GEOPHYSICAL

REPORT ON THE DUCHESS CLAIM (20 UNITS)
RECORD NO. 1277 (2)
COPPER CREEK - COPPERCROWN MOUNTAIN
INVERMERE AREA, GOLDEN MINING DIVISION
BRITISH COLUMBIA

North Latitude 50° 16'
West Longitude 116° 22.5'
NTS 82 K / 8 W

For

Even Resources Ltd.
#809 - 837 West Hastings Street
Vancouver, B.C.

By

George P. Krueckl, P. Eng.
Krueckl Consulting Services Limited

July 25, 1984

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INTRODUCTION

This report was prepared at the request of the Directors of Even Resources Ltd., 809 - 837 West Hastings Street, Vancouver, British Columbia.

The purpose of this report is to review the previous work done in the claimed area and assess the mine-making potential of the property.

This report includes the information collected from a field examination of the claimed ground on June 28, 1984.

A program of mineral exploration is recommended.

SUMMARY AND CONCLUSIONS

The Duchess mineral claim, located 35 kilometers southwest of Invermere B.C., is an old copper prospect discovered around the turn of the century and consists of a 35 foot crosscut tunnel, numerous open cuts and 200 feet of trenching.

An electromagnetic survey carried out in 1970 revealed a conductive anomaly 200 feet long and open at both ends. From information available, it appears that the conductor was never tested by trenching or drilling. An additional geophysical survey was carried out in 1984 to confirm the existence of the conductor and to extend the length of it. This survey gave inconclusive results.

The copper mineralization in the old workings is in the form of chalcopyrite, occurring with pyrite in veinlets. This sulphide mineralization has an average width of about 20 feet. Sampling of several narrow intersections gave high copper and significant values in gold.

A program of mineral exploration involving geophysics, trenching and sampling, geological mapping and diamond drilling is recommended. This program would cost $57,100.

PROPERTY - LOCATION, ACCESS AND PHYSIOGRAPHY

The property is located in the Golden Mining Division, 35 kilometers southwest of Invermere, B.C. The claim is located near the head water of Copper Creek (elevation 7,000'), a tributary of Dutch Creek, near the base of Coppercrown Mountain in the Purcell Range of mountains.

The nearest road access is 2½ miles to the east at the junction of Copper Creek with Dutch Creek. A pack trail follows Copper Creek to the showings which are situated between 6,600 and 7,000 feet elevation.

The claim consists of 20 units at the upper end of the narrow U shaped Copper Creek Valley with glaciers in the surrounding upper cirques. The highest point in the area is over 10,000 feet and the local terrain is extremely rough, especially on the Mountain sides.

Figure 1 shows the general location and Figure 2 shows the claim location and topography of the area.

CLAIM

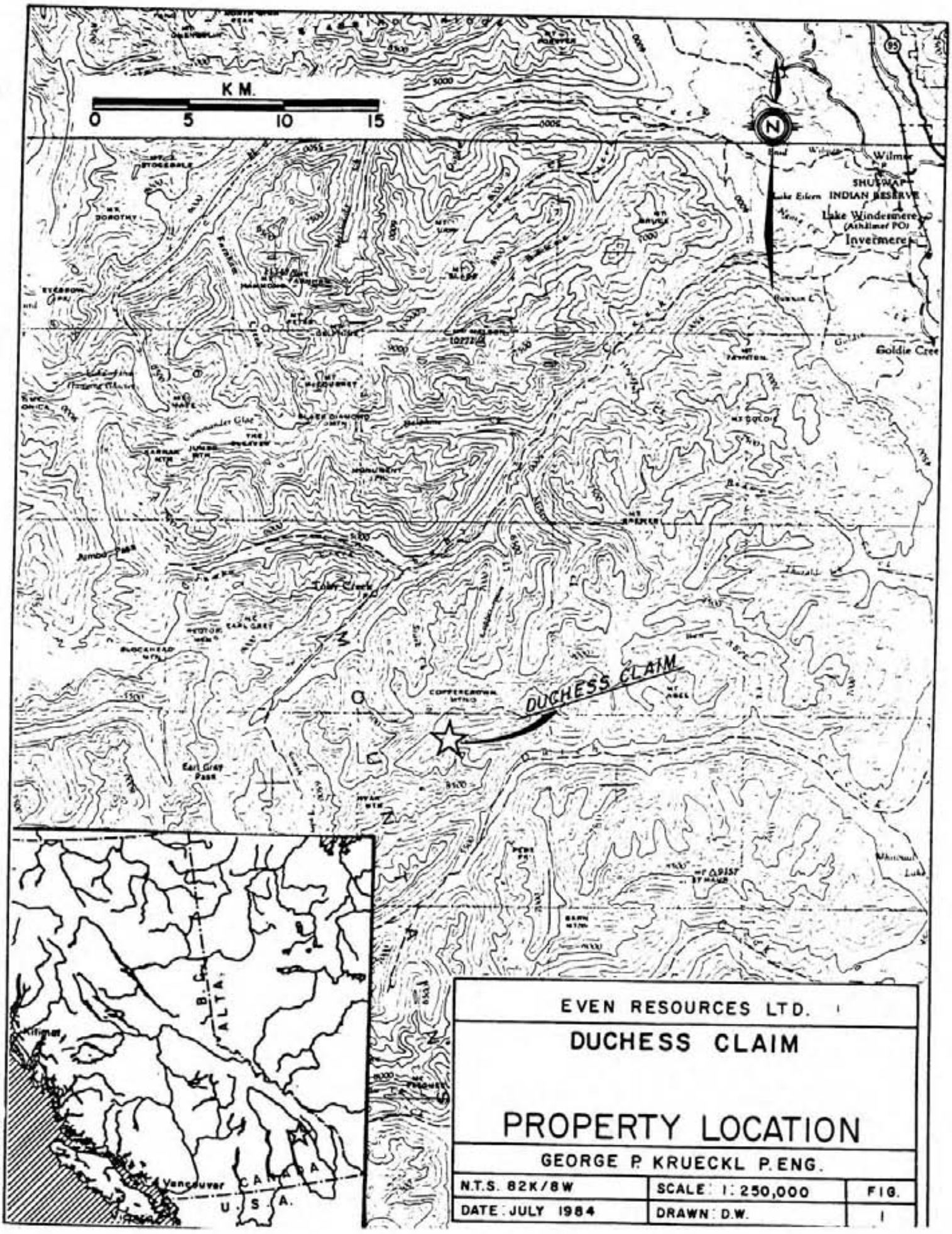
The Duchess claim owned by Even Resources Ltd. is located in the Golden Mining Division. The following statistics have been filed with the Recorders Office at Golden.

Name	No. of Units	Record No.	Record Date	Expiry Date	Recorder
Duchess	4S x 5 W = 20	1277 (2)	Feb. 28/84	Feb. 28/85	Dean De La Mothe

The writer examined the location of the legal corner post for the above claim, but does not accept responsibility for the legal status of the claim.

HISTORY - PREVIOUS DEVELOPMENT AND MINERALIZATION

At the turn of the century, the zone was exposed in two locations, an open cut and an adit 30 feet long, separated by 300 feet. Several other smaller open cuts were also dug.



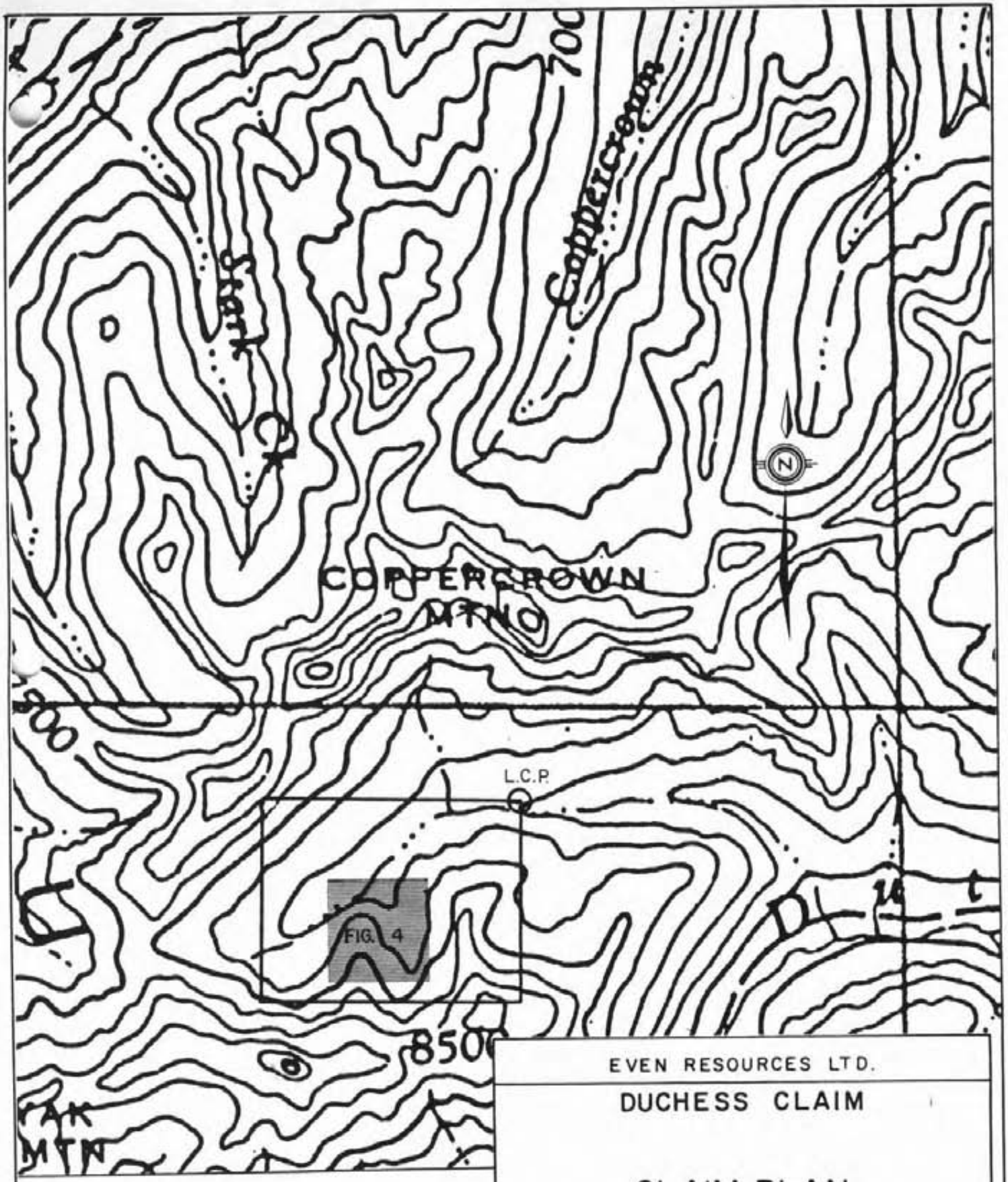
EVEN RESOURCES LTD.

DUCHESS CLAIM

PROPERTY LOCATION

GEORGE P. KRUECKL P.ENG.

N.T.S. 82K/8W	SCALE: 1: 250,000	FIG.
DATE: JULY 1984	DRAWN: D.W.	1



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DUCHESS CLAIM

CLAIM PLAN

GEORGE P. KRUECKL P.ENG.

N.T.S. 82K/8W	SCALE: 1:50,000	FIG.
DATE: JULY 1984	DRAWN: D.W.	2

Cominco carried out a program of mapping and sampling in 1968. Open trenching and soil sampling was also carried out during the same year by Yornoc Mining Co. Ltd. The following year 1969 Cominco carried out additional mapping, soil sampling and trenching. Trenching totalled 200 feet.

In 1970 Yornoc Mining Cor. Ltd. carried out an electromagnetic survey over limited areas of the claimed ground. This survey involved a Crone VEM vertical loop instrument (fixed source). Several lines were surveyed over the known mineralization and two of these picked up a new conductor east of the known mineralization. To the writer's knowledge the new conductor has not been drilled and other than work carried out in 1984, no additional work was carried out on the property since 1970.

In 1984, de la Mothe Exploration staked the ground and carried out a geophysical survey as part of Phase I of the recommended work program to confirm the location of the conductor found in 1970.

REGIONAL AND LOCAL GEOLOGICAL SETTING

The regional geology of the area consist of the Purcell group of sedimentary rocks believed to be of Proterozoic age. These rocks are subdivided by Reesor 1956, Walker 1926, Fyles 1964 into the Mount Nelson, Dutch Creek, Kitchener-Siyeh, Creston and Aldridge Formations. The Mount Nelson Formation and Dutch Creek Formation are located just north of the Duchess property in the area of the Mineral King Mine. These rocks consist of dolomite, dolomitic limestone, black argillites and slate and some argillaceous quartzites. The Kitchener-Siyeh Formation consisting of dolomitic and calcareous argillite and quartzite have been identified as the main rock type in the Copper Creek area where the Duchess property is located.

The mineralized zone on the Duchess is found in the Kitchener-Siyeh Formation and locally is composed of limey, thin bedded argillites. These argillites strike north-south and have a moderate dip the east. Within these rocks is a vertical, north-south shear zone which contains mineralization. This shear zone is very likely the same one upon which the Mineral King Mine is found 9 kilometers N 35° W of this zone.

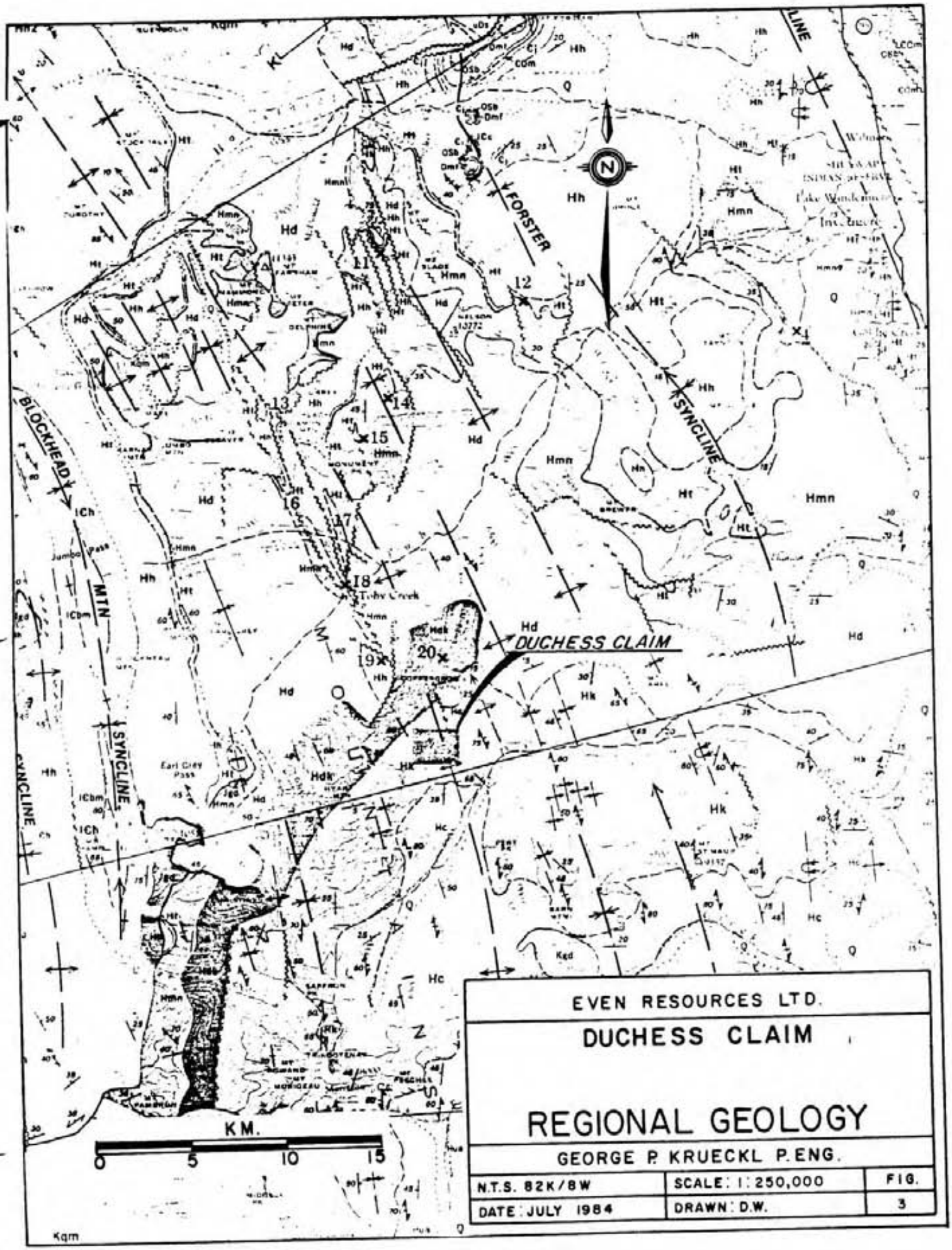
The copper mineralization exposed in old workings is strictly in the form of chalcopyrite, found along with the pyrite in veinlets up to an inch wide within quartz gangue. The attitude of the veinlets is conformable to that of the shear zone. The sulphide mineralization varies in width up to 30 feet, but probably averages about 18 feet. The shear zone is exposed on surface for a distance of 300 meters.

Figure 3 shows the geology of the area.

MINERALIZATION

Information from old records indicate copper mineralization up to 25% and gold values varying from 0.2 to 0.5 ounces per ton. Sampling carried out by J.A. Chamberlain of Dolmage, Campbell and Associates in 1969 gave the following copper values, the samples taken in the trench and adit as follows:

	Width	% Copper
Trench	4'	0.56
	6'	0.05
	2'	2.93
Total Average	12'	0.70
Adit	4'	0.8
	12'	0.17
	2.5'	1.5
Total Average	18.5'	0.49


FORSTER
SYNCLINE
BLOCKHEAD
SYNCLINE
MTN
SYNCLINE
DUCHESS CLAIM
Jumbo Pass
Earl Grey Pass
Tubby Creek
KM.
0
5
10
15
EVEN RESOURCES LTD.
DUCHESS CLAIM
REGIONAL GEOLOGY
GEORGE P. KRUECKL P.ENG.
N.T.S. 82K/8W
SCALE: 1:250,000
FIG.
DATE: JULY 1984
DRAWN: D.W.
3

LEGEND

PROTEROZOIC

WINDERMERE (HADRYNIAN)

HORSETHIEF CREEK GROUP

Hh — *Grey, black, and green slate and argillite; quartz pebble conglomerate, quartzite, feldspathic quartzite and grit; red slate and arenaceous slate, minor blue-grey and black limestone; equivalent mica schist, schistose quartzite and grit, as well as marble in the more metamorphosed zones in the southwest part of the map-area;* **Hh1**, *slates dominant;* **Hh2**, *pebble conglomerate, grit, and quartzite are dominant;* **Hh3**, *limestone and slate*

Ht — *TOBY FORMATION: pebble, cobble, and boulder polymictic conglomerate and breccia (matrix variously of quartzite, argillite, and limestone)*

PURCELL (HELIKIAN)

Hm — *MOYIE INTRUSIONS: meta-quartz diorite and diorite*

Hmn — *MOUNT NELSON FORMATION: buff weathering grey, cream and purple dolomite and dolomitic limestone, purple, grey and black argillite and slate, white quartzite*

Hd — *DUTCH CREEK FORMATION: grey, green and black argillite and slate, buff dolomitic slate; thin-bedded, buff weathering dolomite, green argillaceous quartzite*

Hk — *KITCHENER-SIYEH FORMATION: laminated, buff weathering dolomitic and calcareous argillite and quartzite; green and black argillite, grey and pink quartzite, minor purple argillite*

Hdk — *DUTCH CREEK and KITCHENER-SIYEH FORMATIONS, undivided*

Hc — *CRESTON FORMATION: massive and laminated, green and grey weathering, green and grey argillaceous quartzite and quartzite, green argillite*

ALDRIDGE FORMATION

Hua — *Upper Division: grey quartzite with partings of black argillite; thin-bedded, argillaceous quartzite and argillite*

Hla — *Lower Division: thin-bedded, rusty weathering, light grey quartzite and argillaceous quartzite*

- *Geological boundary (defined, approximate, assumed)*
- *Bedding, tops known (horizontal, inclined, vertical, overturned)*
- *Bedding, tops unknown (inclined)*
- *Igneous primary foliation (inclined, vertical)*
- *Cleavage (inclined, vertical)*
- *Schistosity (inclined, vertical)*
- *Lineation (horizontal, inclined)*
- *Fault (defined, approximate, assumed)*
- *Anticline (defined, approximate)*
- *Syncline (defined, approximate)*
- *Anticline and syncline (overturned)*
- *Anticline or syncline (arrow indicates plunge)*
- *Anticline and syncline (general trend)*

Geology by J.E. Reesor 1953-1956 and part of 1957

(part of Windermere from published report of J.E. Wheeler, 1926)

Sampling carried out by the writer gave the following confirming values:

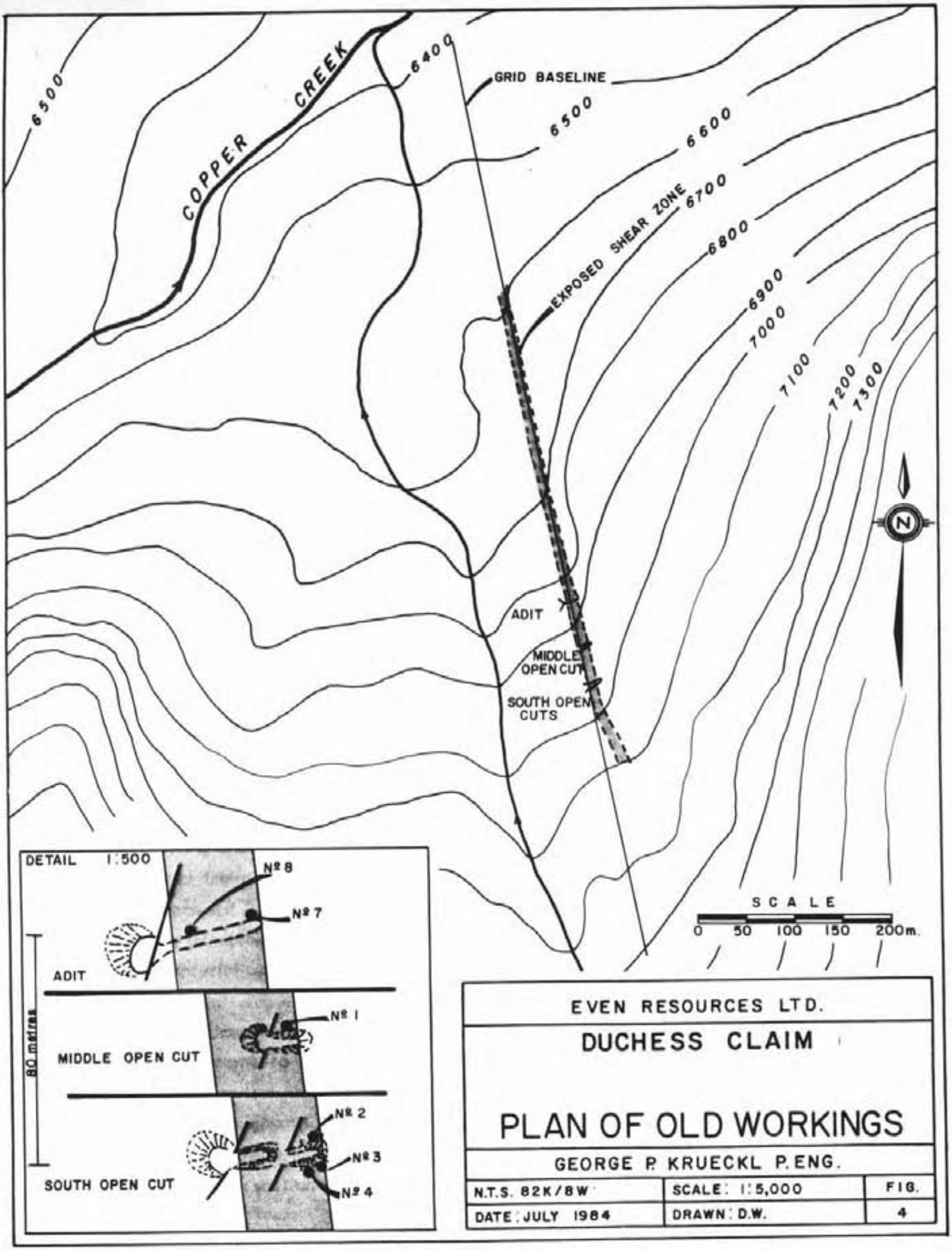
	Sample No.	Width	% Copper	oz Ag	oz Au
Open Cuts	1	2'	8.0	2.1	0.017
	2	2'	11.7	3.0	0.010
	3	1'	22.4	5.1	0.018
	4	1'	26.2	6.2	0.015
Muck Pile	5	grab	2.5	0.8	0.023
	6	grab	20.3	2.3	0.010
Adit	7	4'	1.1	0.1	0.001
	8	7'	0.4	0.01	0.001

GEOPHYSICAL SURVEYS

Two geophysical surveys were carried out over the property. The first survey was carried out in 1970 by Yornoc Mining Co. Ltd. This survey involved a Crone VEM vertical loop instrument with fixed transmitter source. The transmitter used a large coil 9 feet high and 8 feet wide that rotates about a vertical axis with 3 power output giving a survey range up to 2,000 feet. This instrument is designed to pick up conductive zones through electromagnetic induction. The EM transmitter sets up an alternating magentic field, called the primary, by passing an alternating current through the transmitter coil. If a conductive mass is nearby, the primary magnetic field induces a secondary magnetic field. This secondary field distorts the primary field, and it is a measure of this distortion that constitutes the results of the electromagnetic survey.

The survey carried out by Yornoc Mining was limited due to rough terrain, however, several lines were completed over the mineralized shear zone. The instrument seemed not to react over the shear zone. The reason may be that the mineralization in the shear zone is not continuous enough to produce a conductor.

On two of the survey lines just east of the known mineralization the instrument picked up a conductor that seems to be striking approximately N 20°E. The crossovers for the conductor was very narrow having a profile slope of 0.7 which is indicative of a good conductor, usually sulphide.



EVEN RESOURCES LTD.

DUCHESS CLAIM

PLAN OF OLD WORKINGS

GEORGE P. KRUECKL P.ENG.

N.T.S. 82K/8W	SCALE: 1:5,000	FIG.
DATE: JULY 1984	DRAWN: D.W.	4

The second geophysical survey involved an EM - 16 VLF instrument. This survey was carried out by de la Mothe Exploration Services Ltd. during 1984 for the purpose of relocating the conductor found in 1970. Figure 5 shows the results of the survey.

The EM 16 is simply a sensitive receiver, covering the frequency band of the VLF-transmitting stations, with means of measuring the vertical field components of secondary fields that result from the magnetic induction of any conductive body that may be present.

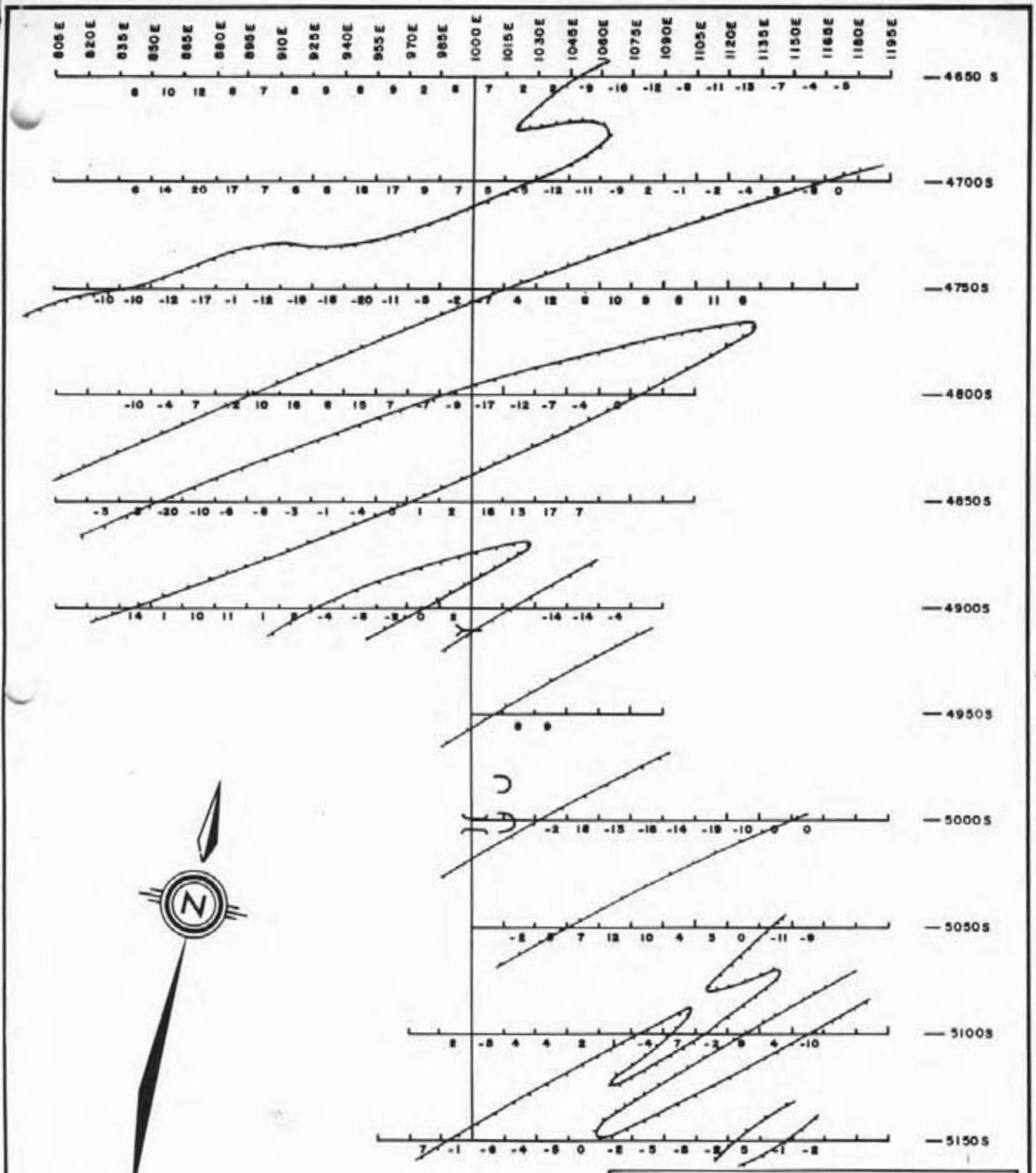
The survey readings were reduced using the Fraser Filtering technique which involves manipulating data to transform noisy non-contourable data into less noisy contourable data. The results were plotted and the zero crossover was contoured as shown in Figure 5. The contouring did not give the results anticipated. The survey used only one transmitter source rather than two sources that normally have approximately 90° difference in azimuth. Two directions are used to minimize adverse field conditions that may be present.

It is possible that this survey may have been carried out during conditions where reception was poor due to the severe topography of the area or that the direction of the transmitting source may not have been optimum for the particular location and/or the conductor orientation.

CONCLUSIONS

The existing showings have low grade copper mineralization with a measured width that varies from approximately 12 feet to 30 feet. The overall grade of this material varies between 0.5 to 0.7% copper. Only trace gold is present. Some investigation should be undertaken to determine depth and lateral extension to this zone. The grade of this material may improve with depth or along strike.

East of the known mineralization an electromagnetometer picked up a conductor in 1970 that seems to be striking approximately N 20° E. The type of instrument response suggests a massive sulphide body. In 1984 a VLF-EM survey was carried out over the same ground. This survey did not confirm the conductor found in 1970, however, it is also felt that the 1984 survey may have had some difficulty as described in the foregoing section.



EVEN RESOURCES LTD.

DUCHESS CLAIM

FRASER FILTERED & CONTOURED

EM-16 SURVEY

GEORGE P. KRUECKL P.ENG.

N.T.S. 82K/8W	SCALE: 1:2000	FIG.
DATE: JULY 1984	DRAWN: D.W.	5

TRANSMITTER SEATTLE 18.6 KHz

REFERENCES

Evans, C.S. Brisco - Dogtooth Map Area, B.C., Geol. Surv., Canada, Sum. Rept. 1912 pt. A II, pp. 106 - 176 (1933).

Little, M.W. Salmo Map Area, B.C., Geol. Surv., Canada, Paper 50 - 19 (1950).

Mark, D.G. Electromagnetic Survey, Dutchy Claim Group, Invermere Area, October, 1970.

Reesor, J.E. Geology Map Lardeau (East Half) , G.S.C. Map 12 - 1957.

Walker, J.F. Geology and Mineral Deposits of Windermere Map Area, B.C., G.S.C., Mem. 148 (1926).

Minister of Mines Report for British Columbia:

Year	Page
1899	595
1902	H135
1903	H103
1905	J147
1968	266
1969	344
1970	470

RECOMMENDATIONS

A 3 phase program of exploration is recommended for the property. The first phase should involve a VLF-EM survey of the mineralized zones and some prospecting and sampling of existing workings to confirm the presence of copper and gold values previously obtained. The VLF-EM survey was carried out by the time of writing this report, however, it did not relocate and delineate extensions of the conductor found in the previous survey. Some resurveying may be required to identify problems with the 1984 survey.

The second phase would involve trenching across locations where the geophysical surveys indicated a conductor (likely a shear zone). These would be mapped and sampled. In addition a reconnaissance mapping program would be undertaken to better define the geology and thus understand better the mode of mineralization for this property. It may be useful to know if the mineralization is similar to the Mineral King Mine, 9 kilometers to the northwest of the Duchess.

The third phase of the work would involve a drilling program to delineate ore extensions discovered in the trenching program.

ESTIMATED COST OF PROPOSED WORK PROGRAMS

Phase 1

Grid work (3,500 meters @ $300/km)	$ 1,050
Geophysical Surveys (3,500 meter @ $500/km)	1,750
Helicopter (2 hours)	1,000
Engineering Report	1,800
	$ 5,600

Phase 2

Trenching (hand trenching & blasting)	$ 5,000
Sampling	1,000
Mapping (5 days @ $400/day)	2,000
Helicopter (4 hours)	2,000
Engineering Report	1,500
	$ 11,500

Phase 3

Diamond Drilling (300 m @ $100/m)	$ 30,000
Core Logging & Sampling (4 days)	3,000
Helicopter (10 hours)	5,000
Engineering Report	2,000
	$ 40,000

GRAND TOTAL	$ 57,100

CERTIFICATE

I, Geoge P. Krueckl, of the City of Richmond, Province of British Columbia, hereby certify as follows:

1. I am a Consulting Geological Engineer with an office at 4860 Fortune Avenue, Richmond, B.C., V7E 4H9.

2. I am a registered Professional Engineer of the Province of British Columbia.

3. I graduated with a degree of Bachelor of Science, Geological Engineering, from the University of Saskatchewan, 1962.

4. I have practised my profession for 22 years.

5. I have no direct, indirect or contingent interest in the shares of Even Resources Ltd. or in the Duchess Claim, subject of this report, nor do I intend to have any interest.

6. Permission is granted to publish this report dated July 25, 1984, in a Statement of Material Facts or in the Prospectus for Even Resources Ltd. Written permission from the author is required to publish this report for any other purpose.

Dated at Richmond, Province of British Columbia, this 25th day of July, 1984.

George P. Krueckl, P. Eng.
Consulting Engineer
#12308

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE: (604)980-5814 OR (604)988-4524 TELEX: 04-352828

CERTIFICATE OF ASSAY

COMPANY: ARIES MANAGEMENT
PROJECT: DUCHESS
ATTENTION: DEAN LAMOTHE

FILE: 4-571
DATE: JULY 18/84
TYPE: ROCK ASSAY

We hereby certify that the following are assay results for samples submitted.

SAMPLE NUMBER	CU %	PB %	ZN %
SAMPLE1	8.010	0.02	0.05
SAMPLE2	11.720	0.01	0.04
SAMPLE3	22.400	0.01	0.06
SAMPLE4	26.240	0.01	0.10
SAMPLE5	2.530	0.01	0.04
SAMPLE6	20.260	0.02	0.10
SAMPLE7	1.060	0.01	0.03
SAMPLE8	0.425	0.01	0.02

Ground to mesh -100
Acid digestion - chemical analysis

Certified by

MIN-EN LABORATORIES LTD.

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
705 WEST 15th STREET NORTH VANCOUVER, B.C. CANADA V7M 1T2

PHONE (604)980-5814 OR (604)988-4524 TELEX: 04-352828

CERTIFICATE OF ASSAY

COMPANY: ARIES MANAGEMENT
PROJECT: DUCHESS
ATTENTION: DEAN LAMOTHE

FILE: 4-571
DATE: JULY 18/84
TYPE: 5-571

We hereby certify that the following are assay results for samples submitted.

SAMPLE NUMBER	AG G/TONNE	AG OZ/TON	AU G/TONNE	AU OZ/TON
SAMPLE1	72.8	2.12	0.57	0.017
SAMPLE2	104.0	3.03	0.34	0.010
SAMPLE3	176.0	5.13	0.62	0.018
SAMPLE4	214.0	6.24	0.53	0.015
SAMPLE5	26.5	0.77	0.80	0.023
SAMPLE6	79.0	2.30	0.33	0.010
SAMPLE7	2.4	0.07	0.01	0.001
SAMPLE8	0.2	0.01	0.01	0.001

Ground to mesh -100
Acid digestion - chemical analysis

Certified by Barry Smaith

MIN-EN LABORATORIES LTD.

COST STATEMENT

Commercial exploration contracting company cost itemization of total cost:

One week August 6-12, 2 men
3.4 kilometres EM 16 surveyed
Geotronics, geophysical instrument rental
Rock channel sampling
8 assays
Helicopter support Okanagan from Golden
Engineering visit Bighorn Helicopter from Cranbrook
Transporation Vancouver to Toby Creek return

TOTAL COST $ 8,000.00

EM-16 RAW DATA

LINE 5050S

STATION	QUAD	DIP		
1000E	-10	-33		
1015E	-10	-30	-33 + -30 = -63	-63 - (-61) = -2
1030E	-11	-30	-30 + -27 = -57	-57 - (-62) = 5
1045E	-10	-27	-30 + -31 = -61	-61 - (-68) = -7
1060E	-7	-31	-27 + -35 = -62	-62 - (-74) = 12
1075E	-5	-35	-31 + -37 = -68	-68 - (-78) = 10
1090E	-5	-37	-35 + -39 = -74	-74 - (-78) = 4
1105E	-6	-39	-37 + -41 = -78	-78 - (-81) = 3
1120E	-8	-41	-39 + -39 = -78	-78 - (-78) = 0
1135E	-4	-39	-41 + -40 = -81	-81 - (-70) = -11
1150E	-6	-40	-39 + -39 = -78	-78 - (-69) = -9
1165E	-8	-39	-40 + -36 = -70	
1180E	-8	-30	-39 + -30 = -69	
1195E	CLIFF			

EAST

LINE 5000S

STATION	QUAD	DIP		
1195E				
1180E	-2	-45		
1165E	-8	-45	-45 + -47 = -92	-92 - (-92) = 0
1150E	-4	-47	-45 + -46 = -91	-91 - (-91) = 0
1135E	-2	-46	-47 + -46 = -93	-93 - (-81) = -12
1120E	-4	-46	-46 + -45 = -91	-91 - (-72) = -19
1105E	-8	-45	-46 + -35 = -81	-81 - (-67) = -14
1090E	-12	-35	-45 + -27 = -72	-72 - (-56) = -16
1075E	-6	-27	-35 + -32 = -67	-67 - (-54) = -13
1060E	-10	-32	-27 + -29 = -56	-56 - (-74) = 18
1045E	-10	-29	-32 + -22 = -54	-54 - (-52) = -2
1030E	0	-22	-29 + -45 = -74	
1015E	-10	-45	-22 + -30 = -52	
1000E	-10	-30		

EAST LINE 4950S

STATION	QUAD	DIP		
1000E	-8	-19		
1015E	-5	-26	-19 + -26 = -45	
1030E	-10	-26	-26 + -25 = -51	-45 - (-53) = 8
1045E	-8	-25	-26 + -27 = -53	-51 - (-60) = 9
1060E	-7	-27	-25 + -35 = -60	
1075E	-2	-35		
1090E	CLIFF			
1105E				

EAST CLIFFS LINE 4900S

STATION	QUAD	DIP		
1195E				
CLIFFS				
1105E				
1090E	-12	-26		
1075E	-6	-26	-26 + -29 = -55	
1060E	-4	-29	-26 + -19 = -45	-55 - (-51) = -4
1045E	-10	-19	-29 + -22 = -51	-45 - (-31) = -14
1030E	0	-22	-19 + -12 = -31	-51 - (-37) = -14
1015E	-10	-12	-22 + -15 = -37	
1000E	-6	-15		

WEST

LINE 4900S

STATION	QUAD	DIP		
1015E	-10	-12		
1000E	-6	-15	-17 + -15 = -32	-32 - (-34) = 2
985E	-5	-17	-15 + -18 = -33	-33 - (-32) = -1
970E	-8	-18	-17 + -17 = -34	-34 - (-32) = -2
955E	-7	-17	-18 + -14 = -32	-32 - (-24) = -8
940E	-6	-14	-17 + -15 = -32	-32 - (-28) = -4
925E	-8	-15	-14 + -10 = -24	-24 - (-26) = 2
910E	-4	-10	-15 + -13 = -28	-28 - (-29) = 1
895E	-7	-13	-10 + -16 = -26	-26 - (-37) = 11
880E	-8	-16	-13 + -16 = -29	-29 - (-39) = 10
865E	-9	-16	-16 + -21 = -37	-37 - (-38) = 1
850E	-9	-21	-16 + -23 = -39	-39 - (-53) = 14
835E	-12	-23	-21 + -17 = -38	
820E	-10	-17	-23 + -30 = -53	
805E	-8	-30		

WEST LINE 4850S

STATION	QUAD	DIP		
805E	-12	-23		
820E	-10	-22	-23 + -37 = -60	-60 - (-57) = -3
835E	-12	-37	-22 + -26 = -48	-48 - (-51) = 3
850E	-10	-26	-37 + -20 = -57	-57 - (-37) = -20
865E	-10	-20	-26 + -25 = -51	-51 - (-41) = -10
880E	-10	-25	-20 + -17 = -37	-37 - (-31) = -6
895E	-16	-17	-25 + -16 = -41	-41 - (-33) = -8
910E	-8	-16	-17 + -14 = -31	-31 - (-28) = -3
925E	-6	-14	-16 + -17 = -33	-33 - (-32) = -1
940E	-12	-17	-14 + -14 = -28	-28 - (-24) = -4
955E	-16	-14	-17 + -15 = -32	-32 - (-27) = -5
970E	-8	-15	-14 + -10 = -24	-24 - (-25) = 1
985E	-8	-10	-15 + -12 = -27	-27 - (-29) = 2
1000E	-6	-12	-10 + -15 = -25	

EAST LINE 4850S

1015E	-7	-15	-12 + -17 = -29	-25 - (-41) = 16
1030E	-10	-17	-15 + -26 = -41	-29 - (-42) = 13
1045E	-8	-26	-17 + -25 = -42	-41 - (-58) = 17
1060E	-12	-25	-26 + -32 = -58	-42 - (-49) = 7
1075E	-12	-32	-25 + -24 = -49	
1090E	-12	-24		
1105E	CLIFFS			

EAST LINE 4800S

STATION	QUAD	DIP		
1195E				
CLIFFS				
1105E				
1090E	-10	-12		
1075E	-10	-13	-12 + -15 = -27	-27 - (-27) = 0
1060E	-10	-15	-13 + -15 = -28	-28 - (-24) = -4
1045E	-8	-15	-15 + -12 = -27	-27 - (-18) = -9
1030E	-10	-12	-15 + -9 = -24	-24 - (-12) = -12
1015E	-10	-9	-12 + -6 = -18	-18 - (-1) = -17
1000E	-10	-6	-9 + -3 = -12	

WEST LINE 4800S

985E	-8	-3	-6 + 5 = -1	-12 - (-3) = -9
970E	-6	+5	-3 + 0 = -3	-1 - 6 = -7
955E	-10	0	5 + 1 = 6	-3 - (-10) = 7
940E	-8	+1	0 + -10 = -10	6 - (-9) = 15
925E	-12	-10	1 + -10 = -9	-10 - (-18) = 8
910E	-16	-10	-10 + -8 = -18	-9 - (-25) = 16
895E	-15	-8	-10 + -15 = -25	-18 - (-28) = 10
880E	-10	-15	-8 + -20 = -28	-25 - (-23) = -2
865E	-12	-20	-15 + -8 = -23	-28 - (-35) = 7
850E	-16	-8	-20 + -15 = -35	-23 - (-19) = -4
835E	-9	-15	-8 + -11 = -19	-35 - (-25) = -10
820E	-8	-11	-15 + -10 = -25	
805E	-7	-10		

WEST SIDE

LINE 4750S

STATION	QUAD	DIP		
805E	-19	-15		
820E	-8	-16	-15 + -20 = -35	-35 - (-25) = -10
835E	-10	-20	-16 + -22 = -38	-38 - (-28) = -10
850E	-10	-22	-20 + -5 = -25	-25 - (-13) = -12
865E	-12	-5	-22 + -6 = -28	-28 - (-11) = -17
880E	-14	-6	-5 + -8 = -13	-13 - (-12) = -1
895E	-12	-8	-6 + -5 = -11	-11 - 1 = -12
910E	-8	-5	-8 + -3 = -11	- 1 - 7 = -18
925E	-12	-3	-5 + 6 = 1	1 - 19 = -18
940E	-14	+6	-3 + 10 = 7	7 - 27 = -20
955E	-8	+10	6 + 13 = 19	19 - 30 = -11
970E	-9	+13	10 + 17 = 27	27 - 32 = -5
985E	-8	+17	13 + 17 = 30	30 - 32 = -2
1000E	-7	+17	17 + 15 = 32	
1015E	-4	+15	17 + 15 = 32	32 - 25 = -7
1030E	-5	+15	15 + 10 = 25	32 - 18 = 4
1045E	-5	+10	15 + 3 = 18	25 - 13 = 12
1060E	-8	+7	10 + 3 = 13	18 - 10 = 8
1075E	-6	+3	7 + 3 = 10	13 - 3 = 10
1090E	-3	+3	3 + 0 = 3	10 - 1 = 9
1105E	-8	0	3 + -2 = 1	3 - (-5) = 8
1120E	-7	-2	0 + -5 = -5	1 - (-10) = 11
1135E	-6	-5	-2 + -8 =-10	-5 - (-11) = 6
1150E	-7	-8	-5 + -6 =-11	
1165	-6	-6		
1180	CLIFF			
1195				

LINE 4700S

STATION	QUAD	DIP		
1195E	-10	-2		
1180E	-13	-3	-2 + 0 =	-2
1165E	-11	0	-3 + 1 =	-2
1150E	-10	+1	0 + 2 =	2
1135E	-6	+2	1 + 3 =	4
1120E	-3	+3	2 + 9 =	11
1105E	-2	+9	3 + 6 =	9
1090E	-3	+6	9 + 4 =	13
1075E	-6	+4	6 + 3 =	9
1060E	-5	+3	4 + 7 =	11
1045E	-8	+7	3 + 15 =	18
1030E	-5	+15	7 + 15 =	22
1015E	-4	+15	15 + 12 =	27
1000E	-6	+12	15 + 14 =	29

-2 - 2 = -4
-2 - 4 = -6
2 - 11 = -9
4 - 9 = -5
11 - 13 = -2
9 - 9 = 0
13 - 11 = 2
9 - 18 = -9
11 - 22 = -11
18 - 27 = -9
22 - 29 = -7
27 - 25 = 2

WEST SIDE

985E	-6	+14	12 + 13 =	25
970E	-7	+13	14 + 6 =	20
955E	-9	+6	13 + 3 =	16
940E	-8	+3	6 + (-3)=	3
925E	-10	-3	3 + (-5)=	-2
910E	-6	-5	-3 + 0 =	-3
895E	-13	0	-5 + (-3)=	-8
880E	-9	-3	0 +(-10)=	-10
865E	-10	-10	-3 +(-22)=	-25
850E	-11	-22	-10 +(-20)=	-30
835E	-10	-20	-22 +(-17)=	-39
820E	-12	-17	-20 +(-16)=	-36
805E	-13	-16		

29 - 20 = 9
25 - 16 = 9
20 - 3 = 17
16 - (-2) = 18
3 - (-3) = 6
-2 - (-8) = 6
-3 - (-10) = 7
-8 - (-25) = 17
-10 - (-30) = 20
-25 - (-39) = 14
-30 - (-36) = 6

LINE 4650S

STATION	QUAD	DIP	
1195E	-2	-10	
1180E	-3	-6	-10 + (-7) = -17
1165E	-4	-7	-6 + (-10) = -16
1150E	-5	-10	-7 + (-5) = -12
1135E	-6	-5	-10 + (-2) = -12
1120E	-7	-2	-5 + 0 = -5
1105E	-6	0	-2 + 3 = 1
1090E	-5	+3	0 + 6 = 6
1075E	-3	+6	3 + 9 = 12
1060	-8	+9	6 + 12 = 18
1045	-10	+12	9 + 16 = 25
1030	-9	+16	12 + 15 = 27
1015E	-8	+15	16 + 7 = 23
1000E	-5	+7	15 + 10 = 25

-17 - (-12) = -5
-16 - (-12) = -4
-12 - (-5) = -7
-12 - 1 = -13
-5 - 6 = -11
1 - 12 = -11
6 - 18 = -12
12 - 25 = -13
18 - 27 = -9
25 - 23 = 2
27 - 25 = 2
23 - 16 = 7

WEST SIDE

985E	-8	+10	7 + 9 = 16
970E	-6	+9	10 + 7 = 17
955E	-10	+7	9 + 5 = 14
940E	-8	+5	7 + 1 = 8
925E	-12	+1	5 + 1 = 6
905E	-16	+1	1 + (-2) = -1
895E	-15	-2	1 + (-3) = -2
880E	-10	-3	-2 + (-6) = -8
865E	-12	-6	-3 + (-7) = -10
850E	-16	-7	-6 + (-14) = -20
835E	-7	-14	-7 + (-13) = -20
820E	-8	-13	-14 + (-12) = -26
805E	-9	-12	

25 - 17 = 8
16 - 14 = 2
17 - 8 = 9
14 - 6 = 8
8 - (-1) = 9
6 - (-2) = 8
-1 - (-8) = 7
-2 - (-10) = 8
-8 - (-20) = 12
-10 - (-20) = 10
-20 - (-26) = 6

LINE 5100S

WEST SIDE

STATION	QUAD	DIP		
CLIFFS				
970E	-10	-29		
985E	-6	-31	-29 + (-33) = -62	-62 - (-64) = 2
1000E	-5	-33	-31 + (-30) = -61	
EAST SIDE				
1015E	-10	-30	-33 + (-31) = -64	-61 - (-56) = -5
1030E	-11	-31	-30 + (-26) = -56	-64 - (-68) = 4
1045E	-7	-26	-31 + (-37) = -68	-56 - (-60) = 4
1060E	-6	-37	-26 + (-34) = -60	-68 - (-70) = 2
1075E	-1	-34	-37 + (-33) = -70	-60 - (-61) = 1
1090E	-2	-33	-34 + (-27) = -61	-70 - (-66) = -4
1105E	-4	-27	-33 + (-33) = -66	-61 - (-68) = 7
1120E	-5	-33	-27 + (-41) = -68	-66 - (-64) = -2
1135E	-7	-41	-33 + (-31) = -64	-68 - (-77) = 9
1150E	-4	-31	-41 + (-36) = -77	-64 - (-66) = 4
1165E	-6	-36	-31 + (-35) = -66	-77 - (-67) = -10
1180E	-8	-35	-36 + (-31) = -67	
1195E	-8	-31		

LINE 5150S

WEST SIDE

STATION	QUAD	DIP		
CLIFFS				
955E	-8	-29		
970E	-11	-32	-29 + (-35) = -64	
985E	-10	-35	-32 + (-37) = -69	-64 - (-71) = 7
1000E	-10	-37	-35 + (-36) = -71	-69 - (-68) = -1
EAST SIDE				
1015E	-6	-36	-37 + (-31) = -68	-71 - (-65) = -6
1030E	-10	-31	-36 + (-29) = -65	-68 - (-64) = -4
1045E	-11	-29	-31 + (-33) = -64	-65 - (-60) = -5
1060E	-13	-33	-29 + (-31) = -60	-64 - (-64) = 0
1075E	-10	-31	-33 + (-31) = -64	-60 - (-58) = -2
1090E	-11	-31	-31 + (-27) = -58	-64 - (-59) = -5
1105E	-7	-27	-31 + (-28) = -59	-58 - (-53) = -5
1120E	-11	-28	-27 + (-26) = -53	-59 - (-57) = -2
1135E	-10	-26	-28 + (-29) = -57	-53 - (-57) = 4
1150E	-6	-29	-26 + (-31) = -57	-57 - (-56) = -1
1165E	-7	-31	-29 + (-27) = -56	-57 - (-56) = -1
1180E	-8	-27	-31 + (-25) = -56	
1195E	-10	-25		