

**SUB-RECORDER  
RECEIVED**  
JAN 14 1991  
M.R. #.....\$.....  
VANCOUVER, B.C

LOG NO: 17-01	RD.
ACTION:	
FILE NO:	

**1990 GEOCHEMICAL SURVEY ON THE HOPEFUL 3 AND FORBES 1 CLAIMS,  
MOUNT VAUGHAN PROPERTY, ATLIN MINING DIVISION  
BRITISH COLUMBIA**

NTS : 104N/11W, 104N/12E  
Latitude 59°43'N  
Longitude 133°30'W

Owners : William Wallis  
Box 57  
Atlin, B.C. V0W 1A0

John Byrne  
7139 - 7th Avenue  
Whitehorse, Yukon Y1A 1P5

Operators: Homestake Mineral Development Company  
1000 - 700 West Pender Street  
Vancouver, B.C. V6C 1G8

Author : Joanne Bozek  
Date : December, 1990

Copy : Homestake File 1  
Homestake Field 1  
W. Wallis 1  
J. Byrne 1

20,822

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

## **TABLE OF CONTENTS**

- I. SUMMARY**
- II. INTRODUCTION**
  - A. SCOPE OF REPORT
  - B. PROPERTY DEFINITION
  - C. LOCATION, ACCESS AND PHYSIOGRAPHY
  - D. EXPLORATION HISTORY
- III. GENERAL GEOLOGY**
  - A. REGIONAL GEOLOGY
  - B. PROPERTY GEOLOGY
- IV. 1990 EXPLORATION PROGRAM**
  - A. INTRODUCTION
  - B. RESULTS
- V. SELECTED BIBLIOGRAPHY**
- VI. COST STATEMENT**
- VII. STATEMENT OF QUALIFICATIONS**

## **LIST OF APPENDICES**

- APPENDIX 1: CONTOURED SOIL GEOCHEMICAL AND GEOLOGY MAPS**
- APPENDIX 2: ANALYTICAL RESULTS**

## **LIST OF FIGURES**

- Figure 1: Location Map, Atlin Area
- Figure 2: Location Map, Mount Vaughan Property
- Figure 3: Claim Location Map, Mount Vaughan Property
- Figure 4: Tectonic Setting of the Canadian Cordillera
- Figure 5: Geology of the Atlin Area

## **I. SUMMARY**

The Mount Vaughan property, comprised of 20 claims totalling 3600 hectares, is located 20 km northeast of the town of Atlin, in northwestern British Columbia. The property surrounds, but does not include 28 crown grants that cover the Atlin-Ruffner Ag-Pb deposit.

The property is situated in the Atlin Terrain, a package of predominantly Upper Paleozoic oceanic crustal rocks which have been intruded by Jurassic to Tertiary granitoid plutons. The Mount Vaughan property is underlain by Cretaceous intrusive rocks of the Fourth of July Creek batholith. Younger granitic rocks of the Surprise Lake batholith occupy the eastern margin of the property. These intrusive bodies are cut by Cretaceous to Tertiary aplite/granite and diabase/gabbro dykes.

Many of these dykes are spatially associated with Ag-Pb-Zn mineralization which occurs along laterally and vertically persistent structures which trend between 060-080° and dip steeply to the north. A number of these vein structures have been the focus of exploration on the Atlin-Ruffner property since 1898. Production from 2 of 4 known mineralized vein/dyke structures has exceeded 3,771 grams Au, 2,066,484 grams Ag, 920 kg Cu, 136,000 kg Pb and 13,540 kg Zn. Reserves from two of the zones, from which most of the past production has occurred, is 113,638 tonnes grading approximately 600 gpt Ag, 5.0% Pb and trace Zn.

Homestake Mineral Development Company acquired the ground surrounding the Atlin-Ruffner mine in early 1988. During that year, airborne and ground geophysics, geological mapping, soil sampling and minor trenching was completed. In 1989, Homestake completed a program consisting of Induced Polarization over selected portions of the property, excavation, mapping and sampling of 20 trenches and 8 hand pits and extended the 1988 soil grid to cover an area of extensive carbonate-sericite alteration.

A detailed grid was established on the Hopeful 3 and Forbes 1 claim to cover a mineralized zone exposed in a handpit in 1989. The "Hopeful showing" is defined by a 3m wide silicified 'lamprophyric' dyke bounded on its south margin by a recessive mineralized zone and post-mineral fault gouge. Channel samples through the zone in 1989 returned values of 10.68 opt Ag, 2.60% Cu, 0.79% Pb and 1.20% Zn over 5.5 meters.

A soil geochemical survey was completed on the detailed grid in an attempt to define the strike extensions of this mineralized zone. Contoured Ag, Cu, Pb and Zn soil geochemistry define a 080° trend which extends 75 metres east of the Hopeful showing, through the mineralized zone to the western edge of the grid.

## II. INTRODUCTION

### A. SCOPE OF REPORT

This report summarizes the results of a soil geochemical survey conducted by Homestake Mineral Development Company on the Hopeful 3 and Forbes 1 claims during the period June 10 to 15, 1990.

### B. PROPERTY DEFINITION

The Mount Vaughan property is comprised of 20 claims consisting of 136 units totalling approximately 3,600 hectares. All of the claims are part of an option agreement between Homestake Mineral Development Company and Mr. William Wallis and Mr. John Byrne. Homestake currently acts as owner and operator of the project. The following summarizes the claims which comprise the property.

CLAIM NAME	REC.NO.	REC.DATE	UNITS	EXPIRY DATE
SILVER FOX	2875	21/04/87	15	21/04/96
BLACK FOX	2876	21/04/87	12	21/04/96
RED FOX	2877	21/04/87	10	21/04/96
WHITE FOX	2878	21/04/87	10	21/04/96
BLUE FOX	2879	21/04/87	8	21/04/96
CROSS FOX	2884	07/05/87	10	07/05/96
HOPEFUL 1	3125	28/03/88	18	28/03/96
HOPEFUL 2	3127	28/03/88	18	28/03/96
HOPEFUL 3	3126	28/03/88	15	28/03/96
HOPEFUL FR.	3128	28/03/88	1	28/03/98
HOPEFUL 1 FR.	3129	28/03/88	1	28/03/98
WB 1	3467	19/09/88	6	19/09/95
WB 2	3468	19/09/88	6	19/09/95
WB 3	3469	20/09/88	1	20/09/95
WB 4	3470	20/09/88	1	20/09/95
WB 5	3471	20/09/88	1	20/09/94
WB 6	3472	20/09/88	1	20/09/94
WB 7	3473	20/09/88	1	20/09/94
WB 8	3474	28/09/88	1	28/09/94
FORBES 1	4260	14/07/90	8	14/07/91

The property surrounds but does not include 28 crown grants, referred to as the Atlin-Ruffner Property, co-owned by Trident and Taywin Resources.

### C. LOCATION, ACCESS AND PHYSIOGRAPHY

The Mount Vaughan property is located approximately 20 kilometres northeast of the town of Atlin, in northwestern British Columbia. The claims are situated on NTS map sheets 104N/11W and 104N/12E, within the Atlin Mining Division (Figures 1,2 and 3).

Access to the property is via the Atlin-Ruffner Mine Road which extends east from the Whitehorse road 15 km north of the town of Atlin. A series of 4-wheel drive bush roads provide good access to within 1.5 km of any portion of the claim block.

Elevations vary from 915 metres at McDonald lakes at the west edge of the property, to 1994 metres at the summit of Mount Vaughan. The property, for the most part, covers the north, south and western slopes of Mount Vaughan extending to the Silver Creek valley to the east, the Vulcan Creek valley to the south and the Fourth of July Creek valley to the north and west. Relief is variable and ranges from broad open valleys and alpine saddles to steep canyon walls and rugged mountain slopes.

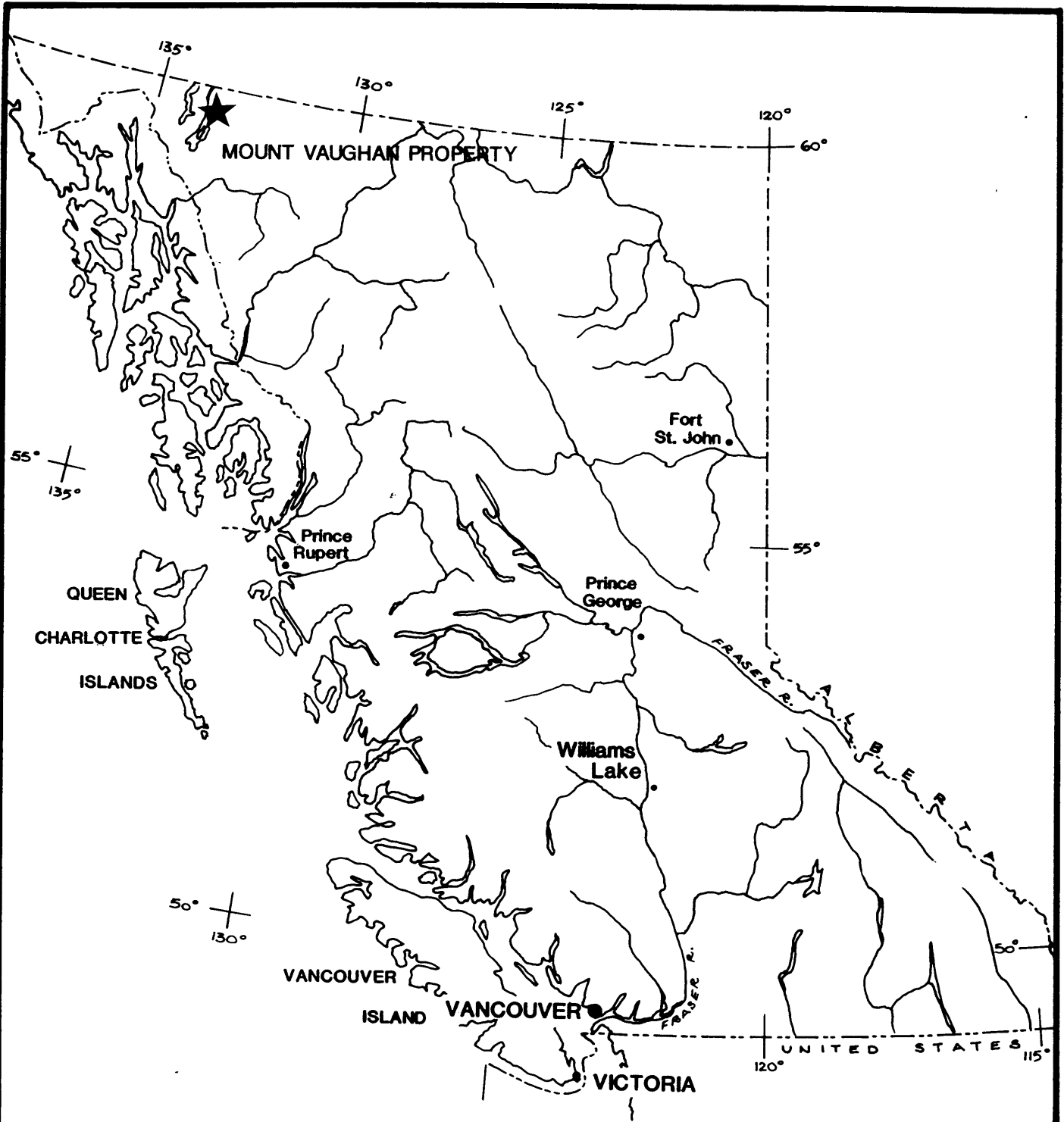
Most of the property is above tree-line, and is largely covered by buckbrush and sphagnum. The western portion of the property, along Fourth of July Creek and the western slope of Mount Vaughan above Fourth of July Creek and McDonald lakes, is heavily treed with spruce, poplar and pine.

Outcrop exposure on the property is poor; it constitutes less than 5% of the total area and occurs mainly along stream valley walls and on steep mountain slopes. Above 1200 metres ASL, talus and felsenmeer covers much of the ground. Below 1200 metres ASL, a relatively thick till covers most of the property.

### D. EXPLORATION HISTORY

The Mount Vaughan property was staked by William Wallis and John Byrne in April 1987, and optioned to Homestake Mineral Development Company in early 1988. Fourteen additional claims were staked by Homestake in 1988 and 1990 which, under the terms of agreement with Wallis-Byrne, became part of the Mount Vaughan property.

In 1988 Homestake completed an extensive exploration program which included airborne total field magnetics, calculated vertical gradient and VLF-EM surveys, detailed



HOMESTAKE MINERAL DEVELOPMENT COMPANY

MOUNT VAUGHAN PROPERTY, B.C.

LOCATION MAP

DRAWN

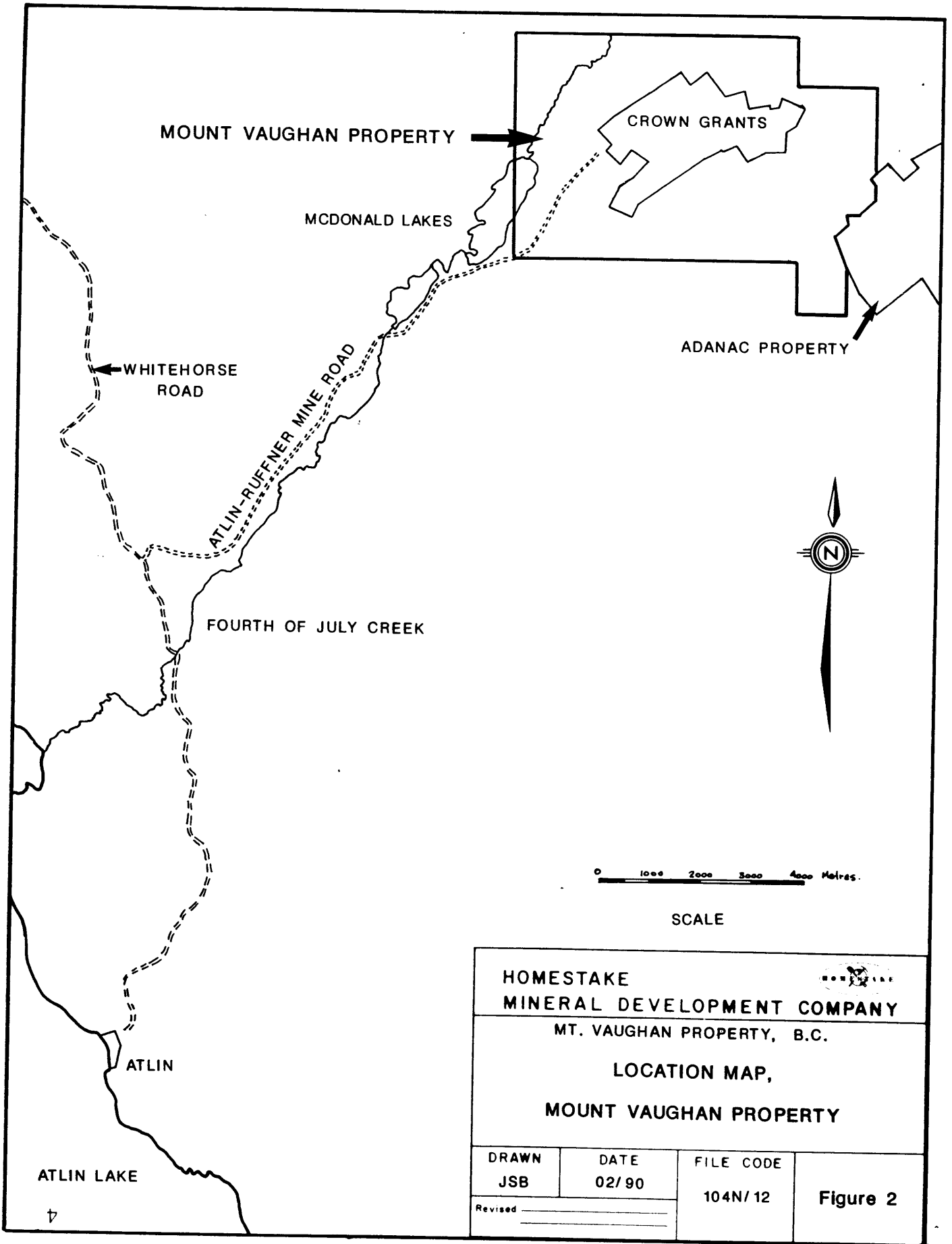
DATE

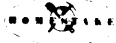
FILE CODE

Figure 1

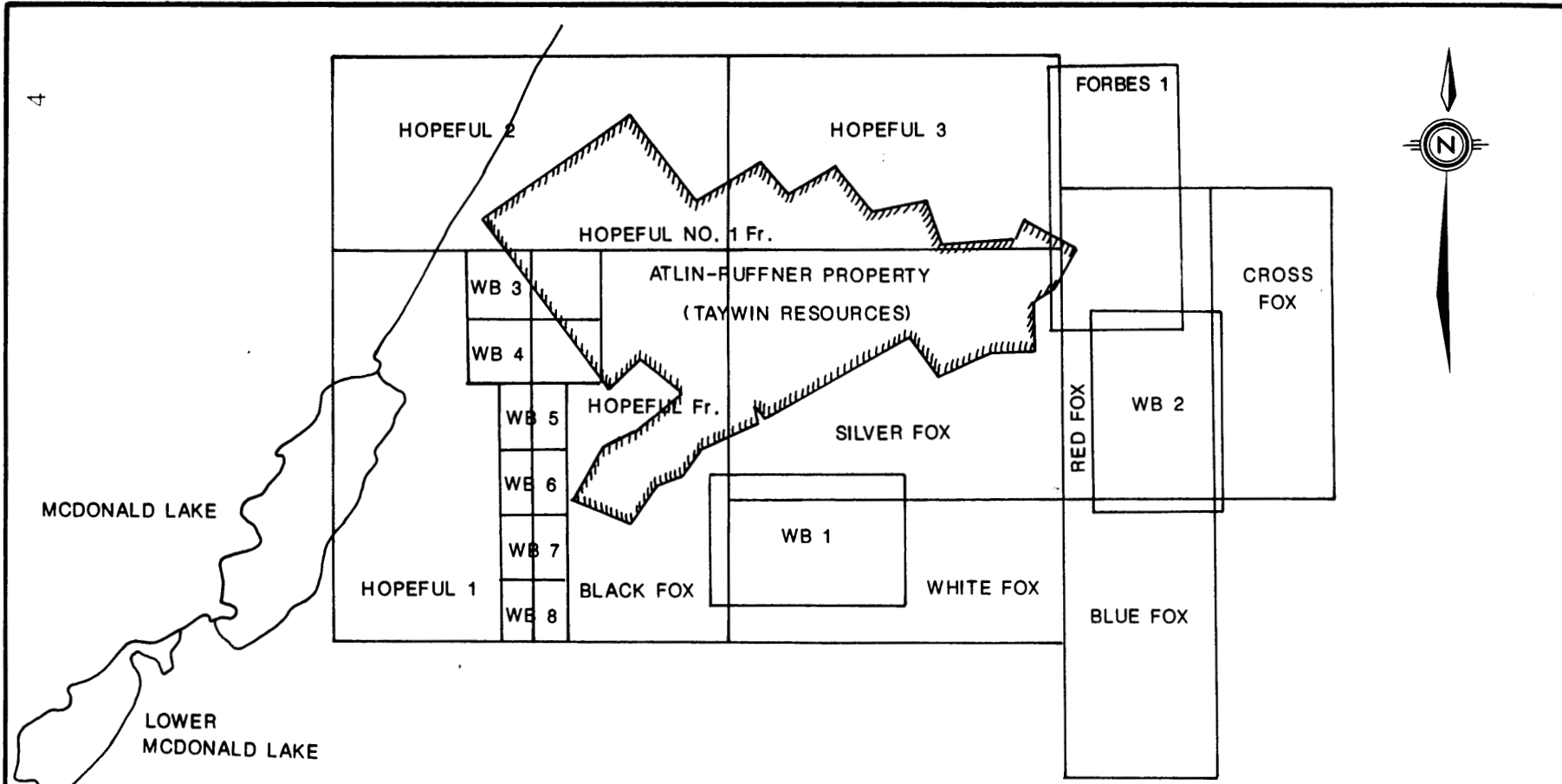
Revised





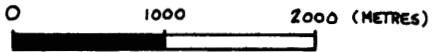
<b>HOMESTAKE</b>  <b>MINERAL DEVELOPMENT COMPANY</b>			
MT. VAUGHAN PROPERTY, B.C. <b>LOCATION MAP,</b> <b>MOUNT VAUGHAN PROPERTY</b>			
DRAWN JSB	DATE 02/90	FILE CODE 104N/12	<b>Figure 2</b>
Revised _____			

4



MCDONALD LAKE

LOWER MCDONALD LAKE



SCALE 1: 50,000

HOMESTAKE MINERAL DEVELOPMENT COMPANY

MT. VAUGHAN PROPERTY, B.C.

CLAIM LOCATION MAP

DRAWN JSB	DATE 02/90	FILE CODE 104N/12	Figure 3
Revised 06/90			



and reconnaissance mapping of the property at a scale of 1:2000, soil geochemical surveys, a total count radiometric survey, orientation ground magnetic and horizontal loop E.M. surveys and detailed re-logging and sampling of 9 diamond drill holes from the Ruff and Vulcan veins. In 1989, 13.6 line kilometres of induced polarization over the central portion of the property (#6 vein grid) and a portion of the South grid were completed; eight test pits and 20 hoe trenches in four main target areas were mapped and sampled.

### **III. GENERAL GEOLOGY**

#### **A. REGIONAL GEOLOGY**

The Mount Vaughan property lies near the western edge of the 'Atlin Terrain', a northwest-southeast trending tectonic belt which occupies the northeast edge of the Intermontane Belt of the Canadian Cordillera (Figure 4). Upper Paleozoic rocks of the Atlin Terrain have been correlated with Cache Creek rocks in central and southern British Columbia; collectively they are referred to as the Cache Creek Terrain.

The Atlin Terrain consists predominantly of Pennsylvanian to Permian basic volcanic rocks, chert, argillite and shallow water limestone of the Cache Creek group. Spatially associated with the mafic volcanic rocks are large, discordant ultramafic bodies which together are thought to represent oceanic crust and mantle on which Cache Creek sediments were deposited. This stratigraphy is cross-cut by granitic plutons which range in age from Late Jurassic to Tertiary (Figure 5).

#### **B. PROPERTY GEOLOGY**

The Mount Vaughan property is underlain by granitic rocks of the Fourth of July Creek batholith which ranges from felsic to intermediate compositions in the north and west to more mafic (less Si and K) in the east (Map 1, Appendix 1). Towards the eastern margin of the claim block, leucocratic granitic rocks of the Surprise Lake batholith intrude the Fourth of July Creek batholith. Both intrusive bodies are cut by Cretaceous to Tertiary aplite dykes; Fourth of July Creek rocks are also intruded by diabase/gabbro dykes. Many of the intermediate to mafic dykes appear to have been emplaced along prominent joint patterns in the granitic rocks and are continuous over several hundred metres. Locally these dyke-filled fractures are spatially related to significant Ag-Pb-Zn mineralization on the Mount Vaughan property.

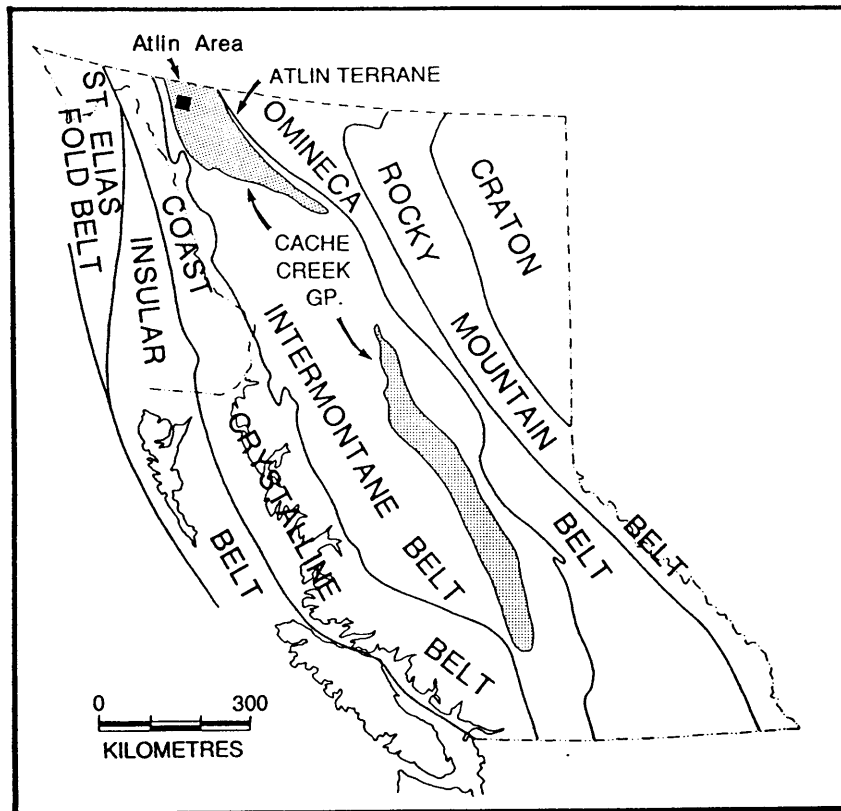


Figure 4: Tectonic Setting of the Canadian Cordillera  
(from Bloodgood et. al., 1989)

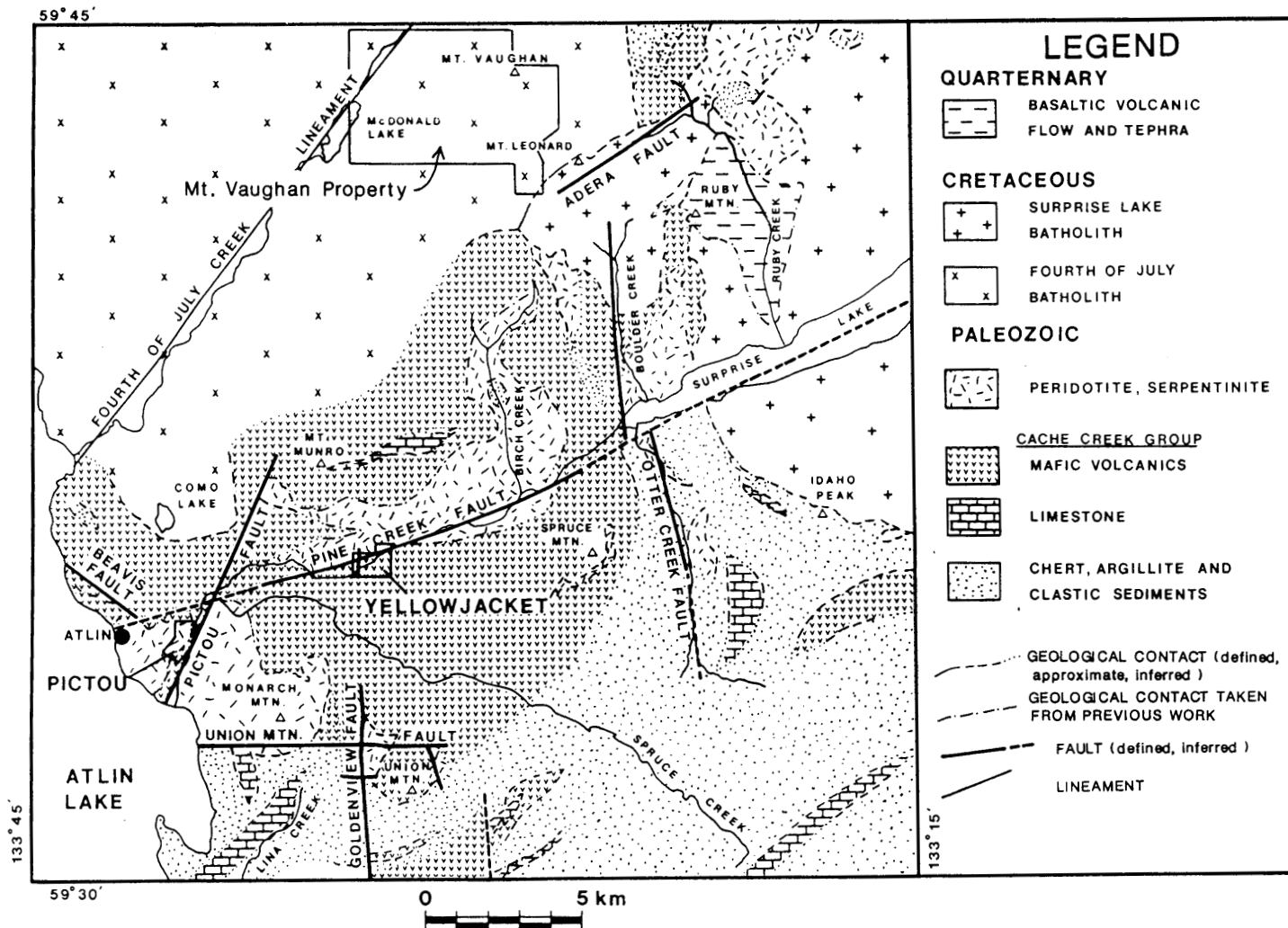


Figure 5 : Geology of the Atlin Area (from Bloodgood et. al., 1989)

## **IV. 1990 EXPLORATION PROGRAM**

### **A. INTRODUCTION**

The Hopeful zone is located on the northern margin of the property on the Hopeful 3 claim. The showing was exposed in a blast pit (Pit-89-04) which uncovered a 3 metre wide lamprophyric dyke and hanging wall gouge zone of unknown width. A continuous 6.5 metre channel sample across the zone returned 9.3 opt Ag, 1.98% Cu, 0.72% Pb and 0.93% Zn. The zone has been traced on surface for 70 metres and trends 085°, parallel to a recessive contact zone between Fourth of July Creek granite and granodiorite.

Eight additional units, totalling 200 hectares, were staked to the east of the Hopeful showing to cover a possible strike extension of the zone (Forbes 1 claim). A detailed grid, with line spacings of 50 metres and 10 to 20 metre stations, was established over the Hopeful showing. The grid extended approximately 200 metres east and west of the showing, upslope for a distance of 40m and downslope for 60m with the baseline following a prominent topographic depression believed to be a fault contact between the Fourth of July Creek granite and granodiorite. BL 0+00 of the newly established grid corresponds to L22E, 10+50N on the Hopeful grid.

A soil geochemical survey was completed over this grid in an effort to help define the strike extension of the Hopeful zone. Fifty-seven soil samples were collected from the 'B' soil horizon and analyzed for Au and a suite of 27 elements. Contoured soil geochemistry maps were produced at a scale of 1:1000 for Au, Ag, Cu, Pb and Zn and are located in Appendix 1, Maps 2a to 2e. Many gaps in the data exist because steep slopes and blocky talus cover prohibited good soil development.

### **B. RESULTS**

A pronounced silver, copper, lead and zinc, and a weak gold-in-soil anomaly define a distinct geochemical signature associated with the Hopeful showing. Adjacent to the Hopeful showing, silver, copper, lead and zinc define a 080° trend which extends from line 2+00W to 0+75E. The soil anomaly bends to the north at a 45° angle from BL 0+75E to the eastern edge of the grid. A broad, diffuse Au soil geochemistry anomaly is located between L1W and L2W and extends downslope from 20 to 40 metres.

## V. SELECTED BIBLIOGRAPHY

- Bloodgood, M.A., Rees, C.J., and Lefebure, D.V., 1989. Geology and mineralization of the Atlin area, northwestern British Columbia. British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork 1988, Paper 1989-1.
- Bozek, J., 1990. 1989 Exploration report on the Mount Vaughan property. Homestake Mineral Development Company, In-house report.
- Dolmage, Campell & Associates, 1967. Atlin Silver properties, Interprovincial Metals Ltd. In-house report.
- Mclvor, D.F., 1988. The Results of a mineral exploration program on the Mount Vaughan Property, Atlin Mining Division, British Columbia. Assessment Report No. 18646.

**VI. COST STATEMENT****1. SALARIES AND WAGES:**

J. Bozek, 5 Field/Office days @ \$160.00/day	\$ 800.00
D. Munro, 4 Field days @ \$105/day	\$ <u>420.00</u>
	\$ 1220.00

**2. GEOCHEMICAL COSTS:**

57 Soil samples, sample preparation, Au geochem plus 27 element ICP @ \$10.05 per sample	\$ 572.85
---	-----------

**3. FIELD SUPPORT**

Food and Accommodation, 5 man days @ \$30.00 per day	\$ 150.00
Vehicle rental and fuel, 4 days @ \$40.00 per day	\$ 160.00
Consumables (kraft bags, flagging tape, etc.)	\$ <u>50.00</u>
	\$ 360.00


<b>TOTAL EXPENDITURES</b>	<b>\$ 2152.85</b>
---------------------------	-------------------

## VII. STATEMENT OF QUALIFICATIONS

I, Joanne Bozek, do hereby certify that:

- 1) I am a graduate of Memorial University of Newfoundland, having been granted the degree of Bachelor of Science in Geology in 1986.
- 2) I have practised my profession as a geologist in mineral exploration since 1986.
- 3) At present I am employed as a geologist with Homestake Mineral Development Company of #1000 - 700 West Pender Street, Vancouver, B.C.
- 4) The work described in the accompanying report entitles "1990 Geochemical Survey on the Hopeful 3 and Forbes 1 claims, Mount Vaughan Property, Atlin Mining Division, British Columbia" and dated December 1990 was done under my supervision and with my participation.
- 5) I am the author of the report described above.
- 6) I have no direct or indirect financial interest in the companies known to me to have an interest in the mineral properties described by this report, nor do I expect to receive any such interest.

DATED THIS 13<sup>th</sup> DAY OF January, 1991 AT VANCOUVER, B.C.

  
\_\_\_\_\_  
Joanne Bozek  
Geologist

**APPENDIX 1: CONTOURED SOIL GEOCHEMICAL  
AND GEOLOGY MAPS**





GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,822

LEGEND

LITHOLOGIES:

CRETACEOUS

- 7 SURPRISE LAKE BATHOLITH
- 7a GRANITE INTENSIVE ADAMS (UNDIFFERENTIATED)
- 7b GRANITE FEELSAR PORPHYRIC GRANITE

POST JURASSIC

- 6 QUARTZ-PORPHYRIC SILICIFIED ROCK
- 5 METASOMATIC QUARTZ-FELSIC PORPHYRY
- 4 VOLCANIC GRAYWACKE-CONGLOMERATE/BRECCIA
- 3 MAFIC DYKES
- 3a MINERALIZED
- 3b UNMINERALIZED
- 2 ALASKITE DYKES

JURASSIC

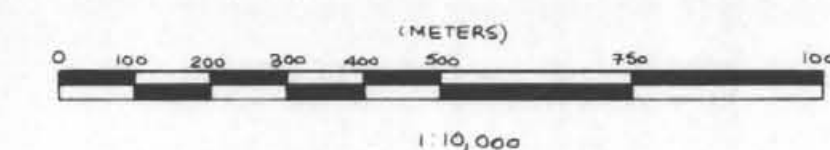
- 1 FOURTH OF JULY CREEK BATHOLITH
- 1a GRANITE INTRUSIVE ROCKS (UNDIFFERENTIATED)
- 1b GRANITE
- 1c GNEISS/DIORITE
- 1d DIORITE

QUALIFIERS:

- C - CLAY ALTERED
- O - OXIDIZED, GOSGAROUS

SYMBOLS:

- GEOLGIC CONTACT (OBSERVED/ASSUMED)
- ~ SCHISTOSITY
- JOINTING
- QUARTZ VEIN
- BRECCIATION
- FAULT
- TOPOGRAPHIC/GEOGRAPHICAL FEATURE
- ROAD
- STREAM
- CLAIM POST
- ★ SAMPLE LOCATION WITH > 1gpt Au



HOMESTAKE  
MINERAL DEVELOPMENT COMPANY

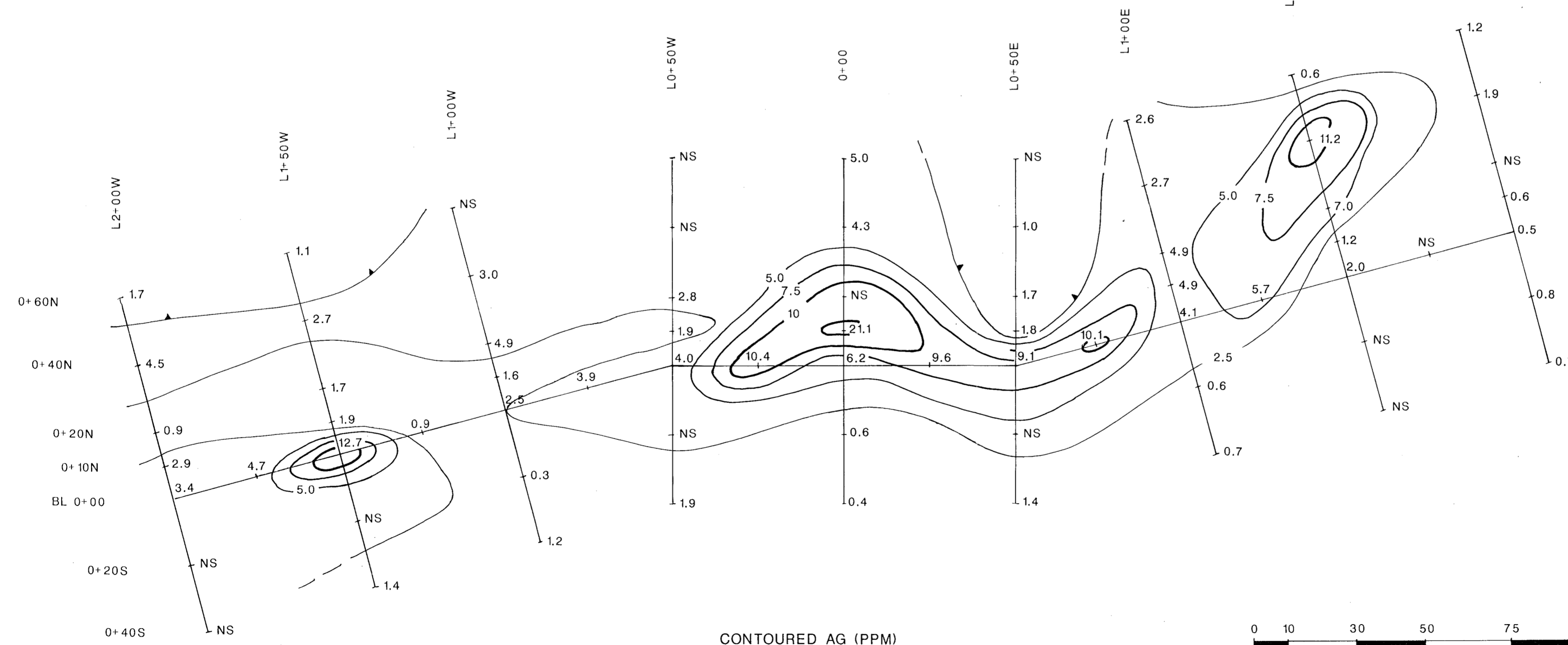
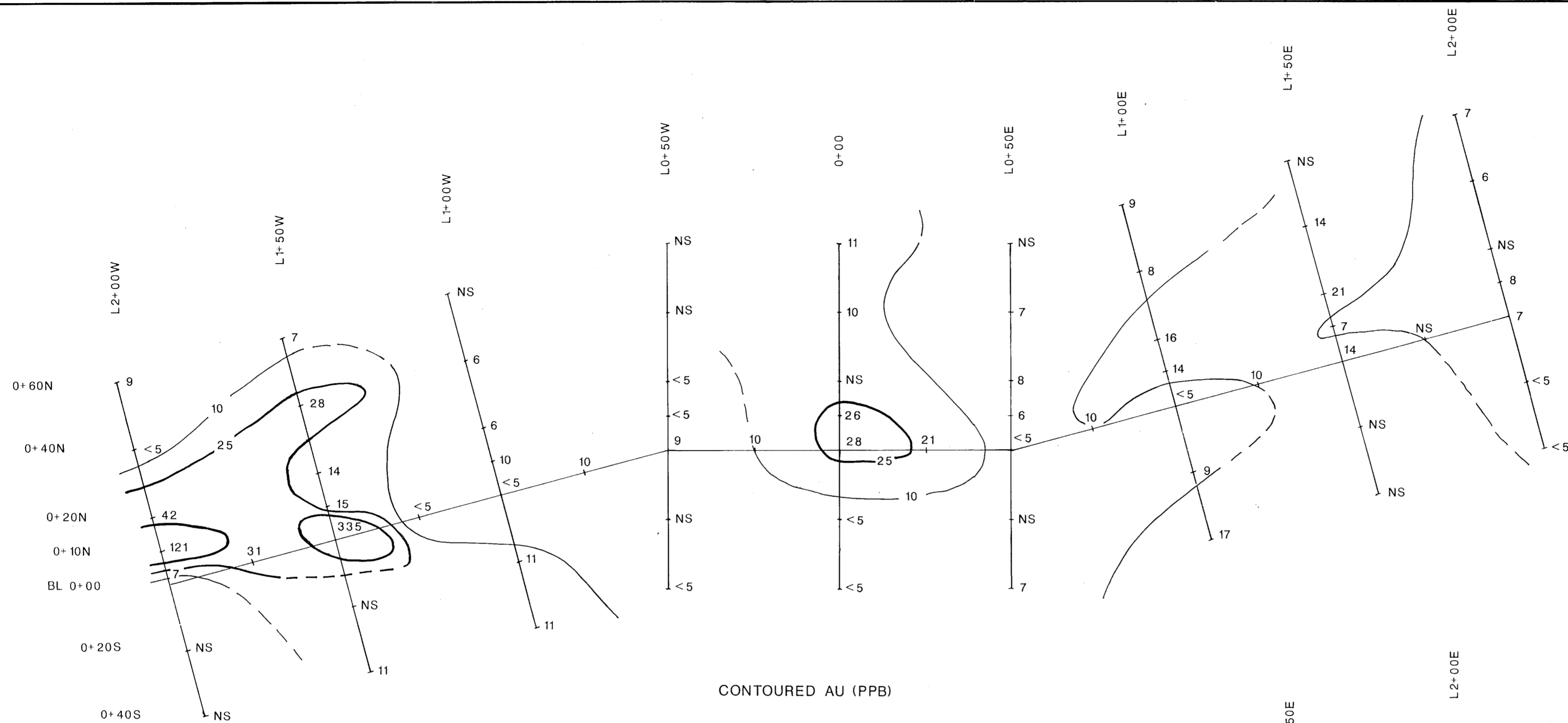
MOUNT VAUGHAN PROPERTY

GEOLOGY COMPILATION

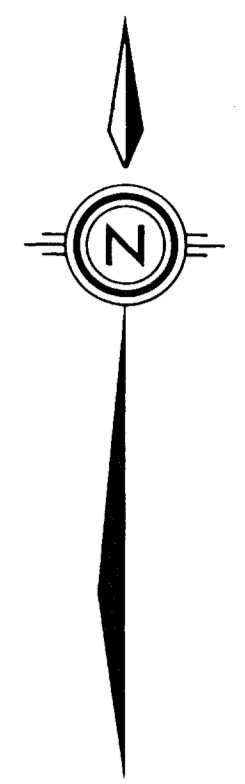
DRAWN JBB	DATE 11/88	FILE CODE 104N/12	MAP 1
REVISED 12/90			







SCALE 1: 1000



Contoured Au  
 — 10 ppb Contour  
 — 25 ppb Contour  
 — 50 ppb Contour

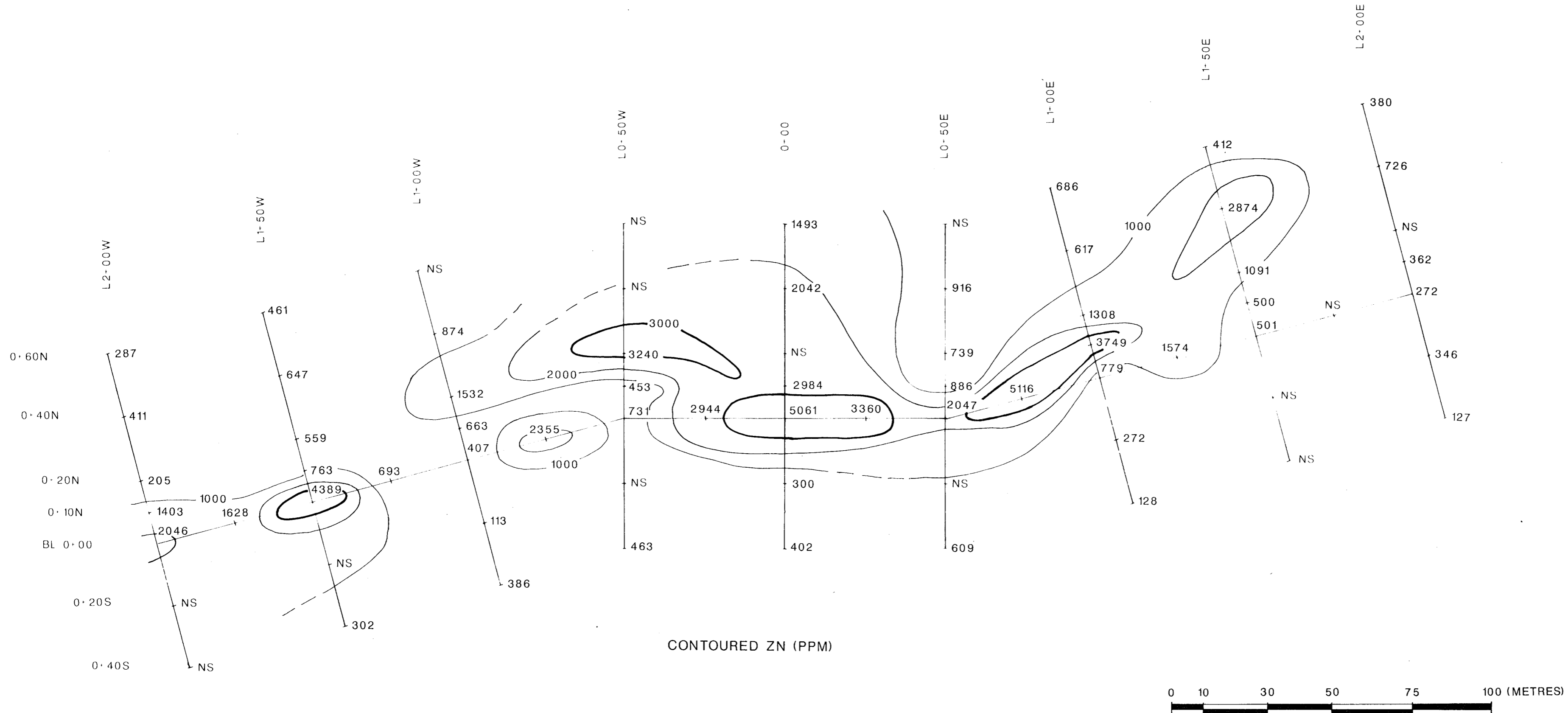
**GEOLOGICAL BRANCH**  
**ASSESSMENT REPORT**

**20,822**

Contoured Ag  
 — 2.5 ppm Contour  
 — 5.0 ppm Contour  
 — 7.5 ppm Contour  
 — 10 ppm Contour  
 — 20 ppm Contour

HOMESTAKE MINERAL DEVELOPMENT COMPANY			
MOUNT VAUGHAN PROPERTY, B.C.			
CONTOURED SOIL GEOCHEMISTRY			
Au and Ag			
HOPEFUL ZONE			
DRAWN JSB	DATE 10/90	FILE CODE 104N/12E	Map 2a,2b
Revised			

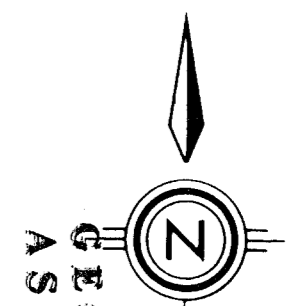




CONTOURED ZN (PPM)



20,822



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

- Contoured Zn
- 1000 ppm Contour
  - 2000 ppm Contour
  - 3000 ppm Contour

HOMESTAKE  
MINERAL DEVELOPMENT COMPANY

MOUNT VAUGHAN PROPERTY, B.C.

CONTOURED SOIL GEOCHEMISTRY (ZN)

HOPEFUL ZONE

DRAWN JSB	DATE 10/90	FILE CODE 104N/12E	Map 2e
Revised			

## **APPENDIX 2: ANALYTICAL RESULTS**

Bondar-Clegg & Company Ltd.  
130 Pemberton Ave.  
North Vancouver, B.C.  
V7P 2R5  
(604) 985-0681 Telex 04-352667



Geochemical  
Lab Report

A DIVISION OF INCHCAP INSPECTION & TESTING SERVICES

REPORT: V90-36123.0 ( COMPLETE )

REFERENCE INFO: *Hopeful Soils*

CLIENT: HOMESTAKE MINERAL DEVELOPMENT COMPANY  
PROJECT: MV-3107

SUBMITTED BY: J. BOZEK  
DATE PRINTED: 3-JUL-90

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOILS	72	1 -80	72	DRY, SIEVE -80	59

REMARKS: "IS" DENOTES INSUFFICIENT SAMPLE.

REPORT COPIES TO: MS. JOANNE BOZEK  
MR. RON BRITTEN

INVOICE TO: MS. JOANNE BOZEK  
MR. RON BRITTEN



A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3-JUL-90

REPORT: V90-36123.0

PROJECT: MV-3107

PAGE 1A

SAMPLE NUMBER	ELEMENT UNITS	Au 10g PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
S1 BL: 2+00W		7	3.4	28	323	2046	4	81	20	13	<5	120
S1 BL: 1+75W		31	4.7	48	1237	1628	3	62	21	6	<5	159
S1 BL: 1+50W		335	12.7	179	1590	4389	3	42	12	29	6	967
S1 BL: 1+25W		<5	0.9	27	392	693	9	18	7	15	10	108
S1 BL: 1+00W		<5	2.5	5	321	407	<1	142	26	2	6	32
S1 BL: 0+75W		10	3.9	122	1724	2355	5	43	20	21	8	43
S1 BL: 0+50W		9	4.0	139	1565	731	6	47	67	6	8	53
S1 BL: 0+25W		10	10.4	236	2238	2944	7	54	19	13	15	110
S1 BL: 0+00		28	6.2	273	1978	5061	8	27	43	39	14	91
S1 BL: 0+25E		21	9.6	867	1400	3360	9	24	79	30	23	103
S1 BL: 0+50E		<5	9.1	260	1172	2047	5	33	24	17	18	56
S1 BL: 0+75E		10	10.1	71	3051	5116	13	34	41	136	27	20
S1 BL: 1+00E		<5	4.1	97	480	779	4	17	8	2	8	106
S1 BL: 1+25E		10	5.7	93	945	1574	5	32	16	14	11	117
S1 BL: 1+50E		14	2.0	49	253	501	3	16	13	2	<5	92
S1 BL: 2+00E		7	0.5	22	146	272	2	19	8	2	<5	60
S1 LINE 2+00W 0+100N		7	3.4	39	565	634	3	20	11	3	<5	67
S1 LINE 2+00W 0+80N		7	0.8	24	297	234	3	15	9	1	<5	44
S1 LINE 2+00W 0+60N		9	1.7	30	276	287	8	18	10	<1	<5	92
S1 LINE 2+00W 0+40N		<5	4.5	39	258	411	11	17	11	2	7	152
S1 LINE 2+00W 0+20N		42	0.9	23	178	205	6	21	14	<1	<5	55
S1 LINE 2+00W 0+10N		121	2.9	40	1381	1403	5	45	21	14	8	74
S1 LINE 2+00W 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 2+00W 0+40S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 1+50W 0+60N		7	1.1	28	564	461	5	21	12	5	<5	60
S1 LINE 1+50W 0+40N		28	2.7	30	712	647	3	20	14	4	<5	213
S1 LINE 1+50W 0+20N		14	1.7	35	592	559	4	29	12	2	<5	127
S1 LINE 1+50W 0+10N		15	1.9	41	743	763	5	40	17	3	6	166
S1 LINE 1+50W 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 1+50W 0+40S		11	1.4	29	332	302	7	14	9	2	6	120
S1 LINE 1+00W 0+60N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 1+00W 0+40N		6	3.0	68	1070	874	4	19	13	5	<5	92
S1 LINE 1+00W 0+20N		6	4.9	70	2340	1532	5	18	14	10	<5	63
S1 LINE 1+00W 0+10N		10	1.6	30	513	663	2	19	9	1	7	65
S1 LINE 1+00W 0+20S		11	0.3	18	119	113	4	8	4	<1	<5	50
S1 LINE 1+00W 0+40S		11	1.2	38	259	386	7	18	10	<1	<5	135
S1 LINE 0+50W 0+60N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+40N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+20N		<5	2.8	146	865	3240	4	69	25	50	5	46
S1 LINE 0+50W 0+10N		<5	1.9	31	264	453	2	124	36	6	<5	52



A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3-JUL-90

REPORT: V90-36123.0

PROJECT: NV-3107

PAGE 18

SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Fe PCT	Mn PCT	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT
S1 BL: 2+00W		9	5.89	0.32	17	174	138	76	<20	<10	62	2.62
S1 BL: 1+75W		6	7.68	0.35	20	98	95	72	<20	<10	38	2.78
S1 BL: 1+50W		13	5.49	0.27	19	51	61	44	<20	<10	29	1.90
S1 BL: 1+25W		9	4.12	0.13	<10	78	49	60	<20	<10	13	1.53
S1 BL: 1+00W		<5	4.32	0.34	15	205	284	84	<20	<10	30	2.03
S1 BL: 0+75W		11	4.82	0.41	15	60	76	47	<20	<10	32	2.98
S1 BL: 0+50W		10	7.33	0.81	26	131	67	67	<20	<10	75	3.75
S1 BL: 0+25W		17	6.79	0.48	22	80	116	66	<20	<10	29	4.04
S1 BL: 0+00		15	4.21	0.63	16	94	42	46	<20	<10	38	1.83
S1 BL: 0+25E		12	7.56	0.60	23	139	44	50	<20	<10	54	2.24
S1 BL: 0+50E		12	4.41	0.29	14	129	65	57	<20	<10	24	2.33
S1 BL: 0+75E		24	8.80	1.72	30	474	37	72	<20	<10	133	2.45
S1 BL: 1+00E		12	3.50	0.10	<10	150	35	50	<20	<10	26	2.53
S1 BL: 1+25E		14	5.34	0.37	19	132	57	62	<20	<10	36	2.76
S1 BL: 1+50E		15	4.39	0.12	12	155	38	65	<20	<10	33	3.30
S1 BL: 2+00E		8	3.40	0.06	<10	86	46	55	<20	<10	22	1.70
S1 LINE 2+00W 0+100N		7	3.28	0.19	<10	107	41	47	<20	<10	30	2.30
S1 LINE 2+00W 0+80N		<5	2.92	0.08	<10	138	30	46	<20	14	21	1.81
S1 LINE 2+00W 0+60N		<5	3.41	0.10	<10	125	39	53	<20	<10	18	1.76
S1 LINE 2+00W 0+40N		8	3.72	0.11	11	116	37	55	<20	14	19	1.90
S1 LINE 2+00W 0+20N		8	3.57	0.15	<10	114	52	57	<20	12	21	1.74
S1 LINE 2+00W 0+10N		5	4.28	0.28	11	109	110	68	<20	<10	33	2.04
S1 LINE 2+00W 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 2+00W 0+40S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 1+50W 0+60N		6	3.09	0.15	<10	56	47	43	<20	<10	18	1.78
S1 LINE 1+50W 0+40N		6	2.88	0.30	<10	55	35	35	<20	<10	26	2.34
S1 LINE 1+50W 0+20N		<5	3.37	0.17	<10	107	55	50	<20	<10	23	2.14
S1 LINE 1+50W 0+10N		6	3.68	0.25	13	110	77	54	<20	<10	21	2.36
S1 LINE 1+50W 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 1+50W 0+40S		<5	2.80	0.09	<10	105	32	43	<20	12	20	1.65
S1 LINE 1+00W 0+60N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 1+00W 0+40N		6	3.50	0.15	<10	110	42	55	<20	<10	27	1.83
S1 LINE 1+00W 0+20N		7	3.53	0.17	14	117	41	53	<20	<10	23	1.77
S1 LINE 1+00W 0+10N		6	3.24	0.11	<10	88	41	54	<20	<10	19	1.55
S1 LINE 1+00W 0+20S		6	2.12	0.04	<10	106	21	40	<20	<10	10	1.14
S1 LINE 1+00W 0+40S		6	3.69	0.08	<10	121	40	58	<20	<10	24	2.19
S1 LINE 0+50W 0+60N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+40N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+20N		10	3.58	0.54	12	190	103	61	<20	<10	39	2.03
S1 LINE 0+50W 0+10N		<5	5.53	0.57	13	128	241	88	<20	<10	45	2.75



A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

REPORT: V90-36123.0

DATE PRINTED: 3-JUL-90

PROJECT: MV-3107

PAGE 1C

SAMPLE NUMBER	ELEMENT UNITS	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 BL: 2+00W		1.28	0.68	<0.05	<0.05	65	26
S1 BL: 1+75W		1.42	0.65	<0.05	<0.05	60	14
S1 BL: 1+50W		0.64	1.36	<0.05	<0.05	82	17
S1 BL: 1+25W		0.62	0.55	<0.05	0.06	79	5
S1 BL: 1+00W		3.34	2.05	0.06	0.32	101	12
S1 BL: 0+75W		1.57	0.75	<0.05	0.08	65	15
S1 BL: 0+50W		1.75	1.00	<0.05	<0.05	74	35
S1 BL: 0+25W		2.07	0.80	<0.05	0.07	81	14
S1 BL: 0+00		0.77	0.62	<0.05	0.09	57	13
S1 BL: 0+25E		0.76	0.55	<0.05	0.08	75	24
S1 BL: 0+50E		0.83	0.60	<0.05	<0.05	120	9
S1 BL: 0+75E		0.95	1.36	<0.05	0.12	100	65
S1 BL: 1+00E		0.68	0.80	<0.05	<0.05	242	8
S1 BL: 1+25E		0.81	0.99	<0.05	0.09	220	15
S1 BL: 1+50E		0.90	1.27	<0.05	0.08	290	11
S1 BL: 2+00E		0.54	0.52	<0.05	0.06	76	9
S1 LINE 2+00W 0+100N		0.90	0.91	<0.05	0.09	167	10
S1 LINE 2+00W 0+80N		0.43	0.55	<0.05	<0.05	170	6
S1 LINE 2+00W 0+60N		0.59	0.51	<0.05	0.07	85	7
S1 LINE 2+00W 0+40N		0.70	0.48	<0.05	0.11	71	7
S1 LINE 2+00W 0+20N		0.60	0.44	<0.05	0.06	79	6
S1 LINE 2+00W 0+10N		0.99	1.46	<0.05	0.06	109	15
S1 LINE 2+00W 0+20S		IS	IS	IS	IS	IS	IS
S1 LINE 2+00W 0+40S		IS	IS	IS	IS	IS	IS
S1 LINE 1+50W 0+60N		0.86	0.54	<0.05	<0.05	76	7
S1 LINE 1+50W 0+40N		1.30	1.03	<0.05	<0.05	83	11
S1 LINE 1+50W 0+20N		0.98	0.82	<0.05	0.06	90	8
S1 LINE 1+50W 0+10N		1.25	0.91	<0.05	<0.05	87	9
S1 LINE 1+50W 0+20S		IS	IS	IS	IS	IS	IS
S1 LINE 1+50W 0+40S		0.53	0.58	<0.05	0.08	126	6
S1 LINE 1+00W 0+60N		IS	IS	IS	IS	IS	IS
S1 LINE 1+00W 0+40N		0.69	0.69	<0.05	0.07	123	8
S1 LINE 1+00W 0+20N		0.65	0.59	<0.05	0.05	75	9
S1 LINE 1+00W 0+10N		0.69	0.46	<0.05	<0.05	70	7
S1 LINE 1+00W 0+20S		0.27	0.25	<0.05	<0.05	113	5
S1 LINE 1+00W 0+40S		0.66	0.66	<0.05	0.08	162	8
S1 LINE 0+50W 0+60N		IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+40N		IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+20N		1.32	1.51	<0.05	0.13	182	19
S1 LINE 0+50W 0+10N		2.36	1.64	<0.05	0.41	95	24



A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3-JUL-90

REPORT: V90-36123.0

PROJECT: MV-3107

PAGE 2A

SAMPLE NUMBER	ELEMENT UNITS	Au 10g PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
S1 LINE 0+50W 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+40S		<5	1.9	44	559	463	5	16	8	2	5	85
S1 LINE 0+00 0+60N		11	5.0	176	658	1493	4	24	14	12	9	236
S1 LINE 0+00 0+40N		10	4.3	181	785	2042	3	12	13	16	7	71
S1 LINE 0+00 0+20N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+00 0+10N		26	21.1	833	2454	2984	6	23	39	28	31	271
S1 LINE 0+00 0+20S		<5	0.6	29	358	300	3	11	7	<1	<5	88
S1 LINE 0+00 0+40S		<5	0.4	29	314	402	3	9	6	3	<5	82
S1 LINE 0+50E 0+60N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50E 0+40N		7	1.0	68	594	916	2	21	21	6	<5	45
S1 LINE 0+50E 0+20N		8	1.7	80	608	739	4	22	11	5	8	56
S1 LINE 0+50E 0+10N		6	1.8	130	592	886	4	18	16	5	7	52
S1 LINE 0+50E 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50E 0+40S		7	1.4	34	574	609	3	9	9	2	<5	139
S1 LINE 1+00E 0+60N		9	2.6	169	287	686	5	18	8	7	7	144
S1 LINE 1+00E 0+40N		8	2.7	76	462	617	5	18	11	16	6	45
S1 LINE 1+00E 0+20N		16	4.9	76	1018	1308	3	38	18	5	6	82
S1 LINE 1+00E 0+10N		14	4.9	56	697	3749	5	42	19	39	9	50
S1 LINE 1+00E 0+20S		9	0.6	27	165	272	<1	18	11	2	<5	38
S1 LINE 1+00E 0+40S		17	0.7	14	68	128	<1	9	9	<1	<5	69
S1 LINE 1+50E 0+60N		IS	0.6	22	106	412	1	21	8	3	<5	64
S1 LINE 1+50E 0+40N		14	11.2	225	2256	2874	4	77	23	19	12	105
S1 LINE 1+50E 0+20N		21	7.0	127	1634	1091	5	46	17	2	11	87
S1 LINE 1+50E 0+10N		7	1.2	33	267	500	3	26	14	2	<5	84
S1 LINE 1+50E 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 1+50E 0+40S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 2+00E 0+60N		7	1.2	32	181	380	3	17	8	5	6	76
S1 LINE 2+00E 0+40N		6	1.9	66	510	726	4	37	13	3	<5	89
S1 LINE 2+00E 0+20N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 2+00E 0+10N		8	0.6	16	245	362	3	31	12	6	5	128
S1 LINE 2+00E 0+20S		<5	0.8	34	133	346	3	18	9	2	<5	38
S1 LINE 2+00E 0+40S		<5	0.7	12	55	127	2	5	3	5	<5	24



A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3-JUL-90

REPORT: V90-36123.0

PROJECT: MV-3107

PAGE 2B

SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Fe PCT	Mn PCT	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT
S1 LINE 0+50W 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+40S		6	3.00	0.13	<10	120	33	47	<20	<10	26	2.19
S1 LINE 0+00 0+60N		10	4.27	0.16	13	126	42	47	<20	<10	40	2.21
S1 LINE 0+00 0+40N		9	3.74	0.22	13	113	21	35	<20	<10	42	1.84
S1 LINE 0+00 0+20N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+00 0+10N		12	5.65	0.42	15	159	39	46	<20	<10	46	2.02
S1 LINE 0+00 0+20S		12	3.11	0.08	<10	78	26	54	<20	12	17	1.41
S1 LINE 0+00 0+40S		9	3.18	0.08	<10	67	24	52	<20	17	14	1.30
S1 LINE 0+50E 0+60N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50E 0+40N		9	3.29	0.18	10	99	40	50	<20	19	18	1.66
S1 LINE 0+50E 0+20N		10	3.24	0.14	<10	101	47	51	<20	21	18	1.58
S1 LINE 0+50E 0+10N		<5	3.01	0.14	<10	127	35	44	<20	15	17	1.51
S1 LINE 0+50E 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 0+50E 0+40S		58	4.29	0.12	<10	89	23	47	<20	22	32	2.16
S1 LINE 1+00E 0+60N		10	3.58	0.06	<10	74	34	47	<20	20	18	1.38
S1 LINE 1+00E 0+40N		7	2.88	0.15	<10	97	45	46	<20	<10	12	1.23
S1 LINE 1+00E 0+20N		14	4.27	0.27	14	108	80	57	<20	<10	21	2.28
S1 LINE 1+00E 0+10N		16	5.94	0.47	16	47	42	50	<20	19	30	1.88
S1 LINE 1+00E 0+20S		5	3.37	0.09	<10	99	28	56	<20	11	19	1.88
S1 LINE 1+00E 0+40S		11	3.32	0.05	11	279	20	46	<20	13	18	2.62
S1 LINE 1+50E 0+60N		<5	3.13	0.04	<10	57	35	50	<20	<10	15	1.17
S1 LINE 1+50E 0+40N		19	6.09	0.30	18	82	186	67	<20	16	39	2.66
S1 LINE 1+50E 0+20N		15	5.76	0.23	15	87	165	63	<20	15	25	2.50
S1 LINE 1+50E 0+10N		18	3.79	0.13	12	133	94	58	<20	17	33	2.41
S1 LINE 1+50E 0+20S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 1+50E 0+40S		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 2+00E 0+60N		6	3.53	0.08	<10	87	38	58	<20	15	17	1.51
S1 LINE 2+00E 0+40N		22	4.34	0.16	13	99	95	53	<20	18	28	2.38
S1 LINE 2+00E 0+20N		IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
S1 LINE 2+00E 0+10N		28	4.82	0.19	<10	106	224	61	<20	<10	21	2.37
S1 LINE 2+00E 0+20S		8	3.01	0.08	<10	85	35	51	<20	10	22	1.41
S1 LINE 2+00E 0+40S		<5	1.26	0.02	<10	45	13	30	<20	<10	5	0.52



A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3-JUL-90

REPORT: V90-36123.0

PROJECT: MV-3187

PAGE 2C

SAMPLE NUMBER	ELEMENT UNITS	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM
S1 LINE 0+50W 0+20S		IS	IS	IS	IS	IS	IS
S1 LINE 0+50W 0+40S		0.70	0.63	<0.05	0.06	232	9
S1 LINE 0+00 0+60N		0.81	0.66	<0.05	0.10	110	16
S1 LINE 0+00 0+40N		0.56	0.71	<0.05	0.07	69	13
S1 LINE 0+00 0+20N		IS	IS	IS	IS	IS	IS
S1 LINE 0+00 0+10N		0.79	0.66	<0.05	0.08	94	20
S1 LINE 0+00 0+20S		0.42	0.38	<0.05	0.05	59	7
S1 LINE 0+00 0+40S		0.43	0.34	<0.05	<0.05	76	5
S1 LINE 0+50E 0+60N		IS	IS	IS	IS	IS	IS
S1 LINE 0+50E 0+40N		0.66	0.54	<0.05	0.06	95	7
S1 LINE 0+50E 0+20N		0.55	0.38	<0.05	<0.05	103	7
S1 LINE 0+50E 0+10N		0.54	0.47	<0.05	<0.05	156	6
S1 LINE 0+50E 0+20S		IS	IS	IS	IS	IS	IS
S1 LINE 0+50E 0+40S		0.67	0.83	<0.05	0.07	208	8
S1 LINE 1+00E 0+60N		0.56	0.47	<0.05	0.06	56	7
S1 LINE 1+00E 0+40N		0.54	0.51	<0.05	<0.05	90	5
S1 LINE 1+00E 0+20N		1.12	0.69	<0.05	0.06	111	7
S1 LINE 1+00E 0+10N		0.63	0.66	<0.05	0.07	56	18
S1 LINE 1+00E 0+20S		0.60	0.63	<0.05	<0.05	147	8
S1 LINE 1+00E 0+40S		0.59	1.02	<0.05	0.14	1102	7
S1 LINE 1+50E 0+60N		0.52	0.54	<0.05	<0.05	44	6
S1 LINE 1+50E 0+40N		1.35	1.14	<0.05	0.07	104	15
S1 LINE 1+50E 0+20N		1.22	1.06	<0.05	<0.05	110	9
S1 LINE 1+50E 0+10N		1.00	1.01	<0.05	0.07	236	10
S1 LINE 1+50E 0+20S		IS	IS	IS	IS	IS	IS
S1 LINE 1+50E 0+40S		IS	IS	IS	IS	IS	IS
S1 LINE 2+00E 0+60N		0.52	0.39	<0.05	0.08	72	6
S1 LINE 2+00E 0+40N		1.21	0.78	<0.05	0.07	138	9
S1 LINE 2+00E 0+20N		IS	IS	IS	IS	IS	IS
S1 LINE 2+00E 0+10N		0.72	0.51	<0.05	<0.05	99	7
S1 LINE 2+00E 0+20S		0.53	0.68	<0.05	<0.05	89	8
S1 LINE 2+00E 0+40S		0.11	0.19	<0.05	<0.05	42	2