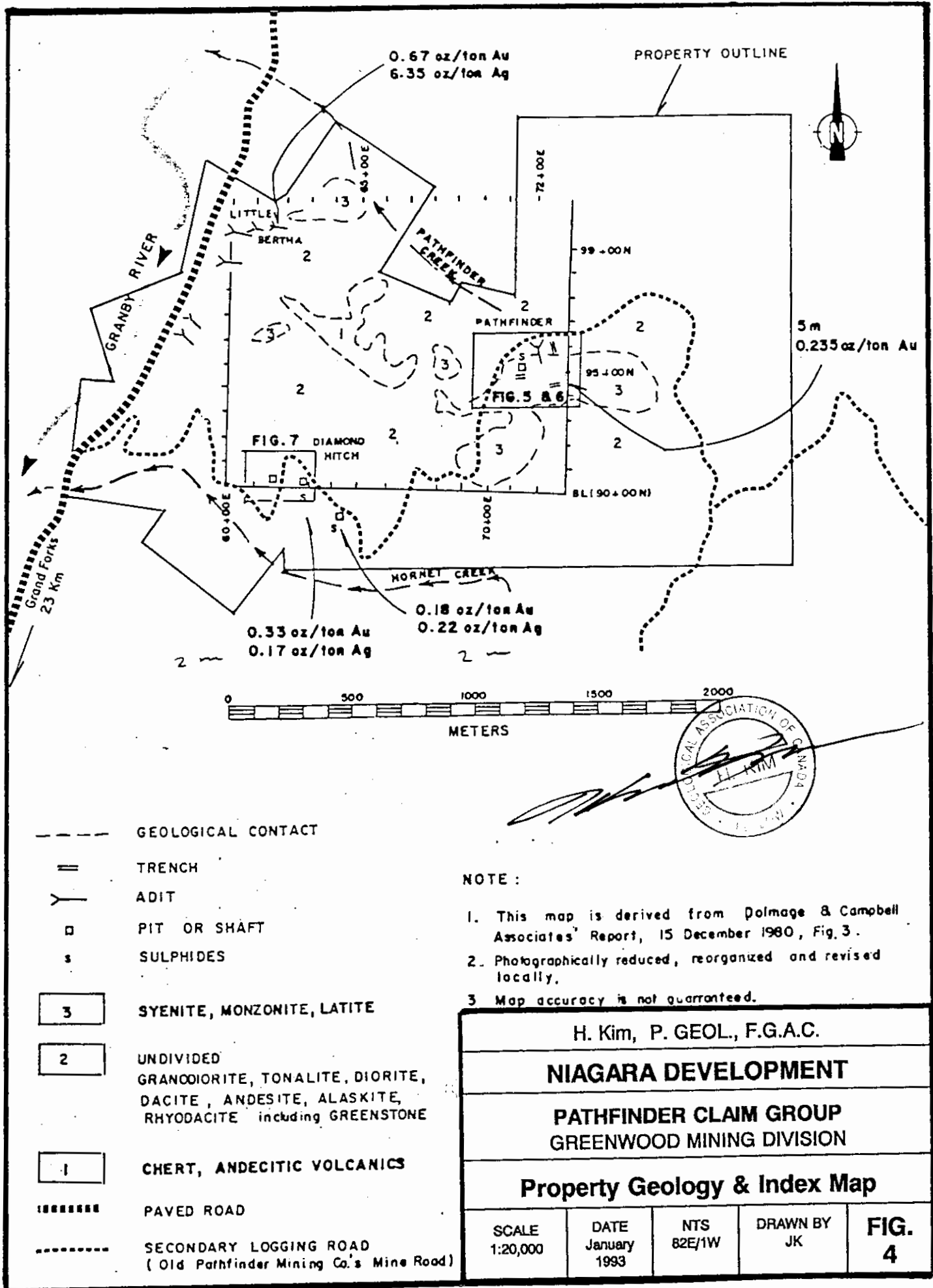
In 1980, Aries Resources Inc. optioned the property and conducted geological reconnaissance and magnetometer survey on the western half of the Pathfinder property. Three diamond drill holes were drilled on the Little Bertha claim. Significant assay results were obtained from this work, but they dropped the lease without a plausible reason.

In 1983, Nu-lady Gold Mines Ltd. optioned the property and carried out a diamond drilling program on the Diamond Hitch claim. The result of drilling were encouraging as in DDH 83-03 (1.4 oz/ton gold).

In January 1984, a four short hole totalling 195 m were drilled on the Diamond Hitch claim by Nu-Lady Gold Mines Ltd.

In 1985, thirteen B.Q. diamond drill holes for a total of 921 meters were drilled in the Pathfinder main workings area. A significant intersection of the massive sulphides was achieved.

In 1986, Ber Resources Ltd. optioned the entire Pathfinder property for continuous exploration and development of the known and unknown precious metal deposits.



- GEOLOGICAL CONTACT
- || TRENCH
- Y ADIT
- PIT OR SHAFT
- s SULPHIDES
- 3 SYENITE, MONZONITE, LATITE
- 2 UNDIVIDED  
GRANODIORITE, TONALITE, DIORITE,  
DACITE, ANDESITE, ALASKITE,  
RHYODACITE including GREENSTONE
- 1 CHERT, ANDECITIC VOLCANICS
- ===== PAVED ROAD
- SECONDARY LOGGING ROAD  
(Old Pathfinder Mining Co.'s Mine Road)

NOTE :

1. This map is derived from Dolmage & Campbell Associates' Report, 15 December 1980, Fig. 3.
2. Photographically reduced, reorganized and revised locally.
3. Map accuracy is not guaranteed.

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<b>NIAGARA DEVELOPMENT</b>			
<b>PATHFINDER CLAIM GROUP GREENWOOD MINING DIVISION</b>			
<b>Property Geology &amp; Index Map</b>			
SCALE 1:20,000	DATE January 1993	NTS 82E/1W	DRAWN BY JK
			<b>FIG. 4</b>

## GEOLOGY

The general geology of the Pathfinder Group consists primarily of Permo-carboniferous aged siliceous volcanics and hornfelsed sediments belonging to the "Anarchist Group". This assemblage of rock has been intruded by granodiorite, quartz diorite, and diorite of the cretaceous aged "Nelson Intrusives". The latter has in turn been intruded by the tertiary aged Coryell syenites and monzonites.

A 1980 geological report by Raymond Saunders, P. Eng. describes the property geology on a reconnaissance basis at a scale of 1:5000. His geological map was photographically reduced and is presented on Figure 4. Saunders has distinguished three map units, each of which contains three or ten different lithologic types. The three map units can be simplified by the writer from the oldest to the youngest as follows:

- Unit 1 Permo-Carboniferous "Anarchist Group"  
Sedimentary and volcanic rocks
- Unit 2 Cretaceous "Nelson Intrusions"  
Quartz diorite intrusive complex
- Unit 3 Tertiary "Coryell Intrusions"  
Syenite, monozonite, latite, phonolite

The following lithologic description is transferred from Saunders' geology report.

### Unit 1

The cherts of this unit are strongly weathered in outcrop due to a consistent content of 2 to 5% pyrite. They are very well bedded, but it is impossible to make any other textural observations without fresh rock exposures. The beds strike uniformly at 100 to 110 and dip steeply to the North. They are associated with andesites which are also pyritic.

The dacites and andesites on the property commonly display white feldspar phenocrysts 1 to 2 mm in size as well as occasional hornblende. Although the groundmass is often very fine frequent heavy chlorite and epidote alteration is evident.



GEOLOGY cont'd

Unit 2

The quartz diorite complex underlies 80% of the property as a large number of small intrusive bodies. The individual rock types represented include quartz diorite, granodiorite, alaskite, diorite, dacite, andesite and rhyodacite. The rocks vary greatly in appearance, they range from fine to medium grain size and from unaltered to very altered.

On the Little Bertha claim an individual body of granodiorite may be traced over an area of 200 m by 300 m, but this is rare. In general the rock type varies from outcrop to outcrop, contacts presumably being gradational, with the finer grained rocks usually showing a much heavier chlorite-epidote alteration. Evidence for a sill-like shape to many of these small bodies come from the fact that the boundaries of the chert of Unit 1 are subparallel to its bedding. It may also be assumed from the extreme variation in the degree of alteration of rocks in the unit that later bodies brought about contact alteration of earlier intrusions.

Brownish-white pyrite quartzite found in the Little Bertha No. 3 Adit and at various other locations on the Pathfinder and Little Bertha claims is assumed by evidence of its gradational contacts to be the product of intense silicification of dacitic and dioritic rocks of this unit.

Unit 3

This unit primarily consists of medium grained monzonite. It contains both white and pink feldspars, one of which is usually porphyritic, C-3% quartz, a small amount of hornblende, and some magnetite. Rocks containing only pink feldspar were mapped as syenite; fine grained pink equivalents as trachyte.

Rocks of this unit are uniform in appearance and unaltered. They may be distinguished from Unit 2 by the presence of two feldspars, little or no quartz and a much lower mafic content. The contacts of Unit 3 with Unit 2 are sharp and lobate in shape.

Unit 3 would appear to represent a different differentiation series, lower in quartz and higher in alkali metals, than Unit 2.

## MINERALIZATION

As mentioned previously the exploration work on the property so far has concentrated on the delineation and development of Gold-Copper bearing massive sulphides of gold bearing quartz veins. Almost all of the old workings and mineral showings are on the Little Bertha, Diamond Hitch or the Pathfinder, although there are numerous other showings.

Massive sulphide mineralization on the Pathfinder Group appears in the contact zones between the "Coryell" intrusives and the "Anarchist" volcano-sedimentary package and in the form of hydrothermal mineralizing solutions, replacing and fracture filling of the sheared-fractured volcanic rock.

Many stages of alteration are observed: Silicification close to the syeno-monzonite intrusive (Jasperoid usually associated with low grade epithermal gold deposits) and into outer zones of chlorite epidote (propylite) alteration.

Mineralization occurs as pyrrhotite, pyrite and chalcopyrite.

## ELECTROMAGNETIC SURVEY

The VLF (very low frequency) survey was carried out utilizing a EM16 Serial #2 manufactured by Geonics Ltd.

The surveys were carried out on grids using 40 meter stations on the baseline and 20 meter stations on the grid lines.

VLF conductors were defined at the reflection point of crossovers from positive to negative tilt and under field strength highs.

VLF anomalies occurring consistently from line to line were also traced between lines.

The interference of a four strand wire fence along the baseline minimized strength of the conductors.

On #2 grid the contouring of the results of VLF station 24.8 Seattle seem to indicate a East-West geological trend. VLF stations used were: VLF 23.4 Hawaii and VLF 24.8 Seattle. As the two VLF stations differ only by 10° and as a result the readings are very similar.

## DATA PRESENTATION

Maps of the grids were prepared at scale showing the baseline, 4 grid lines and stations. The legend includes VLF transmitter and its direction. The tilt angle values are recorded opposite the stations on the left side of the line while the field strength values are recorded on the right side of the line. Field strength data was also contoured and these maps are included in this report.

STATEMENT OF EXPENSES

The 1992 exploration program consisted of establishing three metrically chained grids, totalling seven line km for electromagnetic VLF surveys, sampling, relocating the 1980 grid, and prospecting. This work and the refencing of the two shafts was carried out in the Greenwood Mining Division from October 10 - October 30, 1992.

Fieldwork

4 man days @ \$200/day, Position & place grids	\$ 800.00
1 man day VLF survey, 3 grids	200.00
4 man days, relocate 1980 grid	800.00
10 man days, prospecting and sampling	2,000.00
4 man days, refencing shafts	800.00
4X4 rental @\$65/day, 12 days	780.00
Field supplies, assays and VLF	300.00

Consultant

4 days @ \$500/day	2,000.00
Data compilation	1,000.00
Travel to and from Vancouver and Room & Board	<u>1,480.00</u>

Total	<u>\$10,160.00</u>
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BIBLIOGRAPHY

KIM, H. - Geology of the Quadrangle between Midway and Grand Forks, B.C., Granby Mining Corporation report, 1975

BLACK, J.M. - Geological Report on the 1983 Exploration Program of the Pathfinder Group, February 4, 1983.

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SAUNDERS, C.R. et al - Geological, Geophysical and Drilling Report on the Pathfinder Claim Group December 15, 1980.

SOOKOCHOFF, L. - Geological Report on the Pathfinder Group for Aries Resources Ltd. February 22, 1980.

- Diamond Drill Assessment Report on the Pathfinder Property for Nu-Lady Gold Mines, March 26, 1984.

Geology of Canadian Gold Deposits - Special Volume 24, CIM 1982.

CERTIFICATE

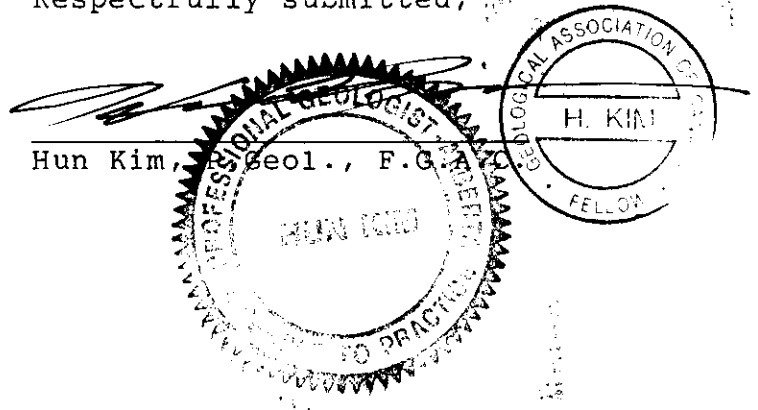
I Hun Kim, with a business address in the city of Vancouver, B.C. do certify that:

1. I am a consulting geologist and registered in the Geological Association of Canada (Registration #F1309).
2. I am a registered, licensed member, in good standing, of the Association of Professional Engineers, Geologists and Geophysicists in the Province of Alberta (Registration #5846).
3. I am a graduate of Seoul University (1958) holding a B.Sc. Degree in Geology and completed one year of post graduate studies for a Master of Science degree (1960).
4. I have practiced my profession for 20 years in Canada, and for 7 years in foreign countries per US Agency of International Development overseas project for the U.N. and assessed about 200 different metallic and non-metallic mines and properties including 104 precious metal deposits.
5. I have been a mine geologist with Granby Mining's Phoenix Division near Grand Forks, B.C. for several years prior to 1977. Since 1977 I have worked as a Geological consultant for numerous companies in the mining industry. I am presently employed by San Pedro Stone Inc. of Burnaby, B.C. This report is based on the writers recent visit to the property in October of 1992 and the supervision of the exploration program on the Pathfinder Claim Group.
6. I have no interest, direct nor indirect, in the properties described herein, or in the securities of any company involved, nor do I expect to receive any interest in the future.

Respectfully submitted,

Vancouver, B.C.  
January, 15, 1993

Hun Kim, Geol., F.G.





## GEOCHEMICAL ANALYSIS CERTIFICATE



John Kemp File # 92-3687

Box 866, Grand Forks BC V0N 1H0

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Tl	Hg	Au*
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppb
PATH #1-92	122	712	2	18	1.3	52	41	410	9.01	31	7	ND	7	27	.2	4	11	60	1.35	.247	53	18	.29	3	.09	9	.62	.15	.04	1	3	2	470
PATH #2-92	10	494	6	11	.5	25	36	216	6.62	41	5	3	3	20	.2	2	2	50	.82	.098	17	25	.32	1	.12	2	.84	.17	.04	3	3	3	2260
PATH #3-92	79	637	9	3	1.6	54	38	298	9.02	35	6	ND	3	23	.2	2	2	112	1.71	.096	14	36	.26	9	.11	2	.82	.12	.04	1	2	2	220
PATH #4-92	32	575	2	10	.9	19	30	176	6.08	8	5	ND	1	26	.2	2	8	55	1.04	.075	3	26	.53	11	.13	2	.73	.07	.03	1	2	1	45
PATH #5-92	13	699	5	11	.8	28	40	289	6.44	16	5	ND	1	56	.2	2	2	61	2.66	.072	3	36	.77	14	.09	4	.88	.05	.03	1	2	1	37
RE PATH #4-92	29	569	3	8	.7	20	30	181	6.05	4	5	ND	1	27	.2	2	2	55	1.08	.073	3	26	.54	16	.13	10	.74	.07	.03	1	2	2	27

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1X, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: OCT 20 1992

DATE REPORT MAILED:

Oct 23/92

SIGNED BY: ..... D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

## CERTIFICATE OF ANALYSIS

A9119488

SAMPLE DESCRIPTION	PREP CODE	Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm
91CH247A	205 294	355	4.2	0.19	< 5	< 10	< 0.5	< 2	0.26	< 0.5	121	11	5530	>15.00	10	< 1	0.01	< 10	0.11	85
91CH248R	205 294	1360	5.4	0.05	< 5	< 10	< 0.5	< 2	0.15	< 0.5	70	17	4910	>15.00	10	< 1	0.01	10	0.03	105
91CH249P	205 294	415	4.6	0.09	25	< 10	< 0.5	< 2	0.07	< 0.5	103	82	1965	>15.00	< 10	< 1	0.01	20	0.03	30
91CH250R	205 294	7280	4.0	0.74	< 5	20	< 0.5	< 2	2.80	< 0.5	78	36	2340	>15.00	10	< 1	0.07	30	0.52	475
91CH251R	205 294	2480	0.4	1.03	< 5	< 10	< 0.5	< 2	0.89	< 0.5	29	44	700	5.77	< 10	< 1	0.02	10	0.30	130
91CH252R ↑	205 294	4740	0.4	1.19	< 5	< 10	< 0.5	< 2	0.78	< 0.5	29	40	1025	7.67	< 10	< 1	0.03	20	0.38	140

TRENCH A RESULTS

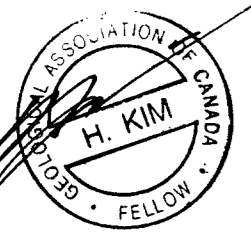
SILVER VALLEY LABORATORIES, INC.  
P.O. Box 929 - One Gov't Gulch  
Kellogg, Idaho 83837  
(208) 784-1258

ORVANA RESOURCES - P.DIRCKSEN/R.FREDERICKS  
2005 IRONWOOD PKWY #222  
COEUR D'ALENE, ID 83814  
CC: PAN ORVANA RESOURCES - VANCOUVER, B.C.  
RE: SKARN PACKAGE

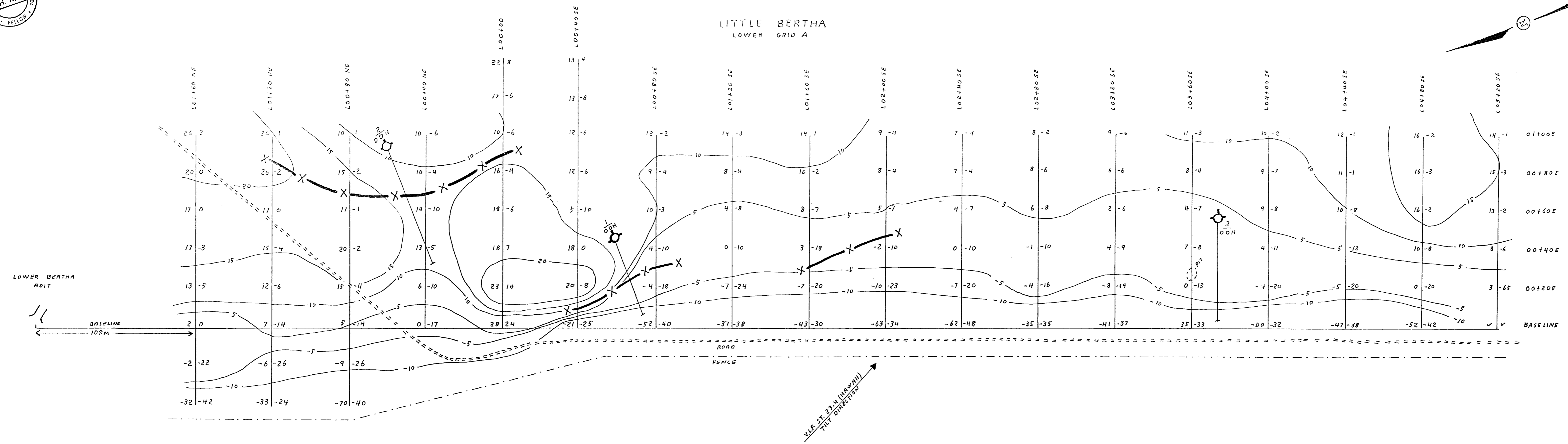
OCTOBER 10, 1991 X1OR1101.270

TEST FOR:	Au	Ag	Pb	Zn	Cu	Ni	Co	Bi
METHOD:	FA+AA	FA+AA	ICAP	ICAP	ICAP	ICAP	ICAP	ICAP
USED:	-	-	-	-	-	-	-	-
RESULTS IN:	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm
12413 Pathfinder	29376	12	114	37	1971	<5	114	1663
12414	643	.3	18	28	126	20	7	<2
12415	401	.8	26	29	340	56	13	<2
12416	426	3.9	31	30	1147	59	29	<2
12417	4036	5.5	112	83	2327	169	331	<2
12418	1586	16	55	33	3369	35	37	<2
12419	2100	.7	19	16	401	23	34	<2
12420	456	1.1	17	21	592	44	14	<2
12421	4692	21	112	226	3495	227	10	<2
12422	30	.4	17	73	49	41	14	<2
12423	1796	14	100	178	1272	172	12	<2
12424	203	.6	14	23	50	15	14	<2
12425 ↓	951	.4	24	94	147	47	11	<2





LITTLE BERTHA  
LOWER GRID A



Grid placement is shown on Claim & Prospecting Map Fig. 9, Page 25.  
The interference of the four strand wire fence along the base line minimized strength of the conductors. The location of the conductors are affected as the result of the fence interference. The three proposed D.D.H.'s are located well back of the weak conductors to make sure the diamond drill intercept the conductors. The No.1 D.D.H., located 25 meters east of the base line, on line 00+40 SE and drilled to a depth of 50 meters to the West at 50° should intercept the No. 1 conductor. The No. 2 hole, spotted between lines 00+40NE and 00+80NE at 0+50 east of the base line and drilled 50° to the west, to a depth of 35 meters, should intercept this secondary conductor. The No. 3 hole, located along the line 3+60SE at 0+30 east of the base line and drilled 50° to the N.W. (310°), to a depth of 30 meters, should intercept this weak conductor. The old trench at 0+20 meters east of the base line, on line 03+60SE is mineralized, that's the main reason for this No. 3 D.D. Hole.

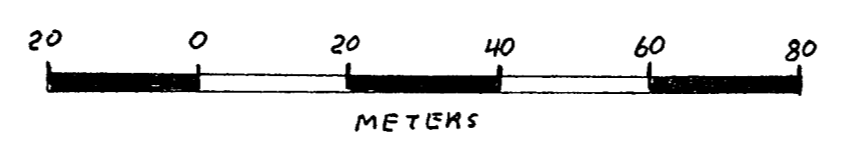
GEOLOGICAL BRANCH  
ASSESSMENT REPORT

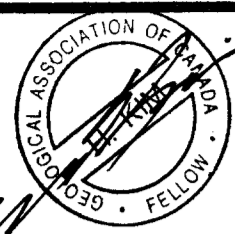
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LEGEND

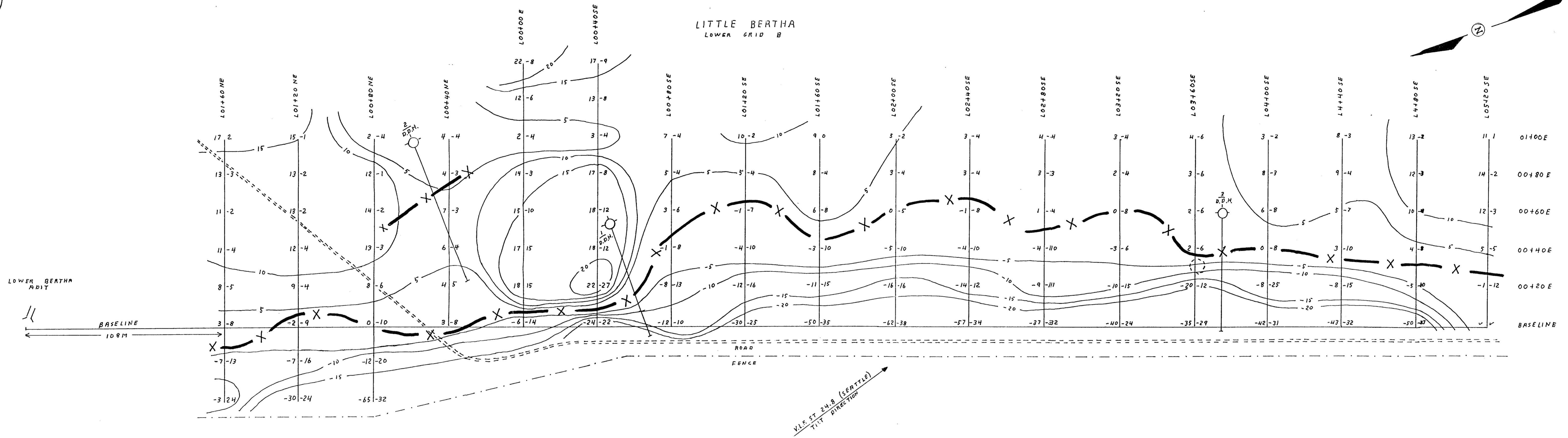
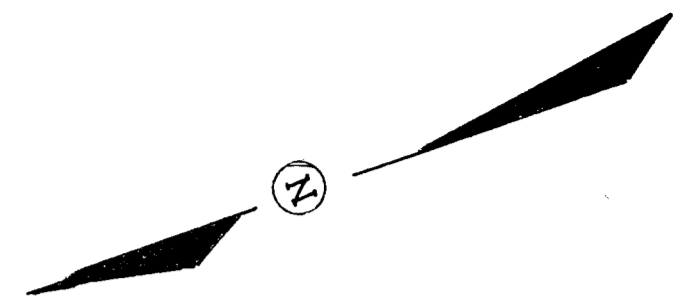
- ADIT
- FENCE
- ROAD
- DIAMOND DRILL HOLE
- CONDUCTOR
- CONTOURS
- PIT

<b>PATHFINDER CLAIM GROUP</b> GREENWOOD MINING DIVISION Lat. 49.12° N Long 118° 25' W				
<b>ELECTROMAGNETIC SURVEY</b> <b>LOWER GRID A</b> <b>LITTLE BERTHA</b>				
INSTRUMENT - Geonics EM 16, SERIAL #2 STATIONS - V.L.F. St. 24.8., SEATTLE TILT DIRECTION 165° V.L.F. ST. 23.4., HAWAII TILT DIRECTION 155°				
INPHASE CONTOURS 10 15 SECONDARY CONDUCTORS X X X				
SCALE 1:5000	DATE January 1993	DRAWN BY JK	NTS 82E/1W	FIG. 5





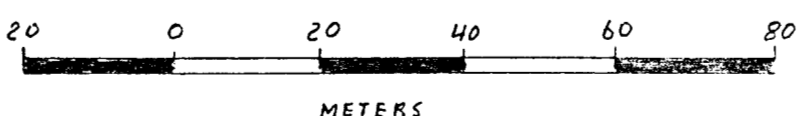
LITTLE BERTHA  
LOWER GRID B



Grid placement is shown on Claim & Prospecting Map Fig. 9, Page 25. The location of the three diamond drill holes are coincidental with that of the Lower Bertha grid "A".

LEGEND

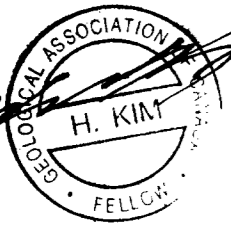
- ADIT
- FENCE
- ROAD
- DIAMOND DRILL HOLE
- CONDUCTOR
- CONTOURS
- PIT



PATHFINDER CLAIM GROUP GREENWOOD MINING DIVISION Lat. 49.12° N Long 118° 25' W				
ELECTROMAGNETIC SURVEY LOWER GRID B LITTLE BERTHA				
INSTRUMENT - Geonics EM 16, SERIAL # 2 STATIONS - V.L.F. St. 24.8, SEATTLE TILT DIRECTION 165° V.L.F. ST. 23.4, HAWAII TILT DIRECTION 155°				
INPHASE CONTOURS 10 SECONDARY CONDUCTORS X X X				
SCALE 1:5000	DATE January 1993	DRAWN BY JK	NTS 82E/1W	FIG. 6

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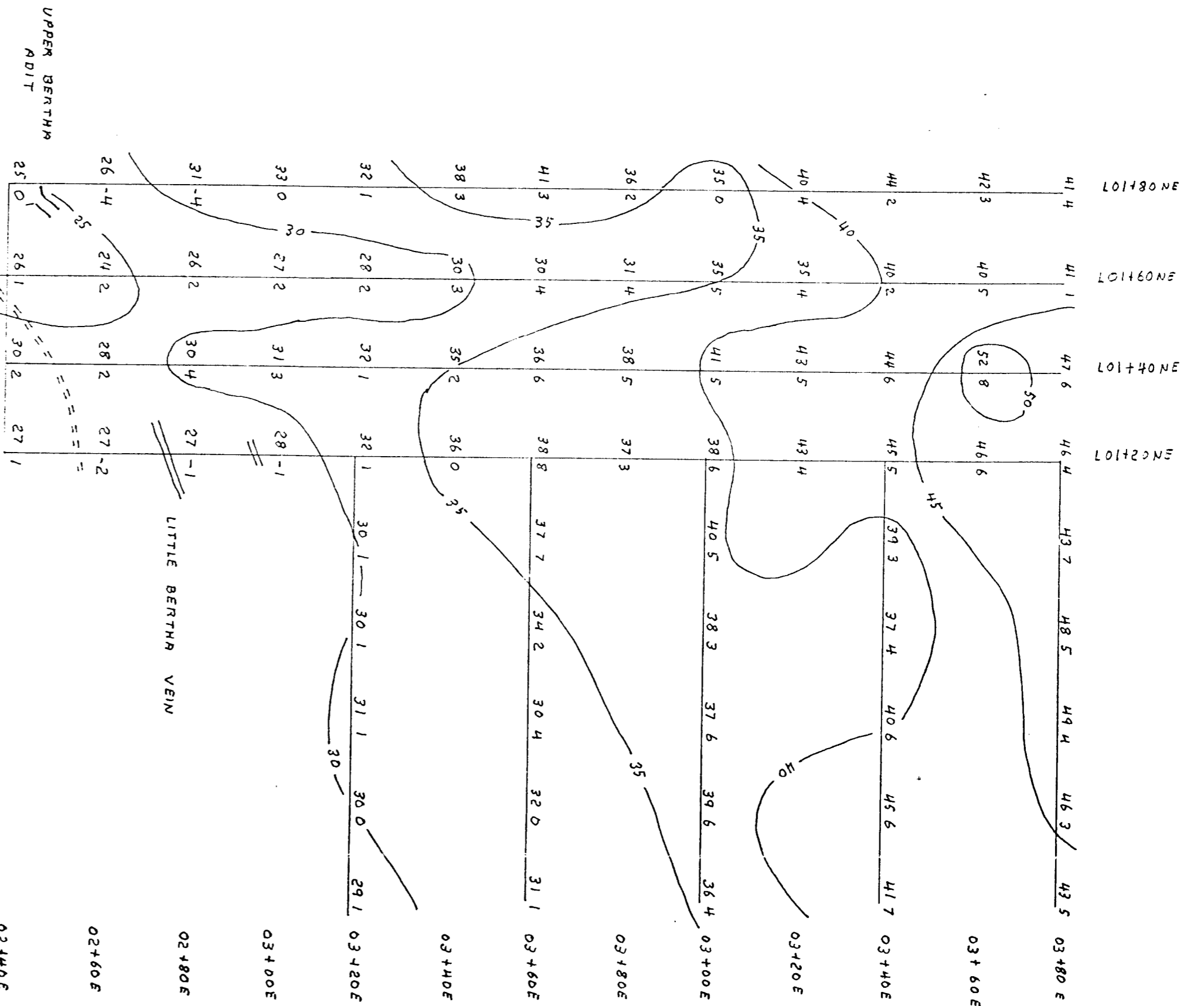
**GEOLOGICAL BRANCH  
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**22,772**

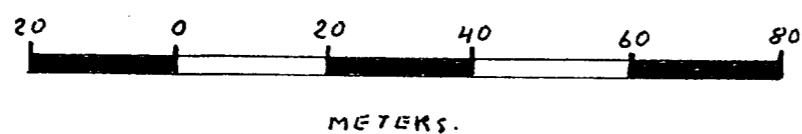
V.L.F. ST. 24.8 (SEATTLE)  
TILT DIRECTION

002200 001400 000600 001800 01+00E 01+20E 01+40E 01+60E 01+80E 02+00E 02+20E 02+40E 02+60E 02+80E 03+00E 03+20E 03+40E 03+60E 03+80E 04+00E

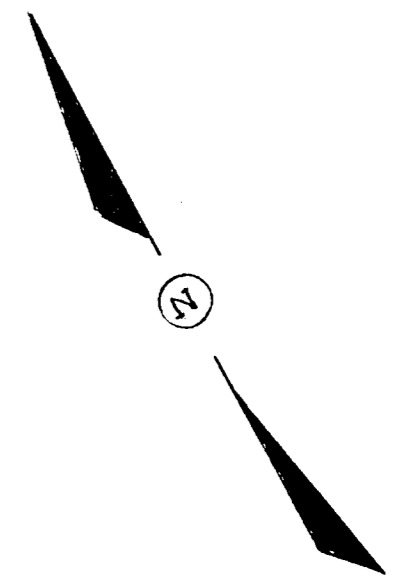
LO1450NE TIES TO LOWER BERTHA GRID

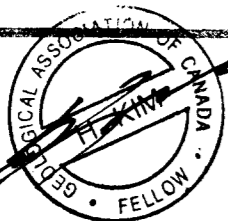


Grid placement is shown on Claim & Prospecting Map Fig. 9, Page 25. The contoured results of VLF St. 24.8, seem to indicate a E.W. geological trend. This east-west trend is not coincidental with the trenching. A magnetic survey should be carried out over the trenching area, to check for any magnetic response if any. The magnetic survey may be useful in extending the mineralized zone of the trenching.



<b>PATHFINDER CLAIM GROUP</b> GREENWOOD MINING DIVISION Lat. 49.12° N Long 118° 25' W				
<b>ELECTROMAGNETIC SURVEY</b> UPPER GRID LITTLE BERTHA				
INSTRUMENT - Geonics EM 16, SERIAL # 2				
STATIONS - V.L.F. St. 24.8., SEATTLE TILT DIRECTION 165° V.L.F. ST. 23.4., HAWAII TILT DIRECTION 155°				
INPHASE CONTOURS 10 15 SECONDARY CONDUCTORS X — X — X				
SCALE 1:5000	DATE January 1993	DRAWN BY JK	NTS 82E/1W	FIG. 7





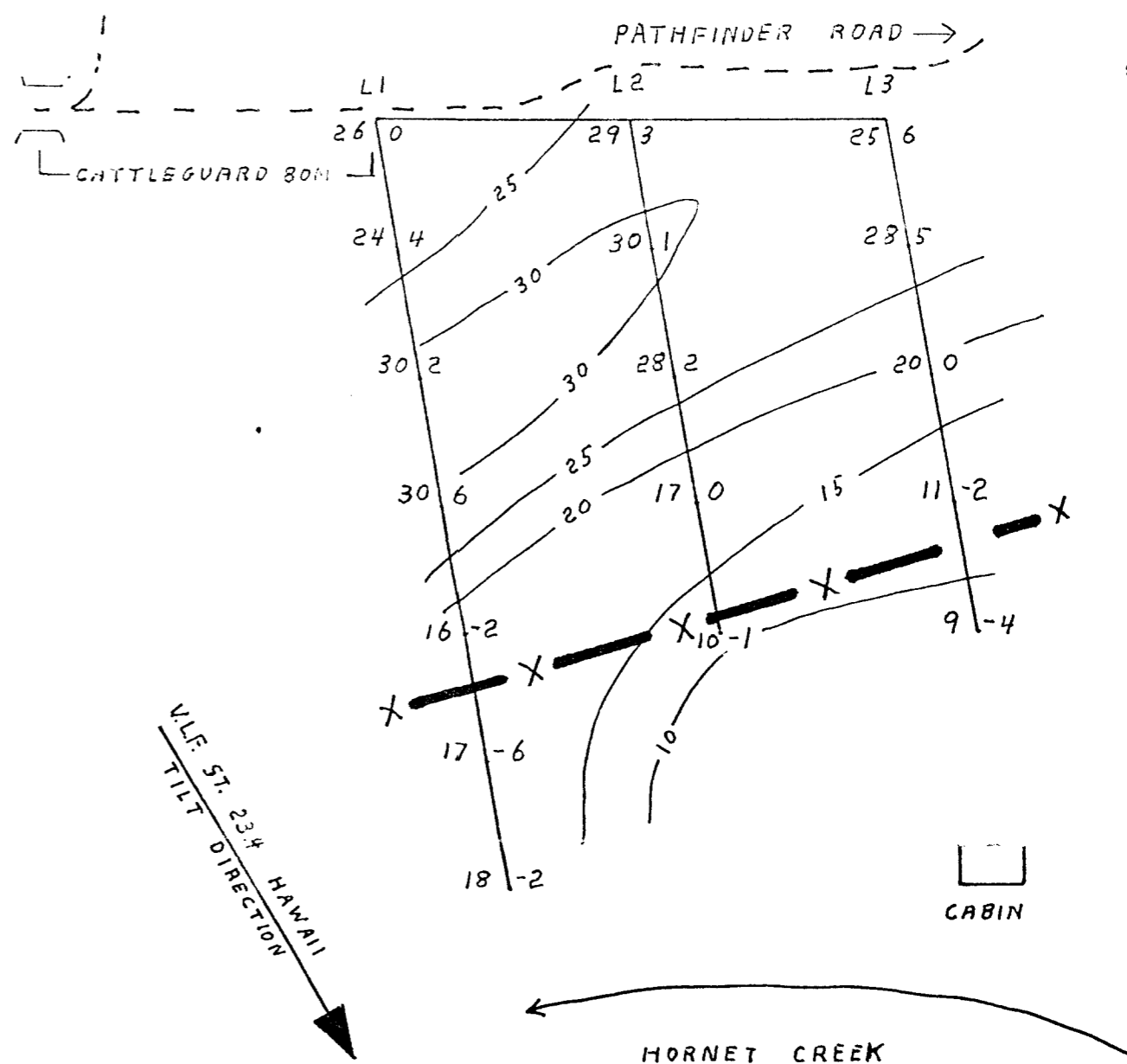
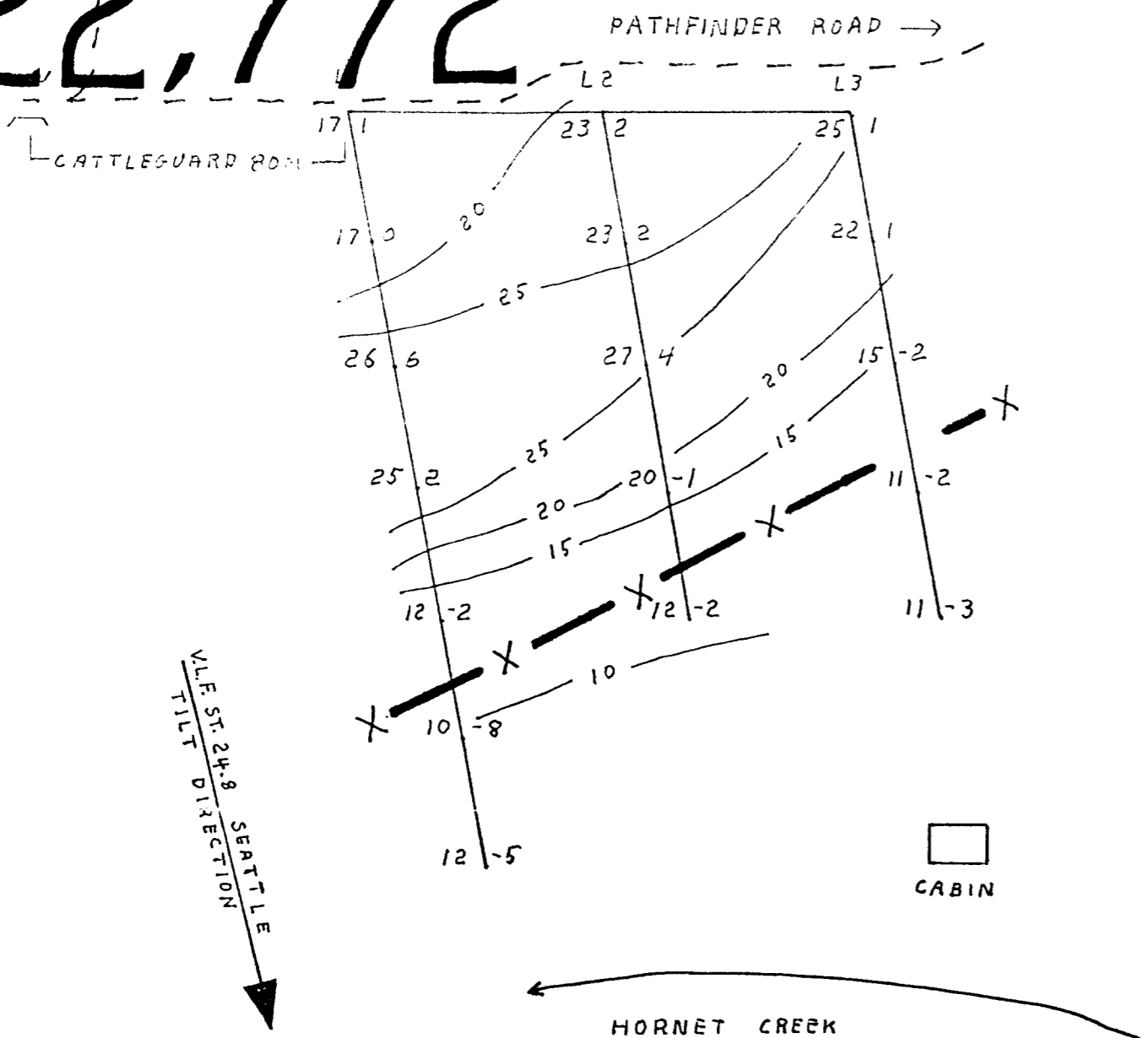
LONESTAR FRACTION

GEOLOGICAL BRANCH ASSESSMENT REPORT

GRID A

GRID B

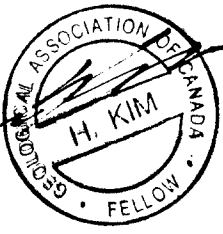
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Grid placement is shown on Claim & Prospecting Map Fig. 9, Page 25. The secondary conductor, shown on both "A" and "B" grids have same strike and location. The two VLF stations, differ only by 10° and as a result the readings are very similar. Dip of the secondary conductor dips to the North.



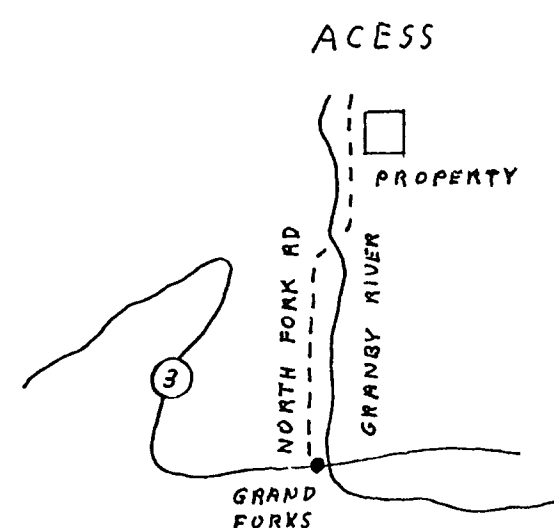
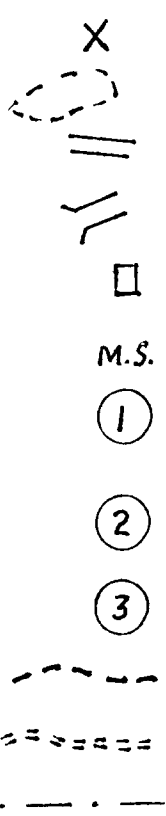
<b>PATHFINDER CLAIM GROUP</b> GREENWOOD MINING DIVISION Lat. 49.12° N Long 118° 25' W			
<b>ELECTROMAGNETIC SURVEY</b> <b>LONESTAR FRACTION A &amp; B</b>			
INSTRUMENT - Geonics EM 16, SERIAL # 2			
STATIONS - V.L.F. St. 24.8., SEATTLE TILT DIRECTION 165° V.L.F. ST. 23.4., HAWAII TILT DIRECTION 155°			
INPHASE CONTOURS _____ 10 _____ 15			
SECONDARY CONDUCTORS <b>X</b> — <b>X</b> — <b>X</b>			
SCALE 1:5000	DATE January 1993	DRAWN BY JK	NTS 82E/1W
			<b>FIG. 8</b>



PATHFINDER CLAIM GROUP



- ASSAYS
- GEOLOGICAL CONTACT
- TRENCH
- ADIT
- PIT OR SHAFT
- MASSIVE SULPHIDES
- CHERT
- GRANODIORITE, TONALITE, DIORITE  
DACITE, ANDESITE, ALASKITE  
RHYODACITE including GREENSTONE
- SYENITE, MONZONITE, LATITE
- PAVED ROAD
- SECONDARY LOGGING ROAD
- FENCE



PATHFINDER CLAIM GROUP				
GREENWOOD MINING DIVISION				
Lat. 49.12° N Long 118° 25' W				
PROSPECTING & CLAIM MAP				
SCALE 1:5000	DATE January 1993	DRAWN BY JK	NTS 82E1W	FIG. 9



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

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