

# 4836

GEOPHYSICAL REPORT

On The

92P/9W, 10E

BOG & FRI CLAIMS

KAMLOOPS MINING DIVISION

BRITISH COLUMBIA

For

CITIES SERVICE MINERALS CORPORATION

405 - 1200 WEST PENDER STREET

VANCOUVER 1, B. C.

WORK PERFORMED: SEPT - NOV. 1973

Located: (1)  $51^{\circ} 36'$  N,  $120^{\circ} 30'$  W

(2) N.T.S. 92P

(3) Friendly Lake Area

J. W. Murton P. Eng.

L. A. Kennedy P. Eng. (Manitoba)

December, 1973

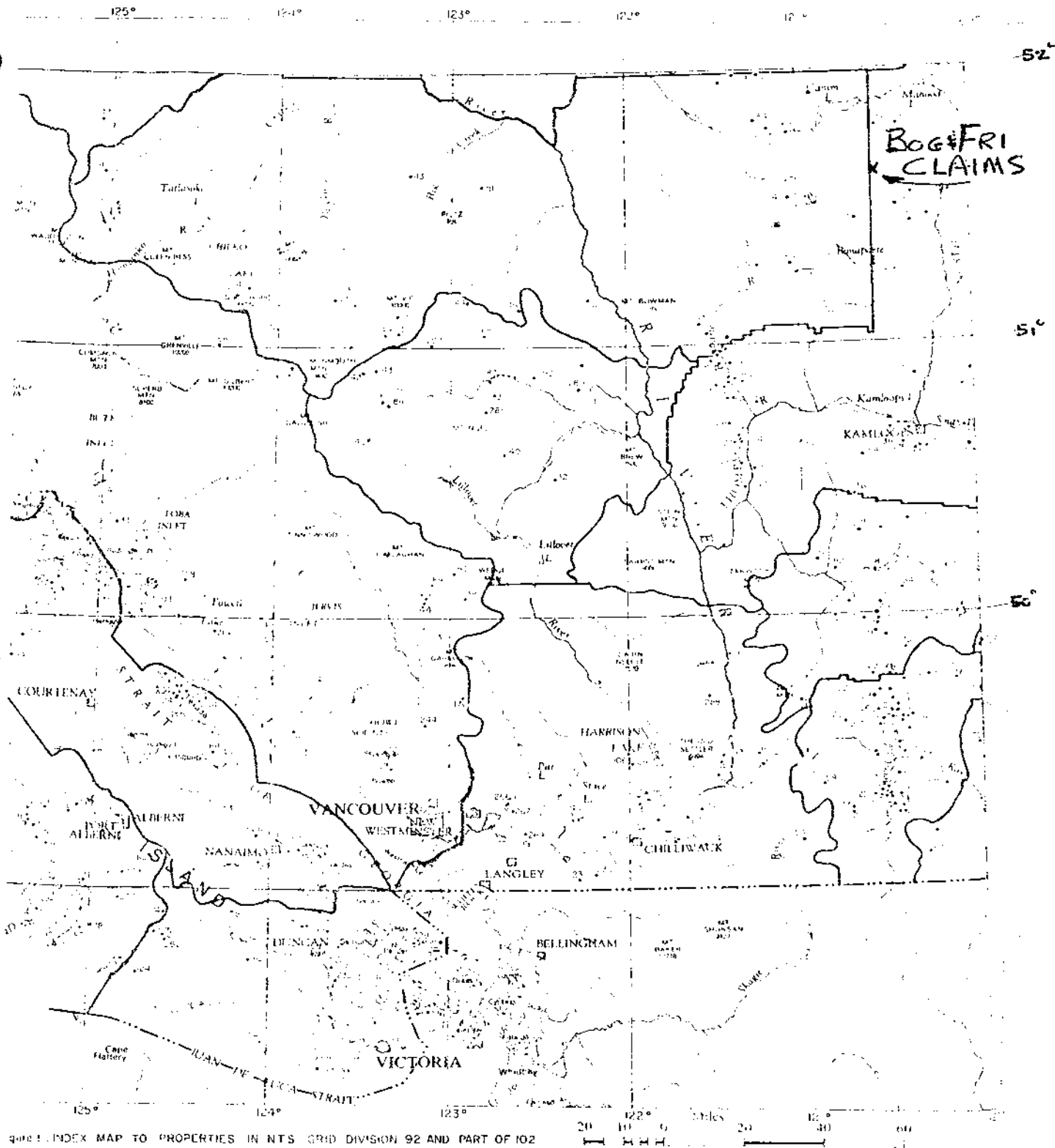
Department of  
Mineral and Petroleum Resources  
ASSESSMENT REPORT  
NO. **4836** MAP.....

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INDEX MAP TO PROPERTIES IN N.T.S. GRID DIVISION 92 AND PART OF 102

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. **4836** MAP # **18**

INTRODUCTION:

The BOG claims were staked to cover possible deposits containing copper and lead.

This report describes the results of a geophysical survey conducted on these claims during the latter portion of September and the first part of November, 1973.

The geophysical survey consisted of a frequency domain Induced Polarization survey.

Outcrop is relatively scarce, except on ridge tops in the area with much of the underlying bedrock obscured.

The area is characterized by low to moderate relief. Forest cover is extensive, and much of the low lying ground between ridges and hills is swampy.

SCOPE OF THE PRESENT WORK:

The work described in this report was undertaken in an attempt to determine the presence of economic copper or lead mineralization.

The disseminated character of the observable mineralization indicated that an Induced Polarization survey might delimit possible zones of ore grade material in economic quantities. Induced Polarization is one of the few exploratory methods capable of detecting disseminated sulphide mineralization.

A ground control grid consisting of 15 East-west cut lines and one North-South base line was established on the claim group. The cut line spacing was at 800 feet intervals.

A frequency domain induced polarization survey consisting of 109,300 feet was conducted on the fifteen cut lines.

PERSONNEL:

Mr. D. Morrison	-	I. P. Operator and Crew Chief
Mr. M. Arsenault	-	Transmitter Operator
Mr. J. Parkin	-	Helper
Mr. J. Shearer	-	Helper
Mr. G. Boggaram	-	Linechaining
Mr. B. Lennan	-	Linechaining

Office:

Mr. J. W. Murton	-	Geologist
Mr. L. A. Kennedy	-	Geophysicist

METHOD AND PROCEDURE:

The induced polarization equipment utilized for the survey consisted of a multi-frequency P660 unit manufactured by McPhar Geophysics of Don Mills, Ontario.

The I. P. field procedure employed a dipole-dipole array with a dipole spacing of 200 feet. Measurements were taken to the fourth separation to yield bedrock physical properties at depth. The frequencies employed were .31 and 5 Hertz.

Resultant observations were plotted in a typical "pseudosection" profile form at a scale of one inch equals two hundred feet, and are included in this report.

DISCUSSION OF RESULTS:

All measurements taken for line limits are to the extreme data points but do not include the outermost electrode placement limits, which would add another 1200 feet per line to the total line footage.

It should be noted that the descriptions such as low resistivity, high resistivity, etc. are relative terms only.

Line 476 N            376E-470E            9400'

A weak frequency effect anomaly exists from 445E to the end of the line at 470E.

Line 484N            446E-470E            2400'

A frequency effect anomalous response exists from 460 to 464.

Line 492N            370E-470E            10,000'

An anomalous response is recorded from 422E to 432E.

Line 500N            426E-470E            4400'

A moderate anomaly exists from 432E to the Westernmost line limit, as well as a weak anomaly extending from 451E to 470E.

Line 508N            370E-470E            10,000'

Weak frequency effects are present throughout the total line length with no particular significance accorded to any anomalous zone.

Line 516N            394E-470E            7600'

Weak frequency effect anomalies are present throughout the lines length.

Line 524N            342E-466E            12,400'

A moderate frequency effect anomaly bordering a high resistivity zone exists from 366E to 368E.

Line 532N            340E-442E            10,200

A moderate F.E. anomalous zone exists from 350E to 364E. Another moderate anomaly exist at depth from 368E to 372E.

Line 540N            339E-461E            12,200

An anomalous I.P. zone is present from 359E to 345E.

Line 548N            342E-385E            4300

A moderate frequency effect response exists from 344E to 358E. A slightly higher zone within this broad zone is situated from 346E to 348E.

Line 556N            342E-442E            10,000'

A moderate frequency effect anomaly exists at depth from 350E to the westernmost limit of the survey line. Another anomalous zone is present from 367E to 384E.

Line 564N            342E-385E            4300

A broad weak anomalous zone exists from 350E to the westernmost line limit.

Line 572N            342E-386E            4400

No anomalous responses have been recorded.

Line 580N            342-385E            4300

Weakly anomalous effects are present throughout the length of the survey line.

Line 588N            351E-385E            3400

Weak frequency effects are present throughout the length of the survey, line however, an increase is noted from 347E to the end of the line.

RECOMMENDATIONS & CONCLUSIONS:

The presence of iron sulphides throughout much of the subject area gives rise to a higher than normal Induced Polarization background.

It is recommended that, if logistic permit, a magnetometer survey be considered for the property. Magnetic information has been found to be very useful when combined with an Induced Polarization survey.

The information gathered during the course of the survey is considered to be adequate, and encouraging enough to consider to a drill program.



*Lance Kennedy*  
Lance A. Kennedy, P. Eng. (Manitoba)



STATEMENT OF EXPENDITURES INCURRED FOR ASSESSMENT PURPOSES  
ON THE BOG & FRI CLAIMS DURING THE PERIOD SEPTEMBER 27 -  
NOVEMBER 13, 1973.

PERSONNEL:

W. Murton - Supervisor, 11 days @ \$70/day	\$ 770.00
G. Boggaram - Linechaining & flagging, 12 days @ \$38/day	456.00
B. Lennan - Linechaining & flagging, 12 days @ \$28/day	336.00
D. Morrison - I. P. Contractor) - 39 days contract M. Arsenault - I.P. Operator ) - 39 days	7,800.00
J. Parkin - I.P. Helper 39 days @ \$25/day	975.00
J. Shearer - I. P. Helper 39 days @ \$28/day	1,092.00
 Camp Cost 185 man days @ \$8/man day	 1,480.00
Vehicle rentals 48/30 x \$580	928.00
Report preparation & Interpretation	875.00
Miscellaneous	250.00
	-----
	\$14,962.00
	VVVVVVVVVV

Declared before me in the

City of Vancouver

British Columbia, this 28

day of December 1973 A.D.

*John Turner*  
Sub-mining Recorder

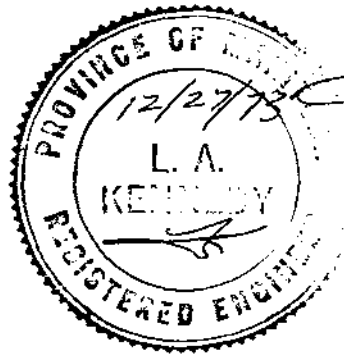
*J. W. Murton*  
J. W. Murton, P. Eng.



WRITER'S CERTIFICATE

I. LANCE A. KENNEDY, OF VANCOUVER, B. C. HEREBY CERTIFY THAT:

- (1) I am a consulting geophysicists residing at 5745 Agronomy Road, Vancouver 8, B. C.
- (2) I am a member in good standing of the Association of Professional Engineers in the Province of Manitoba.
- (3) I am a graduate of the University of British Columbia - B. Sc. Geophysics (1970) member of the Society of Exploration, Geophysicists (1967) and of the B.C. Geophysical Society. I have practised my profession for four years.
- (4) The work described in this report has been interpreted by myself.



*Lance Kennedy*  
Lance A. Kennedy, P. Eng. (Manitoba)  
Geophysicist

I, J. W. Murton, of North Vancouver, British Columbia, do hereby certify that:

I am a member of the Association of Professional Engineers of the Province of British Columbia, registered in 1972, No. 8324.

I am a graduate of the University of Manitoba with a B. Sc. in Geology.

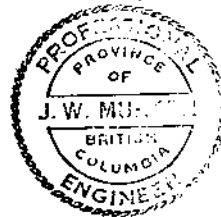
I have been a practising Engineer and Geologist since 1960 in Manitoba, Saskatchewan, British Columbia, South Western U.S.A. and Alaska.

Vancouver, B. C.

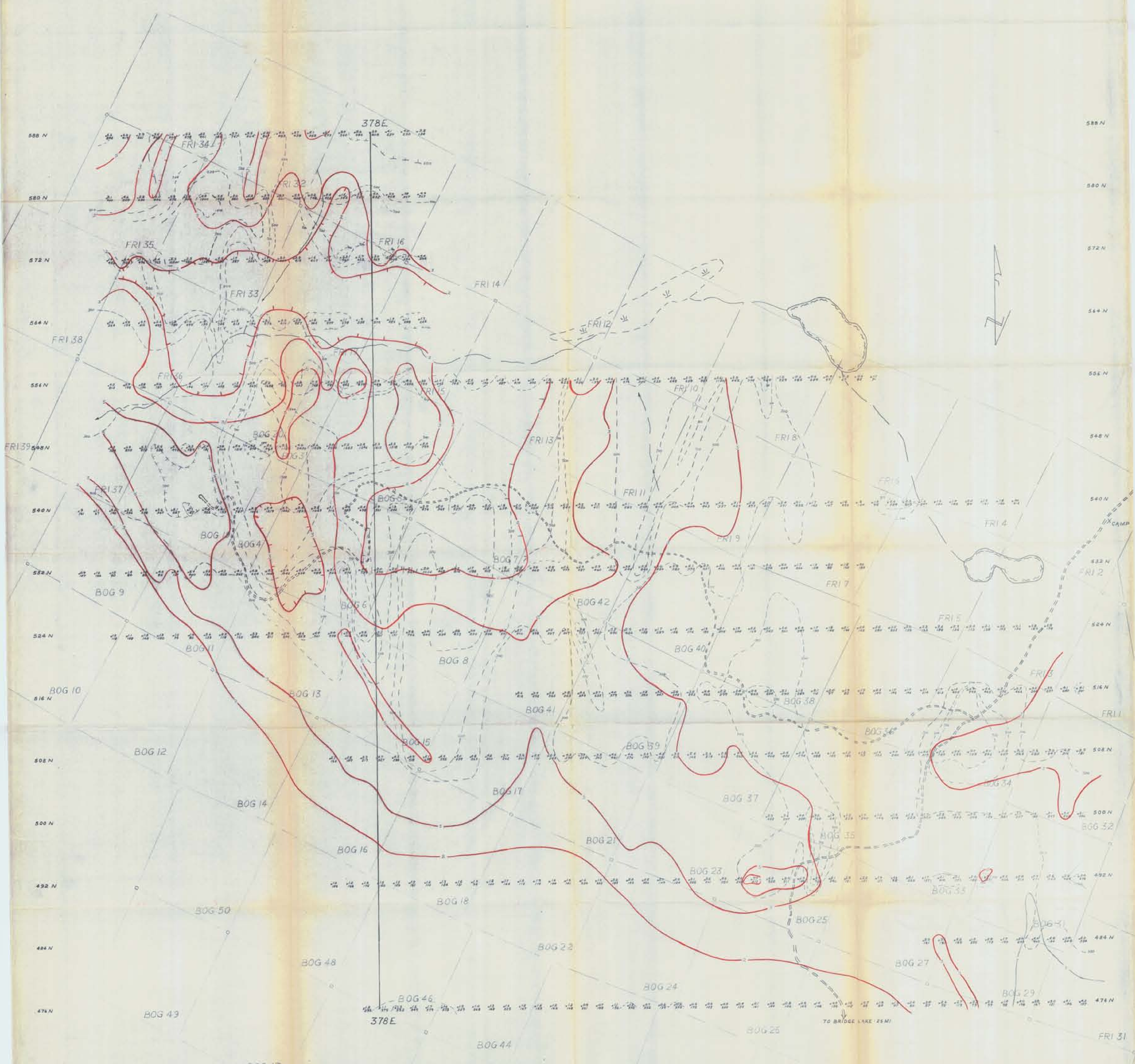
December, 1973



J. W. Murton, P. Eng.







TO ACCOMPANY GEOPHYSICAL REPORT  
ON THE BOG CLAIMS BY J. V. MURTON,  
PENG AND L. KENNEDY DATED  
DECEMBER 1978 IN THE KAMLOOPS  
M.D.



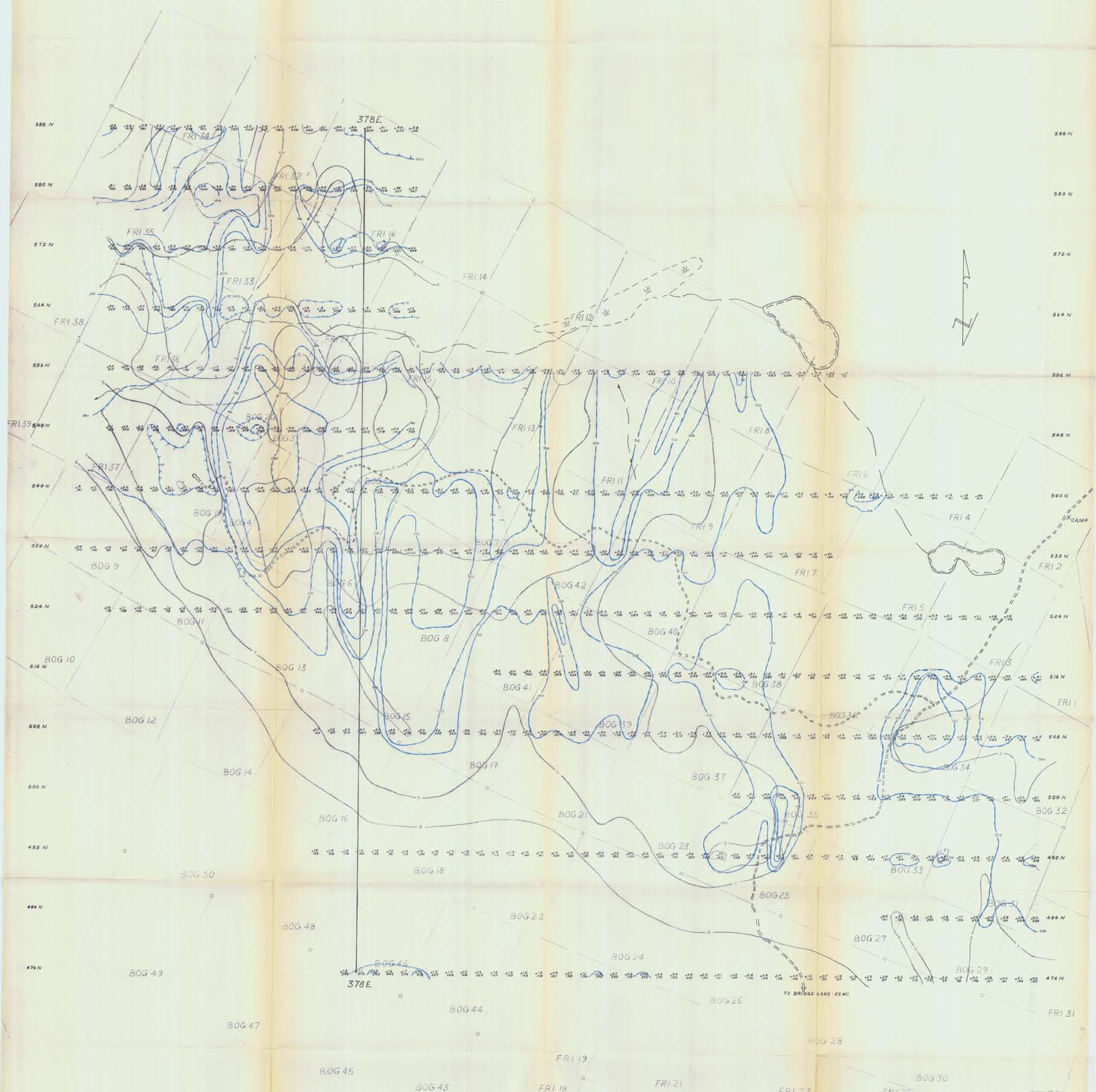
**LEGEND**  
 - - - - - CLAIM LINE WITH POST  
 - - - - - BASE LINE  
 - - - - - CLAIM NUMBER  
 BOG 18 - - - - - FREQUENCY EFFECT  
 - - - - - RESISTIVITY IN OHM FEET  
 - - - - - MARKS READING LOCATION  
 - - - - - INTERVAL = 200'  
 - - - - - CONTOURS  
 - - - - - PFI - 25, 50, 70,  
 - - - - - RES - 200, 300, 500, 700, 900, 1500

Department of  
Mineral Resources  
KAMLOOPS, B.C. CANADA  
 NO. 4836 MI #1  
**CITIES SERVICE MINERALS CORP.**  
 BOG CLAIMS - KAMLOOPS M.D.  
 PLAN VIEW I.P. - N-2

SCALE IN FEET	0 100 200 300 400 500
DWG. DECEMBER 18, 1978	REV. NO. 02 PAGE
DRAWN BY: J.S.	CHECKED BY: J.P.
REVISED:	

**4836 MI**





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ON THE BOG CLAIMS BY J. W. MURTON  
PENG AND L. KENNEDY DATED  
DECEMBER 1973 IN THE KAMLOOPS  
M.D.



**LEGEND**  
 —○— CLAIM LINE WITH POST  
 ——— BASE LINE  
 ——— CLAIM NUMBER  
 \*% FRI FREQUENCY EFFECT  
 — RESISTIVITY IN OHM FEET  
 — MARKS READING LOCATION  
 "INTERVAL = 200"  
 CONTOURS  
 PFE - 20, 30, 50, 70,  
 RES - 200, 300, 500, 700, 900, 1500

CITIES SERVICE MINERALS CORP.		Department of Mines and Petroleum Resources	
VANCOUVER BC CANADA		ASSESSMENT REPORT	
BOG CLAIMS - Kamloops M.D.		NO 4836 #2	
PLAN VIEW IP - N-2		MAP	
SCALE IN FEET	1" = 200'	DATE	DECEMBER 18 1973
DATE	DECEMBER 18 1973	RTS No	92 PNE
DRAWN BY	J.S.	DRAWING No	2
REVISION			

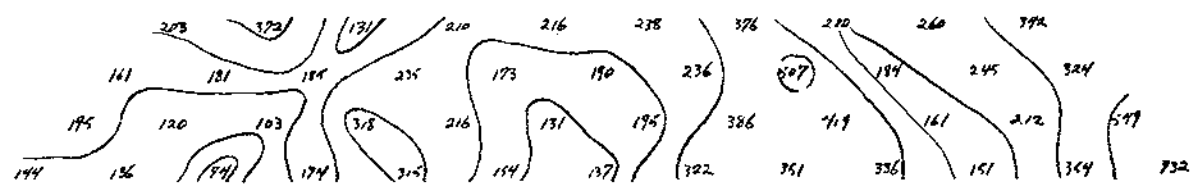
4836 M2





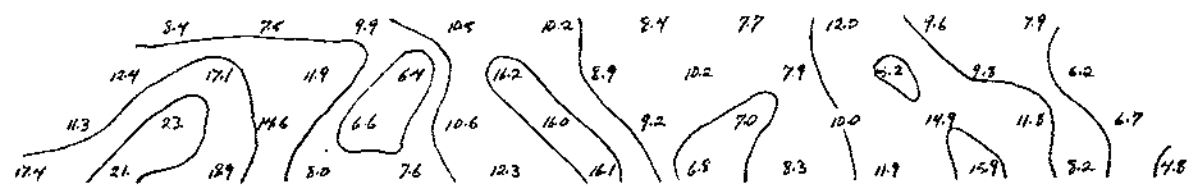
# 4841d

4700 4720 4740 4760 4780 4800 4820 4840 4860 4880 4900 4920 4940 4960 4980 5000



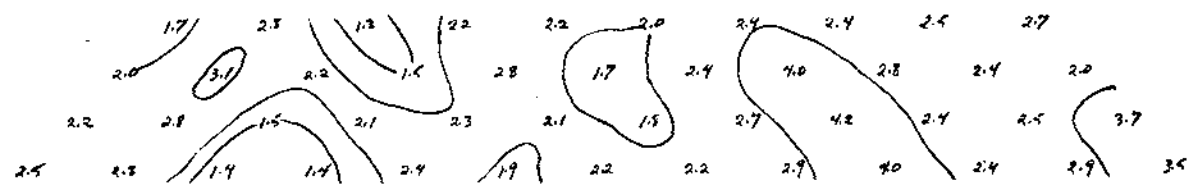
m1  
m2  
m3  
m4

CITIES SERVICE MINERALS CORP.  
 KAMLOOPS AREA, B.C.  
 BOG GROUP CLAIMS.  
 HIGH POWER T.P. (DIPOL-DIPOL)  
 LINE # 4841N.  
 TRAP: 543Hz.  
 SCALE: 1" = 200'  
 Nov. 11, 1973.  
 OPERATOR: J. W. MURTON



m1  
m2  
m3  
m4

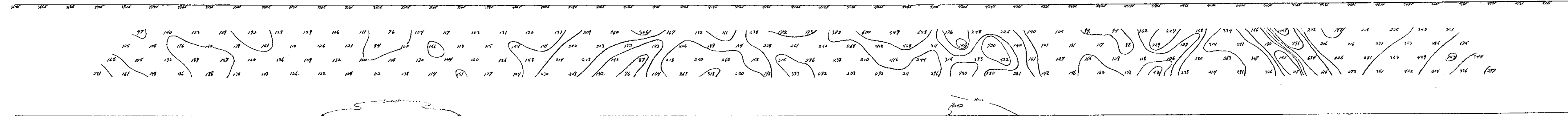
Department of  
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 ASSESSMENT REPORT  
 NO. **4836** MAP #4



m1  
m2  
m3  
m4

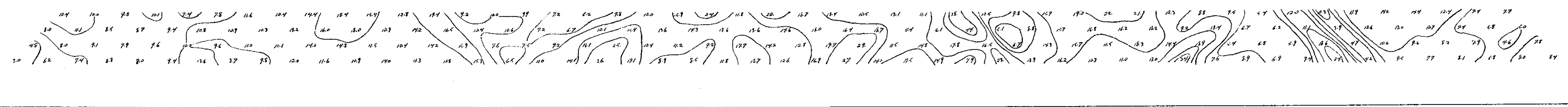
TO ACCOMPANY GEOPHYSICAL REPORT ON  
 THE BOG-FRI CLAIMS BY J. W. MURTON,  
 P. ENG. DATED DECEMBER 1973 IN THE  
 KAMLOOPS M. D.

4921

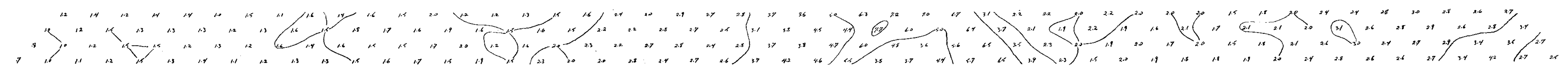


Cross Section Alouette Crst.  
 Kamloops, B.C.  
 Dog Group Claims  
 High Power J. P. (Antenna-Dipole)  
 Line 4921  
 Page: 573a  
 Scale: 1" = 400'  
 Nov. 8, 1973  
 Designer: D. J. Horsfield

FIG. 5



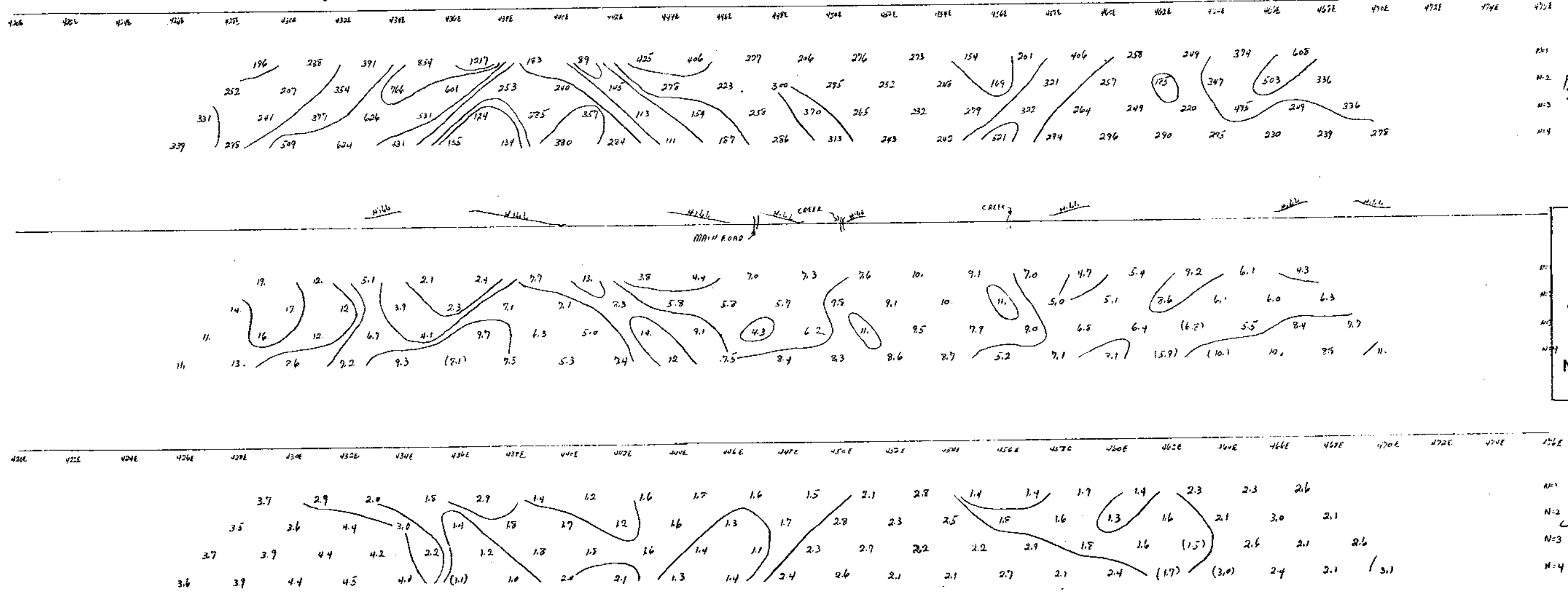
Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 4836 MAP #5



TO ACCOMPANY GEOPHYSICAL REPORT ON  
 THE BOG-FIR CLAIMS BY J. W. MURTON,  
 P. ENG., DATED DECEMBER 1973 IN THE  
 KAMLOOPS M. D.



L 500N



N-1  
N-2  
N-3  
N-4

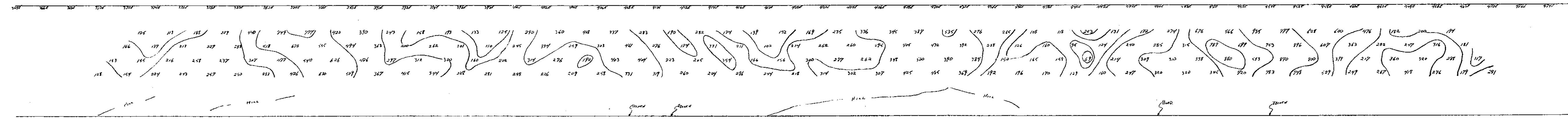
CITIES SERVICE MINERALS CORP.  
 KAMLOOPS AREA, B.C.  
 BOG GROUP CLAIMS  
 H.P. I.P. (DIPOLE-DIPOLE)  
 FREQ. : 0.3 + 5 CPS.  
 LINE : 500N  
 SCALE : 1" = 400'  
 DATE : 9/11/73  
 Department of  
**FIG. 6**  
 Mines and Petroleum Resources  
 M.F. ASSESSMENT REPORT  
 NO. **4836** MAP #6  
 (1.7) - NOISY READING



N-1  
N-2  
N-3  
N-4

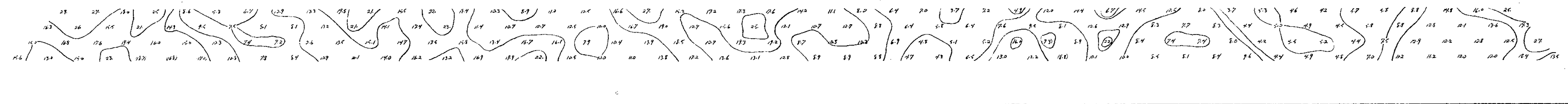
F.E.  
 M.F.  
 TO ACCOMPANY GEOPHYSICAL REPORT ON  
 THE BOG-FRI CLAIMS BY J. W. MURTON,  
 P. ENG. DATED DECEMBER 1973 IN THE  
 KAMLOOPS M. D.

L# 4836



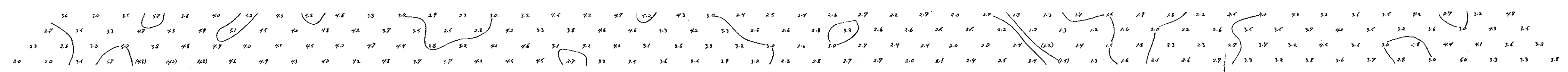
011  
012  
013  
014

Chris Service Minerals Corp.  
Kamloops Area, B.C.  
308 Group Claims  
High Power I.P. (Dipole Dipole)  
Line # 5084.  
File: 57-3-12  
Scale: 1" = 400'  
Nov 5, 1973  
Prepared by: J. W. Murton  
FIG. 7



011  
012  
013  
014

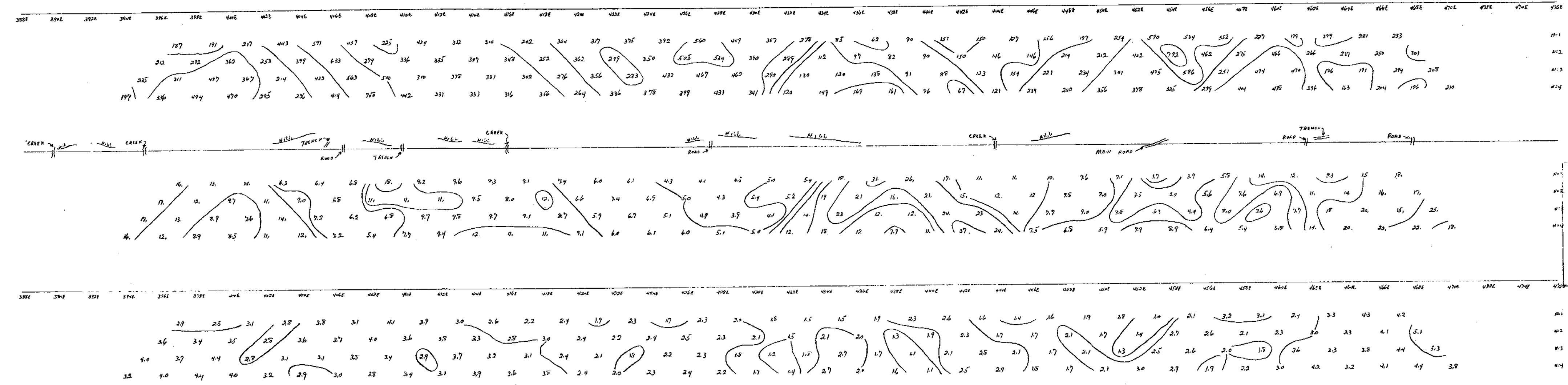
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 4836 MAP #7  
PROVINCIAL  
OF  
J. W. MURTON  
BRITISH  
COLUMBIA  
ENGINEER



011  
012  
013  
014

TO ACCOMPANY GEOPHYSICAL REPORT ON  
THE BOG-FRI CLAIMS BY J. W. MURTON,  
P. ENG. DATED DECEMBER 1973 IN THE  
KAMLOOPS M. D.

6516N



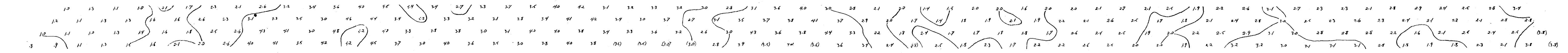
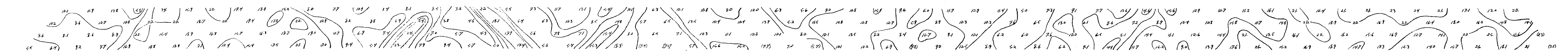
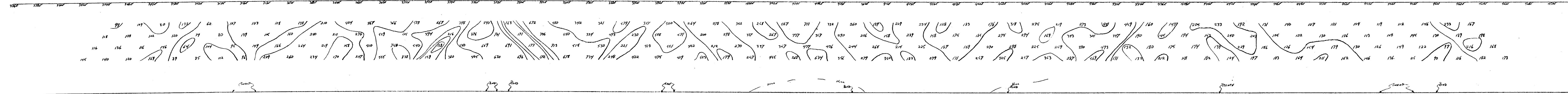
N=1  
N=2  
N=3  
N=4

CITIES SERVICE MINERALS CORP  
KAMLOOPS AREA, B.C.  
BOG GROUP CLAIMS  
H. P. I. P. (DIPPLE-DIPPLE)  
FREQ. : 0.325 CIPS.  
LINE : 516 N  
SCALE : 2" = 400'  
DATE : 7/11/73  
OP : D. G. MORRISON

FIG. 8  
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 4836 MAP #8

TO ACCOMPANY GEOPHYSICAL REPORT ON  
THE BOG-FRI CLAIMS BY J. W. MURTON,  
P. ENG. DATED DECEMBER 1973 IN THE  
KAMLOOPS M. D.

L# 524N  
L# 524N

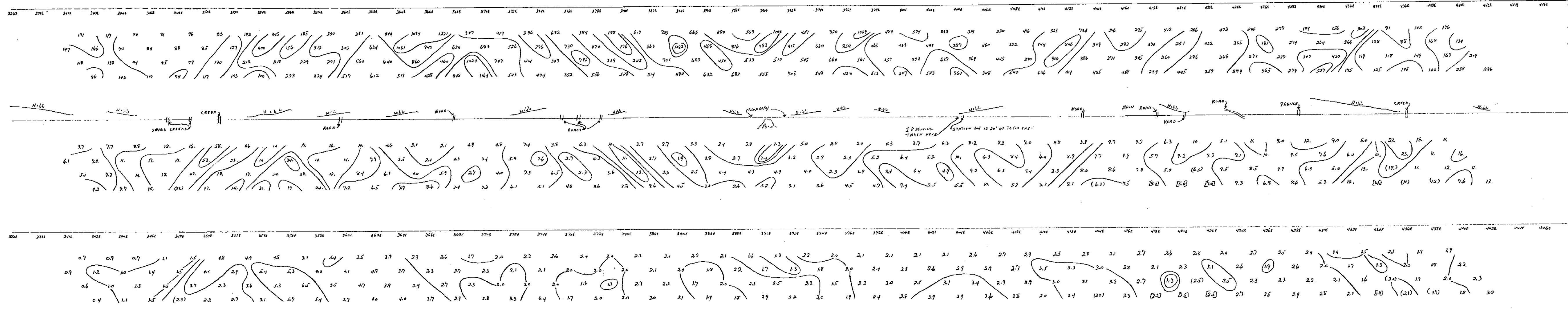


CITIES SERVICE MINERALS CORP.  
KAMLOOPS AREA, B.C.  
BOG GROUP CLAIMS,  
HIGH POWER I.P. (DIPLOLE-DIPOLE)  
LINE #524N.  
TRAC: 57.3 Hz  
Scale: 1" = 400'  
Oct. 31, 1973.  
Operator: D.T. Morrison.  
FIG. 9

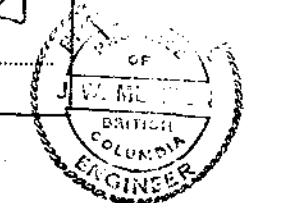
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 4836 MAP #9

TO ACCOMPANY GEOPHYSICAL REPORT ON  
THE BOG-FRI CLAIMS BY J. W. MURTON,  
P. ENG. DATED DECEMBER 1973 IN THE  
KAMLOOPS M. D.

6532N

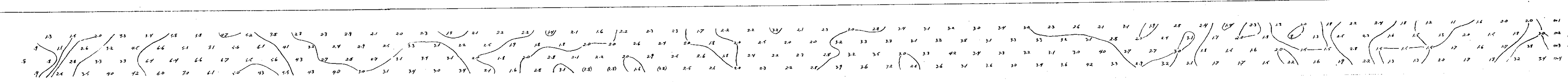
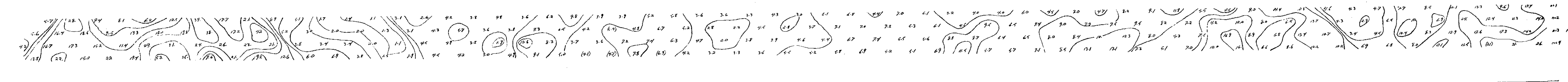
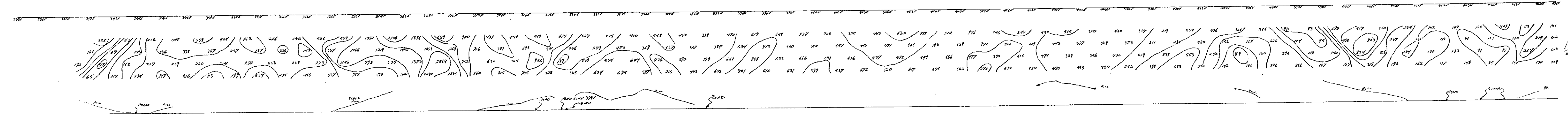


CITIES SERVICE MINERALS CORP.  
 KAMLOOPS AREA, B.C.  
 BOG GROUP CLAIMS  
 H.P.I.P. (DIAPHR-DIAPLE)  
 FREQ. : 0.3 + 5 C.A.S.  
 LINE : 532 N  
 SCALE : 1" = 400'  
 DATE : 6/11/73  
 Department of  
**FIG. 10**  
 Mines and Geoscience Resources  
 M.F. ASSISTANT REPORT  
 NO. **4836** MAP #10  
 LEGEND:  
 (A) - NOISY READING  
 (B) - VERY NOISY READING



TO ACCOMPANY GEOLOGICAL REPORT ON  
 THE BOG-FRI CLAIMS BY J. W. MURTON,  
 P. ENG. DATED DECEMBER 1973 IN THE  
 KAMLOOPS M. D.

L # 54016



CITIES SERVICE AMERICAL CORP.  
 KAMLOOPS AREA B.C.  
 BOG GROUP CLAIMS.  
 HIGH POWER J.P. (DIPLOE-DIPLOE)  
 LINE #54016  
 PACE: 57.3 M  
 SCALE: 1" = 400'  
 OCT. 24, 1973.  
 OPERATOR: J.P. HARRISON.

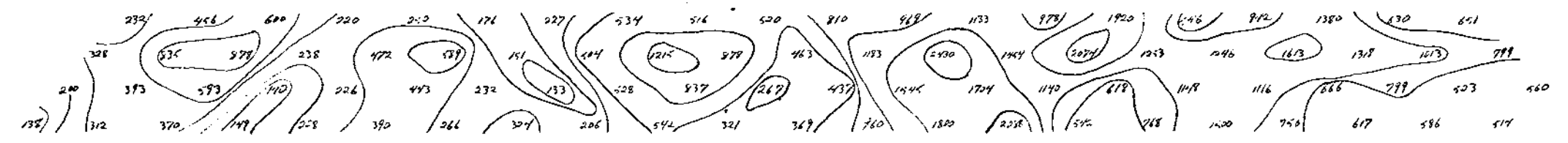
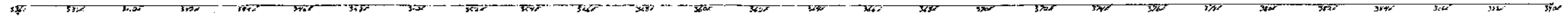
FIG. 11

PROFESSIONAL ENGINEER  
 OF  
 BRITISH COLUMBIA  
 J. W. MURTON  
 ENGINEER

NO. 4836 MAP #11

TO ACCOMPANY GEOPHYSICAL REPORT ON  
 THE BOG-FRI CLAIMS BY J. W. MURTON,  
 P. ENG. DATED DECEMBER 1973 IN THE  
 KAMLOOPS M. D.

54812



m1  
m2  
m3  
m4

CITIES SERVICE MINERALS CORP.  
KAMLOOPS AREA B.C.  
305 GREAT CLAIMS  
HIGH POWER I.P. (D. 1000) DISTRICT  
LIVE # 54812  
Scale: 1" = 400'  
Dec. 9, 1973.  
Operator: J.D. MURTON

10-11

Boundary

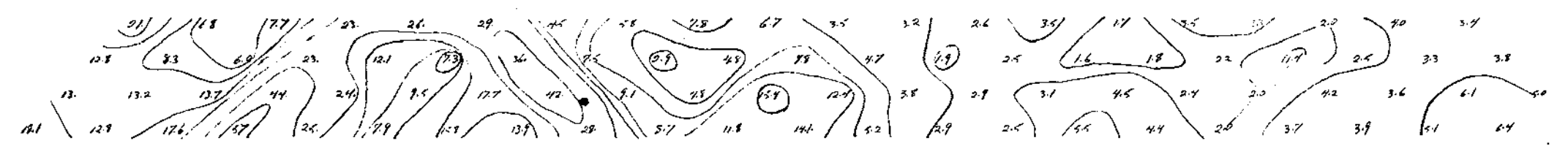
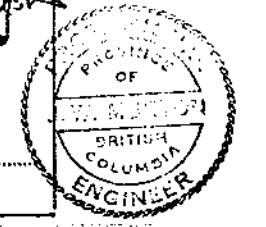


FIG. 12

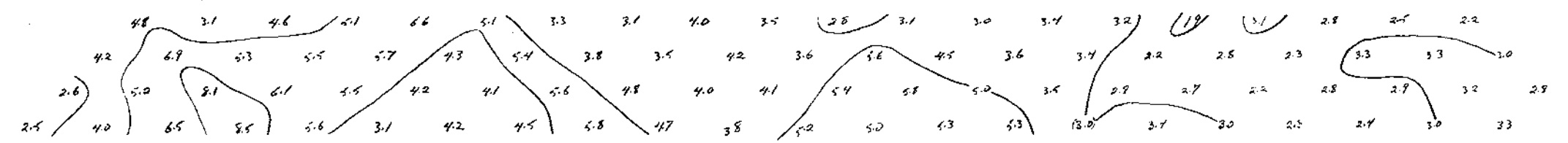
Mines and Geology of Kamloops

ASSESSMENT REPORT

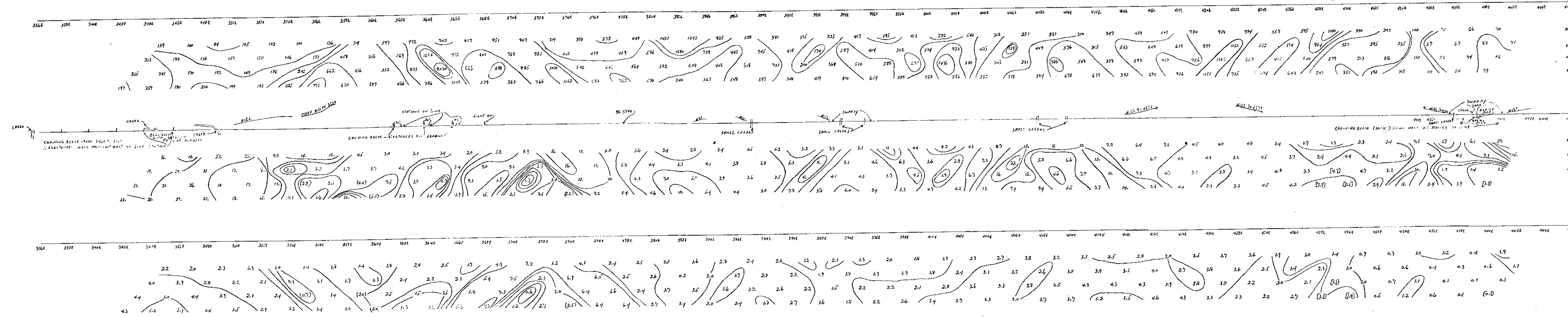
NO. 4836 MAP #12



TO ACCOMPANY GEOPHYSICAL REPORT ON  
THE BOG-FRI CLAIMS BY J. W. MURTON,  
P. ENG. DATED DECEMBER 1973 IN THE  
KAMLOOPS M.D.



6556N



CITIES SERVICE MINERALS CO. INC.  
 KAMLOOPS AREA, B.C.  
 BOG GROUP CLAIMS  
 H.P.I.P. (DIPLOMA - DIPLOMA)  
 FREA : 0115 C.P.S.  
 LINE : 556 N  
 SCALE : 1" = 400'  
 DATE : 12/10/73  
 OP. : D. J. Morrison

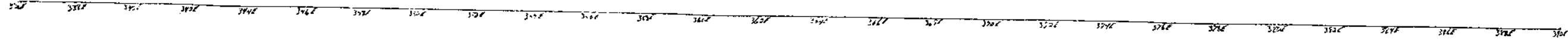
**FIG. 13**  
 Department of  
 Mines and Technical Surveys  
 M.F. 4836 MAP #13  
 Legend:  
 (0.5) - Very noisy readings

BRITISH COLUMBIA ENGINEER

TO ACCOMPANY GEOPHYSICAL REPORT ON  
 THE BOG-FRI CLAIMS BY J. W. MURTON,  
 P. ENG. DATED DECEMBER 1973 IN THE  
 KAMLOOPS M.D.

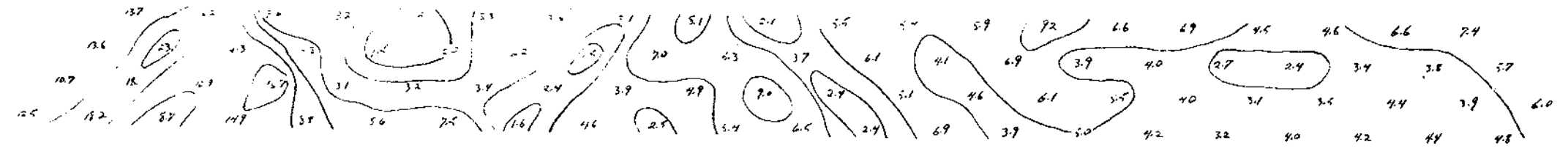


L# 5641



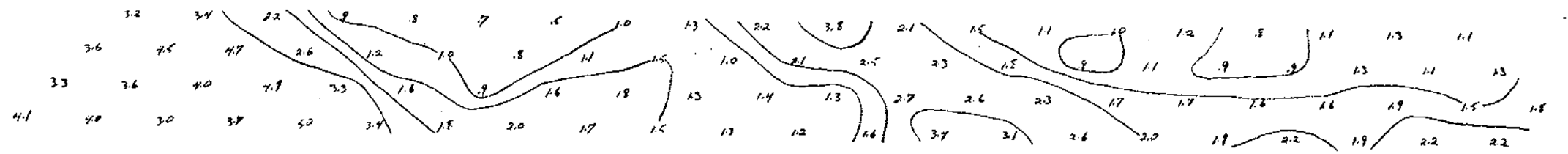
m1  
m2  
m3  
m4

CITUS SERVICE MINERALS CORP.  
KAMLOOPS B.C.  
308 GROUP CLAIMS  
HIGH POWER T.P. (VIBRA. DISTAL)  
LINE #5641.  
DATE: 5-3-74  
SCALE: 1"=400'  
DT. 16, 1973.  
DRAWN BY: D.S. MORTIMER



m1  
m2  
m3  
m4

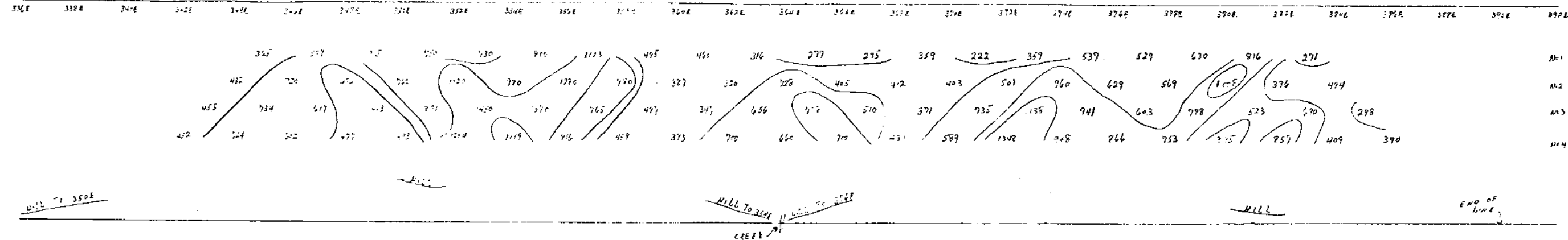
FIG. 14  
Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 4836 MAP #14



m1  
m2  
m3  
m4

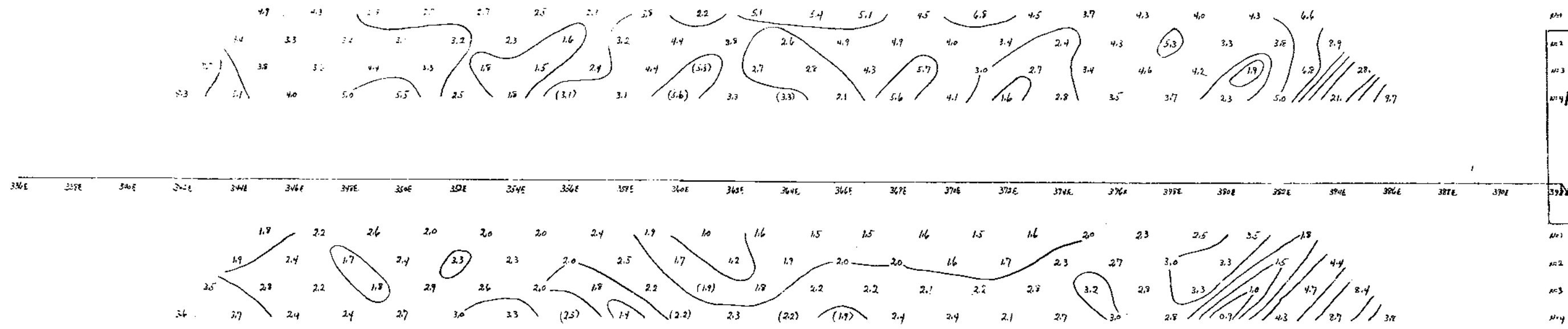
TO ACCOMPANY GEOPHYSICAL REPORT ON  
THE BOG-FRI CLAIMS BY J. W. MURTON,  
P. ENG. DATED DECEMBER 1973 IN THE  
KAMLOOPS M. D.

L 572N



CITIES SERVICE MINERALS CORP.  
 KAMLOOPS AREA, B.C.  
 BOG GROUP CLAIMS  
 H.P.I.P. (DIPOLE-DIPOLE)  
 FREQ. : 0.345 C.P.S.  
 LINE : 572 N  
 SCALE : 1" = 400'  
 DATE : 20/10/73  
 OP. : E. S. MORRISON

FIG. 15

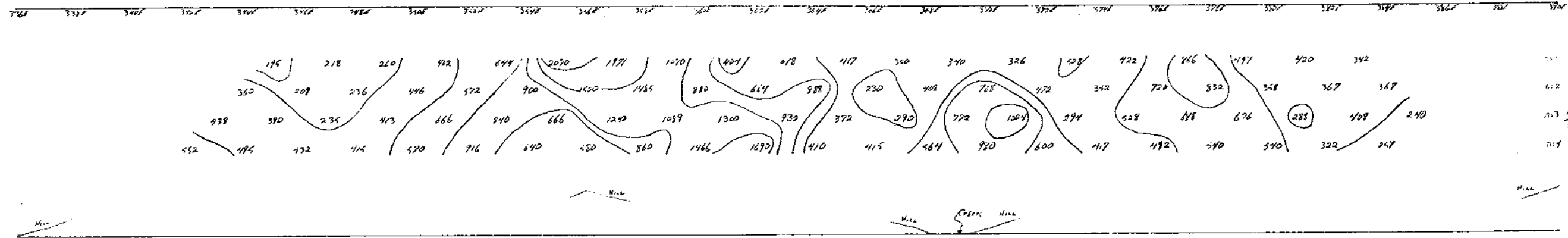


Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
**4836 #15**

PROFESSIONAL  
 J. W. MURTON  
 OFFICIAL  
 COLUMBIA  
 BRITISH COLUMBIA

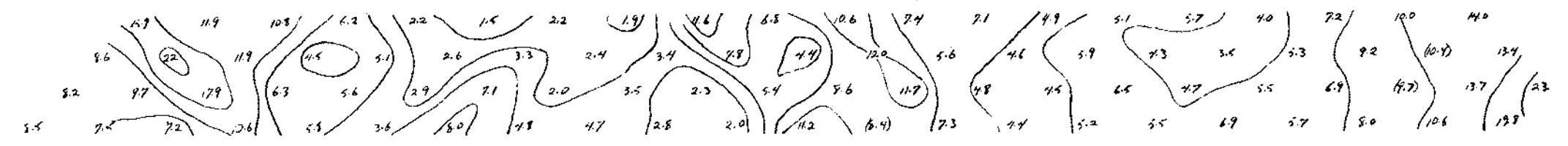
TO ACCOMPANY GEOPHYSICAL REPORT ON  
 THE BOG-FRI CLAIMS BY J. W. MURTON,  
 P. ENG. DATED DECEMBER 1973 IN THE  
 KAMLOOPS M. D.

L-#1-80.2



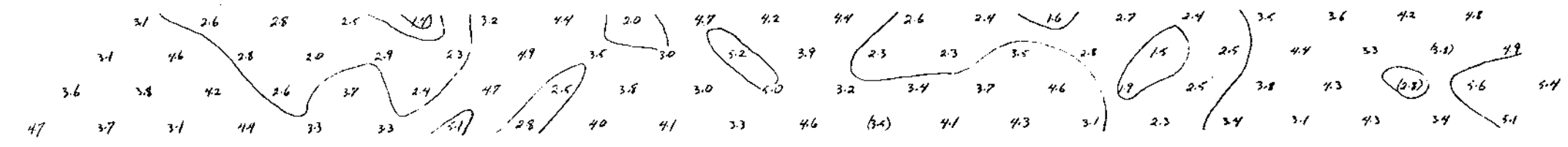
CITUS SERVICE MINERALS CORP.  
 KAMLOOPS AREA, B.C.  
 308 BRAD CLAIMS  
 HIGH BANK, I.P. (L.S. & L.P.A.)  
 LINES # 580N.  
 AREA: 57.3 AC  
 SCALE: 1" = 400'  
 OCT. 15, 1973.  
 DRAWING: D. MORRISON.

P. (n-11)  
 27.



m1  
 m2  
 m3  
 m4

Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. **4836** MAP #16

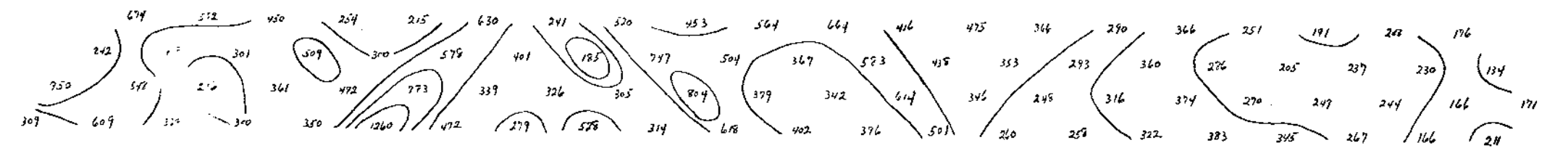


m1  
 m2  
 m3  
 m4

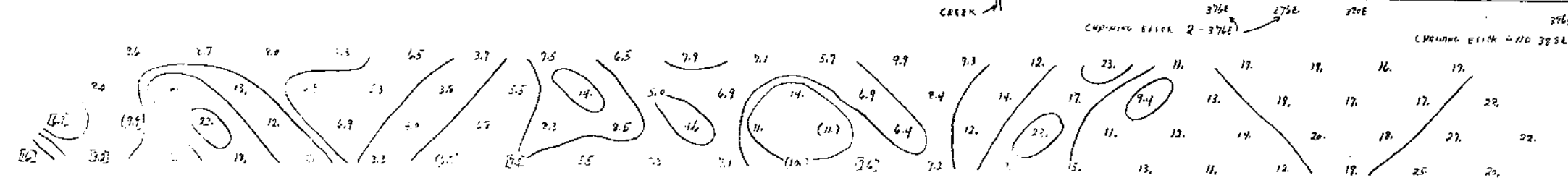
TO ACCOMPANY GEOPHYSICAL REPORT ON  
 THE BOG-FRI CLAIMS BY J. W. MURTON,  
 P. ENG. DATED DECEMBER 1973 IN THE  
 KAMLOOPS M. D.

588N

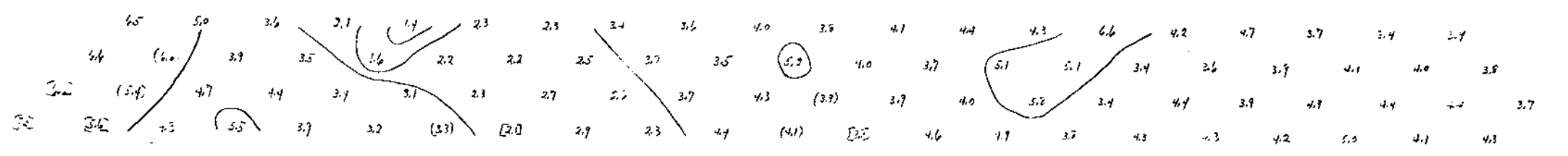
330E 332E 334E 336E 338E 340E 342E 344E 346E 348E 350E 352E 354E 356E 358E 360E 362E 364E 366E 368E 370E 372E 374E 376E 378E 380E 382E 384E 386E 388E 390E



HILL CREEK HILL HILL 376E 378E 380E HILL 386E 388E 390E

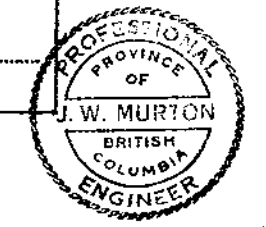


336E 338E 340E 342E 344E 346E 348E 350E 352E 354E 356E 358E 360E 362E 364E 366E 368E 370E 372E 374E 376E 378E 380E 382E 384E 386E 388E 390E



CITIES SERVICE MINERALS CORP  
 KAMLOOPS AREA B.C.  
 BOG GROUP CLAIMS  
 H.P.I.P. (DIPLOLE-DIPLOLE)  
 FREQ. : 0.3 85 C.A.S.  
 LINE : 588 N  
 SCALE : 1" = 400'  
 DATE : 20/10/73  
 OP : S. S. MORRISON  
 Department of  
**FIG. 17**

Mines and Petroleum Resources  
 ASSIGNMENT REPORT  
 M.F. 4836 MAP #17  
 NO.



LEGEND :  
 (3.3) - NOISY READING  
 (4.7) - VERY NOISY READING

TO ACCOMPANY GEOPHYSICAL REPORT ON  
 THE BOG-FRI CLAIMS BY J. W. MURTON,  
 P. ENG. DATED DECEMBER 1973 IN THE  
 KAMLOOPS M. D.