

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES

Region I, Alaska District

SPECIAL REPORT  
ON  
LODE TIN MINING AND MILLING OPERATIONS  
LOST RIVER MINE, SEWARD PENINSULA, ALASKA

For Government Use Only

APPENDIX B  
SAMPLING AND ORE RESERVE DATA

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No.

## Tables

# Use DMEA (without periods)

## APPENDIX B

B-1

### EVALUATION

#### APPENDIX B - SAMPLING AND COMBINING DATA

##### DMEA Diamond Drilling Data

###### Summary of Methods and Procedures

*authorized by the DMEA contract*

Diamond drilling started June 6, 1955 and was completed on August 25, 1955. The depth of holes and total footage follows:

DMEA No. 1	187.0 feet
DMEA No. 2	173.0 "
DMEA No. 3	225.5 "
DMEA No. 4	174.0 "
DMEA No. 5	328.2 "
DMEA No. 6	366.3 "
DMEA No. 7	242.0 "
DMEA No. 8	288.0 "

Total drilled 1,984.0 feet

The drill was set up to drill another hole when the work was stopped.

*DMEA*

All holes were drilled with a CP-55-A air-powered diamond drill using EX rods. Sludge was saved in wooden boxes 1 by 1 by 12 feet with three baffles. Core and sludge sample intervals averaged about 5 feet. Samples were assayed at the Bureau of Mines laboratory in Juneau, Alaska. Petrographic and spectrographic analyses were made at the Bureau laboratory in Albany, Oregon.

*For purpose of calculating of average assay etc. / insert from attached sheet*

Where possible both core and sludge sample data were combined for each sample interval. The individual sludge samples were evaluated in relation to core recovery, position of casing, type of rock, and inflow of water. Sludge samples considered to be more than normally doubtful were disregarded. *Because of the generally low value of the natural tin recovered in all DMEA diamond drilling and because of the erratic sample results, none of their data were used.*

In combining core and sludge samples in the limestone sections, the *used* samples were weighted according to the handbook data based on the percentage recovery of core. In the granite sections, the sludge analysis data were adjusted to allow for the loss of the lighter portions of the sample. More than a normal amount of water was used in drilling the soft, altered granite encountered in the contact zone. This caused a loss of sludge by overflowing the collection tanks. Panning indicated that most of the liberated cassiterite settled in the collection tanks. The percentage of sludge recovery was estimated on the basis of the linear recovery of core and the average specific gravity of the granite in the drill hole. If less than 100 percent of sludge was recovered, the sludge value was adjusted on the assumption that all tin was recovered and the sludge loss consisted of lighter minerals. No adjustment could be made when the sludge recovery exceeded 100 percent. In this case the sludge analysis was given the same weight as for a sludge recovery of 100 percent if the character of the rock and the position of the casing indicated that the over-run of sludge was derived from the same general location as the core. The adjusted sludge analysis was then weighted, as in the limestone section, and combined with the weighted core analysis.

Drill hole locations and sampling data are shown graphically in figures B-6, B-7, B-8, B-9, and B-10.

Core drill sampling data and the results of chemical, petrographic, and spectrographic analyses are given in detail for each drill hole in tables B-1 through B-8; lithologic descriptions of core from the DMER drill holes follows the sampling data.

The legend for the spectrographic analyses is as follows, and applies to all of the tables.

Legend

A - over 10 percent	E - 0.01 to 0.1 percent
B - 5 to 10 percent	F - 0.001 to 0.01 percent
C - 1 to 5 percent	G - under 0.001 percent
D - 0.1 to 1 percent	- Not detected

## Data Used for Evaluating Reserves

In order that information intended for the evaluation of reserves be adequately presented, this Appendix also records all available pertinent sampling data resulting from previous and current investigations. The method of employing these data in the evaluation of reserves is shown in the detail.

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For purposes of calculating average assays, core and sludge sample data were combined for each sample interval. The individual sludge samples were evaluated in relation to core recovery, position of casing, type of rock and inflow of water. Sludge samples considered to be more than normally doubtful were disregarded. Because of the generally low-grade material encountered in all DMEA diamond drill holes and because of the erratic sampling results, none of these data were used.

*Re type*

TABLE B-1. Diamond drill sampling data - Hole No. DMEA-1

Location: 195 crosscut west 365 level. Elevation of collar: -60 ft. Depth: 187 ft.

Bearing: N.  $25^{\circ}$  E. Dip:  $-45^{\circ}$  Date begun: 6/8/55 Date finished: 6/22/55

Average specific gravity: Limestone section = No data. Granite section:- 2.46.

Theoretical weight of combined ore & sludge sample, per ft.: Granite section - AX 1,335 gr. EX 820 gr.

From feet	To feet	Hole size inches	Bottom of casing feet	Formation	Dist. feet	Recovery			Sludge			Assay data		
						Core Feet	Core %	Sludge Grams	Sludge %	Direct tin	Adj. tin	Core direct tin	Core tin	Comb. C. & S. tin
0.0	5.5	BX	0	Alt. ls.	5.5	5.2	95	0	0					
5.5	10.0	AX	5.5	" "	4.5	4.4	98	0	0				0.05	0.05
10.0	19.5	"		Ls.-Gr. Contact 18.7	9.5	7.8	82	0	0				0.10	0.10
19.5	23.8	"		Granite	4.3	3.6	84	0	0				0.20	0.20
23.8	27.5	"		"	3.7	2.7	73	4,195	115	0.1	0.10	Nil	0.07	
27.5	33.0	"	26	"	5.5	5.1	93	3,969	81	Nil	Nil	0.05	0.05	0.02
33.0	38.0	"	28	"	5.0	5.0	100	6,577	154	"	"	0.05	0.05	0.02
38.0	44.0	"	34	"	6.0	3.8	63	7,484	121	0.05	0.05	0.05	0.05	0.05
44.0	49.0	"	34	"	5.0	4.5	90	9,072	201	Nil	Nil	0.10	0.10	0.03
49.0	54.0	"	"	"	6.0	3.0	50	1,871	28	0.26	0.07	0.30	0.30	0.11
54.0	59.0	"	50	"	5.0	3.6	72	4,593	93	0.92	0.86	0.10	0.10	0.66
59.0	64.0	"	"	"	5.0	4.3	86	3,345	73	1.71	1.25	0.05	0.05	0.88
64.0	69.0	"	"	"	5.0	4.4	88	2,778	61	0.55	0.34	0.05	0.05	0.25
69.0	73.0	"	"	"	4.0	1.5	38	4,195	91	0.39	0.35	0.20	0.20	0.33
73.0	79.0	"	"	1/	6.0	4.6	77	5,557	96	0.26	0.25	0.05	0.05	0.19
79.0	84.0	"	"	"	5.0	4.2	84	4,763	102	0.34	0.34	0.05	0.05	0.25
84.0	88.6	"	"	"	4.6	2.9	63	3,175	67	0.74	0.50	0.40	0.40	0.48
88.6	93.8	"	"	"	5.2	5.0	96	3,345	74	1.00	0.74	0.71	0.71	0.73
93.8	99.0	"	"	"	5.2	4.8	92	1,871	40	0.63	0.25	0.30	0.30	0.27
99.0	104.0	"	"	"	5.0	5.0	100	1,928	45	0.66	0.30	0.20	0.20	0.26
104.0	109.0	"	"	"	5.0	4.6	92	2,325	52	0.37	0.19	0.50	0.50	0.29
109.0	114.0	"	"	"	5.0	3.4	68	2,552	51	0.17	0.09	0.20	0.20	0.12
114.0	119.0	"	"	"	5.0	4.2	84	2,722	58	0.20	0.12	0.05	0.05	0.10
119.0	124.5	"	"	"	5.5	4.5	82	8,902	172	0.10	0.16	0.05	0.05	0.09
124.5	130.5	"	"	"	6.0	5.7	95	3,118	59	0.05	0.03	0.20	0.20	0.09
130.5	137.0	"	"	"	6.5	6.2	95	5,480	102	0.05	0.05	Nil	Nil	0.33

Re Type

Table B-1. - Hole No. DMEA-1 (Cont.)

From feet	To feet	Hole Bottom			Dist. feet	Recovery		Assay data				
		size of casing		Formation		Core feet	Sludge Grams	Sludge %	Sludge	Core	Comb.	
		feet	feet						Direct	Adj.	C. & S.	
137.0	141.0	AX	50	Granite	4.0	3.9	98	3,969	115	Nil	0.05	0.02
141.0	146.0	"	"	"	5.0	5.0	100	4,536	106	"	0.05	0.02
146.0	150.0	"	"	"	4.0	3.9	98	3,685	107	"	Nil	Nil
150.0	155.0	EX	"	"	5.0	4.9	98	3,969	92	"	"	"
155.0	162.0	"	143	"	7.0	6.6	94	1,984	52	"	"	"
162.0	167.0	"	"	"	5.0	4.6	92	1,361	49	"	"	"
167.0	172.0	"	"	"	5.0	4.8	96	964	36	"	0.05	0.02
172.0	177.0	"	"	"	5.0	5.0	100	3,232	122	"	0.05	0.02
177.0	182.0	"	"	"	5.0	5.0	100	3,402	129	"	0.05	0.02
182.0	187.0	"	"	"	5.0	5.0	100	2,835	107	"	0.05	0.02

Nil - less than 0.05%.

1/ Heavy inflow of water at 73 feet.

Spectrographic Analysis

Sample 5-1080 - 5 to 19.5 feet

Sample 5-1081 - 27.5 to 64 feet

Sample 5-1082 - 64 to 119 feet

Sample 5-1083 - 119 to 187 feet

Sample	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Ge	Hg	In	K	Li	
5-1081	G	A	D	-	E	-	F	E	B-C	-	-	-	F	A-B	-	-	-	-	B		
5-1082	E-F	A	D	-	D	-	F	E	B-C	-	-	-	E	A	-	-	-	-	D		
5-1083	G	A	D	-	D-E	-	F	-	C	-	-	-	F	A	-	-	-	B	C-D		
	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Pd	Pt	Sb	Si	Sn	Sr	Ta	Ti	V	W	Zn	Zr	Th
5-1081	C	-	E	D	-	F	-	D	-	-	A	D	-	-	E	-	-	D	F	-	
5-1082	C	-	E	D	-	E	-	C	-	-	A	C-D	-	-	E	-	-	C-D	F	-	
5-1083	C	-	E	C-D	-	E	-	D	-	-	A	D	-	-	E	-	-	D-E	F	-	

Petrographic Analysis

Sample 5-1080: This sample essentially contains vesuvianite and fluorite, some dolomite and lithium-bearing mica (incl. quartz) &amp; very small amounts of pyrite, chalcopyrite, &amp; galena.

Sample 5-1082: Essentially contains quartz, some alt. feldspar, zinnwaldite, topaz, sphalerite, small amounts of pyrite, fluorite, sericite, tourmaline, cassiterite, galena, &amp; very small amounts of molybdenite and scheelite.

Re Type

TABLE B-2. - Diamond drill sampling data - Hole No. DMEA-2

Location: 195 crosscut west 365 level. Elevation of collar: -60 Depth: 173 ft.

Bearing: S. 5° E. Dip: -60° Date begun: 6/22/55 Date finished: 6/29/55

Average specific gravity: Limestone section - No data. Granite section - 2.46 (based on data from DMEA-1)

Theoretical weight of combined core and sludge sample, per ft.: Granite sect. AX 1,335 gr. EX 820 gr.

From feet	To feet	Hole size	Bottom of casing feet	Formations	Dist. feet	Recovery		Sludge		Assay data/ Core Comb.		
						Core feet	%	Sludge grams	%	Direct tin %	Adj. tin %	
										tin %	%	
0.0	10.0	BX	0	Alt. ls.	10.0	10.0	100	No sample	-	-	0.05	0.05
10.0	20.8	"	"	"	10.8	10.8	100	"	"	-	0.05	0.05
20.8	26.0	AX	20.8	"	5.2	4.9	94	Data missing	Nil	-	0.20	0.07
26.0	34.5	"	23	"	8.5	7.7	91	"	"	0.09	0.15	0.11
34.5	37.4	"	"	"	2.9	2.8	97	"	"	0.36	1.00	0.58
37.4	42.6	"	"	"	5.2	3.3	63	"	"	0.30	0.05	0.24
42.6	45.0	"	"	"	2.4	2.4	100	"	"	0.15	0.15	0.15
45.0	49.0	"	"	"	4.0	3.6	90	"	"	0.14	Nil	0.09
49.0	50.5	"	"	"	1.5	1.5	100	"	"	0.18	0.10	0.15
50.5	62.5	"	"	"	12.0	10.4	87	"	"	0.13	0.05	0.10
62.5	65.8	"	"	"	3.3	3.1	94	"	"	0.18	0.10	0.15
65.8	76.0	"	"	"	10.2	9.9	97	"	"	0.15	0.10	0.13
76.0	81.0	"	"	"	5.0	4.8	96	"	"	0.14	0.05	0.11
81.0	94.0	"	"	Alt. gr.2/	13.0	11.2	86	18,779	157	0.14	0.14	0.15
94.0	103.4	96.6	97	"	9.4	7.6	81	4,062	63	0.12	0.08	0.05
103.4	115.0	EX	110	"	11.6	10.3	89	3,969	61	0.08	0.08 <sup>3/</sup>	0.05
115.0	125.0	"	"	"	10.0	8.5	85	4,876	85	0.04	0.03	0.05
125.0	135.0	"	"	"	10.0	5.0	50	4,876	72	Nil	Nil	0.05
135.0	145.0	"	"	"	10.0	6.7	67	11,680	187	"	"	0.05
145.0	154.1	"	"	"	9.1	7.0	77	7,768	143	"	"	0.10
154.1	164.0	"	"	"	9.9	5.8	59	20,469	319	"	"	0.05
164.0	173.0	"	"	"	9.0	3.9	43	17,860	286	"	"	0.05
												0.01

1/ Nil equals less than 0.05%; considered as zero for making averages.

2/ Granite contact at 80 feet / or -2 feet.

3/ Net adjusted due to sludge loss 107 to 110 feet.

Table B-2. - Hole No. DMEA-2 (Cont.)

Assay data - Other metals

<u>From</u>	<u>To</u>	<u>Pb</u>	<u>Zn</u>	<u>Cu</u>	<u>W<sub>o</sub><sub>3</sub></u>	<u>Mo</u>
0	81	Nil	0.20	Nil	Nil	Nil
81	173	Nil	0.30	Nil	Nil	Nil

Spectrographic Analysis

Diamond drill core 62.5 to 173 feet was composited and analyzed spectrographically with the following results:

<u>Ag</u>	<u>Al</u>	<u>As</u>	<u>Au</u>	<u>B</u>	<u>Ba</u>	<u>Be</u>	<u>Bi</u>	<u>Ca</u>	<u>Cd</u>	<u>Co</u>	<u>Cr</u>	<u>Cu</u>	<u>Fe</u>	<u>Ga</u>	<u>Ge</u>	<u>In</u>	<u>K</u>	<u>Li</u>	<u>Mg</u>	<u>Mn</u>
F	A	-	-	D	-	F	E	C	-	-	-	E	A	E	-	-	-	D	B	D
Mo	Na	Nb	Ni	P	Pb	Pd	Pt	Sb	Si	Sn	Sr	Ta	Te	Ti	V	W	Zn	Zr		
-	D	-	E	-	D	-	-	-	A	D	-	-	-	D	F	-	D	E		

Petrographic Analysis

None.

TABLE B-3. - Diamond drill sampling data - Hole No. DMEA-3

Location: 195 crosscut west

Elevation of collar: -60

Depth 225.5 ft.

Bearing:

Dip: Vertical (-90°)

Date begun: 7/3/55

Date finished: 7/14/55

Average specific gravity: Limestone section - No data. Granite section - 2.46 (based on data Hole 1)

Theoretical weight of combined core &amp; sludge sample, per ft.: Granite section: AX 1,335 gr. EX 820 gr.

From feet	To feet	Hole size	Bottom casing feet	Formations	Dist. feet	Recovery		Assay data/ Comb. C. & S.					
						Core feet	%	Sludge grams	%	Sludge direct	Core direct	tin %	%
										tin	adj.		
0	5.0	BX	0	Alt. ls.	5.0	4.4	88	No sample				0.66	0.66
5.0	14.5	"	"	"	9.5	9.4	99	"	"			0.05	0.05
14.5	20.0	"	"	"	5.5	4.0	73	"	"			0.10	0.10
20.0	28.0	"	"	"	8.0	6.7	84	"	"			0.05	0.05
28.0	34.5	"	"	"	6.5	5.3	82	"	"			0.10	0.10
34.5	39.8	AX	34.5	"	5.3	4.5	85	1,134	23	0.10	0.02	0.20	0.08
39.8	46.8	"	"	"	7.0	6.5	93	2,495	40	0.45	0.18	0.75	0.37
46.8	52.0	"	"	Alt. gr. 2/	5.2	5.2	100	1,928	43	0.20	0.09	0.10	0.09
52.0	58.7	"	"	"	6.7	6.6	98	7,201	124	0.30	0.30	0.40	0.34
58.7	63.2	"	"	"	4.5	3.1	69	9,979	221	0.10	0.10	0.25	0.14
63.2	68.0	"	"	"	4.8	4.4	92	7,031	164	0.30	0.30	0.35	0.32
68.0	73.0	"	"	"	5.0	5.0	100	7,144	167	0.35	0.35	0.40	0.37
73.0	78.2	"	"	"	5.2	5.1	98	3,345	74	0.20	0.15	0.15	0.15
78.2	83.9	"	"	"	5.7	5.7	100	6,067	125	0.40	0.40	0.20	0.33
83.9	93.5	"	"	"	9.6	6.2	64	9,299	94	0.20	0.19	0.07	0.16
93.5	98.2	EX	93	"	4.7	2.2	47	1,191	37	0.25	0.09	Nil	0.08
98.2	104.8	"	"	"	6.6	5.0	76	11,227	284	0.15	0.15	"	0.11
104.8	109.8	"	100	"	5.0	5.0	100	1,644	62	0.18	0.11	"	0.07
109.8	114.4	"	108	"	4.6	4.6	100	964	40	Nil	Nil	"	Nil
114.4	118.9	"	"	"	4.5	4.0	89	907	36	"	"	0.05	0.02
118.9	125.0	"	"	"	6.1	4.2	69	1,928	25	0.40	0.10	Nil	0.08
125.0	130.1	"	120	"	5.1	4.8	94	9,299	334	0.15	0.15	"	0.10
130.1	134.5	"	129	"	4.4	4.2	95	1,134	47	Missing	"	Nil	
134.5	141.6	"	"	"	7.1	6.4	90	737	19	0.10	0.02	0.05	0.03
141.6	150.3	"	135	"	8.7	6.1	70	907	17	0.20	0.03	Nil	0.02
150.3	155.5	"	"	"	5.2	5.2	100	2,211	80	0.35	0.28	"	0.18

Table B-3 - Hole No. DMEA-3 (Cont.)

From feet	To feet	Hole size casing feet	Bottom Formations	Dist. feet	Recovery		Assay data					
					Core feet	Core %	Sludge grams	Sludge %	Sludge tin %	Core direct tin %	Core Adj. tin %	
155.5	160.0	EX	135 Alt. gr.	4.5	1.4	31	2,722	83	0.10	0.08	Nil	0.07
160.0	164.7	"	" " 3/	4.7	2.0	43	2,325	71	0.25	0.18	"	0.15
164.7	169.7	"	" "	5.0	3.4	68	454	15	0.75	0.11	"	0.08
169.7	175.0	"	" "	5.3	5.3	100	1,474	53	0.30	0.16	"	0.10
175.0	178.5	"	Granite	3.5	3.5	100	624	34	1.00	0.34	"	0.22
178.5	183.6	"	"	5.1	4.1	80	794	26	1.10	0.28	"	0.20
183.6	188.7	"	"	5.1	5.0	98	1,361	50	0.65	0.32	"	0.21
188.7	193.8	"	"	5.1	5.0	98	680	25	Nil	Nil	0.10	0.03
193.8	198.0	"	"	4.2	4.2	100	737	33	0.70	0.23	Nil	0.14
198.0	205.4	"	"	7.4	7.4	100	2,495	64	1.00	0.64	0.05	0.43
205.4	211.0	"	"	5.6	5.2	93	1,361	44	0.40	0.18	Nil	0.12
211.0	215.5	"	"	4.5	4.1	91	1,814	73	Nil	Nil	Nil	Nil
215.5	220.5	"	"	5.0	4.9	98	1,531	57	0.80	0.46	Nil	0.30
220.5	225.5	"	"	5.0	5.0	100	1,021	39	2.00	0.78	Nil	0.50

1/ Nil - less than 0.05%; considered as zero for making averages.

2/ Granite-limestone contact at 46.2 feet.

3/ Water encountered in fracture zone 160 to 170 feet.

4/ Some tin recovered in sludge from 170 to 205.4 feet probably was derived from caving of hole 135 to 170 feet. Sludge and combined core and sludge data very doubtful 170 to 225.5 feet.

5/ Tin in the sludge (205.4 to 225.5 feet) probably was derived from caving of hole 135 to 170 feet.

Assay data - Other metals

From feet	To feet	Pb %	Zn %	Cu %	WO <sub>3</sub> %	Mo %
0	39.8	No data	No data	No data	0.09	No data
39.8	46.8	0.98	"	Nil	Nil	" "
46.8	93.5	0.67	"	0.04	Nil	" "
93.5	225.5	Nil	"	Nil	Nil	" "

Table B-3 - Hole No. DMEA-3 (Cont.)

Sample	<u>Spectrographic Analysis</u>																			
	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Ge	Hg	In	K	Li
1																				
2																				
3																				
4																				
5																				
Sample	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Ge	Hg	In	K	Li
2	E-F	A	D	-	D	-	F	E	C-D	-	-	-	E	B-C	-	-	-	-	-	D
3	E-F	A	D	-	E	-	F	E	C-D	-	-	-	E	B-C	-	-	-	-	C-D	
4	E-F	A	D	-	E	-	F	-	C-D	-	E	-	E-F	B	-	-	-	-	C	
5	E-F	A	D	-	E	-	F	F	G	-	-	-	E-F	B	-	-	-	-	C	
	Mg	Mo	Na	Nb	P	Pb	Pd	Pt	Si	Sn	Sr	Ta	Ti	V	W	Zn	Zr	Th	Ni	
2	C-D	-	D	-	-	C	-	-	A	C-D	-	-	E	-	-	D	E	-	E	
3	C-D	-	D	-	-	D	-	-	A	D	-	-	E	-	-	E	E	-	E	
4	C-D	-	C	-	-	D-E	-	-	A	C-D	-	-	E	-	D	E-F	E	-	D	
5	C	-	C	-	-	D-E	-	-	A	D-E	-	-	E	-	-	E	E	-	E	

Petrographic Analysis

Sample 1: This sample consists primarily of quartz, topaz, and fluorite, with some associated kaolinite, sphalerite, galena, pyrite, and small amounts of tourmaline, feldspar, zinnwaldite, cassiterite, arsenopyrite, chalcopyrite, and apatite. Considerable amounts of the galena, chalcopyrite, cassiterite, and sphalerite are liberated in the plus 100-mesh fraction; however, because of the fine-grained nature of these minerals, liberation is not complete in the minus 100-mesh fraction.

Sample 3: Essentially contains quartz, altered feldspar, & kaolinite with some associated zinnwaldite & small amounts of sericite, fluorite, tourmaline, galena, sphalerite, cassiterite, pyrite, topaz, wolframite, chalcopyrite, rutile, arsenopyrite, spinel, vesuvianite, and molybdenite.

Sample 4: Essentially contains quartz, altered feldspar, & kaolinite with some associated zinnwaldite & topaz and small amounts of sericite, fluorite, sphalerite, tourmaline, arsenopyrite, spinel, chalcopyrite, galena, cassiterite, pyrite, molybdenite, wolframite, and vesuvianite.

Sample 5: Essentially the same as sample 4 with small amounts of rhodochrosite, and trace amount of a mineral tentatively identified as jamesonite.

TABLE B-4. - Diamond drill sampling data - Hole No. DMEA-4

Location: 125 Crosscut south 365 level

Elevation of collar: -60

Depth: 174 feet

Bearing: Vertical

Date begun: 7/14/55

Date finished: 7/23/55

Average specific gravity: Limestone section - No data. Granite section - No data.

Theoretical weight of combined core and sludge sample, per ft: Granite section, AX no data, EX no data.

H  
O  
L  
D

From feet	To feet	Hole size	Bottom casing feet	Bottom of Formations feet	Dist. feet	Assay data/							
						Recovery	Sludge	Core	Comb.	Direct	Adj. direct	C. & S.	
						Core feet	%	Sludge grams	%	tin	tin	tin	%
0	2.4	EX	0	Alt. ls. 4/	2.4	1.4	70	0					
2.4	3.5	"	"	"	1.1	1.1	100	0					
3.5	13.9	"	"	"	10.4	9.9	95	0					
13.9	23.7	"	"	"	9.8	9.4	96	0					
23.7	31.5	"	"	"	7.8	7.5	96	0					
31.5	35.5	AX	31.5	"	4.0	3.4	85	794	0.20		0.15	0.18	
35.5	39.8	"	"	"	4.3	4.0	93	964	0.10		0.23	0.14	
39.8	45.0	"	"	"	5.2	5.2	100	1,644	0.25		0.15	0.21	
45.0	50.5	"	"	"	5.5	5.5	100	2,155	0.15		0.22	0.18	
50.5	55.5	"	"	"	5.0	4.7	94	2,835	0.20		0.15	0.36	
55.5	59.2	"	"	"	3.7	3.5	95	2,552	0.25		0.28	0.26	
59.2	66.3	"	"	"	7.1	6.6	93	2,495	0.25		0.29	0.26	
66.3	72.0	"	"	"	5.7	5.6	98	1,418	0.20		0.09	0.16	
72.0	77.0	"	"	"	5.0	4.4	88	1,644	0.25		0.15	0.12	
77.0	82.0	"	"	"	5.0	4.2	84	2,155	0.15		0.12	0.14	
82.0	87.0	"	"	"	5.0	4.7	94	1,758	0.15		0.10	0.13	
87.0	92.0	"	"	"	5.0	5.0	100	1,361	0.05		0.12	0.07	
92.0	97.0	"	"	"	5.0	4.4	88	1,474	Nil		Nil	Nil	
97.0	99.0	"	"	"	2.0	1.7	85	1,134	0.10		0.10	0.10	
99.0	105.5	"	"	Alt. gr. 5/	6.5	3.6	55	1,814	0.10		Nil	0.08	
105.5	110.6	"	40	"	5.1	4.8	94	7,484	Nil	"	Nil		
110.6	115.6	EX	110.6	"	5.0	3.6	72	1,644	0.05	"	0.04		
115.6	120.0	"	113	"	4.4	2.9	66	907	0.05		0.05	0.04	
120.0	125.5	"	120	"	5.5	2.5	45	2,608	0.05		Nil	0.04	
125.5	132.0	"	125	"	6.5	4.3	66	3,742	0.05	"	0.04		
132.0	138.0	"	131	"	6.0	2.7	45	4,649	Nil	"	Nil		
138.0	143.5	"	"	"	5.5	5.2	94	3,402	"	"	"		

Table B-4 - Hole No. DMEA-4 (Cont.)

From feet	To feet	Hole size	Bottom of casing feet	Formations	Dist. feet	Assay data <sup>1/</sup>						Comb. C. & S. tin %	
						Recovery		Sludge		Sludge			
						Core feet	%	Sludge grams	% <sup>2/</sup>	Direct tin %	Adj. tin %	Core direct tin <sup>3/</sup> %	
143.5	147.5	EX	131	Alt. gr.	4.0	3.7	92	1,588		Nil		Nil	Nil
147.5	152.5	"	144	" "	5.0	4.1	82	8,164	0.05	"	"	"	0.04
152.5	157.5	"	" "	" "	5.0	3.0	60	6,010	Nil	"	"	"	Nil
157.5	162.5	"	" "	" "	5.0	1.0	20	850	"	"	"	"	"
162.5	167.5	"	" "	" "	5.0	5.0	100	3,062	"	"	"	"	"
167.5	172.5	"	" "	" "	5.0	4.7	94	9,639	"		0.15	0.05	
172.5	174.0	"	" "	" "	1.5	0.9	60	567	"		0.05	0.01	

1/ Nil equals less than 0.05%; considered as zero for making averages.

2/ Not calculated.

3/ 0 to 31.5 feet not assayed.

4/ Contains irregular, strongly altered intrusives.

5/ Granite-limestone contact at 100 feet. Limestone altered to clay 93 to 100 feet; feldspars kaolinized 100 feet to bottom of hole.

Assay data - Other metals

## Composite Core Samples

From feet	To feet	Pb %	Zn %	Cu %	WO <sub>3</sub> %	Mo %
0	31.5	No data	No data	No data	No data	No data
31.5	99.0	Nil	Nil	0.05	Nil	" "
99.0	167.5	"	"	0.07	"	" "
167.5	174.0	"	"	0.11	"	" "

Spectrographic Analysis

5-2297 - 50.5 to 55.5 ft.

5-2321 - 125.5 to 132 ft.

5-2314 - 87 to 99 ft.

5-2329 - 132 to 167.5 ft.

5-2320 - 99 to 125.5 ft.

5-2330 - 167.5 to 172.5 ft.

Table B-4 - Hole No. DMEA-4 (Cont.)

Sample	Spectrographic Analysis																		Li	
	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Ge	Hg	In	K	
5-2297	F	A	-	-	E	-	E	E	A	-	-	-	F	A	E	-	E	E	D	
5-2314	-	A	-	-	E	-	E	E	B	-	-	-	F	A	E	-	E	E	D	
5-2320	-	A	-	-	E	-	F	F	D	-	-	-	F	B	E	-	E	E	D	
5-2321	-	A	-	-	F	-	F	-	D	-	-	-	F	B	E	-	E	E	D	
5-2329	-	A	-	-	F	-	F	-	C	-	-	-	F	B	E	-	E	E	D	
5-2330	F	A	-	-	E	-	F	E	C	-	-	-	D	B	D	-	-	-	D	
	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Pd	Pt	Sb	Si	Sn	Sr	Ta	Te	Ti	V	Zn	Zr
	A	D	F	D	-	E	-	D	-	-	A	E	-	-	-	D	E	-	D	
5-2297	A	D	E	D	E	E	-	D	-	-	A	E	-	-	-	D	E	-	E	
5-2314	A	D	F	D	E	E	-	D	-	-	A	E	-	-	-	D	E	-	E	
5-2320	B	D	-	D	E	E	-	D	-	-	A	E	-	-	-	D	E	-	E	
5-2321	B	D	-	D	E	E	-	D	-	-	A	E	-	-	-	D	E	-	E	
5-2329	B	D	-	D	E	E	-	D	-	-	A	E	-	-	-	D	E	-	E	
5-2330	B	D	F	D	E	-	-	D	-	-	A	E	-	-	-	D	E	-	E	

Petrographic Report

Sample 5-2330 is a metasomatically altered rock essentially containing lithium mica (probably lepidolite with intergrown muscovite), montmorillonite, some quartz, less topaz and sphalerite, and small amounts of stannite, galena, and tourmaline.

A complete paragenesis study of this material could not be made because of the decayed nature of the material. However, other mineralogical evidences make it possible to hypothesize that the metasomatic alteration was caused by alkaline solutions and that the minerals present probably were formed contemporaneously as a result of the metasomatism.

TABLE B-5. - Diamond drill sampling data - Hole No. DMEA-5

Location: Calcite drift, 365 level.

Elevation of collar: -60

Depth: 328.2 feet

Bearing: N. 13° E. Dip: -35°

Date begun: 7/24/55

Date finished: 7/31/55

Average specific gravity: Limestone section- none in hole. Granite section - 2.70 (aver. of 18 specimens from drill holes DMEA-5, 6, and 7)

Theor. weight comb. core &amp; sludge sample, per ft. Granite section - AX 1,463 FT 800 gr.

From feet	To feet	Hole size	Bottom casing feet	Dist. feet	Recovery		Sludge		Core		Assay, data/ Comb.		
					Core feet	%	Sludge grams	%	Direct % tin	Adj. % tin	direct tin %	tin %	
0	9.3	EX	0	9.3	Sl. alt. gr. <sup>3/</sup>	9.3	8.0	86	0		0.20	0.20	
9.3	14.2	AX	9.3	4.9	4.9	100	1,814	40	0.15	0.06	0.15	0.09	
14.2	19.4	"	"	5.2	5.1	98	2,943	60	2.25	1.35	1.08	1.25	
19.4	24.7	"	"	5.3	5.1	96	3,062	60	0.25	0.15	0.25	0.18	
24.7	30.0	"	"	5.3	5.2	98	1,928	38	0.65	0.25	0.30	0.27	
30.0	35.0	"	"	5.0	5.0	100	2,381	51	0.20	0.10	0.10	0.10	
35.0	40.0	"	"	5.0	4.9	98	2,495	53	0.20	0.11	0.20	0.14	
40.0	45.0	"	"	5.0	5.0	100	2,268	48	0.10	0.05	0.10	0.07	
45.0	50.0	"	"	5.0	4.9	98	2,041	43	0.10	0.04	0.10	0.06	
50.0	55.0	"	"	5.0	5.0	100	2,268	48	0.45	0.22	0.25	0.23	
55.0	59.8	"	"	4.8	4.7	98	2,155	47	0.25	0.12	0.25	0.16	
59.8	64.9	"	"	5.1	5.0	98	1,644	34	0.20	0.07	0.15	0.10	
64.9	70.2	"	"	5.3	4.6	87	1,418	27	0.25		0.15	0.15	
70.2	75.4	"	"	5.2	5.0	96	907	18	0.50		0.30	0.30	
75.4	80.6	"	"	5.2	4.6	88	1,247	24	0.35		0.45	0.45	
80.6	85.8	"	"	5.2	4.2	81	1,134	21	0.30		0.10	0.10	
85.8	91.2	"	"	5.4	3.6	67	454	8	0.25		0.15	0.15	
91.2	95.3	EX	91.2	"	4.1	2.5	61	1,361	47	0.10		0.10	0.10
95.3	100.2	"	93.0	"	4.9	4.5	92	227	8	0.20		0.10	0.10
100.2	105.2	"	"	5.0	2.6	52	1,474	40	0.15		0.15	0.15	
105.2	110.4	"	"	Hard granite	5.2	4.7	90	454	14	0.10		0.10	0.10
110.4	115.4	"	"	"	5.0	4.9	98	Sample lost			0.25	0.25	
115.4	120.4	"	113	"	5.0	5.0	100	1,361	47	0.10		0.05	0.05
120.4	125.4	"	"	"	5.0	4.9	98	1,474	50	0.20		0.15	0.15
125.4	131.4	"	"	"	6.0	5.1	85	2,041	54	0.70		0.10	0.10
131.4	134.0	"	"	"	2.6	1.8	69	Sample lost			0.50	0.50	
134.0	139.0	"	133	"	5.0	5.0	100	1,247	43	0.45		0.10	0.10
139.0	144.0	"	"	(Sl. alt. gr. <sup>5/</sup>	5.0	5.0	100	2,155	74	0.05		0.05	0.05
144.0	149.1	"	143	"	5.1	4.0	78	2,381	72	0.20		0.15	0.15

Table B-5 - Hole No. DMEA-5 (Cont.)

From feet	To feet	Hole size casing feet	Bottom Formations	Dist. feet	Assay data <sup>1/</sup>						Comb. C. & S. tin %	
					Recovery		Sludge		Core			
					Core feet	%	Sludge grams	%	Direct tin %	Adj. tin %	direct tin %	
149.1	154.4	EX	143	Sl. alt. gr.	5.3	5.1	96	1,134	36	0.05	0.09	0.09
154.4	159.0	"	"	"	4.6	4.6	100	680	25	0.05	Nil	Nil
159.0	164.9	"	"	"	5.9	4.9	83	1,531	41	0.35	0.30	0.30
164.9	168.0	"	"	"	3.1	1.2	39	1,247	52	0.10	Nil	Nil
168.0	173.0	"	"	"	5.0	4.4	88	1,474	48	0.20	"	"
173.0	178.0	"	"	"	5.0	5.0	100	227	8	0.10	0.10	0.10
178.0	185.3	"	"	"	7.3	7.0	96	680	16	0.05	0.05	0.05
185.3	190.5	"	"	"	5.2	5.1	98	964	32	Nil	Nil	Nil
190.5	200.8	"	"	"	10.3	10.2	99	2,041	34	"	0.08	0.08
200.8	221.4	"	"	"	20.6	18.2	88	3,118	24	"	0.05	0.05
221.4	231.8	"	"	"	10.4	10.1	97	1,814	30	"	Nil	Nil
231.8	237.4	"	"	"	5.6	5.2	93	907	27	0.05	0.10	0.10
237.4	272.6	"	"	"	35.2	34.5	98	5,386	26	0.03	Nil	Nil
272.6	297.1	"	"	"	24.5	17.3	71	No data	0.05	"	"	"
297.1	312.5	"	"	"	15.4	14.6	95	"	0.08	"	"	"
312.5	328.2	"	"	"	15.7	14.8	94	"	0.08	0.06	0.06	0.06

1/ Nil equals less than 0.05%; considered as zero for making averages.

2/ Sludge assays below 64.9 ft. are not used in the computations. The low erratic recoveries indicate that much of the sludge was either lost in water bearing fractures or carried away by the heavy flow of water which flooded the collection tanks.

3/ Medium hard to hard quartz rich granite with only slight traces of kaolinization.

4/ Water encountered in fractures starting at 65 ft. Very heavy inflow of water from 91.2 ft. to the bottom of the hole. When casing was removed the water maintained a static head of 50 to 60 pounds per square inch at the collar of the hole. The hole was capped immediately. Flow was not measured.

5/ Slight to moderate kaolinization of feldspars 149 to 328.2 ft. Some 1-inch zones of complete kaolinization 178 to 180 ft. No dikes or rock other than granite of the cupola were recognized in this hole.

Table B-5 - Hole No. DMEA-5 (Cont.)

Assay data - Other metals  
Composite Core Samples

From feet	To feet	Pb %	Zn %	Cu %	WO <sub>3</sub> %	Mo %
0	9.3	0.46	No data	Nil	Nil	no data
9.3	14.2	0.76	Nil	0.04	"	"
14.2	64.9	0.54	"	0.04	"	"
64.9	164.9	0.57	0.24	0.05	"	"
164.9	221.4	0.09	Nil	Nil	"	"

Spectrographic Analysis  
Composite Core Samples

Sample	Sample	Sample
5-2332 - 9.3 to 14.2 ft.	5-2352 - 55 to 95.3 ft.	5-2446 - 221.4 to 273.6 ft.
5-2337-A - 14.2 to 30 ft.	5-2367 - 95.3 to 159 ft.	5-2447 - 273.6 to 277.8 ft.
5-2343 - 30 to 55 ft.	5-2378-B - 159 to 221.4 ft.	5-2457 - 277.8 to 328.2 ft.

Sample	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Ge	Hg	In	K	Li
5-2332	F	A	D	-	E	-	G	E	D	-	-	-	E	B	E	-	-	-	-	
5-2337-A	F	A	D	-	E	E	G	E	D	-	-	-	E	A	E	-	-	-	-	
5-2343	F	A	D	-	-	-	G	E	D	-	-	-	E	B	E	-	-	-	-	
5-2352	F	A	D	-	-	-	G	E	D	-	-	-	E	B	E	-	-	-	-	
5-2367	F	A	D	-	-	-	G	E	D	-	-	-	E	A	E	-	-	-	-	
5-2378-B	F	A	D	-	-	-	G	G	D	-	-	-	E	B	E	-	-	-	-	
5-2446	F	A	D	-	-	-	G	F	D	-	-	-	E	B	E	-	-	-	-	
5-2447	F	A	D	-	-	-	G	F	E	-	-	-	E	B	E	-	-	-	-	
5-2457	F	A	D	-	-	-	G	F	E	-	-	-	E	B	E	-	-	-	-	

Table B-5 - Hole No. DMEA-5 (Cont.)

<u>Sample</u>	<u>Mg</u>	<u>Mn</u>	<u>Mo</u>	<u>Na</u>	<u>Nb</u>	<u>Ni</u>	<u>P</u>	<u>Pb</u>	<u>Pd</u>	<u>Pt</u>	<u>Sb</u>	<u>Si</u>	<u>Sn</u>	<u>Sr</u>	<u>Ta</u>	<u>Te</u>	<u>Ti</u>	<u>V</u>	<u>W</u>	<u>Zn</u>	<u>Zr</u>
5-2332	E	D	F	-	E	E	-	C	-	-	A	D	-	-	-	E	-	-	D	E	
5-2337-A	E	D	F	-	E	E	-	C	-	-	A	C	-	-	-	E	-	-	D	E	
5-2343	E	D	F	-	E	E	-	C	-	-	A	D	-	-	-	E	-	-	D	E	
5-2352	E	D	E	-	E	E	-	C	-	-	A	D	-	-	-	E	-	-	D	E	
5-2367	E	D	F	-	E	E	-	C	-	-	A	D	-	-	-	E	-	-	D	E	
5-2378-B	E	D	F	D	E	E	-	B	-	-	A	D	-	-	-	E	-	-	D	E	
5-2446	D	B	E	D	E	E	-	D	-	-	A	E	-	-	-	E	-	-	E	E	
5-2447	E	D	F	D	E	E	-	D	-	-	A	E	-	-	-	E	-	-	E	E	
5-2457	D	B	F	D	E	E	-	D	-	-	A	E	-	-	-	E	-	-	E	E	

Petrographic Analysis

Sample 5-2337-A: A contact metamorphic rock essentially containing topaz, quartz, a considerable amount of cassiterite, some siderite, pyrite, small amounts of galena, stannite, sphalerite, arsenopyrite, and tourmaline, and traces of cerussite, muscovite, garnet, chalcopyrite, chlorite, feldspar, magnetite, clay minerals, amphibole, and fluorite. A thin-section study of the sample indicates that the cassiterite sulfide minerals, and topaz were deposited through metasomatic processes not directly related to the earlier contact metamorphism of the deposit. Moreover, the cassiterite and sulfide minerals apparently were the end products of this activity.

Sample 5-2447 is a hydrothermally altered granitic rock essentially containing quartz, intergrown muscovite and lepidolite, some elbaite and zinnwaldite, small amounts of molybdenite, magnetite, topaz, and clay minerals, and trace amounts of stannite, arsenopyrite, galena, and cassiterite. A thin-section study of the sample indicates that the topaz, micas, and tourmaline are the products of metasomatic processes acting upon the deposit. The tourmaline has been injected along lines of weakness in the sample and apparently was formed during the late stages of pneumatolytic activity.

TABLE B-6. - Diamond drill sampling data - Hole No. DMEA-6

Location: Calcite drift, 365 level

Elevation of collar: -60

Depth: 366.3 feet

Bearing: N. 13° E. Dip: -60°

Date begun: 7/31/55

Date finished: 8/9/55

Average specific gravity: Limestone section - none in hole. Granite section - 2.70 (aver. of 18

specimens from drill holes DMEA-5, 6, and 7)

Theoretical weight of combined core and sludge sample, per ft.: Granite section - AX 1,463 gr. EX 899 gr.

From feet	To feet	Hole size	Bottom casing feet	Formations	Dist. feet	Assay data/ Recovery							Core direct tin %	Comb. C.S. tin %
						Core		Sludge		Sludge		Core direct tin %	Comb. C.S. tin %	
						feet	%	grams	%	tin	%			
0	10.0	EX	0	Sl. alt. gr. <sup>1/</sup>	10.0	7.5	75	0				0.21	0.21	
10.0	15.0	AX	10	" " "	5.0	5.0	100	0				0.09	0.09	
15.0	30.1	"	15	" " "	15.1	15.1	100	5,897	0.07			0.12	0.09	
30.1	50.8	"	"	" " "	20.7	20.7	100	6,407	0.06			0.05	0.06	
50.8	71.7	"	"	" " "	20.9	20.8	99	7,031	0.04			Nil	0.03	
71.7	87.3	"	"	" " "	15.6	15.3	98	7,938	0.15			0.08	0.13	
87.3	112.2	EX	87	" " " 5/	24.9	23.6	95	6,520	0.09			Nil	0.06	
112.2	126.7	"	89	" " "	14.5	11.5	79	4,479	0.08			"	Nil	
126.7	137.0	"	126	" " "	10.3	8.9	86	3,686	0.13			"	"	
137.0	142.1	"	135	" " "	5.1	4.7	92	1,474	0.20			0.40	0.40	
142.1	158.3	"	140-147	Mod.alt. gr. <sup>6/</sup>	16.2	14.2	88	2,892	0.13			0.05	0.05	
158.3	177.0	"	168	" " "	18.7	15.5	83	3,742	0.09			0.01	0.01	
177.0	196.5	"	177	" " "	19.5	16.0	82	4,820	0.01			0.03	0.03	
196.5	211.6	"	"	" " "	15.1	15.1	100	3,062	Nil			Nil	Nil	
211.6	232.2	"	"	" " "	20.6	20.3	98	4,139	0.14			0.14	0.14	
232.2	250.1	"	"	" " "	17.9	16.3	91	1,928	0.09			0.10	0.10	
250.1	273.5	"	"	" " "	23.4	22.2	95	3,345	0.05			0.02	0.02	
273.5	292.9	"	"	" " "	19.4	18.8	97	1,191	0.01			Nil	Nil	
292.9	308.0	"	"	" " "	15.1	13.1	87	1,021	0.12			0.08	0.08	
308.0	323.7	"	"	" " "	15.7	15.3	97	964	0.13			0.11	0.11	
323.7	345.2	"	"	" " "	21.5	19.5	91	1,871	0.03			0.02	0.02	
345.2	366.3	"	"	" " "	21.1	20.3	96	2,381	0.04			0.03	0.03	

1/ Nil equals less than 0.05%; considered as zero for making averages. Assay data above is, in some cases, a weighted aver. of several assays and may be less than 0.05%.

2/ Not computed because tin content was too low for any adjustment of values to be significant.

3/ Sludge values below 112.2 not used in computations because the heavy flow of water flooded the collection tanks.

## Table B-6 - Hole No. DMEA-6 (Cont.)

- 4/ Slightly altered granite; kaolinization along small fractures at 23.5, 29.4, 35.4, 76.6 feet.  
 5/ Very heavy inflow of water 111 ft. to bottom of hole. Pressure and volume same as Hole DMEA-5.  
 6/ Moderately altered granite; local variations from slight to moderate kaolinization; strong kaolinization 303 to 306 feet. No dikes or rock other than granite of the cupola were recognized in this hole.

Assay data - Other metals

## Composite Core Samples

	From feet	To feet	Pb %	Zn %	Cu %	WO <sub>3</sub> %	Mo %
	0	112.2	0.16	0.12	0.005	Nil	No data
	112.2	137.0	Nil	0.12	Nil	"	"
	137.0	366.3	0.07	0.12	"	"	"

Spectrographic Analysis

## Composite Core Samples

5-2461 - 0 to 15 ft.      5-2484 - 87.5 to 122.4 ft.  
 5-2475 - 15 to 82.1 ft.      5-2485 - 122.4 to 126.7 ft.  
 5-2476 - 82.1 to 87.5 ft.      5-2492 - 126.7 to 158.3 ft.  
 5-2532 - 158.3 to 366.3 ft.

Sample	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Ge	Hg	In	K	Li
5-2461	F	A	D	-	E	-	F	E	D	-	-	-	F	A	E	-	-	-	-	
5-2475	F	A	D	-	E	-	F	E	D	-	-	-	F	A	E	-	-	-	D	
5-2476	F	A	D	-	D	-	G	E	B	-	-	-	E	A	E	-	-	-	-	
5-2484	F	A	D	-	E	-	E	B	D	-	-	-	F	B	E	-	-	-	D	
5-2485	F	A	D	-	F	-	E	F	E	-	-	-	F	B	E	-	-	-	D	
5-2492	F	A	D	-	D	-	E	E	D	-	-	-	E	A	E	-	-	-	D	
5-2532	F	A	D	-	E	-	F	D	-	-	-	-	E	B	E	-	-	-	D	

Table B-6 - Hole No. DMEA-6 (Cont.)

Sample	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Pd	Pt	Sb	Si	Sn	Sr	Ta	Te	Ti	V	W	Zn	Zr
5-2461	E	D	-	-	-	E	-	D	-	-	A	D	-	-	-	E	-	D	-	E	
5-2475	E	D	-	-	-	E	-	D	-	-	A	D	-	-	-	E	-	D	-	E	
5-2476	E	D	-	-	-	E	-	D	-	-	A	D	-	-	-	E	-	D	-	E	
5-2484	E	D	-	E	-	E	-	D	-	-	A	D	-	-	-	E	-	D	-	E	
5-2485	E	D	-	E	-	E	-	D	-	-	A	D	-	-	-	E	-	D	-	E	
5-2492	E	D	-	-	-	E	-	D	-	-	A	D	-	-	-	E	-	D	-	E	
5-2532	E	D	-	D	-	E	-	D	-	-	A	D	-	-	-	E	-	D	-	E	

Petrographic Analysis

Sample 5-2476 is a metasomatically altered rock essentially containing quartz with some associated muscovite which is apparently intergrown with a small amount of lepidolite, and small amounts of scapolite, siderite, stannite, sphalerite, zinnwaldite, tourmaline, and a very small amount of cassiterite and galena.

A thin-section study of the sample indicates that the topaz was formed earlier than the ore minerals. The siderite cuts both the topaz and quartz and probably was formed later than the sulfides; although, sufficient evidence for the latter phenomena was not clearly apparent in the small sections available. The stannite, sphalerite, and galena were definitely formed later than the quartz and apparently followed the tourmaline in the order listed above. It is strongly indicated that the micas were formed contemporaneous with the topaz and tourmaline.

Consequently the following sequence of mineral deposition is proposed: quartz → topaz → tourmaline → stannite → sphalerite → galena → siderite.

TABLE B-7. - Diamond drill sampling data - Hole No. DMEA-7

Location: Calcite drift, 365 level (west end) Elevation of collar: -60 Depth: 242 feet  
 Bearing: west Dip: Horizontal Date begun: 8/9/55 Date finished: 8/12/55  
 Average specific gravity: Limestone section - No data. Granite section - 2.70 (aver. of 18 specimens from drill holes DMEA-5, 6, and 7)  
 Theoretical weight of combined core and sludge sample, per ft.: Granite section - AX 1,463 gr. EX 899 gr.

From feet	To feet	Hole size of casing feet	Bottom Formations	Dist. feet	Assay data/							
					Recovery		Sludge		Core		Comb.	
					Core feet	%	Sludge grams	%	Direct tin	Adj. tin	2/ tin	Comb. tin %
0	15.0	AX	5.0 Hard granite	15.0	14.0	93	0					Nil Nil
15.0	25.0	"	" " 3/	10.0	10.0	100	3,629	39	0.10	0.12	0.12	
25.0	35.5	"	" "	10.5	10.4	99	4,990	50	0.05	Nil	Nil	
35.5	45.9	"	" "	10.4	10.0	96	5,216	52	0.03	"	"	
45.9	51.0	"	" " 4/	5.1	4.3	84	2,835	54	0.10	0.18	0.18	
51.0	58.4	"	" "	7.4	5.7	77	5,216	67	0.15	0.24	0.24	
58.4	63.6	"	" "	5.2	4.7	90	4,082	79	0.10	0.06	0.06	
63.6	74.0	"	" "	10.4	9.8	94	6,691	66	0.10	Nil	Nil	
74.0	84.1	"	" "	10.1	10.0	99	4,763	50	0.10	0.07	0.07	
84.1	94.2	"	" "	10.1	9.8	97	4,990	52	0.10	0.07	0.07	
94.2	97.8	"	" "	3.6	2.2	61	Sample lost				0.06	0.06
97.8	99.2	"	" "	1.4	1.2	86	1,225	87	0.10	0.09	0.09	
99.2	103.0	"	" "	3.8	3.2	84	3,311	85	0.10	0.06	0.06	
103.0	111.0	"	" "	8.0	6.0	75	2,948	34	0.10	0.06	0.06	
111.0	121.7	"	" "	10.7	8.7	81	3,969	36	0.03	Nil	Nil	
121.7	130.4	"	" "	8.7	8.6	99	3,969	48	0.15	0.12	0.12	
130.4	141.0	"	" "	10.6	10.3	97	1,871	19	0.10	Nil	Nil	
141.0	151.0	"	" 5/	10.0	10.0	100	2,722	29	0.05	0.03	0.03	
151.0	161.0	"	" "	10.0	9.9	99	3,629	39	0.05	Nil	Nil	
161.0	168.0	"	" "	7.0	4.8	69	3,175	41	0.10	0.06	0.06	
168.0	173.0	"	Sl. alt. gr. 6/	5.0	5.0	100	1,588	34	0.25	0.35	0.35	
173.0	178.0	"	" "	5.0	3.7	74	2,041	38	0.10	Nil	Nil	
178.0	183.3	"	Limestone 7/	5.3	5.0	94	2,466	8/	0.15	0.17	0.17	
183.3	188.5	"	" "	5.2	5.0	96	2,948		0.15	0.09	0.09	
188.5	198.9	"	" "	10.4	10.3	99	3,402		0.10	Nil	Nil	
198.9	214.5	"	Limestone	15.6	12.5	80	6,237		0.08	0.08	0.08	

Table B-7 - Hole No. DMEA-7 (Cont.)

From feet	To feet	Hole size	Bottom of casing feet	Formations	Dist. feet	Assay data 1/					
						Recovery		Sludge		Core direct tin %	Comb. C.-S. tin %
						Core feet	%	Sludge grams	%		
214.5	218.0	AX	5.0	Alt. ls	3.5	1.9	54	907	0.05	0.06	0.06
218.0	223.0	"	"	Alt. dike	10/	4.4	88	2,041	0.05	Nil	Nil
223.0	228.6	"	"	"	5.6	1.7	30	2,268	0.05	0.06	0.06
228.6	234.6	"	"	"	6.0	2.7	45	3,402	0.05	Nil	Nil
234.6	242.0	"	"	Limestone	11/	7.4	3.5	47	3,856	0.05	"

1/ Nil equals less than 0.05%; considered as zero for making averages. Assay data above is, in some cases, a weighted average of two or more assays and may be less than 0.05%.

2/ Sludge assay data was not used in computing the "combined sludge-core" analysis because of the high core recovery, low sludge recovery, and the uniformly small percentage of tin.

3/ Iron-stained fractures at 15, 17, and 20 ft. Slight water seepage.

4/ Numerous small slightly iron-stained fractures 46 to 121.7 ft. Heavy inflow of water started at 46 ft. Volume and pressure was about the same as for holes DMEA-5 and 6. Sludge collection tanks were flooded.

5/ Very slight kaolinization of feldspars 140 to 161 ft.

6/ Very slightly altered granite 170 to 178.8 ft.

7/ Granite-limestone contact 178.8 ft. No clay alteration in limestone.

8/ Not calculated because of insufficient data on the specific gravity of the limestone and altered dike.

9/ Intense alteration 214.5 to 218 ft. Limestone-dike contact not definite because of core loss.

10/ Intensely altered acid dike 218 to 232 ft.

11/ Slightly altered limestone. No clay alteration.

Assay data - Other metals  
Composite Core Samples

From feet	To feet	Pb %	Zn %	Cu %	WO <sub>3</sub> %	Mo %
0	168.0	0.16	0.33	Nil	Nil	No data
168.0	178.0	0.06	0.12	"	"	"
178.0	218.0	Nil	0.20	"	"	"
218.0	232.0	"	0.07	"	0.01	"
232.0	242.0	"	Nil	"	0.03	"

Table B-7 - Hole No. DMEA-7 (Cont.)

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## **Spectrographic Analysis**

<u>Sample</u>	<u>Sample</u>												<u>Sample</u>												
5-2533 - 0 to 15 ft.													5-2558 - 101.1 to 121.7 ft.												5-2572 - 178.9 to 183.3 ft.
5-2552 - 15 to 99.2 ft.													5-2561 - 121.7 to 130.4 ft.												5-2581 - 183.3 to 223 ft.
5-2553 - 99.2 to 101.1 ft.													5-2570 - 130.4 to 173 ft.												5-2582 - 223 to 228.6 ft.
													5-2571 - 173 to 178.9 ft.												5-2585 - 228.6 to 242 ft.
<u>Sample</u>	<u>Ag</u>	<u>Al</u>	<u>As</u>	<u>Bi</u>	<u>B</u>	<u>Ba</u>	<u>Be</u>	<u>Bi</u>	<u>Ca</u>	<u>Cd</u>	<u>Co</u>	<u>Cr</u>	<u>Cl</u>	<u>Fe</u>	<u>Ga</u>	<u>Ge</u>	<u>Hg</u>	<u>In</u>	<u>Li</u>	<u>Mg</u>	<u>Na</u>	<u>P</u>	<u>Pb</u>	<u>Pt</u>	
5-2533	F	A	E	-	E	-	F	E	D	E	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2552	F	A	E	-	E	-	F	E	D	E	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2553	F	A	E	D	E	-	F	E	D	E	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2558	F	A	D	D	-	-	F	E	D	E	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2561	F	A	E	-	-	-	F	E	D	E	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2570	F	A	E	E	-	-	F	E	D	E	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2571	G	A	E	-	-	-	F	E	D	E	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2572	G	A	E	-	-	-	D	E	A	-	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2581	G	A	E	-	-	-	D	E	A	-	-	-	P	B	C	-	-	-	D	H	E	E	E	E	
5-2582	G	A	E	-	-	-	D	E	A	-	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
5-2585	G	A	E	-	-	-	D	E	A	-	-	-	P	B	E	-	-	-	D	H	E	E	E	E	
<u>Sample</u>	<u>Mn</u>	<u>Mo</u>	<u>Na</u>	<u>Nb</u>	<u>Ni</u>	<u>P</u>	<u>Pb</u>	<u>Pt</u>	<u>Si</u>	<u>Sb</u>	<u>Si</u>	<u>Sn</u>	<u>Sr</u>	<u>Ta</u>	<u>Te</u>	<u>Ti</u>	<u>V</u>	<u>W</u>	<u>Zn</u>	<u>Zr</u>	<u>Ca</u>	<u>Cr</u>	<u>Fe</u>	<u>Ir</u>	
5-2533	D	E	F	E	E	-	D	-	A	D	A	D	-	E	-	-	-	-	D	E	E	E	E	E	
5-2552	D	E	-	E	E	-	D	-	A	D	A	D	-	E	-	-	-	-	D	E	E	E	E	E	
5-2553	D	E	F	E	E	-	D	-	A	D	A	D	-	E	-	-	-	-	D	E	E	E	E	E	
5-2558	D	E	E	-	E	E	D	-	A	D	A	D	-	E	-	-	-	-	D	E	E	E	E	E	
5-2561	D	E	E	-	E	E	D	-	A	D	A	D	-	E	-	-	-	-	D	E	E	E	E	E	
5-2570	D	E	F	E	E	-	D	-	A	D	A	D	-	E	-	-	-	-	D	E	E	E	E	E	
5-2571	D	E	F	E	E	-	D	-	A	D	A	D	-	E	-	-	-	-	D	E	E	E	E	E	
5-2572	D	-	E	E	E	-	D	-	D	D	D	D	-	E	-	-	-	-	D	-	E	E	E	E	
5-2581	D	-	E	E	E	-	D	-	D	D	D	D	-	E	-	-	-	-	D	-	E	E	E	E	
5-2582	D	-	E	E	E	-	D	-	D	D	D	D	-	E	-	-	-	-	D	-	E	E	E	E	
5-2585	D	-	E	E	E	-	D	-	D	D	D	D	-	E	-	-	-	-	D	-	E	E	E	E	

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Table B-7 - Hole No. DMEA (Cont.)

Petrographic Analysis

Sample 5-2553 is a metasomatically altered rock essentially containing quartz, relatively small amounts of fluorite, topaz, tourmaline, a muscovite-lepidolite intergrowth, and trace amounts of cerussite, cassiterite, zircon, kaolin, pyrite, mimetite, pyromorphite, and stannite.

Although a detailed thin-section study could not be made of such friable material, other microscopic observations suggest the following probable sequence of mineral deposition: quartz → mica → topaz → tourmaline → fluorite → pyrite → cassiterite → stannite.

Sample 5-2571 essentially contains quartz, relatively small amounts of feldspar, lithium mica, fluorite, and small amounts of topaz, clay minerals, and siderite. Also present are trace amounts of pyrolusite, cassiterite, and garnet.

A thin-section study of this sample indicates that the lithium mica was formed at the expense of the quartz and that the topaz was formed after the micas. None of the ore minerals were detected in the thin-section; consequently, further studies could not be made.

Sample 5-2582 is a metamorphic rock that has been recrystallized to greisen and essentially contains quartz with some associated lithium mica, sericitized feldspar, and small amounts of topaz, quartz, and pyrolusite. No ore minerals were detected in this sample.

TABLE B-8. - Diamond drill sampling data - Hole No. DMEA-8

Location: 125 crosscut south

Elevation: -60

Depth: 288 feet

Bearing: S.  $16^{\circ}30'$  W. Dip:  $-45^{\circ}$ 

Date begun: 8/13/55

Date finished: 8/22/55

Average specific gravity: Limestone section - No data. Granite section - 1.96

Theoretical weight of combined core and sludge sample, per ft.: Granite section - AX 1,062 EX 653 gr.

From feet	To feet	Hole size	Bottom casing feet	Formations	Dist. feet	Assay data/ <sup>1</sup>								
						Recovery			Sludge <sup>2</sup> /		Core direct			
						Core feet	Core %	Sludge grams	% <sup>3</sup>	Direct tin %	Adj. tin %	tin %		
0	8.0	EX	0	Alt. ls. <sup>4</sup>	8.0	4.5	56	0			No assay			
8.0	12.7	AX	8.0	" "	4.7	3.5	74	0			" "			
12.7	65.0	"	10.0	" "	52.3	39.5	76	23,587	0.22		" "	0.225		
65.0	79.2	"	"	" "	14.2	4.4	31	15,422	0.13		Nil	Nil 6/		
79.2	91.0	"	"	" "	11.8	4.2	36	9,072	0.10		" "			
91.0	96.5	"	"	" "	5.5	2.0	36	3,175	0.10		0.09	0.09		
96.5	103.8	"	"	Dark gray clay <sup>7</sup>	7.3	7.0	96	4,536	0.15		0.25	0.25		
103.8	109.2	"	"	" "	5.4	0.2	4	4,649	0.15		0.24	0.24		
109.2	116.0	"	"	" "	6.8	6.3	93	1,814	0.15		0.06	0.06		
116.0	127.0	"	"	" "	11.0	10.0	91	3,175	0.15		Nil	Nil		
127.0	130.8	"	"	" "	3.8	3.5	92	1,701	0.20		0.38	0.38		
130.8	136.0	"	"	" "	5.2	4.6	88	3,969	0.15		0.06	0.06		
136.0	141.2	"	"	Alt. gr. <sup>8</sup>	5.2	3.6	69	3,856	0.15		0.73	0.73		
141.2	146.8	"	"	" "	5.6	4.0	71	5,216	118	0.25	0.70	0.70		
146.8	152.3	"	"	" "	5.5	3.4	62	2,948	65	0.15	0.32	0.32		
152.3	158.0	EX <sup>9</sup>	152	" "	5.7	1.5	26	1,134	28	0.30	0.08	0.08		
158.0	163.5	"	"	158	"	5.5	3.1	56	1,588	55	0.65	0.36	0.20	0.33
163.5	169.5	"	"	163.5	"	6.0	4.3	72	1,814	62	0.05	0.03	Nil	0.02
169.5	174.4	"	"	169.5	"	4.9	2.3	47	794	30	0.10	0.03	"	0.02
174.4	190.4	"	174	10/	"	16.0	6.1	38	2,722	30	0.20	0.06	0.26	0.09
190.4	195.5	"	190	"	5.1	1.4	27	4,356	151	0.20	0.20	0.50	0.23	
195.5	201.0	"	"	201	"	5.5	1.4	25	9,526	291	0.30	0.30	Nil	0.27
201.0	205.8	"	"	199	"	4.8	2.0	42	3,629	136	0.10	0.10	0.06	0.09
205.8	216.5	"	"	205	10/	10.7	5.3	50	11,794	205	0.12	0.12	Nil	0.10
216.5	227.0	"	"	215	"	10.5	4.1	39	14,515	245	0.10	0.10		0.09
227.0	235.8	"	"	235	"	8.8	7.6	86	4,536	114	0.15		0.09	0.09
235.8	239.8	"	"	"	"	4.0	2.7	68	5,216	263	0.05		Nil	Nil

Table B-8 - Hole No. DMEA-8 (Cont.)

From feet	To feet	Hole size	Bottom of casing feet	Formations	Dist. feet	Recovery				Assay data <sup>1</sup>		Core direct tin %	Comb. C.-S. tin %
						Core		Sludge Grams	% <sup>2</sup> /	Sludges <sup>2</sup> /	Core		
						Feet	%			Direct	Adj.		
239.8	245.4	EX	215	Alt. gr.	5.6	3.2	57	4,763	163	0.10		0.12	0.12
245.4	258.8	"	"	"	13.4	11.5	86	13,268	218	0.18		Nil	Nil
258.8	269.0	"	"	"	10.2	9.7	95	5,443	123	0.15		"	"
269.0	282.5	"	"	"	13.5	9.9	73	9,979	153	0.10		"	"
282.5	288.0	"	"	"	5.5	4.4	80	4,536	176	0.05		"	"

1/ Nil equals less than 0.05%; considered as zero for making weighted averages. The assay data is, in some cases, a weighted average of two or more assays and may be less than 0.05%.

2/ Sludge assay data 12.7 to 65 ft. is not adjusted but is used because core assay data is not available; from 65 to 152.3 is not used because core assay data is available; from 152.3 to 158 ft. is used but doubtful because part of the sludge is from AX and part from EX hole; from 158 to 227 ft. is used because the casing closely followed drilling; below 227 ft. is not used because casing could not be advanced below 215 ft. and the high sludge recovery indicates sluffing.

3/ Sludge recovery not calculated in the limestone section.

4/ Altered limestone: slightly altered 0-20 ft.; moderately kaolinized 20-47 ft.; strongly kaolinized 47-60 ft.; completely kaolinized (light gray color) 60-96.5 ft.

5/ Sludge assay only.

6/ Core analysis only 56 to 152.3 feet and 227 to 288 feet.

7/ Dark gray clay derived from limestone.

8/ Granite contact at 137 +/- 2. Strongly kaolinized granite 137 to 273 ft.; moderately kaolinized granite 273 to 288 feet.

9/ AX to 153 feet.

10/ Advanced casing every five feet (approx.) 174 to 190 feet and 205 to 215 feet.

Table B-8 - Hole No. DMEA-8 (Cont.)

Assay data - Other metals  
Composite Core Samples

From feet	To feet	Pb %	Zn %	Cu %	WO <sub>3</sub> %	Mo %
12.7	136.0	0.10	0.44	Nil	0.02	No data
136.0	146.8	2.41	1.72	0.05	0.02	" "
146.8	163.5	0.95	0.81	Nil	Nil	" "
163.5	288.0	Nil	Nil	"	0.04	" "

Spectrographic Analysis

Sample	Sample	Sample
5-2698 - 59.7 to 65 ft.	5-2715 - 98.5 to 141.2 ft.	5-2719 - 158 to 163.5 ft.
5-2705 - 65 to 96.5 ft.	5-2716 - 141.2 to 146.8 ft.	5-2740 - 163.5 to 282.5 ft.
5-2706 - 96.5 to 98.5 ft.	5-2717 - 146.8 to 152.3 ft.	5-2741 - 282.5 to 288 ft.
5-2718 - 152.3 to 158 ft.		

Sample	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Ge	Hg	In	K	Li	Mg
5-2698	F	B	-	-	F	-	E	F	A	-	-	-	F	A	E	-	-	-	-	-	A
5-2705	F	B	-	-	F	-	E	F	A	-	-	-	F	A	A	E	-	-	-	-	A
5-2706	-	A	-	-	F	-	F	-	G	-	-	-	F	A	A	E	-	-	-	-	A
5-2715	F	A	-	-	E	-	F	F	C	-	-	-	F	A	A	E	-	-	-	-	B
5-2716	F	A	-	-	D	-	F	E	C	E	-	-	F	A	A	E	-	-	-	-	B
5-2717	F	A	-	-	D	-	F	F	B	E	-	-	F	A	A	E	-	-	-	-	B
5-2718	F	A	-	-	D	-	F	F	A	-	-	-	F	A	A	E	-	-	-	-	B
5-2719	F	A	-	-	E	-	F	F	B	-	-	-	F	B	E	-	-	-	-	B	
5-2740	F	A	-	-	E	-	F	F	C	-	-	-	F	B	E	-	-	-	-	C	
5-2741	F	B	-	-	F	-	F	D	-	-	-	-	F	B	E	-	-	-	-	D	

Table B-8 - Hole No. DMEA-3 (Cont.)

<u>Sample</u>	<u>Mn</u>	<u>Mo</u>	<u>Na</u>	<u>Ni</u>	<u>Nb</u>	<u>P</u>	<u>Pb</u>	<u>Pd</u>	<u>Pt</u>	<u>Sb</u>	<u>Si</u>	<u>Sn</u>	<u>Sr</u>	<u>Ta</u>	<u>Te</u>	<u>Ti</u>	<u>V</u>	<u>W</u>	<u>Zn</u>	<u>Zr</u>
5-2698	D	-	-	E	-	-	E	-	-	B	D	-	-	-	-	D	E	-	D	E
5-2705	D	-	-	E	-	-	E	-	-	B	D	-	-	-	-	D	E	-	D	E
5-2706	D	E	-	E	E	-	E	-	-	A	D	-	-	-	-	D	E	E	D	E
5-2715	D	E	-	E	E	-	D	-	-	A	D	-	-	-	-	D	E	E	D	E
5-2716	D	E	-	-	E	-	C	-	-	A	D	-	-	-	-	E	E	-	D	E
5-2717	D	-	-	-	E	-	D	-	-	A	D	-	-	-	-	E	E	-	D	E
5-2718	D	-	-	-	E	-	C	-	-	A	D	-	-	-	-	E	E	-	D	E
5-2719	D	E	-	-	E	-	D	-	-	A	D	-	-	-	-	E	E	-	D	E
5-2740	D	E	-	E	E	-	E	-	-	A	D	-	-	-	-	E	E	-	E	E
5-2741	D	E	-	E	E	-	E	-	-	A	E	-	-	-	-	E	E	-	-	E

Petrographic Analysis

Sample 5-2716 is a kaolinized rock essentially containing kaolinite, some dolomite, relatively small amounts of quartz, topaz, lithium mica, sphalerite, pyrite, and montmorillonite. Also present are small amounts of stannite, seapolite, feldspar, fluorite, and trace amounts of cassiterite, tourmaline, chlorite and amphibole. A suggested paragenesis of this sample, based upon microscopic observation other than thin section, is as follows: quartz  $\rightarrow$  chlorite  $\rightarrow$  topaz  $\rightarrow$  tourmaline  $\rightarrow$  fluorite  $\rightarrow$  pyrite  $\rightarrow$  cassiterite  $\rightarrow$  stannite  $\rightarrow$  sphalerite  $\rightarrow$  galena  $\rightarrow$  kaolinite.

Sample 5-2741 is a greisen essentially containing quartz, less lithium mica, some sericitized feldspar, and a small amount of siderite, fluorite, clay minerals, and trace amounts of pyrite, stannite, sphalerite, and topaz. A suggested sequence of mineral deposition, based upon microscopic observation other than thin section, is as follows: feldspar  $\rightarrow$  quartz  $\rightarrow$  mica  $\rightarrow$  topaz  $\rightarrow$  fluorite  $\rightarrow$  pyrite  $\rightarrow$  stannite  $\rightarrow$  sphalerite  $\rightarrow$  siderite.

Several of the above samples were too friable for the preparation of thin sections without special facilities. The suggested paragenesis data is offered in the hope that it will be of some help even though the exact sequence of deposition could not be substantiated by thin-section studies.

Sample 5-2719 is a kaolinized rock essentially containing kaolinite, some lithium mica, dolomite, fluorite, relatively small amounts of chlorite, sericitized feldspar, topaz, seapolite, quartz, small amounts of pyrite, stannite, sphalerite, galena, and trace amounts of garnet and tourmaline.

B-28 (letter)

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## APPENDIX B - DATA USED IN CLASS I EVALUATION OF RESERVES

Cassiterite Dike, No. 3 Adit Level

Sample / Number	Eff. Dist.	Width E. of Portal	Width of Lode	Width of Sample	Area 1/ Sample Area	Sn %	W <sub>O</sub> <sub>3</sub> %	X %	Area X %	Area X %
Portal										
F Sample	41.5	0	10.5	10.5	436	1.13	0.84	493	366	87
F 120	46.0	83 (est)	11	5	506	.43	0.77	218	390	77
F 121	10.0	92	11	5.5	110	0.92	1.29	101	112	61
F 119	8.5	103	11	7.5	94	1.26	1.97	118	185	67
F 118	10.5	109	10.5	6	110	.78	1.88	86	207	73
F 115	20	124	10.5	5	210	.52	.47	109	99	53
BM 20ABC	13.5	149	10	6.4	135	.81	.76	113	103	50
F 116	12.5	151	10	6	125	1.08	tr	135	—	57
F 111	14	174	10	3	140	.66	.47	92	66	47
F 110	5	179	9.5	2.5	47+	.34	.39	16	18	11
F 109	5	184	9	3	45	.77	.60	35	27	18
F 108	5	189	8	3.5	40	.74	.33	30	13	13
F 107	4	194	8	2	32	.43	.79	11	25	10
BM 4	2.5	197	8.6	8.6	21+	.39	.46	8	10	5
F 106	3.5	199	7	1.5	24+	.20	.45	5	11	11
F 105	5	204	7	2	35	tr	.91	—	32	32
F 104	13	209	6.5	6.5	84+	.22	1.23	18	103	103
F 100	13	230	6	2	78	.22	3.13	17	244	244
F 99	4.5	235	5.5	3.5	25	.65	.80	16	20	16
BM 5	2.5	239	8.2	8.2	20+	.58	.79	12	16	12
F 98	3	240	5	3.5	15	.77	.79	12	12	12
F 97	5	245	4.5	4	22+	.58	.73	13	16	16
F 96	5	250	5	3.5	25	.74	1.39	18	35	35
F 95	5	255	5	3.5	25	.94	tr	23	—	—
F 94	2.5	260	5	4	12+	.71	tr	9	—	—
BM 6	2.5	260	4.7	4.7	12	.70	2.59	8	31	31
F 93	5	265	5	4	25	.46	.41	11	10	10
F 92	5	270	5.5	4	27+	1.91	1.10	52	30	30
F 91	5	275	6	3	30	.58	.54	17	16	16
F 90	5	280	6.5	5	32+	1.35	.44	43	14	14
F 89	5	285	7.5	7.5	37+	2.98	.25	110	9	9
F 88	3.5	290	8	6	28	.92	.30	26	8	8
BM 21	2.5	292	9.1	9.1	23	.46	.20	11	5	5
F 87	4	295	8	5.5	32	.86	tr	28	—	—
F 86	3.5	300	8.5	4.5	30	.68	tr	20	—	—
BM 8	2.5	302	8.5	7.9	21	.36	.08	8	2	2
F 85	7.5	305	9	5	67	.74	tr	50	—	—
F 82	12	317	10	10	120	1.14	.76	137	91	91
F 81	6.5	329	12	12	78	1.11	.35	87	27	27
BM 7	6.4	330	11.5	8.5	44	.50	.38	22	17	17

1/ Effective distance times the width of dike.

## Cassiterite Dike, No. 3 Adit Level (continued)

Sample Number	Eff. Dist.	Dist. of Portal	Width of Lode	Width of Sample	Area <sup>1</sup> /	Sn %	WO <sub>3</sub> %	Area x % Sn	Area x % WO <sub>3</sub>
F 80	5	337	10.5	4	52	.83	.27	43	14
BM 9	2.5	340	10	8.2	25	0.43	0.34	11	8
F 79	3.5	342	10	4	35	.80	.35	28	12
F 78	5.0	347	10	5	50	1.11	.75	55	37
F 77	2.5	352	10	7	25	1.60	1.21	40	30
BM 10	2.5	352	10	8.1	25	.63	.18	16	4
F 76	5	357	10	5.5	50	1.17	.44	58	22
F 75	2.5	362	10.5	4.5	26	1.23	.70	32	18
BM 11	2.5	362	10.5	7.7	26	1.84	.45	48	12
F 74	5	367	10.5	4.0	52	.80	.60	42	31
F 73	3	372	10.5	6.0	31	3.44	1.50	107	46
BM 12	2.5	373	10.5	8.3	26	2.46	0.17	64	4
F 72	4.5	377	10.5	5.5	47	4.03	0.93	189	44
F 71	3	382	11	5.5	33	1.66	0.25	55	8
BM 13	2.5	383	11	7.1	27	2.55	0.24	69	6
F 70	3.5	387	11	6.5	38	2.92	.87	111	33
BM 14	2.5	390	11	7.4	27	3.33	2.33	90	63
F 69	3.5	392	11	6.5	38	3.54	.34	135	13
F 68	4.5	397	11	6.0	49	1.97	.72	97	35
BM 15	2.5	401	11	7.5	27	1.65	.07	45	2
F 67	3	402	11	4.5	33	1.41	.84	47	28
F 66	5	407	11	4.5	55	1.23	1.65	68	91
F 65	2.5	412	11.5	6.5	27	2.98	.63	80	17
BM 17	2.5	412	11.5	8.3	27	1.57	.07	42	2
F 64	5	417	11.5	4.5	57	1.69	.90	96	51
F 63	2.5	422	11.5	4.5	29	2.21	.42	64	12
BM 16	2.5	422	11.5	6.1	29	1.14	.31	33	9
F 62	5	427	11.5	5.5	57	1.23	.48	70	27
F 61	2.5	432	12	6.0	30	.89	1.10	27	33
BM 18	2.5	432	12	7.4	30	.60	.40	18	12
F 60	5	437	12	8.0	60	1.41	.61	85	37
F 59	5	442	12	7.0	60	3.63	.25	218	15
F 58	5	447	12	5.0	60	1.60	.28	96	17
F 57	4	452	12	7.5	48	3.57	1.36	171	65
BM 22	2.5	455	12	9.7	30	1.97	0.37	59	11
F 56	3.5	457	12	6.5	42	2.15	0.48	90	20
F 55	5.0	462	12	4.5	60	1.23	0.42	74	25
F 54	2.5	467	11.5	11.5	29	2.86	0.29	83	8
<b>Block #1 total Ave.</b>									
<b>Portal to Winze</b>									
<b>Interval 1670 — 467</b>									
<b>Block A total</b>									
11	0	375	9.2	3445	0.84	0.77	2885	2638	
<b>Block C total</b>									
11	375	537.5	10.9	1776	2.17	0.59	3860	1056	

<sup>1</sup>/ Effective distance times the width of dike.

O = Portal of No 3 adit

## Cassiterite Dike, No. 3 Adit Level (continued)

Sample Number	Eff. Dist.	Dist. E. of Portal	Width of Lode	Width of Sample	Area 1/	Sn %	WO <sub>3</sub> %	Area x % Sn	Area x % WO <sub>3</sub>
F 54	5.5	467	11.5	11.5	63	2.86	0.29	180	18
F 53	9	478	12	12	108	2.54	.95	274	103
F 52	6	485	12	5	72	2.37	.82	171	59
F 51	5	490	11.5	7.5	57	3.01	.63	172	36
F 50	5	495	11	5	55	1.94	.48	107	26
F 49	5	500	10	5.5	50	1.23	.32	61	16
F 48	5	505	10	8	50	1.78	.34	89	17
F 47	5	510	9	5	45	1.11	1.07	50	48
F 46	5	515	9	5.5	45	2.46	.26	111	12
F 45	5	520	9	5.5	45	1.35	.29	61	13
F 44	5	525	9	7.5	45	3.70	.22	166	10
F 43	5	530	9	7.5	45	2.40	.16	108	7
F 41	5	535	9.5	6	47	2.09	.14	98	7
<b>Block D</b>	<b>70.5</b>	<b>537.5</b>	<b>10.3</b>	<b>7.3</b>	<b>727</b>	<b>2.27</b>	<b>.51</b>	<b>1648</b>	<b>372</b>
F 42	5	540	10	5.5	50	1.29	tr	64	
F 40	5	545	10	6.5	50	1.91	tr	95	
F 39	5	550	10.5	5.25	52	2.21	tr	115	
F 38	5	555	10.5	5.5	52	1.66	.28	86	
F 37	5	560	11	6.5	55	2.15	tr	118	
F 36	5	565	11	6.0	55	2.09	tr	115	
F 35	5	570	11.5	5.5	57	1.63	tr	93	
F 33	6	575	12	6.5	72	3.14	tr	226	
F 32	9	582	12	5	108	.89	tr	96	
F 31	12	593	14	14	168	2.17	tr	365	
F 114	9	606	13	9	117	1.61		188	
F 122	6.5	611	13	12	84	1.01		84	
F 123	9	619	13.5	5	121	.49		59	
F 124	10	629	14	10	140	2.22		311	
F 125	7.2	639	14.5	12	104	1.05		109	
C T 1	4.5	643.4	14.5	13	65	1.29		84	
C T 2	4.8	648	14.5	6	70	1.15		80	
C T 3	5	653	14.5	6	72	1.27		91	
C T 4	5	658	13	6	65	1.00		65	
C T 5	5	663	13	4.5	65	1.30		84	
C T 6	5	668	12.5	5.5	62	1.38		86	
C T 7	5	673	12.5	7.5	62	1.36		84	
C T 8	5	678	12	6.5	60	3.05		183	
C T 9	5	683	12	6.5	60	.87		52	
C T 10	5	688	11.5	7	57	.80		46	

1/ Effective distance times the width of dike.

## Cassiterite Dike, No. 3 Adit Level (continued)

Sample Number	Eff. Dist. on Dike	Dist. E. of Portal	Width of Lode	Width of Sample	Area L/	Sn %	WO <sub>3</sub> %	Area x Sn %	Area x WO <sub>3</sub> %
IR 7K	5.5	693.0	10.5	6	50	3.00	0.24	150	12
IR 6K	4.5K	5.5	10.2	50	2.17	.20	108	10	10
IR 5K	4.14K	5.5	11.8	6.7	55	.72	.21	40	12
IR 13K	8.0	5.5	12.0	13	60	.97	.35	58	21
IR 12K	8.0	6.0	12.0	12	72	1.06	.21	76	17
IR 39K	7.5	7.0	12.0	13	90	1.00	.10	90	10
IR 19K	7.5	6.5	11.5	10	71	1.40	.17	99	12
IR 38K	8.0	5.5	7.0	7	50	2.71	.12	135	7
IR 36K	8.0	5.5	10.0	9.3	50	1.35	.15	67	2
IR 27K	8.0	5.5	10.0	6	50	1.11	.04	55	20
IR 28K	8.0	5.5	10.0	10.5	50	1.72	.40	86	12
IR 29K	8.0	5.5	10.0	8	50	1.62	.25	81	3
IR 35K	5.5	5.5	9	9.5	45	.65	.06	38	3
IR 34K	5.5	5.5	9	7.0	45	1.33	.07	60	1
IR 30K	5.5	5.5	9	7.0	45	.54	.00	24	2
IR 31K	5.5	7.0	9	10	45	1.21	.04	54	5
IR 33K	10	7.0	10	3	100	1.39	.05	139	21
IR 32K	23.5	7.0	10	7.3	235	1.55	.09	364	11
IR 11L	18.5	7.0	8.25	10	185	0.89	.06	165	10
IR 22L	7.5	8.30	10	8.0	75	1.01	.13	76	73
IR 32L	7.5	8.40	11	8.58	82	0.89	.11	66	66
IR 44L	5.5	8.45	11	11	82	1.20	.13	70	92
IR 66L	5.5	8.50	11	11	82	1.27	.01	106	81
IR 77L	5.5	8.60	11	11	82	1.67	.04	84	63
IR 88L	5.5	8.65	12	12	82	1.96	.04	81	79
IR 99L	5.5	8.70	12	12	82	1.40	.05	293	73
IR 100L	5.5	8.75	12	12	82	1.05	.07	97	103
IR 131L	5.5	8.80	12	12	82	1.28	.05	267	267
IR 122L	5.5	8.85	12	12	82	1.40	.06	16	16
IR 144L	5.5	8.90	12	12	82	1.44	.06	303	123
IR 155L	5.5	8.95	9.00	12	82	1.40	.06	601	601
IR 166L	5.5	9.05	9.10	12	82	1.20	.11	276	114
IR 177L	5.5	9.15	9.15	11	82	1.20	.04	114	6
IR 188L	5.5	9.25	9.25	12	120	1.44	.06	99	5
IR 199L	10	9.35	9.49	12	144	1.44	.06	113	113
IR 200L	12	9.5	9.59	11	77	1.44	.05	220	220
IR 42L	12	9.63	9.63	11	55	1.35	.05	11	24
IR 43L	7	9.69	9.69	11	7	220	1.00		

V Effective distance times the width of dike.

## Cassiterite Dike, No. 3 Adit Level (continued)

Sample Number	Eff. Dist.	Width of Portal	Width of Lode	Width of Sample Area	Sn %	WO <sub>3</sub> %	Area x % Sn	Area x % WO <sub>3</sub>
IR 51L	26	1003	11	12.5	286	1.22	349	
IR 51L-105L interp.	9	1021	11		99	1.00 (cut off)	99	

<i>Interval</i>	375	7286	1.73	12585
Block	537.5	5510	1.58	8725

*Prefix*  
Sample Explanation:

- F - Frederick C. Fearing
- C - D. G. Campbell
- BM - Federal Bureau of Mines
- IR - Mining Company
- LH - Long hole

*1/ Effective distance times the width of dike.*

**APPENDIX B DATA LIBRATION CENTER INDICATED ON INSTRUMENTS**

### Cassiterite Dike, No. 2 Adit Level

Sample Number		Eff. Dist.	Dist. From Portal	Sample Width	Lode Width	Area 1 / Area 2	% Sn	% WO <sub>3</sub>	Area x
F	Portal	25.5	0	9	9	229	1.10	252	
F	4	28	51	5.5	9	252	1.29	325	
F	160	5	56	6	9	45	2.34	105	
F	5	5	61	5.5	8.5	42	1.72	72	
F	159	5	66	5.5	8	40	.55	22	
F	6	5	71	5	7	35	1.14	40	
F	158	5	76	4.5	6	30	.55	16	
F	7	5	81	4	5.5	27	.89	24	
F	157	5	86	4	5.5	25	.83	21	
F	8	5	91	4	5.5	25	1.11	28	
F	156	5	96	5.5	5.5	27	1.47	40	
F	9	5	101	5.5	6	30	.98	29	
F	155	5	106	7	9	45	.66	30	
F	10A FW								
F	B HW	6	111	8	11	66	.89	59	
F	CDE BK								
F	154								
F	11	6	118	9	12	72	.71	51	
F	12A								
F	B	4.5	123	5.5	11	49	.62	30	
F	C								
F	153A								
F	B	4	127	6	11	44	.85	37	
F	13A								
F	B	4	131	5	11	44	2.18	96	
F	C								
F	152	5	135	4.5	11	55	4.67	257	
F	14	3	141	5	11	33	3.32	110	
			Face						
				6.2	8.6	1215	1.35	1644	

1/ Effective distance times the width of dike.

## APPENDIX B - MINERAL LISTING AND INDICATED OR ESTIMATED RESERVES

## Cassiterite Dike, No. 1 Adit Level

Sample Number	Eff. Dist.	From Portal	Width of Sample	Width of Lode	Area 1/	Sn %	X % (Sn)	Area	
								Area	Depth
F 1ABCDE	22	00 0	11	12	264	2.40	J 634	100	300 ft
F 151AB	24.5	00 44	11	12	294	.83	J 244	100	300 ft
F 150	28.5	00 49	5	5	60	1.10	66	100	300 ft
F 149	30.5	00 54	5	5	60	.80	J 148	100	300 ft
F 148	30.5	00 59	5	5	60	3.02	J 161	100	300 ft
F 147	30.5	00 64	6	12	66	1.17	J 177	100	300 ft
F 146AB	30.525	00 70	9	12	63	2.06	J 130	100	300 ft
F 145	31.475	00 74.5	5	12	57	1.70	J 1097	100	300 ft
F 144	31.475	00 79.5	5	12.5	59	2.85	J 168	100	300 ft
F 143	30.45	00 84	5	13	58	2.74	159	100	300 ft
F 142	30.45	00 88.5	5	13	58	4.00	J 232	100	300 ft
F 141	30.45	00 93	5	12.5	56	1.93	108	100	300 ft
F 140	4.5	97.5	5	12	54	1.45	78		
F 139	4.5	102	5	11.5	52	0.40	21		
F 138	4.5	106.5	5	11	49	1.27	62		
F 137	4.75	111	2.5	11	52	.18	9		
F 136	5	116	2	11	55	.26	14		
F 135	5	121	2.5	11	55	.34	19		
F 134	5	126	3	11.5	57	.22	13		
F 133	5	131	4	12	60	.50	30		
F 132	5	136	7	12	60	2.50	150		
F 131	5	141	5	12	60	.34	20		
F 130	5	146	5	12	60	5.48	329		
F 129	5	151	5	12	60	.80	48		
F 128	5	156	4.5	12	60	.92	55		
F 127	5	161	4	12	60	.60	36		
F 126	5	166	4	12	60	.63	38		
F 125AB	2.75	171	11	12	33	.88	29		
BM 19ABC	2.75	171	12	12	33	.81	27		
BM 23	10	177	5	12	120	.98	118		
LR 3B	12	191	12	12	144	.77	111		
LR 71K	14	201	7.6	12	168	.59	99		
LR 70K	19	219	9.2	12	228	.59	135		
LR 69K	25	239	14.7	13	325	.87	283		
LR 68K	26	269	6.8	12	312	1.38	431		
LR 67K	20	291	9.9	12	240	3.33	799		
LR 66K	17	309	9.7	12	204	.33	67		
LR 65K	16	325	12.5	12	192	.52	100		
LR 53L	12.5	341	10.5	11	137	2.43	333		
LR 61L+72L	7	350	9	11	77	.46	35		

1/ Effective distance times the width of dike.

## Cassiterite Dike, No. 1 Adit Level (continued)

Sample Number	Eff. Dist.	Dist. From Portal	Width of Sample	Width of Lode	Area <sup>1/</sup>	Area	
						Sn %	% Sn
LR 70L+73L	25	355	9.5	11	105.5	1.92	51
LR 74L+78L	25	360	11.5	11	55	.59	32
LR 75L+122L	0.5	365	8.1	10	50	1.71	85
LR 76L+121L	0.5	370	8.1	10	50	1.40	70
LR 77L	0.5	375	8.1	6.5	10	.90	45
LR 79L+123L	0.5	380	8.1	6	10	.87	44
LR 124L+125L	0.5	385	8.1	12	11	9.55	1.40
LR 130L+127L	71.5	390	8.1	11	10	50	1.40
LR 126L+129L	80.5	395	8.1	7	10	50	1.89
LR 128L+131L	0.5	400	8.1	7.5	10	50	2.10
LR 134L+132L	0.5	405	8.1	6	10	50	1.35
LR 133L	0.5	410	8.1	5	9	45	.57
LR 136L+135L	0.5	415	8.1	6	9	45	2.73
LR 137D	2.5	420	8.1	6.5	9	22	.36
85							
B1000	0.420	8.1	8.3	11.7	4899.	1.33	6530
86	TS.L	8.1	11	11	300		861
87	8.1	8.1	8.1	8.1	100		861
88	8.1	8.1	8.1	8.1	100		861
89	8.1	8.1	8.1	8.1	100		861
90	8.1	8.1	8.1	8.1	100		861
91	8.1	8.1	8.1	8.1	100		861
92	8.1	8.1	8.1	8.1	100		861
93	8.1	8.1	8.1	8.1	100		861
94	8.1	8.1	8.1	8.1	100		861
95	8.1	8.1	8.1	8.1	100		861
96	8.1	8.1	8.1	8.1	100		861
97	8.1	8.1	8.1	8.1	100		861
98	8.1	8.1	8.1	8.1	100		861
99	8.1	8.1	8.1	8.1	100		861
100	8.1	8.1	8.1	8.1	100		861
101	8.1	8.1	8.1	8.1	100		861
102	8.1	8.1	8.1	8.1	100		861
103	8.1	8.1	8.1	8.1	100		861
104	8.1	8.1	8.1	8.1	100		861
105	8.1	8.1	8.1	8.1	100		861
106	8.1	8.1	8.1	8.1	100		861
107	8.1	8.1	8.1	8.1	100		861
108	8.1	8.1	8.1	8.1	100		861
109	8.1	8.1	8.1	8.1	100		861
110	8.1	8.1	8.1	8.1	100		861
111	8.1	8.1	8.1	8.1	100		861
112	8.1	8.1	8.1	8.1	100		861
113	8.1	8.1	8.1	8.1	100		861
114	8.1	8.1	8.1	8.1	100		861
115	8.1	8.1	8.1	8.1	100		861
116	8.1	8.1	8.1	8.1	100		861
117	8.1	8.1	8.1	8.1	100		861
118	8.1	8.1	8.1	8.1	100		861
119	8.1	8.1	8.1	8.1	100		861
120	8.1	8.1	8.1	8.1	100		861
121	8.1	8.1	8.1	8.1	100		861
122	8.1	8.1	8.1	8.1	100		861
123	8.1	8.1	8.1	8.1	100		861
124	8.1	8.1	8.1	8.1	100		861
125	8.1	8.1	8.1	8.1	100		861
126	8.1	8.1	8.1	8.1	100		861
127	8.1	8.1	8.1	8.1	100		861
128	8.1	8.1	8.1	8.1	100		861
129	8.1	8.1	8.1	8.1	100		861
130	8.1	8.1	8.1	8.1	100		861
131	8.1	8.1	8.1	8.1	100		861
132	8.1	8.1	8.1	8.1	100		861
133	8.1	8.1	8.1	8.1	100		861
134	8.1	8.1	8.1	8.1	100		861
135	8.1	8.1	8.1	8.1	100		861
136	8.1	8.1	8.1	8.1	100		861
137	8.1	8.1	8.1	8.1	100		861
138	8.1	8.1	8.1	8.1	100		861
139	8.1	8.1	8.1	8.1	100		861
140	8.1	8.1	8.1	8.1	100		861
141	8.1	8.1	8.1	8.1	100		861
142	8.1	8.1	8.1	8.1	100		861
143	8.1	8.1	8.1	8.1	100		861
144	8.1	8.1	8.1	8.1	100		861
145	8.1	8.1	8.1	8.1	100		861
146	8.1	8.1	8.1	8.1	100		861
147	8.1	8.1	8.1	8.1	100		861
148	8.1	8.1	8.1	8.1	100		861
149	8.1	8.1	8.1	8.1	100		861
150	8.1	8.1	8.1	8.1	100		861
151	8.1	8.1	8.1	8.1	100		861
152	8.1	8.1	8.1	8.1	100		861
153	8.1	8.1	8.1	8.1	100		861
154	8.1	8.1	8.1	8.1	100		861
155	8.1	8.1	8.1	8.1	100		861
156	8.1	8.1	8.1	8.1	100		861
157	8.1	8.1	8.1	8.1	100		861
158	8.1	8.1	8.1	8.1	100		861
159	8.1	8.1	8.1	8.1	100		861
160	8.1	8.1	8.1	8.1	100		861
161	8.1	8.1	8.1	8.1	100		861
162	8.1	8.1	8.1	8.1	100		861
163	8.1	8.1	8.1	8.1	100		861
164	8.1	8.1	8.1	8.1	100		861
165	8.1	8.1	8.1	8.1	100		861
166	8.1	8.1	8.1	8.1	100		861
167	8.1	8.1	8.1	8.1	100		861
168	8.1	8.1	8.1	8.1	100		861
169	8.1	8.1	8.1	8.1	100		861
170	8.1	8.1	8.1	8.1	100		861
171	8.1	8.1	8.1	8.1	100		861
172	8.1	8.1	8.1	8.1	100		861
173	8.1	8.1	8.1	8.1	100		861
174	8.1	8.1	8.1	8.1	100		861
175	8.1	8.1	8.1	8.1	100		861
176	8.1	8.1	8.1	8.1	100		861
177	8.1	8.1	8.1	8.1	100		861
178	8.1	8.1	8.1	8.1	100		861
179	8.1	8.1	8.1	8.1	100		861
180	8.1	8.1	8.1	8.1	100		861
181	8.1	8.1	8.1	8.1	100		861
182	8.1	8.1	8.1	8.1	100		861
183	8.1	8.1	8.1	8.1	100		861
184	8.1	8.1	8.1	8.1	100		861
185	8.1	8.1	8.1	8.1	100		861
186	8.1	8.1	8.1	8.1	100		861
187	8.1	8.1	8.1	8.1	100		861
188	8.1	8.1	8.1	8.1	100		861
189	8.1	8.1	8.1	8.1	100		861
190	8.1	8.1	8.1	8.1	100		861
191	8.1	8.1	8.1	8.1	100		861
192	8.1	8.1	8.1	8.1	100		861
193	8.1	8.1	8.1	8.1	100		861
194	8.1	8.1	8.1	8.1	100		861
195	8.1	8.1	8.1	8.1	100		861
196	8.1	8.1	8.1	8.1	100		861
197	8.1	8.1	8.1	8.1	100		861
198	8.1	8.1	8.1	8.1	100		861
199	8.1	8.1	8.1	8.1	100		861
200	8.1	8.1	8.1	8.1	100		861
201	8.1	8.1	8.1	8.1	100		861
202	8.1	8.1	8.1	8.1	100		861
203	8.1	8.1	8.1	8.1	100		861
204	8.1	8.1	8.1	8.1	100		861
205	8.1	8.1	8.1	8.1	100		861
206	8.1	8.1	8.1	8.1	100		861
207	8.1	8.1	8.1	8.1	100		861
208	8.1	8.1	8.1	8.1	100		861
209	8.1	8.1	8.1	8.1	100		861
210	8.1	8.1	8.1	8.1	100		861
211	8.1	8.1	8.1	8.1	100		861
212	8.1	8.1	8.1	8.1	100		861
213	8.1	8.1	8.1	8.1	100		861
214	8.1	8.1	8.1	8.1	100		861
215	8.1	8.1	8.1	8.1	100		861
216	8.1	8.1	8.1	8.1	100		861
217	8.1	8.1	8.1	8.1	100		861
218	8.1	8.1	8.1	8.1	100		861
219	8.1	8.1	8.1	8.1	100		861
220	8.1	8.1	8.1	8.1	100		861
221	8.1	8.1	8.1	8.1	100		861
222	8.1	8.1	8.1	8.1	100		861
223	8.1	8.1	8.1	8.1	100		861
224	8.1	8.1	8.1	8.1	100		861
225	8.1	8.1	8.1	8.1	100		861
226	8.1	8.1	8.1	8.1	100		861
227	8.1	8.1	8.1	8.1	100		861
228	8.1	8.1	8.1	8.1	100		861
229	8.1	8.1	8.1	8.1	100		861
230	8.1	8.1	8.1	8.1	100		861
231	8.1	8.1	8.1	8.1	100		861
232	8.1	8.1	8.1	8.1	100		861
233	8.1	8.1	8.1	8.1	100		861
234	8.1	8.1	8.1	8.1	100		861
235	8.1	8.1	8.1	8.1	100		861
236	8.1	8.1	8.1	8.1	100		861
237	8.1						

## APPENDIX B - SURFACE SAMPLES USED IN DETERMINING THE ESTIMATES

Surface Sample Calculations

(Totals used in ore block width and grade determinations)

Sample Number	Eff. Dist. of Portal	E. of Sample	No. of Lode	Width of Sample Area <sup>1/</sup>	Sn %	WO <sub>3</sub> %	Area x % Sn	Area x % WO <sub>3</sub>
F Portal #3	26.5	0	10.5	10	265	1.13	.84	299 223
F	51.5	53	11	10.3	530	.76	.94	403 498
F Above 119	63	103	10.5	9.9	624	.89	1.07	555 668
			141					
<del>Face Blocker</del>	141			10.1	1419	0.89	0.98	1257 1389
			141					
F Above 110 #3 Level	65.5	179	9.5	8.9	583	.67	tr	391
F Portal #2 Adit	27.5	234	9	8.4	231	1.10	tr	254
	93				814			645
<del>Face Blocker</del>	234			9.5	2233	0.85		1902
F Portal #2 Adit	35.25	234	9	8.4	296	1.10	tr	326
F $\frac{1}{2}$ Way to Face #2	70.5	304.5	9	8.4	592	1.18	tr	699
F Over Face #2	35.25	375	8	7.5	242	.31	tr	75
<del>Face Blocker</del>	141			8.0	1130	.97		1100
F Over Face #2	25.25	375	8	7.5	189	.31	tr	59
F $\frac{1}{2}$ Way Portal #1	50.5	425.5	8	7.5	379	.84	tr	318
F Portal #1	25.25	476	12	11.3	285	1.37	--	390
<del>Face Blocker C</del>	101				853	.90		767
F 12' Above Portal #1	24.5	476	12	11.3	277	1.37	--	379
F Above #150	58	525	11.5	10.8	626	.96	--	601
F Above #136	64	592	10	9.4	602	.46	--	277
F Above Face #1	30.5	653	11.5	10.8	329	.76	--	250
<del>Face Blocker</del>	177				1834	.82		1507

<sup>1/</sup> Effective distance times the width of dike.

A REINFORCED CONCRETE PUDGING IN A CANTILEVERED CROWN ESTIMATED

### Winze Samples to 50' Below Collar

1/ Effective distance times the width of dike.

~~OPENBEN BY DRILL HOLE NUMBER IN ORDER INDICATED ORE IS REMARKS~~

Cassiterite Dike 195 Level 4 Continuation of Main level ore shoot 4  
showing sections included in ore shoot.

Place	Dist. East From Winze	Eff. Length	Average Dike Width	Area <sup>1</sup>	Sn %	Area x % Sn
Winze Start	140	E.	11		.18	
LH1A	155.5	23.0	14.2	327	.88	288
LH1	186	11.5	16.6	191	1.05	201
LH2	198	14.0	20.8	291	.76	221
LH3	214	21	15	315	.45	142
LH4	240	25	19	475	.60	285
LH5	264	31	18.5	574	.49	281
Start Blocked Cut-off start	290	6	17	102	1.01	103
LH6	302	18	16	288	1.29	372
LH7	326	18	15.6	281	2.50	703
X-Cut	338	9	14.2	128	2.21	283
X-Cut	344	13	14	182	1.63	297
LH8	364	24	14	336	1.21	407
LH9	392	22	15	330	1.96	647
LH9A	408	16	16	256	1.39	356
LH10	424	17	14.5	247	1.00	247
X-Cut	442	15	11	165	1.52	251
X-Cut	448	3	9	27.6	.99	27.6
Top Blocked	158			2342	1.57	3693
LH13	468	20	9	180	.64	115

DMEA and mining company samples.

Sample	10.0	0.00	0.00	0.00	0.00	0.00
Sample	10.0	0.00	0.00	0.00	0.00	0.00
Sample	10.0	0.00	0.00	0.00	0.00	0.00

Sample	10.0	0.00	0.00	0.00	0.00	0.00
Sample	10.0	0.00	0.00	0.00	0.00	0.00
Sample	10.0	0.00	0.00	0.00	0.00	0.00

Sample	10.0	0.00	0.00	0.00	0.00	0.00
Sample	10.0	0.00	0.00	0.00	0.00	0.00
Sample	10.0	0.00	0.00	0.00	0.00	0.00

1/ Effective distance times the width.

Y/L H=Long hole number  
In the left hand column consider hole numbers 1000 and above.

*Cut*

## APPENDIX B - DATA USED IN INDICATED ORE ESTIMATES

## Ore Block Grade and Width Data

		Eff.	Dike	Area <sup>1</sup>	Sn %	WO <sub>3</sub> %	Area x Sn	Area x WO <sub>3</sub>
#3 Port.-375'		375		3445	0.84	.77	2885	2638
" -#2 Port.		234		2233	.85	.62	1902	1389
#2 Adit		141		1215	1.35		1644	
Total Block A		750	9.19	6893	0.93		6431	
#3 Port.-375'		375		3445	0.84	0.77	2885	2638
" End WO <sub>3</sub>		141		1419	.89	.98	1257	1389
Total Block A		516		4864	0.85	0.83	4142	4027
Block AA'				20550	0.93		19111	
Block A'				15600	0.85		13260	
Block A-B				4950	1.18		5851	
Port.#2-Sur. at 141.5		141		1130	.97		1100	
#2 Adit		141		1215	1.35		1644	
Total Block B		282	8.3	2345	1.17		2744	
#3 Adit 375'-1021'		646	11.3	7286	1.73		12585	
Sur.#2-Port.#1		101	8.4	853	.90		767	
#1 Adit Level		420	11.7	4899	1.33		6530	
Total Block C-C'		1167	11.17	13038	1.52		19882	
Block C' 375'-537.5		162.5	10.9	1776	2.17	0.59	3860	
Block C-C'				109900	1.52		167048	
Block C				6750	2.17		14648	
				103150	1.48		152400	
#1 Adit Level		420	11.7	4899	1.33		6530	
Portal-Surface-177		177	10.4	1834	.82		1507	
Block D		597	11.3	6733	1.19		8037	
Winze 0-50		50	10.9	545	1.40	0.27	763	150
#3 Adit 467-537.5		70.5		727	2.26	0.51	1648	372
Block E'		120.5	10.5	1272	1.89	0.41	2411	522

<sup>1</sup>/ Effective distance times the width of dike.

*Cut*  
Ore Block Grade and Width Data (continued) ADIT - R. ZIONITE

~~and distance from and to previous and next dike~~

<del>Eff.</del> <del>Dist.</del>	<del>Width</del>	<del>Dike</del>	<del>Area<sup>1</sup></del>	<del>Sn %</del>	<del>WO<sub>3</sub> %</del>	<del>Area x % Sn</del>	<del>Area x % WO<sub>3</sub></del>
-------------------------------------	------------------	-----------------	-----------------------------	-----------------	-----------------------------	------------------------	------------------------------------

#3 Adit 537.5-1021 195 Level 290-448	483.5	11.4	5510	1.58		8725	
Block E	641.5	12.2	7852	1.58		12418	
#3 Adit 0-467 Winze 0-50	447.5	9.6	4494	1.13	0.74	5097	3332
Block F	517.5	9.7	5039	1.16	0.69	5867	3482
Block G	158.5	14.8	2342	1.57		3693	

*1/*

Ore Block Dike

Ore Block

Ore A

Ore B

Ore C

Ore D

Ore E

Ore F

Ore G

Ore H

Ore I

Ore J

Ore K

Ore L

Ore M

Ore N

Ore O

Ore P

Ore Q

Ore R

Ore S

Ore T

Ore U

Ore V

Ore W

Ore X

Ore Y

Ore Z

Ore AA

Ore BB

Ore CC

Ore DD

Ore EE

Ore FF

Ore GG

Ore HH

Ore II

Ore JJ

Ore KK

Ore LL

Ore MM

Ore NN

Ore OO

Ore PP

Ore QQ

Ore RR

Ore SS

Ore TT

Ore UU

Ore VV

Ore WW

Ore XX

Ore YY

Ore ZZ

Ore AA

Ore BB

*1/ Effective distance times the width of dike.*

Ore CC

Ore DD

Ore EE

Ore FF

Ore GG

Ore HH

Ore KK

Ore LL

Ore MM

Ore NN

Ore OO

Ore PP

Ore QQ

Ore RR

Ore SS

Ore TT

Ore UU

Ore VV

*Act*  
APPENDIX B - DATA USED IN CLASS 1 INDICATED ORE ESTIMATESTonnage Calculations Class 1 Indicated Ore

Corrected planimeter measurements, calculated normal width  
and factor of 12 cubic feet to the ton

Ore Block	Area	Average Width	Cubic Feet	Tons	Tons Sn Ore	Sn-WO <sub>3</sub> Ore
A'	20430	9.19	1877520	15600	15600	
A	6470	9.19	59459	4950	4950	
B	5516	8.3	45783	3800	3800	
C'	7253	11.2	81234	6750	6750	
C	110811	11.17	1237759	103150	103150	
D	32560	11.3	367928	30650	30650	
E'	4189	10.5	43985	3650	3650	
E	72739	12.2	887416	73950	73950	
F'	24450	9.7	237165	19750	19750	
G	4060	11.8	60088	5000	5000	
			3208569	267250	221500	45750

Ore Mined

Stopes A-1-E & A-1-W					
A'	1295	10.5	13560	1130	1130
C'	6008	10.5	63000	5250	5250
C	23108	10.5	242640	20220	20220
Stopes A-2-E					
C	29288	11.8	345600	28800	28800
Stopes A-3-E					
C	11428	10.5	120000	10000	10000
Stopes 1-B					
D	6218	11	68400	5700	5700
			853200	71100	64720
					6380

1956 Class 1 Indicated Ore

Block A'					
A			14470		14470
B			4950	4950	
C'			3800	3800	
C			1500		1500
D			44130	44130	
E'			24950	24950	
E			3650		3650
F'			73950	73950	
G			19750		19750
			5000	5000	
			196150	156780	39370

40  
-B-43

APPENDIX B - TABULATION OF STOPE SAMPLES

Weighted to sample width and grouped by stope  
and by section of dike sampled

Sample Number	Place	Width	Percent Sn	Percent WO <sub>3</sub>	Width x % Sn	Width x % WO <sub>3</sub>
<u>A-1 West Stope</u>						
1H	FW into Dike	5.5	3.67	0.03	20.19	0.17
2H	" " "	8.0	1.25	.04	10.00	.32
8H	" " "	2.5	0.69	.04	1.72	.10
9H	" " "	5.0	0.22	.02	1.10	.10
Totals and Averages		5.25	21.0	1.57	33.01	.69
3H	HW into Dike	6.0	2.08	0.29	12.48	1.74
4H	" " "	6.0	1.00	--	6.00	--
5H	" " "	4.5	1.66	0.12	7.47	.54
6H	" " "	3.0	0.53	0.05	1.59	.15
7H	" " "	6.0	2.04	0.25	12.24	1.50
11H	" " "	5.0	2.05	0.43	10.25	2.15
12H	" " "	6.0	1.26	0.22	7.56	1.32
Totals and Averages		5.2	36.5	1.58	57.59	7.40
<u>1-B Stope</u>						
1B	FW to HW	4.0	1.28	--	5.12	--
2B	" " "	9.0	1.65	--	14.85	--
3B	" " "	12.0	0.77	--	9.24	--
4B	" " "	5.0	1.17	--	5.85	--
5B	" " "	10.0	0.5	--	5.00	--
6B	" " "	10.0	1.0	--	10.00	--
7B	" " "	6.0	0.83	--	4.98	--
8B	" " "	3.0	0.65	--	1.95	--
9B	" " "	12.0	0.48	--	5.76	--
10B	" " "	8.0	0.53	--	4.24	--
11B	" " "	10.0	1.50	--	15.00	--
12B	" " "	8.5	1.25	--	10.63	--
13B	" " "	8.0	0.32	--	2.56	--
Totals and Averages		8.1	105.5	0.90	95.17	

4/10/68  
B-44

APPENDIX B - TABULATION OF STOPE SAMPLES (continued)

Sample Number	Place	Width	Percent		Width	Width
			Sn	W <sub>O</sub> <sub>3</sub>		
<u>A-1 East Stope</u>						
1J	FW into Dike	7.0	5.00	.05	35.00	0.35
2J	" " "	7.0	2.98	.02	20.86	.11
10J	" " "	4.0	1.76	.07	17.04	.28
13J	" " "	2.5	2.47	.06	6.17	.15
15J	" " "	4.0	0.71	--	2.84	--
21J	" " "	2.0	.98	.10	1.96	.20
22J	" " "	4.2	1.18	.06	4.96	.25
24J	" " "	10.0	1.79	.05	17.90	.50
25J	" " "	4.0	0.82	--	3.28	--
26J	" " "	6.5	1.64	.10	10.66	.65
27J	" " "	7.0	3.82	.11	26.74	.77
30J	" " "	2.5	.51	.05	1.27	.12
<b>Totals and Averages</b>		<b>5.1</b>	<b>60.7</b>	<b>2.29</b>	<b>.06</b>	<b>138.68</b>
<u>A-1 East Stope</u>						
3J	FW to HW	11.0	2.20	0.04	24.20	0.44
4J	" " "	11.0	2.90	0.10	31.90	1.10
5J	" " "	11.0	4.18	.16	45.98	1.76
6J	" " "	2.5	2.89	.13	7.22	.32
7J	" " "	10.0	1.63	.30	16.30	.00
8J	" " "	11.0	1.64	.17	18.04	.87
9J	" " "	11.0	2.14	--	23.54	--
11J	" " "	9.5	2.38	.05	22.61	.47
12J	" " "	10.0	4.03	.07	40.30	.70
14J	" " "	6.0	3.31	.15	19.86	.90
16J	In Dike	4.0	1.31	--	5.24	--
17J	" " "	17.5	.99	--	17.32	--
18J	" " "	13.5	2.23	.01	30.10	.13
19J	FW to HW	17.5	1.29	.01	22.57	.17
23J	" " "	12.0	2.80	.16	33.60	1.92
28J	" " "	12.0	1.00	.03	12.00	.36
29J	" " "	7.0	.84	.02	5.88	.14
<b>Totals and Averages</b>		<b>10.4</b>	<b>176.5</b>	<b>2.08</b>	<b>.07</b>	<b>376.66</b>

42 East  
B-45

**APPENDIX B - TABULATION OF STOPE SAMPLES (continued)**

Sample Number	Location	Place	Width	Percent Sn	Percent WO <sub>3</sub>	Width x % Sn	Width x % WO <sub>3</sub>	Logistic Number
20J	HW into Dike		5.0	2.50	0.10	12.5	0.50	
	A-2 East Stope							
4K	FW into Dike			12.0	0.86	0.05	10.32	.60
33K	" "			3.0	1.39	.05	4.17	.15
34K	" "			7.0	1.33	.07	9.31	.49
35K	" "			9.5	0.85	.06	8.07	.57
Totals and Averages			7.9	31.5	1.01	0.06	31.87	1.81
	A-2 East Stope							
1K	FW to HW			18.0	1.12	0.01	20.16	.18
2K	" "			12.0	1.28	.07	15.36	.84
3K	" "			11.0	1.31	.07	14.41	.77
6K	" "			12.0	3.30	.24	39.60	2.88
28K	" "			10.5	1.72	.40	18.06	4.20
31K	FW to FW			10.0	1.21	.04	12.10	.40
56K	" "			11.7	0.98	.01	11.47	.12
57K	" "			12.0	1.75	.01	21.00	.12
58K	" "			10.1	.25	.02	2.52	.20
59K	" "			13.5	.77	.01	10.39	.13
60K	" "			11.0	1.01	.03	11.11	.33
61K	" "			13.0	.86	--	11.18	--
62K	" "			14.5	.77	.01	11.16	.14
63K	" "			11.0	1.42	.03	15.62	.33
64K	" "			12.0	1.06	.03	12.72	.36
65K	" "			12.4	.52	.03	6.45	.37
66K	" "			9.7	.33	--	3.20	--
67K	" "			9.9	3.33	.06	32.97	.59
68K	" "			6.8	1.38	.07	9.38	.48
69K	" "			14.7	.87	.02	12.79	.29
70K	" "			9.2	.59	.02	5.43	.18
71K	" "			7.6	.59	.02	4.48	.15
Totals and Averages			11.5	252.6	1.19	0.05	301.56	13.06

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## APPENDIX B - TABULATION OF STOPE SAMPLES (continued)

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Sample Number	Place	Width	Percent Sn	Percent WO <sub>3</sub>	Width x % Sn	Width x % WO <sub>3</sub>	Remarks	
<u>A-2 East Stope</u>								
5K	HW into Dike	6.0	0.92	0.07	5.52	.42		
7K	" " "	6.0	3.00	0.24	18.00	1.14		
8K	" " "	7.0	2.20	.28	15.40	1.96		
9K	" " "	8.0	.98	.23	7.84	1.84		
10K	" " "	6.0	.37	.12	2.22	.72		
11K	" " "	4.5	1.30	.25	5.85	1.12		
12K	" " "	7.0	1.06	.24	7.42	1.68		
13K	" " "	10.0	13.00	.97	12.61	4.55	feldspar	
14K	" " "	11.5	.62	.28	7.13	3.22		
15K	" " "	8.5	.57	.15	4.84	1.27		
16K	" " "	8.8	.90	.48	7.92	4.22		
17K	" " "	8.5	1.00	.21	8.50	1.78		
18K	" " "	6.0	2.08	.30	12.48	1.80		
19K	" " "	10.0	1.40	.17	14.00	1.70		
20K	" " "	Duplicate of 18K						
21K	" " "	8.2	1.13	.39	9.27	3.20		
22K	" " "	9.5	1.43	.39	13.58	3.70		
23K	" " "	9.5	1.35	.29	12.82	2.75		
24K	" " "	11.5	1.65	.14	18.97	1.61		
25K	" " "	11.5	2.21	.07	25.41	.80		
26K	" " "	11.5	1.85	.04	21.27	.46		
27K	" " "	6.0	1.11	.04	6.66	.24		
29K	" " "	8.0	1.62	.25	12.96	2.00		
30K	" " "	7.0	.54	--	3.78	--		
32K	" " "	7.3	1.55	.09	11.31	.66		
37K	" " "	9.1	1.27	.16	11.56	1.46		
38K	" " "	7.0	2.71	.12	18.97	.84		
39K	" " "	13.0	1.00	.11	13.00	1.43		
72K	" " "	6.0	1.44	.40	8.64	2.40		
Total and Averages		8.4	235.9	1.35	0.21	317.93	49.27	

Approved by \_\_\_\_\_

44 Measured  
B-47

**APPENDIX B - TABULATION OF STOPE SAMPLES (continued)**

Sample Number	Place	Width	Percent Sn	Percent WO <sub>3</sub>	Width x % Sn	Width x % WO <sub>3</sub>
<b>A-3 East Stope</b>						
11L	FW into Dike	7.6	1.70	0.07	12.92	0.53
28L	" " "	5.0	.57	.04	2.85	.20
29L	" " "	4.6	1.57	.02	7.22	.09
30L	" " "	4.8	1.05	.03	5.04	.14
33L	" " "	3.5	1.08	--	3.78	--
34L	" " "	4.7	3.05	.02	14.33	.09
35L	" " "	3.7	3.05	.07	11.28	.26
36L	" " "	3.5	1.56	.02	5.46	.07
37L	" " "	4.0	2.57	.06	10.28	.24
38L	" " "	3.8	2.13	.03	8.09	.11
39L	" " "	4.0	.87	.06	3.48	.24
40L	" " "	3.0	.90	--	2.70	--
41L	" " "	4.0	.63	.02	2.52	.08
45L	" " "	4.0	.35	.05	1.44	.20
66L	" " "	2.0	.66	.02	1.32	.04
69L	" " "	2.0	1.22	.01	2.44	.02
71L	" " "	8.0	.46	--	3.68	--
Totals and Averages		4.2	72.2	1.37	0.03	98.79
<b>A-3 East Stope</b>						
19L	FW to HW	12.5	1.50	0.06	18.75	0.75
20L	" " "	12.5	5.01	.14	62.62	1.75
23L	" " "	4.0	.68	--	2.72	--
24L	" " "	3.5	3.07	.37	10.74	1.29
26L	" " "	5.0	2.85	.01	14.25	.05
31L	" " "	5.2	1.01	.04	5.25	.21
32L	" " "	3.3	1.49	.02	4.92	.07
42L	" " "	13.0	.79	.04	10.27	.52
43L	" " "	11.5	1.28	.06	14.72	.69
47L	" " "	4.0	.60	.03	2.40	.12
48L	" " "	3.3	1.59	.04	5.25	.13
49L	" " "	3.3	1.69	.06	5.58	.20
50L	" " "	9.0	.25	.10	2.25	.90
51L	" " "	12.5	1.22	--	15.25	--
52L	" " "	11.7	.47	--	5.50	--
54L	" " "	10.1	1.45	--	14.64	--
55L	" " "	10.0	.96	--	9.60	--
60L	" " "	8.2	.31	.03	2.54	.25
62L	" " "	4.0	1.08	.01	4.32	.04
68L	" " "	10.0	2.83	.01	28.30	.10
Totals and Averages		7.8	156.6	1.53	.05	239.87
						7.07

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~~ANALYSIS~~ TABULATION OF STOPE SAMPLES (continued)

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Sample Number	Depth ft	Width ft	Percent Sn	Percent WO <sub>3</sub>	Width x % Sn	Width x % WO <sub>3</sub>	Average reading
<b>A-3 East Stope</b>							
1L	60 HW into Dike	10.0	7.5	0.89	0.06	6.67	.45
2L	68 " "	10.0	8.0	1.01	.13	8.08	1.04
3L	70 " "	10.0	6.5	.89	.11	5.78	.91
4L	71 " "	10.0	7.5	1.20	.13	9.00	.97
5L	72 " "	10.0	5.5	1.27	.01	6.98	.05
6L	73 " "	10.0	5.8	1.67	.07	9.69	.41
7L	74 " "	10.0	7.9	1.96	.04	15.48	.32
8L	75 " "	10.0	7.3	1.40	.11	10.22	.80
9L	76 " "	10.0	8.0	1.05	.06	8.40	.48
10L	77 " "	10.0	7.2	1.31	.07	9.43	.50
12L	78 " "	10.0	8.5	1.22	.12	10.37	1.02
13L	79 " "	10.0	9.6	4.88	.60	46.85	5.76
14L	80 " "	10.0	6.0	1.61	.05	9.66	.30
15L	81 " "	10.0	5.0	1.71	.04	8.55	.20
16L	82 " "	10.0	3.0	4.86	.05	14.58	.15
17L	83 " "	10.0	2.0	0.30	.02	6.0	.04
18L	84 " "	10.0	2.2	5.51	.06	12.12	.13
21L	85 " "	10.0	3.5	2.09	.07	7.91	.24
22L	" "	10.0	3.0	1.05	.01	3.15	.03
25L	87 " "	10.0	7.5	2.42	.03	18.15	.22
27L	88 " "	10.0	6.5	1.11	.07	7.21	.45
44L	" "	10.0	10.7	0.39	.04	4.17	.43
46L	89 " "	10.0	5.7	0.20	.02	1.14	.11
56L	90 " "	10.0	4.0	.42	.02	1.68	.08
57L	91 " "	10.0	5.9	.35	.02	2.06	.12
58L	92 " "	10.0	4.0	.20	.03	.80	.12
59L	93 " "	10.0	5.0	.35	.05	1.75	.25
63L	94 " "	10.0	7.0	1.00	.11	7.00	.77
64L	95 " "	10.0	5.0	.43	.02	2.15	.10
65L	96 " "	10.0	7.0	.50	.02	3.50	.14
67L	97 " "	10.0	6.0	.23		1.38	
90L	98 " "	10.0	6.0	1.69		10.14	
91L	99 " "	10.0	7.0	2.88		20.16	
92L	100 " "	10.0	6.0	.81		4.86	
95L	101 " "	10.0	3.5	2.72		9.52	
100L	102 " "	10.0	4.0	.88		3.52	
<b>Totals and Averages</b>							
		6.0	214.80	1.41	0.08	302.11	16.59

100% 100% 100% 100% 100% 100% 100% 100%

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## APPENDIX D - COMPARISON OF STOPE SAMPLE AVERAGES

			Total Width	Percent Sn	Percent WO <sub>3</sub>	Width x Percent Sn	Width x Percent WO <sub>3</sub>
Place							
A-1 West	FW into Dike		21.0	1.57	.03	33.01	.69
A-1 East	" " "		60.7	2.28	.06	138.68	3.41
A-2 East	" " "		31.5	1.01	.06	31.87	1.81
A-3 East	" " "		72.2	1.37	.03	98.79	2.31
Total and Averages			185.4	1.63	0.04	302.35	8.22
A-1 West	FW to HW		None			--	--
A-1 East	" " "		176.5	2.13	.08	376.66	13.28
A-2 East	" " "		252.6	1.19	.05	301.56	13.06
A-3 East	" " "		156.6	1.53	.05	239.87	7.07
Total and Averages			585.7	1.57	0.06	918.09	33.41
A-1 West	HW into Dike		36.5	1.58	0.20	57.59	7.40
A-1 East	" " "		5.0	2.50	.10	12.50	0.50
A-2 East	" " "		235.9	1.34	0.20	317.93	49.27
A-3 East	" " "		214.8	1.41	0.08	302.11	16.59
Total and Averages			492.2	1.40	0.15	690.13	73.76
1-B Stope	HW to FW		105.5	.90	--	95.17	
Total and Averages for all stope channel samples			1368.8	1.47	0.08	2005.74	115.39

47 odd

**DATA USED FOR EVALUATION OF RESERVES**

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APPENDIX B - INDICATED ORE CLASS

## Randt Adit and Surface from No. 3 Adit Portal

#### Datenmodellierung

Above Randt Adit

	Randt	Trench	34.5	528	9.0	10.0	345	1.80	.31	621	107
1	"	"	69	597		9.5	655	.63	.47	413	308
2	"	"	67	666		9	603	.99	.33	597	199
3	"	"	<u>32.5</u>	731		<u>9</u>	<u>292</u>	<u>1.15</u>	<u>.19</u>	<u>336</u>	<u>55</u>
			203			9.3	1895	1.04	.35	1967	669

1/ Effective distance times the width of dike.

B-52

APPENDIX B - INDEX OF CATHOLIC GRASS-2

West from #3 Adit Portal to end of Randt Adit

## Data used in Broadband

Sample Number	Eff. Dist.	Dist. from No. 3 Portal				Lode Area x % Sn	Lode Area x % WO <sub>3</sub>
		Width	Eff.	Dist.	Sn %		
DDH #3	75	11.0	13.0	975	0.25	0.16	244 156
DDH #2	130	150	13.0	1690	0.14	0.33	237 558
DDH #2	118	260	12.7	1499	0.33	0.22	495 330
DDH #1	167	386	4.2	701	0.44	Nil	308 --
DDH #5	174	594	8.4	1462	0.15	0.24	219 351
DDH #6	70	734	12.7	889	0.64	0.08	569 71
		734	9.8	7216	0.29	0.20	2072 1466

卷之三

## APPENDIX B - INDICATED ORN CLASS 2 TUNNELS

#3 Adit to West End of Randt Adit

Data used in Block Headings

## Planimeter measurement

72.37	35.95	35.96	44.57	36.47	36.48
36.42			08.10		
00.44	35.98		71.60	36.50	

72.46 Sq. In. = 115,936 Sq. Ft.

Randt Adit Sample Area covered on the surface and underground averaged

	Dist.	Width	Area <sup>1</sup>	Sn %	WO <sub>3</sub> %	Area x % Sn	Area x % WO <sub>3</sub>
Sur. Adit	203	9.3	1895	1.04	.35	1967	669
	<u>203</u>	<u>8.7</u>	<u>1761</u>	<u>1.07</u>	<u>.48</u>	<u>1876</u>	<u>839</u>
	406		3656			3843	1508
Aver.	203	9.0	1828	1.05	.41	1921.5	754
#3 Portal	528	11.4	6052	.67	.81	4043	4882
Randt Port.							
Surface	731	10.78	7880	0.76	0.71	5964.5	5636
DD Holes	734		7216			2072	1466
	1465	10.3	15096	0.53	0.47	8036.5	7102

$$\frac{115,936 \times 10.3}{12} = 99,500$$

1/ Effective distance times the width of dike.

119 8 d. 0

B=54

## APPENDIX D - INDICATED, ORT CLASS 2, TONNAGE

On Ida Bell Dike at intersection with Cassiterite DikeDetermined in Block I

Sample	Eff. Length	Dike Width	Width x Length, Area	Sn %	Area x % Sn
Tr. #15	174'	30		0.11	
Interpolation	34	17	1190	1.00	1190
Tr. #8	40	80	3200	1.22	3904
Interpolation	46	23	1495	1.00	1495
Tr #11	160'	29.9		0.47	
Surface	80	76.6	5885	1.12	6589
110' below surface	80	66.6	5328	1.00	5328
	160		11213		11917
			5606	1.06	
Class 2 Indicated 111 x 467 tons/ft. of depth 51837 tons @ 1.06 % Sn					
Tr. 8	80	80		1.22	
DDH #17	450'	111	70	1.00	
			42.8	0.33	Evaluated on weighted core sludge analyses
					60000 tons @ 106 % Sn

119 8 d. 0

## APPENDIX B - INDICATED ORE CLASS 2

Ida Bell Cassiterite Dike Intersection Arsenopyrite Vein

## Data used in Block J

Sample No.	Eff. Length	Width	Area	Sn %	Area x Sn %
BM 6					
LR-44-33	67	4.0	268	3.36	900
122					
32	72	6.0	432	2.83	1222
22					
31	14	1.6	22	2.14	47
3					
Total & Aver.	153	4.7	722	3.00	2169

Equivalent to 60 tons per foot of depth.

This block is adjacent to Block I which indicates a downward continuation to a depth of at least 100 feet.

In Class 2 indicated ore we have:

6000 tons of 3.00 percent tin ore.

B-56

*Cut*

APPENDIX B - INDICATED SUB-ORE (0.6-1.0 % Sn) CALCULATIONS

Between Winze and Ore Blocks E, E' and G

Place	Dist. East From Winze	Eff. Length	Dike Width	Width x Length Area	Sn %	Area x % Sn
<b>195 Level</b>						
LH 1A	175	23	14.2	327	.88	288
LH 1	186	11.5	16.6	191	1.05	201
LH 2	198	14	20.8	291	.76	221
LH 3	214	21	15	315	.45	142
LH 4	240	25	19	475	.60	285
LH 5	264	25	18.5	462	.49	226
Int. 5 - 6	290	13	17	221	1.01	223
<b>195 Level Average</b>		<u>132.5</u>	<u>17.2</u>	<u>2282</u>	<u>0.695</u>	<u>1586</u>
<b>Block E, E'</b>						
Cut off	<u>320</u>	<u>12</u>		<u>3840</u>	<u>1.0</u>	<u>3840</u>
	<u>452.5</u>	<u>13.5</u>		<u>6122</u>	<u>0.88</u>	<u>5426</u>
<b>West of Blocks E, E'</b>						
	<u>132.5 x 135 x 13.5</u>	<u>2 x 12</u>		<u>10,000 tons</u>	<u>@ 0.88 % Sn</u>	<u>- Block E-2</u>
<b>West of Block G</b>						
Cut off	<u>75.0</u>	<u>14.8</u>		<u>1110</u>	<u>1.00</u>	<u>1110</u>
195 Level Average	<u>132.5</u>	<u>17.2</u>		<u>2282</u>	<u>.69</u>	<u>1586</u>
	<u>207.5</u>	<u>16.3</u>		<u>3392</u>	<u>.79</u>	<u>2696</u>
<b>Block G-2</b>						
	<u>16.3 x 132.5 x 50</u>	<u>12</u>		<u>9000 tons</u>	<u>@ 0.79 % Sn</u>	<u>- Block G-2</u>

S.C. 6/6

Winey Front 58' to 100' 150-87 180-ft and 200-ft Xents B-57

APPENDIX B - MINERALS DETERMINED IN SECTION 500-1000' X-1000' AT 150', 180' AND 200'

Used in Borehole 3 and 4

Sample No.	Dist. Below Collar	Eff. Length	Sample Width	Dike Width	x Length	Area Width	Sn %	x Area	% Sn
F	50	2.5	9.0	10	25	0.77	19.25		
F	55	2.5	4.5	9	22.5	0.60	13.5		
BM 48	55	2.5	5.64	9	22.5	0.06	1.35		
F	60	5	8.0	8	40	0.50	20.0		
F	65	5	6.5	8	40	0.30	12.0		
F	70	5	6.5	8	40	0.30	12.0		
BM 37 AB	75	2.5	5.6	8	20	1.04	20.8		
F	75	2.5	4.5	8	20	0.15	3.0		
F	80	5.0	4.0	9	45	0.10	4.5		
F	85	5.0	5.0	9	45	0.08	3.6		
F	90	5.0	5.0	10	50	0.05	2.5		
F	95	5.0	3.5	10	50	0.05	2.5		
F	100	7.5	11	11	82.5	0.57	47.03		
BM 38 AB	100	7.5	13.6	11	82.5	0.36	29.7		
BM 49	125	25.0	5.7	11	275	0.47	129.25		
F	150	13.75	14	12	165	0.38	62.7		
BM 36	150	13.75	5.6	12	165	0.29	47.85		
BM 35	180	12.5	6.8	6.5	81.25	0.45	36.56		
F	180	12.5	7	6.5	81.25	0.64	52.0		
BM 34	200	5	8.5	6.0	30	0.33	9.9		
F	200	5	6	6.0	30	0.65	19.5		
		150		9.4	1412.5	0.39	549.49		
DDH 3				13		0.25	W03 %		
4				17.3		0.60	0.16		
11				7		0.09	0.02		
							Nil		

5160

B-58

198-foot level east

APPENDIX B: THEORETICAL FRAMEWORK FOR THE STUDY OF THE FASHION INDUSTRY

Used in Block Type and Block M.

## APPENDIX B - BLOCK F-2, SUB-ORE CALCULATIONS

Place	Ave. Width	Length	Area	Sn %	WO <sub>3</sub> %	Area x % Sn	Area x % WO <sub>3</sub>
Bottom Block F'	9.6	467	4483	0.8	0.2	3586	897
West end Block F-2							
#3 & #4 D.D.H.	15.0	140	2100	0.45	0.08	945	168
* Bottom Block F-2	9.5	467	4436	0.31	0.11	1375	488
#3 & #11 D.D.H.	10.5			0.19	0.09	2.00	
195 level west	9.0			0.45	0.14	4.05	
*	9.5			0.31	0.11	6.05	
Winze 50' - 195	9.0	140	1260	0.39	0.10	491	126
Block F-2	10.1	1214	12279	0.52	0.13	6397	1679
Block F-2 from immediately below block F' to the 195' level west							
(467) (140) (10.1)			55,000 tons @ .52% Sn		0.13% WO <sub>3</sub>		
12							

B-60

52 East

52 East

## 195-foot level west

APPENDIX E - 195-Foot Level West - AVERAGE

Used in Block F-2 and M

Sample No.	Dist. Winze	Eff. Length	Sample Width	Dike Width	x	Area	Sn %	WO <sub>3</sub> %	Area	x	Area	Sn %	WO <sub>3</sub> %
F	0	13.5		6	81	0.65			52.7				
1 G	27	15.5	8.5	9	139.5	0.51	0.19	71.1	26.5				
2 G	31	14.5	9.0	9	40.5	0.37	0.20	15.0	8.1				
3 G	36	15.5	9.0	9	49.5	1.37	1.28	67.8	63.4				
4 G	42	18	4.5	9	162	0.07	0.05	11.3	8.1				
5 G	72	21	3.5	9	189	0.23	0.04	43.5	7.6				
6 G	84	11.5	7.0	9	103.5	0.25	0.06	25.9	6.2				
7 G	95	11.5	14.5	11	126.5	0.16	0.16	20.2	20.2				
8 G	107	13	5.5	10	130	1.32	0.28	171.6	36.4				
9 G	121	14	6.0	9	126	0.50	0.12	63	15.1				
10 G	135	12	5.5	9	108	0.34	0.07	36.7	7.6				
11 G	145	12.5	8.0	9	112.5	0.28	0.10	31.5	11.3				
18 G	160	12.5	7.0	9	112.5	0.79	0.13	88.9	14.6				
19 G	170	10	6.0	9	90	0.10	0.07	9	6.3				
		175		9	1570.5	0.45	0.15	708.2	231.4				

53 odd

B-61

365-foot level east

## APPENDIX B - CASSITERITE DIKE, 2 WINZE, NO. 3181 EAST, 365-FOOT LEVEL

Used in Block M

	<u>365-Level</u>	<u>Eff.</u>	<u>Dike</u>	<u>Area</u>	<u>Sn %</u>	<u>Area</u>
	<u>Ø Winze +</u>	<u>Length</u>	<u>Width</u>	<u>Area</u>	<u>% Sn</u>	<u>x % Sn</u>
LH 18	0	12.5	15	187.5	0.51	95.6
LH 17	25	44.5	23.5	1045.7	0.44	460.1
X-Cut WS	89	35.5	10	355.0	0.15	53.2
" " ES	96	9	10.5	94.5	0.27	25.5
LH 10	107	21	11	294.0	0.24	70.6
LH 9	138	20	9.4	188.0	0.12	22.6
X-Cut WS	147	7.5	9.4	70.5	0.44	31.0
X-Cut ES	153	9.5	9.4	89.3	0.34	30.4
LH 8	166	22	9.4	206.8	0.20	41.4
LH 7	197	30	19	570.0	0.27	153.9
LH 6	226	17.5	14	245.0	0.20	49.0
X-Cut WS	232	6.0	9.4	56.4	0.58	32.7
X-Cut ES	238	12.0	9.4	112.8	0.25	28.2
LH 5	256	24	9.4	225.6	0.17	38.4
LH 4	286	31	9.4	291.4	0.17	49.5
LH 3	318	29	9.4	272.6	0.27	73.6
LH 2	344	15	9.4	141.0	0.25	35.2
LH 1	348	2	9.4	18.8	0.35	6.6
				348	12.8	1297.5

## 365 Level west to DMEA diamond drill hole 1

LH 18	0	10	15	150	0.51	76.5
LH 21	20	20	17	340	0.20	68.0
Ch. Samples	40	15	20	300	0.37	111.0
" "	50	20	20	400	0.35	140.0
LH 19	80	80	25	2000	0.19	380.0
D.M.E.A.						
D.D.H.#1	210	70	46 *	3220	0.415	1336.3
54' - 109'						
Total West	210	30.5		6410	0.33	2111.8
Total East	348	12.8		4464.9	0.29	1297.5
365-Foot Level	558	19.5		10874.9	0.31	3409.3

\* Actual width is 50; reduced to 46' because of shape in section.

195 Level E 155'	155	8.5	1318.5	0.25	335.90
195 Level W	233	9.0	2097.0	0.45	943.65
D.D.H. #3 & #11	233	10.5	2446.5	0.19	464.83
195-Foot Level	621	9.4	5862.0	0.30	1744.38
365-Foot Level	558	19.5	10874.9	0.31	3409.3
Total	1179	14.2	16736.9	0.308	5153.68

172 (589) (14.2) = 120,000 tons of 0.30 percent Sn Sub-Ore in Block M

54 E

B-62

DMEA diamond drill hole 1

## APPENDIX B - MEASURED DATA FROM DRILL HOLE 1

Hole	Lineal Feet From	To	Distance Feet	Sn %	(Distance) (% Sn)
DMEA 1	5.5	19.5	14	0.08	1.175
1	19.5	23.8	4.3	0.20	.86
1	23.8	54.0	31.2	0.05	<u>1.579</u>
1	54.0	84.0	30	0.07	3.614
1	84.0	109	25	0.27	<u>4.154</u>
1	109	130.5	21.5	0.10	2.135
1	130.5	187.0	56.5	0.01	.565

Coppola areaBottom section - area of intensive fracturingLinear average of samples in the 365 level disseminated sub-area

Area Sampled or Sample	Sample Length	Sn %	(Sample Length) (Sn %)
S.side 32 X-Cut	132	0.36	47.52
N.side	70	0.53	37.10
Calcite Drift	100	0.26	26.00
" " (cont.)	130	0.44	57.20
X-Cut South	60	0.19	11.40
Long Hole #11	55	0.49	26.95
#12	45	0.22	9.90
#13	40	0.24	9.60
#14	40	0.24	9.60
#15	25	0.29	7.25
#16	10	0.25	2.5
Calcite vein	15	1.04	<u>15.60</u>
	722	0.36	260.62

55-6d

B-63

M-A-1

APPENDIX C - DRILL HOLE ANALYSIS OF LIMESTONE AND SUB-COREDiamond Drill Holes Intersecting Section

Diamond Drill Hole No.	Footage in Section	Sn Percent	WO <sub>3</sub> Percent	(Footage) (Sn %)	(Footage) (WO <sub>3</sub> %)
U.S.B.M.					
3	68	0.32	0.03	21.76	2.04
4	80	0.29	0.03	23.70	2.40
10	381	0.34	0.03	102.64	11.26
11	274	0.41	0.05	112.34	13.70
12	260	0.33	0.03	81.62	7.34
22	270	0.19	0.02	45.90	5.40
23	480	0.26	0.04	81.36	17.69
26	334	0.50	0.03	86.79	4.50
	800.2261	0.33	0.03	744.56	64.33

Drill hole averages in limestone onlyDIAMOND DRILL HOLE AVERAGES IN THE LIMESTONEFor average analysis of Surface Areas other than Trenches

Diamond Drill Hole No.	Limestone etc. Footage	Sn Percent	WO <sub>3</sub> Percent	(Footage) (Sn %)	(Footage) (WO <sub>3</sub> %)
3	68	0.32	0.03	21.76	2.04
4	80	0.29	0.03	23.70	2.40
10	381	0.27	0.03	102.64	11.26
11	274	0.41	0.05	112.34	13.70
12	244.5	0.33	0.03	81.62	7.34
22	270	0.19	0.02	45.90	5.40
23	480	0.17	0.04	81.36	17.69
26	229	0.37	0.02	86.79	4.50
	2026.5	0.27	0.03	556.11	64.33

B-6L

**APPENDIX K - BLOCK K - TEN GRADE CALCULATIONS**

Cupidariae (cont.)

	Square Feet	Sn %	(Area) (% Sn)
Keweenaw Lode Quartz Porphyry Lode	1,590,000	0.60	1,590,000
Tr. 5	1,226	0.55	1,226
Tr. 6	100	0.12	100
Tr. 9a, 9b, 9c	210	0.53	210
	750	0.89	750
Trench Sampled Area	3,876	0.65	3,876
Other area from drilling in limestone	188,444	0.27	188,444
Total Surface	192,320	0.27	192,320
365 Level	61,130	0.36	61,130
Equivalent for total Diamond Drill Holes	253,450	0.33	253,450
	506,900	0.31	506,900
			159,044

Sub-Spec in Block K - 0.91 percent Tin.

#### Tchad : le 1er octobre

Average elevation - top area

### Elevation of 365 Level area

Distance between assumed parallel surfaces

## Surface area by planimeter measurement

### Area of 365 Level zone by planimeter measurement

(Average area) (height)

Cubic Feet/ton

$$\frac{126,725 \text{ (345)}}{12} = 3,600,000 \text{ Tons}$$

*Cut*  
APPENDIX B - BLOCK L - GRANITE CONTACT - SUB-ORD

Sample	Eff. Length	Normal Width	End Area	Sn %	WO <sub>3</sub> %	Area x Sn %	Area x WO <sub>3</sub> %
Sur. DDH #28	151	16.5	2491.5	0.56	0.34	1395.2	847.1
DDH #8	86	11	946	0.71	0.02	671.7	18.9
	237	14.5	3437.5	0.60	0.25	2066.9	866.0
190 Raise X-Cut 40' of granite	80	30	2400	0.40	0.05	960	120
32 S X-Cut, Channel Samples	157	40	6280	0.12	0.04	2637.6	251.2
	237	36.6	8680	0.41	0.04	3597.6	371.2
West end Area	28*	36.6	1024.8	0.41	0.04	420.2	41
East end Area	98	14.5	1421.0	0.60	0.25	852.6	355.3
East of E.E.A.	10	12.2	122.0	0.60	0.25	73.2	30.5
	136	18.9	2567.8	0.52	0.17	1346.0	426.8

\* 70' cut off as it is a part of Block K

$$\frac{136 (237) (18.9)}{12} = 50,000 \text{ tons} \quad 0.52\% \text{ Sn} \quad 0.17\% \text{ WO}_3$$