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REPORT ON

VLF-EM AND SCINTILLOMETER SURVEY

VAL#2 CLAIM

FORT ST. JAMES, BRITISH COLUMBIA

NTS 93K/16

54° 54' N, 124° 17' W

BY

Uwe Schmidt, P.Geo.

February 22, 2000

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

26,187

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Photographs

1. INTRODUCTION

A VLF-EM survey was carried out on a 90 hectare grid located on the Val #2 mineral claim. The survey was carried during the period from July 20 to 26, 1999 and was funded in part by the B.C. prospectors' assistance program. The writer was assisted by Jason McLaughlin, a recent U.B.C. geology graduate.

The Val claims are located approximately 50 km north of Fort St. James, in Central British Columbia. The area is underlain by metasedimentary and volcanic rocks of the Takla Group and coeval plutons within the Quesnel Terrane. This area lies north of northwest trending Pinchi and Prince George faults, the dominant structural elements of the area. The Prince George Fault marks the boundary of the Quesnel and Cache Creek Terranes in the area.

2. CLAIMS, LOCATION AND ACCESS

The Val claims are located in the Kleedlee Creek area, approximately 50 km north of Fort St. James, in central British Columbia, in NTS map area 93K/16. Details of the claims are as follows:

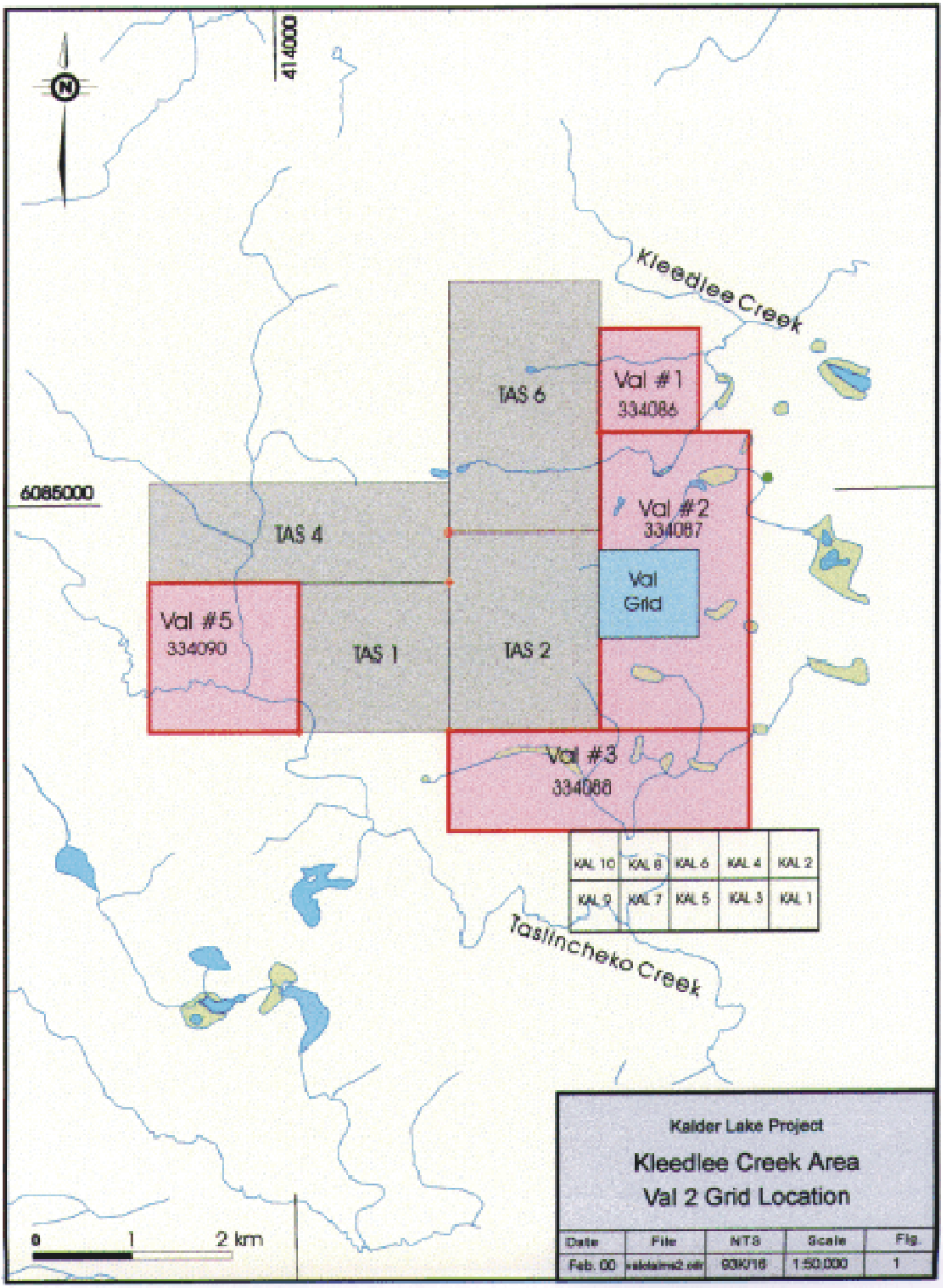
Claim Name	Units	Tenure Number	Expiry Date
Val #1	4	334086	02/23/2000
Val #2	18	334087	02/24/2000
Val #3	12	334088	02/25/2000
Val #5	9	334090	02/27/2000

The claims are accessible by road from Fort St. James via the Germansen Road, which provides all-season access. Kleedlee Creek area lies west of Germansen Road, and is accessed via Inzana-Main and Esker F.S. roads. Additional local access is provided by a number of bulldozer trails and clear cuts.

The approximate centre of the Val #2 claim is 54° 54' N latitude and 124° 17' W longitude.

3. PHYSIOGRAPHY

The area lies with the Nechako Plateau at the northern edge of the Fraser Basin physiographic region. The area is predominantly covered by glacial till, with minor glaciofluvial and



414000
6085000
Kleedlee Creek
Taslincheko Creek
TAS 6
TAS 4
TAS 1
TAS 2
Val #1
334086
Val #2
334087
Val Grid
Val #3
334088
Val #5
334090
KAL 10
KAL 8
KAL 6
KAL 4
KAL 2
KAL 9
KAL 7
KAL 5
KAL 3
KAL 1
0
1
2 km
Kalder Lake Project
Kleedlee Creek Area
Val 2 Grid Location
Date
File
NTS
Scale
Fig.
Feb. 00
93K/16
1:50,000
1

glaciolacustrine deposits (Plouffe, 1994). Glaciers moved from west to east in the southern map area and gradually turned northeastward in the northern half of the map area. The terrain in the southern map area is characterized by low rolling hills with swamps and lakes in the low-lying areas. Elevations increase toward the northeast.

4. GEOLOGY

The map area lies within Quesnel and Cache Creek Terranes. The boundary between Cache Creek and Quesnel Terranes lies southwest of the claims and is defined by the northwest trending Prince George Fault (Struik, 1998). The erosional remnants of Miocene basalt flows are evident in the southeast map area.

The Quesnel Terrane rocks are represented by an Early Mesozoic island-arc assemblage of the Takla Group. This group comprises sedimentary, volcanic, pyroclastic, epiclastic and coeval plutonic rocks of Upper Triassic to Early Jurassic time. The Takla Group was subdivided by Nelson et al (1991), into four informal successions. The Tas area is underlain by the predominantly sedimentary, Inzana Lake Formation and early Jurassic intrusions, but no outcrops are known on the Val #2 claim.

5. HISTORY AND WORK CARRIED OUT

This area has seen several episodes of mineral exploration. Early porphyry copper exploration occurred after the release of regional airborne magnetic maps by the G.S.C. in the late 1960's. Regional airborne EM and magnetic surveys in early 1980's led to the staking and drilling of several conductors in the search for VMS deposits.

The most significant exploration success in the area to date is the discovery of the Mt. Milligan Cu-Au porphyry deposit which is located approximately 38 km northeast of the claims. This alkalic porphyry system was discovered in 1987 and resulted in a reexamination of the porphyry potential of a number of magnetic anomalies underlain by Takla Group lithologies within NTS 93K/16. The Tas, Bio, Max and Hat properties were intermittently explored during the period of 1987 to 1991. Of these properties, the Tas has received the most work. Much of the drilling to date has centered on gold-bearing sulphide-rich shear-veins, which are thought to be peripheral to an alkalic porphyry system. The Val #2 claim is located at the eastern boundary of the Tas property and has the potential to host gold-bearing sulphide-rich shear/veins similar to the Tas Ridge Zone.

A till sampling program along the eastern boundary of the Tas property was originally contemplated on the Val claims but due to thick glaciofluvial deposits in the area (Photo 1), this concept was abandoned in favor of a VLF-EM survey.

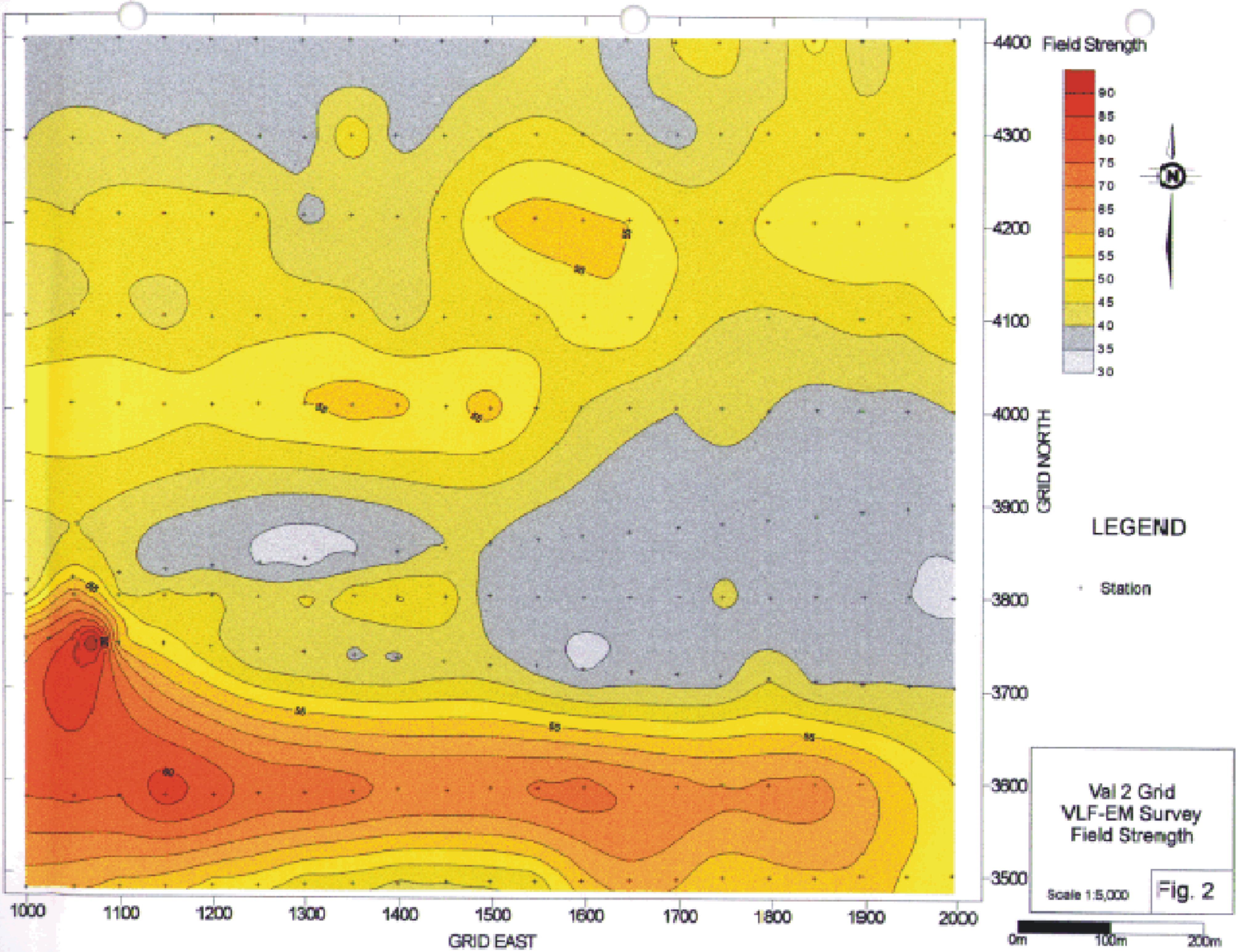
The VLF-EM survey was carried out on the Val #2 claim over a 6 ½ day period in late July. The Val #2 claim is one of four claims held by the writer, adjacent to the Tas property. A one kilometre wide perimeter area around the Tas property has received limited exploration to date because of previous ownership conflicts. The EM survey was designed to test a portion of this area.

The survey included the reestablishment of an existing north-trending base line and the surveying of flagged lines by hip-chain and compass, to the boundary of the Tas property. A VLF-EM survey was carried at 50 metre stations and 100 metre line spacing. A few 25 metre stations were added in areas of high field strength response. A Sabre model 27 VLF-EM was used in the survey. Relative field strength measurements were used in this survey to detect conductors. A contoured plot of the field strength data is presented in Fig. 2 . The data were analyzed using Probplot software. Three populations were defined with population boundaries at 54 and 38. An upper threshold of 55 is plotted in Fig. 2. Values above 55 outline a strong conductor in the southwest corner of the grid. This conductor has a length of at least 200 metres in a southeast direction. The convergence of three survey lines in the vicinity of the conductor suggests that it is also a magnetic anomaly. This conductor continues in an east-west direction along line 36+00N. A weaker, northeast trend is defined by three areas, exceeding the field strength anomaly threshold.

A scintilllometer survey was carried out concurrently as an overburden and K-silicate alteration mapping tool. The survey was conducted with an Urtec UG-130, threshold scintillometer. Total count readings, over a ten second sample interval, were recorded. A total of 10 line-kilometres were surveyed. The survey data are appended to this report.

Total count radioactivity data were also analyzed by the Probplot software. These data are also divisible into 3 populations having boundaries at approximately 61 and 32 cps. A contoured

Photo 1   Gravel deposits on Val #2 claim



Field Strength
90
85
80
75
70
65
60
55
50
45
40
35
30
N
4400
4300
4200
4100
4000
3900
3800
3700
3600
3500
GRID NORTH
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
GRID EAST
LEGEND
Station
Val 2 Grid
VLF-EM Survey
Field Strength
Scale 1:5,000
Fig. 2
0m
100m
200m

version of the data is presented in Fig. 3. The data also show northeast trends on the east half of the grid. The lower threshold of 32 cps outlines swampy areas where radioactivity is suppressed by water, organics and clay deposits. The higher threshold probably outlines a higher proportion of igneous rock fragments in gravel deposits.

Discussion of Results

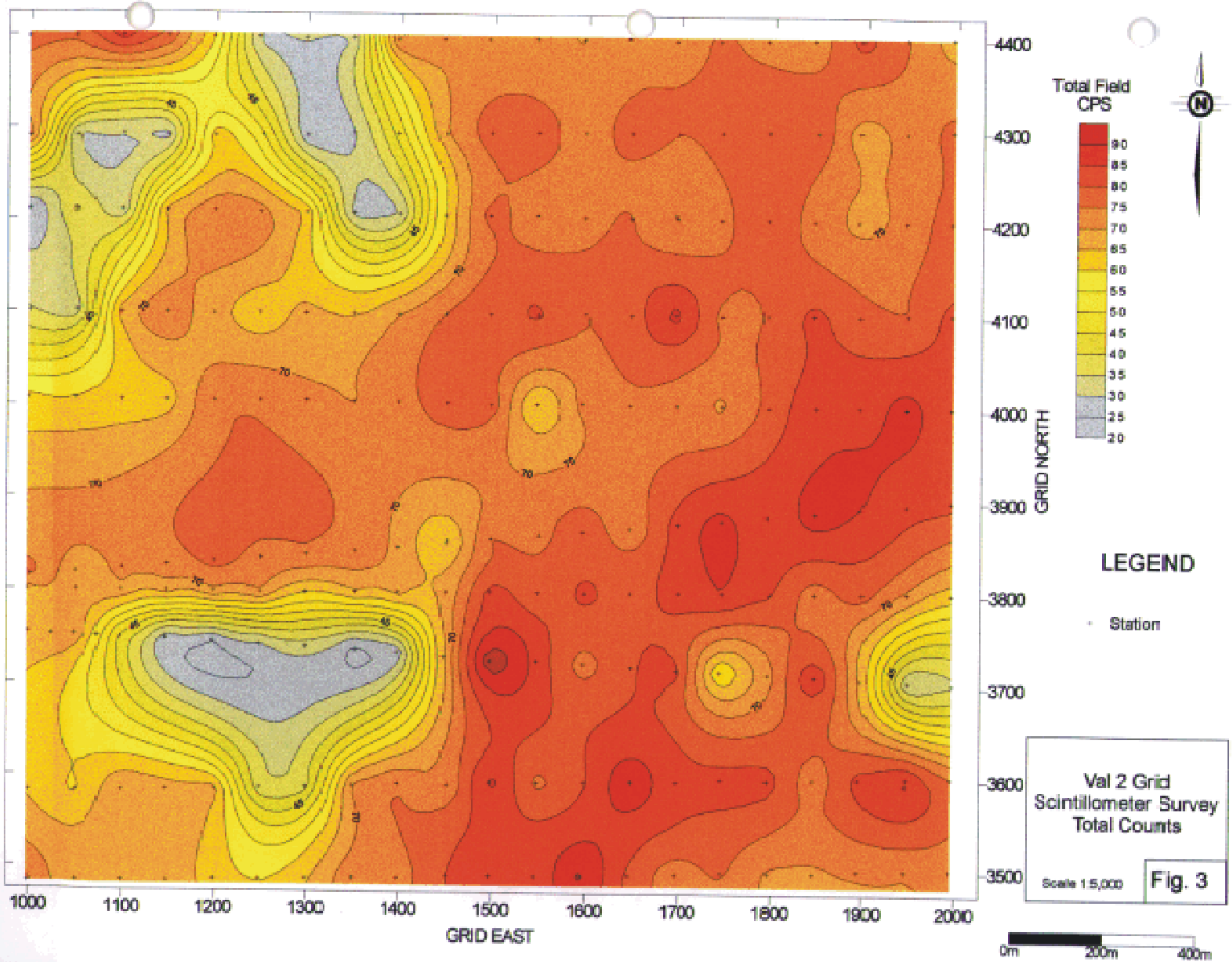
The field strength anomaly in the southwest corner of the grid may have detected a massive sulphide shear/vein similar to the Tas veins. The east-west extension of this anomaly, along line 36+00N looks suspicious. The higher background along this line may be caused by a calibration error. The Sabre Model 27 VLF-EM is recalibrated at the start of each day and this may have led to lower readings in the northern area of the grid.

6. CONCLUSIONS

A preliminary evaluation of a VLF-EM survey suggests that a massive sulphide shear/vein system, similar to the Tas Ridge Zone veins, may extend on to the Val #2 claim.

7. RECOMMENDATIONS

The VLF-EM survey on the Val #2 claim should be expanded. The survey interval needs to be reduced to 25 metres or less. Additional lines should be surveyed in the vicinity of the largest conductor. A magnetic survey should also be considered to help define this type of target.



Val 2 Grid
Scintillometer Survey
Total Counts

Fig. 3

8. BIBLIOGRAPHY AND REFERENCES

Nelson, J.L., Bellefontaine, K.a. (1996): BCGS, Bulletin 99, The Geology and Mineral Deposits of North-Central Quesnellia; Tezzeron Lake to Discovery Creek, Central B.C.

Plouffe, A.(1994):Surficial geology, Tezzeron Lake, B.C., GSC Open File 2846, Scale 1:100,000

Sinclair, A.J., (1976): Applications of Probability Graphs in Mineral Exploration; The Association of Exploration Geochemists, Special Volume No. 4

Struik, L.C. (1998): Bedrock Geology of Tezzeron Map Area, GSC Open File 3624, Scale 1:100,000

Stanley, C.R., (1987): Probplot; The Association of Exploration Geochemists, Special Volume No. 14

9. STATEMENT OF EXPENDITURE

I. Field Expenses		Amount Eligible for Reimbursement
1) Labour		
U.Schmidt (July 20-26, 1999)		
6.5 days @ $250/day	$1,625.00	
J. McLaughlin, (July 20-26, 1999)		
6.5 days @ $100/day	$650.00	$487.50
2) Equipment Rental		
Sabre EM 27 (6 days @ $25.00)	$150.00	$112.50
Urtec UG-130 Scintillometer (6 days @ $10.00)	$60.00	$45.00
Magellan Mark V GPS System (6 days @ $5.00)	$30.00	$22.50
2 Motorola HT90 VHF radios (6 Days @$5.00)	$30.00	$22.50
3) Room and Board		
13 man-days @ $50/m-d	$650.00	$379.37
4) Transportation		
4 WD Truck 6.5 days @ $50.00/day	$325.00	$243.75
II. Office		
Report Writing		
U. Schmidt	$250.00	
Totals	**$3,770.00**	**$1,313.12**
Less Reimbursement	**($1,313.12)**	
Net Assessment Total	**$2,456.88**	

Appendix A

Certificate of Qualifications

STATEMENT OF QUALIFICATIONS

I, Uwe Schmidt, of 656 Foresthill Place, Port Moody, B.C. do hereby declare:

(1) I am a consulting geologist and controlling shareholder of Northwest Geological Consulting Ltd. .

(2) I am a 1971 graduate of the University of British Columbia with a B.Sc. degree in geology.

(3) I am a member of The Association of Professional Engineers and Geoscientists of British Columbia and a Fellow of the Geological Association of Canada.

(4) I have practiced my profession continuously since graduation.

Uwe Schmidt, P. Geo.

Feb. 22, 2000
Port Moody, B.C.

Appendix B

Survey Data and Statistics

	A	B	C	D	E	F	G
1	LABEL	EAST	NORTH	NULL	FS	OUTPH	CPS
2	35N1000	999	3483	0	62	0	76.1
3	35N1050	1051	3485	0	61	0	64.4
4	35N1100	1099	3486	0	58	0	68.5
5	35N1150	1149	3486	-2	57	0	69.0
6	35N1200	1199	3488	-4	53	0	62.5
7	35N1250	1248	3488	-3	52	1	59.5
8	35N1300	1299	3489	-3	47	0	64.0
9	35N1350	1349	3490	-1	47	0	73.8
10	35N1400	1398	3490	2	44	0	71.9
11	35N1450	1450	3492	7	45	0	80.1
12	35N1500	1497	3493	4	46	0	83.7
13	35N1550	1546	3493	3	47	0	80.0
14	35N1600	1595	3494	0	58	0	91.1
15	35N1650	1647	3495	-1	63	0	79.0
16	35N1700	1696	3496	0	61	0	72.0
17	35N1750	1747	3498	5	55	0	75.8
18	35N1800	1796	3498	0	58	0	69.3
19	35N1850	1846	3498	4	59	0	69.0
20	35N1900	1895	3501	0	59	0	70.7
21	35N1950	1944	3501	-1	54	0	70.4
22	35N2000	1994	3502	0	51	0	
23	36N1000	1000	3582	2	75	0	64.5
24	36N1050	1051	3583	0	76	0	59.2
25	36N1100	1099	3584	1	75	0	70.1
26	36N1150	1148	3585	0	83	0	67.0
27	36N1200	1200	3585	-5	78	1	67.1
28	36N1250	1249	3587	-1	73	0	36.5
29	36N1300	1299	3588	-4	74	0	37.9
30	36N1350	1349	3590	-3	72	0	70.9
31	36N1400	1398	3592	-1	70	0	74.7
32	36N1450	1451	3591	0	70	0	69.9
33	36N1500	1498	3594	0	70	0	86.6
34	36N1550	1549	3594	2	71	0	73.4
35	36N1600	1598	3595	1	72	0	79.3
36	36N1650	1649	3596	0	69	0	89.2
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38	36N1750	1746	3599	2	65	0	81.4
39	36N1800	1795	3598	3	66	0	82.3
40	36N1850	1846	3599	0	67	0	71.9
41	36N1900	1895	3600	0	62	0	81.4
42	36N1950	1946	3601	0	55	0	85.8
43	36N2000	1995	3602	0	50	0	75.4
44	37N1000	999	3754	2	70	0	66.5
45	37N1025	1024	3752	2	75	0	
46	37N1050	1049	3752	5	80	0	69.9
47	37N1075	1073	3750	0	97	0	

	A	B	C	D	E	F	G
48	37N1100	1097	3749	-3	57	0	43.6
49	37N1150	1147	3748	-3	52	0	26.6
50	37N1200	1197	3745	-4	46	0	24.4
51	37N1250	1248	3742	-4	40	0	28.8
52	37N1300	1298	3740	-1	40	0	
53	37N1350	1351	3737	0	39	0	23.6
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56	37N1500	1497	3726	-2	42	0	93.8
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60	37N1700	1697	3717	0	37	0	81.9
61	37N1750	1745	3716	0	37	0	54.7
62	37N1800	1795	3713	0	45	0	67.8
63	37N1850	1847	3711	0	39	2	84.7
64	37N1900	1897	3708	0	40	2	64.0
65	37N1950	1947	3706	0	40	2	30.0
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185	43N1650	1647	4298	-1	41	5	76.5
186	43N1700	1697	4298	1	38	3	75.0
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	A	B	C	D	E	F	G
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192	43N2000	1994	4302	0	49	0	76.3
193	44N1000	998	4398				77.3
194	44N1050	1049	4398				76.1
195	44N1100	1098	4399				88.0
196	44N1150	1148	4399				79.2
197	44N1200	1197	4398				60.8
198	44N1250	1246	4399				28.8
199	44N1300	1297	4398				30.8
200	44N1350	1347	4399	1	35	4	29.9
201	44N1400	1396	4398	4	36	1	76.2
202	44N1450	1445	4398	3	38	2	70.2
203	44N1500	1494	4398	2	37	2	70.1
204	44N1550	1546	4399	3	40	1	71.6
205	44N1600	1595	4398	-2	43	1	69.5
206	44N1650	1644	4400	1	35	2	75.3
207	44N1700	1694	4398	2	46	5	72.8
208	44N1750	1743	4398	1	50	3	75.6
209	44N1800	1792	4399	3	39	4	73.5
210	44N1850	1844	4400	-2	53	1	71.6
211	44N1900	1895	4400	1	41	2	81.9
212	44N1950	1943	4401	-2	48	1	75.3
213	44N2000	1994	4402	0	47	0	67.6

##

PARAMETER SUMMARY STATISTICS FOR PROBABILITY PLOT ANALYSIS

Data File Name = VALGRID3.DAT

Variable = FS Unit = N = 205
N CI = 24

Transform = Logarithmic Number of Populations = 3

# of Missing Observations = 0.

7 Observations Were Below the Minimum Value of 0.0001
0 Observations Were Above the Maximum Value of 99999.9999

==

Users Visual Parameter Estimates

Population	Mean		Std Dev	Percentage
1	35.667	-	34.324	10.00
		+	37.063	
2	45.138	-	39.528	75.00
		+	51.545	
3	68.585	-	60.948	15.00
		+	77.178	

==

User Defined Thresholds.

Thresholds
54.163
38.512

##

##

SUMMARY STATISTICS and HISTOGRAM ARITHMETIC VALUES

Variable = FS Unit = N = 205

Mean =	48.351	Min =	32.000	1st Quartile =	40.000
Std. Dev. =	11.328	Max =	97.000	Median =	46.000
CV % =	23.428	Skewness =	1.261	3rd Quartile =	54.000

==

(# of bins = 24 - bin size = 2.826)

%	cum %	cls int	
0.00	0.24	30.587	
0.49	0.73	33.413	*
6.83	7.52	36.239	********
15.61	23.06	39.065	******************
11.22	34.22	41.891	*************
6.83	41.02	44.717	********
19.51	60.44	47.543	***********************
6.34	66.75	50.370	********
5.85	72.57	53.196	*******
8.78	81.31	56.022	**********
3.90	85.19	58.848	*****
1.95	87.14	61.674	**
1.95	89.08	64.500	**
1.95	91.02	67.326	**
2.44	93.45	70.152	***
1.46	94.90	72.978	**
2.44	97.33	75.804	***
0.98	98.30	78.630	*
0.49	98.79	81.457	*
0.49	99.27	84.283	*
0.00	99.27	87.109	
0.00	99.27	89.935	
0.00	99.27	92.761	
0.00	99.27	95.587	
0.49	99.76	98.413	*

0 1 2 3 4

Each "*" represents approximately 1.7 observations.

##

##

SUMMARY STATISTICS and HISTOGRAM — LOGARITHMIC VALUES

Variable = FS Unit = N = 205

Mean =	1.6739	Min =	1.5051	1st Quartile =	1.6021
Std. Dev. =	0.0936	Max =	1.9868	Median =	1.6628
CV % =	5.5908	Skewness =	0.7196	3rd Quartile =	1.7324

Anti-Log Mean = 47.191 Anti-Log Std. Dev. : (-) 38.043
(+) 58.538

%	cum %	antilog	cls int	(# of bins = 24 - bin size = 0.0209)
0.00	0.24	31.238	1.4947	
0.49	0.73	32.781	1.5156	*
1.46	2.18	34.400	1.5366	**
5.37	7.52	36.099	1.5575	******
5.37	12.86	37.883	1.5784	******
10.24	23.06	39.754	1.5994	************
11.22	34.22	41.718	1.6203	*************
5.37	39.56	43.778	1.6413	******
7.32	46.84	45.941	1.6622	*********
16.59	63.35	48.210	1.6831	********************
3.41	66.75	50.592	1.7041	****
5.85	72.57	53.091	1.7250	*******
7.80	80.34	55.714	1.7460	*********
4.88	85.19	58.466	1.7669	******
1.95	87.14	61.354	1.7878	**
1.95	89.08	64.384	1.8088	**
1.95	91.02	67.565	1.8297	**
2.44	93.45	70.902	1.8507	***
2.44	95.87	74.405	1.8716	***
2.44	98.30	78.080	1.8925	***
0.49	98.79	81.937	1.9135	*
0.49	99.27	85.985	1.9344	*
0.00	99.27	90.232	1.9554	
0.00	99.27	94.689	1.9763	
0.49	99.76	99.367	1.9972	*
				0 1 2 3 4

Each "*" represents approximately 1.7 observations.

##

##

PARAMETER SUMMARY STATISTICS FOR PROBABILITY PLOT ANALYSIS

Data File Name = VALGRID3.DAT

Variable = Scint Unit = CPS N = 208
N CI = 24

Transform = Logarithmic Number of Populations = 3

# of Missing Observations = 0.

4 Observations Were Below the Minimum Value of 0.0001
0 Observations Were Above the Maximum Value of 99999.9999

==

Users Visual Parameter Estimates

Population	Mean		Std Dev	Percentage
1	28.605	-	25.694	10.00
		+	31.846	
2	46.704	-	38.384	5.00
		+	56.826	
3	73.495	-	66.880	85.00
		+	80.763	

==

User Defined Thresholds.

Thresholds
60.856
31.550

##

##

SUMMARY STATISTICS and HISTOGRAM LOGARITHMIC VALUES

Variable = Scint Unit = CPS N = 208

Mean =	1.8164	Min =	1.3729	1st Quartile =	1.8209
Std. Dev. =	0.1344	Max =	1.9722	Median =	1.8573
CV % =	7.4006	Skewness =	-2.0081	3rd Quartile =	1.8876

Anti-Log Mean = 65.531 Anti-Log Std. Dev. : (-) 48.086
(+) 89.304

%	cum %	antilog	cls int	(# of bins = 24 - bin size = 0.0261)
0.00	0.24	22.903	1.3599	
0.48	0.72	24.319	1.3859	*
1.92	2.63	25.822	1.4120	**
0.48	3.11	27.419	1.4381	*
1.92	5.02	29.114	1.4641	**
3.85	8.85	30.915	1.4902	*****
0.48	9.33	32.826	1.5162	*
0.48	9.81	34.856	1.5423	*
0.96	10.77	37.011	1.5683	*
0.48	11.24	39.300	1.5944	*
0.48	11.72	41.730	1.6204	*
0.48	12.20	44.310	1.6465	*
0.48	12.68	47.050	1.6726	*
0.00	12.68	49.959	1.6986	
0.48	13.16	53.048	1.7247	*
0.48	13.64	56.328	1.7507	*
1.92	15.55	59.811	1.7768	**
5.29	20.81	63.509	1.8028	******
8.65	29.43	67.436	1.8289	**********
17.79	47.13	71.606	1.8550	*********************
21.63	68.66	76.034	1.8810	**************************
15.38	83.97	80.735	1.9071	******************
11.06	94.98	85.727	1.9331	*************
3.85	98.80	91.028	1.9592	*****
0.96	99.76	96.656	1.9852	*

0 1 2 3 4

Each "*" represents approximately 1.7 observations.

##

```
20:58:20                              Val Grid                              12/19/99

########################################################################
SUMMARY STATISTICS and HISTOGRAM                              ARITHMETIC VALUES

 Variable = Scint           Unit =      CPS                N =   208

     Mean =     68.135         Min =     23.600   1st Quartile =     66.200
Std. Dev. =     15.759         Max =     93.800         Median =     72.000
     CV % =     23.130    Skewness =     -1.515   3rd Quartile =     77.200

========================================================================
  %    cum %    cls int            (# of bins = 24  -  bin size =     3.052)
-----  -----   --------            ---------------------------------------
 0.00   0.24    22.074
 1.92   2.15    25.126             **
 1.92   4.07    28.178             **
 4.81   8.85    31.230             ******
 0.96   9.81    34.283             *
 0.96  10.77    37.335             *
 0.48  11.24    40.387             *
 0.48  11.72    43.439             *
 0.48  12.20    46.491             *
 0.48  12.68    49.543             *
 0.48  13.16    52.596             *
 0.48  13.64    55.648             *
 0.96  14.59    58.700             *
 3.85  18.42    61.752             *****
 5.77  24.16    64.804             *******
 6.73  30.86    67.857             ********
14.42  45.22    70.909             *****************
13.94  59.09    73.961             *****************
15.87  74.88    77.013             *******************
 7.21  82.06    80.065             *********
10.10  92.11    83.117             ************
 3.37  95.45    86.170             ****
 3.37  98.80    89.222             ****
 0.48  99.28    92.274             *
 0.48  99.76    95.326             *
------------------------------------------------------------------------
                                  0         1         2         3         4

                         Each "*" represents approximately 1.7 observations.

########################################################################
```

Appendix C

Instrumentation

SABRE ELECTRONIC INSTRUMENTS LTD.

4245 EAST HASTINGS STREET • BURNABY, B.C. V5C 2J5 • TELEPHONE: 291-1617

SABRE MODEL 27 VLF-EM RECEIVER

The model 27 EM unit was designed originally for a large Canadian mining company to overcome the deficiencies inherent in existing units.

The instrument is so stable and selective that completely reliable measurements can be made on distant stations without interference from nearby powerful transmitters. Stability and selectivity are especially important when making field-strength measurements, which are now being emphasized as a means of locating conductors.

This EM receiver is very compact, requires no earphones or loudspeakers and is housed in a heavy scotch saddle leather case. All of these features add up to make an ideal one-man EM unit of unexcelled electrical performance and mechanical ruggedness.

SPECIFICATIONS -

Source of Primary Field - VLF radio stations (12 to 24 KHz.)

Number of Stations - 4, selected by switch; Cutler, Main on 17.8 KHz. and Seattle, Washington on 18.6 KHz. are standard, leaving 2 other stations that can be selected by the user.

Types of Measurement

1. Dip angle in degrees, read on a meter-type inclinometer with a range of $\pm$ 60° and an accuracy of $\pm \frac{1}{2}$°.
2. Field strength, read on a meter and a precision digital dial with an accuracy exceeding 1%.
3. Out of phase component, read on the field strength meter as a residual reading when measuring the dip angle.

SABRE MODEL 27 VLF-EM RECEIVER - (Continued)

Dimensions and Weight

Approx. 9½" x 2½" x 8½"; Weighs 5 lbs.

Batteries

8 alkaline penlite cells. The instrument will run continuously on 1 set of batteries for over 200 hours; So that in normal on-off use, the batteries will last all season. The battery condition under load is shown by pushing a button and reading voltage on the field strength meter.

OPERATING MANUAL

FOR A PORTABLE, FIVE-CHANNEL

THRESHOLD SCINTILLOMETER

miniScint UG 130

urtec
LIMITED

May 1979

Printed In Canada

DESCRIPTION

The UG 130 unit is a high-performance, threshold scintillometer for measuring all gamma radiation above five selectable energy levels. Each selectable energy level may be sampled at either one or ten second time intervals. The count rate displayed on the ruggedized five digit liquid crystal display is normalized to CPS (counts per second) regardless of the selected sample rate. When operated in the ten second sample mode, a decimal point is displayed automatically. UG 130 may be operated in two different total count modes or in a threshold mode for the measurement of Uranium, Potassium and Thorium.

The unit is a ruggedized, compact portable field instrument with simplified operational controls. The main enclosure is a single piece aluminum casting with sealed controls and battery compartment. The unit can be operated safely in the rain or in high humidity environments.

The detector is a custom designed ruggedized NaI (Tl) crystal detector which has a volume of 66 cm^3 (4 cu in.). The geometry of the crystal has been optimized to provide a greater detection sensitivity compared to other similar units. An audio signal generator has been incorporated which may be operated in a continuous mode or in an adjustable count rate threshold mode. The frequency response of the audio is five times the actual displayed count rate in CPS. This feature allows for a greater audio response to low intensity anomalies.

The UG 130 is equipped with a unique calibration source. Supplied with the unit is a set of alkaline batteries, two carrying handles, genuine leather case with shoulder strap, operating manual and shipping container.

TECHNICAL SUMMARY

Selectable energy levels:	
CAL - Calibration	All energy above 0.30 MeV
TC1 - Total count I	All energy above 0.08 MeV
TC2 - Total count II	All energy above 0.40 MeV
KUT - Potassium + Uranium + Thorium	All energy above 1.36 MeV
UT - Uranium + Thorium	All energy above 1.66 MeV
T - Thorium	All energy above 2.46 MeV
Detector:	NaI (Tl) crystal; Volume, 66 cm^3 (4.0 cu in.), Mechanically ruggedized.
Spectral shift as a function of count rate:	3% or less from 0 CPS to 15000 CPS, Integrated over an energy Interval from 80 keV to 1500 keV
Energy response linearity error:	Less than 2%
Visual display:	Ruggedized low temperature versiom five digit liquid crystal display. Readout in CPS regardless of selected sample rate. Excellent visibility in direct sunlight.

TECHNICAL SUMMARY (Cont)

Display overflow:	When count exceeds 99999, two dots will indicate count rate overflow.
Sample rate:	1.0 or 10.0 seconds, auto recycle, for all energy levels, except the 'CAL' position
Power:	Three 'C' size alkaline batteries provide 40 hours continuous operation at 23°C ambient without audio.
Battery test monitor:	Three indicators provide battery charge status when required. When batteries are nearly discharged, a keyed audio alarm is activated, overriding count rate audio.
Audio:	The count rate may be monitored in a continuous mode or may be adjusted to monitor above any background threshold.