

LOG NO: SEP 30 1991	RD.
ACTION:	
FILE NO:	

LOG NO: May 14/91	RD.
ACTION:	
FILE NO:	

GEOLOGICAL & GEOCHEMICAL REPORT

on the

BAR 1 - 4 MINERAL CLAIMS

Greenwood Mining Division

NTS 82E/2

Latitude 49° 05'N, Longitude 118° 54' W

British Columbia

by

C.J. WESTERMAN, Ph.D.  
Consulting Geologist  
1010 - 470 Granville Street  
Vancouver, B.C.  
V6C 1V5

for

TECK CORPORATION  
1199 West Hastings Street  
Vancouver, B.C.  
V6E 2K5

March 1, 1991

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

21,280

## CONTENTS

	<b>Page</b>
Summary	1
Introduction	2
Location, Access, Topography	2
Property Definition	2
History	5
Current Work Program	5
References	5
Geology	6
Geochemistry	8
Conclusions and Recommendations	10

## **LIST OF FIGURES**

Figure 1	Location Map	3
Figure 2	Claim Map	4
Figure 3	Sample Locations & Geology (with anomalous geochemical values)	in pocket
Figure 4	Geochemical Results - As, Cu, Au, Hg	in pocket

## **LIST OF TABLES**

Table 1	Mineral Claims	2
---------	----------------	---

## **LIST OF APPENDICES**

Appendix I	Statement of Expenditures
Appendix II	Statement of Qualifications
Appendix III	Sampling and Analytical Procedures
Appendix IV	Geochemical Results
Appendix V	Rock Sample Descriptions

## SUMMARY

The BAR claims are located 10 km northwest of the town of Midway in southern British Columbia. The claims are underlain by an east-west trending basement sequence of Permian and Triassic metasediments unconformably overlain by Eocene volcanics and sediments. Large Jurassic-Cretaceous granitic plutons have intruded the basement rocks in areas adjacent to the BAR claims. Subvolcanic intrusions of Eocene age occur in the form of numerous sills, dikes and small stocks of diorite to syenite composition. Middle to late Tertiary extensional tectonics has produced a number of NNE trending normal faults, some of which have very shallow dips. Mineralization in the District includes copper and gold skarn deposits of probable Jurassic age hosted in Permo-Triassic rocks and epithermal gold-quartz veins of probable Tertiary age hosted in a variety of lithologies.

The current work program consisted of reconnaissance geological and geochemical surveys involving collection and analysis of 15 rock, 128 soil, 1 silt and 3 heavy mineral silt samples. Several small outcrops in the north-central portion of claim BAR 2 expose interbedded calc-silicate hornfels and brecciated chert of Triassic age. A sample of the former returned a value of 155 ppm Ni and a sample of the chert which had traces of malachite returned a value of 108 ppm Cu. A nearby soil sample contains 173 ppb Au. Two other soil samples from the BAR 2 claim returned anomalous gold values in proximity to a late Tertiary fault structure.

On the BAR 3 claim a heavy mineral silt sample returned an anomalous value of 365 ppb Au from Bubar Creek. Three adjacent soil samples returned anomalous As and Ni values accompanied in two samples by anomalous Cr values and in one each of anomalous Co and Au. Two adjacent angular float boulders of intense quartz - ankerite alteration in an andesite breccia contain significantly anomalous Co, Ni and Cr values. A sample of hematitic chert breccia from abundant angular boulders located 500 m upstream contains significantly anomalous As, Co, Ni, Cr and Au values. The economic significance of these anomalies is not presently defined.

Further work is recommended to follow-up on anomalies outlined to date and to continue evaluation of the claims.

## INTRODUCTION

### Location, Access, Topography

The BAR claims are located 10 km northwest of the town of Midway near the International Border in southern British Columbia. The property is centered on Latitude 49° 05' N, Longitude 118° 54' W within NTS area 82E/2. Access to the north end of the claims is gained via the Ingram Creek Forestry Road which is a well maintained gravel surface road departing Highway 3, 8 km west of Midway. The Bubar Creek forest road leaves the Ingram Creek Road at a point 6 km north of the highway and provides access to the north end of the BAR 2 claim. A network of overgrown old logging roads crosses this claim. Access to the south and central part of the property is provided by a poorly maintained old logging/ranching road which follows Bubar Creek northwards from its outlet into the Kettle River Valley. Topography is moderate with elevations ranging from 600 m to 1,280 m. Vegetation cover is highly variable since most of the property has been logged at some time in the past and is currently used as summer grazing by local ranchers. Most of the property is covered by semi-mature second growth with locally thick underbrush.

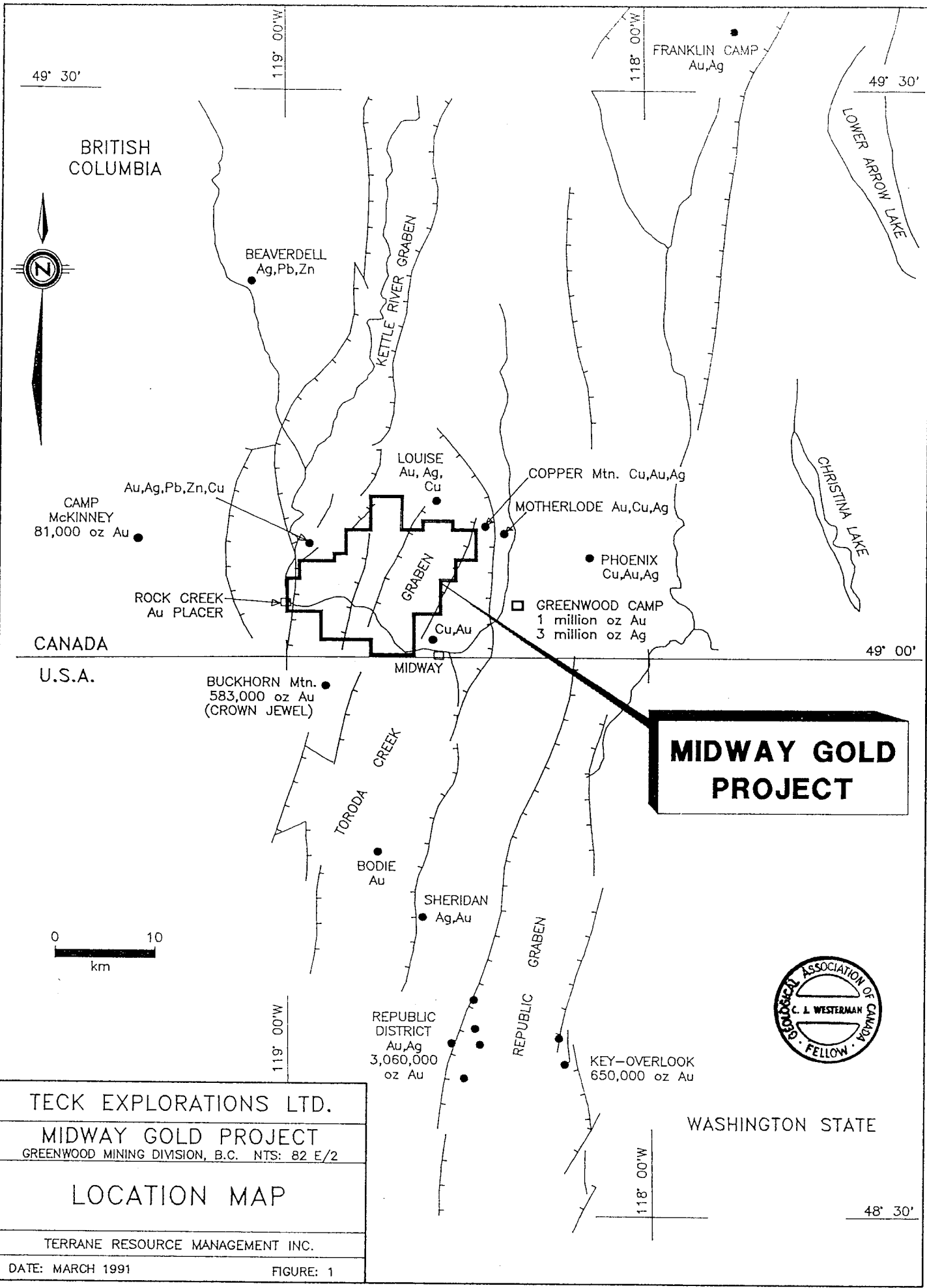
### Property Definition

The BAR property consists of four (4) contiguous metric grid system mineral claims totalling 76 units within the Greenwood Mining Division of British Columbia. The claims were originally staked in March 1990 for Amex Exploration Services Ltd. which transferred title to James Robertson in May 1990 who subsequently transferred title to Teck Corporation pursuant to an agreement dated February 7, 1991. The BAR 1-4 mineral claims (total 76 units) were grouped as the BAR Group.

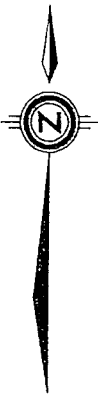
TABLE 1  
Mineral Claims

<u>Name</u>	<u>Units</u>	<u>Record No.</u>	<u>Record Date</u>	<u>Expiry Date*</u>
BAR 1	20	5700	March 8, 1990	March 8, 1991
BAR 2	16	5701	March 4, 1990	March 4, 1991
BAR 3	20	5702	March 5, 1990	March 5, 1991
BAR 4	20	5703	March 4, 1990	March 4, 1991

\*Note: expiry date based on acceptance of this report.



BRITISH COLUMBIA



49° 30'

119° 00'W

118° 00'W

49° 30'

BEAVERDELL  
Ag,Pb,Zn

FRANKLIN CAMP  
Au,Ag

LOWER ARROW LAKE

KETTLE RIVER GRABEN

Au,Ag,Pb,Zn,Cu

CAMP  
McKINNEY  
81,000 oz Au

LOUISE  
Au, Ag,  
Cu

COPPER Mtn. Cu,Au,Ag

MOTHERLODE Au,Cu,Ag

PHOENIX  
Cu,Au,Ag

CHRISTINA LAKE

ROCK CREEK  
Au PLACER

GREENWOOD CAMP  
1 million oz Au  
3 million oz Ag

CANADA

49° 00'

U.S.A.

BUCKHORN Mtn.  
583,000 oz Au  
(CROWN JEWEL)

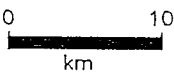
MIDWAY

**MIDWAY GOLD  
PROJECT**

TORODA CREEK

BODIE  
Au

SHERIDAN  
Ag,Au



REPUBLIC DISTRICT  
Au,Ag  
3,060,000 oz Au

REPUBLIC GRABEN

KEY-OVERLOOK  
650,000 oz Au



TECK EXPLORATIONS LTD.

MIDWAY GOLD PROJECT  
GREENWOOD MINING DIVISION, B.C. NTS: 82 E/2

LOCATION MAP

TERRANE RESOURCE MANAGEMENT INC.

WASHINGTON STATE

118° 00'W

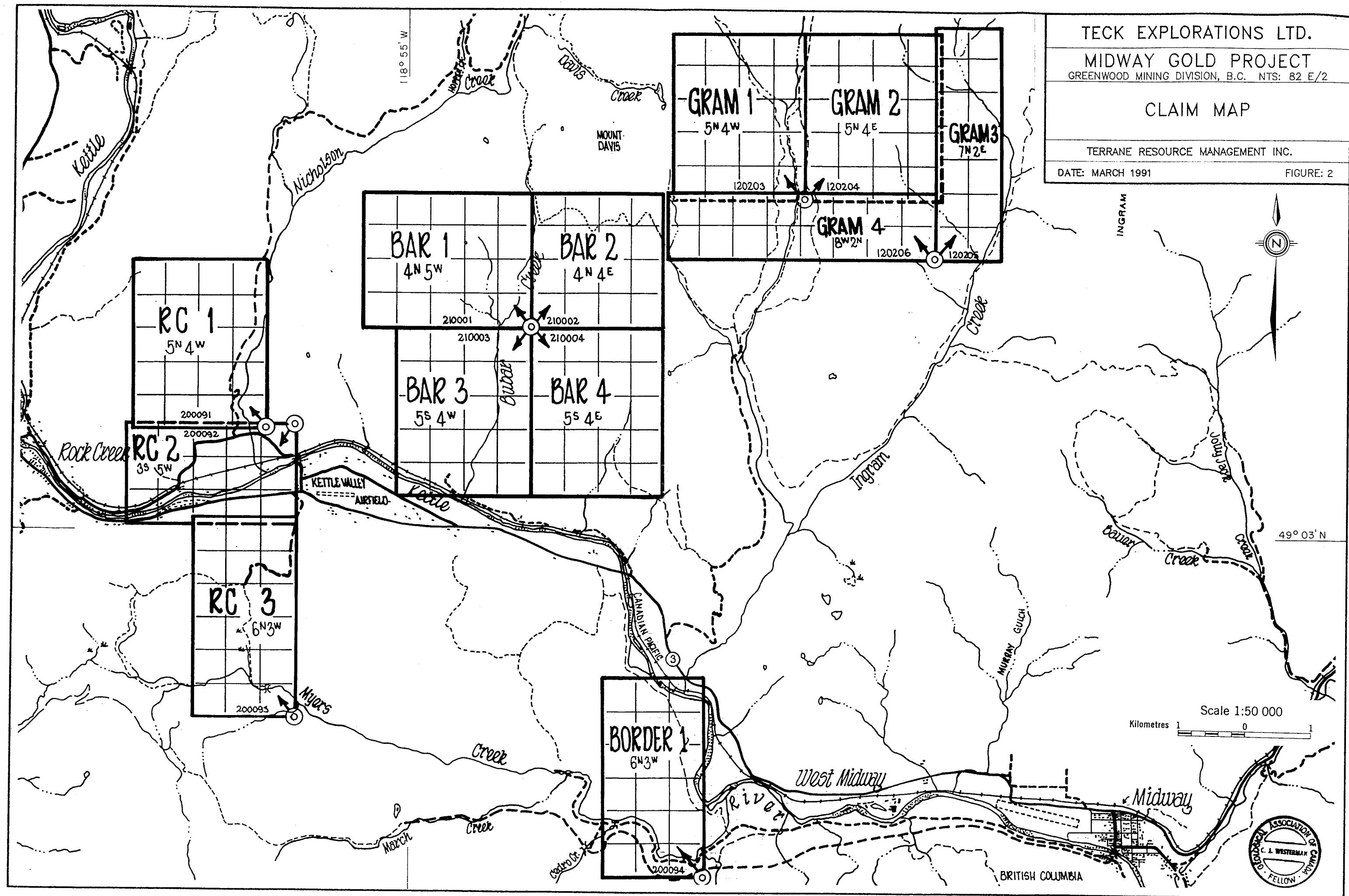
48° 30'

CLAIM MAP

TERRANE RESOURCE MANAGEMENT INC.

DATE: MARCH 1991

FIGURE: 2



### History

The area of the BAR claims has been covered in the past by other mineral claims but only limited previous exploration work has been undertaken. L. Sookochoff (1983) reports on a wide spaced grid based sampling program which collected about 400 soil samples covering the NW four units of the BAR 4 claim. This work on the pre-existing Rock claim for Prominent Resources Corp. revealed seven spot gold anomalies in the 50-150 ppb Au range. A ground magnetic survey indicated a N-S trend coincident with the strike of Tertiary volcanic units in this area. S. Tan (1984) surveyed a 500 m square area in the SE corner of the BAR 3 claim for Rand Resources Inc. (pre-existing BETA claim). A total of 158 soil samples collected from a 25 m spaced grid returned 3 spot anomalies in the 140 ppb Au range.

### Current Work Program

The current field work program was undertaken in the periods June 5 - 8, October 28 - November 4, 1990 by C.J. Westerman, and in the period February 17-22, 1991 by C.J. Westerman and R. Farmer. The program was designed as an initial reconnaissance survey of the claims and will be followed by a more comprehensive evaluation currently being planned by Teck Explorations Ltd. The current program involved geological examination of available outcrops, initial prospecting, and collection of 5 rock, 83 soil, 1 silt and 9 heavy mineral silt samples. All samples were analyzed at Min-En Laboratories, North Vancouver, B.C. for gold, mercury and 31 trace elements. Details of sample collection and analytical procedures are given in Appendix 3, analytical results are present in Appendix 4.

### References

- H.W. Little (1983) - Geology of the Greenwood Map-Area, British Columbia. Geol. Surv. Canada, Paper 79-29.
- J.T. Fyles (1990) - Geology of the Greenwood - Grand Forks Area, British Columbia NTS 82E/1, 2. B.C. - EMPR - Geol. Surv. Branch - Mineral Resources Division Open File 1990-25.
- B.N. Church (1986) - Geology & Mineralization in the Mount Attwood - Phoenix Area, Greenwood, B.C.; BCEMPR Paper 1986-2.

L. Sookochoff (1983) - Geological, Geochemical & Geophysical Report on the Rock Claim for Prominent Resources Corp. BC-EMPR Assessment Report No. 12095.

S.S. Tan (1984) - Geological, Geochemical & Geophysical Report on the BETA Claim for Rand Resources Inc. BC-EMPR Assessment Report No. 12502.

## GEOLOGY

Geology of the Midway - Greenwood District has been described in some detail recently by Little (1983) and Fyles (1990). The framework of the District consists of five north-dipping thrust slices of Permian and Triassic sediments and volcanics metamorphosed to greenschist facies which lie on unexposed high grade metamorphic complexes. The Permian-Triassic rocks are intruded by Jurassic-Cretaceous granitic plutons and are unconformably overlain by Tertiary sediments and volcanics with small associated subvolcanic intrusions. Distribution of Tertiary rocks is controlled by a complex network of extensional faults of late Tertiary age.

A variety of mineral deposits occur in the District. The most notable are copper-gold magnetite skarns and replacements in Brooklyn Formation limestones (Triassic age) in B.C. and gold-magnetite skarns in Knob Hill Formation calcareous rocks (Permian age) in Washington State. Examples of the former are the previously mined Phoenix deposit (22.7 million tonnes grading 1.14% Cu and 1.51 g/t Au) and Motherlode - Greyhound deposits (3.5 million tonnes grading 1.00% Cu and 1.47 g/t Au). The Crown Jewel deposit at Buckhorn Mountain in Washington State (6.6 million tonnes grading 5.59 g/t Au) is an example of the latter type. In addition, the District has many occurrences of gold - quartz veins with epithermal characteristics, some of which are of Eocene age.

The BAR claims lie astride the Turoda Creek Graben which is a NNE trending extensional tectonic feature of late Tertiary age. Several NNE trending normal faults have been mapped as passing through the BAR claims by both Little (1983) and Fyles (1990) without agreement regarding details of location and attitude. Fault structures shown on Figure 3 are taken from mapping by Little (1983). The



valley of Bubar Creek occupies an upthrown block of Permian-Triassic rocks bounded to the east and west by Tertiary volcanics of the Marron Formation. The apparent vertical movement on these faults is emphasized by the topographic effects of the creek valley. The eastern boundary fault probably dips steeply to the east whilst the western boundary fault appears to have a shallow west dip.

Permian age rocks exposed in the Bubar Creek valley are a moderately north-dipping sequence of interbedded siltstones, argillites, andesitic tuffs and cherts with rare limestone horizons and belong to the Knob Hill Group. These rocks are locally overlain by cherts, siltstones and limestones of the Triassic Brooklyn Formation. Regional metamorphic effects on both Permian and Triassic rocks are generally at middle greenschist facies. An area of weak to moderate hornfelsing of Brooklyn Formation lithologies is poorly exposed at higher elevations adjacent to the North Bubar access road on the BAR 2 claim. One outcrop of interbedded calcareous hornfels and brecciated grey-green chert in this area has weak malachite staining and returned an analytical value of 108 ppm Cu (90 WR 103).

The distribution of pre-Tertiary rocks at the south end of Bubar Creek as shown on Figure 3 is taken from G.S.C. mapping by Little (1983). The small body of fine grained pale green-grey quartz-feldspar porphyry in this area was correlated tentatively by Little with the Scatter Creek rhyodacite of Eocene age which is commonly found in association with epithermal gold deposits in Washington State. Both Little (1983) and Fyles (1990) have correlated this body with the Lexington quartz porphyry intrusions of Goosmus Creek, south of Greenwood, which host pyritic and disseminated gold deposits. Church (1986) has reported an Early Jurassic uranium-lead zircon age for the Lexington quartz porphyry.

The Bubar Creek quartz-feldspar porphyry appears to be dacitic in composition and is cut by a 10 metre thick breccia zone with intense fine silicification and secondary ankerite alteration that dips north at about 35°. Several similar zones of alteration can be observed in Knob Hill Group rocks further north for a distance of about 1 km up Bubar Creek. This alteration is characterized by anomalous arsenic, cobalt, nickel and chrome values in rocks and soils (Figure 3). A black

limestone (marble) unit which dips moderately to the north in this area was mapped by Fyles (1990) as belonging to the Brooklynn Formation. A rock sample from angular float originating in a hematitic chert breccia unit apparently overlying the limestone returned anomalous geochemical values for arsenic, cobalt, nickel, chrome and gold (90 WR 147).

Tertiary rocks lying unconformably on the Knob Hill and Brooklynn Formations consist of a lower sedimentary unit - Kettle River Formation - and an upper volcanic unit - Marron Formation. Both are early to middle Eocene age. Lithic tuffaceous sandstones, siltstones shales and conglomerates of the Kettle River Formation are poorly exposed. Andesite to sodic trachyte flows, tuffs and subvolcanic intrusive equivalents of the Marron Formation tend to be well exposed and form topographic highs.

Rock sample descriptions are presented in Appendix 5.

## GEOCHEMISTRY

The current reconnaissance program collected a total of 15 rock, 128 soil, 1 silt and 3 heavy mineral silt samples from the BAR claims. Sample locations (Figure 3) were determined by geology and ease of access with no attempt made to complete a grid based survey. Sampling and analytical methods are detailed in Appendix 3. Analytical results are presented in Appendix 4. No attempt to undertake statistical analysis of the results has been made due to the small sample populations and highly variable bedrock and surficial geology. Anomaly threshold values have been assigned on the basis of over 23 years of practical field exploration experience by the author.

### Silt Samples

Two of the three heavy mineral silt samples collected from creeks draining the area of the BAR claims returned geochemically anomalous gold values, but these

are not supported by any other trace element values. Sample site 90 WL 91 HM is located 1,000 m east of the east boundary of the BAR 4 claim and represents silts derived in part from creeks draining the east side of the BAR 2 claim. This sample contains 552 ppb Au. The source of the gold may not be located on the BAR claims. Sample 90 WL 107 HM from the south end of Bubar Creek on claim BAR 3 contains 365 ppb Au. A moss-mat silt sample (MM001) collected from the same location returned background values for all elements.

### Soil Samples

Three soil samples (90 WS 393 to 395) from Bubar Creek adjacent to the 90 WL 107 HM silt location returned geochemically anomalous arsenic, cobalt, nickel, chrome or gold values which are apparently related to zones of silica-carbonate alteration in adjacent outcrops.

Three soil samples from the BAR 2 claim returned geochemically anomalous gold values above a selected threshold of 100 ppb Au. One of these (90 WS 295) is underlain by Brooklynn Formation cherts and calc-silicate hornfels. The other two (90 WS 137 and 90 WS 121) are underlain by Kettle River Formation sediments in close proximity to a major Tertiary normal fault. The significance of these anomalous values is currently unknown.

Anomalous values in soil samples are tabulated below and shown on Figure 3.

#### Sample

90 WS 121	236 ppb Au
90 WS 137	143 ppb Au
90 WS 295	173 ppb Au
90 WS 393	28 ppm As, 105 ppm Ni, 30 ppb Au
90 WS 394	45 ppm As, 31 ppm Co, 539 ppm Ni, 527 ppm Cr
90 WS 395	21 ppm As, 174 ppm Ni, 133 ppm Cr

### Rock Samples

Two rock samples from a single outcrop in the north part of the BAR 2 claim returned weakly anomalous geochemical values. Sample 90 WR 102 of fine grained calc-silicate hornfels returned 155 ppm Ni. Sample 90 WR 103 of interbedded brecciated chert with weak malachite staining returned a value of 108 ppm Cu.

Four rock samples from the lower Bubar Creek area of claim BAR 3 returned anomalous Ni and Cr values with a variable association of Co. These samples, 90 WR 141, 144 and 145, are related to zones of intense silica-carbonate alteration. A hematitic chert breccia from the same area (90 WR 147) contains anomalous quantities of As, Co, Ni, Cr and Au.

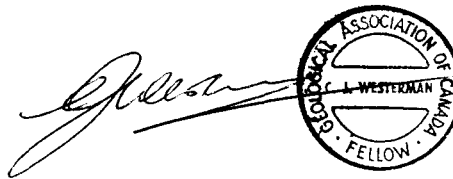
Anomalous values are tabulated below and shown on Figure 3.

#### Sample

90 WR 102	155 ppm Ni
90 WR 103	108 ppm Cu
90 WR 141	213 ppm Ni, 109 ppm Cr
90 WR 144	37 ppm Co, 864 ppm Ni, 205 ppm Cr
90 WR 145	78 ppm Co, 1831 ppm Ni, 945 ppm Cr
90 WR 147	59 ppm As, 59 ppm Co, 1456 ppm Ni, 782 ppm Cr, 122 ppb Au

### CONCLUSIONS AND RECOMMENDATIONS

The current program represents only the initial phase of a far more complete evaluation of the claims currently at the planning stage. Further geology, prospecting and geochemical sampling surveys are recommended to follow-up on geochemical anomalies revealed by the current survey and to complete coverage of the claim group.



March 1, 1991  
Vancouver, B.C.

C.J. Westerman, Ph.D.  
Consulting Geologist

APPENDIX I

STATEMENT OF EXPENDITURES

BAR 1 - 4 CLAIMS (76 Units)

Record Nos. 5700 - 5703

Greenwood Mining Division

**Labour**

C.J. Westerman - consulting geologist: 8½ days at \$450	\$ 3,825.00
Field: June 7, Oct 29, Nov 1(½), 1990; Feb 20 & 21, 1991	
Travel: Nov 4, 1990 and Feb 17, 1991	
Office: 2 days consolidated	
R. Farmer - project geologist: 1½ days at \$250	375.00
Field: Feb 20, 1991; Travel Feb 18(½), 1991	

**Geochemical Analyses**

128 soils at \$19.80	\$ 2,534.40	
15 rocks at \$22.47	337.05	
3 HM silt at \$55.91	167.73	
1 silt at \$19.80	19.80	3,058.98
All analyzed for Au & Hg plus 31 ICP trace elements		

**Vehicle**

7 days at \$50	\$ 350.00	
1,447 km at 10¢	144.70	
Gas	217.54	712.24

**Accommodation**

193.30

**Meals**

117.28

**Office, copying, communications**

311.88

**Drafting**

319.98

**TOTAL**

\$ 8,913.66

March 1, 1991  
Vancouver, B.C.

C.J. Westerman, Ph.D., FGAC  
Consulting Geologist



APPENDIX II

STATEMENT OF QUALIFICATIONS

I, Christopher John Westerman, hereby certify that:

1. I am an independent Consulting Geologist with an office at 1010 - 470 Granville Street, Vancouver, British Columbia, V6C 1V5.
2. I am a graduate of London University, England with the degree of Bachelor of Science in Geology (1967); of the University of British Columbia with the degree of Master of Science in Geology (1970) and of McMaster University, Ontario with the degree of Doctor of Philosophy in Geology (1977).
3. I am a Fellow of the Geological Association of Canada (F.525) and a member of the Canadian Institute of Mining and Metallurgy.
4. I have practised my profession in North America since 1967, having worked as employee and consultant for several International Mining Corporations and Junior Resource Companies.
5. This report is based upon field work undertaken on the property in the period June 5-8 and October 28 - November 4, 1990 and February 17-22, 1991.

March 1, 1991  
Vancouver, B.C.

C.J. Westerman, Ph.D., F.G.A.C.  
Consulting Geologist

### APPENDIX III

#### SAMPLING AND ANALYTICAL PROCEDURES

Soil samples for geochemical analysis were collected with a mattock from 'B' horizon material at depths of 15 - 30 cm. The majority of the soil samples were collected adjacent to access roads and spaced at either 50 metre or 100 metre intervals. Additional soil samples were collected at random spacing along reconnaissance traverses undertaken during geological mapping and prospecting. All soil samples were placed in numbered Kraft wet strength bags. Rock chip samples were taken at geologically significant locations and placed in numbered plastic bags. Heavy mineral silt samples were collected from centre stream gravel bars, sieved to minus 40 mesh and placed in numbered Kraft wet strength bags. Standard silt samples were collected directly from the fine fraction of stream sediment material and placed in Kraft bags. Moss mat silt samples were collected from centre stream moss mats on boulders, placed directly in Kraft wet strength bags and dried at the laboratory. All samples were analyzed by Min-En Laboratories Ltd. in North Vancouver. Samples were air dried to prevent volatilization loss of mercury. Soil and silt samples were sieved to -80 mesh to produce sufficient material for analysis. Rock samples were crushed and pulverized. Heavy mineral silt separation was achieved by flotation in a liquid with specific gravity of 2.93. The following elements were analyzed by Jarrell Ash 9000 Induction Coupled Plasma (ICP) analysis after digestion in a  $\text{HNO}_3$  -  $\text{H}_2\text{CO}_4$  mixture: Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sr, Th, U, V, Zn, Ga, Sn, W, Cr. Mercury (Hg) was analyzed by flameless atomic absorption. A 15 gram sample was analyzed by fire assay for gold (Au).

APPENDIX IV

GEOCHEMICAL RESULTS

Samples collected from the BAR claims:

**Silts:**

90 WL 91 HM, 90 WL 107 HM and 90 WL 108 HM  
MM001

**Rocks:**

90 WR 91 to 90 WR 93 inclusive  
90 WR 102 and 90 WR 103  
90 WR 140 to 90 WR 149 inclusive

**Soils:**

90 WS 101 to 90 WS 165 inclusive  
90 WS 281 to 90 WS 305 inclusive  
90 WS 385 to 90 WS 416 inclusive  
90 WS 418 to 90 WS 423 inclusive



COMP: TECK EXPL/TERRANE RESOURCE  
 PROJ: MIDWAY  
 ATTN: F.DALEY/C.WESTERMAN

MIN-EN LABS — ICP REPORT  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 1V-0146-HJ1  
 DATE: 91/02/25  
 \* HEAVY MINERALS \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPM	HG PPM	HM %
90WL91HM	.8	7560	10	1	78	.1	2	23240	.1	11	23	37580	560	6	6240	546	1	250	16	7520	22	1	104	1	1	81.0	40	1	1	1	37	552	5	1.34
90WL92HM	.6	8890	9	1	88	.1	2	9860	.1	13	27	39920	620	7	8000	512	1	280	23	2890	13	1	36	1	1	97.8	39	1	1	1	44	62	10	1.82
90WL93HM	.5	7530	18	1	112	.1	2	8450	.1	14	33	33120	700	5	6910	406	1	320	31	2180	16	1	26	1	1	64.4	41	1	1	1	36	22	5	2.68
90WL95HM	.6	6760	4	1	65	.1	2	8260	.1	12	19	34010	520	5	6680	404	1	280	19	2000	6	1	24	1	1	85.0	31	1	1	1	36	212	10	3.28
90WL96HM	.5	8060	9	1	96	.1	2	10620	.1	14	26	35650	610	4	7330	459	1	300	24	2500	12	1	31	1	1	88.7	42	1	1	1	44	34	10	1.38
90WL97HM	.9	4840	2	1	55	.1	2	17170	.1	7	10	26200	420	2	4340	305	1	220	7	6660	9	1	103	1	1	77.7	24	1	1	1	35	13	5	3.84
90WL98HM	.6	4800	5	1	98	.2	1	17250	.1	6	11	20150	390	2	4110	297	1	210	8	6420	23	1	104	1	1	58.8	32	1	1	1	31	8	5	2.62
90WL99HM	.8	4590	6	1	44	.1	2	15290	.1	8	26	28490	420	2	4310	297	1	180	9	5250	8	1	87	1	1	79.6	23	1	1	1	34	2	5	5.93
90WL100HM	.8	5090	4	1	52	.1	2	17050	.1	8	19	26050	510	3	4210	295	1	210	7	6550	9	1	113	1	1	77.4	25	1	1	1	36	16	5	5.29
90WL101HM	.7	6930	17	1	73	.1	2	10050	.1	15	91	38770	530	4	8510	411	1	140	26	3490	28	1	31	1	1	93.8	40	1	1	1	40	29	5	2.07

COMP: TECK EXPL./TERRANE RESOURCE  
 PROJ: MIDWAY  
 ATTN: F.DALEY/C.WESTERMAN

MIN-EN LABS — ICP REPORT  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 1V-0215-HJ1  
 DATE: 91/03/01  
 \* HEAVY MINERALS \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPM	HG PPM	HM %
90WL102 HM	.9	5040	10	1	509	.7	3	20000	.1	14	22	41340	390	2	5580	368	1	260	16	8460	23	1	160	1	1	98.6	39	1	1	1	46	2	15	3.73
90WL103 HM	.8	5630	33	1	621	.7	3	23110	.1	11	77	31650	500	2	6390	301	1	280	15	9140	24	1	175	1	1	77.0	29	1	1	1	47	2	15	2.19
90WL104 HM	.7	8090	1	1	50	.4	4	13830	.1	11	14	27470	510	1	6840	334	1	280	13	2250	16	1	41	1	1	66.2	23	1	2	1	48	1	10	4.55
90WL105 HM	.7	5900	1	1	30	.2	3	12880	.1	7	8	19690	320	1	4580	254	1	240	9	2580	9	1	41	1	1	51.5	16	1	1	1	47	7	10	2.41
90WL106 HM	.9	6640	1	1	40	.1	6	14770	.1	12	12	36050	450	1	5490	473	1	240	13	3170	6	1	49	1	1	89.4	25	1	1	3	75	237	5	6.78
90WL107 HM	.7	7840	12	1	87	.5	4	18500	.1	15	20	31920	740	1	6400	318	1	290	57	5790	16	1	120	1	1	72.5	29	1	1	2	71	365	10	1.80
90WL108 HM	.2	2130	5	1	18	.5	1	10420	.1	4	10	10290	210	1	4970	132	1	70	17	3140	10	1	34	1	1	35.6	11	1	1	2	81	3	25	24.08

COMP: TECK EXPL/TERRANE RESOURCE  
 PROJ: MIDWAY  
 ATTN: F.DALEY/C.WESTERMAN

MIN-EN LABS — ICP REPORT  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 1V-0215-LJ1  
 DATE: 91/03/01  
 \* SILT \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPM	HG PPM	HM %
MM001	.8	5020	11	1	105	.2	2	83070	.1	4	19	9180	900	1	4280	206	1	180	27	810	16	1	217	1	1	19.1	36	2	1	1	26	1	45	









COMP: TECK EXPL/TERRANE RESOURCE  
 PROJ: MIDWAY  
 ATTN: F.DALEY/C.WESTERMAN

MIN-EN LABS — ICP REPORT  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 1V-0146-SJ7  
 DATE: 91/02/22  
 \* SOILS \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPB	HG PPB
90WS 285	.8	14570	6	1	171	.2	2	5290	.1	8	24	15530	890	4	2670	613	1	500	27	2000	19	1	24	1	1	28.8	65	1	1	1	17	1	55
90WS 286	.7	16790	5	1	157	.3	2	5150	.1	8	20	16930	1530	4	3220	578	1	680	23	1320	16	1	22	1	1	30.7	55	1	1	1	19	1	35
90WS 287	1.0	26050	9	1	156	.6	3	5080	.1	12	31	24360	1290	11	5220	504	1	610	37	780	20	3	21	1	1	41.6	64	2	1	2	42	2	45
90WS 288	.9	20600	7	1	149	.3	3	5110	.1	9	25	19030	1580	7	3680	588	1	760	31	1240	15	3	22	1	1	33.2	57	2	1	1	22	1	65
90WS 289	.6	12860	4	1	122	.3	2	6400	.1	6	21	13140	1100	10	2630	435	1	570	14	560	17	1	41	1	1	24.5	43	1	1	1	14	1	50
90WS 290	.7	21240	4	1	147	.4	3	4320	.1	11	25	25060	1990	13	5540	308	1	460	27	320	16	2	22	1	1	43.4	62	2	1	1	29	1	35
90WS 291	.6	16060	5	1	133	.3	2	4330	.1	7	19	16380	1740	7	2840	286	1	490	17	710	12	1	41	1	1	26.9	80	1	1	1	16	2	50
90WS 292	.5	19270	7	1	150	.4	2	4640	.1	8	17	18050	1270	8	3250	494	1	450	14	620	14	1	28	1	1	29.0	70	1	1	1	14	2	30
90WS 293	.5	21200	5	1	177	.5	2	4840	.1	8	24	19450	1420	12	3280	395	1	550	15	380	18	1	29	1	1	32.4	68	1	1	1	19	1	55
90WS 294	.4	18150	1	1	187	.5	2	4740	.1	8	18	18210	1700	7	3230	735	1	370	18	590	21	1	21	1	1	29.9	72	1	1	1	19	1	35
90WS 295	.5	21980	2	1	172	.8	2	5040	.1	13	31	29600	3230	14	6050	483	1	1330	39	490	19	1	19	1	1	44.1	68	1	1	2	42	173	45
90WS 296	.6	18640	3	1	171	.3	3	6010	.1	10	25	21370	2050	8	4280	840	1	460	32	1070	14	1	18	1	1	36.9	58	1	1	1	33	2	30
90WS 297	.8	25950	4	1	221	.5	4	6110	.1	11	33	25540	1310	10	4680	840	1	1260	25	1400	19	2	21	1	1	46.8	57	1	1	2	30	1	55
90WS 298	.8	21610	5	1	173	.4	3	5230	.1	10	25	19870	1220	9	3090	487	1	550	19	500	17	2	19	1	1	31.3	54	1	1	1	18	1	60
90WS 299	1.0	20900	7	1	162	.4	3	4150	.1	10	23	21910	1040	7	4360	352	1	500	22	760	16	2	20	1	1	42.0	55	2	1	1	27	1	40
90WS 300	.6	14720	4	1	172	.2	2	5070	.1	8	18	17170	1490	4	3350	625	1	550	29	1280	16	1	24	1	1	31.2	56	1	1	1	23	1	25
90WS 301	.8	15860	6	1	143	.3	2	4510	.1	7	14	16320	1240	16	2910	425	1	530	22	1410	18	2	33	1	1	26.9	69	1	1	1	17	2	50
90WS 302	1.0	26080	10	1	190	.5	4	5220	.1	9	30	22390	1400	9	3810	526	1	520	24	2110	20	3	21	1	1	40.2	80	1	1	1	25	1	80
90WS 303	.7	15000	5	1	261	.1	2	5560	.1	5	18	12420	1110	3	1880	807	1	570	15	2380	14	1	21	1	1	21.8	52	1	1	1	10	3	65
90WS 304	.8	16300	7	1	198	.2	3	5010	.1	6	17	15290	1520	6	2690	377	1	590	16	580	15	1	15	1	1	27.6	44	1	1	1	15	2	50
90WS 305	.9	23020	7	1	186	.4	3	4470	.1	10	28	24250	1930	10	5030	334	1	420	24	800	18	2	21	1	1	43.5	65	2	1	1	29	3	40
90WL 94 (SILT)	.7	8160	9	1	113	.2	2	5250	.1	8	28	21600	1070	4	3540	492	1	360	16	670	13	1	19	1	1	65.8	45	1	1	1	25	17	30



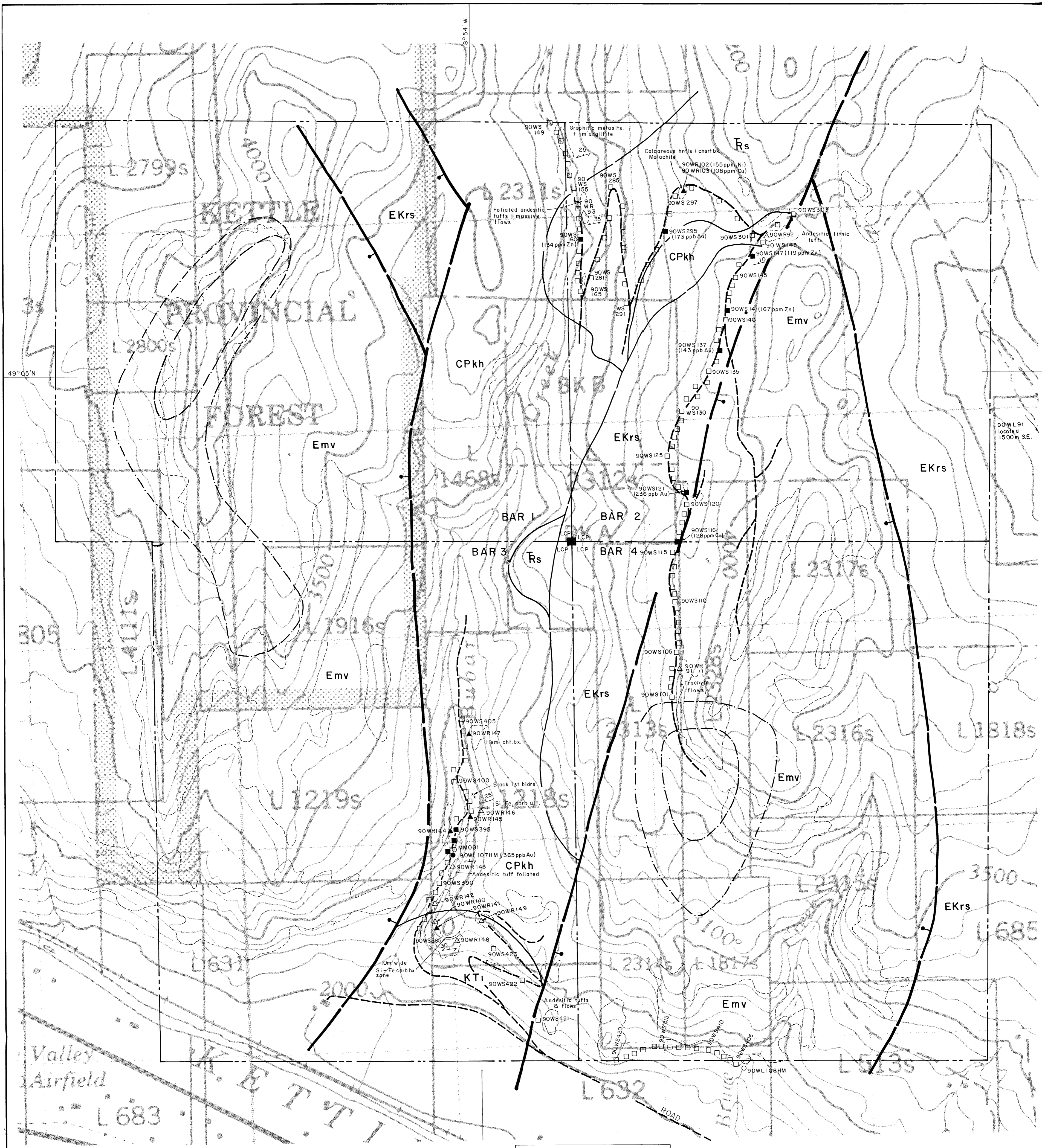




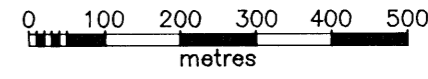
## APPENDIX V

### ROCK SAMPLE DESCRIPTIONS

90 WR 91	BAR 4:	Red-brown weathering hematitic trachyte - Marron Fm.
90 WR 92	BAR 2:	Brown-green weathering andesitic fragmental - Marron Formation.
90 WR 93	BAR 2:	Grey, thin bedded hornfelsed calcareous cherty siltstone with weak iron oxide staining - Knob Hill group.
90 WR 102	BAR 2:	Fine grained banded calcareous hornfels - Brooklynn Formation.
90 WR 103	BAR 2:	Bedded brecciated grey-green chert with trace malachite. Interbedded with 90 WR 102.
90 WR 104	BAR 3:	Grey-green fine grained dacitic quartz feldspar porphyry with minor iron oxide as fractures.
90 WR 141	BAR 3:	Three metre wide bleached breccia zone of introduced iron carbonate and thin chalcedonic stringer veins cutting dacitic porphyry. Weak limonite staining.
90 WR 142	BAR 3:	Lithology as 90 WR 141 with late calcite in vugs.
90 WR 143	BAR 3:	Grey-green cherty andesitic tuff with 15 cm wide layer parallel iron carbonate breccia zones - Knob Hill group?
90 WR 144	BAR 4:	Angular float. Banded fine grained quartz vein 15 cm wide cutting iron carbonate flooded andesitic tuff - Knob Hill group?
90 WR 145	BAR 3:	Large angular boulders of intense silica-carbonate alteration in brecciated andesite - Knob Hill group?
90 WR 146	BAR 3:	As 145 but from outcrop 25 m above creek, contains 3% fine grained disseminated pyrite.
90 WR 147	BAR 3:	Large angular boulders of hematitic chert breccia. Brooklyn Fm.?
90 WR 148	BAR 3:	Breccia zone 10 m thick, bleached, weakly silicified, moderate iron carbonate alteration. Cuts dacitic feldspar porphyry.
90 WR 149	BAR 3:	Iron carbonate altered andesitic flow - Knob Hill Fm.?



SAMPLE N°	As ppm	Co ppm	Ni ppm	Cr ppm	Au ppb
90WR141				213	109
90WR144		37		864	205
90WR145		78		1831	945
90WR147	59	59		1456	782
90WS393				105	
90WS394	45	31		539	527
90WS395	21			174	133



21280

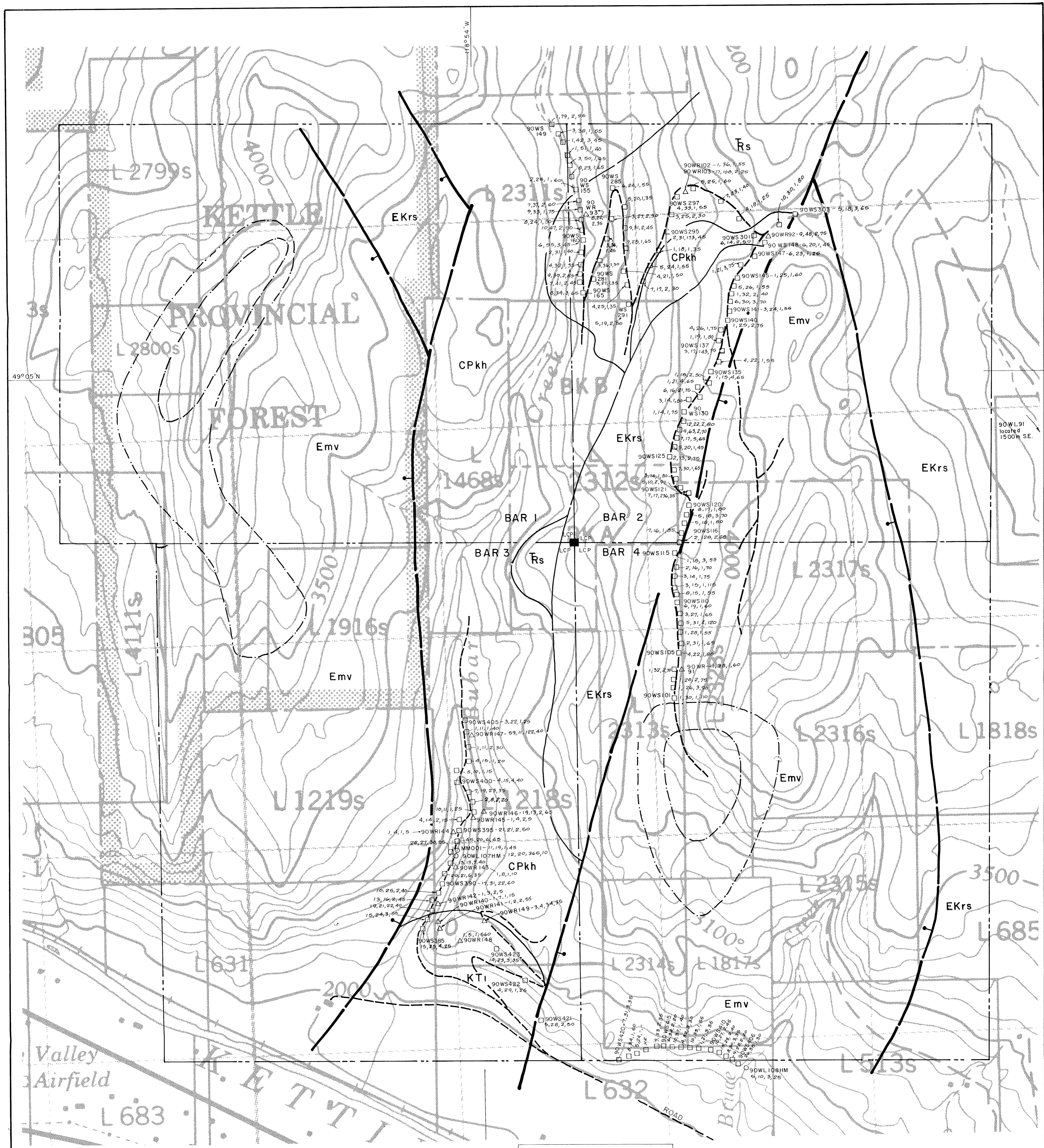
- LEGEND:
- KTi CRETACEOUS-TERTIARY: QUARTZ FELDSPAR PORPHYRY (SCATTER CREEK RHYODACITE)
  - Emv TERTIARY MARRON FM: ANDESITE-TRACHYTE LAVAS
  - EKrs TERTIARY KETTLE RIVER FORMATION: SEDIMENTS
  - Rs TRIASSIC BROOKLYNN FM: CHERT, ARGILLITE, CONGLOMERATE, LIMESTONE
  - CPkh CARBONIFEROUS-PERMIAN KNOB HILL GROUP CHERT, GREENSTONE, ARGILLITE, LIMESTONE

- OUTCROP
- △ ROCK SAMPLE (WR)
- SILT SAMPLE (WL)
- SOIL SAMPLE (WS)
- FAULT
- AEROMAGNETIC ANOMALY
- ANOMALOUS SAMPLES
- FOLIATION
- BEDDING



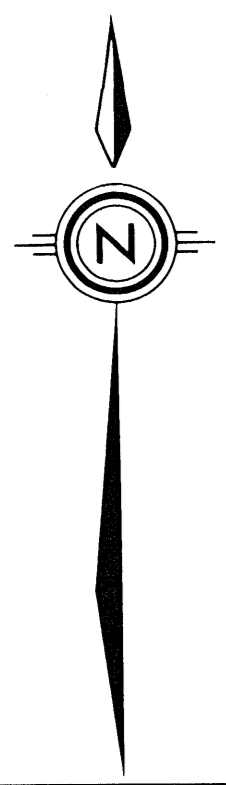
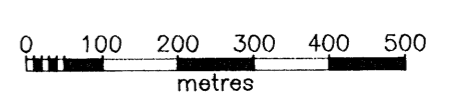
GEOLOGY AFTER G.S.C. MAP 1500A, H.W.LITTLE(1983)

TECK EXPLORATIONS LTD.  
 MIDWAY GOLD PROJECT  
 GREENWOOD MINING DIVISION, B.C. NTS: 82 E/2  
**BAR CLAIMS**  
 SAMPLE LOCATIONS & GEOLOGY  
 TERRANE RESOURCE MANAGEMENT INC.  
 DATE: MAR., 1991



SAMPLE No.	As ppm	Cu ppm	Ni ppm	Cr ppm	Au ppb
90WR141			213	109	
90WR144	37		864	205	
90WR145	78		1831	945	
90WR147	59	59	1456	782	122
90WS393	28		109		30
90WS394	45	31	539	527	
90WS395	21		174	133	

21280



- LEGEND:
- KTI CRETACEOUS-TERTIARY: QUARTZ FELDSPAR PORPHYRY (SCATTER CREEK RHYODACITE)
  - Emv TERTIARY MARRON FM: ANDESITE-TRACHYTE LAVAS
  - EKrs TERTIARY KETTLE RIVER FORMATION: SEDIMENTS
  - Rs TRIASSIC BROOKLYNN FM: CHERT, ARGILLITE, CONGLOMERATE, LIMESTONE
  - CPkh CARBONIFEROUS-PERMIAN KNOB HILL GROUP CHERT, GREENSTONE, ARGILLITE, LIMESTONE
  - △ ROCK SAMPLE (WR)
  - SILT SAMPLE (WL)
  - SOIL SAMPLE (WS)
  - FAULT
  - AEROMAGNETIC ANOMALY
- 12, 20, 365, 10 As ppm, Cu ppm, Au ppb, Hg ppb RESULTS

GEOLOGY AFTER G.S.C. MAP 1500A, H.W.LITTLE(1983)



**TECK EXPLORATIONS LTD.**

**MIDWAY GOLD PROJECT**  
GREENWOOD MINING DIVISION, B.C. NTS: 82 E/2

**BAR CLAIMS**  
GEOCHEMICAL RESULTS (As,Cu,Au,Hg)

TERRANE RESOURCE MANAGEMENT INC.

DATE: MAR., 1991 FIGURE: 4