

GEOCHEMICAL & GEOPHYSICAL REPORT

on the

FILMED

FLATS CLAIM GROUP
Osoyoos Mining Division
Marsel Creek Area

CLAIMS: Flats #1(1 unit)
Flats #2(1 unit)
Flats #3(1 unit)
Flats #4(1 unit)

NTS: 82E/5
LATITUDE: 49° 20'N
LONGITUDE: 119° 47'W

on behalf of

GRAND NATIONAL RESOURCES INC.
905-626 West Pender Street
Vancouver, B.C., V6B 1V9

by

D.F. SYMONDS, B.Sc.(Geol.)

BURTON CONSULTING INC.
901-626 West Pender Street
Vancouver, B.C., V6B 1V9

December 19, 1988

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VANCOUVER, B.C.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

18,332

BURTON CONSULTING INC.

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1.0 INTRODUCTION

This report has been written on behalf of Grand National Resources Inc., of Vancouver, B.C. It describes field work, including geochemical soil sampling and VLF electromagnetic surveys, which were carried out on the Flats claim group, located in the Osoyoos Mining Division near Marsel Creek. This work was carried out from November 19th to November 21st, 1988.

A statement of costs incurred directly as a result of the 1988 work program is included. This cost statement was prepared by a representative of Grand National Resources Inc. and supplied to Burton Consulting Inc.

Recommendations for further work on the property are made, contingent upon the changing status or availability of the ground immediately to the west of the Flats claim group.

2.0 SUMMARY & CONCLUSIONS

The Flats claim group, owned by Grand National Resources Inc. of Vancouver, B.C. consists of 4 claims in the Osoyoos Mining Division, B.C.

The property is located approximately 15 kilometres north of Keremeos, B.C. and is accessible by road via Highway 3A which passes through the property.

There is some evidence of old diggings on the claim area. However, the exact details of this work are not available.

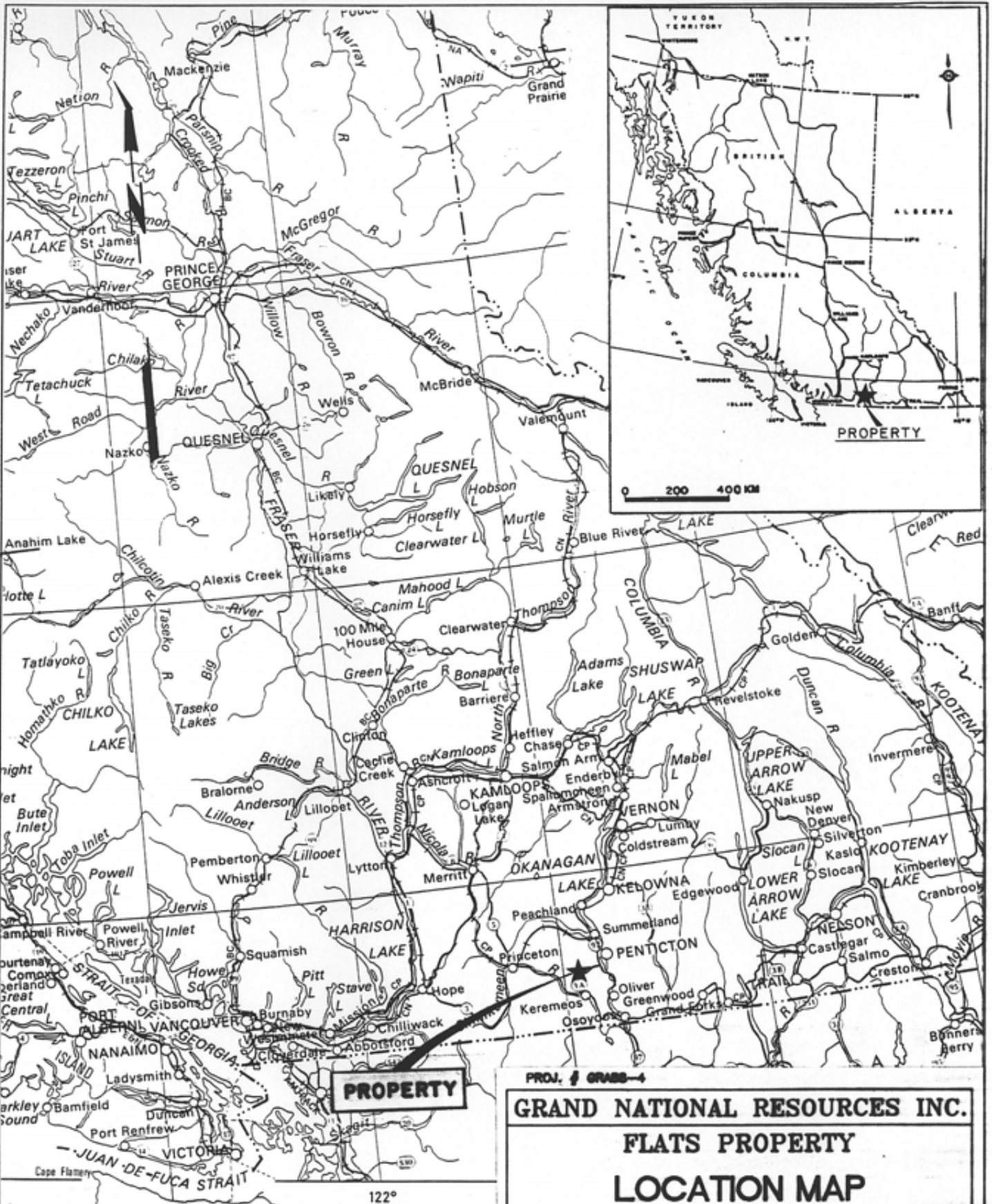
The claim group is underlain by Triassic and Jurassic sediments in contact with volcanics, which are intruded in one area on the property by Cretaceous granitic rocks.

Field work carried out during 1988 included geochemical soil sampling and VLF-EM surveying totalling 2.55 kilometres of grid line and 56 samples.

A multi-sample Pb, Zn, Ag anomaly was detected on the west edge of the survey grid. This anomaly should be followed up contingent upon access to, by agreement or by direct acquisition, of the ground immediately west of the Flats claim group. The VLF-EM survey found no detectable anomalies.

3.0 LOCATION & ACCESS

Access to the Buckshot claim group is from Highway 3A, which passes through the claim group approximately 15 kilometres north of the Town of Keremeos, B.C. or alternatively, 9 kilometres north of the town of Olalla, B.C. Figures 3-1 and 4-1 show location and access respectively.



PROPERTY

PROJ. # GRAB-4

GRAND NATIONAL RESOURCES INC.

FLATS PROPERTY

LOCATION MAP

BURTON CONSULTING INC.

DRAWN: D.F.S./dw	SCALE: 1:3,750,000	FIG.
DATE: DEC. 19, 1988	N.T.S. 82E/5	3-1

0 20 40 60 80 100 200 km.

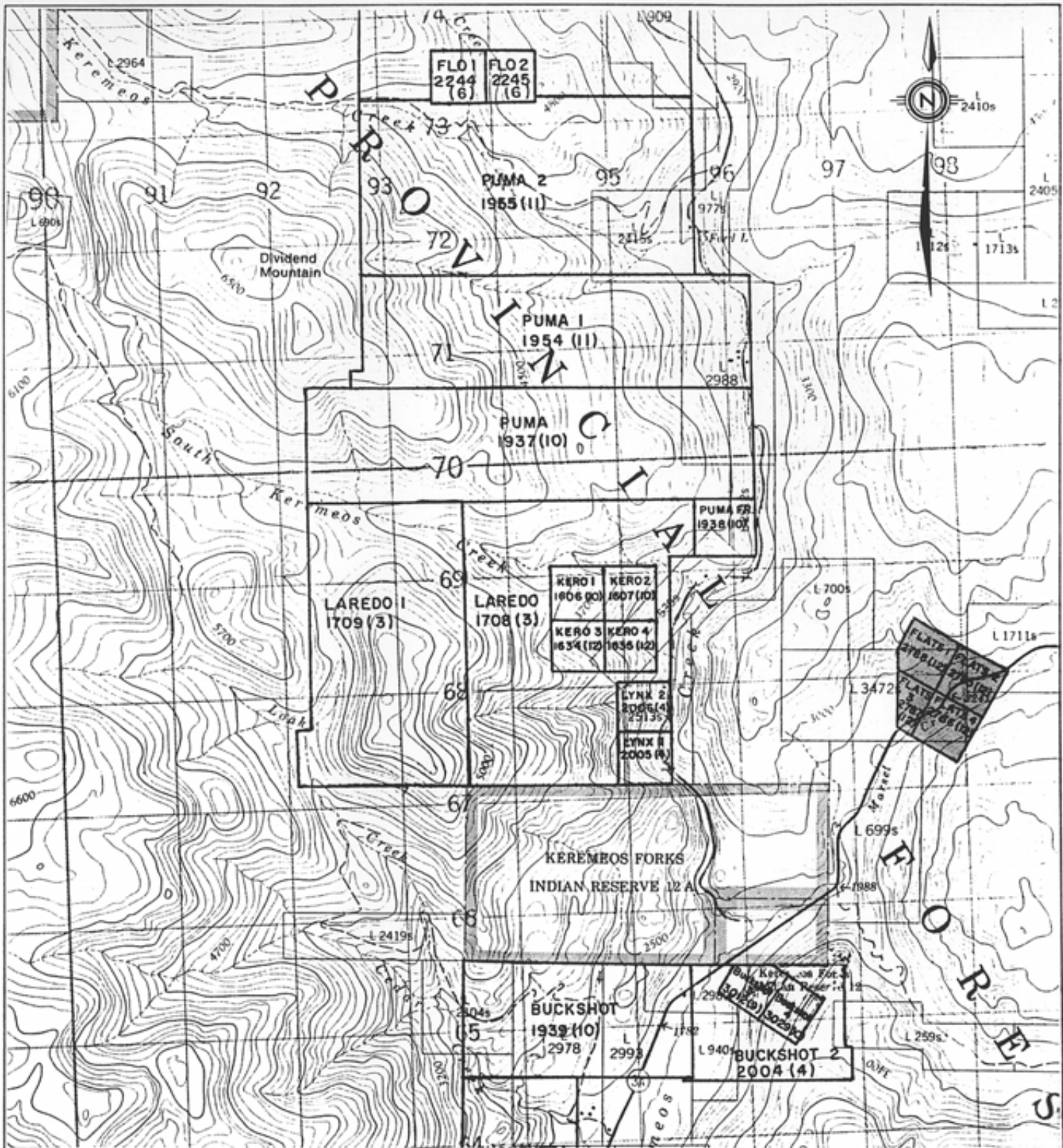
4.0 CLAIM INFORMATION

The Flats claim group consists of 4 claims as shown in the following table:

<u>CLAIM NAME</u>	<u>#UNITS</u>	<u>RECORD#</u>	<u>RECORD DATE</u>	<u>EXPIRY DATE</u>	
FLATS #1	1	2788	08DEC87	08DEC92	**
FLATS #2	1	2785	08DEC87	08DEC92	**
FLATS #3	1	2787	08DEC87	08DEC92	**
FLATS #4	1	2786	08DEC87	08DEC92	**

** New Expiry Date Pending Acceptance of This Report

Claims are shown in Figure 4-1.



PROJ. # GRASS-4

GRAND NATIONAL RESOURCES INC.
FLATS PROPERTY
CLAIM MAP

BURTON CONSULTING INC.

DRAWN: D.F.S./dw

SCALE: 1:50,000

FIG.

DATE: DEC. 19, 1988

N.T.S. 82E/5

4-1



0 500 1000 2000 3000 METRES

5.0 HISTORY & PREVIOUS WORK

There is some evidence of old diggings on the claims, but there are no records of this work available.

6.0 GEOLOGY

The geology of the claim area is shown in Figure 6-1. The property is underlain by sediments and clastic volcanic rocks of the Triassic Shoemaker Formation and by Jurassic ultrabasic rocks which include pyroxenites, hornblendites and serpentinites.



PROJ. # GRASS-4

TERTIARY

13 MARRON FORMATION: Mainly basalt & andesite

12 SPRINGBROOK: Mainly conglomerate; sandstone, shale, tuff, talus deposits

POST-TRIASSIC

9 GRANODIORITE

7 Mainly diorite; gabbro, quartz diorite

TRIASSIC or OLDER

4 OLD TOM FORMATION: Mainly basalt & andesite; related dioritic intrusives; chert

3 SHOEMAKER FORMATION: Mainly chert, greenstone, limestone

A Massive limestone, breccia, conglomerate (at base). Unconformably overlies (3) & (4), age unknown

GRAND NATIONAL RESOURCES INC.

FLATS PROPERTY

REGIONAL GEOLOGY MAP

BURTON CONSULTING INC.

DRAWN: D.F.S./dw

SCALE: 1:50,000

FIG.

DATE: DEC. 19, 1988

N.T.S. 82E/5

5-1

7.0 GEOCHEMICAL SOIL SURVEY

During the 1988 field season a total of 56 geochemical soil samples were collected at 50 metre intervals on 2.55 kilometres of grid line established on the claim group. The samples were analysed at Chemex Laboratories of North Vancouver, B.C. for Au, Cu, Pb, Zn, Ag and W. Sample results are shown in Figures 7-1A through 7-1F and a discussion of the results follows:

GOLD(Au):

Sample Preparation: screen to -80 mesh
 Analytical Method: fire assay/atomic absorption
 Detection Limit: 5 ppb
 Note: samples with values less than detection limit were set at 1 ppb for statistical purposes

Arithmetic and logarithmic histograms for Au were previewed on the computer. A total of 40 samples were at the detection limit. Many of the histogram "bins" were absent of data. Visual examination of the histogram was employed to choose a contour interval which best reflected the interface between background and anomalous sample values as follows:

Population	From(ppb)	To(ppb)
Background	Detection Limit	20
Anomalous	20	>20

Sample results are shown in Figure 7-1A. There is a small multi-sample Au anomaly at the northeast corner of the survey grid.

COPPER(Cu):

Sample Preparation: screen to -80 mesh
 Analytical Method: nitric-perchloric digestion
 atomic absorption
 Detection Limit: 1 ppm

Arithmetic and logarithmic histograms for Cu were previewed on the computer. The distribution for Cu is lognormal. A probability plot of logarithmic Cu values indicated 3 populations, from which contour intervals could be established as follows:

Population	From (ppm)	To (ppm)
Background (I)	25	96
Background (II)	75	125
Anomalous	125	>125

Sample results are shown in Figure 7-1B. Only scattered single sample anomalies are present on the survey grid.

LEAD (Pb):

Sample Preparation: screen to -80 mesh
 Analytical Method: nitric-perchloric digestion
 atomic absorption
 Detection Limit: 1 ppm

Arithmetic and logarithmic histograms for Pb were previewed on the computer. The distribution for Pb is lognormal. A probability plot of logarithmic Pb values indicated 3 populations, from which contour intervals could be established as follows:

Population	From (ppm)	To (ppm)
Anomalous Low	3	6
Background	6	18
Anomalous	18	>18

Sample results are shown in Figure 7-1C. A single multi-sample anomaly occurs on the west edge of the survey grid, with 5 anomalous samples up to 54 ppm.

ZINC (Zn):

Sample Preparation: screen to -80 mesh
 Analytical Method: nitric-perchloric digestion
 atomic absorption
 Detection Limit: 1 ppm

Arithmetic and logarithmic histograms for Zn were previewed on the computer. The distribution for Zn is lognormal. A probability plot of logarithmic Zn values indicated 3 populations, from which contour intervals could be established as follows:

Population	From (ppm)	To (ppm)
Anomalous Low	63	77
Background	77	205
Anomalous	205	>205

Sample results are shown in Figure 7-1D. A single multi-sample anomaly occurs on the west edge of the survey grid, coincident with the Pb anomaly, with 6 anomalous values up to 410 ppm Zn.

SILVER (Ag):

Sample Preparation: screen to -80 mesh
 Analytical Method: aqua regia digestion
 atomic absorption
 Detection Limit: 0.1 ppm

Arithmetic and logarithmic histograms for Ag were previewed on the computer. The data exhibited missing values in many of the histogram "bins". The distribution for Ag is probably lognormal. Visual examination of the histogram of logarithmic values was used to choose an anomalous contour value as follows:

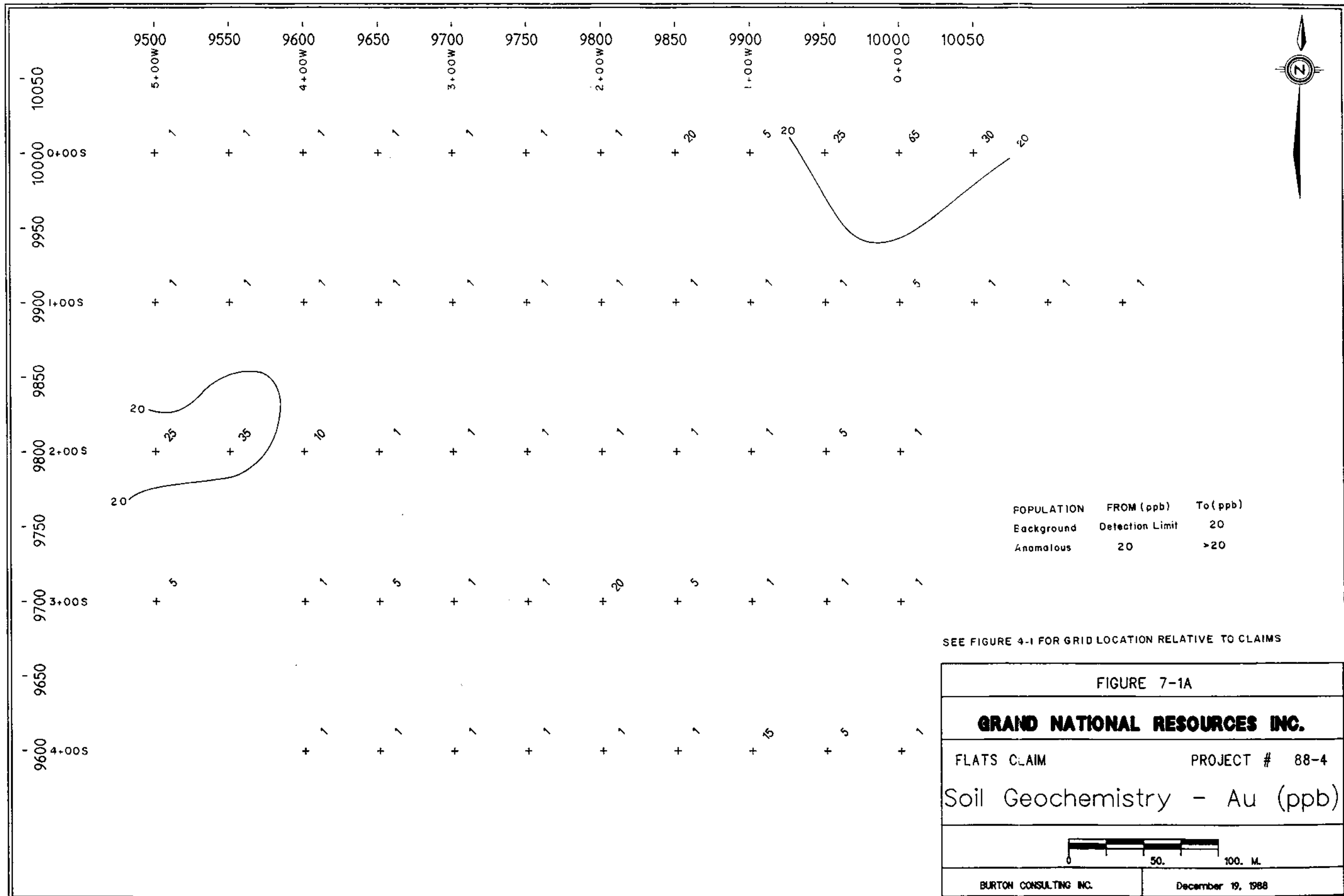
Population	From (ppm)	To (ppm)
Background	Detection Limit	0.7
Anomalous	0.7	>0.7

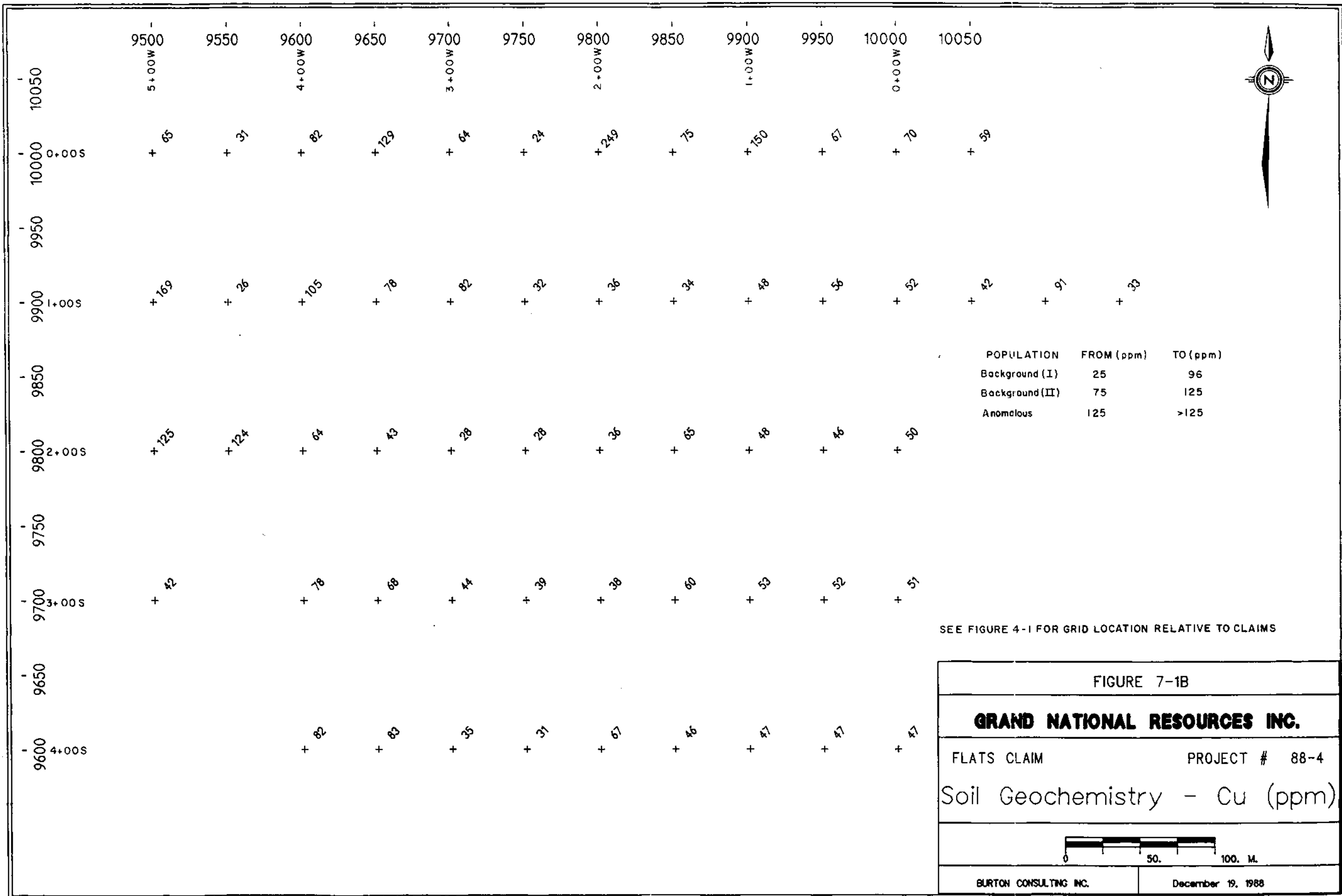
Sample results are shown in Figure 7-1E. A single multi-sample anomaly occurs on the west edge of the survey grid coincident with the Pb and Zn anomalies, with 3 anomalous values up to 2.2 ppm.

TUNGSTEN (W):

Sample Preparation: screen to -80 mesh
 Analytical Method: nitric-perchloric digestion
 atomic absorption
 Detection Limit: 1 ppm

Visual examination of the data detected no significant anomalous values.

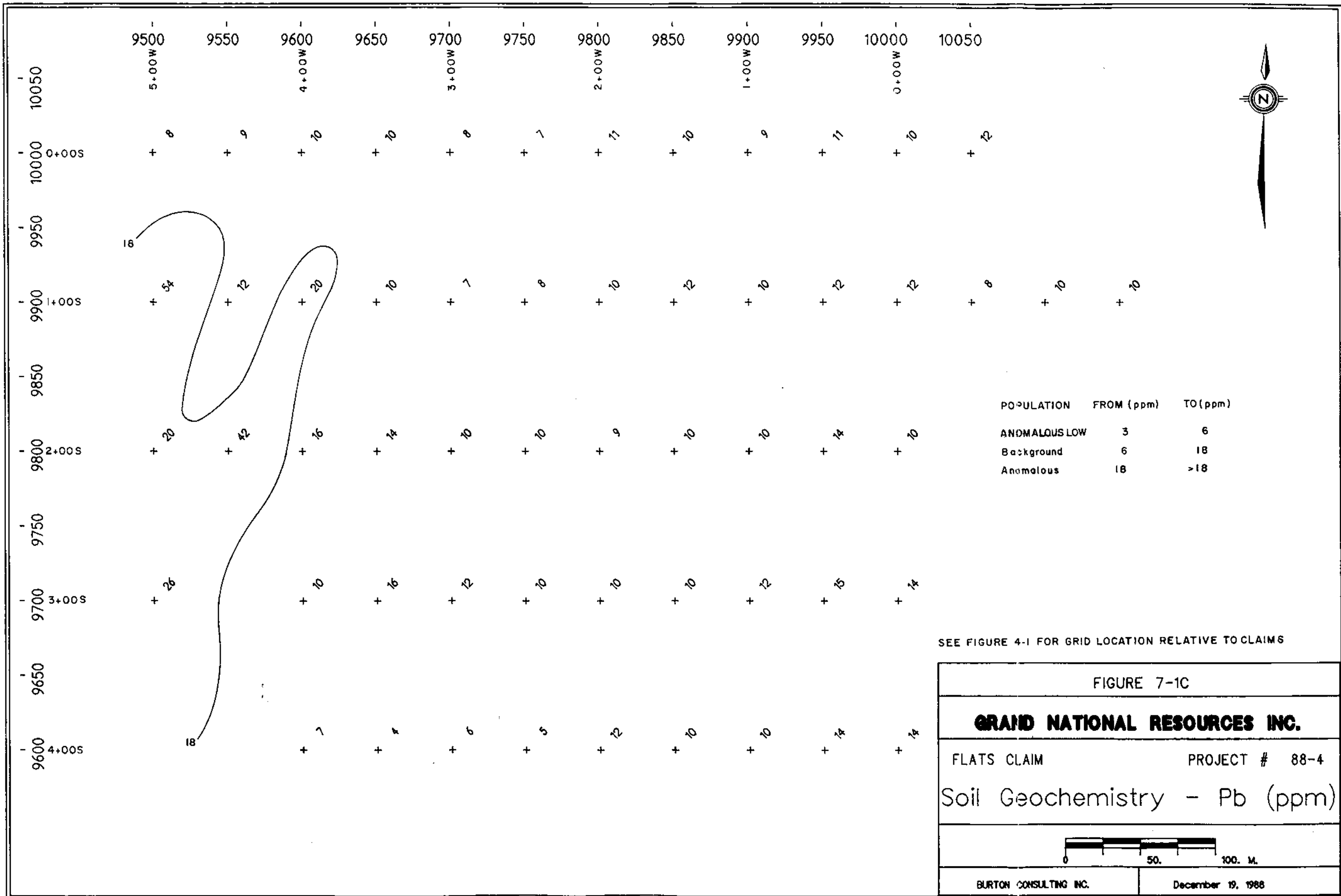




POPULATION	FROM (ppm)	TO (ppm)
Background (I)	25	96
Background (II)	75	125
Anomalous	125	>125

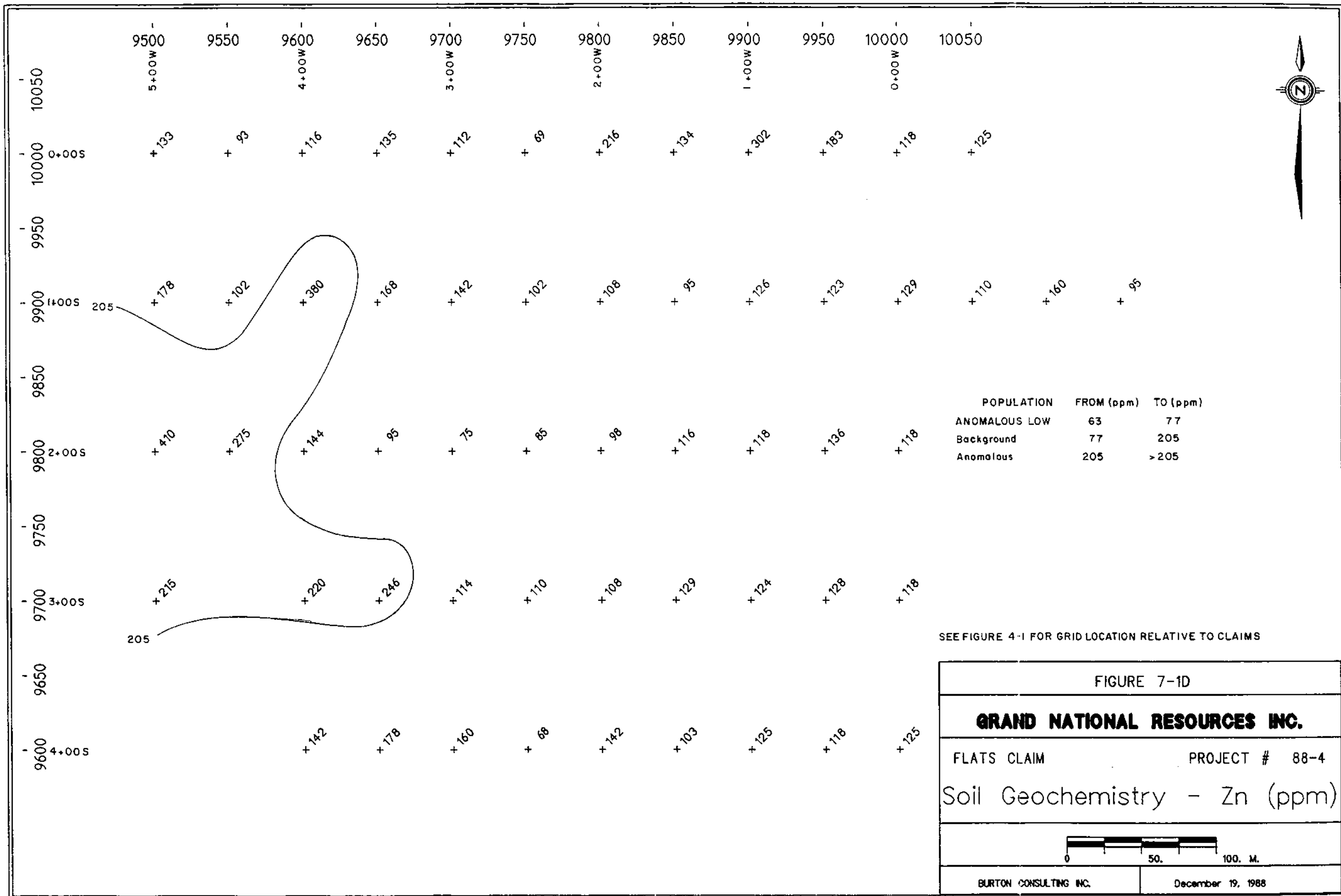
SEE FIGURE 4-1 FOR GRID LOCATION RELATIVE TO CLAIMS

FIGURE 7-1B	
GRAND NATIONAL RESOURCES INC.	
FLATS CLAIM	PROJECT # 88-4
Soil Geochemistry - Cu (ppm)	
BURTON CONSULTING INC.	December 19, 1988

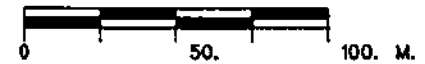


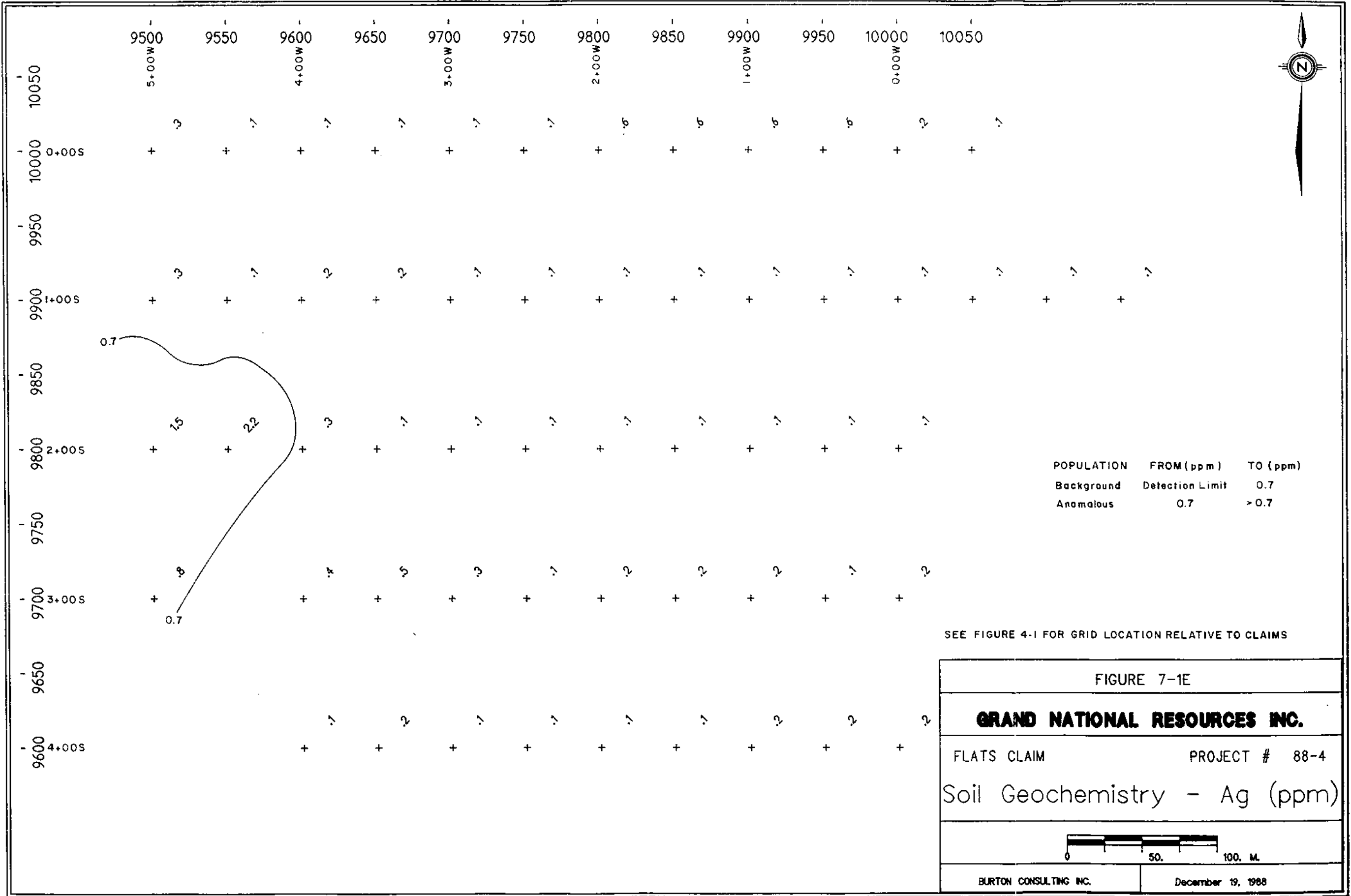
SEE FIGURE 4-1 FOR GRID LOCATION RELATIVE TO CLAIMS

FIGURE 7-1C	
GRAND NATIONAL RESOURCES INC.	
FLATS CLAIM	PROJECT # 88-4
Soil Geochemistry - Pb (ppm)	
BURTON CONSULTING INC.	December 19, 1988



SEE FIGURE 4-1 FOR GRID LOCATION RELATIVE TO CLAIMS

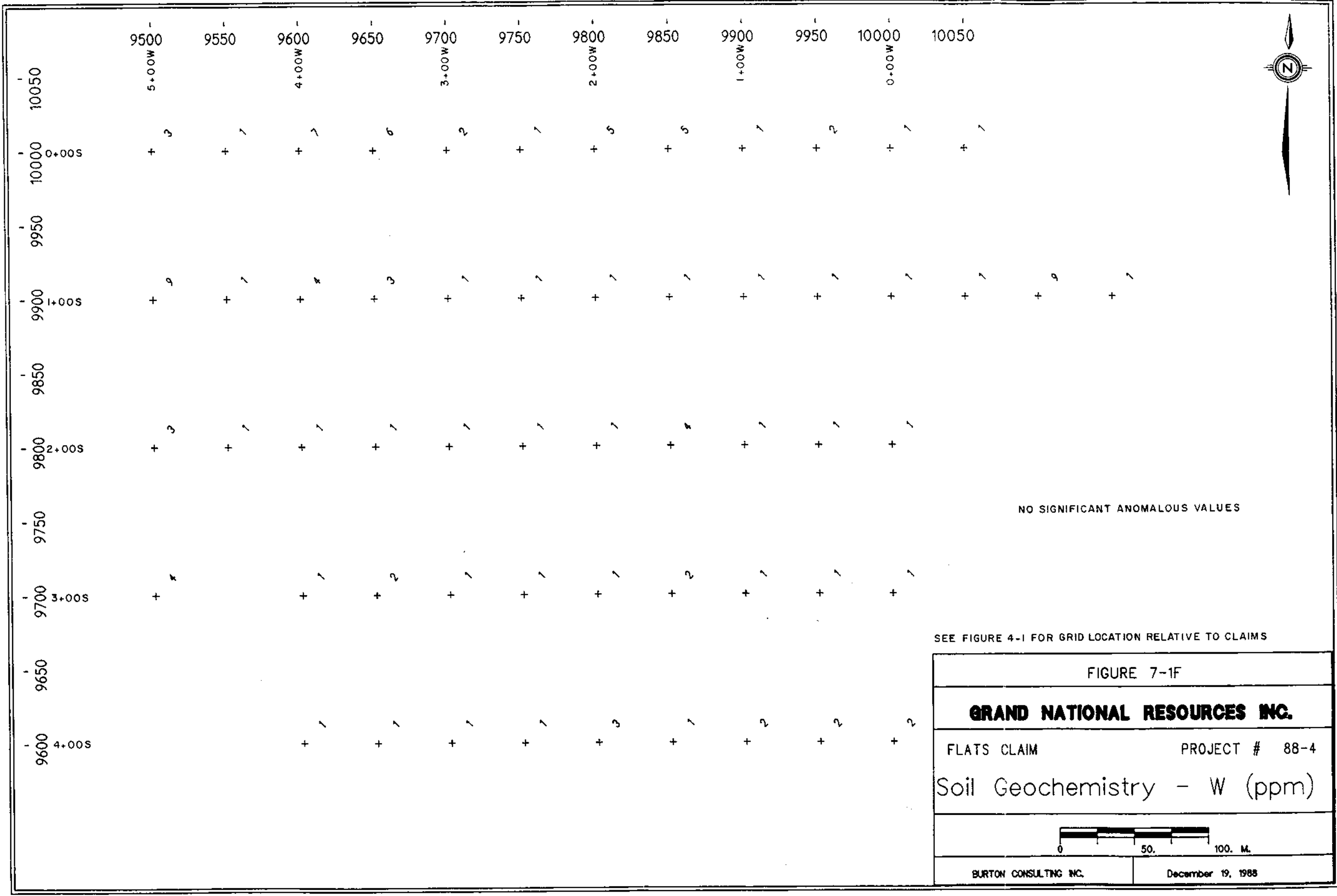
FIGURE 7-1D	
GRAND NATIONAL RESOURCES INC.	
FLATS CLAIM	PROJECT # 88-4
Soil Geochemistry - Zn (ppm)	
	
BURTON CONSULTING INC.	December 19, 1988



POPULATION	FROM (ppm)	TO (ppm)
Background	Detection Limit	0.7
Anomalous	0.7	>0.7

SEE FIGURE 4-1 FOR GRID LOCATION RELATIVE TO CLAIMS

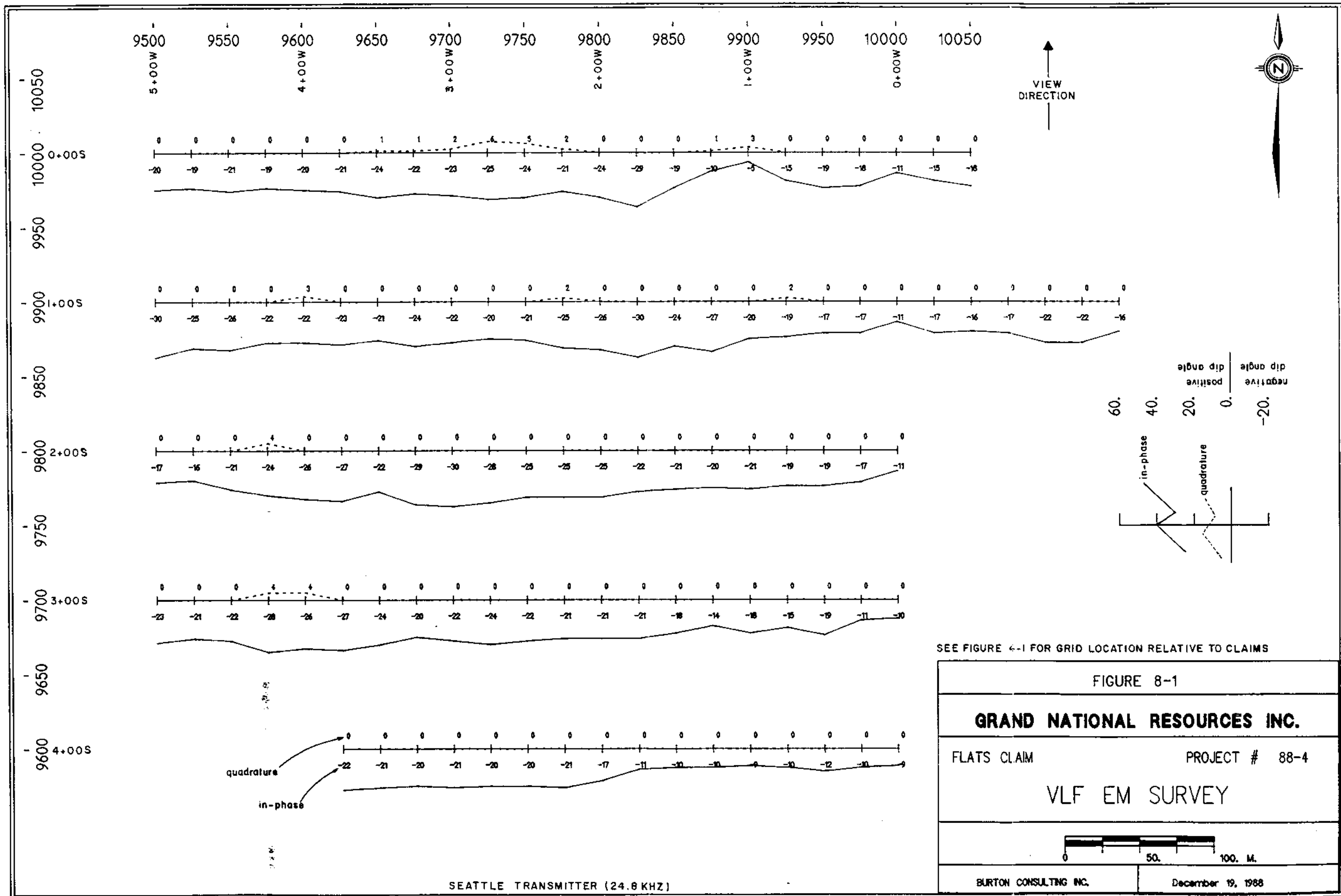
FIGURE 7-1E	
GRAND NATIONAL RESOURCES INC.	
FLATS CLAIM	PROJECT # 88-4
Soil Geochemistry - Ag (ppm)	
BURTON CONSULTING INC.	December 19, 1988



8.0 VLF-EM SURVEY

A VLF-EM survey was carried out using the same control grid as employed for geochemical sampling. In-phase, quadrature and field strength readings were taken using a **Sabre Model 27** receiver and **Seattle** transmitter(24.8 mHZ). A total of 2.55 kilometres of lines were read at 25 metre spacing. Results are shown in Figure 8-1.

The VLF-EM survey gave no conclusive results.



9.0 DISCUSSION & RECOMMENDATIONS

A multi-sample lead, zinc and silver geochemical anomaly occurs on the west edge of the 1988 survey grid.

No VLF-EM anomalies were detected on the survey grid.

The status of the mineral claims adjoining the Flats claim group to the west should be monitored closely. If this ground were available to Grand National Resources Inc., either outright by staking or under some type of joint-venture arrangement, further examination of the Pb, Zn, Ag anomaly would be recommended.

10.0 COST BREAKDOWN

The following cost breakdown was prepared by a representative of Grand National Resources Inc. from information supplied in part by Burton Consulting Inc.

GRAND NATIONAL RESOURCES INC.

Suite 905 - 626 West Pender Street, Vancouver, B.C. Canada V6B 1V9 Telephone (604) 682-5648 Fax (604) 682-5649

Flats Mineral Claims 1 to 4 Osoyoos Mining Division

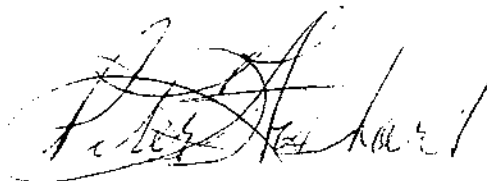
Work completed on the above noted claims and expenses incurred .

Work was done on November 19, 20 & 21.

Supervision Personnel:

Burton Consulting Inc	\$ 450.00 per day
Alex Burton, P.Eng.,	
Doug. Symonds, Geologist	
L.M Schram, field manager	\$200.00 per day
I.R. Schram, field assistant	\$150.00 per day

Burton Consulting Inc	3 days	\$ 1,350.00
Field manager & VLF-EM Operator	3 days	600.00
Field assisitant & soil sampler	2 days	300.00
Lodging and board @ \$70.00 per day	5 man/days	350.00
Truck rental 4X4 @ \$100.00 per day	3 days	300.00
Assaying and analysis	56 samples	938.00
Drafting, report writing and printing		350.00
		4,188.00




BURTON CONSULTING INC.

11.0 CERTIFICATE

I, Douglas Frederick Symonds, of 10081 - 120th Street, Surrey, B.C. do certify that:

1. I am a geologist and a graduate of the University of British Columbia(B.Sc.(Geol.), 1972).
2. I have practised my profession in Canada and the United States since 1972.
3. I have based this report on field work carried out by qualified personnel under my supervision during November, 1988.
4. I have no personal interest, directly or indirectly in the property or securities of Grand National Resources Inc. nor do I expect to receive any such interest, directly or indirectly in any such property or securities.

Dated this 19th day of December, 1988 in Vancouver, B.C.



DOUGLAS F. SYMONDS, B.SC.(Geol.)
Geologist

APPENDIX I
GEOCHEMICAL ANALYSIS CERTIFICATES

BURTON CONSULTING INC.



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

To: GRAND NATIONAL RESOURCES INC.

905 - 626 W. PENDER ST.
VANCOUVER, BC
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Project:

Comments: CC:A BURTON NOTE: SMPLS WERE SIEVED TO -10 MESH THEN GROUND

**Page No. : 1
Tot. Pages: 5
Date : 7-DEC-88
Invoice #: 1-8828072
P.O. # : NONE

Flats

CERTIFICATE OF ANALYSIS A8828072

SAMPLE DESCRIPTION	PREP CODE	Au ppb FA+AA	Cu ppm	Pb ppm	Zn ppm	Ag ppm Aqua R	W ppm				
F/L00 BLE	217	---	65	70	10	118	0.2	1			
F/L00 050E	217	---	30	59	12	125	0.1	1			
F/L00 050W	217	---	25	67	11	183	0.6	2			
F/L00 100W	217	---	5	150	9	302	0.6	1			
F/L00 150W	217	---	20	75	10	134	0.6	5			
F/L00 200W	217	---	<	249	11	216	0.6	5			
F/L00 250W	217	---	<	24	7	69	0.1	1			
F/L00 300W	217	---	<	64	8	112	0.1	2			
F/L00 350W	217	---	<	129	10	135	0.1	6			
F/L00 400W	217	---	<	82	10	116	0.1	7			
F/L00 450W	217	---	<	31	9	93	0.1	1			
F/L00 500W	217	---	<	65	8	133	0.3	3			
F/L1S BLE	217	---	<	52	12	129	0.1	1			
F/L1S 050E	217	---	<	42	8	110	0.1	1			
F/L1S 100E	217	---	<	91	10	160	0.1	9			
F/L1S 150E	217	---	<	33	10	95	0.1	1			
F/L1S 050W	217	---	<	56	12	123	0.1	1			
F/L1S 100W	217	---	<	48	10	126	0.1	1			
F/L1S 150W	217	---	<	34	12	95	0.1	1			
F/L1S 200W	217	---	<	36	10	108	0.1	1			
F/L1S 250W	217	---	<	32	8	102	0.1	1			
F/L1S 300W	217	---	<	82	7	142	0.1	1			
F/L1S 350W	217	---	<	78	10	168	0.2	3			
F/L1S 400W	217	---	<	105	20	380	0.2	4			
F/L1S 450W	217	---	<	26	12	102	0.1	1			
F/L1S 500W	217	---	<	169	54	178	0.3	9			
F/L2S BLW	217	---	<	50	10	118	0.1	1			
F/L2S 050W	217	---	<	46	14	136	0.1	1			
F/L2S 100W	217	---	<	48	10	118	0.1	1			
F/L2S 150W	217	---	<	65	10	116	0.1	4			
F/L2S 200W	217	---	<	36	9	98	0.1	1			
F/L2S 250W	217	---	<	28	10	85	0.1	1			
F/L2S 300W	217	---	<	28	10	75	0.1	1			
F/L2S 350W	217	---	<	43	14	95	0.1	1			
F/L2S 400W	217	---	10	64	16	144	0.3	1			
F/L2S 450W	217	---	35	124	42	275	2.2	1			
F/L2S 500W	217	---	25	125	20	410	1.5	3			
F/L3S BL	217	---	<	51	14	118	0.2	1			
F/L3S 050	217	---	<	52	15	128	0.1	1			
F/L3S 100	217	---	<	53	12	124	0.2	1			

CERTIFICATION: *Hart Buchler*



Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers

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P.O. #: NONE

Project :

Comments: CC:A. BURTON NOTE: SMPLS WERE SIEVED TO -10 MESH THEN GROUND

CERTIFICATE OF ANALYSIS A8828072

SAMPLE DESCRIPTION	PREP CODE	Au ppb FA+AA	Cu ppm	Pb ppm	Zn ppm	Ag ppm Aqua R	W ppm				
F/L3S 150	217	---	5	60	10	129	0.2	2			
F/L3S 200	217	---	< 20	38	10	108	0.2	1			
F/L3S 250	217	---	< 5	39	10	110	0.1	1			
F/L3S 300	217	---	< 5	44	12	114	0.3	1			
F/L3S 350	217	---	5	68	16	246	0.5	2			
F/L3S 400	217	---	< 5	78	10	220	0.4	1			
F/L3S 500	217	---	5	42	26	215	0.8	4			
F/L4S BL	217	---	< 5	47	14	125	0.2	2			
F/L4S 050W	217	---	5	47	14	118	0.2	2			
F/L4S 100W	217	---	15	47	10	125	0.2	2			
F/L4S 150W	217	---	< 5	46	10	103	0.1	1			
F/L4S 200W	217	---	< 5	67	12	142	0.1	3			
F/L4S 250W	217	---	< 5	31	5	68	0.1	1			
F/L4S 300W	217	---	< 5	35	6	160	0.1	1			
F/L4S 350W	217	---	< 5	83	4	178	0.2	1			
P/L4S BLE	217	---	< 15	41	2	92	0.1	2			
P/L4S 050E	217	---	< 5	73	4	83	0.1	1			
P/L4S 100E	217	---	< 5	38	10	110	0.1	2			
P/L4S 150E	217	---	< 5	200	2	94	0.1	3			
P/L4S 200E	217	---	< 5	36	8	70	0.1	1			
P/L4S 250E	217	---	< 5	34	4	103	0.1	1			
P/L4S 300E	217	---	< 10	32	4	67	0.1	1			
P/L4S 050W	217	---	< 5	88	4	169	0.1	7			
P/L4S 100W	217	---	< 5	140	4	184	0.1	6			
P/L4S 150W	217	---	< 5	97	2	147	0.1	5			
P/L4S 200W	217	---	< 5	93	1	140	0.3	4			
P/L4S 250W	217	---	< 5	55	4	179	0.1	2			
P/L4S 300W	217	---	< 5	45	4	238	0.1	1			
P/L4S 350W	217	---	< 5	46	4	385	0.1	1			
P/L4S 400W	217	---	5	57	2	200	0.1	1			
P/L5S BLE	217	---	< 25	52	1	150	0.1	1			
P/L5S 050E	217	---	< 5	32	4	117	0.1	1			
P/L5S 100E	217	---	< 5	26	4	115	0.1	1			
P/L5S 150E	217	---	< 5	64	3	120	0.2	4			
P/L5S 200E	217	---	< 5	85	4	143	0.2	1			
P/L5S 250E	217	---	< 15	99	4	243	0.1	3			
P/L5S 050W	217	---	< 5	26	2	80	0.1	2			
P/L5S 100W	217	---	< 5	47	2	98	0.1	2			
P/L5S 150W	217	---	< 5	42	4	159	0.1	1			
P/L5S 200W	217	---	< 5	61	3	120	0.1	5			

CERTIFICATION :

Hart Becker

APPENDIX II

VLF-EM FIELD NOTES

BURTON CONSULTING INC.

FLATS

NOV. 20/38

L.O.O.

SEATTLE

GAIN 09

STA.	X	F.	ES	Q
F/500 W.	- 20		60	
F/475 W.	- 19		62	
450 W.	- 21		64	
425	- 19		60	
400	- 20		60	
375	- 21		61	
350	- 24		59	1
325	- 22		58	1
300	- 23		60	2
275	- 25		55	6
250	- 24		57	5
225	- 21		56	2
200	- 24		53	
175	- 29		53	
150	- 19		48	
125	- 10		47	1
100	- 5		59	3
75	- 15		58	
50	- 19		49	
25	- 18		51	
B.L.	- 11		51	
25 E.	- 15		18	
50 E.	- 18		11	

FLATS

NOV. 20/88

L. 1-S

SEATTLE

GAIN 09

STA	X	F.	F.S.	Q
F./500 W.	- 30		55	
F./475 W.	- 25		61	
450 W.	- 24		54	
425	- 22		58	
400	- 22		62	3
375	- 23		61	
350	- 21		59	
325	- 24		56	
300	- 22		52	
275	- 20		51	
250	- 21		56	
225	- 25		55	2
200	- 26		50	
175	- 30		44	
150	- 24		40	
125	- 27		37	
100	- 20		37	
75	- 19		39	2
50	- 17		42	
25	- 17		41	
B.L.	- 11		42	
25 E.	- 17		29	
50 E.	- 16		29	
75 E.	- 17		32	
100	- 22		30	
125	- 22		26	
150	- 16		23	

FLATS

NO V. 21/88

L. 2-5.

SEATTLE

GAIN 29

STA.	A	F.	ES.	Q
F/500 W.	- 17		57	
F/475 W.	- 16		55	
450 W	- 21		53	
GAIN 16				
425 W.	- 24		100 +	4
400	- 26		100 +	
375	- 27		98	
350	- 22		100	
325	- 29		91	
300	- 30		71	
275	- 28		70	
250	- 25		65	
225	- 25		57	
200	- 25		52	
175	- 22		45	
150	- 21		44	
125	- 20		43	
100	- 21		43	
75	- 19		43	
50	- 19		44	
25	- 17		44	
B.L.	- 11		47	

POWER LINE AT 475W.

FLATS

NOV. 21/88

L. 3-S.

SEATTLE

BAIV 57

STA.

X

F.

F.S.

Q

F./500 W.	- 23		63	
F./475 W.	- 21		61	
450 W.	- 22		55	
425	- 28		53	4
400	- 26		50	
375	- 27		40	
350	- 24		40	
325	- 20		37	
300	- 22		40	
275	- 24		35	
250	- 22		30	
225	- 21		30	
200	- 21		30	
175	- 21		28	
150	- 18		28	
125	- 14		28	
100	- 18		30	
75	- 15		27	
50	- 19		26	
25	- 11		26	
B.L.	- 10		25	

POWER LINE AT 425 W.

FLATS

NOV. 21/88

L. 4-3.

SEATTLE

GAIN 09

STA.	X	F.	F.S.	Q
F./375 W.	- 22		12	
F./350 W.	- 21		16	
325 W.	- 20		20	
300	- 21		20	
275	- 20		22	
250	- 20		25	
225	- 21		26	
200	- 17		28	
175	- 11		13	
150	- 10		15	
125	- 10		15	
100	- 9		16	
75	- 10		17	
50	- 12		18	
25	- 10		20	
B.L.	- 9		17	

APPENDIX III

STATISTICAL ANALYSIS OF GEOCHEMICAL DATA

BURTON CONSULTING INC.

FLAT CLAIMS

SIMPLE STATISTICS

Element	Unit	n	Mean	Median	Standard Deviation	Lowest Value	Highest Value	Coef. of Var.
AU	ppb	56	5.7	1.0	11.4	1.0	65.0	1.99
CU	ppm	56	64.6	52.0	39.9	24.0	249.0	.62
PB	ppm	56	12.4	10.0	7.9	4.0	54.0	.64
ZN	ppm	56	144.6	125.0	67.7	68.0	410.0	.47
AG	ppm	56	.26	.10	.36	.10	2.20	1.39
W	ppm	56	2.05	1.00	1.95	1.00	9.00	.95

NOTE - Coefficient of Variation = Standard Deviation / Mean

FLAT CLAIMS

SIMPLE STATISTICS

LOG (Base 10) Transformed

Element	Unit	n	Mean	Median	Standard Deviation	Lowest Value	Highest Value	Coef. of Var.
AU	ppb	56	.3089	.0000	.5327	.0000	1.8129	1.72
CU	ppm	56	1.7520	1.7160	.2144	1.3802	2.3962	.12
PB	ppm	56	1.0445	1.0000	.1837	.6021	1.7324	.18
ZN	ppm	56	2.1265	2.0969	.1615	1.8325	2.6128	.08
AG	ppm	56	-.7669	-1.0000	.3341	-1.0000	.3424	-.44
W	ppm	56	.1920	.0000	.2919	.0000	.9542	1.52

NOTE - Coefficient of Variation = Standard Deviation / Mean

 SUMMARY STATISTICS and HISTOGRAM LOGARITHMIC VALU

Variable = AU Unit = ppb N = 56

Mean = 0.3089 Min = 0.0000 1st Quartile = 0.000
 Std. Dev. = 0.5327 Max = 1.8129 Median = 0.000
 CV % = 172.4104 Skewness = 1.3997 3rd Quartile = 0.699

Anti-Log Mean = 2.037 Anti-Log Std. Dev. : (-) 0.59
 (+) 6.94

=====				
%	cum %	antilog	cls int	(# of bins = 18 - bin size = 0.106)

0.00	0.88	0.884	-0.0533	
71.43	71.05	1.131	0.0533	***** -->
0.00	71.05	1.445	0.1600	
0.00	71.05	1.848	0.2666	
0.00	71.05	2.362	0.3732	
0.00	71.05	3.019	0.4799	
0.00	71.05	3.859	0.5865	
0.00	71.05	4.934	0.6932	
12.50	83.33	6.307	0.7998	*****
0.00	83.33	8.062	0.9065	
1.79	85.09	10.306	1.0131	*
0.00	85.09	13.175	1.1197	
1.79	86.84	16.842	1.2264	*
3.57	90.35	21.529	1.3330	**
3.57	93.86	27.521	1.4397	**
3.57	97.37	35.181	1.5463	**
0.00	97.37	44.973	1.6530	
0.00	97.37	57.490	1.7596	
1.79	99.12	73.491	1.8662	*

			0	1
				2
				3

#####

SUMMARY STATISTICS and HISTOGRAM LOGARITHMIC VALUE

Variable = CU Unit = ppm N = 56

Mean = 1.7520 Min = 1.3802 1st Quartile = 1.6235
 Std. Dev. = 0.2144 Max = 2.3762 Median = 1.7160
 CV % = 12.2354 Skewness = 0.6824 3rd Quartile = 1.8921

Anti-Log Mean = 56.493 Anti-Log Std. Dev. : (-) 34.481
 (+) 92.546

```

=====
% cum % antilog cls int (# of bins = 18 - bin size = 0.0598)
-----
0.00 0.88 22.404 1.3503
1.79 2.63 25.709 1.4101 *
5.36 7.89 29.502 1.4699 ***
7.14 14.91 33.855 1.5296 ****
8.92 23.68 38.849 1.5894 *****
8.93 32.46 44.581 1.6491 *****
16.07 48.25 51.153 1.7089 *****
7.14 55.26 58.705 1.7687 ****
14.29 69.30 67.336 1.8284 *****
5.36 74.56 77.305 1.8882 ***
10.71 85.09 88.709 1.9480 *****
1.79 86.84 101.797 2.0077 *
1.79 88.60 116.815 2.0675 *
5.36 93.86 134.048 2.1273 ***
1.79 95.61 153.824 2.1870 *
1.79 97.37 176.518 2.2468 *
0.00 97.37 202.560 2.3066
0.00 97.37 232.443 2.3663
1.79 99.12 266.736 2.4261 *
-----
0 1 2 3

```

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FLAT CLAIMS

LOGARITHMIC VALUES

=====

VARIABLE = CU
UNIT = 00H
N = 36
N CI = 10

POPULATIONS

=====

Pop.	Mean	Std.Dev.	%
1	1.8881	0.1481	35.1
2	2.0334	0.0804	3.9
3	2.2277	0.1222	3.0

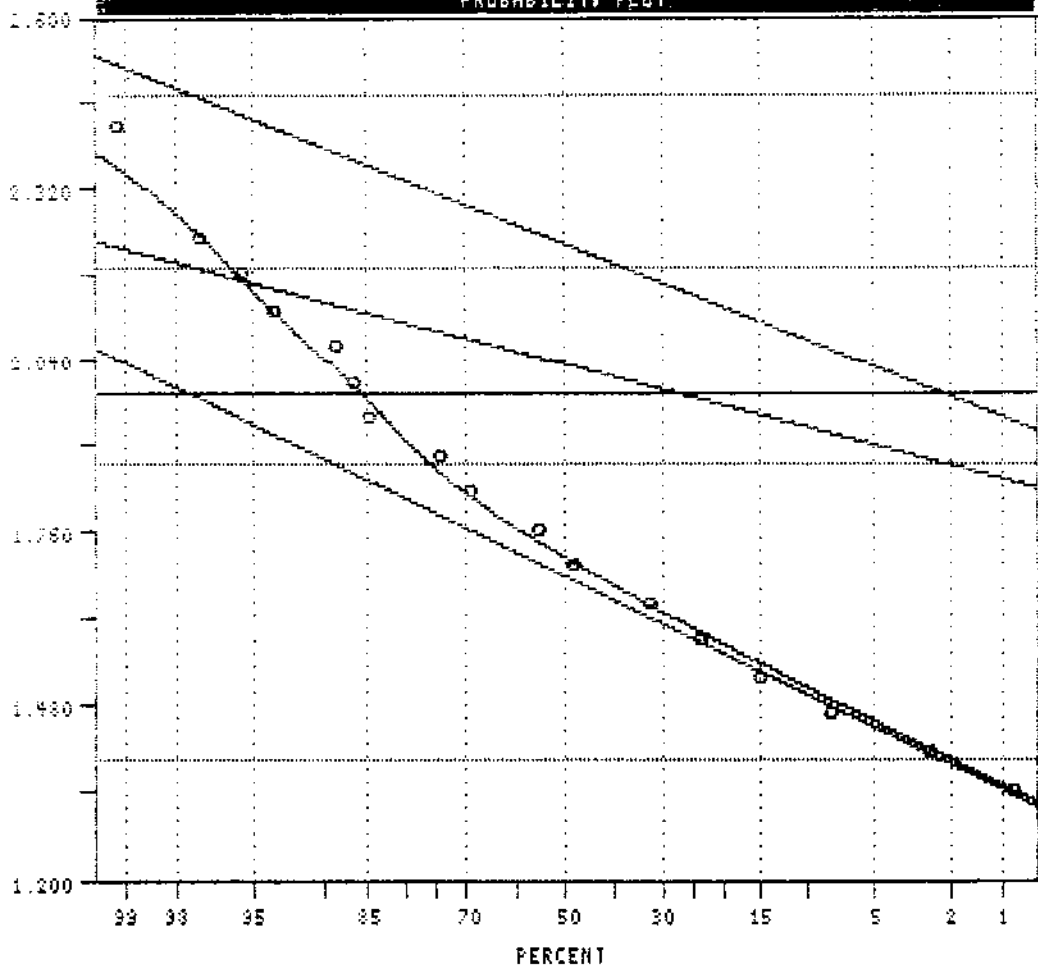
Pop. THRESHOLDS

=====

1	1.9919	1.9993
2	1.9725	2.1942
3	1.9834	2.4720

USERS VISUAL
PARAMETER ESTIMATES

PROBABILITY PLOT



#####

PARAMETER SUMMARY STATISTICS FOR PROBABILITY PLOT ANALYSIS

Data File Name = \DATA\FLATALL.PPP

Variable = CU Unit = ppm N = 56
N CI = 18

Transform = Logarithmic Number of Populations = 3

of Missing Observations = 0.

=====

Users Visual Parameter Estimates

Population	Mean	Std Dev	Percentage
1	48.768	- 34.677 + 68.534	85.10
2	107.987	- 89.732 + 129.957	3.90
3	168.924	- 127.506 + 223.797	6.00

=====

Default Thresholds.

Standard Deviation Multiplier = 2.0

Pop.	Thresholds	
1	24.657	96.453
2	74.562	156.396
3	96.243	296.493

#####

SUMMARY STATISTICS and HISTOGRAM LOGARITHMIC VALUE

Variable = FB Unit = ppm N = 56

Mean = 1.0445 Min = 0.6021 1st Quartile = 1.0000
 Std. Dev. = 0.1837 Max = 1.7324 Median = 1.0000
 CV % = 17.5867 Skewness = 1.2730 3rd Quartile = 1.0792

Anti-Log Mean = 11.080 Anti-Log Std. Dev. : (-) 7.250
 (+) 16.913

```
=====
```

%	cum %	antilog	cls int	(# of bins = 13 - bin size = 0.0665)
0.00	0.88	3.705	0.5688	
1.79	2.65	4.318	0.6353	*
1.79	4.39	5.033	0.7018	*
0.00	4.39	5.865	0.7683	
1.79	6.14	6.836	0.8348	*
5.36	11.40	7.966	0.9013	***
12.50	23.68	9.284	0.9678	*****
35.71	58.77	10.820	1.0342	*****
17.86	76.32	12.611	1.1007	*****
8.93	85.09	14.697	1.1672	*****
5.36	90.35	17.123	1.2337	***
0.00	90.35	19.962	1.3002	
3.57	93.86	23.265	1.3667	**
1.79	95.61	27.114	1.4332	*
0.00	95.61	31.599	1.4997	
0.00	95.61	36.827	1.5662	
1.79	97.37	42.920	1.6327	*
0.00	97.37	50.021	1.6991	
1.79	99.12	58.296	1.7656	*

```
-----
```

0 1 2 3

#####

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PLAT CLAIMS

LOGARITHMIC VALUES

=====

VARIABLE = PG

UNIT = MPH

n = 55

N CI = 18

POPULATIONS

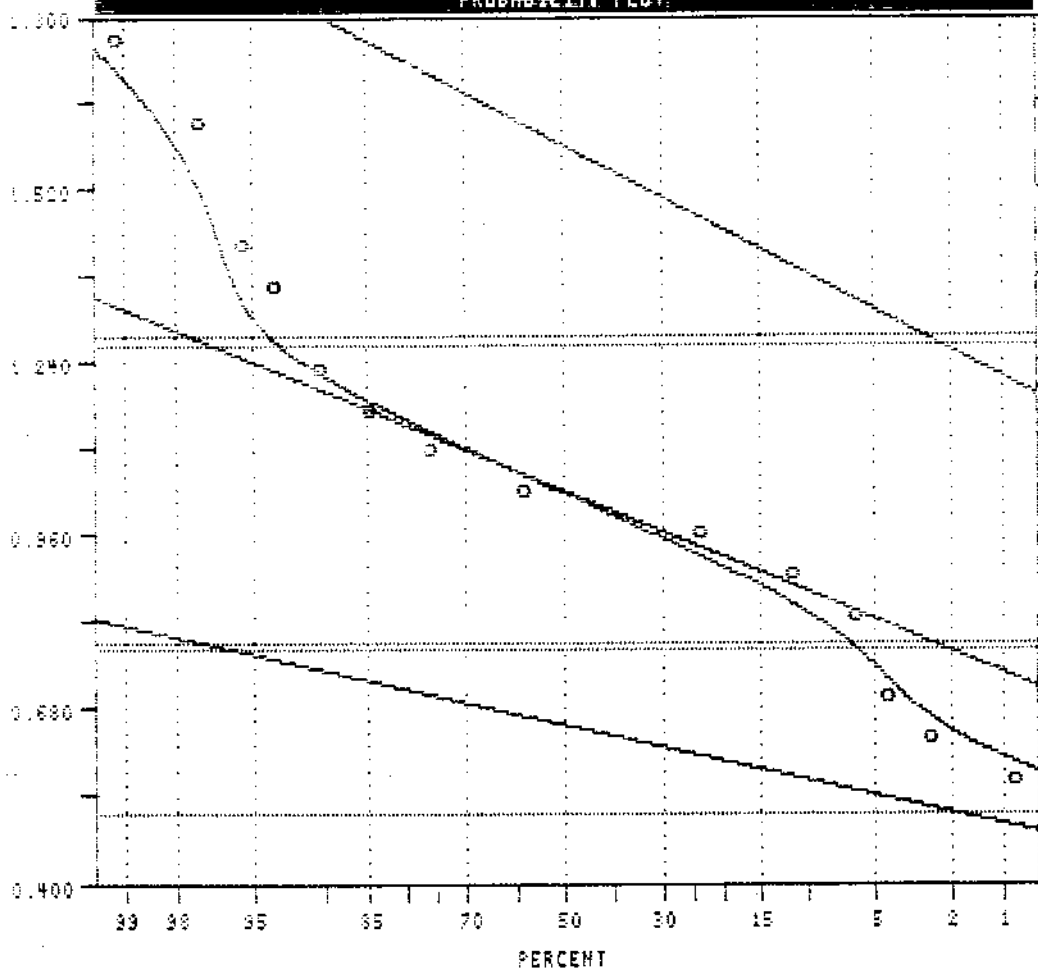
=====

Pop.	Mean	Std.Dev.	%
1	0.5505	0.0685	4.0
2	1.0290	0.1270	32.0
3	1.5902	0.1613	4.0

Pop.	THRESHOLDS	
1	0.5135	0.7826
2	0.7749	1.2931
3	1.2677	1.9127

USERS VISUAL
PARAMETER ESTIMATES

PROBABILITY PLOT



#####

PARAMETER SUMMARY STATISTICS FOR PROBABILITY PLOT ANALYSIS

Data File Name = \DATA\FLATALL.PPP

Variable = PB

Unit = ppm

N = 56

N CI = 18

Transform = Logarithmic

Number of Populations = 3

of Missing Observations = 0.

=====

Users Visual Parameter Estimates

Population	Mean	Std Dev	Percentage
1	4.472	3.819	4.00
2	10.690	7.979	92.00
3	38.923	26.849	4.00

=====

Default Thresholds.

Standard Deviation Multiplier = 2.0

Pop.	Thresholds
1	3.262 6.131
2	5.955 19.190
3	18.521 81.798

#####

 SUMMARY STATISTICS and HISTOGRAM LOGARITHMIC VALUE

Variable = ZN Unit = ppm N = 56

Mean = 2.1265 Min = 1.8325 1st Quartile = 2.0414
 Std. Dev. = 0.1613 Max = 2.6128 Median = 2.0969
 CV % = 7.5947 Skewness = 1.0295 3rd Quartile = 2.2041

Anti-Log Mean = 133.817 Anti-Log Std. Dev. : (-) 92.259
 (+) 194.095

=====				
%	cum %	antilog	cls int	(# of bins = 18 - bin size = 0.0459)

0.00	0.88	64.500	1.8096	
3.57	4.39	71.690	1.8555	**
1.79	6.14	79.681	1.9014	*
1.79	7.89	88.564	1.9473	*
8.93	16.67	98.456	1.9932	*****
8.93	25.44	109.409	2.0391	*****
19.64	44.74	121.605	2.0850	*****
21.43	65.79	135.160	2.1308	*****
8.93	74.56	150.227	2.1767	*****
3.57	78.07	166.973	2.2226	**
7.14	85.09	185.586	2.2685	****
0.00	85.09	206.273	2.3144	
5.36	90.35	229.267	2.3603	***
1.79	92.11	254.824	2.4062	*
1.79	93.86	283.230	2.4521	*
1.79	95.61	314.802	2.4980	*
0.00	95.61	349.894	2.5439	
1.79	97.37	388.897	2.5898	*
1.79	99.12	432.248	2.6357	*

			0	1
				2
				3

#####

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FLAT CLAINS

LOGARITHMIC VALUES

=====

VARIABLE = ZH

UNIT = DDM

N = 56

N CI = 10

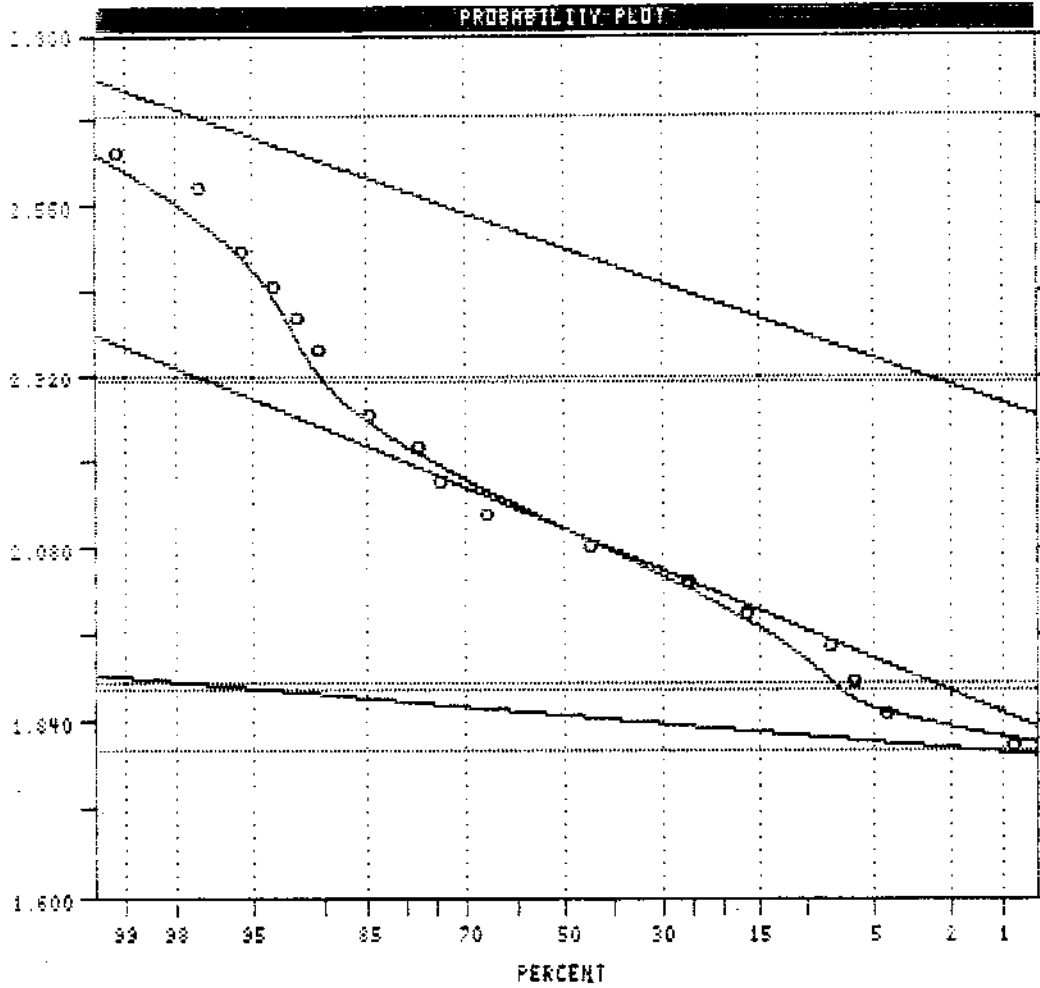
POPULATIONS

=====

Pop.	Mean	Std.Dev.	%
1	1.8488	0.0280	9.5
2	2.1060	0.1088	36.5
3	2.5006	0.0936	54.0

Pop.	THRESHOLDS	
1	1.80029	1.8947
2	1.8885	2.3236
3	2.3123	2.6878

USERS VISUAL
PARAMETER ESTIMATES



#####

PARAMETER SUMMARY STATISTICS FOR PROBABILITY PLOT ANALYSIS

Data File Name = \DATA\FLATALL.PPP

Variable = ZN Unit = ppm N = 56
N CI = 18

Transform = Logarithmic Number of Populations = 3

of Missing Observations = 0.

=====

Users Visual Parameter Estimates

Population	Mean	Std Dev	Percentage
1	70.600	66.965	5.50
2	127.652	99.372	86.50
3	316.642	255.239	8.00

=====

Default Thresholds.

Standard Deviation Multiplier = 2.0

Pop.	Thresholds
1	78.473
2	210.648
3	487.315

#####

 SUMMARY STATISTICS and HISTOGRAM LOGARITHMIC VALL

Variable = AG Unit = ppm N = 56

Mean = -0.7669 Min = -1.0000 1st Quartile = -1.0000
 Std. Dev. = 0.3341 Max = 0.3424 Median = -1.0000
 CV % = 43.5616 Skewness = 1.4432 3rd Quartile = -0.6900

Anti-Log Mean = 0.171 Anti-Log Std. Dev. : (-) 0.07
 (+) 0.36

%	cum %	antilog	cls int	(# of bins = 18 - bin size = 0.079)
0.00	0.88	0.091	-1.0395	
57.14	57.02	0.110	-0.9605	*****
0.00	57.02	0.131	-0.8816	
0.00	57.02	0.158	-0.8026	
0.00	57.02	0.189	-0.7236	
19.64	76.32	0.227	-0.6447	*****
0.00	76.32	0.272	-0.5657	
7.14	83.33	0.326	-0.4867	****
0.00	83.33	0.391	-0.4078	
1.79	85.09	0.469	-0.3288	*
1.79	86.84	0.563	-0.2498	*
7.14	93.86	0.675	-0.1709	****
1.79	95.61	0.809	-0.0919	*
0.00	95.61	0.971	-0.0129	
0.00	95.61	1.164	0.0660	
0.00	95.61	1.396	0.1450	
1.79	97.37	1.675	0.2240	*
0.00	97.37	2.009	0.3029	
1.79	99.12	2.409	0.3819	*

0 1 2 3

#####

 SUMMARY STATISTICS and HISTOGRAM LOGARITHMIC VALUES

Variable = W Unit = ppm N = 56

Mean = 0.1920 Min = 0.0000 1st Quartile = 0.0000
 Std. Dev. = 0.2919 Max = 0.9542 Median = 0.0000
 CV % = 152.0345 Skewness = 1.2284 3rd Quartile = 0.3010

Anti-Log Mean = 1.556 Anti-Log Std. Dev. : (-) 0.795
 (+) 3.047

=====

% cum % antilog cls int (# of bins = 18 - bin size = 0.0561)

%	cum %	antilog	cls int	
0.00	0.38	0.937	-0.0291	
64.29	64.04	1.067	0.0291	*****
0.00	64.04	1.214	0.0842	
0.00	64.04	1.381	0.1403	
0.00	64.04	1.572	0.1965	
0.00	64.04	1.789	0.2526	
12.50	76.32	2.036	0.3087	*****
0.00	76.32	2.317	0.3649	
0.00	76.32	2.636	0.4210	
7.14	83.33	3.000	0.4771	****
0.00	83.33	3.414	0.5333	
0.00	83.33	3.885	0.5894	
5.36	88.60	4.421	0.6455	***
3.57	92.11	5.031	0.7016	**
0.00	92.11	5.725	0.7578	
1.79	93.86	6.515	0.8139	*
1.79	95.61	7.414	0.8700	*
0.00	95.61	8.437	0.9262	
3.57	99.12	9.601	0.9823	**

0 1 2 3 4

#####

APPENDIX IV

REFERENCES

BURTON CONSULTING INC.

REFERENCES

1. Bostock, H.S.;GSC Map 628A(Olalla Sheet); 1927.
2. Bostock, H.S.;GSC Paper, Part A; 1929.
3. Camsell, C.;GSC Memoir 2; 1910.
4. Little, H.W.;GSC Map 6-1957(Kettle River); 1956.
- 5 .Little, H.W.; GSC Map 15-1961(Kettle River); 1961

BURTON CONSULTING INC.