UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Investigations of gold mineralization
along a part of the Elliott
Highway, Fairbanks district, Alaska

U.S. Geological Survey Research Contract
14-08-0001-11947

By

D. B. Hawkins and R. B. Forbes
University of Alaska
College, Alaska

1971

Property of
DGGG LIP

This report is preliminary
and has not been edited or
reviewed for conformity with
Geological Survey standards
and nomenclature

Contents

	Page
Abstract-----	1
Introduction-----	1
Geologic setting-----	2
Geochemical investigations-----	2
Results-----	3
Conclusions-----	4
References cited-----	5

Illustrations

Plate 1. Geochemical sample localities along Elliott

Highway

Separate

- Figure 1. Geochemical sample traverses, borrow pit,
 section "P", 3.30 mile, Elliott Highway----- 6
2. Geochemical sample traverses, eclogite borrow
 pit, section "W", 6.0 mile, Elliott Highway----- 7
3. Geochemical sample traverses, borrow pit,
 section "AA", 7.58 mile, Elliott Highway----- 8

Table

- Table 1. Analyses and rock types of samples taken along
 the Elliott Highway between Fox and the
 Chatanika River ----- 9-65

Investigations of gold mineralization

along a part of the Elliott Highway,

Fairbanks district, Alaska

By D. B. Hawkins and R. B. Forbes

Abstract

Gold analyses of grab samples of bedrock taken along the Elliott Highway between Fox and the Chatanika River reveal that the road cuts several mineralized zones that are characterized by anomalous concentrations of gold. A statistical analysis of the mineralized samples shows a positive correlation between gold and antimony significant at the 95 percent confidence level. Antimony may thus serve as an element indicative of gold mineralization in the Fairbanks district. The presence of previously unreported gold anomalies indicates that additional prospecting may be warranted.

Introduction

This preliminary report presents previously unpublished data on gold anomalies that have been detected in grab samples taken from both country rock and mineralized quartz veins that are exposed in road cuts and borrow pits along the Elliott Highway between its junction with the Steese Highway at the settlement of Fox and the bridge spanning the Chatanika River near the settlement of Olmes (Pl. 1). This area is within the central part of the Ester-Cleary mineralized belt of the Fairbanks district, Alaska. These data were obtained by the University of Alaska as part of the U.S. Geological

Geology Department, University of Alaska, College, Alaska

Survey's program (Contract No. 14-08-0001-11947).

Geologic setting

Lode-gold deposits in the Fairbanks district occur mainly in quartz veins in metamorphic rocks which have been mapped as Birch Creek Schist. Some of the gold lodes occur in quartz diorite-granodiorite plutons and quartz monzonite plutons (Chapman and Foster, 1969). Most of the lode-gold deposits in the area are found along the crest of an anticlinal structure (Hill, 1933, p. 44-45) also referred to as the Pedro Dome-Cleary Summit anticlinorium (Pilkington and others, 1969). This anticlinorium may be confined to the rocks that compose the upper plate of a thrust which overrides an older basement complex of higher-grade and more complexly deformed rocks (Forbes and others, 1968).

Intensive prospecting in the early 1900's followed by recurrent mining and development activity up to the present have delineated the more obvious lodes and/or vein systems in the Ester-Cleary mineralized belt. Chapman and Foster (1969) have compiled and summarized data on the lode mines, prospects and claims of the Fairbanks district.

Geochemical investigations

The area along the Elliott Highway that is discussed here transects the mineralized Pedro-Cleary Summit anticlinorium. Numerous quartz veins and an extensive hydrothermally altered zone, presumably related to gold mineralization, can be seen along this highway. The degree of hydrothermal alteration of the country rock increases northward along the traverse from Fox to Olmes, reaching a maximum in the summit region between the Fox Creek and Dome Creek drainages.

During the summer of 1969, grab samples were collected at 37 sites along the previously-described section of the Elliott Highway where road cuts and rubble crops were available. Grab samples were also collected along short traverses, at sampling intervals of 10 to 50 feet, in several borrow pits and road cuts.

Analytical techniques.--The gold assays given in this report were determined at the University of Alaska by atomic absorption spectrometry using an aqua-regia digestion procedure. The routine detection limit for gold by this method is 0.01 ppm (parts per million). A value of 0.10 ppm or more gold probably represents an anomalous concentration of gold in the rocks of this district.

The antimony content of all samples was determined at the University of Alaska by atomic absorption spectrometry.

The mercury content of a number of selected samples was determined by U.S. Geological Survey analysts with a mercury vapor detector.

Spectrographic analyses for elements other than gold were also performed at the University of Alaska using a modification of the method utilized by the U.S. Geological Survey. The method used here is that briefly described by Stevens and others (1969).

Results

The gold analyses and spectrographic analyses for other elements and type of rock that was sampled are shown in table 1. The sections of table 1 are designated by capital letter headings "A" through "BB" that correspond to similarly-labeled sample sites on the highway shown on plate 1.

Figures 1, 2, and 3 show in detail the sample sites in three borrow pits along the highway. These figures are keyed in the manner described above to both plate 1 and table 1.

Blank spaces in the columns of table 1 for the various trace elements indicate that these elements were sought but not detected in the spectrographic analyses.

Conclusions

The gold values (table 1) indicate that the Elliott Highway route across the Ester-Cleary mineralized belt cuts several zones characterized by anomalous concentrations of gold. Of particular interest is the zone exposed in the borrow pit near the head of Fox Creek (see figure 1 and section P, plate 1). This zone may be a southwesterly extension of the Fox Creek mineralized zone discussed by Forbes and others (1968). If so, a fairly large area, about 1 mile long and 100 feet wide, of low-grade (approximately 0.5-1.0 ppm) gold enrichment is present here. Further prospecting seems to be warranted here.

A statistical analysis of the mineralized samples that were analyzed shows a positive correlation between gold and antimony significant at the 95 percent confidence level. Anomalous antimony concentrations may be indicative of gold mineralization, and thus antimony may serve as a useful prospecting guide to gold deposits in the Fairbanks district.

References cited

- Chapman, R. M., and Foster, R. L., 1969, Lode mines and prospects in the Fairbanks district, Alaska: U.S. Geol. Survey Prof. Paper 625-D, 25 p.
- Forbes, R. B., Pilkington, H. D., and Hawkins, D. B., 1968, Gold gradients and anomalies in the Pedro Dome-Cleary Summit area, Fairbanks district, Alaska: U.S. Geol. Survey open-file report, 49 p.
- Hill, J. M., 1933, Lode deposits of the Fairbanks district, Alaska: U.S. Geol. Survey Bull. 849-B, p. 29-163.
- Pilkington, H. D., Forbes, R. B., Hawkins, D. B., Chapman, R. M., and Swainbank, R. C., 1969, Preliminary investigation of gold mineralization in the Pedro Dome-Cleary Summit area, Fairbanks district, Alaska: U.S. Geol. Survey open-file report, 47 p.
- Stevens, D. L., Forbes, R. B., and Hawkins, D. B., 1969, Gold anomalies and magnetometer profile data, Ester Dome area, Fairbanks district, Alaska: U.S. Geol. Survey open-file report, 43 p.

Figure 1. Geochemical sample traverses, borrow pit, section "P" 3.30 mile, Elliott Highway.

Figure 2. Geochemical sample traverses, eclogite borrow pit, section "W" 6.0 mile, Elliott Highway. Numbers following sample numbers are gold values in parts per million.

Figure 3. Geochemical sample traverses, borrow pit, section "AA" 7.58 mile, Elliott Highway.

Table 1.--Analyses and rock types of samples taken along the Elliott Highway between Fox and the Chatanika River.

Sample Locality A

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 1	Discordant vein quartz			.01	0.17				210	
- 2	Same, with micaceous selvage			.01	0.31			115	395	
- 3	Schist, hanging wall, quartz vein			.01	1.70	0.33	0.32	1700	520	
- 4	Sheared, discordant vein quartz			.01	0.25				380	
- 5A	Scorodite (?) stained schist			.01	0.89	0.12	0.06	350	325	
- 5B	Quartz-mica schist			.01	1.25	0.06	0.05	330	260	
- 5C	Quartz stringer in altered schist			.01	1.85	0.10	0.17	820	470	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 1	31				3.7	3.8						10			L			
- 2	38				4.6	3.8						10		185	L			
- 3	100	145			19.0	29.0		150		16		10		150	L			160
- 4	44				9.0	32.0								310	L			
- 5A	44				12.0	13.0						10		320	L			87
- 5B	70				9.4	81.0						10		190	L			93
- 5C	37	60			31.0	33.0		105		18		10		260	L			130

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality B

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 6A	Concordant vein quartz			.01	0.33			180	220	
- 6B	Altered schist, hanging w wall			.01	3.05	0.74	0.07	2900	235	
- 6C	Quartz stringer in altered schist hanging wall			.01	0.28	0.02		120	275	
- 7A	Altered schist, hanging wall			.01	1.80	0.54	0.12	3600	325	
- 7B	Concordant vein quartz			.01	0.55	0.06	0.10	260	310	
- 8A	Discordant vein quartz			.01	0.30				400	
- 8B	Slightly altered silicified schist			.01	0.59	0.06	0.12	6900	350	
- 8C	Slightly altered pelitic schist			.01	2.10	0.49	0.06	1800	185	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 6A					3.3	4.7						20		200				
- 6B	61.0	480			12.0	22.0		470		8.8	13	20	3.2		85			300
- 6C	62.0				7.4	6.6								330				
- 7A	13.0	540			125.0	18.0				11.0	13				55			410
- 7B	9.3				8.4	4.8		98						210				83
- 8A					6.4	6.9								220				
- 8B	11.0				13.0	4.9		83						225				120
- 8C	40.0	520			120.0	33.0		175		9.4	20				62			240

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality C

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 9	Highly altered schist with quartz veinlets			.01	1.90	0.16	0.07	270	115	
- 10A	Vein quartz			.01	0.55		0.05	105	240	
- 10B	Altered schist, footwall quartz vein			.01	1.90	0.52	0.14	2700	340	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 9	14	46			24	82.0		88		23	17	5		260				93
- 10A					6	9.6								190				
- 10B	54	540		1.2	150	25.0		230		15	20	5			64			28

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality D

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 11A	Concordant vein quartz	Grab		0.14	1.1	0.23	0.05	650	320	
- 11B	Mica schist, footwall	Grab		.01	3.0	0.76	0.22	3200	460	
- 11C	Discordant vein quartz	Grab		.01	0.5	0.02	0.05	220	360	
- 11D	Silicified quartz-mica schist with vein quartz	Grab		.01	2.4	0.42	0.18	2900	570	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 11A	21	165			26	16		100		13				200				117
- 11B	60	580		2.0	160	62		440		20	22		4.0	230	54			225
- 11C					9.1	26					19			150				73
- 11D	68	310			175	57				21	29			480	30			270

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality E

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 12A	Concordant vein quartz			.01	0.82	0.06	0.22	230	640	
- 12B	Altered quartz-mica schist			.01	4.7	1.0	0.12	4600	560	
- 13A	Concordant vein quartz			.01	1.3	0.09	0.10	375	560	
- 13B	Altered mica schist			.01	4.5	1.20	0.16	7500	325	
- 14A	Concordant vein quartz			.01	3.0	0.92	0.18	1000	640	
- 14B	Silicified altered schist footwall			.01	3.0	0.74	0.28	3200	620	
- 15A	Concordant vein quartz			.01	15.0	0.05	0.14	1700	560	
- 15B	Highly altered, silicified quartz-mica schist			.01	3.9	0.72	0.21	2400	480	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 12A		87			40	13						10		470				83
- 12B	44	750		8.4	370	42				23	27	10	9	450	66			370
- 13A	29	74			240	32								740				105
- 13B	69	1950		13.0	2700	300				20	36		23	600	135			560
- 14A		125			170	25								760	39			160
- 14B		500			265	170					26			740	48			340
- 15A					97	140								750				
- 15B	33	340		17.0	400	155				28	27			760	61			270

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality F

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 16A	Concordant vein quartz	Grab		.01	1.3	0.17	0.11	325	540	
- 16B	Slightly altered mica schist	Grab		.01	6.0	1.40	0.11	17000	530	
- 17A	Concordant vein quartz with micaceous selvage	Grab		.01	1.4	0.16	0.09	5500	495	
- 17B	Altered silicified quartz-mica schist, hanging wall	Grab		.01	2.7	0.64	0.15	2900	520	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 16A					100	26				22	22			630				92
- 16B	120	1950		20	880	78				28	31		23	620	115			730
- 17A		47			41	17				16				400				200
- 17B	24	420			140	38				24				560	50			300

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality G

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 18A	Vein quartz in altered gouge	Grab		.01	0.72	0.78	0	62	520	
- 18B	Clayey gouge and altered mica schist	Grab		.01	5.30	0.78	0.17	3600	640	
- 18C	Slightly altered mica schist	Grab		.01	5.90	1.10	0.43	4600	660	
- 19	Altered mica schist	Grab		.01	4.70		0.13	4000	660	
- 20A	Vein quartz	Grab		.01	0.50	0.65		52	410	
- 20B	Altered silicified quartz mica schist	Grab		.01	3.70	0.78	0.12	5300	650	
- 21A	Concordant vein quartz			.01	2.90	0.14	.057	200	540	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 18A					37	11						5		500				
- 18B	55	1150		7.6	620	130				29	31		14	660	80			370
- 18C	79	1150		7.0	370	82				27	31		13	360	100			370
- 19	52	1050		5.6	400	73				27	26		12	450	80			390
- 20A					105	8.6								700				
- 20B	56	2400			1200	26				24	25		14	500	100			420
- 21A	41	440			180	62				11.5	21			630	34			

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality G

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 21B	Altered silicified quartz mica schist			.01	6.60	0.78	.145	5300	540	
- 22A	Massive quartz			.01	0.50			41	360	
- 22B	Silicified schist			.01	4.70	0.80	0.20	7600	560	
- 23	Gouge with quartz fragments			.01	2.35	.265	1155	2700	330	
- 24A	Concordant vein quartz			.01	0.38			53	365	
- 24B	Altered mica schist selvage on vein quartz			.01	2.40	0.52	0.30	1950	590	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 21B	79	1650			1200	140				27	30		15.5	590	84			420
- 22A					25	7								520				
- 22B	195	1950			2800	93				23	28		17.5	460	127			650
- 23	24	750			100	34				25				480	51			280
- 24A					15	52								580				
- 24B		560			240	19.5				22.5				550	110			225

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLMES TRACE ELEMENT DATA

Sample Locality H

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 25A	Concordant vein quartz			.01	0.64	.019		92	380	
- 25B	Altered mica schist			.01	4.70	0.96	.305	7600	620	
- 25C	Gray-green mica schist			.01	2.90	0.65	.185	2900	600	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 25A					22	13.5								650	125			
- 25B	145	1400			770	73.0				26	25	10	18	510	105			680
- 25C	49	610			150	73.0				15	25	10		360	62			285

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLMES TRACE ELEMENT DATA

Sample Locality I

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 26A	Concordant vein quartz			.01	0.33			70	300	
- 26B	Altered mica schist			.01	3.70	0.99	.061	4000	590	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 26A					17	3.9						10		470				
- 26B	140	1300			430	54.0				19.5	22	20	7.6	370	84			370

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 27	Silicified schist, - sample of road metal. Source of road metal is gravel pit, sample locality P			8.85	12.5	0.28	0.19	4600	310	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 27	170	520	11.5	115	1000	360	0.15			64	H	20	600	240	190			570

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality K

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 28	Gouge and altered schist			.01	4.20	0.34	.105	4000	330	
- 29A	Concordant vein quartz			0.02	0.30		.060	39	265	
- 29B	Altered schist			0.04	4.50	0.45	.055	3600	810	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 28	110	800			370	37	0.14			17.5	25	10	H	1600	117			370
- 29A					7.6	4.3	0.60							340				
- 29B	153	1300		25	460	105	0.11			36.0	23	50	12.5	290	91		L	1370

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNE'S TRACE ELEMENT DATA

Sample Locality L

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 30A	Vein quartz			0.06	0.49	.050	.155	760	290	
- 30B	Yellow-brown gouge			0.08	4.70	0.42	0.10	5300	390	
- 30C	Altered silicified schist			0.03	1.35	0.35	.054	5300	130	

21

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 30A	54	165			38	6.0	0.11					5		345	L			145
- 30B	195	1050			780	81.0				41	27	90	13.7	350	94			510
- 30C	350	1150			460	11.0				22	20	30	9.7	220	90			440

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNE'S TRACE ELEMENT DATA

Sample Locality M

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 31A	Vein quartz			.01	0.86	.052	.115	1450	365	
- 31B	Slightly altered silicified schist			.01	2.80	0.64	0.29	3200	400	
- 31C	Altered schist			.01	8.10	1.60	0.25	5300	740	

22

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 31A	88	150			32	8.2	0.08					10		500	34			195
- 31B	44	850			225	35.0				14	26	20	7.6	315	80			335
- 31C	46	1300			1500	130.0				35		30			135			520

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality N

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 32A	Discordant vein quartz			.01	1.10	0.14	0.12	1600	280	
- 32B	Yellow-brown gouge with some vein quartz			.01	2.65	.145	0.14	1600	420	
- 33	Altered micaceous quartzite			.01	4.40	0.88	0.29	5500	495	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 32A		250			52	21	0.24			18		10		550	25			240
- 32B	24	270			90	48	0.07		9	26		20		360	30			220
- 33	72	1500		7.8	800	53				29	26	10	2.6	310	110	10		375

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality O

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 34	Quartzite rubble	Start Traverse; N-5°E		.01	2.70	.038	.065	6200	350	
- 35	Quartzite rubble	10'		.01	0.49		.055	320	475	
- 36	Altered micaceous quartzite	20'		.01	2.00	0.34	0.40	4000	390	
- 37	Quartz rubble and micaceous quartzite	30'		.01	2.10	0.50	0.90	4600	520	
- 38	Micaceous quartzite	40'		.01	2.80		.066	4600	380	
- 39	Mica schist and quartz rubble	50'		0.04	2.85	.235		5300	900	2.8
- 40	Quartzite	60'		0.04	1.90		.046	6300	740	
- 41	Quartzite and micaceous quartzite	70'		0.08	1.45	.064	.083	1800	205	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 34					440	12.0				21		10		680	125			510
- 35					27	8.0				18		10		700	L			
- 36		500			100	14.5				37				580	96			440
- 37					290	14.0				57				610	97			450
- 38	21	70			560	39.0				22				520	125			480
- 39	18	1300		11	480	82.0				23	19.5			390	84			480
- 40					440	20.0				19				500	110			480
- 41		80			90	10.5				18				560	50			240

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 42	Quartz	Traverse; N-5°E - 80'		0.03	0.39				350	
- 43	Gossan-like altered schist	90'		0.03	8.20	.024	0.12	3600	640	
- 44	Quartzite	100'		0.03	0.50			1700	270	
- 45	Quartz	110'		.01	0.42				380	
- 46	Quartzite	120'		.01	2.40	0.08	.115	11000	570	
- 47	Quartzite	130'		0.54	0.95		0.34	1300	170	
- 48	Quartz	140'		.01	0.40			60	430	
- 49	Quartzite and silicified schist	150'		.01	3.40	0.22		6200	440	
- 50	Silicified schist	160'		0.02	3.60	0.34	.081	11000	360	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 42					317	4.4								600				
- 43	8	70.0		16.0	300	60.0				37.0		50	17.0	900	180			400
- 44	20	75.0			57	8.6								650	340			250
- 45					19	6.4								660				
- 46	34.5	6.8		16.0	1000	23.0				31.5			8.6	370	145			600
- 47	20.0	82.0			25	11.5								520	30			195
- 48					15.5	4.0								580				
- 49	39.0	1300		2.6	370	12.0				25.0				370	105			680
- 50	82.0	1900		6.4	1300	23.0				27.5	22.5		86.0	320	110	12		730

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality 0: (3)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 51	Quartzite	Traverse; N-5°E - 170'		0.04	1.80			2450	460	
- 52	Quartz	180'		0.03	0.50			100	345	
- 53	Quartzite	190'		0.03	4.10	0.39	.074	15500	590	
- 54	Altered mica schist	200'		0.03	2.10	0.34	.074	1600	400	
- 55	Quartzite	210'		0.02	1.50	0.50	.070	3200	480	
- 56	Quartz	220'		0.04	0.75	.036			530	
- 57	Quartzite	230'		0.02	1.00			1700	375	
- 58	Quartz	240'		0.02	0.54	.081			500	
- 59	Micaceous quartzite	250'		0.03	3.80	0.18	.074	11000	375	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 51		92			77.0	7.6								700	45			
- 52					14.5	3.2								420	L			
- 53	105	1900		14.0	1800	58.0				30.5	23.0	25	19	440	125	19.0		640
- 54		160			54.0	34.0				21.0				370	44			225
- 55		260			140	26.0				25.0				310	59			300
- 56					75.0	6.4								660				
- 57		230			39.0	10.0				16.5				560	3510			280
- 58					23.0	5.6								520				
- 59	105	580		6.4	1000	48.0				33.0	22.5		15	280	120	4.8		620

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 60	Quartz	Traverse; N-40°E - 260'		0.03	0.45				400	
- 61	Quartzite	270'		0.34	0.95	.039	.044	1000	460	
- 62	Altered mica schist	280'		0.06	0.42	0.67	.042	5300	580	
- 63	Altered mica schist	290'		0.06	2.65	0.24	.030	2900	340	
- 64	Altered micaceous quartzite	300'		0.06	3.20	0.43	0.38	4600	450	
- 65	Altered mica schist	310'		0.06	3.60	0.24		3200	650	
- 66	Quartz	320'		.01	1.15	.044		670	395	
- 67	Altered mica schist	330'		.01	3.60	0.21		2900	560	
- 68	Quartzite	340'		0.12	2.15	0.66	.040	1200	580	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 60					21	5.2								570				
- 61	34	105			32	6.0								600	350			195
- 62	105	1050		3.3	660	5.4				26.8	22		14.0	440	110			680
- 63				2.0	100	35.0				18.0				320	70			320
- 64	94	1300		2.0	580	31.0				23.0	18		5.6	360	90	L		460
- 65	135	1300		3.4	275	42.0				23.0			4.9	320	82	L		390
- 66	44	260			45	16.0				17.0			4.8	460	27			150
- 67	120	1000		4.7	205	66.0				24.0				390	76			370
- 68	50	400		7.6	98	77.0				20.0				460	42			200

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality 0

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 69	Altered micaceous quartzite	Traverse; N-40°E		.01	2.00	0.10	0.09	1700	580	
- 70	Altered schist	360'		.01	2.50	.085		1850	400	
- 71	Altered schist	370'		.01	3.70	0.49	.063	4600	650	3.9
- 72	Gouge and altered schist	380'		0.04	4.80	0.50	0.14	4600	500	3.7
- 73	Gouge and altered schist	390'		0.04	3.30	0.23	.076	6600	480	
- 74	Altered schist	400'		.01	4.60	0.60	.022	6200	760	
- 75	Quartzite	410'		.01	1.85	0.25	0.18	1700	500	
- 76	Gouge and altered schist	420'		.01	4.40	0.36	.084	6600	740	
- 77	Quartzite	430'		.01	2.50	0.12	.059	2650	680	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 69	46	380		4.6	68	44.0				21				480	58			265
- 70	52	580		2.9	65	62.0				21				360	54			270
- 71	96	1000		4.2	250	35.0				25		25	5.6	350	86	L		510
- 72	64	1300		3.3	660	96.0				32	46		9.0	370	90	2.0		460
- 73	81	700		7.4	410	29.0				30.5	34		11.0	350	98	11.5		450
- 74	64	800		8.5	200	34.0				29.0	21		82.0	380	90	4.5		600
- 75	19	540			38	7.4				27.0				700	52			235
- 76	100	1500		22.0	1000	37.0				42.0			15.0	370	110	15.0		700
- 77	94	660			120	15.5				25.0				580	92	11.5		350

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 78	Gouge and quartzite	Traverse N-40°E - 440'		.01	2.3	.062	0.14	2450	620	
- 79	Quartzite	450'		0.08	1.5	.050	0.12	9000	470	
- 80	Quartz	460'		.01	0.4				290	
- 81	Gouge and quartzite	470'		0.06	1.6	.023	.043	1700	350	
- 82	Mica schist	480'		.01	2.7	0.60	0.13	6600	410	
- 83	Slightly altered mica schist	490'		.01	4.0	0.29		4000	480	
- 84	Quartz	End of traverse - 500'		.01	13.0	.022		4000	860	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 78	31	600			100	22.0				22		25		370	68			325
- 79	14	360			27	14.5								440	22			175
- 80					12	4.3								620				
- 81	19	170			7.5	12.5				23				560	62			255
- 82	62	760		5.5	180	37.0				34		10		290	64	4.8		380
- 83	83	760		2.8	800	45.0				56	19			270	107	52.0		560
- 84	45	95		18	1200	49.0				40		20	20.5		140	L	L	600

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality P (1)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 85	Altered schist	Gravel pit traverse N-80°E		2.78	12.50		3.50	6600	900	
- 86	Altered schist	10'		.01	5.60	1.30	0.78	4600	790	
- 87	Quartz	20'		.01	0.30		0.13	34	275	
- 88	Altered schist	30'		0.12	6.40	1.65	0.87	5500	810	
- 89	Altered schist with gouge	40'		0.02	5.30	1.10	1.80	4000	790	
- 90	Altered schist	50'								
- 91A	Altered schist with gouge	60'		0.82	4.80	1.40	1.05	4000	570	
- 91B	Quartz	60'		0.34	0.33	.017	0.64	55	390	
- 92	Altered schist	70'		0.38	6.80		0.40	7200	520	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 85		760	8.2	76.0	1150	70	0.13			52		30	20	610	116	42.0		580
- 86	39	830		26.0	720	100	0.08			48	22	70		370	110	12.0		580
- 87						32	0.10					20		430				
- 88	32	1100		21.0	800	80	0.06			40	25	40		360	105	8.		640
- 89	38	1100		7.6	800	58	0.11			34		40		410	95	12.0		570
- 90							0.10					40						
- 91A	27	540		6.0	470	37	0.24			46		50		410	88	8.		480
- 91B					11	2.9	0.14					20		440				
- 92	53	820		14.0	900	145	0.20			31	24	70			120	6.2		510

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 93	Altered schist	Traverse; N-80°E - 80'		.01	4.8	1.05	0.29	4000	510	
- 94	Quartz with altered schist	90'		0.04	4.9	0.78	0.54	4000	590	
- 95	Altered silicified schist with gouge	100'		0.08	15.0	0.45	0.78	15000	1000	
- 96	Altered gray-green mica schist	110'		0.09	5.0	0.25	0.29	6600	950	
- 97	Altered gray-green mica schist	120'		0.14	4.2	0.30	0.12	4600	650	
- 98	Altered mica schist	Traverse; N-135°E 130'		0.09	3.6	0.33	0.18	6600	305	
- 99	Altered silicified schist	140'		0.06	18.0	0.26	0.14	6800	1070	

31

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 93	70	600		23.0	500	120	0.12			38.0	22	50	2.5		103	7.0		450
- 94	41	920		5.4	470	39.0	0.20			28.5		40		350	82	44		420
- 95	140	230		33.0	2700	12.5	0.16		27	46.0		40	30.0	420	180	34		2000
- 96	110	610		8.6	220	17.5	0.14			27.0		30	12.0	410	74	40		530
- 97	110	650		12.0	380	53.0	0.10			26.5	22	40	11.0	400	85	11		540
- 98	110	650		8.8	660	48.0	0.09			30.0		40	14.0	410	107			500
- 99	52	350		51.0	1900	200				80.0		10	24.0		210	21		700

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality P (3)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 100	Gouge and silicified schist	Traverse; N-135°E - 150'		0.08	3.6	0.19	0.11	5500	770	
- 101	Quartzite	160'		0.09	2.4	0.58	0.135	6600	700	
- 102	Quartzite with quartz stringer and gouge	170'		0.08	2.9	0.86	0.68	4600	770	
- 103	Quartzite	End of traverse 180'		0.01	4.7	1.30	1.30	4600	810	
- 104	Altered quartz-mica schist	Start traverse; N-30°E		0.10	12.5	2.70	4.20	15500	1100	
- 105	Altered quartz-mica schist	10'		0.09	2.5	0.68	0.38	790	560	
- 106	Quartzite	20'		0.09	1.9	3.80	0.32	2000	440	

32

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 100	42	155	13	13	340	16.0	0.11			29.0		40	12.5	420	130	14.0		480
- 101	23	68		14	470	10.0	0.05			29.0		40	17.5	460	145	8.3		580
- 102	24	84		14	410	17.5	0.09			27.0		40	13.0	520	123			480
- 103		140		23	900	21.0	0.13			35.0		20	19.0	590	160	17.0		580
- 104	43	300		70	900	145	0.14			50.0	38.0	0	36.0	440	225	23.0	L	1700
- 105		570		3.0	110	17.5	0.16			24.0	22.5	20		410	64			275
- 106	19	540			52	13.0	0.10			15.5					26			220

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 107	Quartzite and altered schist	Traverse; N-30°W - 30'		1.05	6.4	1.50	1.80	4000	420	
- 108	Quartzite	40'		0.45	6.4	1.50	5.20	4600	1650	
- 109	Altered schist and quartz veinlet	50'		0.09	5.3	1.00	0.70	3500	560	
- 110	Altered schist	60'		0.31	4.9	0.59	0.39	4600	680	
- 111	Micaceous quartzite with quartz stringer	70'		0.09	3.5	0.74	0.66	3500	530	
- 112	Silicified schist, gossan like	80'		0.06	3.5		0.13	3500	680	
- 113	Altered mica schist	90'		0.08	9.0	1.40	0.32	6600	590	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 107		570		26	470	8	0.09			64.0			13.0	470	127	28		480
- 108	19	650		22	1000	53	0.07			32.0		10	17.5	700	103	29		480
- 109	110	920		33	800	145	0.10			34.5		10	17.0	420	113	21		470
- 110	20	700		27	1000	90	0.02			35.0			23.0	480	130	24		670
- 111	21	78		9.0	410	27	0.10			27.0		70	13.5	530	110			400
- 112	16			8.0	360	13.5	0.18			25.0	31	70	12.5	530	105			400
- 113	56	540		27	1300	120	0.11			39.0	25	50	27.0	570	160	33		640

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNE'S TRACE ELEMENT DATA

Sample Locality P

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 114	Altered mica schist	Traverse; N-30°W - 100'		0.12	7.5	2.0	0.52	6600	680	
- 115	Altered micaceous quartzite	End of gravel pit traverse 110'		0.03	5.6	1.3	1.05	6600	680	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 114		610		33	1150	90	0.22			46		70	22	420	150			580
- 115		220		17	1000	39	0.13			33.5		20	16	480	137			620

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 116	Quartzite	Start road traverse; 0'		0.06	1.6	0.12	0.12	2350	480	
- 117	Altered mica schist	50'		0.03	6.7	0.13	0.075	2600	1050	
- 118	Altered mica schist with vein quartz	100'		0.03	2.4	.022	0.068	1100	570	
- 119	Highly altered mica schist	150'		0.03	6.7	.080	0.064	4600	720	
- 120	Quartz with silicified schist	200'		0.18	8.5	.030		2200	810	
- 121	Micaceous quartzite	250'		0.02	7.4	.044	0.20	5500	1100	
- 122	Micaceous quartzite	300'		.01	1.5	.056	0.115	2350	500	
- 123	Altered silicified schist	350'		.01	13.	0.10	0.090	3500	710	

35

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 116	23	190			76	23				20.0	22.5			530	55			225
- 117	51	580		2.7	145	34				32.0		20		270	60	L		240
- 118	32	130			34	16				21.5				300	29			115
- 119	39	520		2.5	160	23				28.0		28		270	76	L		400
- 120	16	195		3.8	195	21			L	33.0	38.0	30	L	200	59	L		210
- 121	49	210		32.0	1900	325				71.0		20	20	660	175	10		700
- 122	22	280			76	20				17.0		4		350	36			235
- 123	67	410		23.0	350	100				40.0	35.0	45	14.5		100	L	L	420

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality Q (2)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 124	Altered schist gouge	Road traverse - 400'		.01	3.50	0.72	0.32	2600	540	
- 125	Altered schist gouge	450'		0.10	5.40	0.15	.064	4000	650	
- 126	Quartzite	500'		0.02	1.55	0.32	0.12	1600	335	
- 127	Gouge with vein quartz	550'		0.01	2.50	0.44	.070	4000	160	
- 128	Altered silicified schist	600'		.01	3.20	0.58	.063	3200	540	
- 129	Micaceous quartzite	650'		0.02	1.70	0.55		2850	320	
- 130	Slightly altered mica schist	700'		.01	1.65	0.59	.076	11000	L	
- 131	Silicified schist with quartz	750'		0.03	0.66			1100	580	

36

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 124	19	00		2.4	280	37			L	26.0		50	2.4	270	73	L		275
- 125	62	600		22	1000	64				32.0	27.5	50	12.5	240	127	L	L	400
- 126	52	400			56	29				44.0		23		380	45			190
- 127	110	7600			440	28				22.0	21.0	83	5.8		84	L		370
- 128	26	1250		108	650	28				47.0	20.0	64	5.2		97	L		300
- 129	29	520			89	27				17.0	16.5	51		370	40			230
- 130	47	1500			1000	22				12.5	19.0	91	6.4		88	3		480
- 131	14	49			40	20				13.0				320	L			150

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality 0 (3)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 132	Altered silicified schist	Road traverse - 800'		.01	5.30	.076		2850	720	
- 133	Quartzite with vein quartz	850'		.01	0.66		0.05	600	245	
- 134	Quartzite with vein quartz	900'		.01	2.20	0.05	.065	1500	460	
- 135	Schist gouge with quartzite	950'		0.03	4.70	0.95	0.19	4000	365	
- 136	Altered mica schist and gouge	1000'		.01	3.20	0.30	.087	6600	225	27
- 137	Altered micaceous quartzite	1050'		.01	5.30	0.37	0.10	4600	950	
- 138	Altered micaceous quartzite	1100'		.01	2.40	0.40	0.35	2600	370	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 132	24	610		4.2	190	64				36.0	21.5	34	2.0	400	68	L		280
- 133	26	92			24	18				13.5		13		225	L			100
- 134	33	260			150	32				24.0		34		440	55			175
- 135	35	1250		9.2	440	34				25.0	19.5	125	6.7	370	82	L		385
- 136	105	820		2.5	500	45				29.0	32.0	66	10.0	390	98	11	110	480
- 137	37	1100		16.0	205	28				58.0	27.0	51	6.0	420	78	2		350
- 138		410			145	54				22.0	20.0	40		370	47			250

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality 0 (4)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 139	Micaceous quartzite	Road traverse - 1150'		0.03	2.90	.055	0.06	1850	840	
- 140	Altered silicified schist	1200'		0.06	4.70	1.20	0.20	5500	370	
- 141	Quartz	1250'		0.03	1.25	.039	.067	1400	310	
- 142	Silicified schist	1300'		0.03	6.70	0.80	0.13	4600	320	
- 143	Quartz and altered schist	1350'		.01	1.40	.066	0.07	1850	400	
- 144	Altered schist	1400'		0.06	7.50	1.10	0.19	8300	520	
- 145	Silicified schist	1450'		0.08	2.70	0.34	.076	4600	220	
- 146	Quartzite and silicified schist	1500'		.01	1.45	0.22	0.15	1700	250	
- 147	Silicified schist	1550'		.01	4.70	1.00	0.15	3500	380	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 139	165	380		47.0	78	53.0				29.5				380	46	L		245
- 140	86	1500		2.6	1100	82.0				40.0	35	13	14.5		100	L	L	420
- 141	15	150			56	14.5				11.5				440	25			170
- 142	22	700		6.8	340	58.0			L	23.0	23			270	82			345
- 143	17	400			110	17.5				12.0	14			370	47	L		220
- 144	76	1500		45.0	2200	72.0			L	31.0	33	125	21.0	370	137			620
- 145	58	760		9.0	600	42.0				22.0	15		9.5	330	96	23		460
- 146	15	180			460	9.8				18.0				400	30	5.4		293
- 147	41	1100		3.5	800	53.0				30.0	37	43	5.8	310	94	L		390

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality Q (6)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 148	Silicified schist	Road traverse - 1600'		0.02	1.90	0.62	0.09	6600	L	3
- 149	Silicified schist	1650'		.01	4.20	0.92	0.18	4000	470	
- 150	Silicified schist with quartz	1700'		0.03	4.40	0.96	0.32	11000	530	
- 151	Altered schist	1750'		.01	9.40	1.30	0.27	3800	980	
- 152	Altered silicified schist	1800'		0.04	2.80	.038		1800	270	
- 153	Quartzite	1850'		0.06	0.48	.012		1500	220	
- 154	Quartzite veinlet	1900'		0.03	0.53	.019		130	610	
- 155	Silicified schist	1950'		0.06	6.10	.022	.090	2000	550	
- 156	Altered mica schist	2000'		0.04	2.40	.105		3200	240	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 148	86	1250		1.4	2700	23.0		110		19	36.0		24.5		130	3		560
- 149	30	920		1.7	600	39.0				28	36.0	18	5.6		86	L		350
- 150	27	650		7.2	380	21.0				25	23.0	400	9.0	360	94	L		600
- 151	78	1100		42.0	2150	72.0			L	96		20	25.0	540	170	36		440
- 152	23	370			140	38.0				19		38		310	52	L		230
- 153	23	45			70	35.0				15				340	44			155
- 154		50			44	8.4				13				450	L			45
- 155	24	115		4.0	370	140			L	31		38	L	410	87	L		260
- 156	52	930			800	105			L	18	22.5	86	L	220	95	L		340

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality Q (6)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 157	Slightly altered silicified schist	Road traverse - 2050'		.01	3.90	.022		2300	210	
- 158	Altered mica schist	2100'		0.08	3.30	0.80	.057	2700	350	
- 159	Slightly altered mica schist	2150'		.01	1.10	0.25	0.14	1350	560	
- 160	Altered schist	2200'		0.09	4.60	1.10	0.44	3900	680	
- 161A	Altered schist	2250'		0.08	6.70	1.50	0.94	5000	980	
- 161B	Vein quartz and silicified schist	2250'		0.09	0.30		0.05	5000	240	
- 162	Gouge and altered schist	2300'		0.09	6.00		0.30	26000	860	
- 163	Silicified schist with quartz	2350'		0.09	5.60		0.41	26000	810	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 157	16	250			125	8.8							L	270	44	L		290
- 158	24	1100			800	35.0			L	16	23	118	L	140	105	L		390
- 159	18	420			100	14.0				15				320	13	L		150
- 160	15	400		35	690	54.0			L	70	22	15	2.4	270	130	L		420
- 161A	66	1100		32	2150	62.0			L	44	26	19	23.0	250	160	L		540
- 161B	14				140	8.6								170	58			270
- 162	34	800		19	1200	320				70		19	25.0	300	180	L		720
- 163	13	720		14	1550	500			L	360		18	23.0	270	180	L		660

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality Q (7)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 164	Altered micaceous quartzite with gouge	Road traverse - 2400'		0.08	3.40		.125	4000	600	
- 165	Highly altered silicified schist	2450'		0.09	16			4000	660	
- 166	Altered micaceous quartzite	2500'		0.09	3.80			5000	220	
- 167	Altered silicified schist	2550'		0.04	5.60		.072	7000	780	
- 168	Quartzite with vein quartz	2600'		.01	0.87		.074	5000	420	
- 169	Altered mica schist	2650'		0.04	3.80		0.18	3200	1200	
- 170	Altered schist plus soil	2700'		0.06	2.00		.125	2050	640	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 164	28	1400			520	42			L	23		150	L	230	76	L		320
- 165	53	650		8.4	460	61			L	42	23.5	84		330	88	L		290
- 166	20	130			115	8.0								330	29	L		270
- 167	21	170		25.0	280	500			L	22		130	L	200	98	L		380
- 168					110	25						9		370	30			280
- 169		920			140	15				28		135		480	60	L		240
- 170	18	480		9.2	105	38				20		250		360	44			185

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality R (8)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 171	Quartzite	Start of traverse - 0'		0.03	4.60		0.25	7000	700	
- 172	Highly altered mica schist	50'	1250	0.22	10	0.43	0.26	2600	10000	
- 173	Altered mica schist	100'		.01	7.50	2.00	0.25	2600	780	
- 174	Moderately altered mica schist	150'		0.04	10	3.60	1.80	8300	950	
- 175	Discordant vein quartz	200'		0.03	0.76		.078	96	1000	
- 176A	Altered schist	250'	350	0.03	10	1.10	.135	2600	420	
- 176B	Vein quartz	250'		0.04	1.20	.056	.074	760	780	
- 177	Altered schist	300'		.01	7.40	2.30	0.33	11000	1020	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 171	15	79		40	520	120	0.10			48	17		L	410	135	L		390
- 172	240	920		64	7000	230	0.24			190	37	1260	25.0		225	15.0		1230
- 173	42	330		28	3500	53	0.14			56		70	21.5	320	170	6.5		700
- 174	22	79		40	2700	460	0.16			60		80	17.0		240	L	L	790
- 175		56			54	14	0.26			16		100		350	L			
- 176A	64	210		27	1800	500	0.18			46		530	31.0		220	8.3	L	760
- 176B					80	29	0.14			18		220			29			117
- 177		110		38	2700	250		130		62		863	24.0		260	L	L	760

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality R

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 178A	Vein quartz	350'		.01	0.51		.074	96	780	
- 178B	Vein quartz	350'		.01	0.80		.076	120	540	
- 179	Vein quartz	400'		.01	0.40		.072		570	
- 180	Altered schist, edge of gray zone above stibnite vein	410'		0.01	7.00	1.80	0.36	2600	810	
- 181	Altered silicified schist	420'		.01	7.00	1.70	0.36	5500	840	
- 182	Altered silicified schist with vein quartz	430'		.01	4.50	0.92	0.40	2150	700	
- 183	Altered silicified schist	440'		0.01	7.00	1.70	0.37	5500	890	
- 184	Gray-black silicified schist with quartz nodules	450'		0.01	7.00	1.70	0.14	8300	840	

43

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 178A					29	8.6	0.30					40			L			
- 178B					47	13.5	0.18					20			L			
- 179					24	7.1	0.18					20			L			
- 180	31	450		33.0	1500	71.0	0.13			47		30	21.0		180	6.5		760
- 181		280		33.0	1900	145				47		21	22.0		235	L		920
- 182	17	340		19.0	900	71.0	0.14			33		30	13.5		130	L		380
- 183	19	280		27.0	1200	100	0.11			43		20	18.0		185	L		700
- 184	45	760		24.5	1400	100	0.12			37		20	19.0		160	L		700

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality R

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 185	Altered schist gouge with silicified schist	460'		.01	6.60	1.50	0.19	8300	910	
- 186	Altered schist gouge with quartz	470'		.01	7.00	1.70	0.19	5500	760	
- 187	Schist gouge with quartz	480'		0.01	4.00	0.95	0.15	4000	890	
- 188	Quartz with schist selvage	490'		0.01	0.66	.032	.055	5100	650	
- 189	Altered mica schist	500'		0.01	7.00	2.05	0.13	6600	760	
- 190	Altered micaceous quartzite	550'		0.01	5.00	1.15	.125	5500	670	
- 191	Quartzite	600'		0.02	1.00	.011		2200	460	
- 192	Quartzite with vein quartz	650'		0.03	3.00	0.52	0.14	4600	740	

44

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 185	53	610		26.0	1100	900	0.10			40.0		60	18.0		165	L		760
- 186	53	650		20.0	1200	125	0.14			39.0	27	70	18.0		145	L		460
- 187	44	510		11.0	740	90	0.18			30.5	23	40	22.0		125	L		540
- 188		630			29	47	0.09					80	16.0		L			81
- 189	53	650		27.0	1200	200	0.12			40.0	28	90	16.0		150	L		620
- 190	73	650		17.5	980	200	0.14			30.5	27	120	12.5		135	L		450
- 191		840			56	35	0.22					40			42			250
- 192	60	1100		4.4	580	49	0.13			35.0	29	30	8.6		110	L		470

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality R

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 186	Altered schist gouge with quartz	470'		<0.01	7.0	1.7	0.19	5500	760	
- 187	Schist gouge with quartz	480'		0.01	4.0	0.95	0.15	4000	890	
- 188	Quartz with schist selvege	490'		0.01	0.66	0.032	0.055	5100	650	
- 189	Altered mica schist	500'		0.01	7.0	2.05	0.13	6600	760	
- 190	Altered micaceous quartzite	550'		0.01	5.0	1.15	0.125	5500	670	
- 191	Quartzite	600'		0.02	1.0	0.11		2200	460	
- 192	Quartzite with vein quartz	650'		0.03	3.0	0.52	0.14	4600	740	
- 193	Slightly altered gray mica schist	700'		<0.01	5.5	1.70	0.44	4600	820	
- 194	Vein quartz with altered schist gouge	750'		<0.01	1.7	0.092	0.076	3500	640	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 186	53	650		20	1200	125	0.14			39	27		18		145	L		460
- 187	44	510		11	740	90	0.18			30.5	23		22		125	L		540
- 188		630			29	47	0.09						16		L			81
- 189	53	650		27	1200	200	0.12			40	28		16		150	L		620
- 190	73	650		17.5	980	200	0.14			30.5	27		12.5		135	L		450
- 191		540			56	35	0.22								42			250
- 192	60	1100		4.4	580	49	0.13			35	29		8.6		110	L		470
- 193	42	260		24.5	980	100	0.14			37		30	16		180	L		580
- 194	22	580		1	318	18	0.13			19		50			58			345

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.A.C.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality R

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 195	Altered micaceous quartzite and altered schist	800'		0.03	1.4	0.037		2000	300	
- 196	Altered mica schist	850' - 15' from contact with dike		0.03	4.2	0.61	0.13	4000	540	
- 197	Altered quartz monzonite (?) dike rock	900'		0.04	2.3	0.26	0.17	1100	560	
- 198	Altered quartz monzonite (?)	920'		0.03	1.6	0.19	0.095	1500	240	
- 199	Altered quartz monzonite (?)	970'		0.09	2.2	0.26	0.18	1200	260	
- 200	Altered quartz monzonite (?)	1020'		0.03	2.2	0.21	0.014	760	195	
- 201	Much altered schist	1070' - 20' from contact with dike		0.04	1.9	0.21		3200	350	
- 202	Much altered silicified schist	1120'	3350	0.38	7.0	0.040	0.10	4600	310	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 195	14	360			39	8.4	0.13			15.5		60			35			240
- 196	61	450		4.7	440	33	0.09			28		40	7.6	500	105	L		410
- 197	39	1500			11	8.0	0.11			35	20		330		15			160
- 198	37	1500			6.8	2.9	0.12			23	80		340		L			200
- 199	27.5	1900			6.6	2.1	0.14			25	70				L			165
- 200	29	1500			8.2	4.5	0.45			22	130				L			145
- 201	24	650			80	3.4	0.50			21	19.5	130			55			185
- 202	64	760			470	70	0.24			23	28	12900	2.8		125	L		410

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 203	Segregation quartz with quartzite	1170'		0.02	0.43	0.026		500	370	
- 204	Silicified schist	Across road about opposite EFO - 200		0.02	2.9	0.086	0.077	2500	810	
- 205	Vein quartz in altered dike	Across road about opposite EFO - 200		4.20	1.3			910	650	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 203	19	230			14	4.9	0.07					50			L			95
- 204	50	580		4.6	180	17	0.20			25	19	70			58			305
- 205	16	260			25	10	0.18			13	18	240			30			120

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality S

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 206	Silicified schist with segregation quartz	Traverse N-30°W - 0'		<0.01	1.2	0.040		2600	320	
- 207	Altered schist and clay gouge	50'		<0.01	2.3	0.092		2800	420	
- 208	Quartzite	100'		0.02	1.1	0.030		710	790	
- 209	Moderately altered silicified schist	150'		0.01	2.0	0.29		4600	220	
- 210	Segregation quartz with micaceous selvage	200'		0.01	3.6	0.16		4000	430	
- 211	Quartzite	250'		<0.01	0.86			880	310	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 206	42	300		1.8	68	13.5				19		55			58			265
- 207	28	470			170	18				22		275			56			300
- 208		320			34	9.0				24		73			11			117
- 209	46	830			380	32				17	18		6.8		88	L		500
- 210	60	650		7.2	300	32				22	22	24			65	19		365
- 211		125			16	8.0						21			L			130

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality T

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 212	Quartzite with segregation quartz	Traverse N-12°W - 0'		<.01	1.1	0.014		460	410	
- 213A	Vein quartz	100'		<.01	0.60			100	600	
- 213B	Slightly altered gray mica schist	100'		<.01	1.75	0.27	0.64	2600	310	
- 214A	Quartz	200'		0.01	0.48				440	
- 214B	Quartzite	200'		<.01	1.5	0.24	0.64	1450	490	
- 215	Quartzite	300'		0.02	2.15	0.22		2350	420	
- 216	Vein quartz with altered schist	400'		0.03	5.0			280	1400	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 212		130			33	8.0				17.5		35			L			90
- 213A					29	5.0				14		9						
- 213B	30	310			100	14				14					34			230
- 214A					20	4.9						9						
- 214B	19	2100			46	11				22		28			29		L	235
- 215	45	650		2.7	220	13.5				21.5		19			60		L	290
- 216		190		8.6	47	33				40		19	3.2		33			

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality T

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 217	Micaceous quartzite	500'		0.02	3.1	0.24	1.0	1850	460	
- 218	Segregation quartz with silicified schist	600'		0.03	2.3			960	355	
- 219	Red-brown altered micaceous quartzite	700'		0.05	7.4	0.31	0.96	3200	570	
- 220	Vein quartz	Traverse continued, new bearing N-20°W - 800'		0.02	0.56			200	540	
- 221	Vein quartz stringers with altered schist	900'		0.56	0.78	0.05		900	490	37
- 222	Micaceous quartzite	1000'		0.02	1.2	0.055		2000	450	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 217	20	490			86	13				24.5		49			50			270
- 218	16	400			44	9.6				18.5		70			31			160
- 219	64	700			330	52				32		28			81	L	L	410
- 220					29	12						15			L			
- 221	30	340			81	11				30	45				36			113
- 222	24	570			165	19				15.5	22.5	19			49			265

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality T

(2)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 223	Slightly altered mica schist	1100'		0.01	1.2	0.82		2000	290	
- 224	Mica schist	1200'		0.03	6.3	0.93	1.05	3200	440	
- 225	Vein quartz with altered monzonite dike rock	1300'		0.04	1.55	0.043	0.076	1450	1070	
- 226	Much altered silicified schist	1400'		0.02	5.8	0.067	0.066	1500	820	
- 227	Much altered mica schist	New bearing N-15°W 1500'		0.03	8.3	4.4	2.0	8400	860	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 223	33	610			400	18				15.5	21	43			61			265
- 224	28	760		8.8	800	40				29	29	44	8.8		86	L		400
- 225		110			96	8.4				19.5		15			34			160
- 226	14	360		13	90	33				28		240	5.6		42	L		190
- 227	14	5000+		24	10000+	82	0.12			39	34	20	18	890	165	L		650

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality T

(2)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 228	Segregation quartz	1540'		0.02	0.64			29	640	
- 229	Altered silicified schist	1600'		0.03	3.75	0.88	0.085	4600	450	
- 230	Slightly altered mica schist	1700'		0.01	5.5	1.3	0.14	5500	760	
- 231	Vein quartz	1800'	860	1.30	1.9	0.037		920	740	
- 232	Vein quartz	1900'		0.06	0.58			32	680	
- 233	Quartz boudin with altered schist	2000'		0.01	2.9	0.8	0.30	4000	740	
- 234	Slightly altered mica schist	2100'		0.02	6.3	1.2	0.15	5500	790	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 228					24	10	0.14					20						
- 229	60	1500			550	36	0.07			26.5	24	70	7.6		98	L		440
- 230	27	920			900	25	0.24			18.5	64		9.0		100	9.2		440
- 231	26	195			120	32	0.09			15		20			23			137
- 232					52	11	0.60					10						
- 233		115		86	350	52	0.09			25		40	7.6		110			350
- 234	41	1100		28	2200	125	0.09			40		80	17.5		145	L		570

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality T (5)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Tl	Mn	Ag
EFO - 235	Discordant vein quartz	2200'		0.03	0.47			37	620	
- 236	Gray-green mica schist	New bearing N-38°W - 2300'		0.02						
- 237	Quartz with mica schist	2400'		0.01	0.54		0.18	69	710	
- 238	Micaceous quartzite	2500'		0.03	1.3	0.22	0.13	1450	660	
- 239	Gray mica schist	2600'		0.03	4.7	0.70	0.21	8300	1070	
- 240	Vein quartz	2700'		<0.01	0.83	0.15	0.15	390	600	
- 241	Vein quartz	2800'		<0.01	0.90	0.06	0.115	310	650	
- 242	Altered silicified schist	2900'		0.39	5.3	0.90	0.22	8300	1400	
- 243	Altered micaceous quartzite with vein quartz	3000'		<0.01	5.5	1.7	0.74	11000	890	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 235					27	11.5	0.08					20						
- 236												36						
- 237					25	26									L	L		
- 238	31	340		2.7	58	17				21.5					48			200
- 239	45	570		38	1200	100				61			12.5		125	0.93		650
- 240		42		1.8	23	16.5				14					31			96
- 241		55		2.8	29	18				16.5					37			86
- 242	56	610		36.5	1400	250				60	26	260	11		125	L		650
- 243	31	86		31.5	113	100				42			24		250	0.94		920

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality U

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Tl	Mn	Ag
EFO - 244	Altered caliche-coated garnet-mica schist	0'		<0.01	0.59	0.05	0.085	120	640	
- 245	Yellow-brown gouge and garnet-mica schist	100'		0.02	11	0.82	10	16500	1250	
- 246	Dense, unaltered garnet-mica schist	200'		0.02	0.24	0.54	1.45	2800	320	
- 247	Vein quartz from altered zone between #245 and 246	150'		0.01	0.43	0.02	2.0	56	620	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 244					34	12						54			L			
- 245	94	2500		40	6200	100				130		175	21	350	220	L		1300
- 246		1250		2.1	26	12		145			27	61		660	56			360
- 247		830			25.5	9.0				24		19			L			

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 248	Quartzite rubble with soil	Bearing N - 0'		0.04	7.4	4.4	10	11000	1300	
- 249	Slightly altered quartz mica schist	100'		0.06	6.3	1.3	0.67	4600	980	
- 250	Garnetiferous quartzite with segregation quartz	200'		0.06	2.1	0.53	0.97	3200	730	
- 251	Gray, quartz-mica schist	300'		0.06	7.0	1.7	1.05	8300	980	
- 252	Dense altered garnet-mica schist; bright green mica	400'		0.06	18	4.4	6.8	16500	10000	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 248		2500		30	10000+	81				145		50	17	1850	150	L		870
- 249	140	760		16	800	44				35.5	27	10	L		115	L		470
- 250	19	190		2.6	195	29				20					79			320
- 251	135	760		17	1100	49				31	28		13		115	L	L	540
- 252		570		32	105	47		500		28		54	15.5	1200	380	80		1300

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality W

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 253	Red altered garnet-mica schist	Eclogite pit, traverse 1, 0'		0.06	12	4.4	5.2	16500	1400	
- 254	Calcite lens with garnet-mica schist	40'		0.02	2.8	1.5	10.0+	3500	860	
- 255	Micaceous quartzite with calcite	80'		0.02	2.9	2.3	6.8	3200	550	
- 256	Silicified garnet-mica schist with calcite	120'		0.01	4.4	2.05	6.8	4000	950	
- 257	Altered mica schist	160'		0.03	11.0	11	4.2	16500	840	27
- 258	Slightly altered garnet-mica schist	200'		0.01						
- 259	Yellow-green stained mica schist	190'		0.03	4.9	2.05	1.1	50000+	410	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 253		4400		55	10000+	200				510		46	25	1000	185	L		1300
- 254	57	2500			2200	64				34	19	68	60	560	127	L		345
- 255	52	2500			810	69				31	21	51		620	165	L		275
- 256	77	1500		5.2	980	47				27.5	26	30	7.6	570	92	L		375
- 257	19	2400		53	9400	82				115	30	33	28		121	25	L	1300
- 258												18						
- 259	30	5000+			9400	60			23				42	470	450			2600

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 260	Eclogite	Traverse #2 eclogite pit Bearing N-SE - 0'		0.03	1.05	0.90	1.3	34	L	
- 261	Black graphitic schist	20'		0.03	2.3	0.61	6.8	4600	660	
- 262	Dense altered eclogite	40'		0.03	11	3.5	10+	16500	1300	
- 263	Moderately altered eclogite	60'		0.02	6.6	3.5	10	25000	1100	
- 264	Quartz rubble	60'		0.02						
- 265	Much altered mica schist	80'		0.02	4.1	2.05	10	16500	7600	
- 266	Black graphitic schist	100'		0.03	2.2	0.72	10+	1350	8400	
- 267	Quartz pod	100'		0.01	0.74	0.34	0.34	265	840	
- 268A	Vein quartz	120'		0.03	0.69	0.062	0.062	295	470	

- 268B Altered mica schist selvage 120' 0.03 15.5 8.0 6.8 16500 780

SAMPLE NO.	From 268A	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 260		410			6200	5.8				15	35	33			L			58
- 261	18	2400			6200	170				67		15	78		1000+	18	L	380
- 262		1250		53	10000	52			21.5	88		33	45	880	360	L		1900
- 263		1850		21	9400	90				50		38	28	840	300	L		980
- 264																		
- 265	7.6	1850		20.5	10000+	100				64		90	17	780	300	L		700
- 266	24	1500			9400	145			19	145		45	6.0	570	1000+	L	950	240
- 267		1850		1.4	160	10				9.6		28			51			
- 268A		410		1.45	38	13.5				17		10			23			
- 268B		1850		50	9400	200				115	68		39		470	15		1300

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality W

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 269	Eclogite	Eclogite pit, traverse 2 Bearing N-SE - 140'		0.04	13.0	8.0	10+	16500	1250	
- 270	Eclogite	160'		0.04	13.0	11	10+	16500	1250	
- 271	Altered graphitic schist	180'		0.03	3.0	1.2	3.0	6600	630	
- 272	Mica schist with graphite	Eclogite pit, traverse #3 Bearing N-90°E 0'		0.05	3.6	0.72	10+	2800	680	
- 273	Mica schist and black micaceous quartzite	50'		0.06	6.0	3.0	10+	11000	650	
- 274	Quartzite	100'		0.04	15.5	5.7	5.2	16500	990	
- 275	Quartz mica schist	150'		0.06	13.0	4.6	6.8	16500	1100	

- 276 Altered garnet mica schist and 200' 0.04 24.0 8.0 10+ 16500 4500

SAMPLE NO.	From 269	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 269		1850		43	9400	125				19	61	74	15	44		390	L	1200
- 270		1500		43	6200	125				17	56	71	43	42		330	L	1100
- 271	53	1850		3.9	1100	125				115	53	13	5.8	460	1000+	L	1050	460
- 272	80	1850		3.0	6200	46				39	38	54	8.8	520	105	L	L	365
- 273	21	1500		23	6200	110			L	80	57	54	17	600	330	10	L	830
- 274	19	410		49	4400	125			L	76	76	18	29		250	L	L	870
- 275	40	540		40	4400	110				61	72	10	32		310	L	L	920
- 276		920		70	9400	82		420	21	145	82	19	33	960	360	52	L	1100

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality W

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 277	Altered garnet-mica schist and eclogite	Eclogite pit, traverse #3 250'		0.05	14.0	8.0	10+	16500	1400	
- 278	Quartz	Grab sample, floor of pit		0.05	0.78		0.44	74	860	
- 279	Not taken									

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 277		1250		56	9400	100		200	25	94	68	33	36	630	310	17	L	1100
- 278		48			100	18.5								620				
- 279																		

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality X

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 280	Black micaceous quartzite	Road traverse N-15°W - 0'		0.06	4.7	2.6	3.0	5500	1200	
- 281	Black micaceous quartzite	100'		0.06	3.1	1.7	1.7	3200	480	
- 282	Graphitic schist	200'		0.05	5.5	2.6	1.7	5500	1400	
- 283	Graphitic schist	300'		0.03	4.7	1.7	5.2	5500	860	
- 284	Graphitic schist	400'		0.04	4.7	3.5	6.8	4000	650	
- 285	Graphitic schist	500'		0.05	4.2	1.2	0.78	3200	1070	
- 286	Quartzite	600'		0.06	2.5	1.5	2.4	4000	780	
- 287	Quartzite	700'		0.05	3.6	1.85	5.2	2800	590	
- 288	Calcite bearing quartzite	Grab sample 850'		0.05	0.47	0.48	10	125	1300	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 280	38	1850		16	620	170				39	30.5		9.6	700	120	L		510
- 281	53	1850		4.8	540	110			L	26	24		3.3		125	L		325
- 282	37	1850		8.8	740	56			L	30	37		8.6		115	L		570
- 283	96	1850		2.3	1900	320			15	42	37	10	8.4		360	52		460
- 284	39	2400		3.3	1100	35			L	25	35	29	5.7	590	110	L		355
- 285	44	1850		7.6	150	64			L	32	36				66	L		300
- 286	38	1850		3.4	470	75		160	L	27.5	22	8	5.7		200	21.5		400
- 287	42	1850		5.4	1100	75		100	L	31	21	35	4.8		180	L		280
- 288		190			17	6.0						190			L	L		

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality Y

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 289	Segregation quartz with micaceous quartzite	Grab samples		0.05	3.5	1.4	2.4	5500	670	
- 290	Segregation quartz with mica schist	Grab samples		0.06	2.9	1.9	10	6600	8200	
- 291	Red-brown gouge and altered schist	Grab samples	750	0.06	15.5	1.40	3.0	25000	1300	
- 292	Quartz stringers in silicified schist	Grab samples		0.06	1.2	0.059	0.41	1200	760	
- 293	Altered schist and gouge	Grab samples	800	0.08	9.5	0.93	1.45	16500	1070	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 289		1850		13	1900	90		115	L	30	23		8.7	460	125	14		700
- 290		5000+		8.5	2700	52				33		66	8.6	1130	85	L		500
- 291	170	1850		108	9400	200		410	18	370	30	237	40		450	71	L	2600
- 292	53	1500			245	14				23		28			135			175
- 293	100	1850		.99	9400	460		200	L	280	29	125	27		450	44	L	1300

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality Z

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 294	Segregation quartz with mica schist	Grab samples		0.03	1.9	0.36	0.43	1600	670	
- 295	Gray mica schist	Grab samples		0.06	3.3	0.84	0.54	4000	740	
- 296	Silicified mica schist	Grab samples		0.03	3.5	0.81	0.51	4600	820	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 294	26.5	1500		3.0	235	16				19.5					56			230
- 295	31	830		3.0	580	17				21	25		4.0		66	L	L	510
- 296	35	610			620	46				18	26.5		8.5	460	86	L	L	480

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 297	Segregation quartz	Gravel pit traverse - 0'		0.04	1.3	0.27	0.10	450	560	
- 298	Quartz-mica schist	10'		0.03	2.6	0.64	0.15	4600	390	
- 299	Garnetiferous silicified schist	50'		0.03	4.7	0.88	0.21	4600	700	
- 300	Segregation quartz with mica schist	100'		0.04	0.8	0.065	0.068	365	470	
- 301A	Altered mica schist	150'		0.04	4.9	0.98	0.31	5500	660	
- 301B	Segregation quartz	150'		0.03	0.63		0.086	35	760	
- 302	Quartzite	200'		0.03	1.55	0.26	0.083	1500	510	
- 303	Altered micaceous quartzite	250'		0.05	1.95	0.29	0.11	890	570	
- 304	Quartzite with quartz-mica schist	300'		0.04	1.6	0.41	0.084	1400	570	

63

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 297	24	350			90	17.5				16					25			105
- 298	27	1100		1.9	400	17				23.5	22		4.8		70	L		440
- 299	40	1100		89	680	17				25.5	24		8.5		92	L		510
- 300	30	83			66	13									L			-98
- 301A	49	1250		2.2	1200	53				29.5	25	9	9.3		107	L		470
- 301B					60	9.6									L			
- 302	23	280			77	19.5				17					29.5			200
- 303	25	230			49	14				21.5					18			155
- 304	25	400			160	15				20					36			195

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

FOX-OLNES TRACE ELEMENT DATA

Sample Locality AA

(2)

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 305	Quartzite and segregation quartz	340'		0.02	0.60		0.063	125	790	
- 306	Altered garnet-mica schist	350'		0.02	1.40	0.29	0.14	740	910	
- 307	Altered garnet-mica schist	400'		0.03	8.3	2.3	0.60	11000	910	

64

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 305					41	16.5										L		64
- 306	19				110	28				18.5						30		125
- 307	63	700		32.5	1900	100				48	37		24			190	10	730

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.

SAMPLE NO.	MATERIAL	LOCATION	As	Au ¹	Fe%	Mg%	Ca%	Ti	Mn	Ag
EFO - 308	Gray mica schist	Chatanika bridge, contact with quartz #309 Grab samples		0.02	5.8	1.2	0.115	5500	690	
- 309	Segregation quartz with mica schist selvage	Grab sample		0.02	4.7	1.2	0.13	5500	510	
- 310	Segregation quartz	Grab sample		0.01	1.1	0.15	0.14	1000	560	
- 311	Segregation quartz	Grab sample		0.02	2.6	0.60	0.135	2600	950	
- 312	Altered mica schist	Grab sample		0.02	3.3	0.32	0.15	11000	740	
- 313	Altered mica schist	Grab sample		0.03	10	0.77	0.155	16500	640	

SAMPLE NO.	B	Ba	Be	Co	Cr	Cu	Hg ²	La	Mo	Ni	Pb	Sb ¹	Sc	Sr	V	Y	Zn	Zr
EFO - 308	29	1500			1200	44				19.5	30	24	12.5		110	E		470
- 309	55	1850		1.5	1600	46				18.5	34		13		125	L		470
- 310	19	93			77	20.5		137		21					16	L		165
- 311	30	165			9.3	11.5				23.5				480	80	L		240
- 312	56	165		4.8	300	38				32.5		10	13		140	L		600
- 313	94	610		20	800	69				46	29	20	20	320	175	L		790

Emission Spectrographic Analyses
Analytical results in ppm unless otherwise indicated.

¹ Atomic Absorption
² Hg Detector, U.S.G.S.