Geologic logs and assays of cores from 1980, 1981, and 1982 drill holes of the Coal Creek tin property of the Talkeetna Mountains D-6 Quadrangle of the Alaska Range.

Alaska Department of Natural Resources

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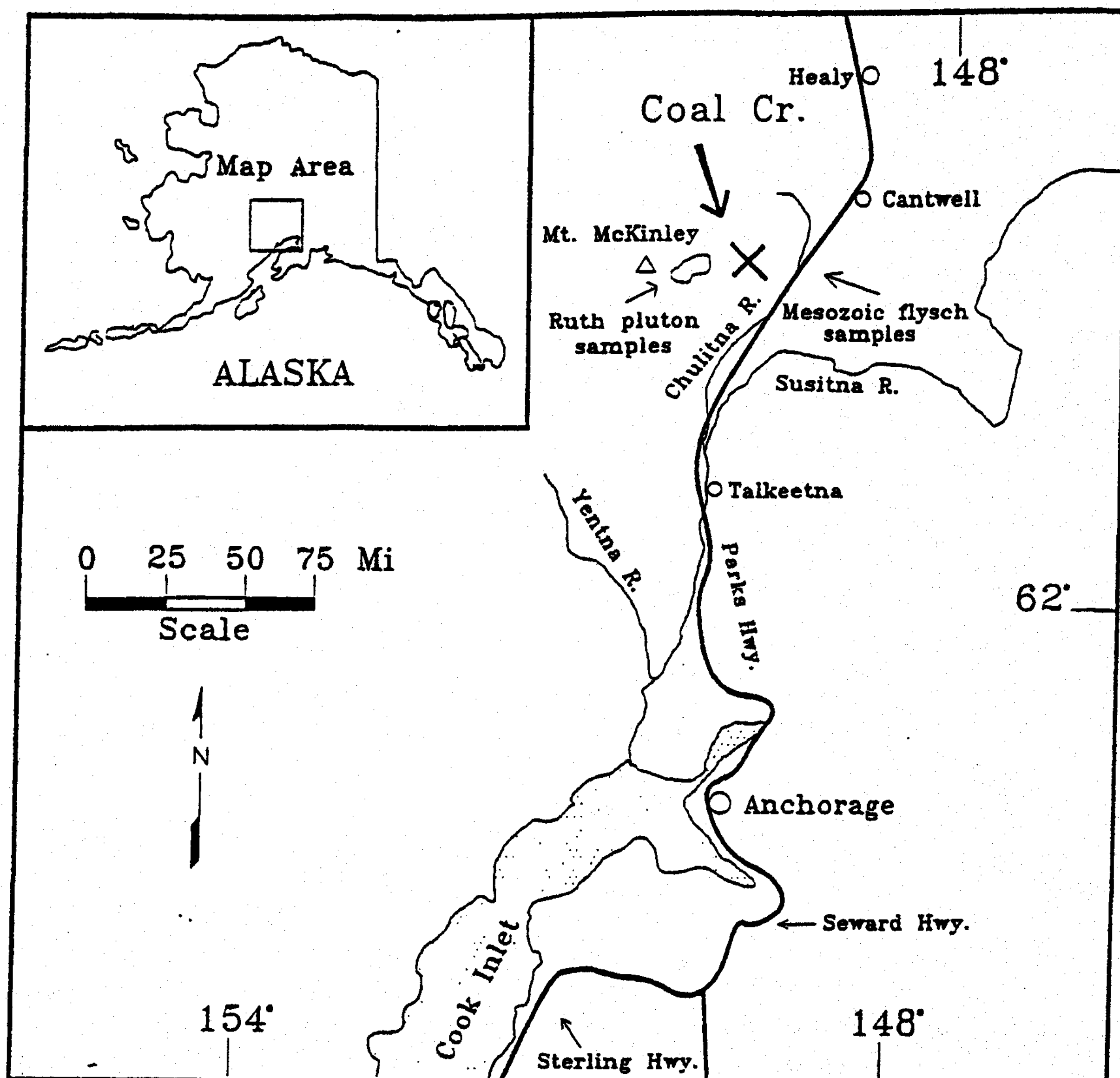

Figure 1. --Location map of the Coal Creek tin prospect.

From Field Report 1991
U.S. Bureau of Mines

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APPENDIXES

1980, 1981+

Appendix A. Drill hole data from the summer 1982 drilling project at Coal Creek.

	Hole Number	Depth of Hole	Bearing	Dip	Coordinates
1980	1	248.4	S15W	50	N10167,E9698
	2	250.3	S15W	50	N10118,E9892
	3	201.6	S70E	50	N10859,E9436
	4	196.6	S70E	50	N8238,E9485
	5	201.7	S60E	50	N4840,E8745
	6	160.2	N70W	50	N7934,E6710
	7	248.2	S70E	50	N8980,E6770
	8				
1981 →	9	158.9	N15E	50	N9883,E9917
	10	270.0	S15E	50	N10368,E9746
	11	405.0	N15E	50	N9784,E9603
	12	874.0	N15E	50	N9444,E9317
	13	196.0	S45E	50	N12230,E12207
	14	376.0	S83W	70	N6196,E5894
	15	570.0	0	90	N9828,E9840
	16	866.0	S15E	70	N10265,E9312
	17				
	18				
1982 →	19	693.3	0	90	N10001,E9740
	20	609.8	0	90	N9915,E9790
	21	653.8	0	90	N9656,E9740
	22	555.4	0	90	N9484,E9640
	23	692.8	0	90	N9915,E10090
	24	803.2	N15E	50	N9539,E9735
	25	800.3	N15E	50	N9588,E9552
	26	206.3	0	90	N8768,E6881
	27	172.8	0	90	N8322,E7017
	28	91.6	0	90	N8579,E7589
	29	295.7	0	90	N11418,E11055
	30	133.7	0	90	N10883,E10492
	31	418.5	0	90	N10373,E9741
	32	727.5	0	90	N9828,E9740
	33	746.9	0	90	N9828,E9640
	34	593.0	0	90	N10001,E9940
	35	500.7	N15E	50	N9054,E9214
	36	762.8	N15E	50	N9732,E9794
	37	194.3	N15E	50	N9200,E9454
	38	547.2	N15E	50	N8725,9309
	39	645.4	N15E	50	N9831,E9403
	40	237.4	N15E	50	N9828,E10626
	41	215.1	N35E	50	N12254,E11729
	42	172.0	N35E	50	N12493,11691

From Field Report 1991
U.S. Bureau of Mines
Dept. of Interior

From Field Report 1991 by Tracy V.L. Parker
U.S. Bureau of Mines

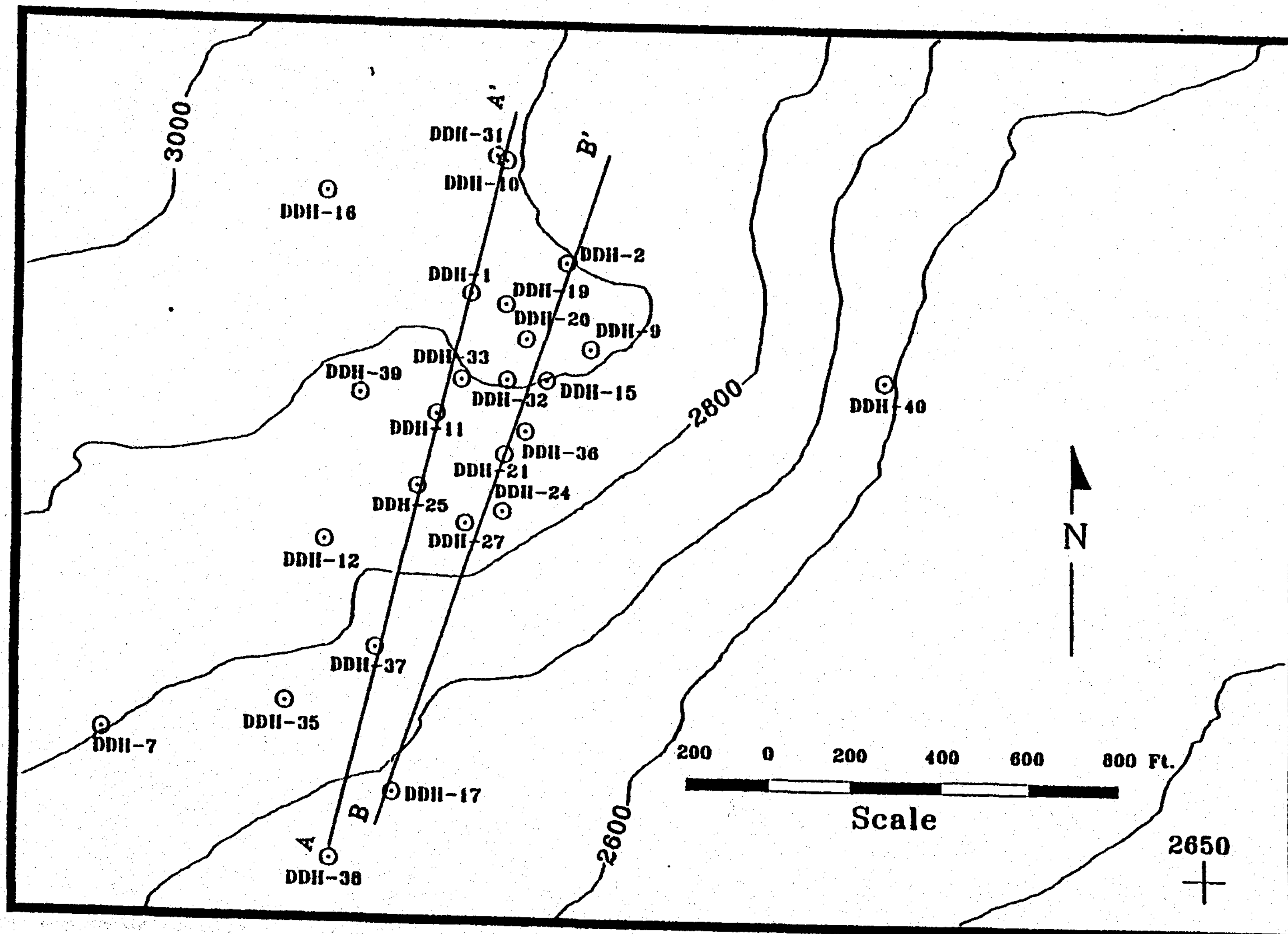

Figure 2. -- Drill hole and cross section location map.

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
EXPLANATION	FOR CORE LOGS
Rock Types	Mineralization
Devonian argillites, graywackes, and conglomerates	Sulfide bearing veins ± cassiterite, quartz, tourmaline, topaz, fluorite, and clay, at the dip indicated
Tertiary granite porphyry, including pegmatitic and aplitic border phases.	Disseminated sulfides ± cassiterite
Tertiary aplite porphyry, including subaplitic and pegmatitic intrusives and dikes.	Quartz-muscovite greisen veins ± topaz and fluorite, at the dip indicated
Structures	Tourmaline veins ± quartz at the dip indicated.
Fault zone at the dip indicated, denoted by fault gouge or slickensides	Disseminated tourmaline.
	Alteration
Broken core resulting from fracturing or faulting, but with no indication of movement before drilling	Silicification associated with sulfide veining, resulting in complete destruction of original texture of host rock.
Orange bar denotes oxidized core	Quartz-sericite alteration; destruction of feldspar phenocrysts and groundmass, with more or less complete replacement by quartz and sericite.
	Sericite alteration; partial destruction of feldspar phenocrysts with replacement by sericite.
	Chlorite alteration; partial to complete replacement of feldspar phenocrysts by dark green chlorite
	Quartz-muscovite greisen alteration, ± topaz, tourmaline, and fluorite.

HOLE DEPTH | CORE RECOVERED | % RECOVERY | INTERVAL | NUMBER

PROPERTY ______ SEC ______ T ______ R ______ STATE ______ DRILL HOLE NO. ______ SHEET NO. ______

SCALE 1" = ______ COORD. N ______ E ______ BEARING ______ DIP ______ COLLAR ELEV ______ START ______ COMPLETED ______ BY ______

Key 1/1

ROCK TYPES & STRUCTURES	AND ALTERATION							Cu	Pb	Zn	Ag	Au	Sn

DDH-1

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Overburden, no recovery

Depth	Rec	Recovery			Sulfide / Sample	Cu	Pb	Zn	Ag	Au	Sn
10.4											
12.4		50									
15.4	1.9										
20.4	1.5	30	20		1200	60	30	[illegible]	2.0	30	200
22.2	0.5	25									
24.8	3.0	77			.4% F						
27.0	3.2	100									
30.4	1.9	85	30	7.9	1201	52	18	100	1.4	10	10
32.1	1.7	100									
33.8	1.1	65			.71% F						
40.4	6.6	100	40	9.4	1202	100	30	[illegible]	2.2	10	88
45.4	4.5	96			.59% F						
48.8	3.3	97									
49.8	0.8	80	50	9.2	1203	58	14	[illegible]	.6	<10	<10
53.1	1.5	96			1.1% F						
58.8	4.5	80									
59.5	0.9	75	60	9.2	1204	100	44	400	2.5	<10	300
62.7	1.7	53									
65.3	2.4	100			1.3% F						
68.9	3.5	97									
69.5	0.5	86	70	9.3	1205	102	74	300	4.4	200	500
78.?		92	80	6.6	1.5% F 1206	100	36	1100	4.2	30	400
83.3											
86.2		63			1.1% F						
88.8											
91.2				6.2	1207	70	22	200	2.2	20	700
92.0											
96.2					1.2% F						
98.1											
100.4	1.0	87	100	9.1	1208	98	72	300	3.0	40	26

irreg. FeOx stained frac @ 35.5-38.8

40.7

irreg. FeOx stained frac @ 44.0-45.4

irreg. FeOx stained frac @ 47

irreg. frac @ 53.1-58.7

irregular FeOx stained frac @ 65.0-65.5

~1/2" wide

irreg. FeOx stained frac @ 73

~1/2" wide

DDH-1 1/3

PROPERTY COAL   SCALE 1" = 10'   COORD. N   E   SEC 11   T   R   STATE   BEARING S14W   DIP -50   COLLAR ELEV 2940'   START 6/21/80   COMPLETED 6/23/80   BY

ROCK TYPES & STRUCTURES | MINERALIZATION AND ALTERATION

DDH-1

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PROPERTY COAL — SCALE 1" = 10' — COORD. N — E — SEC 11 T — R — BEARING S14W — DIP -50 — COLLAR ELEV 2940' — STARTED 6/21/80 — COMPLETED 6/23/80 — BY GEO

Irreg. FeOx stained frac @ 44.0, 45.4

irreg. frac @ 58.1 - 58.7

Irreg. FeOx stained frac @ 65.0 - 65.5

1/2" wide

Footage	Number	Cu	Pb	Zn	Ag	Au	Sn
20.4	1200	60	30	[illegible]	2.0	30	200
30.4	.4% F 1201	52	18	100	1.4	10	10
40.4	.71% F 1202	100	30	[illegible]	2.2	10	88
49.8	.59% F 1203	58	14	[illegible]	.6	<10	<10
59.5	1.1% F 1204	100	44	400	2.5	<10	300
69.5	1.3% F 1205	102	74	300	4.4	200	500
78	1.5% F 1206	100	36	1100	4.2	30	400
89.7	1.1% F 1207	70	23	200	[illegible]	20	700
100.4	1.2% F 1208	98	72	300	5.0	40	36

DDH-1 1/3

ROCK TYPES & STRUCTURES | AND ALTERATION

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PROPERTY CURL — SCALE 1" = 10' — COORD. N — E — SEC 11 T 23 R 12W STATE ARIZONA — BEARING S14W DIP -50 — COLLAR ELEV 2940' — DRILL HOLE NO. DDH-1 — SHEET NO. 2/3 — START 6/21/80 — COMPLETED 6/27/80 — BY

fault bx zone @ 108.4 ...

Feox on frac @ 123.6 @ ...

Feox along frac @ 127.0 @ 15

fault bx zone @ 135.6-137.3 @ 30°

fault bx zone @ 140-141 @ 40°

fault bx zone @ 144-144.5 @ 10°

... centrated along fractures. Greenish ...

Fresh / weathered

DDH-1 2/3

Z.E. DDH 1-C @ 162'

sp-rich min. vein. Also Py & Po.

sp. Po. Py ...

Core runs:

Depth	Run	Rec. %
100.4		
107.3	6.9	100
108.4	1.0	[illegible]
111.8	2.9	[illegible]
116.8	3.7	[illegible]
119.2	2.3	[illegible]
121.4	1.9	86
125.4	3.7	93
127.8	2.4	100
128.1	0.3	100
131.3	2.9	91
135.7	4.2	96
137.4	0.9	53
138.9	1.1	73
141.6	2.1	78
147.2	5.4	96
156.7	9.5	100
166.0	9.3	100
175.2	9.2	100
183.3	8.1	94
189.8	5.0	[illegible]
191.6	[illegible]	[illegible]
193.3	[illegible]	[illegible]
198.3	[illegible]	[illegible]
201.4	2.5	93
[illegible]	[illegible]	92

Samples and assays:

To	Length	Sample No.	F	Cu	Pb	Zn	Ag	Au	Sn
[illegible]		1209	.69% F	126	20	[illegible]	2.2	20	100
120	8.5	1210	.49%	42	4	[illegible]	.4	20	100
130	9.2	1211	.79%	22	4	300	.6	10	5
140	9.4	1212	.7%	52	22	300	1.7	10	100
150	9.3	1213	.76% F	30	2	200	.6	20	100
160	10.0	1214	1.02% F	68	34	500	3.1	20	78
170	10.0	1215	1.2% F	42	34	600	3.8	30	2100
180	9.8	1216	2% F	100	40	150	5.5	50	700
188.0	7.7	1217	1.6% F	62	30	900	6.1	30	700
192.0	4.0	1218	1%	74	300	400	44.6	1500	1800
200.0	7.9	1219	1% F	70	38	[illegible]	3.8	190	300

ROCK TYPES & STRUCTURES | AND ALTERATION

PROPERTY COAL — SCALE 1" = 10' — COORD. N ___ E ___ — SEC 11 T 22 R 12W — STATE ALASKA — DRILL HOLE NO. ___ — SHEET NO. ___ — BEARING S14W — DIP -50 — COLLAR ELEV 2940' — START 6/21/80 — COMPLETED 6/23/80 — BY GEO-BORE

208.5' weathered [illegible]

Pyrite [illegible] P.S. 1-1

Same: Granite porphyry see description above

Qz Py, tour. & Fl

Tourmaline & Qtz w/ 1' zone of diss. Tourm., Py & mag. Feldspars weathered or altered

Qz vein surrounded w/ 1' zone of diss. mag. [illegible]

248.4 EOH.

EOH 248.4

202.8	2.2	92										
212	[illegible]		212	8.8	1% F 1220	88	18	300	1.4	20	300	
212.5	4.6	150										
219.8	7.9	100	220	10.0	2.6% F 1221	200	48	2100	7.7	100	3300	
229.8	10.0	100	230	10.0	1.3% F 1222	92	42	700	2.7	50	53	
232.3	2.6	92										
240.3	4.2	53	240	6.1	1.3% F 1223	100	38	700	2.5	30	600	
240.5	1.9	86										
248.4	3.3	66	248.4	6.9	2.7% F 1224	100	300	800	11.6	40	800	

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3/3

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PROPERTY ___ SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___ BEARING S70E DIP -50 COLLAR ELEV ___ DRILL HOLE NO. DDH-3 SHEET NO. 1 of 2 START 6/26/80 COMPLETED 6/28/80 BY ___

ROCK TYPES & STRUCTURES

Overburden - No recovery

Chert Pebble Conglomerate, Poorly sorted

Fe-stn. gouge @ 37.6'

Dk gry arg.

DDH-3 1/2

MINERALIZATION AND ALTERATION

Thin Section DDH 3-A

py along fract. fillings @ 38'

massive beds ~1/2" thick

INTERVAL	RECOVERY FOOTAGE	NUMBER	Cu	Pb	Zn	Ag	Au	Sn
23.8	6.9	1252	104	22	1400	5.3	100	200
32.7	6.5	1253	100	14	800	5.3	180	31
41.3	8.8	1254	80	4	200	2.0	10	16
47.0	5.5	1255	78	4	100	2.9	10	16
57.0	9.5	1256	66	1	100	16.6	180	100
64.5	3.5	1257	84	2	200	.8	180	19
69.8	4.5	1258	64	1	100	.8	<10	20
78.0	8.1	1259	64	2	400	.8	<10	200
88.0	9.3	1260	60	1	3700	2.9	<10	27
98.0	9.5	1261	104	1	400	4.5	10	100

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ BEARING S70E DIP -50 COLLAR ELEV ____ DRILL HOLE NO. ____ START 6/26/80 COMPLETED 6/28/80 BY ____ SHEET NO. ____

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
100	
110	Thin Section
120	
129	
130	
140	Sections DDH 3
148.8	
150	Thin Section
153.5	
160	
168.2	
170	
180	
190	
200	END OF HOLE @ 201.6'
	EOH 201.6'

HOLE DEPTH	CORE RECOVERED	% RECOVERY
100.8	4.4	102
102.9	2.1	111
106.4	3.4	92
108.9	1.7	68
112.3	3.8	112
113.5	1.6	133
117.5	3.9	98
	2.3	82
121.3	1.0	100
124.9	3.0	83
127.2	1.7	74
128.8	1.5	94
	1.7	100
132.1	2.4	83
135.2	2.3	74
136.7	0.9	60
137.4	0.5	71
138.2	0.6	75
142.4	2.1	50
143.3	0.7	78
	0.2	67
148.5	4.2	98
151.6	3.3	106
154.3	2.5	93
159.6	5.1	96
	0.6	86
163.4	3.2	100
168.2	4.3	90
168.8	0.2	133
174.1	4.9	93
[illegible]	0.8	133
175.4	0.3	43
177.8	3.0	68
184.6	5.5	95
185.4	0.7	88
188.6	3.2	100
195.1	6.1	99
196.3	1.0	83
197.5	1.1	92
198.3	0.5	
199.6	0.7	
201.6	0.8	

INTERVAL	FOOTAGE	NUMBER	Cu	Pb	Zn	Ag	Au	Sn
108.0	9.7	1262	76	4	300	.3	10	4
118.0	10.0	1263	80	1	200	.3	<10	10
128.0	8.5	1264	72	2	300	.	10	31
138.0	8.0	1265	76	1	100	.3	10	8
143.0	2.8	1266	62	4	100	.8	10	5
146.5	3.2	1267	74	1	100	.3	20	10
148.5	2.0	1268	88	1	300	.5	10	100
153.0	4.7	1269	80	1	400	.8	<10	500
163.0	9.5	1270	72	1	300	.8	10	200
173.0	9.5	1271	48	4	100	2.9	10	6
183.0	8.8	1272	74	20	500	10.8	370	100
192.5	9.5	1273	68	12	200	3.7	180	4
197.5	4.6	1274	94	10	500	4.5	10	15
201.6			70	8	200	<1.1	<10	100

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PROPERTY COAL SCALE 1" = 10' COORD. N E SEC 28 T 22S R 12W STATE ALASKA BEARING S70E DIP -50 COLLAR ELEV DRILL HOLE NO. DDH-4 SHEET NO. 1 of 2 START 6/28/80 COMPLETED 7/7/80 BY

AND ALTERATION

14.0	[illegible]	1275	36	[illegible]	700	[illegible]	100	[illegible]
21.7	8.[illegible]	[illegible]	26	10	[illegible]	4.5	100	5
30.5	4.8	1277	36	18	[illegible]	3.7	180	9
40.0	1.7	1278	38	100	[illegible]	[illegible]	180	4
50.0	7.0	1279	38	1	[illegible]	.1	10	2
60.0	[illegible]	1280	46	1	[illegible]	.1	210	3
70.0	10.0	1281	30	1	100	[illegible]	[illegible]	2
71.3	1.2	1282	60	8	100	.4	210	1
71.6	[illegible]	[illegible]	24	8	400	.3	210	10
80.5	9.2	[illegible]	66	[illegible]	[illegible]	11.2	[illegible]	[illegible]
88.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
91.[illegible]	[illegible]	[illegible]	38	4	[illegible]	[illegible]	[illegible]	[illegible]
95.[illegible]	[illegible]	[illegible]	40	6	[illegible]	[illegible]	210	7
100	[illegible]	[illegible]	54	[illegible]	[illegible]	14	[illegible]	[illegible]

DDH-4 1/2

PROPERTY COHL — SCALE 1" = 10' — COORD. N — E — SEC 10 T 22S R 11W STATE ALASKA — BEARING S70E DIP -50 COLLAR ELEV — DRILL HOLE NO. DDH-4 SHEET NO. 2 of 2 — START 6/24/80 COMPLETED 7/7/80 BY

Quartz diorite

DDH-4 2/2

Cov., no weathering out of ...

T.S. DDH 4-F @ 156.6'

EOH 196.6'

101.0											
104.4	3.4	100									
105.5	1.1	100									
106.5	0.3	83									
107.8											
108.6	1.1	83									
110.0		96	110.0	9.1	1289	46	4	200	<.2	<10	4
111.3		83									
114.5		72									
115.5		17									
		75									
119.5		89	120.0	8.1	1290	54	4	700	.1	<10	5
122.9	3.3	102									
124.0	1.7	155									
125.0		80	125.0	5.2	1291	56	12	300	.6	<10	3
			126.0	1.0	1292	64	10	600	.8	<10	2
128.7	3.6	97									
129.8	0.5	46	130	3.3	1293	46	8	300	.8	10	1
132.4	3.4	131									
134.4	2.0	122	134.4	5.2	1294	52	8	100	.4	<10	2
138.1	3.6	97	138.0	3.6	1295	74	100	200	1.1	10	4
140.5	2.4	100									
142.6	2.1	100									
147.4	4.8	100	147.4	9.4	1296	72	22	200	.8	10	3
151.9	4.4	98									
153.7	1.6	89	153.7	6.0	1297	78	28	100	1.5	<10	4
158.8	5.1	100	158.8	5.1	1298	46	4	400	.4	<10	25
161.6	0.7	25	161.6	0.7	1299	100	100	1900	15.4	400	135
163.5	1.5	79	163.5	1.5	1300	64	18	300	1.5	<10	49
165.6	1.6	84									
167.3	1.6	94									
170.0	2.3	85	169.9	5.4	1301	52	12	900	.6	10	100
172.9	0.8	28									
175.3	1.7	71									
177.4	1.8	86	177.4	4.4	1302	74	18	1000	2.6	<10	8
178.2	0.6	75									
179.3	1.1	100									
180.5	1.1	92									
181.7	1.1	92									
184.4	2.5	93	184.4	6.4	1303	48	10	200	.1	10	1
187.5	2.6	84									
191.1	2.0	74									
191.9	0.6	67									
193.2	1.0	77	193.2	6.8	1304	44	8	100	.2	<10	1
196.6	1.5	44	196.6	1.5	1305	34	6	100	.2	<10	4

ROCK TYPES & STRUCTURES | AND ALTERATION

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SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___ DRILL HOLE NO. DDH-5 SHEET NO. 1 of 2

BEARING S60E DIP -50 COLLAR ELEV ___ START 7/3/80 COMPLETED 7/6/80 BY GEO-

4.6	1306	50	[illegible]	52	.1	<10	2
4.4	1307	12	[illegible]	[illegible]	.1	<10	2
5.0	1308	14	[illegible]	200	.1	<10	1
[illegible]	1309	100	[illegible]	400	3.7	10	2
8.1	1310	66	12	300	.6	<10	1
[illegible]	1311	8	[illegible]	26	.1	<10	1
6.9	1312	10	300	200	.1	<10	1
5.0	1313	104	10	1900	.6	<10	1
[illegible]	1314	68	[illegible]	[illegible]	.2	<10	2
[illegible]	1315	100	[illegible]	300	1.0	10	[illegible]
[illegible]	1316	14	[illegible]	[illegible]	.1	<10	1
[illegible]	[illegible]	58	10	400	.8	10	[illegible]
[illegible]	[illegible]	46	[illegible]	26	.4	10	[illegible]

DHH-5 1/2

GMC DATA REPORT 3 2 7

AND ALTERATION

DRILL HOLE NO. DDH 5 SHEET NO. 2 of 2

SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___

BEARING S60E DIP -50 COLLAR ELEV ___ START 7/8/80 COMPLETED 7/10/80 BY GEO. BOEE

201.7 EOH

DDH-5 2/2

PROPERTY COAL SCALE 1" = 10' COORD. N ___ E ___ SEC 29 T ___ R ___ STATE ___ DRILL HOLE NO. DDH-6B

BEARING N70W DIP -50 COLLAR ELEV ___ START 7/1/80 COMPLETED 7/4/80 BY ___

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION

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HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	FOOTAGE	RECOVERY	NUMBER						
11.5												
[illegible]	[illegible]	9										
[illegible]	[illegible]	10										
17.7	[illegible]	38										
20.6	[illegible]	4										
23.[illegible]	[illegible]	15										
26.[illegible]	1.2	52										
28.0	[illegible]	50	23.0	4.6	[illegible]	[illegible]	58	[illegible]	400	4.5	10	3
29.3	[illegible]	92										
[illegible]	[illegible]	62										
30.6	1.0	95										
33.7	1.2	100										
[illegible]	2.5	67										
35.[illegible]	[illegible]	56										
38.6	[illegible]	50	33.0	7.6		1015	96	40	[illegible]	1.0	20	1
41.1	[illegible]	45										
43.2	1.9	68										
47.[illegible]	[illegible]	53	[illegible]	6.0		1016	80	22	[illegible]	5.3	<10	2
50.0	[illegible]	100										
[illegible]	[illegible]	30										
55.0	[illegible]	92	[illegible]	[illegible]		1017	96	8	[illegible]	.7	10	3
58.[illegible]	[illegible]	59										
[illegible]	[illegible]	60										
64.3	[illegible]	97	[illegible]	7.[illegible]		1018	88	4	[illegible]	4.5	20	2
[illegible]	[illegible]	77										
72.[illegible]	[illegible]	100										
75.0	[illegible]	[illegible]	[illegible]	9.2		[illegible]	106	[illegible]	[illegible]	.8	30	9
77.8	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	5.[illegible]		[illegible]	78	8	[illegible]	.8	10	1
[illegible]	[illegible]	97										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	64	1	[illegible]	<.3	10	3
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	68	4	[illegible]	<1.1	10	4
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	96	8	[illegible]	[illegible]	<10	2

DDH-6B 1/2

PROPERTY ___ SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___ BEARING N70W DIP -50 COLLAR ELEV.___ DRILL HOLE NO. DDH-6B SHEET NO. ___ START 7/11/80 COMPLETED 7/1/80 BY GEO

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
[illegible]	[illegible]
160.2' EOH	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	FOOTAGE RECOVERY	NUMBER	Cu	Fe	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	86	17	200	<1.1	107	6
[illegible]	[illegible]	89									
111.7	[illegible]	[illegible]									
[illegible]	12	89									
116.3	2	100	[illegible]	9.1	1025	80	25	[illegible]	3.7	<10	6
[illegible]	1.0	90									
119.9	1.6	80	119.0	3.4	[illegible]	58	30	300	[illegible]	200	7
121.[illegible]	[illegible]	62									
123.0	1.5	83									
124.6	[illegible]	56	[illegible]	3.3	1027	38	2	[illegible]	1.9	<10	2
128.6	2.0	72	128.[illegible]	2.9	1028	102	10	[illegible]	2.8	20	1
131.7	[illegible]	13									
[illegible]	1.9	76									
1[illegible]0.0	[illegible]	61									
135.[illegible]	[illegible]	95	[illegible]	4.6	1029	72	4	200	<1.1	10	2
139.5	2	92									
141.6	1.5	62	141.[illegible]	4.6	1030	44	1	100	1.1	<10	1
[illegible]	[illegible]	91									
148.[illegible]	2.9	93									
[illegible]	[illegible]	[illegible]									
			[illegible]	8.3	1031	86	6	[illegible]	.9	<10	1
152.5	[illegible]	100									
154.[illegible]	[illegible]	93									
160.2	1.7	44	160.[illegible]	6.4	1032	38	1	42	2.8	<10	1

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DDH-6B 2/2

GMC DATA REPORT 3 2 7

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	SAMPLE INTERVAL	SAMPLE FOOTAGE	SAMPLE RECOVERY	SAMPLE NUMBER	ASSAY					
		[illegible]	[illegible]	52										
		[illegible]	[illegible]	108										
		[illegible]	[illegible]	71	[illegible]		6.8	[illegible]	44	1	90	[illegible]	18	9
		[illegible]	[illegible]	105										
		[illegible]	[illegible]	93										
		[illegible]	[illegible]	91	[illegible]		9.[illegible]	[illegible]	48	[illegible]	10[illegible]	[illegible]	9	4
		[illegible]	[illegible]	93										
		[illegible]	[illegible]	100										
		[illegible]	[illegible]	84	[illegible]		9	1055	54	4	100	0.1	6	[illegible]
		[illegible]	[illegible]	94										
		[illegible]	1.9	83	[illegible]		[illegible]	1056	[illegible]	[illegible]	[illegible]	[illegible]	9	[illegible]
		[illegible]	[illegible]	54										
		[illegible]	[illegible]	[illegible]	[illegible]		1	1057	[illegible]	[illegible]	[illegible]	1.3	140	3
T.S.		[illegible]	[illegible]	[illegible]										
		[illegible]	4.5	100	[illegible]		[illegible]	[illegible]	54	14	[illegible]	1.2	3	210
		[illegible]	[illegible]	97										
		[illegible]	[illegible]	98										
		[illegible]	[illegible]	96	[illegible]		7	[illegible]	[illegible]	[illegible]	130	[illegible]	7	52
			[illegible]	95										
			[illegible]	[illegible]			[illegible]	[illegible]	44	[illegible]	145	0.5	10	4
	DDH-7 1/3		[illegible]	94										
			[illegible]		[illegible]			1061	[illegible]	[illegible]	[illegible]	0.5	5	4

SCALE 1" = 10'

COORD. N ____ E ____

BEARING S70E DIP -50°

COLLAR ELEV ____ START ____ COMPLETED ____ BY ____

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	FOOTAGE	RECOVERY	NUMBER						
I				42		7.7			42	24	20	43	81	15
GMC DATA REPORT 3 2 7	Page 17/314			94		8.7		1065		80	135	0.1	7	14
T.S. ... @ 126				89		2.9		1066	43	1300			7	265
				93						54	14.2	0.7	880	31
				27		5.				6	120		33	4
						13.			46		155	0.9		40
						6.8					80	0.4	6	35
	T.S. 7			95				1069	40	106			2.	25
				120						24	295		6	15
	DDH-7 2/3					3.				80			16	30
				96								0.	0.9	15

SCALE 1" = 10'

COORD. N

E

BEARING S70E

DIP -50°

COLLAR ELEV

START

COMPLETED DDH-7

BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	FOOTAGE	RECOVERY NUMBER	Cu	Pb	Zn	Ag		Sn
				100									
				90									
				50		8.[illegible]	1073	66	44	70	0.2	34	15
				100									
				90		9.[illegible]	1074	18	40	80	0.5	86	11
				65									
				105			1075	46	64	60	0.8	117	16
		[illegible]1.8	1.0	78									
	T.S DDH 7-A @ 233			93									
				96		9.7	1076	100	28	110	2.8	325	20
				[illegible]									
				93									
				79			1077	62	18	60	1.3	215	6
	EOH 242.2'												

DDH-7 3/3

GMC DATA REPORT 327

SCALE 1" = ___ COORD. N ___ E ___ BEARING S70E DIP -50° COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

DDH-7

DDH-9

GMC DATA REPORT 3 2 7

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	SAMPLE RECOVERY FOOTAGE	SAMPLE NUMBER	ASSAY					
				86									
				98		8.1	6101034	74	4	275	0.2	97	100
				100 80 92		9.2 9.2	1025	48	12	330	0.1	91	185
				96 100 90		8.8	[illegible]	[illegible]	7	330	[illegible]	23	[illegible]
				102 93 91		9.6	[illegible]	40	[illegible]	435	[illegible]	21	[illegible]
				95		8.2	[illegible]	[illegible]	[illegible]	340	[illegible]	[illegible]	[illegible]
				92 78 100 89		8.7	1037	62	[illegible]	500	[illegible]	25	[illegible]
				98 81		9.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	195	[illegible]
				100 98		5.8	[illegible]	60	12	340	[illegible]	115	[illegible]
				94 102		9.3						67	

1/2

COAL

SCALE 1" = 10'

COORD. N Sec. 21 T22S R12W E

Alaska

BEARING N14E

DIP -50°

COLLAR ELEV

START

COMPLETED

GEO PORF

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	RECOVERY FOOTAGE	NUMBER	ASSAY					
		1[illegible]	[illegible]	93	10[illegible]	4,3	1044	9[illegible]	1	500	0.4	61	27
				94									
				90									
					[illegible]		1045	90	4	3[illegible]	1.1	120	680
				94									
				94									
				100		7,9							
							1046	5[illegible]	4	440	1.1	61	860
				96									
							1047	280	350	3050	16.0	16	1007
				97		3.3							
							1048	58	22	800	2.9	20	7
				100		6							
							1049	50	[illegible]	[illegible]	4.9	22	256
				96									
				96			1050	[illegible]8	134	450	4.8	4	440
				81									
				97			1051	62	96	640	2.6	73	242
						3.9							
				71	[illegible]		1052	[illegible]	2	310	0.6	45	170
	EOH 158.9'	153	143.5	94		143.5							

SCALE 1" = 10' COORD. N ____ E ____ BEARING N14E DIP -50° COLLAR ELEV ____ START ____ COMPLETED ____

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DDH-9 2/2

DDH-9

OVERBURDEN

No RECOVERY

10

[illegible] : GRANITE PORPHYRY
Quartz and K-spar phenocrysts with plagioclase mesocrysts in a leucocratic, fine grained matrix. Tiny, hairlike mafics occur irregularly as less than 1% of the rock.

20

Qtz phenos are euhedral, up to 1/4 in. dia., and constitute the most striking aspect of the rock as quartz eyes.
K-spar phenos are eu-subhedral,

30

lath like and grow to > 1/4 in long. They are off-white in color and often appear banded, or mottled with paler, near colorless bands.
Plag mesocrysts are eu-anhedral,

40

equidimensional, up to 1/16 in dia. They are the first to show alteration, whether sericitic or chloritic and [illegible] give the rock its color.
The matrix is very fine grained

50

to aphanitic.
The hairline mafics [illegible] non-resistant to a very small percentage. They disappear immediately in the [illegible] pervasive oxydation. They often appear to have sulfide components

60

[illegible] microscope and prob. represent disseminations or replacements of tourmaline and sulfides [illegible]
[illegible] in structure [illegible] brecciated zones.
[illegible]

70

[illegible]

80

Guesstimate :
20% qtz
40 % Kspar
20 % Plag
20 % mtx

90

GMC DATA REPORT 3 2 7

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100

AND ALTERATION

KEY TO MINERALIZED FRACTURES
[illegible] is tourmaline ± qtz.
Red is Sulfides + qtz ± Tourm ±Cas
Orange is limonite-stained fractures
YELLOW bar paralleling core indicates pervasively oxidized zones.

11' - 1/3 in veinlet of Asp, Sph (Blackjack) and Po. (1:15:2) Trace Cp.
15' - 3/8" Tourm veinlet w/ xls interior and flood zone exterior.
A solution front is often discernable around oxidized areas. It is deep, indigo blue with traces of sulfides.
Above 30', Rock has faint [illegible] tint due to weak [illegible] of plag.
Quartz veinlets often [illegible] often [illegible] noted in fracture column.
A weak, discontinuous chlorite alt. occurs from 29'-40'.
30' - several tourm veinlets w/ Asp and Po.

MINERALIZED FRACTURE CONVENTIONS
Thickness of line is indicative of width of vein.
Major structural features are aligned dipping to right. Only when features clearly cross-cut these are they plotted dipping to the left. Thus three dimensions are reduced to two, but it is usually the case that major structures do dip in 180° opposite directions.

Small swarm of [illegible] Asp discontinuous to 1/4 in wide Po and Cp w/ Tourm, [illegible]
Tourm in [illegible] injection @55 a Sp, Po, Cp veinlet [illegible] has 3/4" dia. green halo. but [illegible] are [illegible].
60' - Sp, Asp, Po (10:2:1)
Veinlets often accompanied by qtz-ser. gangue in [illegible] zone.
All veinlets are small, [illegible] varying amts of Cp, Asp, Po [illegible]

Asp Veinlet > 1/8" w/ tourm.
Weak sericite alt. makes plag a little bit soft. Chlorite alt makes them very soft.

Veinlet > 1/8" w/ Sp and Qtz-Ser gangue. Nearby Asp, Sp (8:1) in similar vein.

KEY TO ALTERATION
SERICITIC ALT.
CHLORITE ALT.
DIAGONAL BARS SHOW GREATER INTENSITY

Depth			Run	Recovery	Sample No.		
10			10				
19.5 / 20	8.3 / .5	87 / 100	20	8.8' / 10	8101365	125	1.0
29 / 30	7.7 / 1.4	86 / 140	28.4	7.0' / 8.4	8101366	100	0.7
40 / 41	5.8 / 1.1	58 / 110	39	7.4' / 10.6	1367	150	0.6
50	8.7	97	46.4	7.3' / 7.4	1368	1050	1.4
			53	6.3' / 6.7	1369	145	2.3
60 / 61	10 / .7	100 / 70	59.5	6.5 / 6.5	1370	165	2.0
			64	3.9 / 4.5	1371	455	2.3
70	9	100	70	5.8' / 6.0	1372	295	1.1
80	7.2	72	80	7.2' / 10	1373	83	1.4
			87	6.0' / 7	8101374	120	1.9
90	6.6	66	93	4.1' / 6.0	8101451	400	1.6
100	8.5	85	101	7.6' / 7.0	8101452	170	1.2

DDH-10 Coal Creek 1/3

E 1" = 10'
COORD. N ____ E ____
BEARING S14W DIP -50° COLLAR ELEV 2920' START 6/5/81 COMPLETED 6/11 BY ARGILL

...OCK TYPES & STRUCTURES	Depth	MINERALIZATION AND ALTERATION
[illegible] w/ [illegible] Qtz and [illegible] Plag Phenos. - Ac Granulated [illegible] Page 1	100–110	102'- Cass w/ Tourm and [illegible] not sulfides! Two Veinlets. Sericite alt. is variable, weak to moderate, and color is good indicator in hues of pale green. (Structure symbols are too tightly grouped [illegible] [illegible])
	110–120	
LITHIFIED BRECCIA →	120–130	INTENSE Chlorite alt. Plag very soft. Dark Green - black. Some silica veins and chlorite smeared fractures. 127'- Silica Flood 3/4" thick.
	130–140	Cpy, Asp, Po?, w/ Silica (veinlet)
	140–150	Asp, Sp w/ Si + Tourm. diss. in 1 in wide zone. Asp, Po, Sp, Cp? Veinlet w/ Si.
	150–160	Cass, Sp in Qtz gangue 2 veinlets >1/2" wide. Vug filling.
LITHIFIED BRECCIA →	160–170	Several Cass xls <1/3" dia w/ qtz. Asp Veinlet 3/16" w/ Tourm + Qtz
	170–180	
	180–190	DDH-10 2/3
	190–200	Veinlets w/ Asp, Po and Cass? en echelon in 9" wide silicified zone. Biotite flakes.

...LE ...TH	...RE ...VERED	% ...OVERY	...ERVAL	...OTAGE / ...OVERY	...MBER	Sn	F
			101				
110	5.7	57	110	5.0/9.0	810453	1090	2.4
120	8.3	83	120	8.3/10	810454	125	1.3
			125	4.0/5.0	..1455	180	0.6
130	8.5	85	130	4.5/5.0	..1456	1100	1.1
137	6.1	87	136	5.3/6.0	1457	275	2.6
138	1.6	160					
142	2.1	53	144	6.0/8.0	1458	240	1.8
			150	4.1/6.0	1459	220	2.8
152	7.3	73	155	4.3/5.0	1460	390	2.8
			160	4.6/5.0	1461	720	2.4
162	9.3	93	165.5	4.5/5.5	1462	220	0.9
169	4.9	70	174	6.9/8.5	1463	55	0.8
180	11.5	104	179	5.1/5.0	1464	40	0.6
			184	4.6/5.0	1465	27	0.4
190	9.5	95	189	[illegible]/5.0	1466	105	2.9
			195	4.3/6.0	1467	150	3.6
200	7.4	74	200	3.9/5.0	1468	50	0.5

DDH-10 2/3

SCALE 1" = 10'
COORD. N
E
BEARING S14W
DIP 50
COLLAR ELEV 2920'
START 6/5/81
COMPLETED 6/11
BY [illegible]

Depth	OCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	LE TH	RE VERED	VERY	ERVAL	OTAGE / VERY	MBER	Sn	Ag
		[illegible]	210	[illegible]	77	[illegible]	5.1/6.0	8101469	435	3.7
210	GRANITE PORPHYRY W/ QTZ, K-SPAR AND SMALLER PLAG PHENOS. AS DESCRIBED ON PAGE 1.	Veinlets of Sp, Asp, Po in Si, (3:1:2)				214	6.3/[illegible]	8101470	220	3.2
			220	9.4	94		6.8/7.0	1471	85	2.0
220		diss Asp in Si flood >1" wide	230	7.8	78	221 / 228	5.7/7.0	1472	125	1.2
230		TR. Asp w/ Qtz-Ser Veinlet. Sp. w/ Qtz, tiny.				235	5.9/7.0	1473	76	1.3
			240	8.4	84	240	4.0/5.0	1474	220	1.8
240		Sp, Asp (4:1) in Si veinlet	248 / 248	5.2 / .5		249	5.9/9.0	1475	130	1.0
250		Sericite Alt. [illegible] INTENSITY BUT KEEPS GREEN HUE AND SOME [illegible]	259	7.3	73	259	[illegible]/9.0	1476	47	1.5
260			264 / 270	1.7 / 1.1		270	3.1/12.0	8101477	55	1.4
270		270' T.D. DDH-10 3/3	E	N	E					

SCALE 1" = 10' COORD. N E BEARING S14W DIP 50 COLLAR ELEV 2920' START 6/5/81 COMPLETED 6/11 BY ARC

GMC DATA REPORT 3 2 7

ROCK TYPES & STRUCTURES | MINERALIZATION AND ALTERATION

ROCK TYPES & STRUCTURES

GRANITE PORPHYRY Qtz and K-spar phenos with plag megacrysts in fn grn aphanitic mtx. Tiny hairlike dk biotite occur irregularly as <1% of the rock. Qtz phenos are euhedral, smoky up to >1/4" dia.

K-spar phenos are eu-subhedral, lath like, and grow to > 1/4" long. K-spar undergoes replacement in local clay zone, poss. gouge areas (Qtz-Ser, Kaolinization?) the clay is in turn replaced by tourm, itself replaced in turn by sulfides.

Plag is indistinguishable from K spar in hand specimen (except poss. on grain-size basis) and undergoes similar replacement.

The dark minerals when scratched under magnification prove to be composed of fine pale biotite.

Tourmaline composes a significant but variable component of the whole rk. It replaces Fldsps and disseminates to form crystal clusters > 1/4" dia.

Sulfides locally replace diss tourm. to form up to 8% of rock. Sulfide estimates are high in right column. They have value as relative amts only.

OXIDATION is fairly weak apparently due to thorough silicification and consequent porosity reduction.

Silica enrichment is pervasive in this hole. Its presence may be in small or lg veinlets, as fracture fillings, gndmass replacement or near total silica saturation. As Qtz + ser it imparts a pale green to lower altered rk.

Tourmaline is also ubiquitous in this hole, forming veinlets, fracture fillings and wide zones of rich disseminations after Fldsp usually in silicified zones.

COLOR The rock is highly altered and mineralized in pastel colors. Si w/Ser is watery gray to pale green. Si w/ Tourm imparts a dark misty blue hue. Weak oxidation provides shades of orange. K-spar replacement often a vivid yellow, pink, green, or orange when oxidized. The least altered portions are pale green and appear to be the result of weak ser. alt. The fdsps are quite thin; darker green w/Si floods seems to be chloritic altn.

MINERALIZATION AND ALTERATION

2" wide diss. tourm

Po w/Tourm, tiny veinlet

Asp w/ tourm.

Swarm of tourm veinlets tourm diss. w/Si in few places. Clean Si (+Ser?) veinlets in up to 3" wide zones often cross-cut major structural grain

tourm diss

Rusty fractures are often maroon brown, poss. Mn Ox.

Tourmaline is much diss. throughout core. Silica flooding is pervasive as well.

Asp w/ Tourm + Si

Si, Tourm veinlets w/ Cass?

8" tourm + Si flooded zone

tourm and minor Asp diss.

Asp w/ Tourm veinlet

Asp w/ tourm

Po. Sp veinlet

diss Asp

diss tourm some wide zones 3"-4"

Asp w/ Si veinlet <3/16" wide

Sp ?, w/Si veinlets >1" zone w/ one 1/8" fluorite xtal pale violet in color

Tourm + Si veining and diss.

Cass, Sp in qtz gangue

K-spar is replaced by yellow clays. Leaves yellow vugs. Thick diss tourm ~1ft.

DDH-11 1/4

ALTERATION AND MINERALIZATION KEYS ON NEXT PAGE

5	7.4	88		6.6/8.0	8/01478	115	2.0				
8	2.2	73	8								
10	2.7	13.5									
			15	7.8/7.0	8/01479	305	3.0				
20	9.5	95		7.2/8.0	8/01480	93	2.4				
			23								
30	9.8	98	30	7.2/7.0	8/01443	96	1.8				
40	9.8	98	38	7.5/8.0	8/01444	540	3.2				
			43	5.1/5.0	1445	71	1.2				
50	7.1	81		6.2/7.0	1446						
60	9.0	98	58	6.7/7.0	1447						
70	9.1	71	65.5	7.6/7.5	1448	125					
			73		1449						
80	10.1	101	80	6.7/7.0	1450						
88	7.4	105			1551	500		44	12		
			93	6.0	1552	485	2.7	121	14	645	7.1
97	10.9	111	100	9.5/7.0	1553	1680	16.0	250	191	1619	7.1

SCALE 1" = 10' COORD. N E BEARING N 14 E DIP -30° COLLAR ELEV START 6/17/81 COMPLETED 6/24/81 BY

ALE 1" = 10' COORD. N ___ E ___ BEARING N14E DIP -50° COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

OCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
100 GRANITE PORPHYRY w/ Qtz + K-spar PHENOS, HIGHLY ALTERED (SEE PREVIOUS PAGE)	tourm. diss around veinlet 2" wide. Several generations of qtz. xls. in fractures
110	
120 MINERALIZATION KEY Red lines are Sulfide or Cass Veinlets Green lines represent tourm veins and zones Orange lines are oxide coated fracture zones YELLOW bar paralleling cores indicates notably oxidized zones. Blue diamonds denote areas of broken rock.	diss tourm and clay K-spar destruction
130	
140 ALTERATION KEY Silica floods and Veins - Only intense zones are represented because most of core is silicified.	Diss. tourm zone tourm vein 1/2" thick diss tour, soft K-spar
150 K-spar disintigration and replacement by clay, tourm and sulfides. Asso. w/ strong silicification	
160 Weak sericite alteration hardly softens plag. Weak chlorite alteration of plag.	diss tourm.
170	Cass w/ qtz and finely diss tourm + pale violet flurite xl.
180	Strong Silica flood - some dark green vein halos.
190	
200	Strong Si flush w/ dk green vein halos. DDH-11 2/4

LE TH	RE VERED	VERY	ERVAL	OTAGE VERY	MBER						
103			108	7.6/8.0	810/1554	715	3.8	116	19	211	>.1
113	9.8	98		8.1/8.0	1555	1700	10.0	198	46	440	>.1
117	9.3	108	116								
				6.0/7.0	1556	550	9.0	190	101	134	>.1
123	5.3	88	123								
127	1.9	48		4.7/10.0	1557	260	5.8	112	14	122	.05
133	2.8	43	133								
137	3.5	88	138	4.8/5.0	1558	345	6.0	210	11	400	.08
143	5.5	92		7.0/8.0	1559	500	6.8	178	4	140	>.1
147	3.8	95	146								
153	3.4	90	154	7.1/8.0	1560	435	5.1	67	23	135	>.1
161	7.0	88	161	6.2/7.0	1561	68	1.3	75	4	144	.04
170	6.7	74	170	6.6/9.0	1562	125	4.8	175	13	320	>.1
174	4.5	[illegible]	176	6.3/6.0	1563	110	1.8	47	7	160	.02
		96		6.9/7.0	1564	280	5.4	111	24	340	.06
183	8.6		183								
193	[illegible]	[illegible]	197	5.3/6.0	1565	190	6.4	220	69	400	>.1
195	10.0	100	195	5.8/6.0	1566	390	4.7	130	26	625	>.1
			202	6.7/7.0	810367	495	4.4	178	30	440	.04

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
GRANITE PORPHYRY w/ Qtz + Kspar PHENOS HIGHLY ALTERED (SEE FIRST PAGE)	diss tourm >4" thick
	Cass w/ Sp, tourm + Qtz
210	
	diss tourm throughout this zone esp. at end
220	
	Po w/ tourm + Qtz
230	
	Po, Asp, Sp. Silica flood w/ dark green flush.
240	
	251 Cass to 1/4" dia w/ Qtz
250	
	Sp, Asp w/ tourm; Diss tourm zones; Asp w/ Qtz + tourm; Po, Sp veinlets; Blackjack (Sp) w/ Po, sm veinlets — Some pale gr. zones have soft plag. wk ser alt
260	
	262'–265' tourm zone w/ diss tourm disappearing; Po, Cass w/ Tourm in 2" wide zone; Diss Asp, Sp, Po, Cp; Tourm diss. zones; tr. Asp, Sp, w/ Si, tourm
270	
	Sp + Po in Si rich zones; Asp; tourm replaces Kspar in diss.; Sp, Po veinlet 3/16" wide
280	
	Sp, Asp, Po in tourm diss. zone; Diss tourm zones
	Sp, Asp, Po veinlet + diss. Prob replaces tourm replacing Kspar; Asp, Sp, Po (2:2:1) vnlt + diss.
290	
	Much diss. Sulfide
	1/4" Asp veinlet w/ qtz + gangue; >1/8" Sp vnlt.
300	

Interval	Recovery	Sample number						
209	7.3 / 7.0	81 01568	1400	4.6	138	35	1270	.08
214–215	6.6 / 6.0	1569	220	1.2	57	7	280	.08
223	8.0 / 8.0	1570	1010	2.0	89	17	580	>.1
224–231	7.6 / 8.0	1571	1420	4.8	189	20	745	>.1
231–238	6.2 / 7.0	1572	670	1.6	58	7	1060	.04
243–246	6.5 / 7.0	1573	1550	2.2	76	11	265	.08
[illegible]	[illegible]	1574	2320	2.0	63	13	545	.04
[illegible]	[illegible]	1575	1630	5.0	140	31	1480	.06
262	[illegible]	1576	11400	20.0	680	149	5600	>.1
[illegible]	[illegible]	1577	1840	7.4	148	46	3000	.08
		1578	2630	10.0	210	75	2400	>.1
	7.0	1579	2790	11.0	310	81	3500	>.1
299	7.8 / 8.0	1580	1970	9.7	250	140	2150	>.1

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SCALE 1" = 10' COORD. N E BEARING N14E DIP -50° COLLAR ELEV START COMPLETED BY

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
GRANITE PORPHYRY QTZ + KSPAR PHENOS. HIGHLY ALTERED (SEE FIRST PAGE)	Diss. Sulfides around veinlets in varying widths usu several inches
310	1/4" Asp w/ Qtz + clay; 1/4" vnlt w/ purple iridescent sp, + qtz + tourm
320	diss tourm; diss sulfides w/ tourm; Wkly diss. sulfides
330	diss tourm + sulfides; strongest diss to 8% sulfides
340	diss sulfides more localized do not accompany every veinlet
	diss zone 6" wide; Chlorite alteration? 345'-375' darker green but fdsps quite hard.
	1/4" sp Vnlt w/ Po, Asp + diss zone.
	1/2" Vnlt w/ Asp, Cass. xls. Thouroughly diss. between two lg. veinlets; 1" Vein w/ Asp in Qtz. Green clay gangue + Cassiterite
	Much diss. sulf. Cass xl > 1/8" dia in rusty zone
1" wide dikelet - fn grn qtz, kspar, musc. porphyry. Aplitic w/ tourm. Dikelet reoccurs smaller and lower down	1/4" Asp Vnlt - no diss. Biotite appears in core, @ trace amts. usu altered, sometimes euhedral.
Biotite intraceamts in bottom core.	
400	diss tourm and sulfides 3" zone

Sample						
8101581	1130	5.8	105	92	1490	>.1
1582	1550	8.2	139	81	730	>.1
1583	125	2.7	60	37	425	.04
1584	1250	5.9	186	37	1320	>.1
1585	810	8.0	220	139	1280	>.1
1586	250	3.2	60	47	600	.06
1587	630	7.6	190	47	1500	.07
1588	1590	5.3	77	40	2200	.07
1589	750	12.0	330	110	3300	>.1
1590	2130	16.0	330	187	4000	.08
8101591	245	8.0				
1592	28	1.6				
1593	28	0.5				
8101594	235	0.8				

SCALE 1" = 10'
COORD. N
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BEARING N14E
DIP -50
COLLAR ELEV
START
COMPLETED
BY

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TD 405' DDH-11 4/4

ROCK TYPES & STRUCTURES | AND ALTERATION

SCALE 1" = 10' COORD. N ___ E ___ BEARING N14E DIP -50 COLLAR ELEV ___ START 6/24/81 COMPLETED 7/?/81 BY Aretz

GMC DATA REPORT 3 2 7

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GRANITE PORPHYRY

Qtz and Kspar Phenos with Plag mesocrysts in fine grained matrix. Biotite is small but constant percentage and muscovite occurs irregularly. Qtz phenos are euhedral variably smoky, to > 1/4" dia.

Kspar phenos are eu-subhedral lathlike, and grow to > 1/4" long. Kspar is replaced in local areas. Plag mesocrysts are eu-anhedral equidimensional, up to 1/16" dia. They often show color susceptibility to wk qz-ser alt. giving the rock a basic green color.

Biotite occurs in tiny, hairlike plates. Muscovite usually occurs near stronger alteration zones.

Rock is mod. altered and mineralized.

KEY TO MINERALIZED FRACTURES

RED is sulfides and/or Cass (rare)

[illegible] is tourmaline

ORANGE is limonite stained fractures (± Mn)

YELLOW bar paralleling core indicates pervasively oxidized zones

KEY TO ALTERATION

Weak, ubiquitous, Quartz-Sericite alteration. In parts, green color to less altered core (Diog. bars more intense)

Weak Chlorite alteration confined to small patches and fault zones.

Siliceous alteration

Kspar → clay alteration

ALTERATION DETAILS ON PG. 3

PERCENTAGE SULFIDE ESTIMATION

Sulfide percentages have been estimated for each sample interval. The first range of figures estimates the variability in the amount of diss. sulfides - discounting veins. The second figure estimates the average percentage in that interval including veins. The estimates are meant to be relatively significant, not absolutely. The numerical estimates are certainly too high, especially for low percentages.

5" zone of sulfides in Secon. Kspar → clay zone. Diss. patches of Si and sulfides in blebs and spiderweb networks. 14.5' 3/16" Sp, Po (Si:1) vnlt w/ Si + tourm

thoroughly Silic. xenolith 8"

>1" wide Kspar repl. zone. Si-Slfd webworks.

Si-Sulf webworks.

Mineralized fracture Conventions: thickness of line is vaguely indicative of width of vein. Major structural features are aligned dipping to right. Crosscutting features, at any significant angle, are aligned dipping to left.

Si-Sulf webworks

tr. Po

Si vnlts w/ tourm + Po. Si-Sulf webwork

Si-Slf webworks

Si-Sulf webworks

Po vnlts subll to core

Sample						Values		
7601	14	[illegible]	[illegible]	14	6.0	370	1.0	
7602		4.2	73	20	4.7 / 6.0	145	0.2	
7603	22. / 24	2.5 / 6.6	1.0 / 94	30	10.0 / 10.0	355	0.3	
7604	31 / 34	27	90	40	[illegible] / 10.0	490	0.3	
7605	44	9.9	99	50	9.8	54	0.2	
7606				60		160	0.2	
7607						36	0.2	
7608						39	0.6	
7609		3				[illegible]		
7610	96.5 / 97.3	9 / 3.3	9 / 20	100	9.6 / 10.0	70	0.2	

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ROCK TYPES & STRUCTURES | AND ALTERATION

GRANITE PORPHYRY
- QTZ-KSPAR PHENOS.
Moderately altered
(See first page)

110

Sulfide content of GRANITE is <<1/2% with exception of silica sulfide webworks which are volumetrically insignificant

120

DARK GREY ARGILLITE HORNFELS
Veinlets of qtz, tourm and sulfides occur with a frequency similar to that of the surrounding granite.

130

CLAY GOUGE, PROB. FAULT →
A 7" vein of Cp, Po, Sp w/outlying Asp. in qtz is unique. Fdsp. is recrystallizing in the fabric along some Si veins. (Little diss. Po.)

140

142'-144' 2' highly assimilated xenolith.
GRANITE PORPHYRY
Qtz - Kspar PHENOS / AS ABOVE BUT

150

STRONGLY ALTERED!
The character of the granite is different on either side of the 18' hornfels xenolith. (separating wall?) the lower granite is

160

more silicified and mineralized than the upper. Kspar → clay, chloritic alt. and diss sulfs. are more common in the lower section

170

180

190

200

Alteration notes:

Si-Sulf webworks. Vy. white granite, may be that this section is spared the weak pervasive qtz-ser alt.

40% of Kspar altered to yellow clay(?) but has not been removed as in other Kspar replacement zones.

Asp w/ tourm + qtz

2" wide cp, po, sp, Asp vn in 3" of qtz gangue (10:7:5:1)

0-2% sulf. <1/2%

Po, Cp, Sp, Asp w/ qtz + tourm
Weak chlorite alteration

tourm w/ Kspar → clay along vn

Po around tourm vn w/ kspar → clay

Po + Sp in qtz.

Cs tourm + qtz w/ Po. Silica flood surrounding w/ Kspar → clay

169'-171', 6-8% diss sulfides after clay fed in silica zone Po, Sp, Asp (10:2:1)

tourm + Po replacing Kspar along tourm vnlt
Asp Sp, Po (1:1:1) around tourm vnlt in Kspar → clay zone

Cs tourm / Asp vnlt <1" wide

Sp, Asp, Po, qtz vnlt >1/2" (3:1:1)
Po vnlt ll to core in fully diss tourm core

Cs tourm w/ Asp + Po 1/2" wide

Section Kspar → clay w/ tourm and Asp.

					Sample		
113 / 118 / 120	1.6 / 4.8 / 1.6	115 / 96 / 80		11.0 / 11.0	7612	5	0.2
123 / 125 / 128	3.0 / 1.7 / 2.2 / 2.6	100 / 85 / 107 / 87	121 / 130	8.9 / 9.0	7613	70	0.2
131 / 139	5.8	93	139	7.5 / 9.0	7614	600	500
143	6.7	112 / 93	146	6.8 / 7.0	7615	56	0.7
		104		6.9	7616	30	0.2
		94	160	6.3 / 7.0	7617	43	2.0
	7.9	93		6.9 / 7.0	7618	36	3.0
	10.0	100	177	7.0	7619	375	7.8
					7620	850	13.0
		98	194	6.3 / 6.0	7621	120	2.6
196			200	6.1 / 6.0	7622	400	2.1

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SCALE 1" = 10' COORD. N ___ E ___ BEARING ___ DIP ___ COLLAR ELEV ___ START ___ COMPLETED ___ BY ARCO

SCALE 1" = 10'
COORD. N ___ E ___
BEARING ___ DIP ___
COLLAR ELEV ___
START ___ COMPLETED ___ BY ___

Rock Types & Structures

200

GRANITE PORPHYRY w/ Qtz + Kspar phenos. STRONGLY ALTERED (SEE PREVIOUS PAGES)

210

ALTERATION PATTERNS

QTZ-SERICITE: The core has an ubiquitous green hue in lesser altered portions. This is assumed to indicate pervasive qtz-ser. alt. Few feldspars are soft however so the alteration is weak.

220

CHLORITE: This occurs in very limited zones, and along faults. It makes plag dk green-black and very soft.

230

SILICA: All the core is silicified to some extent as per qtz-ser. above. Stronger silicification is implied by siliceous alteration. Silicification occurs as heavy qtz veining, silica flooding,

240

silica permeation and replacement and as a siliceous web-like network containing finely diss. sulfides. The Si-sulf webworks are usually independent of veinlet control. They occur as insidious

250

impregnations which snake into the cleavages and fractures of qtz and feldspar and infiltrate between and thru mineral grains. They are composed of Si w/ Po mostly and

260

Asp + Sp. The possibility of gold has been raised.

KSPAR → CLAY: Usu. asso w/ Si floods, these are areas of Kspar replacement by clays. Commonly the clays are subsequently replaced by tourm or

270

sulfides

Between 271.7' and 286' - 10 feet of core was ground and lost. Exact footage uncertain.

280

290

Crumbled rock, clay-chlorite altered; Weakly consolidated fault breccias - FAULT ZONE 290'-303'

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300

Alteration

- Qtz flood around tourm vnlt
- tourm diss around vnlts, 1" wide
- Asp w/ Cs. tourm >1/4" tiny Po vnlt.
- Wkly diss Po w/ Si + tourm
- Po w/ tourm 1/8"
- Yellow sericite-clay alteration not replaced further. Po vnlt.
- tiny Asp vnlt.
- Bt Sp w/ tourm + Si
- Asp w/ tourm
- Po, Sp w/ tourm + Si <1/4"
- Sp + Po w/ tourm
- Sp + B >1/4"
- sheet like Po on fractures
- tourm, Sp, Po in <1/8" vnlts
- Silica flood w/ Asp, Sp (8:1)
- Sp, Asp, Cp <1/8" vnlt
- Po sheets in tiny fractures w/ tourm
- Sp, Po, Asp <1/4" vnlt (4:2:1)
- Sp vnlt <1/8" w/ tourm diss.
- CHLORITE ALT.

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Sample Data

From			To	Recovery	Sample No.		
20[illegible]			210	9.3/10.0	117623	49	1.0
214; 218	10.0; 4.1	100; 103	220	10.0/10.0	7624	250	1.9
224	5.7	95	230	9.3/10.0	7625	490	0.9
234	9.1	91	240	9.5/10.0	7626	700	1.5
243	9.1	[illegible]	250	9.8/10.0	7627	990	4.3
[illegible]	[illegible]	[illegible]	260	9.6/10.0	7628	780	4.7
263; 265; 270.9	9.7; 1.9; 3.6	97		11.1/11.7	7629	115	4.5
271.7	.8		290		7630	90	2.5
294; 301	7.7; 6.6	9[illegible]; 94	300	9.0/10.0	117631	21	1.2

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AND ALTERATION

GRANITE PORPHYRY
QTZ - KSPAR PHENOS
STRONGLY ALTERED
(AS PAGES 1+2)

140' Unusual texture to rock, perhaps tour banded. Minerals are segregated + swirled to give an impressionistic feeling of motion. Feldspars are semi-soft, and wholly anhedral, laced w/ qtz veins and rare sulfide blebs, becomes ordinarily silicified down hole, but pattern recurs @ 347-348.

369' 4" of sandy mud?

Depth	Description	From			Sample		
300–310	tour, qtz, sec. kspar → clay 1/4" wide; Asp, Sp < 1/8"	310	5.8		817632	61	3.6
310–320	Sp + po < 1/8"; Pow/Sp + qtz < 1/8"; Wk chl alt zone; Asp w/ Sp + Po in Si flood zone w/ Si-Ser zone carrying sulfs.	316	5.3		7633	515	2.5
320–330	Sp, Po, Cp in veinlets thru-out interval, Asp too; Kspar → clay ± tourm; Diss tour + Sulfides	324	7.7	96	7634	315	7.1
330–340	Qtz → Si + Po - even qtz is replaced by sulfides; thick tourm diss. 336' Diss includes Cp, Po, Asp, Sp w/ tourm. and Kspar → clay remnants (3:2:2:1)	334			7635	520	31.0
340–350	tourm w/ minor sulfides; Asp + tourm < 1/4"; Asp, Sp (2:1) < 1/4" w/ Po vnlt nearby.	34?	9.7	112	7636	63	2.0
350–360	Diss tourm around Sp, Asp, fluorite veinlet. Fluorite has inclusions of tourmaline laths; Sp, Cp, Po (4:2:1) 3/16"				7637	425	2.2
360–370	Sp + Po (3:1) < 1/2" wide No diss. Kaolinization leaves vugs where clay is gone and not replaced; Cs tourm + Po crosscut by fr. tourm; Sp + Po (6:1) < 1/2" wide w/ diss zone 5".				7638	190	5.2
370–380	Sp, Asp (4:1) w/ secon. Kspar → clay and tourm/qtz; 379' Cass? w/ tourm + qtz + secon kspar → clay				7639	95	1.2
380–390	Sp, Po, Asp, Cp (5:1:2:4) in vnlt + wkly diss.; Sp + Po w/ qtz; 386' 7 1/2" wide vn. w/ Fluorite xls, tourm, qtz, Sp + Secon. kspar → clay; Sp < 1/8"				7640	675	2.4
390–400	Diss tourm + Sulfs; tourm Asp, Po 1/2" wide + / diss round about; Sp, Asp, tourm in qtz + Kspar → clay; qtz partially replaced by sulfides	398			817641	1545	1.2

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LE 1" = 10' COORD. N E BEARING DIP COLLAR ELEV START COMPLETED BY

Depth	ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	NUMBER		
400–410	GRANITE PORPHYRY - Qtz - KSPAR PHENOS STRONG - MOD ALTERED (SEE PAGES 1+2)	Asp, Sp w/ KsQtz surrounded by white and gray Si envelopes Sp, Asp, Po (3:3:1) >1/8" Diss tourm 3" Sp, Asp, w/Po diss outward	817642	1625	2.8
410–420	418'-422'	qtz w/minor sulf crosscutting tourm disseminations 418-422 diss sulfides in	7643	535	1.8
420–430	Bleached zone contains highest sulfide and cassiterite values yet noted.	Kspar→clay zone w/cass: poss diss also(?) Asp, Sp, Cp, Po (5:3:2:1) >1/8" wide	7644	2000	3.1
430–440		Fn-Cs tourmaline vnlt fills 0-1/8" Si flood grading from cs-tn outward. 435' Cp+Sp w/qtz and olive green clay. 1' Si zone w/10% Sp tr. Cp.	7645	1520	4.2
440–450	Slickensides - Sn fault →	Si-sulf webwork, Si tourm floods w/tr salf. Sp, Cp, Po <1/8" (2:2:1)	7646	92	1.4
450–460		Po sheet on frac. tourm w/tr Po Cp+Sp <1/8" w/qtz + diss tourm Sp, Cp (6:1) w/clay+qtz >1/8"	7647	825	1.5
460–470		w/ diss tour zone 3" w/Fluorite Sp, Po <1/8" w/diss tourm	7648	315	1.1
470–480		Sp, Asp, Po (3:4:1) in 1/4" vnlt w/ Si vnlt cross cutting Fl, Asp, Sp. w/ silver, metallic unknown (tetra?) in qtz w/diss. tourm Sp, Po (2:1) 1/8"	7649	590	3.9
480–490		Cp+Sp (1:1) Cp gives blue tarnish to Sp Sp (w/Si-Sulf network) <1/8" Sp, Asp w/Cs tourm+qtz <1/4" Asp+Po injected w/Si along trellis frac network	7650	370	3.2
490–500		Diss. tourm 8"	817651	490	2.4

SCALE 1" = 10' — COORD N — E — BEARING — DIP — COLLAR ELEV — START — COMPLETED — BY

DDH-12 5/9

SCALE 1" = 10'

Footage	Rock types & structures	Mineralization and alteration	Sample		
500–510	GRANITE PORPHYRY QTZ – KSPAR PHENOS STRONGLY ALTERED (AS PAGES 1 + 2)	Po w/Si – pinches out Sp, Po w/Cs tourm in 5" Si zone Asp diss to extremities Po w/Si 50° Asp w/Si < 1/4" Vnlt + diss Sp in Si flood.	817652	60	4.9
510–520	Finger dikelet 1/2" wide Qtz Bio porph, No green color	Po diss w/Si Cp vnlt < 1/8" tiny Sp vnlt. Sp Swarm of Asp Vnlts to 1/4" wide Po w/Si	7653	120	0.5
520–530		Asp in qtz, some Po subll to core tourm vnlt + diss w/Si Po sheens on fracs.	7654	46	2.4
530–540		Po sheen on frac cross cutting vnlt swarm w/ po, Cp, Asp. Po in tiny fracture swarm	7655	26	0.3
540–550	Dark Greenish black shear zone, 3" wide Small fault, crosses local structure	tr. Asp, Sp in Qtz-tourm vnlt. Sp, Po, Asp vnlts > 1/8" + < 1/8" Diss tourm < 2"	7656	130	0.6
550–560	Finger dike, Qtz bio Porph – No green color	Po on fracs Wkly diss Py Asp w/tourm along frac swarm Wk sulfs mostly tourm diss in strong Si flood w/Kspar destruction Diss tourm < 2" w/Sp	7657	105	0.7
560–570		Cp, Po vnlts < 1/16" w/Si halo Sp w/greenclay + qtz Asp w/qtz + Po tiny Po Vnlt in Si flood 2" wide	7658	535	1.4
570–580		Asp w/Si, subl to core often Sp, Po, Cp < 1/4"	7659	465	1.7
580–590	Finger dikelet (as above) 1/2" wide two finger dike 1" wide	Sp, Po (2:1) < 1/4" Sp, Po < 1/16" Sp, Po, Cp < 1/4" Light silicified core w/ Cs. Sulf diss. + tourm	7660	615	4.2
590–600	branching dike (as above)	Asp, Cp vnlt w/qtz < 1/4" Dk silicified core w fine diss sulf. Asp w/Si, low angle Asp w/Cp in Si – diss also w/Sp	817661	285	1.2

Side margin fragments: 10.1 / 10.0; 9.7 / 10.0; 510; 530

COORD. N____ E____ BEARING____ DIP____ COLLAR ELEV____ START____ COMPLETED____ BY____

DDH-12 6/9

GMC DATA REPORT 3 2 7

ROCK TYPES & STRUCTURES | AND ALTERATION

SCALE 1" = 10'

Depth	Rock types & structures	Structures and alteration	Sample		
600–610	Dikelet 2" wide w/ 1/4" dikelet parallel Qtz-bio (As below)	Asp w/ Si in poorly defined vnlts. Po, Sp, Cp w/ qtz < 1/4" + diss. Po sheen on frac. Po on fracs	817662	285	0.7
610–620	GRANITE PORPHYRY. QTZ-KSPAR PHENOS STRONGLY ALTERED (SEE PGS 1 + 2)	Diss Po, Asp, tourm. Aplitic mass of lite green qtz-ser w/ Asp + tourm facing missing section. Diss Sp, Po, Cp Asp - discontinuous (Sp, Asp, Po ≈ 1/4") 612'–616'	7663	860	7.7
620–630	Dikelet >1/4"	Po sheet on frac + Asp w/ Si. Fracture info. is deceptive. tourm is still common and prob. lends dark color to core. Sulfides are poorly confined to fractures and thus much disseminated. Consequently - fracture mint. will not be confined to more significant veins from here down.	7664	71	0.3
630–640		Sp, Asp, Po, tourm, qtz < 1/8"	7665	90	0.9
640–650	Dikelet? 3/4". Dikelet 1/4"	Asp >> Po in Si, 1" band of pink alt. (> 1/4" x 1) Cs tourm in white qtz w/ Cass. Asp, Po + Cp diss outward. Clusters of Pyrit-hedrons included remnants of pyrrhotite	7666	325	1.8
650–660	Dikelets 3" + 1"	Asp w/ Si. Sp, Po, Asp, tourm, Cass. (Siliceous Alt weakening) Sp, Cp < 1/8" Asp + Musc w/ Si + tourm	7667	52	0.2
660–670		Asp w/ Si. Asp w/ tourm	817668	30	0.4
670–680	Much Biotite. 4" chlorite alt? →	Po w/ tourm + Reddish, resinous min. common in veinlets (Looks vaguely like Cass, but is softer) Asp + Cs. tourm in Cs Qtz w/ cass.	7669		
680–690	Qtz-bio Dike 1' thick (alteration of upper side may post-date dike). Qtz-bio Dikelet 2.5" w/ blue Si/tourm (?) rndo	Sp, Po, Asp Vnlts < 1/4" cut by smaller Asp @ low angle. Asp in Si 1/n 1/2" clean. Sp, Po, tourm 1/8"	817670		
690–700		3' zone of diss tourm + sulfs. in Kspar → clay. Po 1/8". Asp Vns. Cp on fracs.	817671	DDH = 12	

694 6.4

710

7/9

BY Arch.

GMC DATA REPORT 3 2 7

AND ALTERATION

Footage	Lithology	Mineralization and Alteration	Sample
700–710	GRANITE PORPHYRY QTZ-KSPAR PORPH STRONGLY ALTERED (AS ABOVE)	Asp w/qtz + green clay (Very colorful alteration) to 720"; Asp w/qtz; PotAsp w/Si	8117672
710–720		Cass qtz + yellow clay Asp, Py (1:4); Asp w/Si ∥ to core; Dark Musc. rich vnlts.	7673 (10.0/10.0)
720–730	aplite porphyry → subhedral-anhedral qtz + k.fld phenos in subaplitic groundmass	Po, Sp (8:1) <1/8"; Po, Sp (1:1) <1/8"; Po, Sp (2:1)	7674 (/10.0)
730–740	Qtz Porph with minor fdsp + Biot. phenos. Biotite microgranite intrudes qtz porph. 10% qtz, 15% anhedral Fdsp, 8% Biot at <1/8" dia. Aphanitic siliceous mtx.	Bright yellow-green kspar Alt. 1" wide Cs Qtz w/Py + Po; Diss Sp Asp, Cp, Po, Cass !?	7675 (9.2/10.0)
740–750		Py Sp Qtz + Green clay; Cs. Cass. Asp, tourm, >1" w/diss inc Cp + Po, Sp.; Asp Cp, Po, Sp w/tourm + qtz ≥1/2" (2); Sp + Po in Kspar → Sulf diss (<1/4")	7676
750–760		Pink band <1/4" w/Po + Asp; Qtz + Py 1/2"; Sp, Po w/green clay 1/8"	7677
760–770	Biotite granite - subequigranular qtz-k-spar-plag granite w/access. biotite ~3% and musc. ~ ±2%	Musc. Vnlts w/wk diss. (small)	7678
770–780	1/2" dikelet fngrn Qtz, Biot Gn (No Relation to Miner →)	Asp, Qtz, Po > 1/2"; Sp, Cp, Po, Asp (10:5:3:1) >1/8"	7679
780–790		Po, Musc, clay 1/8"	7680
790–800		Cass, epidote in qtz vnlt. Py, Po Asp, Sp diss; Qtz, Asp, Po, Cass, Sp Py Cp	8117681

COORD. N ___ E ___ BEARING ___ DIP ___ COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

DDH-12 8/9

GMC DATA REPORT 327

AND ALTERATION

800

Bit vnlt? - inclusion/xenolith?

(Qtz-Kspar) Biot GRANITE
(SEE PREVIOUS PAGE)

Po, Py, Cassiterite, qtz > 1/4"
Sp Py Po qtz < 1/4"

Dark musc. vnlts
Sp, Py, Asp (3:1:1)
Py, Sp < 1/8" (Green alt)

8117682

810

7683

820

Asp, Po, Sp, Cp, Bn, Cs qtz, tourm
yellow clay

7684

830

7685

840

7686

Asp Py Cp? ≈ 1/4" in Qtz

850

Po, Cp < 1/8"
Epidote Vnlts? w/ Dk Musc
(Bright, lt. green)

Asp + Py in qtz

7687

860

Clay GOUGE 1/4"-1/2" - Sm. fault.

Yellow Kspar → Clay @ fault
and in Vnlts nearby

8117688

870

874 T.D.

DDH-12

9/9

COORD. N
E
BEARING
DIP
COLLAR ELEV
DRILL HOLE NO.
START
COMPLETED
SHEET NO. 10
BY

ROCK TYPES & STRUCTURES | AND ALTERATION

OVERBURDEN
No RECOVERY

32

Biotite Granite
Med Grn-subequigranular
Qtz < 1/4" dia
Kspar laths to > 1/4"
Biotite flakes to 3/16" long
Plag < 1/8", equidimensional

ESTIMATE · 35% Kspar
30% qtz
25% plag
5% biot

5" fn grn dikelet - Aplite wkly porphyritic
ITES < 1"

No Mineralization
No Alteration
No OXIDATION
No Rusty fractures

Highly Wtrd - often friable, top to bottom of hole

Very few fractures as noted.

Fdsps are changed to white clays, This is attributed to weathering since the biotite is fresh and the condition of fdsps is unvarying

8117689 ↓

7690

7691

7692

8117693

DDH - 13 1/2

SCALE 1" = 10' COORD. N ____ E ____ BEARING S45E DIP -50 COLLAR ELEV ____ START 7/21/81 COMPLETED 7/23/81 BY [illegible]

ROCK TYPES & STRUCTURES | AND ALTERATION

DIKE, QTZ - BIOT PORPHYRY
HARDER THAN HOST
CO-MAGMATIC
Vy. Fn. GRN. MTX, Phenos <1/8"

BIOT. GRANITE
AS PREVIOUS PAGE

DIKE AS ABOVE, Vague Boundaries

Dark musc. rich fracture parallels core.

clay rich fracture ll to core (Similar to above) w/musc

Rock gets gradually harder with depth, but never achieves much hardness.

Green chlorite-clay frac sub ll to core.

8117694
7695
7696
7697
7698
7699
8117/10.0
8117/8.99
7/12900

196 | 24 | 80 | 196 | 9.0

196'. T.D.

DDH-13 2/2 Recovery = 72.6%

1" = 10'
COORD. N
E
BEARING
DIP
COLLAR ELEV
START 7/21/81
COMPLETED 7/23/81
BY Arctis

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GMC DATA REPORT 327

... ALTERATION

1" = 10'

COORD. N ___ E ___ BEARING S93E DIP -70 COLLAR ELEV ___ START 7/24/81 COMPLETED 8/1/81

SYMBOL CONVENTION
BEDS DIP TO RIGHT, Veins dip to left.

OVER BURDEN, C+D SOIL LAYERS, NO MEANINGFUL RECOVERY

DarkGrey-Black ARGILLITE w/green siltstone interbeds to several inches.
Structures commonly convoluted altho they retain general 40°-50° dip orientation.
Fractures w/tiny offsets are common.
25' Chlorite lithified breccia - old fault
27-31' neatly bedded arg in shales of grey w/some po + qtz rich beds. 50° dip
OFFSET BY sm Fault, 3/4"

35' Green siltstone w/ qtz + po.
' lenticular, uneven bdding of grey arg w/ Po and little qtz.

46' ARGILLITE begins to become much more cherty. CHERTY ARGILLITE
' chert-clay stringers along bdding look like dewatering structures.
' set of small fracs w/offsets to 1/2"

m Pure Chert beds < 1/2", beige.

hert % increases to become still more common. Chert beds more common also.

-95' Less chert - arg more - clay.

-97'
hert beds in pastel colors, pink, green, beige.

Po is > 1% of rock commonly it is often concentrated in sm beds to > 50%

19' po rich bds > 5%, 1" Fractures and blebs nearby are py, prob remobilized.
22-24 green siltstone mostly w/small po Py fractures.
25' po in Fault zone < 5% total w/Chl.
28' Po speckles and qtz/py vn

30' Massive Po lentile 1/4" above speckled po bds 1/4" 20%. Both offset by sm faults
32' Po + qtz rich beds < 1/2" to 30% w/qtz veins cross cutting
36' chl-clay bd 1" w/ 5% po
38'-43' Remob. Po + qtz vns.

44' Po + qtz in beds partially remob. into cross cutting vnlts. Po 5% over all
47' Qtz rich bd? w/clay chl vein splays.

50' Stratiform green clay + Po to 10% Po in discreet 1" wide zones.

56' Qtz + Clay-chl bd w/Po blebs cross cut by Qtz + chl veins
58' 10% Po in 1.5" lentide.

Qtz, clay-chl + Po vein < 1/4"
64' 10% Po in 4" bd
Green clay veining is common in tiny swarms

73' Po beds < 1/4" (several) to 40% Po
Po content consistently strong - 1-3% finely diss overall
77' Po bds < 1/4" as above

80'-82' 8" 3" green clay beds + vns

Po bd < 1/8" - lenses out
few Qtz blebs + vns
Speckled Po bd 3/4" > 15%
Po bd > 1/4" pinches out

Sample	Assay
7801	
7802	
7803	
7804	
7805	
7806	<5
7807	<5
7808	<5
7809	<5
7810	<5

DDH-14 1/4

AND ALTERATION

Description	Depth	Notes	Sample	Assay
... gray argillite ... Qtz + Po common as beds + vns. Chert less common than previous		... Multiple faults ... jumble of ... Po rich beds (to 25%). Small offsets (inches max) - 104' qtz vns - 101' Po + Py in qtz	8117810	<5
Greenish Rhy porph. Euhedral qtz eyes - Anhedral Kspar to 1/8"	110	qtz vns w/ sm py blebs		
No contact effects in either material - Drillers noted clay boundary (?)		Rhy. is fresh, unaltered - Fdsps are hard. Py vnlts w/sheets into cross fractures	7811	40
CHERTY ARGILLITE Convoluted bedding		Qtz vn < 1/8". clay chlorites // to + ⊥ to bdding	7812	29
Dip of bedding is shallower - 70° to core axis is average.	120	chy bd 3" w/ remob qtz + clay chl ... CROSSCUTTING		
...t bds. 3/4" thick and lenticular near po pods →		Lenticular pods of mass Po. > 1/4" thick. 2" bd > 10% Po (near chert beds). Uneven Po rich bds to > 1/2" > 20%	7813	<5
...hlorite lithified breccia zone 5" - old fault	130			
LESS CHERTY - LESS Po SINCE FAULT. Bedding diff. to distinguish except where there are weak chert beds.		136' Po bed < 1/4" lenticular. Po ≈ 1% finely diss. often stronger asso. w/ chert and remob qtz.	7814	<5
	140	Po asso w/ partially remob. qtz + chert. Green clay + Po in wk cherty beds.	7815	<5
...RGILLITE, SILTSTONE, GREYWACKE. ...reywacke beds V. fine Grn. Poorly Sorted.	150	Quartz vns.	7816	<5
...wo beds are leucocratic, high chert ss ...w/ much qtz and fewer mafics	160	qtz vns. Po rich beds in arg to 5% - Grey wackes nearly barren of Po - Green clay veins more common in arg	7817	<5
...heared zone w/ Po (Fault? poor recovery)	170	Qtz w/ rich Po in anastomosing veins > 1/4"	7818	<5
Marbles - Poor Recovery. Dip of beds uneven w/ average of 70°-80°	180	Irregular Po rich beds w/ qtz + Po veins	7819	<5
Mottled chert beds w/ some Po blebs. Weak shear zone	190	Small qtz-Po veins and tiny fracture offsets are common	8117820	<5
	200			

SCALE 1" = 10' COORD. N ___ E ___ BEARING S63E DIP -70 COLLAR ELEV ___ START ___ COMPLETED 8/1/81 BY ...

DDH - 14 2/4

1" = 10' COORD. N ___ E ___ BEARING S83E DIP -70 COLLAR ELEV ___ START ___ COMPLETED 8/1/81 BY ___

Description	Remarks	Sample	Assay
Wk shear zone Highly convoluted cherty units	Po in shear Greenclay w/ Po in cherty beds	8117821	<5
Argillite, chert, and cherty ss in 1/2"-3" beds Overturned bed, 6" fold. Beds dip @ 70°-85° often uneven	Po >1% in Arg. Variable in chert	7822	<5
Bedding distinguished by chert + Po content. Paler beds have more chert and coarser, usally more Po. <<1/2" - >1" beds.	Po coarser and more abundant in chert rich argillites Qtz Po Vnd(?) ll to bedding <1/4"	7823	<5
Dark Argillite, little chert		7824	<5
Bedding steepens gradually to 50°		7825	<5
Banded green + pink chert bed 1ft thick w/disturbed bedding soft sediment defor?	Po in chert bands	7826	<5
	Po asso w/chert often remobilized Po in chert bed 1", partially remobilized w/qtz	7827	24
Bedding @ 40° to core axis	Po rich cherty beds	7828	<5
		7829	<5
Recordianed Po rich arg + chert	Po in green granular vein <1/4"	8117830	<5

DDH-14 3/1

1" = 10' COORD. N ___ E ___ BEARING S83E DIP -70 COLLAR ELEV ___ START ___ COMPLETED 8/1/81 BY ___

Chert, cherty argillite and argillite, interbedded.	Po > 1% throughout	B117831	<5
	Cross cutting qtz vns	7832	<5
321-324 - clay altered zone - prob sheared - Fault Pale chert beds several inches thick, w/qtz vns (mm) w/Po. Cherts contain little Po themselves.	Po in qtz vns	7833	<5
Beds near horizontal (90°) since fault 336'-342' clastic cherty layers Soft sediment deformation w/rip ups	Po in Green + white chert (+ qtz?)	7834	15
	Green chert bed cut by white mottled qtz. Long narrow qtz vns	7835	<5
Bedding steepens again, variable to 65°	Po w/green and white chert Bed, Vein?	7836	<5
		7837	<5
Pale chert bed - Sharp lower contact gradual upper contact chert has qtz sand? (clastics) - Coarse clastic chert beneath	Po rich clastic chert w/remob veins	B117838	<5

376' TD

DDH-14 4/4

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
OVERBURDEN INSIGNIFICANT RECOVERY (bit of Argillite Bldrk?)	
10	
GRANITE PORPHYRY Qtz - Kspar Phenos Plag mesocrysts.	Tourmaline and Quartz are common.
20	Asp w/qtz + tourm.
30	
40	Asp, Po. w/tourm + Si <1/4"
Highly oxidized broken zone (Fault?)	Asp+Po 1/2" w/ Si flood 7 5/8"
	Kspar destruction zone - Sp, Po, Cp, Asp, diss and in tiny vnlts
50	STRONG GREEN HUES - Some Fdsp is softer - Strong Qtz Ser alt.
60	63'-71' Kspar dest zone (weaker than above) Po, Cp, Asp, Tourm diss.
70	Po w/ Si
80	
84'-92' Finer grained border phase. Shows effects of assimilation. Qtz, Subhedral <1/8" Fldsps small, usu <1/16". Highly Silicic.	Asp w/qtz vn. Diss Asp, Po. Tourm, Kspar DEST. Si from 84'-92' mostly due to assimilation.
90	Cass w/qtz - rusty
HORNFELS. CHERTY ARGILLITE Dark-Fngrn Mtx w/ Common Qtz Blebs (and beds?)	No sulfides No Po Vnlts as marked
100	

From	To	Recovery	Sample No.	Assay
13	15	4.1 / 102 / 14	817839	6.5 / 7.0 — 125
17	20	2.2 / 110 / 20	817840	6.1 / 6.0 — 95
26	30	7.9 / 88 / 94 / 30	817841	8.7 / 10.0 — 430
33	38	6.6	817842	9.4 / 10.0 — 77
38	40	4.8 / 40		
40	42	1.6		
42		2.4	7843	900
			7844	185
			7845	715
			7846	350
			7847	325
		92.5		
95	97	6.3	817848	7.4 / 7.5 — 25
97	100	2.0		

SCALE 1" = 10'

COORD. N — E — BEARING — DIP -90 — COLLAR ELEV — START 8/2/81 — COMPLETED — BY

DDH - 15 1/6

...HOLOGY & STRUCTURES | AND ALTERATION

HORNFELS – Cherty Argillite Parent. Dark reddish grey w/ pale qtz blebs + veins. @106' are pale bands thought to be rexlized chert beds.
106'-107' small dike narrowing from 3/4" to pinch out, then swell to 1/2"

No diss Po

Sample	Recovery	Interval	Value
8117849	9.9/10.0	110	19

Asp, Tourm and chloride <1/4"

7850	9.9/10.0	120	1050

Green silicic dike – Vy fn grn 5"

Tourm + Si w/ tr Asp <1/8"

7851	9.7/10.0	130	630

Qtz pods less common in lower section.

135	8.8				
138	2.5				
139	1.1	140	9.8/10.0	7852	17

7853	8.9/10.0	205

Uneven Contact:
Granite Porphyry, Course and fine border phases.
Green silicic dike 3" vy fn grn.
HORNFELS AS ABOVE

Cs Tourm Veilts.

100501	55	1.2

— Poor Recovery, No Contact —
GRANITE PORPHYRY (AS PREVIOUS)

Si, Tourm, tr Asp
Many unmineralized silica at varying angles

Tourm + Si

275	4.9

Tourm + Si
Tourm Diss

310	8.8

510	11.0

wk diss sulfs.
Strong Qtz Ser Alt – Pastel Green w/ semisoft fdsp.
Qtz veins still predominate

<1%
AVE

8100505	8.2/10.0	200	81	1.8

SCALE 1" = 10' — COORD. N — E — BEARING — DIP -90 — COLLAR ELEV — START 8/2/81 — COMPLETED — BY

DDH-15 2/6

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	Sample	Ag
200	Heavy Si veining thru 220' Common Si veins thruout	8100506	27 / 1.5
210			
220		507 (8.8/15.0)	14 / 1.0
230		508 (7.7/10.0)	440 / 2.1
240 Biotite flurry, 243-245', No phase change 2% biot	Biotite; Tourmaline/Silica vnlts Tr Po Asp	509	130 / 3.7
250		510 (10.0)	190 / 6.0
260		511	37 / 3.6
270	Asp Sp; Sp Asp Wk K spar destruct.; Sp, Po, Asp 3/16"	512	320 / 8.4
280		513	415 / 7.2
290	Kspar dest, no replacement; Wk torm diss.	514 (9.7/10.0)	185 / 3.3
300			

SCALE 1" = 10'

COORD N

E

BEARING

DIP

COLLAR ELEV

START

COMPLETED

BY

DDH-15 3/6

OCK TYPES & STRUCTURES | MINERALIZATION AND ALTERATION | Sn | Ag

Depth	Rock types & structures	Mineralization and alteration	From	To	Recovery	Sample	Sn	Ag
300–310		Sp Asp w/ Scorodite mcs qtz 3/4" 9Po, tr Cp			9.? / 10.0	8100515	2000	24.0
310–320		Cass in clumps, Tourmaline <1/4"; 0-4% diss, 1% avc	316	2.7 / 4.0	6.6 / 10.0	516	4500	17.0
320–330		Many qtz veins; 0-3% diss, <1% AVC	321 / 326	2.2	6.7 / 10.0	517	2300	7.1
330–340		Tourmaline + Si, Tr Po Diss Tourm, 1/4" vns. wk Sp, B.; 0-5% diss, 3% A/C; Cass, Asp, Po, Sp w/ tourm Si <1/2" Tourmagite?	336	9.0 / 9.0	8.9 / 10.0	518	7300	16.0
340–350		0-4% diss				519	135	4.3
350–360		Cass, Sp, Po, Cp, Asp w/ Tourm + Si <1/2"; Vy fn Tourm w/ Asp	355			520	795	12.0
360–370		Sp, Cp, Po 1/8" wkly diss.; Tourm, Sp Cp, Asp 1/8"		4.9		521	220	3.6
370–380		Silica swarm w/ tr sulfide diss to 373 - Pastel Green; Many qtz vns	375		9.4 / 1	522	6	0.5
380–390	380.5-381.5 - aplite porphyry; 381.5-381.8 qtz porphyry; 381.8 and below aplite porphyry - qtz + k-feld phenos 1-3 mm diam in subaplitic groundmass					523	ND	0.6
390–400	of qtz, plag + k feld. - access. musc. 3-5%, biotite -1%	Sp, Po, qtz >1/8" wkly diss.	395	4.6	7.4 / 10.0	524	840	6.0

DDH-15 4/6

ALE 1" = 10 | COORD N | E | BEARING | DIP | COLLAR ELEV | START | COMPLETED | BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	FROM	TO	RECOVERY	INTERVAL	FOOTAGE	SAMPLE NUMBER	Sn	Ag
400-403 - pegmatitic phase 400 of aplite porphyry - prob. due to deuteric alteration. 403 + below: aplite porphyry	Sp, Po, Cp 1/8" w/ thick diss. Vnlts + wkly diss	405			407	6.4 / 7.0	8100525	2300	15.0
	Si flooded, Fdsp destroyed, thickly diss zone, partially pegmatitic? 407-414'	412	4.4		414	7.0 / 7.0	526	7200	39.0
410	413' Si vn, 2' wide, w/ Po, Sp, leached gossand, in vnlts + pods	418	2.8		420	4.7 / 6.0	527	1650	5.0
420	Parallel banded Si + Tourm multiple ingection 2"	422	3.9						
	Si + Tourm banding as above	427	4.6		430	8.7 / 10.0	528	1050	7.7
430	Tiny, dk Si swarms, w/ tourm.	433	4.3						
		438	4.8		440	9.1 / 10.0	529	185	1.8
440	Sp. Cp. Po <1/8".	443	4.3						
Banding and mineral segregation							530	220	1.6
450	Sp. Po. Tourm, Musc diss								
	Musc. diss.	457				/ 10.0	531	565	2.0
460	Tourm Si 1/4"								
Clay gouge - Fault zone	Diss musc								
	Parallel banded Si + Tourm vnlts						532	4500	4.4
470									
Clay Gouge, Fault Zone.							533	2800	1.2
480	Wkly diss sulfs w/ Musc. Tourm, Si 1/4"						534	2200	1.6
490	Diss Sp Cp Po. No Musc								
	Sp Po Vnlts 1/8"	495				9.3 / 10.0	535	1000	6.8
500		500	9.5		500				

DDH-15 5/6

PROPERTY ___ SCALE 1" = 10' ___ COORD. N ___ E ___ SEC ___ T ___ R ___ BEARING ___ STATE ___ DIP ___ COLLAR ELEV ___ DRILL HOLE NO. ___ START ___ COMPLETED ___ BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	SAMPLE FROM	FEET RECOVERED	RECOVERY	INTERVAL	FOOTAGE RECOVERY	SAMPLE NUMBER		
Aplite porphyry as above. 502	(15:1:1) Sp, Po, Cp 1/2" in Qtz. Sp tarnishes metallic blue					9.3/10.0	8100536	1550	6.7
	Sp. Po Ry Cp <1/4"-1/2" in qtz + Topaz? (Clearxls)	509.5	4.7						
510			4.5	107		9.5/10.0	537	20000	8.1
		519	4.7	94	520				
520		523	4.7	118		10.2/10.0	538	1030	1.8
		527	2.9	72					
	Tiny mineralized Si vnlts.		4.6	115	530				
530		531							
	Apy, Sp, Po, Ry 1/2" w/wk dks.	535	4.9				539	715	0.6
	Tiny mineralized Si vein thru 553'	540	4.9	97	540				
540			4.3	96			540	180	0.3
550						9.6/10.0	541	130	0.5
	Tourm Po Apy. Musc <1/8" w/1" hole	560	4.9	98	560				
560	Tiny Si, tourm vnlts	565	4.6	92		9.4/100	542	13	0.3
	wk. chl. alt.	570	4.8	96	570				
	570' TD					DDH-15			6/6

SCALE 1" = 10'

COORD. N ____ E ____ BEARING ____ DIP ____ COLLAR ELEV ____ START ____ COMPLETED ____ BY ____

(OVERBURDEN ?)
Bedded argillites & siltstones

Yellow bar parelleling core represents thoroly oxidized zones.

— 10

5117854

— 20

Hornfels - Argillite parent. Wkly-non bedded. Dark grey. finer grained

Po content very low <1%. Mineralized veins uncommon - as noted

7855

Qtz Veins >1/4" leached of sulfides - tr Sp.

— 30

Bedding wkly developed - 60°-70° to axis of core

32' drumming. qtz vns.

ARGILLITE IS VERY BROKEN AND SHATTERED IN RECOVERY. BLUE DIAMONDS INDICATE ESPECIALLY CRUMBLED ZONES.

7856

— 40

qtz vn. <1/4"

Convoluted cherty-looking qtz? vns.

Silty bed 2' between qtz occurances

— 50

51' cherty bands, pods and lenses become common.

Chert pebble sand coarsened down-hole to fault.

Limonite lithified fault breccia.

— 60

Angular chert pieces in dk. mtx common below fault. Also mottles pods (and beds?) To 65'

ARGILLITE, AS ABOVE

Mottled chert/qtz w/coarse Py + Po.

— 70

Qtz/chert rns/bds

Sp in qtz + clay <1/8"

— 80

Asp, Sp in qtz <1/4" w/tourm chl.

CHERT - argillic

— 90

Mottled textures, no bedding

Cs. Asp (2 1/8 dia) w/s <1/4"

Asp + Po w/chl + tourm

Near 1% Po - around edge of chert "mottles"

Angular dark chert pieces in mottled rk @ 97'

Asp + Chl. + Sp w/ Po + Tourm

7862

17	8.1		18		
26	1.8			9.9 / 12.0	7855
34	8.7	117	40	10.2 / 10.5	7856
44	9.3				
97	3.6	113		10.2 / 15.0	7862
99	2.0		100		

DDH- 16 1/9

— 100

SCALE 1" = 10' COORD. N E BEARING DIP COLLAR ELEV START COMPLETED BY

Depth (ft)	Lithology	Alteration	Core data	Sample
100–110	ARGILLIC CHERT 103–107' Chert conglomeratic breccia – mostly matrix – blk & white clasts. 109'–113' weakly bedded more silty – argillic section	Cassiterite w/ Si + chl-clay on frac. Po on frac, tiny. Si w/ Asp + Po, tiny.	107 1.1 73 109 1.5 [illegible] 110 2.4/10.0	117863
110–120	Mottled, argillitic chert, as before	Po, Asp, qtz, tourm, <1/8"	116 2.3 119 2.4 3.0 120	7864
120–130	122' chert texture changes to a motif of anastamosing stringers (of clay)	Po vnlt <1/4" Po > 1% diss in bdds	122 1.0 129 7.2 [illegible]/10.0	7865
130–140	134' CHERTY ARGILLITE again – slight bedding	Po appears in bds (>1% diss) Po blebs and stringer	134 3.5 88 140.5 4.9	7866
140–150		Po bds <1/8", lenticular		7867
150–160	155' Bedding becomes better defined @ 45–50° SILTY ARGILLITE	Po + Sp, Anastomosing vns. to 1/2" wide (3:1) Po > 1% diss		7868
160–170		Asp + chl Po stringers	168.5 6.2	7869
170–180	ARGILLITE Bedding vy. weak	Asp + chl <1/8"		7870
180–190		Asp + Si <1/16" Po <1/8" Asp <1/8" Po <1/4" Po 1% diss Asp, tourm, Si <1/16"		7871
190–200	CHERTY SILTSTONE Greenish, Bdded, Chloritic.	Chl, w/ Po. >1/8" (2) Po asso w/ chert.	196 9.2 97 9.5/10.0 200 84	117872

LE 1" = 10'
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BY

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GMC DATA REPORT 3 2 7

ROCK TYPES & STRUCTURES | AND ALTERATION

Depth	Rock types & structures	Alteration	Sample data	Sample no.
200	CHERTY SILTSTONE		80; 120	7873
	ARGILLITIC AGAIN ARGILLITE + SILTY ARGILLITE INTERBEDDED			
210	Weakly cherty		90	
			213; 2.2; 37; 63; 220; 5.5/10.0	7874
220			221; 223; 115	
		Po, chl, tourm, dissem <1/8"	66; 230; 7.3/10.0	7875
230	Bdding to 30° to axis of core FAULT? → Bdding @ 80° to core		231; 5.3; 232; 1.1; 110	
		Po + chl	237; 5.9; 118; 240; 10.3/10.0	7876
240	SILTY & CHERTY ARGILLITE	Po stringers <1/16" each. >1% Po diss Py + Po in vnlts.	244; 7.0; 106	7877
250		Po in chert. Po stringers, tiny	82; 88; 260	7878
260		Po + Py vnlt. <1/4"	80	7879
270	Fault – Mud recovery → CHERTY ARGILLITE Mottled chert + Cong. to 285'		58; 60	7880
280	280'–283' Chert Pbl. Cong. w/ clasts to 1/4" dia, mostly smaller Wkly bdd CHERT + CTY ARG – Bdding 85°–60° to core axis	Po vnlts to 1/4" 1% Po, often remobilized into tiny and larger fracs.	72	7881
290		Po < 1/4" Po + Asp w/ qtz xls,	292; 293; 299.5; 2.3; 128; 300; 16.8/10.0	7882
300				

DDH-16 3/9

SCALE 1" = 10'

PROPERTY | COORD. N | E | BEARING | DIP | COLLAR ELEV | START | COMPLETED | BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
ARGILLITE, wkly Cherty (300)	Po content <<1%. Finely diss and in blebs.
Bedding weak @ 50°-70°	
310 Bedding is even, undisturbed	
	Po in cherty band 3/4"
320	
	Po+green clay in cherty bands.
330	
340	
	Cass, Sp, Apy, Monazite? in qtz
350	Po near 1% diss
360	
FAULT ZONE – MARBLES IN CORE 367–380	Po+Sp in chert beds 1/8" vo
370 CHERT, ARGILLIC - Downhole from initiation of fault zone. Badly broken core thru 404' mostly chert.	Fault zones to 404' partially chloritized
380 Bedding uneven ≈60°	
390	Apy in Chl+tourm.
	Po (band or bd?) 1/4"
400	

From	Rec.	%	To	Sample	No.
		5			7883
316		>95	320	10.0	7884
326		>95	330	10.0	7885
336		>96	340	10.0	7886
342		>95			7887
					7771
361		81 / 20			7771
	.5	10 / 18		10.0	7771
		26 / 90			7771
399.5	3.6	45	400	3.0 / 10.0	21184

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SCALE 1" = 10'

ROCK TYPES & STRUCTURES | MINERALIZATION AND ALTERATION

ARGILLIC CHERT 400 | Po < 1% diss | 79 | 7612

Interfingered Contact 410 | Sp w/ chl + si

INTRUSIVE, Green + Gray, Vy Fn. Grn Border phase. Probably affected by much chert assimilation. Xenoliths appear to be more argillic pieces of chert. 420 | Po stringers, Diss SP. Cass, Po, Asp, Monazite? in clay + chl. >1/8" | 7.0 | 6.8 | 98 | 10.0/10.0 | 7613 | 500

Isolated, irregularly distributed, Kspar and qtz phenos < 1/8" | Cass, Asp, Po, Sp, chl + clay. >1/8" Po, chl, Tourm, clay. Veinlets have grey si halos (selvages) in green intrusive. | 9.2 | 97 | 9.7/10.0 | 7614 | 305

430 Dark, Cherty Argillite pods and stringers - xenoliths | Po blebs in xenolith | 97 | 9.1/10.0 | 7615 | 90

440 | Sp, Asp, Chl, clay >1/8" w/ Cass(?) + Monazite? Tourm + qtz w/ chl.

Cherty pod - xenolith | 10.0 | 7616 | 1700

Cherty pods partially assimilated 450 | Po, tourm, chl, clay >1/8"

Tiny Po + tourm vnlts are common in intrusive | 73 | 7617 | 77 | 1.1

Tap

460 | Tourm / Po >1/8" | 8116 | 1050

Tourm chl, clay w/ TE Sp Asp Po. Diss Sp. | 97 | 750 b

470 | Po sheets on fractions

Spray of Kspar Phenos to 3/16". Gradually and irregularly becoming more abundant to lg. xenolith. | 8161 | 62 | 0.8

480 ARGILLITE XENOLITH (HORNFELS) Neatly bedded @ 70°. Hornfels realization occurs w/o erasing st. texture. Small Faults have 1/4" offsets | Asp, Po, Tourm, Ser-clay 1/4". Po in XENOLITH ~1% | 95 | 8100162 | 635 | 2.0

490 Fn. Cs. Grn. Qtz. Kspar Porphy. | 497 | 5.7 | 95 | 9.9/10.0 | 8100163 | 55 | 0.6

500

DDH-16 | 5/9

SCALE 1" = 10' | COORD. N | E | BEARING | DIP | COLLAR ELEV | START | COMPLETED | BY

ROCK TYPES & STRUCTURES | MINERALIZATION AND ALTERATION

400 ARGILLIC CHERT — Po <1% diss — 79 — 7677

Interfingered Contact — 410 — Sp w/chl+si

INTRUSIVE, Green+Gray, Vy Fn. Gn Border phase. Probably affected by much chert assimilation. Xenoliths appear to be more argillic pieces of chert. — Po stringers, Diss Sp, Cass, Po, Asp, Monazite? in clay+chl. >1/8" — 7.0 — 6.8 — 98 — 10.0/10.0 — 7673 — 500

420 Isolated, irregularly distributed, Kspar and qtz phenos < 1/8" — Cass, Asp, Po, Sp, chl+clay >1/8"; Po, chl, Tourm, clay; Veinlets have grey si halos (selvages) in green intrusive. — 9.2 — 97 — 9.7/10.0 — 7674 — 305

430 Dark, Cherty Argillite pods and stringers – xenoliths — Po blebs in xenolith — 97 — 7.1/10.0 — 7675 — 90

440 Sp, Asp, Chl, clay >1/8" w/ Cass(?)+Monazite? Tourm+qtz w/chl. — Cherty pod – xenolith — 10.0 — 7676 — 1700

Cherty pods, partially assimilated — 450 — Po, tourm, chl clay >1/8"; Tiny Po+tourm vnlts are common in intrusive — 73 — 7677 — 77 — 1.1

Tap

460 — Tourm./Po >1/8"; Tourm, chl, clay w/ Tr Sp Asp, Po, Diss Sp. — 97 — 8100160 — 1050 — 750 ppb

470 Spray of Kspar Phenos to 3/16". Gradually and irregularly becoming more abundant to lg. xenolith. — Po sheets on fractions — 9.1/10.0 — 8100161 — 62 — 0.8

480 ARGILLITE XENOLITH (HORNFELS) Neatly bedded @ 70°. Hornfels recrystallization occurs w/o erasing structure. Small Faults have 1/4" offsets — Asp, Po, Tourm, Ser-clay 1/4"; Po in XENOLITH ≈1% — 95 — 8100162 — 635 — 2.0

490 Fn- Cs. Gen. Qtz Kspar Porphy. — 497 — 5.7 — 95 — 9.9/10.0 — 8100163 — 55 — 0.6

500 — DDH-16 — 5/9

SCALE 1" = 10' — COORD. N — E — BEARING — DIP — COLLAR ELEV — START — COMPLETED — BY ARCELS

ROCK TYPES & STRUCTURES AND ALTERATION

Depth	Rock type	Structures and alteration					Sample		
500–510	GRANITE PORPHYRY. MED GRN. QTZ + KSPAR Phenos - PLAG MESOCRYSTS. TR Biotite – invariably destroyed in strongly altered areas.	[illegible] intense zones [illegible] for alteration column. Po+Tourm <1/16" Azp, Po, Sp <1/16" (2)		102		[illegible]	100764	39	1.1
510–520	-	Sp Cp Azp Po. Monazite? <1/4" Asp, Sp, CHL, Tourm <1/8" – weak Kspar destruction and Po on frac. Some chloritization & tourm.	15	106	520	16.7	765	285	6.7
520–530	- Coarse grained dike of same composition Kspar to 1/4"	Thick tourm vn w/ Azp, Po Qtz Vn + Monazite and diss tourm + sulfs. Some chloritization. Po sheets on frac. Cp, Sp, clay 1/8"		73		[illegible]	766	730	10.0
530–540	Blue diamonds indicate broken areas. Granite is immensely more competent than the argillite hornfels.	Vein angles <20° Cp, Po, Tourm <1/4" Asp, Cp blebs along Si, tourm. Sp, Cp, Qtz. Tourm 1/2" R (15:1)					767	510	7.5
540–550	Crude graphic texture	Sp, Azp, Po, Monazite? in Si 1/2" Sp, tourm, Monazite? 1/4"					768	3700	6.0
550–560	-	Sp Azp Monazite Chl +Ks Po, Cp w/ Qtz 1/2" Asp, Po (2:1) Tourm, qtz >1" wide + Monazite? + Chlorite Po, Sp, tourm, qtz <1/4" Asp >1/8"			560	[illegible]	769	5600	31.0
560–570	-	Po, Monazite, Frm green clay (Chl?). 1/2" Tourm + Po, Vn <1/16" Flood >1/2" (2) Sp, Po, Monazite? Green Clay + Qtz 2" wide					770	1095	3.8
570–580	-	Po, Sp vnlts <1/8" (2) Po vn, diss Tourm + Po + Chl					771	2640	12.0
580–590	-	Sp, Po + Monazite Tourm + qtz Splayed veins > 2" total. Po, Sp, Asp (3:1:1) w/ qtz <1/4" Asp, 1/4" Asp <1/8"					772	705	5.6
590–600	-	Po, Sp – Mostly white qtz Po + Tourm w/ Si 3/4" Sp, Po, Chl w/ Si, Flood <1/2" + Tourm					100773	420	10.0

DDH-16 6/9

PROPERTY — SCALE 1" = 10' — COORD N — E — SEC — T — R — STATE — BEARING — DIP — COLLAR ELEV — START — COMPLETED — BY

SCAPES & STRUCTURES AND ALTERATION

PROPERTY — SCALE 1" = 10' — COORD N — E — BEARING — DIP — COLLAR ELEV — START — COMPLETED — BY

Depth	Lithology	Mineralization / Alteration	Sample	Value	Width
500–510	GRANITE PORPHYRY MED GRN. QTZ + KSPAR Phenos - PLAG MESOCRYSTS. TR Biotite — invariably destroyed in strongly altered areas.	Po+Tourm <1/16" Asp, Po, Sp <1/16" (2)	8100764	39	1.1
510–520	-	Sp Cp Asp, Po. Monazite? <1/4" Asp, Sp, CHL, Tourm <1/8" Po on frac. w/ tourm. — weak Kspar destruction and some chloritization	765	285	6.7
520–530	- Coarse grained dike of same composition Kspar to 1/4"	Thick tourm vn w/ Asp, Po Qtz Vn + Monazite and diss tourm + sulfs. Some chloritization. Po sheets on frac. Cp, Sp, clay 1/8"	766	730	10.0
530–540	Blue diamonds indicate broken areas. Granite is immensely more competent than the argillite hornfels.	Vein angles <20° Cp, Po, Tourm <1/4" Asp, Cp blebs along S_1, tourm. Sp, Cp, Qtz, Tourm 1/2" (15:1)	767	510	7.5
540–550	Crude graphic texture -	Sp, Asp, Po, Monazite? in S_1 1/2" Sp, tourm, Monazite? 1/4"	768	3700	6.0
550–560	-	Sp Asp Monazite Chl +tr. Po, Cp in Qtz 1/2" Asp, Po (2:1) Tourm, qtz >1" wide + Monazite? + Chlorite Po, Sp, tourm, qtz <1/4" Asp >1/8"	769	5600	31.0
560–570	-	Po, Monazite, Frm green clay (Chl?) 1/2" Tourm + Po, Vn <1/2" Flood >1/2" (2) Sp, Po, Monazite? Green Clay Qtz 2" wide	770	1095	3.8
570–580	-	Po, Sp vnlts <1/8" (2) Po vn, diss Tourm + Po + chl	771	2640	12.0
580–590	-	Sp, Po Monazite Tourm + qtz splayed veins > 2" total Po, Sp, Asp (3:1:1) w/ qtz <1/4" Asp, 1/4" Asp <1/4"	772	705	5.6
590–600	-	Po, Sp — Mostly white qtz Po+tourm w/ S_1 3/4" Sp, Po, Chl w/ S_1, flood <1/2" Tourm	8100773	920	10.0

DDH-16 6/9

Depth	Rock types & structures	Mineralization and alteration	Sample data
600–610	GRANITE PORPHYRY (SEE PREVIOUS PAGE)	Sp, Tr, Asp green clay, Si < 1/2"; Sp, Po, Chl ~1/8"; Po, green clay qtz (4) 1/8" each; Po green clay Si. 3/4" to 1/2"	100774; 1730; 6.7
610–620		Thickly Diss Sphalerite, almost a vein w/ Topaz, Cass 8" to 1/4"	1-5%; 1%; Af; 620; 99; 99; 620; 9.9/10.0; 775; 9000; 12.0
620–630	SAND + MUD CAKE - Not Measured; No Sheared Rock	Po, Sp: Tourm (2); Asp, Po to 1/4" irregular; Asp xls in tourm, tr. Sp 6" wide	1-5%; 10%; Af; 626; 6.1; 102; 630; 10.2/10.0; 776; 575; 3.9
630–640	636.5 3 inch flowband	Tourm + Si	1-2%; 1%; Af; 636; 9.9; 99; 640; 9.4/10.0; 777; 200; 2.4
640–650		Asp < 1/8" (2); Tourm + chl. 1/8"; Asp, Po (2:1) > 1/4"	10-35; 1%; Af; 9.7; 99; 10.3; 778; 100; 1.4
650–660	Qtz, Biot. Dikelet 1" wide - Microgranite	Po, Tourm, Si 71"	656; 99; 660; 9.5/10.0; 779; 56; 1.2
660–670	Gouge Breccia 3/4" Fault?	Wkly diss Po (4?) in grey siliceous zones. > 1%; Qtz + Sp Vns w/ diss Sp	9.7; 99; 780; 790; 1.1
670–680	Finger dikelet Biot Microgranite 1/2"	Po, Asp < 1/8"	9.9; 99; 9.7/10.0; 781; 24; 0.8
680–690	BX Core From Here Down	Tourm + Musc	50; 135; 10.0; 782; 22; 0.6
690–700		Po Tourm > 1/8"; Tiny Po vnlts.	0-2%; 1%; Af; 696; 9.6; 96; 700; 9.6/10.0; 8100783; 14; 0.5

SCALE 1" = 10'

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GRANITE PORPHYRY
(SEE PG. 6)

Depth	Notes					Sample No.		
700–710						8160784	335	0.5
710–720		716	10	100	7.3/10.0	785	1170	1.2
720–730	Asp, Po, Tourm <1/4"	726	7.0	70	7.3/10.0	786	57	0.4
730–740	Kspar → clay 732'-734' Kspar → Vugs 734'-737' Kspar → clay + chl 737'-740' Po sheet on Frac	734 736	7.1 1.7	89 85		787	2960	1.5
740–750	Sp Azp, Tnrm 7 1/2"					788	4200	15.0
750–760	Po in Si					789	140	1.0
760–770						790	34	1.0
770–780	Tnrm w/Asp, Some diss <1" wide					791	1010	3.0
780–790	Gouge, clay lithified breccia fault zone					792	27	0.8
790–800	Asp <1/4" w/ Musc + Po	795	6.1	68	7.6/10.0	8160793	NO	0.5

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SCALE 1" = 10'

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COMPLETED

BY Arch

GRANITE PORPHYRY
(AS ABOVE)
-Biot Micrgranite 3" Tr sulfs

810

Tourm vnlt <1/8" w/diss Po + Asp + Musc

Asp, Tourm + clay 1/4" + Po

820

aplite porph, qtz + k feld phenos 1-3 mm. in subaplitic groundmass Muscov. 3-5% biotite 1-3%.

irregular Asp + Si w/diss (wk)

Asp, Tourm <1/4" w/Po

830

Po, Asp, Tourm <3/4"

Dike, Biot Microgranite - Size <5", >2"

840

Biot Granite Dike, Med-Cs grn. Gradual boundaries

Diss Asp, Po, Musc 3%

Tourm, Si, Musc.

850

Po irregular w/diss musc

Tourm w/qtz-ser flood >1"

Tourm 3/4"

860

Sp, qtz > 1/4"
Po tiny Diss Musct. Wk sulfs.

866' TD

870

Sample					
810794	87		10	0.5	
795	53	98	53	0.9	
796	97	10.1/10.0	19	0.7	
797	88	9.7/10.0	235	0.7	
798	97	7.7	60	0.6	
799	98	8	400	0.5	
810800	91		170	1.0	

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GMC DATA REPORT 327

PROPERTY
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ROCK TYPES & STRUCTURES | AND ALTERATION

OVERBURDEN
No RECOVERY

ARGILLIC OVERBURDEN — 10

- aplite porphyry - qtz-k spar phenos. subap. grdmass
- quartz porphyry - qtz-k spar phenos aphan. grdmass
- aplite porphyry - scattered pegmatitic zones.

— 20

- quartz porphyry - qtz + k spar phenos up to 6 mm, groundmass is aphanitic 2% diss. biotite, tr. musc.

— 30

- aplite porph. as above.
- quartz porph. as above.

— 40

— 50

- aplite porph, no pegmatitic zones.

— 60

- granite porph - qtz-kfeld-plag. phenos - aphan. grdmass
- aplite porph.

— 70

- granite porph.
- aplite porph.

— 80

— 90

— 100

- granite porph

Alteration notes:

- Greisenized (Green) in Part w/ Co Muscovite
- Asp, Po, Sp w/Si + Tr. Tourm
- Tourm diss.
- Sp, Asp, Po >1/8" in Si
- Same <1/8"
- Po sheets w/Si on Frac.
- Sp, Asp, Po w/ wt clay + Si >1/4"
- Greisenized Halo + CASS.
- Sp, Po <1/8"
- Po on Fracs.
- Po, Sp, Asp 1/4"
- Sp, Po, tiny
- Coarse Greisen Pods*
- Po, Sp <1/4"
- Very Weak greisen 80'-90'
- Sp bleb >1/2"
- Tiny Tourm Sulf mlts
- Diss Tourm

10							
12							
17	50	100	20	8.2 / 8.0	8100543	1240	1.5
24	7.7	110	30	9.5 / 10.0	544	785	1.0
34	97	97	40	10.3 / 10.0	545	585	1.4
44	9.1	91	50	9.1 / 10.0	546	945	1.3
55	[illegible]	91	60	9.4 / [illegible]	547	835	2.4
64	9.8	109		10.1 / [illegible]	548	620	2.8
7?	9.1	101	80	9.9 / [illegible]	549	265	3.0
[illegible]	9.9	[illegible]	[illegible]	[illegible]	550	115	0.5
93	9.9	99	95	5.7 / 6.0	551	53	0.6
					552	165	3.4
1?3	9?	[illegible]					

SCALE 1" = [illegible] | COORD. N | E | BEARING | DIP | COLLAR ELEV | START | COMPLETED | BY

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GMC DATA REPORT 327

granite porph.
quartz porph
granite porph. - seriate texture
qtz + K feld. phenos 3-6 mm diam
plag. phenos 1-3 mm diam.
aphanitic to aplitic grdmass

Significant Muscovite Greisen than ont Qtz-Kspar Porph also, in patches.

Depth	Remarks	Sample	Value	Value
110	Significant Muscovite Greisen than ont Qtz-Kspar Porph also, in patches.	8100553	450	0.8
120	Leached Frac	554	168	0.6
130	Po. shear on Frac. Sp. Asp. Csqtz clay >1/4"	555	305	1.1
140		556	420	1.5
150		557	54	0.9
160	Po, Tourm w/ wk diss.	558	45	0.7
170	<Biotite "Flowers" in radiating clusters ≈1/2" dia.	559	81	1.3
180	wk muscovite greisen still exists in patches	560	20	0.5
190	Tourm vn truncated by Fault Shear. Pegmatite vn 1" w/ Graphic Qtz Fsp Musc "Flowers", clay.	561	375	0.7
200	Glassy Po fract Flood zones. Discontinuous greisenization 190'-200' >60%	562	69	0.9

-110
-120
-130
-140

130'-143' Earthy oxidized areas w/ abundant limonite fracs.

-150

wkly oxidized areas 160'-182'
& abundant limonite fracs - near breccia
162' 8" silica dike - beige, fn grn.

-160

Gradational &
-170
Irregular contact w/ "Qtz Porph" similar to above. Phenos vary from none to abundant.

Limonite Cemented breccia & Gouge Zone. - Fault Zone
-180

-190
aplite porph., as above.

-200

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COORD. N — E — BEARING — DIP — COLLAR ELEV — START — COMPLETED — BY

1" = 10' COORD N ____ E ____ BEARING ____ DIP ____ COLLAR ELEV ____ START ____ COMPLETED ____ BY ____

200–210	upper porph as above	Po on Fracs; muscovite greisen 200-210' 40%	563	61	0.7
210–220	LIMONITE BRECCIA - FAULT ZONE	Sulfide/mag fracs & diss	564	86	1.2
220–230	LIMONITE Breccias continuous thru 250' excepting competent interval at 234-238'. SHEAR ZONES 223'-254'		565	35	0.7
230–240	Competent interval	WK Greisen; Cs Greisen @ 237-238'	566	96	2.4
240–250			567	52	1.3
250–260	granite porphyry as above		568	49	3.4
260–270		Diss Sp, Po, Cass around 1/2" Qtz-Sp Vn.; Diss Sp, Po, Cass	569	2695	10.0
270–280		Diss, Sp, Po w/ tiny vts	570	2015	2.9
280–290	CLAY GOUGE - Fault	Sp, Cp, Po, Cass (1/4") mqtz; 1" wide chl-clay alt (gouge?)	571	2055	3.6
290–300		Sp, Po, tiny; Kspar → clay; Asp, Sp, Po 1/4" Kspar → sulfs	572	2250	2.7

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AND ALTERATION

granite porph. as above — 300

Tiny Po, Si vnlt.

305-309' wkly diss sulfs

300 – 310: 573 — 135 — 2.3

Clay gouge - Fault — 310

Sp, Po 1/8" (2)

Sp Cass, Monazite, >1/8"
Sp Po <1/8" Garnet ??

311 – 314 – 320: 7.? / 8.0 — 95% — 9.8 / 10.0 — 574 — 2050 — 10.0

320

Sp, Po <1/4"
Sp, Po, Cass? in qtz 1/2"

326 – 330: 7.1 / 7.0 — 101% — 8.9 / 10.0 — 575 — 975 — 2.5

330

Swarm of Sp, Po Vlts <1/8"

Sp, Po, vnlts >1/4" (4) wk diss

335: 7.5 / 9.0 — 83% — 8.3 / 10.0

340: 5.0 / 7.0 — 71% — 576 — 1720 — 4.1

340

Sp, Po, clay <1/8" (2) Si Flood

Sp <1/8" w/ tourm & Si

342 – 350: 7.9 / 10.0 — 79% — 9.2 / 10.0 — 577 — 435 — 2.2

350

Sp, Po qtz >1/2"

Monazite?, Topaz? <1/4"
Kspar dust w/ partial clay-ish ... partial rhys

352 – 359 – 360: 7.5 / 7.0 — 107% — 9.5 / 10.0 — 578 — 3965 — 4.6

CLR
Clay gouge - Fault — 360

CLAY ALTERATION
358' - 389'
Fdsp in part hard, in part, semi soft.
Vy soft is designated in alt column (eg little)

362: 2.8 / 3.0 — 93%
366: 3.6 / 4.0 — 90%
370: 2.2 / 6.0 — 37%
6.8 / 10.0 — 579 — 430 — 1.2

370

372
376: 2.0 / 4.0 — 50%
380: 2.7 / 4.0 — 68%
6.0 / 10.0 — 580 — 157 — 0.7

semi-lithified CLAY GOUGE - FAULT — 380

Sp, Po, Monazite? Cass?

386: 4.1 / 6.0 — 68%
390: 3.2 / 4.0 — 80%
8.1 / 10.0 — 581 — 445 — 1.0

mi lithified (clay cemented breccia) gouge - Fault — 390

Po >1/8" wk diss
Sp Po >1/8"
Po, Monazite? <1/8"

395: 4.3 / 5.0 — 86%
400: 5.4 / 6.0 — 90%
8.8 / 10.0 — 582 — 180 — 1.7

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400

401

ALE 1" = 10'

COORD. N ———— E ————

BEARING ———— DIP ————

COLLAR ELEV ————

START ———— COMPLETED ———— BY ————

granite porphyry as above 400

Depth	Description	Sample	Value	
–410		810583	230	1.1
410–420	Sp, Cp, Tourm } Tiny; Po, tourm; Cass, Po St 1/8" + sp; Asp, Sp, Po, qtz 1/4"; Po, Sp qtz >1/8"	584	1845	1.7
420–430	Po sheets + Tourm	585	70	0.6
430–440		586	82	0.4
440–450	Qtz Vn w/ Tourm (1" in core but prob. sub. //.)	587	91	0.3
450–460	Cp, Tourm <1/4" (2); Po sheet on Frac	588	40	0.3
460–470		589	20	0.2
470–480	Asp, Sp, Monazite? >1/4"	590	2960	0.5
480–490	Tourm w/ Po; Green color silicification; Asp, Sp, Po, qtz >1/4"	591	300	0.4
490–500	Sp, Tourm, Monazite <1/4"; Sp, Po, Tourm	8100592	360	0.7

501 TD

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GMC DATA REPORT 327

1" = 10'

COORD. N

E

BEARING

DIP

COLLAR ELEV

START

COMPLETED

BY

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC 21 T 22S R 12W BEARING ____ STATE ALASKA DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-19 START 6/9/82 COMPLETED 6/18/82 BY ____ SHEET NO. 1 of 7

ROCK TYPES & STRUCTURES

No recovery

Tgp - seriate granite porphyry - phenocrysts compose ~75% of rock volume; qtz:25::k-spar: 35:: plagioclase 35: biotite:1:: musc:4. Qtz phenos 3-5 mm diam, equidimensional, eu-subhedral; K-spar 1-8 mm in long dimension, eu-subhedral; plag 1-9 mm, equidimensional, subhedral

orange bar indicates oxidized rock

<<1% primary biotite → phlogopite visible in unoxidized intervals between 14.0 - 57.0

Most of the fractures shown in blue are FeOx coated joints, very irregular in S+D, with no apparent movement between walls. If clay gouge or slicks are present, they are individually described.

Biotite <<1%, alt to phlogopite; occurs as randomly oriented platelets 0.7mm - 2 mm in long dimension between 57 - 100

MINERALIZATION AND ALTERATION

6.3 - 8.0 near vert. 1mm qtz-sulf. vein w/ qtz flood 3 cm either side: 5-10% sulf. diss in qtz flood; now gone to FeOx. 8-10 - 1mm cass. xtals at 7.0; two preexisting qtz-tourm veins @ 6.6 - 8.3 ~ 1-2 mm wide, with clots of tourm up to 6 mm in radiating clusters.

1-2 mm qtz-tourm vns. - no apparent alt. or margins

Note: Because of horiz. exaggeration of graphic log, all veins are dipping more steeply than shown in graphic representations.

3 - 1 to 3 mm wide qtz. sulf - minor tourm. - cass.? vns, w/ qtz flood margins ~2 cm thick; 3-5% diss sulf. → FeOx in qtz flood margins

diss tourm app. replacing K-spar phenos

1-2 mm qtz-sulf-cass vn - cass entirely w/i vn. walls, ~.7 mm diam.

39.1 - 42.9 near vert. qtz-sulf-cass? vn ~.5mm wide, w/ 2-3 mm barren qtz flood on margins

qtz-tourm vn 1mm wide; tourm in vn + diss in margins in clots up to 3 mm

v. minor sulf (FeOx) w/ qtz + tourm in 1mm frac.

vert. .5 mm wide qtz-tourm vn.

qtz-sulf-tourm vn 1mm wide, w/ 2 cm wide qtz flood w/ 8-10% diss. sulf. + tourm arseno: sph: cp: py :: 4:4:1:1 @ 60.0

63.5 - 66.7 3 subparallel 1 mm wide qtz-sulf. tourm vns @ 7° - 12° to core; qtz flood 3-20 mm wide flanking vns, w/ 3% diss. sph + asp.

67.4 - 71.0 early qtz. minor sulf. tourm vn 3mm wide, w/ qtz-seric-tourm flood zone 3mm wide, cut by 1mm wide qtz-sulf vn at 68.8 - 69.0; diss sph:asp:: 2:1, 8% total

72.7 - 74.2 early qtz-minor sulf-tourm. vein as at 67.4 - 71.0 - cut by hairline qtz-sulf vnlt at 74.0 - 74.2

81.5 - 84.2 qtz-asp-sulf-cass vn 1-2 mm wide w/ diss sulf (~1%) + diss tourm (15%) in qtz-seric alt zone 1cm wide flanking vn.

1 mm wide qtz vn w/ minor sulf. + tourm

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HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
5.0						
10.7	[illegible]	74	5.0		2100	19.0
	8.1	91				
19.6			10.0		25	3.8
	9.3					
28.5		101	8.0		47	3.3
	10.2	100				
			9.0		390	5.1
38.7						
42.0	3.3	100				
	8.2		10.0		500	2.6
50.3		99				
	9.7					
			10.0		280	2.5
60.2		98				
~~60.9~~	~~1.1~~	~~158~~				
~~61.2~~	~~0.3~~	~~100~~				
63.3	2.1	100	6.0		620	8.3
66.0	2.7	100				
66.9	0.8	89				
			8.0		1480	14.0
	9.0	92				
76.7						
			7.0		140	4.0
	8.8	100				
85.5						
	1.1		10.0		1000	8.0
89.5		28				
92.6	2.7	87				
	2.3					
95.8		68				
	4.1		10.0		180	4.1
100.0		98				

PROPERTY CML SCALE 1" = 10' COORD. N E SEC 21 T 22S R 12W BEARING STATE ALASKA DIP -90 COLLAR ELEV DRILL HOLE NO. DDH 19 START COMPLETED SHEET NO. 2 of 7 BY

ROCK TYPES & STRUCTURES	Depth	MINERALIZATION AND ALTERATION
Tgp - sericite granite porphyry, as above		101.5-104.5 2-3mm wide qtz-sulf veins, sulf → FeOx, 2-3% diss sulf in 2 cm wide silica flood zone w/ diss tourm, sulf → FeOx
	110	109.8-111.1 3 mm wide qtz-sulf vein, sulf → FeOx, 1 cm wide qtz flood zone w/ 1-2% diss sulf → FeOx
		113.0-119.0 2 to 5 mm wide qtz-tourm veins as shown, minor diss tourm.
fresh rock has greenish cast, indicating green sericite alt.	120	121.2-123.0 intense tourmalization (± chloritization?) no sulf. T.S. 2-82
	130	129.2-130.3 3mm wide qtz-sulf vein w/ sulf → FeOx; diss sulf (5%) + tourm in 2 cm wide qtz-flood zone
138.3-138.5 clay gouge and rock chips @ 82° to core		136.8-137.7 2 mm wide qtz-sph-asp-cass vein sph:5::asp:4::cass:1; vein bifurcates in downhole direction to 2-1 mm wide qtz-sulf veins
	140	138.3-141.9 2 mm wide tourm veins as shown, w/ minor diss tourm
	150	149.6-151.0 intense silic. + tourmalization
		152.4-153.2 1-2 mm qtz-sph-asp-cass vein; most sulf → FeOx; minor diss sulf + tourm in 1 cm wide qtz-flood zone.
		154.5-156.0 2 mm qtz-sulf open frac, sulf → FeOx, w/ cass?
	160	157.0-164.5 1-5 mm qtz-tourm veins, as shown
165.4-166.9 Intermittent clay gouge w/ rock chips, largest zone ~ 20 cm thick @ 85° to core	170	
		173.8-176.7 4 en echelon qtz-tourm-topaz?-sulf veins 1-2 mm wide w/ coalescing silica flood zones. Total sulf 1-2%, mostly sph; 80% of sulf → FeOx
177.4-178.4 clay gouge and rock chip zone, orientation uncertain but probably @ high angle to core	180	180.0-181.1 1 mm wide qtz-tourm vein
		182.5-183.9 Intense silic. w/ subord tourmalization no sulf.
	190	188.9-190.1 1 mm wide qtz-minor sulf vein sulf → FeOx; <1% diss py in 1 cm wide qtz flood zone
		198.0-200.0 3-5 mm wide qtz-tourm veins, no sulf
	200	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
	7.5					
100.9		84	10.0		305	5.7
112.1	2.7	89				
	9.7		7.0		118	6.1
122.1		97				
	6.2		10.0		32	2.4
131.3		67				
133.1	1.4	78				
	4.9		10.0		160	4.4
138.1		98				
	9.3		10.0		820	6.3
147.8		96				
148.8	1.0	100				
	8.1		9.0		90	4.2
157.2		96				
160.4	2.8	88				
161.6	1.2	100				
164.9	3.2	97	10.0		1500	4.4
167.0	2.0	95				
167.7	0.7	100				
169.8	2.1	100				
	8.5		10.0		25	1.8
178.4		99	5.0		1000	11.0
	9.9					
188.9		94	10.0		1000	2.1
	9.6					
199.1		94	10.0		180	4.7

DDH-19 2/7

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ BEARING ____ STATE ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-19 START 6/9/8? COMPLETED 6/1?/8? SHEET NO. 3 of 7 BY ____

ROCK TYPES & STRUCTURES

- Typ. seriate granitic porphyry, as above
- (220–230) 8 cm FeOx stained clay gouge and rock chips @ 77° to core
- (230–240) 7 cm FeOx stained clay gouge and rock chips @ 78° to core
- 1 cm clay gouge and rock chips @ 88° to core
- (240–250) 3 mm clay gouge and fine rock chips @ 78° to core and 68° to core respect.
- 299.4 1 cm wide gouge + rock chip fault zone @ 78° to core.

Depth marks: 210, 220, 230, 240, 250, 260, 270, 280, 290, 300

MINERALIZATION AND ALTERATION

198.0-205.0 6-1 cm wide early(?) qtz-topaz?-minor pyrite veins @ 20° to core

205.1-204.0 1 mm wide qtz-sph-py vein w/ 2 mm wide qtz flood zone borders; minor [illegible] in alt. halo sph:py::2:1, vein @ 9° to core.

208.8-210.6 2 mm wide qtz-sph-py-fluorite vn w/ 1 cm qtz flood border w/ 3% diss sph+py; access tourm in vn and border, vein @ 4° to core

211.2-211.9 - 1 mm qtz-sulf → FeOx + cass vn w/ qtz-flood border ~ 1 cm wide w/ ≤1% diss sulf → FeOx + access tourm. In both of these veins and in most if not all subsequent qtz flood borders, <1 - 1.5 mm secondary white feldspars (or remnants of orig. feldsp. phenos) are visible and seem to increase in number toward the vein. Vn @ 7° to core

1 mm wide qtz-sulf vein app. offset ~2 cm by barren qtz vein

224.6-225.1 - 5 mm wide early qtz-topaz(?) vein, trace of py + sph.

241.4-243.3 - 5 mm wide qtz-asp-sph? vein. Most of sulf in Vn. → FeOx; qtz flood border w/ minor diss. sulf → FeOx 2-3 cm thick. Vn @ 11° to core

253.4-257.1 2-8 to 10 mm wide qtz-topaz? musc vns w/ traces of py and asp; vns @ 8° to core

257.4-258.9 2- 1 mm wide qtz-sph-py-cp veins @ 14° to core; sph:py:cp::5:4:1; 5% diss sulf in 8-12 mm wide qtz-flood border; acc. tourm diss ~ 3%

262.2 2 cm wide qtz vn w/ tr. of py; no alteration on margins

264.6-264.9 - 2 - 1.5 cm wide qtz veins. <1% sph + tr of py + <1% asp.; qtz flood margins w/ acc. tourm 6-8 mm thick.

274.0-274.5 - 4 mm wide qtz-sph-py-asp-cass vn @ 8° to core; sulf ≈ 10% in vn, sph:py:asp:cass::4:3:2:1; 2% diss. sulf in 3 mm wide qtz flood border.

276.9-277.8 1 mm qtz-cass-sph vn w/ 2% diss sph + py in 1 cm wide qtz-flood border; cass:sph::7:3

278.4-279.7 1 mm qtz-sph-asp-py-cp vn w/ diss sph + py + asp in 1 cm wide qtz flood zone; vn @ 14° to core.

283.5-285.4- 5 mm wide qtz-cass-sph-py-cp-fluorite vn @ 9° to core; cass:sph:py:cp::3:3:3:1 2% diss sulf (sph + py) in 2 cm wide qtz-flood zone

292.0-293.0 early qtz-topaz? - minor [illegible] vein 7 cm wide [illegible] obliterated by sulf. vns.

293.5-294.5 1 cm wide qtz-cass-sph-py-cp vn @ 9° to core; cass:sph:py:cp::3:3:3:1; diss sph-py-cp in 1.5 cm wide qtz-flood margin

295.5-299.3 qtz scinter, no veining discernable, ~10% sulf now weathered out, leaving honeycomb texture w/ some FeOx stain

SAMPLE / ASSAY

Hole Depth	Core Recovered	% Recovery	Interval	Number	[illegible]	[illegible]
			8.0		135	2.4
208.5	10.0	96				
			6.0		535	18.0
218.5	8.8	98				
219.5	1.2	120	7.0		850	3.8
			5.0		80	4.8
228.7	9.0	96				
233.1	4.2	96	10.0		475	3.1
241.6	8.5	102				
			10.0		36	5.8
249.4	7.9	99				
			8.0		<5	0.4
256.6	7.2	100				
			8.0		595	8.1
266.6	10.0	100				
269.6	3.3	110				
			12.0		1070	2.2
279.4	9.5	97				
			10.0		19	9.2
289.3	10.0	101	9.0		3150	6.5
299.6	9.7	94	10.0		1750	9.2

DDH-19 3/7

PROPERTY COAL SCALE 1" = 10' COORD. N E SEC T R BEARING STATE DIP COLLAR ELEV DRILL HOLE NO. DDH-19 START COMPLETED SHEET NO. 4 of 7 BY

ROCK TYPES & STRUCTURES

Tgp-sericite granite porphyry, as above

309.0 - 1.5 cm wide clay gouge + rock chips @ [illegible] to core

309.4 - 310.4 clay gouge + rock chips; orientation of fault uncertain, but appears to cut core at high angle

314.3 - 314.8 15 cm wide clay gouge @ 76° to core

320

330

340

350

360

2 cm clay gouge w/ rock chips @ 77° to core

370

379.7 1 cm clay gouge and rock chips @ 76° to core

380

387.0 - 387.1 f.gr., rapidly chilled dike of aplite porphyry @ 58° to core

388.0 2 cm clay gouge and rock chips @ 70° to core

389.0 - 389.3 broken zone w/ clay gouge + FeOx, orient. unk.

390.0 2 cm clay gouge and rock chips @ 78° to core

GMC DATA REPORT 3 2 7

396.6 - 397.1 broken zone w/ clay gouge + FeOx, orientation unknown.

399.3 - 399.4 3 cm wide dike of fine gr. aplite porphyry @ 54° to core

400

MINERALIZATION AND ALTERATION

302.8 - 304.0 2 cm wide qtz-asp open space filling w/ diss. sph:py:cass::6:1:1 in 2 cm wide qtz flood border. Vn @ 10° to core.

304.1 - 304.8 1 mm wide qtz-sph vn w/ diss sph:py::4:1 w/ 10 mm wide qtz flood border

304.9 - 307.8 qtz sericite, no veins discernable, ~15% [illegible] sulfide [illegible] except between 306.0 - 306.2, diss py:sph::9:1

310.1 - 310.4 2 cm qtz-py-cass-sph-asp vn @ 14° to core, much sulf w/ FeOx.

317.2 - 317.6 qtz-sph-py-cass vn, sulf <1% by volume sph:py:cass:: 6:2:2

319.8 - 326.0 6 qtz-sulf veins 1-2 mm wide w/ coalescing qtz flood zones w/ 5% diss sulf ave. Veins subparallel, 14°-16° to core; sph:py:cass:po:: 6:2:1:1, acc tourm to 5% in clots up to 5 mm diam.

332.6 - 335.2 1 cm qtz-sulf open space filling which bifurcates uphole into 2 - 3 to 5 mm qtz-sulf vns @ 8° and 23° respec. Sulf ≅ 5% w/i interval, sph:py:po:cass:asp::5:1:2:1:1; acc tourm ~ 3%

342.8 - 350.0 5 - 2 to 3 mm wide qtz-sulf veins w/ coalescing qtz-flood zones; 3-4% total sulf in interval. Veins subparallel, 10°-14° to core. Sph:py:po:asp:cp:cass:: 8:2:1:1:1:<1; access tourm ~ 2%

353.8 - 358.3 1 mm qtz-sulf vn w/ 1 cm qtz flood zone w/ diss. sulf. Total sulf ~1%, sph:asp:po:py:: 7:1:1:1. Vn @ [illegible]

363.0 - 365.4 8-10 mm wide qtz-sulf-cass vn @ 9° to core; 5 mm wide qtz-flood border w/ diss sulf + acc tourm, Total sulf ≅ 6%, sph:asp:cass:py:: 4:3:2:1

383.0 - 384.7 near vert. <1 mm qtz-asp vein w/ acc. tourm; no alteration envelope

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394.8 - 395.5 1 mm wide qtz-sph vn w/ 5 mm wide qtz flood zone; < 1% total sulf.

399. - 400. network of barren qtz vns, hairline - 3 mm in width, offset one another 0-3 mm and cut aplite porphyry.

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	F
310.4	9.7	40	9.0		[illegible]	2.4
319.4	9.0	100	10.0		390	2.0
329.5	10.1	100	10.0		3175	9.2
330.6	1.1	100				
339.7	9.1	100	10.0		4000	6.3
349.9	10.2	100	11.0		3350	25.0
360.1	9.8	96	10.0		315	1.1
370.3	9.8	96	10.0		2300	3.5
381.0	9.7	91	10.0		38	1.0
391.3	9.3	90	11.0		330	14
401.0	9.6	97	10.0		57	1.1

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PROPERTY Coal SEC ___ T ___ R ___ STATE ___ DRILL HOLE NO. DDH-19 SHEET NO. 19

SCALE 1" = 10' COORD. N ___ E ___ BEARING ___ DIP -90 COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

OCK TYPES & STRUCTURES

Tn seriate granite porphyry, as above

404.5-404.7 3 cm clay gouge + rock chips @ 70° to core

410

417.4-417.5 1 cm wide f. gr. aplite porphyry dike @ 29° to core

420.0-420.1 3 cm clay gouge w/rock chips @ 75° to core

420

427.2 1cm clay gouge w/rock chips @ 80° to core

430

440

443.5-445.4 f. gr. aplite porphyry w/two xenoliths of seriate granite porph 2+8 cm diam; both phases are cut by qtz-sulf vn

450

450.6-450.8 f. gr. aplite porph Xcuts seriate granite porph. @ 58°

455.1-455.2 3-4 mm clay gouge zones w/ rock chips and FeOx stain @ 80° to core

460

470

471.6 seriate granite porph/aplite porph contact @ 70° to core; phenos 20% by vol, qtz: k-spar: plag: bio: 5:2:1.5:1.5; qtz is subhedral, 1-5 mm diam, Kspar sub-euhedral + 3-7 mm max dim., plag an-subhedral, 1-6 mm diam, biot. in plates ~1mm in max. dim.

472.2-480.8 irregular pods of pegmatitic texture within apl. porph constitute ~10%

480

of rock in interval; phenocrysts of qtz and feldspar up to 1 cm diam.

490

500

MINERALIZATION AND ALTERATION

406.5 1-2 mm wide qtz-tourm offsets 5 mm wide flat lying barren qtz vein

414.3-415.3 5 mm wide qtz-topaz? vein w/acc. tourm + tr. of py. @ 12° to core

415.5-418.0 4- 1&2 mm qtz-tourm veins, as shown

428.1-432.9 near-vert. 6 mm wide qtz-sph-asp-py vein w/minor diss sph+py in 1 cm wide qtz-flood zone. Sph:asp:py :: 5:4:1

434.1-434.5 1mm qtz-sph-py vein, w/diss sph+py in 1.5 cm wide qtz-flood zone; Total sulf ~2% sph:py :: 8:2

437.0-438.0 2- 1mm wide qtz-sph-py veins @ 8° to core; no alteration halo

443.8-444.9 1mm qtz-sph-py vn; sph:py::6:2; trace of sulf in 4mm wide qtz-flood border; vn @ 14° to core

448.0-449.9 1cm wide qtz-topaz? vn w/acc. tourm + trace of py; vn @ 4° to core

450.2-450.3 1cm wide qtz-vn w/trace of py

457.5-458.6 1mm wide qtz-sph-py vn, sph:py::7:3 trace of sulf + acc. tourm in 8 mm wide qtz flood border

460.3-462.8 1mm wide qtz-sph-py vn, sph:py::5:5, diss sph+py (same ratio) in 1-2 cm wide qtz flood border w/ 5% acc tourm in clots of radiating Xtals up to 6mm diam. Total sulfide ~3% w/i interval

468.5-471.4 2mm wide qtz-sph-asp-py vn @ 14°-18° to core w/ 8 cm wide qtz flood zone w/ diss sph, asp, py and 8% diss tourm; sph:asp:py::6:2:2

472.6-475.0 8mm wide greisen vein, qtz-topaz?-musc-cassiterite, w/tr of sph + 0.5% f. diss. py

475.0-477.0 5- hairline to 2mm wide greisen vns as above, @ 18°-20° to core, tr asp.

477.4-480.5 near vert. qtz-topaz?-musc greisen vn 8 mm wide, tr. of sph + py + asp

480.6-482.7 1.5 cm wide qtz-py-sph-tourm open space filling, py:sph:: 6:4, w/ tr. diss sulfides + acc tourm in 1 cm wide qtz-flood zone

482.7-484.0 1mm qtz-sph-py-musc greisen vn, w/<1% diss sph+py in 1-3 cm wide greisenized alt zone around vn.

486.0-491.0 1-2 mm qtz-sph-py-cass-musc greisen vn, w/~1% diss sph+py in 1-2 cm greisenized border.

492.8-494.5 1mm qtz-sph-musc greisen vn; tr of py+sph in 1cm greisenized alt border.

499.8-501.9 1mm qtz-sph-py-musc greis. vn, tr of sulf in 5mm greis. margin

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	As		
401.2	9.6	97	10.0					
410.4	8.5	92			<5	0.5		
			10.0					
418.5	7.4	91			12	0.4		
			10.0					
			7.0		13	0.4		
428.7	9.9	97						
432.4	2.9	78						
			10.0		770	3.6		
442.4	10.0	100						
			10.0		100	0.4		
452.5	10.1	100						
			10.0		65	0.4		
462.7	9.8	96						
			10.0		295	1.8		
472.7	10.0	100						
			10.0		225	7.5		
483.0	9.8	95						
			10.0		6000	7.5		
493.1	9.6	95	DD	H-	19		5/7	
			10.0		2300	2.6		

PROPERTY ______ COAL ______ SCALE 1" = 10' COORD. N ______ E ______ SEC ______ T ______ R ______ BEARING ______ STATE ______ DIP -90 COLLAR ELEV ______ DRILL HOLE NO. DDH-19 START ______ COMPLETED ______ SHEET NO. 6 4 7 BY ______

ROCK TYPES & STRUCTURES	Depth	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
Aplite porphyry, as above.			503.1	10.0	99	10.0		925	0.8
	510	510.0 - 513.3 massive qtz-sph-py-cass-cp-musc greisen; sulf total ~8%, sph:py:cass:cp :: 6:1:1:tr	513.3	10.0	99	10.0		2400	8.0
	520	523.4 - 524.9 1cm qtz-sph-cass-py open space filling @ 11° to core; sph:cass:py :: 7:3:tr. 525.9 - 526.4 massive greisen, total sulf ≈ 4% sph:cass:py :: 7:2:1 528.3 - 528.8 2-3mm qtz-sph-cass-musc. greis. vns	523.5	10.1	99	10.0		4360	16.0
Aplite porphyry becomes progressively coarser grained with deeper penetration	530	536.8 - 537.2 qtz-py-sph-musc greis.-sulf total ~5% py:sph :: 8:2	533.7	10.2	100	10.0		415	1.2
	540		543.8	10.1	100	10.0		175	2.4
	550	554.1 - 555.9 massive qtz-sph-py-musc greisen, sulf total ~ 3%. 559.5 - 561.9 2mm qtz-cass-sph-musc-fluorite? greis. vn; tr. of sulf + cass in 5mm greis. border	553.8	10.0	100	5.0		78	0.2
	560	565.6 - 567.1 1mm qtz-sph-musc greisen vn	562.8	8.9	99	10.0		2760	2.0
	570		573.0	10.2	100	10.0		210	0.3
	580		583.1	10.1	100	10.0		715	0.3
	590		593.3	10.1	99	10.0		185	0.2
	600								

DDH- 19 6/7

PROPERTY COAL SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___ BEARING ___ DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-19 START ___ COMPLETED ___ SHEET NO. 6 of 7 BY ___

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
Aplite porphyry, as above.		[illegible]	[illegible]	[illegible]				
					10.0		925	0.8
510	510.0 - 523.3 massive qtz-sph-py-cass-cp-musc greisen, sulf total ~ [illegible], sph:py:cass:cp:: 8:1:1:tr.	513.3	10.0	98				
					10.0		2400	8.0
520	523.4 - 524.9 1cm qtz-sph-cass-py open space filling @ 11° to core; sph:cass:py:: 7:3:tr.	523.5	10.1	99				
	525.9 - 526.4 massive greisen, total sulf ~ 4% sph:cass:py:: 7:2:1				10.0		4360	16.0
	528.3 - 528.8 2-3mm qtz-sph-cass-musc greis. vns							
530 Aplite porphyry becomes progressively coarser grained with deeper penetration		533.7	10.2	100				
	536.8 - 537.2 qtz-py-sph-musc greis.-sulf total ~5% py:sph:: 8:2				10.0		415	1.2
540		543.8	10.1	100				
					10.0		175	2.4
550		553.8	10.0	100	5.0		75	0.4
	554.1 - 555.9 massive qtz-sph-py-musc greisen, sulf total ~ 3%.							
	559.5 - 561.9 2mm qtz-cass-sph-musc-fluorite? greis. vn; tr. of sulf + cass in 5mm greis. border.							
560		562.8	8.9	99	10.0		2760	2.0
	565.6 - 567.1 1mm qtz-sph-musc greisen vn							
570		573.0	10.2	100	10.0		210	0.3
580		583.1	10.1	100	10.0		715	0.3
590		593.3	10.1	99	10.0		195	0.2
600								

DDH- 19 6/7

PROPERTY ____ SCALE 1" = 10' COORD N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-19 START ____ COMPLETED ____ SHEET NO. 7 of 7 BY ____

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Aplite porphyry, as above.	
610	605.0 - 607.9 1cm qtz-sph-py-cp vn w/tr. of sulf in 1cm wide silic. margins, sph:py:cp::8:1:1, vn @ 9° to core
620	613.4 - 614.7 8mm wide qtz-sph-py vn w/diss sulf in 12 mm wide silic. margins, total sulf ~9% sph:py::8:2
	616.6 - 635.5 6 - near vert. hairline qtz-musc greisen vns, as shown, no alteration envelope
630	632.6 - 633.6 1mm qtz-musc. greisen vn, tr. of sulf
	635.1 - 635.9 2mm qtz-musc. greisen vn, tr. of sulf
640	637.9 - 638.8 mass. qtz-sph-py-chl?-musc greisen, 7% total sulf, sph:py::6:4
	1mm qtz-musc greisen vn
650	647.0 - 677.8 5 hairline qtz-musc greisen vns
660	
670	
680	
690	
693.3 EOH	Overall recovery 97.0%
700	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
602.5	10.0	100	10.0		87	0.3
613.5	10.2	100	10.0		660	2.6
623.6	10.1	100	10.0		1000	1.9
633.6	10.0	100	10.0		41	0.2
643.7	10.1	100	10.0		365	0.3
653.6	9.9	100	10.0		215	0.2
663.5	9.9	100	10.0		29	0.2
673.7	10.2	100	10.0		26	0.2
684.1	10.4	[illegible]	10.0		62	0.2
693.3	9.2	100	10.3		77	0.2
				DDH-19		7/7

GMC DATA REPORT 327

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Top-sericite granite porphyry	0.0 - 4.7 6mm wide qtz-sph-asp-cass vn near vertical w/ diss tourm in 1-2 cm wide qtz flood margin; sph:asp::cass::5:3:2
	5.2 - 7.5 near vert qtz-sph vn, 3mm wide, @ edge of core; 2 cm wide qtz flood zone w/ 1-2% diss sulf → FeOx
	9.3 - 11.2 3 - hairline qtz-sulf vns → FeOx
15.5 5mm clay gouge @ 47° to core	13.3 - 15.7 2mm wide qtz-sulf vn @ 3° to core sph:py:asp::6:2:2, w/ 4% diss sulf in 3 cm wide qtz flood zone
	19.4 - 27.0 hairline to 15mm wide qtz-tourm vns, w/ clots of diss tourm up to 3mm diam @ 24-27.
	Note: Because of horiz. exaggeration of graphic log, most veins are dipping more steeply than shown in graphic representations.
27.5 1cm clay gouge + rock chips @ 77° to core	
	31.5 - 32.9 2mm wide qtz-sulf vn @ 5° to core, sph:py::7:3; diss sph + py ~4% in 15mm qtz-flood border
	34.7 - 37.2 hairline qtz-sulf → FeOx vn, 5mm wide qtz flood border
	38.6 - 41.3 3 mm wide qtz-asp-py vn @ 3° to core; asp:py::9:1, 5 cm wide qtz flood margin w/ 1-2% diss asp + py
48.2 - 48.3 2cm FeOx stained clay gouge, negligible displacement as vert. frac is continuous on both side (ie. post-min. faulting); Flt. @ 90° to core	43.1 - 45.1 2 - 1mm wide qtz-sph-py vns @ 11° to core sph:py::5:5, w/ 2 cm wide qtz flood margins w/ 1-2% diss sph:py:po::3:2:5
	47.0 - 49.6 1-3 mm wide qtz-sph-asp-cass vn @ 5° to core w/ diss sulf + cass in 2 cm qtz flood border; sph:asp:cass::4:3:3; cass ~1% in interval
	50.0 - 51.8 2mm qtz-sulf → FeOx vn @ 8° to core;
	53.3 - 54.9 3mm wide qtz-asp vn @ 14° to core, <1% diss asp in 4 cm wide qtz flood margin
	56.2 - 57.9 5mm wide qtz-sulf + cass vn @ 7° to core w/ tr of diss sulf in 2 cm qtz flood margin; sph:asp:py:cass:ep ::3:2:2:3:tr.
	60.2
	64.7 - 65.8 2 - 1mm qtz-asp vns @ 7° to core
68.0 4mm clay gouge and rock chips @ 87° to core	66.1 - 66.6 2% diss sph + py + acc. tourm around hairline frac.
71.0 clay gouge and rock chips, < 3 cm wide, @ 88° to core	69.2 - 73.3 diss sph, asp, py + po in coalescing silic margins between 4 & 1mm qtz-asp-sph-py vns w/ interval, w/ 8% acc. diss tourm. Total sulf ~5% sph:py:asp:po::5:3:1:1
	75.3 - 77.3 4 to 6 mm qtz-sph-asp-py vn w/ 3% diss sulf and acc. tourm in 4 cm qtz flood margin; sph:asp:py::5:3:2 in vn @ 12° to core
	80.1 - 82.9 3 - hairline to 4mm qtz-sulf vns @ 14° to core; sph:py:asp:cass::6:2:1:1
	83.2 - 84.6 2 mm qtz-sph-asp-py-cass vn @ 7° to core; diss sph-py (~2%) in 2 cm qtz flood zone; sph:asp:py: cass::4:3:2:1
	85.4 - 86.9 diss. asp:sph:py::5:4:1 totalling 2% in 4 cm wide qtz flood margin around near vert. hairline fracture in interval.
	87.6 - 89.2 2 mm qtz-sph-py-cass vn @ 4° to core; sph:py:cass::8:1:1
	99.8 - 100.6 2 - hairline to 1mm qtz-sph-py vns w/ tr of diss sulf in 3 cm qtz flood border

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
5.0	3.3	66				
			8.0		<9	5.8
12.0	8.3	119				
			9.0		160	6.6
22.1	10.1	100				
			10.0		195	1.4
29.5	6.9	93				
34.5	4.5	90				
			10.0		205	2.4
44.7	10.1	99				
47.0	2.1	91	10.0		545	1.5
			5.0		3450	3.6
56.6	9.6	100				
			7.0		2320	3.5
63.9	7.3	100				
			10.0		210	2.0
74.1	9.6	94				
			10.0		2590	7.4
84.2	10.1	100				
			8.0		3000	2.6
94.5	9.7	94				
			10.0		385	1.0

SCALE 1" = 10'

COORD. N

E

BEARING

STATE

DIP -90

COLLAR ELEV

DRILL HOLE NO DDH 20

START

COMPLETED

SHEET NO 1 of 7

BY

DDH - 20 1/7

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
'gp-seriate granite porphyry, as above	102.5 - 104.2 5 mm qtz-asp-sph-py-cass vn, w/2% - 4% diss sulf + cass in 3 cm qtz flood margin; sph:asp:py:cass::5:3:2:tr; vn @ 11° to core
	108.0 - 112.0 2 - 2 cm qtz-asp-sph-cass vns @ 9° to core, w/ 3-5% diss sph + py in coalescing qtz-flood margins. Sph:asp:cass::2:6:2
110	113.0 - 116.5 diss sph:asp:py:cass::3:3:1:3 totalling 5-6% in coalescing qtz flood margins between 3-1 mm qtz-sulf vns. Acc. tourm. ~ 8%, vns @ 3-12% to core
	116.5 - 117.4 2 cm qtz-sph:asp:cass vn w/ 5% diss sulf in coalescing qtz flood margin
120.4 <3 cm clay gouge + rock chips, FeOx stained, @ 86° to core	117.4 - 120.2 neat vert 2 mm qtz-asp:cass::8:2 vn w/ diss sph+asp+py+cass totalling 5% in 2 cm qtz flood margin
120	121.3 - 122.0
124.5 2 cm clay gouge + rock chips, FeOx stained @ 63° to core	124.3 - 126.8 Indistinct veining, w/ 4% diss sph+py; acc. tourm. 5%
129.8 - 130.0 1 cm clay gouge + rock chips @ 25° to core	
130	
134.9 - 135.2 10 cm clay gouge and broken rock	
135.6 - 135.7 3 cm irregular clay gouge + rock chips	136.5 - 137.0 2 mm wide vn @ 14° to core w/ 5% diss sph+py in 3 cm wide qtz-flood zone; acc tourm ~8%
	138.7 - 138.8 1 mm wide qtz-sph-py vn @ 27° to core w/ 2% diss sulf in 2 cm qtz flood zone
140	144.5 - 147.9 3 - 1 mm qtz-sph-topaz? vns @ 22° - 32° to core.
150	154.4 - 156.5 3 - 1 mm qtz-sph vns w/2% diss sulf in coalescing qtz flood margins
160	159.7 - 160.3 3 mm qtz-sulf → FeOx vn w/10% cass diss sph ~ 3% in 3 cm qtz flood margin; acc tourm ~ 5%
	166.8 - 167.7 1 cm qtz-topaz vn @ 58° to core; tr of py.
170.0 - 170.8 ~50 cm clay gouge and rock chips, orientation uncertain	172.5 - 178.1 near vertical 1 mm qtz-sulf → FeOx-cass vn w/ 1-2% diss sph in 2 cm wide qtz flood margin
170	
178.1 - 178.9 23 cm clay gouge + rock chips @ 60° to core	
180	182.5 - 183.2 1 mm qtz-sulf → FeOx vn @ 16° to core
186.2 - 186.3 3 cm clay gouge + rock chips, FeOx stain @ 85° to core	186.6 - 192.0 2-3 mm qtz-sulf → FeOx-cass vn @ 6° to core, w/1-2% diss sulf → FeOx in 3 cm qtz flood margin; acc. tourm ~ 1%
190	192.6 - 195.8 1-2% diss sulf → FeOx in qtz flood zone bordering two hairline qtz-sulf vns
	197.7 - 199.1 1 mm qtz-sulf → FeOx vn w/3% diss sulf → FeOx in 2 cm wide qtz flood border
200	199.1 - 200.2 1 mm qtz-sulf → FeOx vn @ 7° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY
104.6	10.0	99
115.0	9.9	95
123.2	7.6	93
130.4	4.1	57
135.4	3.9	78
142.3	6.6	95
149.9	7.4	97
159.7	9.4	98
164.5	3.4	68
165.8	0.9	69
173.0	6.5	90
182.3	9.1	98
192.[illegible]	[illegible]	79

INTERVAL	NUMBER	Sn	Ag
10.0		1800	1.8
10.0		6800	14.0
10.0		7350	200
10.0		500	2.7
10.0		210	1.4
10.0		185	2.9
10.0		3050	2.2
10.0		3900	1.4
10.0		1800	2.9
10.0		5700	4.5

DDH-20 2/7

PROPERTY
SCALE 1" = 10'
COORD. N
E
SEC
T
R
STATE
BEARING
DIP -90
COLLAR ELEV
DRILL HOLE NO DDH-20
START 6/19/82
COMPLETED 6/29/82
SHEET NO 2 of 7
BY

PROPERTY COAL
SCALE 1" = 10'
COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___
BEARING ___ DIP ___ COLLAR ELEV ___
DRILL HOLE NO. DDH-20 START ___ COMPLETED ___ SHEET NO. 3 of 7 BY ___

ROCK TYPES & STRUCTURES

Tgp - seriate granite porphyry, as above

210

220

230

240

250

255.1-255.2 clay gouge + rock chips @ 90° to core

260

262.8-263.9 clay gouge + rock chips @ 81° to core

265.9-266.0 1cm clay gouge + rock chips @ 83° to core

269.4-270.4 aplite porphyry dike, f.gr., w/ flow lines @ 25°-30° to core

270

270.4-271.1 Tgp - seriate granite porphyry, as above.

271.4-285.8 contact between Tgp and f.gr. aplite porphyry contacts and flow lines 25°-35° to core; stockwork of barren qtz vns 1-2 mm wide in Tap dike.

279.6-279.9 12 cm clay gouge @ 87° to core

280

285.8 contact - aplite porphyry dike above seriate granite porphyry

289.7-289.8 3 cm clay gouge @ 80° to core

290

300

MINERALIZATION AND ALTERATION

200.5-201.4 1mm qtz-sph-py vn @ 14° to core w/ 2% diss sph+py in 3 cm qtz-flood margin; sph:py::5:5

203.8-205.3 1mm qtz-sph-py-cass vn @ 14° to core, w/ 1% diss sph+py in 3cm qtz flood margin, sph:py:cass::7:2:1 acc tourm ~2%

208.1-208.6 1mm qtz-sulf → FeOx vn

210.6-213.5 1mm qtz-sph vn @ 4° to core w/ 1-2% diss sph + 5% acc diss tourm in 3cm qtz flood margin;

213.6-216.9 2 mm qtz-sph-asp vn @ 8° to core, w/ 2% diss sph+asp in 3cm qtz flood margin; acc diss tourm. ~4%

218.1-222.0 3 mm qtz-sph-py-asp vn @ 5° to core, w/ 3% diss sph+py and acc diss tourm ~5% in 2-5 cm qtz flood margin

234.5-236.0 near vert. qtz-topaz? vn, tr of py

243.3-244.9 2mm qtz-sph-py-cass vn @ 14° to core w/ 1% diss sph:py and acc. diss. tourm ~2% in 3cm qtz-flood margin. Sph:py:cass::4:3:3 in vn

253.0-254.8 3% diss sph:py:cass:cp::6:3:1:tr + acc diss tourm ~3% in 3 cm wide qtz flood margin around hairline qtz-sulf vn.

258.0-259.2 4mm qtz-cass-sph vn @ 6° to core, w 1% diss sph+py in 2 cm qtz flood margin; cass:sph::5:5.

262.7-263.5 5% diss sph+py in 5cm qtz-flood margin about hairline qtz-sulf vn @ 25° to core

270.1-270.6 hairline qtz-py vn w/ 1% diss sph in 3 cm qtz flood margin

271.6-272.1 tr. of diss. sph in 1cm wide qtz flood zone around near vert hairline qtz-topaz? vn

277.2-279.5 1% diss sph in qtz flood margin <1 cm wide around near vert qtz-topaz? vn.

286.8-289.7 3 - hairline to 1mm qtz-py vns at 22° to core, w/ 2% diss sph:py:cass::8:2:1 in 2 cm qtz flood margin

297.3-305.2 3 mm qtz-sph-py-cass vn @ 8° to core, w/ 1% diss sph-py-cp in >5cm qtz flood margin. Sph:py:cass:: 2:4:4 in vn

HOLE DEPTH	CORE RECOVERED	% RECOVERY
202.5	9.6	97
210.1	5.8	70
218.1	7.3	91
227.7	8.8	92
236.0	8.0	96
246.2	10.0	98
256.5	10.1	98
267.2	9.7	90
277.5	10.2	99
287.7	9.9	97
297.8	10.1	100

INTERVAL	NUMBER	Sn	Ag
10.0		2200	5.2
10.0		1900	5.3
5.0		3860	3.1
10.0		110	1.4
10.0		360	0.9
10.0		320	0.6
10.0		4360	8.5
10.0		615	3.2
10.0		600	6.0
11.0		690	2.6

DDH-20 3/7

PROPERTY ____ SCALE 1" = ____ COORD. N ____ E ____ SEC ____ T ____ R ____ BEARING ____ STATE ____ DIP ____ COLLAR ELEV ____ DRILL HOLE NO. DDH-20 START ____ COMPLETED ____ SHEET NO. 4 of 7 BY ____

ROCK TYPES & STRUCTURES

Tgp - seriate granite porphyry, as above

310

320

330

340

350

360

366.9 contact between Tgp above and v.f. gr. aplite porphyry below; aplite porphyry consists of ~3% anhedral qtz phenos ≤1mm, tr. of phlogopite phenos <1mm diam, in a subaplitic ground mass of qtz, kspar and plag. Tr of diss sulf., mostly py.

370

367.0-380.0 aplite porphyry hosts a stockwork of hairline to 5mm wide barren qtz and qtz-musc greisen vns.

380

380.6-435.6 patches of pegmatitic texture in aplite porphyry, amounting to <5% total volume, qtz + feldspar an- to subhedral Xtals up to 15 cm diam, but more commonly between 0.5-1.5 cm.

390

GMC DATA REPORT 327

397.1-397.7 Xenolith(?) of qtz porphyry

400

MINERALIZATION AND ALTERATION

317.5-318.4 3 mm qtz-topaz? vn @ 8° to core, w/ tr. to 1% cass:sph:py::2:3:5 in vn and 1.5cm qtz flood margin.

323.6-327.2 2 mm near vert. qtz-sph-py vn, w/ 3% diss sph:py:cass:asp::4:4:1:1 in 4 cm qtz flood zone, acc. diss tourm ~4%.

328.5-329.3 [illegible]

331.2-332.9 4 mm qtz-cass:sph:py::4:3:3 vn @ 12° to core tr. of sulf in 1cm qtz-flood margin.

333.5-335.7 1 to 2 mm qtz-sph-py vn @ 3° to core

340.9-343.0 2 - 2 to 4 mm qtz-sph-py vns @ 9° to core.; sph:py::7:3. Tr to 1% diss sph in coalescing 4 cm wide qtz flood zones.

360.7-361.8 4 mm qtz-sph:py:cass::4:3:3 vn @ 18° to core w/acc tourm + tr of diss sulf in 1cm qtz flood margin

362.0-362.8 2 to 3 mm qtz-sph:cp:py::5:3:2 vn

373.5-379.9 5 - hairline to 1mm sulf bearing greisen vns, w/ qtz-musc-minor sph; vns @ 11° to core

380.0-381.4 3mm qtz-cass-sph-py vn @ 15° to core w/5% diss sph+py in 1cm qtz flood margin; sph:cass:py::5:2:3

383.3-386.6 2 mm qtz-sph-asp vn @ 9° to core; 10% diss sph: cp:py:: [illegible] w/ [illegible] in 2 cm qtz flood margin

388.8-392.0 4 mm qtz-cass-sph-py vn at 8° to core, cass:sph:py::3:4:3; 8% diss sph:py:cass::8:1:1 in 3 cm qtz flood margin.

HOLE DEPTH	CORE RECOVERED	% RECOVERY
307.9	9.7	96
318.0	10.1	100
328.2	10.2	100
338.3	10.1	100
348.5	10.1	99
358.6	9.9	98
368.8	10.2	100
378.9	10.1	100
389.0	10.1	100
399.2	9.8	96

INTERVAL	NUMBER	Sn	Ag
10.0		4200	9.2
10.0		325	4.0
10.0		110	1.6
10.0		3800	6.6
10.0		530	3.3
10.0		29	0.8
10.0		1400	3.7
10.0		32	0.6
10.0		1300	4.0
10.0		8500	35.0

DDH-20 4/7

PROPERTY COAL | SCALE 1" = 10' | COORD. N ___ E ___ | SEC ___ T ___ R ___ | STATE ___ | BEARING ___ | DIP -90 | COLLAR ELEV ___ | DRILL HOLE NO. DDH-20 | START ___ | COMPLETED ___ | SHEET NO. 5 of 7 | BY ___

ROCK TYPES & STRUCTURES

405.8 - 406.9 33 cm clay gouge + rock chips

413.2 - 414.2 30 cm clay gouge + rock chips @ 68° to core
415.2 - 415.3

421.3 - 422.3 30 cm clay gouge + pegmatitic rock chips, orientation unknown

463.0 - 464.1 33 cm rock chips and rock dust @ 86° to core.

[illegible] - 489.2 [illegible] dry core as show[n]
Reduced to 1AX @ [illegible]
490.6 3 mm [illegible] + 85° [illegible]

MINERALIZATION AND ALTERATION

405.8 - 412.2 3mm qtz cass:sph :: 6:4 vn @ 26° to core; 7% csc. diss sph:py :: 9:1 in 15 cm wide qtz flood margin.

425.5 - 435.8 set of several near vert. barren qtz-musc greisen vns hairline to 1mm wide

446.6 - 448.6 2 mm barren qtz-musc greisen vn @ 4° to core

452.0 - 456.0 2 mm qtz-musc. greisen vn, tr of sulf

455.7 - 456.8 2% diss sph:py :: 9:1 in 5 cm qtz flood margin around 1mm qtz-sulf vn

468.4 - 470.3 3 - 2 to 4 mm qtz-sph-py-cass vns, w/ 5% diss. sph:py:cas :: 4:4:2

474.3 - 476.8 1% diss sph in qtz-musc greisen

484.2 1-2 mm qtz-sph-py vn @ 12° to core
486.2 - 488.1 4 mm [illegible]
489.5 - 490.0 3 mm qtz [illegible] sph-py vn @ 29° to core; 2% diss [illegible] margin

493.5 - 493.6 [illegible] greisen [illegible] @ 58° to core; tr. sph in [illegible]
494.2 - 494.6 2 mm qtz-py [illegible] vn @ 31° to core, w/ <1% diss sph + py in [illegible] cm qtz-musc greisen margin
496.6 - 497.3 2 mm qtz-py vn @ 34° to core; 1% diss py:sph :: 7:3 in 3 cm qtz musc greisen margin

HOLE DEPTH	CORE RECOVERED	% RECOVERY
408.1	9.0	101
413.3	4.4	88
420.3	6.0	86
425.8	5.4	102
435.8	9.4	94
445.8	10.0	100
454.1	8.0	96
464.1	9.5	95
466.5	2.4	100
476.3	10.1	103
478.6	2.3	100
487.7	8.7	100
489.5	1.6	73
490.5	1.0	100
493.2	2.4	89

INTERVAL	NUMBER	Sn	Ag
10.0		135	0.5
10.0		2700	18.0
10.0		140	0.7
10.0		38	0.2
10.0		210	0.6
10.0		220	2.9
10.0		1900	12.0
10.0		725	11.0
10.0		2750	0.5
4.3		550	5.2
4.7		900	2.0

DDH-20 5/7

PROPERTY Coal SCALE 1" = 10' COORD. N E SEC 21 T 23S R 12W STATE AK BEARING DIP -90 COLLAR ELEV DRILL HOLE NO. DDH-20 START COMPLETED SHEET NO. 6 of 7 BY

ROCK TYPES & STRUCTURES

500 Top: aplite porphyry as above

510

520

530

531.7 bx rock + 1.5cm grey clay gouge @ 60° to core

536.8 3mm grey clay gouge @ 80° to core

540

541.5 3mm grey clay gouge @ 85° to core

550

560

570

580

586.1-591.0 Textural variation to subaplitic groundmass, 5% anhedral K spar phenos 1-5mm, 1% anhedral qtz phenos ~1mm diam, ~2% biotite.

590

600

MINERALIZATION AND ALTERATION

522.2-523.6 2mm qtz vn @ 15° to core w/ tr. sph; 1-5cm greisen margin

542.4-544.4 silic zone w/ <<1% diss sph:cp:cass:: 8:1:1

545.4-547.2 1mm qtz-cass-sph-py::4:3:3 vn @ 7° to core; 1% diss cass:sph:py::3:4:3 in 3cm qtz-musc greisen margin

547.2-548.6 1mm qtz-py-sph vn @ 20° to core; 1% diss sph:py::6:4 in 1 to 8cm qtz flood margin

552.6-553.3 2mm qtz-musc-sph-asp greisen vn @ 11° to core

567.6 topaz xtals w/ qtz and musc in 4cm pegmatite zone

HOLE DEPTH	CORE RECOVERED	% RECOVERY
502.7	9.6	101
512.5	9.8	100
522.3	9.7	99
532.0	9.2	95
542.1	9.4	93
552.0	9.7	96
561.5	9.3	98
571.2	9.5	98
580.9	9.6	98
590.5	9.6	100
600.2	9.6	99

INTERVAL	NUMBER	Sn	Ag
10.0		1000	0.9
10.0		38	0.2
5.0		14	0.2
10.0		455	0.8
8.0		15	0.2
6.0		16	0.2
8.0		410	2.6
5.0		595	0.2
10.0		120	0.2
5.0		11	0.2
10.0		14	0.2
10.0		11	0.2
10.0		12	0.2

DDH-20 6/7

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
600 Top – aplite porphyry, as above	609.1–609.9 2mm qtz-musc-py greisen vn @ 14% core; 1cm qtz-musc greisen margin	609.8	98	102	9.8		30	0.3
610 609.8 TD.	609.8 T.D. DDH-20	7/7						
620								

PROPERTY ____ SEC ____ T ____ R ____ STATE ____ DRILL HOLE NO DDH-20 SHEET NO. 7 of 7

SCALE 1" = 10' ____ COORD. N ____ E ____ BEARING ____ DIP ____ COLLAR ELEV ____ START ____ COMPLETED ____ BY ____

GMC DATA REPORT 3 2 7

PROPERTY Coal
SCALE 1" = 10'
COORD. N ___ E ___
SEC 21 T 22S R 12W STATE ALASKA
BEARING ___ DIP -90 COLLAR ELEV ___
DRILL HOLE NO. DDH-21
START 6/30/82 COMPLETED 7/12/82 BY ___
SHEET NO. 1 of 7

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Overburden - No Recovery	
Tgp - seriate granite porphyry	10.0 - 51.7 hairline to 1mm barren qtz-tourm vns, as shown in graphic log
	16.5-16.7 2 cm qtz-tourm vn w/ minor asp + tr of py
	30.2-30.8 3 cm qtz-tourm vn w/ 5% asp @ 17° to core.
7.0-37.7 FeOx stained frac @ 5° to core, no apparent offset.	
48.5 52.2 2 fracs @ 5° to core, no apparent offset	
	57.6-100.0 hairline to 1mm qtz-tourm vns, as shown in graphic log.
2-78.3 2 cm clay gouge @ 40° to core.	
	93.9-96.2 2 mm qtz-asp vn @ 2° to core, w/20% acc tourm.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
10.0			No	SAMPLE		
12.0	2.0	100				
			10.0		29	1.7
22.3	9.4	91				
			10.0		26	0.9
32.7	9.8	94				
			10.0		77	0.7
42.9	10.0	98				
			10.0		165	0.4
53.0	9.8	97				
			10.0		21	1.4
63.3	10.3	100				
			10.0		26	1.0
73.6	10.0	97				
			10.0		54	0.8
83.3	9.7	100				
			10.0		46	2.8
93.4	10.1	100				
				DDH-21		
			10.0		43	3.7

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PROPERTY ______ SEC 21 T 22S R 12W STATE AZ ______ DRILL HOLE NO. DDH-21 SHEET NO. 2 of 7
SCALE 1" = 10' COORD. N COAL E ______ BEARING ______ DIP -90 COLLAR ELEV ______ START 6/30/82 COMPLETED 7/12/82 BY ______

ROCK TYPES & STRUCTURES

Tgp - seriate granite porphyry, as above.

148.0 - 148.1 6mm clay gouge + rock chips @ 90° to core.

148.1 - 178.4 granite porphyry is highly fractured, but no apparent movement is discernable

178.4 - 192.3 granite porphyry is highly fractured w/ many gouge zones; however, most were not recovered intact so relative motion, if any, is unknown.

MINERALIZATION AND ALTERATION

100.0 - 121.9 hairline to 1mm qtz-tourm vns, as shown.

122.0 - 124.2 2mm qtz-tourm vn, near vert

138.2 - 140.1 near vert. 2 mm qtz-sph-cp-po-asp vn

177.4 - 177.9 2mm qtz-sulf → FeOx vn @ 10° to core

198.3 - 199.2 2mm qtz-sulf → FeOx vn @ 17° to core, w/ 2% diss sulf → FeOx in 2 cm qtz flood margin

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
103.6	10.2	100				
			10.0		11	0.7
113.9	10.3	100				
			10.0		13	1.8
124.2	10.0	97				
			10.0		32	3.6
134.4	10.0	98				
			10.0		26	9.0
144.7	10.0	97				
			10.0		15	2.4
[illegible]	9.6	96				
			10.0		22	1.5
164.8	9.7	96				
169.9	4.3	86	10.0		11	0.8
171.9	2.0	100				
173.0	1.1	100				
178.4	4.6	92				
			10.0		9	1.7
186.9	7.5	88				
190.5	2.6	72	10.0		360	1.3
192.3	1.8	100				
194.8	1.0	40				
197.5	1.5	56				
200.2	2.0	74	10.0		134	4.5

110 120 130 140 150 160 170 180 190 200

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PROPERTY ____ SCALE 1" = 10' ____ COORD N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP -90 ____ COLLAR ELEV ____ DRILL HOLE NO. DDH-21 ____ START ____ COMPLETED ____ SHEET NO. 3/7 ____ BY ____

ROCK TYPES & STRUCTURES

Tgp - granite porphyry, as above.

210

220

221.0 1cm yel-wht clay gouge + rock bx @ 60° to core

222.0 - 230.0 at least 10 distinct zones w/ yel-wht to brn clay gouge + rk bx ~ 0.5-2.0cm thk, @ 50-60° to core

230

233.0 clay gouge 1cm w/ rk bx at 60° to core.

234.2 ... clay gouge + rk bx ~ 2cm thick @ 55° to core

237.0 5mm bull qtz vn @ 70° to core

240

240.3 7mm bull qtz vn @ 65° to core

249.0 5mm bull qtz vn @ 70° to core.

250

250.5 2-3mm ... clay gouge @ 60° to core

252.0 10cm shatter zone w/ minor clay gouge @ 65° and 65° to core

253.7 - 255.2 bx rock frags + clay gouge @ 65° to core

259.2 ...mm pale grn clay gouge @ 65° to core

260

260.2 3-5mm bull qtz vn @ 60° to core

263.1 1cm bull qtz vn @ 75° to core

264.4 1-2cm pale grn. clay gouge @ 65° to core

270

270.6 3mm FeOx stn. clay gouge along 0.5cm bull qtz vn @ 60° to core

275.5 5cm zone of FeOx stn. clay gouge + rock frag. @ ~60° to core

278.8 3mm FeOx stn. rock frag + clay gouge @ 68° to core

280

285.8 2-3cm yel-brn clay gouge w/ rock frags @ 65° to core, cuts tourm. zone

286.6 5mm FeOx stn. clay gouge w/ rock frag. @ 65° to core

290

293.7 1cm yel. clay gouge along qtz-chl. ? vn. @ 40° to core

294.3 7mm qtz vn @ 55° to core

296.1 7mm qtz vn @ 70° to core

299.7 3mm dk brn clay gouge @ 70° to core

300

MINERALIZATION AND ALTERATION

208.4 - 208.9 1mm qtz-sulf → FeOx vn @ 9° to core

210.5 - 211.1 1mm qtz-sulf → FeOx vn @ 11° to core

234.6 - 235.0 1mm qtz-sulf → FeOx vn @ 10° to core

255.6 - 256.5 1mm qtz-sulf → FeOx vn @ 15° to core

276.9 - 277.6 1mm qtz-sph:cp:asp:py :: 6:2:1:1 vn @ 10° to core.

278.6 - 279.0 1mm qtz-sph-py-asp vn @ 12° to core

285.9 - 286.1 1mm qtz-sulf → FeOx vn @ ~10° to core

299.0 - 299.9 1mm qtz-py-sph vn @ 9° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
204.3	2.0	99				
207.5	2.9	91				
			10.0		35	1.4
210.9	3.0	90				
215.7	4.2	65				
			10.0		20	1.2
221.6	4.4	74				
222.5	1.4	156				
223.5	1.6	80				
227.3	2.7	96				
			10.0		82	15
232.2	4.8	98				
233.3	1.0	91				
235.1	1.4	78				
			10.0		42	0.9
243.5	8.0	95				
			10.0		27	0.8
252.3	8.5	97				
260.3	7.8	98	10.0		54	1.9
269.0	8.5	101	10.0		25	0.5
279.1	10.1	100	10.0		57	1.3
289.0	9.7	98	10.0		11	0.5
295.0	5.7	95				
			10.0		175	1.1

DDH-21 3/7

PROPERTY Coal SCALE 1" = 10' COORD. N ___ E ___ SEC 21 T 32S R 12W STATE Az. BEARING ___ DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-21 START ___ COMPLETED ___ SHEET NO. 4 of 7 BY ___

ROCK TYPES & STRUCTURES

300

301.0 3mm FeOx stn. clay gouge @ 55° to core

Typ. seriate granite porphyry, as above.

307.0 [illegible] bull qtz vn @ 70° to core

310

311.7-315.1 FeOx stn. clay gouge in 2 locat. @ 85° + 50° to core

316.0 >3cm of wht clay gouge + rock chips @ 65° to core

319.0-320.0 broken rock zone w/ clay gouge 1-2cm thick @ 45-65° to core

320

325.2 bull qtz vn 5mm thick @ 70° to core

328.2 1cm yel-wht clay gouge @ 65° to core
328.8 1cm FeOx stn. clay gouge @ 65° to core

330

334.3 3mm FeOx stn. clay gouge w/ rock chips @ 50° to core
336.2 shatter zone w/ minor Fe stn. clay gouge @ 60° to core
338.2 1mm dk brn FeOx stn. clay gouge @ 60° to core

340

342.2 1mm dk brn FeOx stn. clay gouge @ 60° to core

349.0 0.5cm FeOx stn. clay gouge @ 50° to core

350

356.4-359.0 bx zone w/ yel-wht clay gouge + rock chips @ 60° to core

360

362.8 >3cm yel. clay gouge w/ rock chips @ 50° to core

370

371.4-372.6 bx rock mixed w/ yel-wht clay gouge + fxs @ 60° to core

377.0 bx rock w/ minor yel-wht clay gouge + fxs @ 40° to core

380

382.7 1cm lt gry-wht clay gouge @ 80° to core
385.8 2mm dk red-brn clay gouge @ 65° to core

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390

394.7-395.2 bx rock zone w/ minor wht clay gouge @ ~75° to core

398.2 4mm bull qtz vn @ 60° to core

400

MINERALIZATION AND ALTERATION

299.7-302.0 [illegible] 1mm qtz-cass-[illegible] [illegible]

302.8-303.0 1mm qtz-py vn @ [illegible] to core

306.1-307.0 2-1mm qtz-py vns @ [illegible] + 37° to core

311.7-313.0 5mm qtz-sulf→FeOx vn @ 21° to core

320.5-321.2 2mm qtz-sulf.-FeOx-cass vn @ 25° to core; 4% diss sulf→FeOx in 3-5mm qtz flood margin

335.1-335.5 2mm qtz-sph-py-cp-asp-cass vn @ 21° to core; tr. diss sph+py in 4mm qtz flood margin

336.6-337.0 2mm qtz-sph-py-cass vn @ 12° to core

337.8-339.5 2-hairline qtz-sulf→FeOx vns @ 7° to core

344.8-346.0 2-1mm qtz-sph-py vns @ 19° to core; 2% diss sph+py in 1cm qtz flood margin

345.7-346.9 2-3mm qtz-asp:cass:py:sph::7:2:<1:<1 vns @ 25° to core; 4% diss sph:py:cp:asp:cass ::7:2:1:tr:tr in 2cm qtz flood margin

348.8-353.0 6mm qtz-tourm vn, near vert, w/ tr. diss py+po

360.3-365.5 at least 8-hairline to 1mm qtz-sulf→FeOx vns @ 33° to 45° to core; 5% diss sulf sph:cp:py::6:2:2 mostly oxidized in coalescing qtz flood margins; 5%-7% diss tourm

382.7-383.5 4mm qtz-asp:sph:py::6:3:1 vn @ 15° to core; 3% diss sph:asp:cp:py::5:2:1:2 in 1cm qtz flood margin.

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392.6-393.8 1mm qtz-sph-py vn @ 9° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	[illegible]
305.0	9.8	98				
			10.0		430	3.5
315.1	10.0	79				
318.5	1.3	35				
			10.0		155	3.1
321.5	3.1	103				
328.2	6.2	93				
			10.0		100	6.5
338.4	9.8	96				
			10.0		200	4.9
346.8	7.8	93				
			10.0		800	9.0
355.8	8.6	96				
358.9	3.2	103				
			10.0		740	2.6
360.7	1.6	90				
365.3	4.1	89				
			10.0		2000	17.0
371.8	4.7	72				
378.1	4.0	63				
			10.0		28	1.6
388.2	9.6	95				
			10.0		440	2.9
398.1	9.7	98				
			10.0		1100	0.4

DDH-21

4/7

PROPERTY Coal SCALE 1" = 10' COORD. N ___ E ___ SEC 21 T 22S R 12W STATE Alaska BEARING ___ DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-21 START ___ COMPLETED ___ SHEET NO. 5 of 7 BY ___

ROCK TYPES & STRUCTURES

400.0 - 405.4 bx rk zone w/ 4 cm thk clay gouge @ 402.0 and 1 cm thk gouge @ 405.4 both ~ 70° to core
Typ. consists granite porphyry as above

410

413.0 3mm FeOx stn. clay gouge @ ~ 80° to core - same at 413.4
414.2 3mm bull qtz vn @ 65° to core
415.2 2mm bull qtz vn @ 65° to core

420

420.7 - 421.7 bx rk w/ minor wht clay gouge @ 75° to core

425.7 1cm bull qtz vn @ 60° to core
426.1 8mm bull qtz vn @ 60° to core

430

437.4 - 438.1 1.5 cm dike of f. gr. aplite porphyry @ 12° to core.
439.3 contact of granite porphyry above w/ f. gr. aplite porphyry below

440

442.8 - 447.7 bx rock w/ wht + FeOx. stn. clay gouge zones @ 70° to core
439.6 - 443.0 Xenoliths of granite porphyry as shown
447.5 fault contact back to granite porphyry

450

451.4 contact w/ v.f. gr. aplite porphyry @ 15° to core
452.9 - 459.6 intermittent pegmatitic textures and some minor flow banding at ~60°-65° to core, pegmatite phenos up to 8 mm diameter.
rock gradually coarsens into subaplite porphyry below 460.0, w/ subhedral qtz phenos 2-3 mm diam

460

4% K spar (subhedral) 2-8 mm diam 10%; plag an-subhedral 1-2 mm diam 5% in groundmass of f. gr. qtz, K spar, biot + plag., all < .5 mm diam.

470

476.5 2mm clay gouge (FeOx stn) @ 25° + 85°

480

490

500

MINERALIZATION AND ALTERATION

420.6 - 420.7 1mm qtz-py-asp vn @ 11° to core.

429.1 - 430.1 1mm qtz tourm vn @ 5° to core, tr diss po.

452.9 - 458.2 near vert. hairline - 1mm qtz-musc greisen vns w/ tr. py as shown

467.3 - 474.8 near vert hairline - 1mm qtz-musc greisen vns as shown.

477.6 - 486.4 near vert. hairline - 1mm qtz musc vns as shown

490.0 - 490.3 1mm qtz - cass - py - asp vn @ 33° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
408.1	8.1	81	10.0		30	0.6
416.3	9.8	111	10.0		<5	0.4
426.4	9.9	97	10.0		11	0.5
436.3	9.8	99	10.0		6	0.4
446.2	9.7	98	10.0		6	0.6
456.2	10.0	100	10.0		<5	0.4
466.4	10.0	98	10.0		19	0.4
476.0	9.2	96	10.0		66	0.5
485.9	9.7	98	10.0		31	0.2
496.0	10.0	99	10.0	DDH-21	69	0.2

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PROPERTY Coal SCALE 1" = 10' COORD. N E SEC T R STATE BEARING DIP -90 COLLAR ELEV DRILL HOLE NO. 21 START COMPLETED SHEET NO. 6 of 7 BY

ROCK TYPES & STRUCTURES

500 Tap – aplite porphyry, as above

510

520

530

540

544.7 2mm FeOx stn. clay gouge @ 20° to core

550

560.2 Textural change to much finer grained groundmass and less phenos; margins of lge K spar phenos are indistinct; texture prob. due to increase in metasomatic altn

570

575.6 Textural change back to cser gr. subaplite porphyry, as described above.

580

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590.4 2mm FeOx stn. clay gouge @ 55° to core

600

MINERALIZATION AND ALTERATION

502.0 – 506.0 near vert hairline qtz-cass-sulf → FeOx vn

507.1 – 508.1 1mm qtz-sph-py vn @ 6° to core.

593.8 – 594.6 3mm qtz-cass-py-tourm-musc greisen vn @ 12° to core; tr. diss sulf in 5mm greisen margin.

596.5 – 597.0 hairline qtz-sph-py vn @ 22° to core

Hole Depth	Core Recovered	% Recovery	Interval	Number	Sn	Ag
506.0	7.8	78				
			10.0		270	0.4
516.1	10.1	100				
			10.0		11	0.2
523.4	7.2	98				
			10.0		18	0.2
533.4	9.7	97				
			10.0		12	0.2
543.5	10.0	99				
			10.0		7	0.2
553.6	9.8	97				
			10.0		22	0.4
563.4	10.0	102				
			10.0		12	0.2
573.6	10.1	99				
			10.0		17	0.3
583.4	9.8	100				
			10.0		9	0.2
593.2	9.6	98				
			10.0		3600	0.5

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ROCK TYPES & STRUCTURES	Depth	MINERALIZATION AND ALTERATION
Top- aplite porphyry as above.	600	
		607.0-607.8 2mm qtz-musc-cass-py greisen vn @ 12° to core
	610	609.5-610.6 2-1mm qtz musc-py-sph greisen vns @ 11° to core; tr. diss sulf in 3cm qtz-musc-tourm greisen margin
	620	
622.0 2mm wht clay gouge @ 65° to core		621.3-621.7 2mm qtz-sph-py-musc greisen vn @ 17° to core
	630	
634.5 4mm wht clay gouge @ ~40° to core		
636.2 1cm wht clay gouge w/ rk chips @ 85° to core		
	640	
649.5 3mm wht clay gouge @ 65° to core		
	650	
653.6 1cm wht clay gouge w/ rk chips @ 75° to core		
653.8 TD		DDH-21 7/7
	660	
	670	
	680	
	690	
	700	

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
603.3	10.0	99				
			10.0		1800	0.3
613.6	9.9	96				
			10.0		855	0.2
623.7	10.0	99				
			10.0		38	0.2
633.8	10.0	99				
			5.0		105	0.4
641.4	7.3	96				
			10.0		700	0.6
650.0	7.3	85				
653.8	2.2	58	8.8		13	0.2

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PROPERTY Coal

SCALE 1" = 10'

COORD. N ____ E ____ SEC ____ T ____ R ____ STATE ____

BEARING ____ DIP ____ COLLAR ELEV ____ DRILL HOLE NO. DDH-21 SHEET NO. 7 of 7

START ____ COMPLETED ____ BY ____

SCALE 1" = 10' COORD N E SEC T R STATE Alaska DIP 40 COLLAR ELEV DRILL HOLE NO. START 7/13/82 COMPLETED SHEET NO. 1 of 2 BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
0.0– ...	
11.5 5cm ... (includes ...)	
14.0 ...	
Tgp seriate granite porphyry	
	24.1–25.3 2mm qtz sulf → FeOx vn @ 8° to core, 2% diss sulf → FeOx in 1 cm qtz flood ...
... 2mm ... @ 60° to core.	
55.6 ... @ ...	
59.6 3 ... gouge w. ... chips @ 60°	58.4–60.1 2 1mm qtz-sph-py vns @ 6° to core, w/ tr. diss sulf + 10% diss tourm in 1.5 cm qtz flood margin
	61.0–62.1 2 hairline qtz-sph-py vn @ ...° to core
	62.9–65.4 near vert 1-2 mm qtz-sph-py-asp-cass vn, w/ tr. diss py in 2–10 mm qtz flood margin
75.0–77.0 ... gouge + ... chips @ ~ 60° ...	
	89.7–90.0 2 ... tourm-asp vn @ 22° to core

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
10.0						
14.3	4.5	105				
~~14.7~~	~~0.6~~	~~150~~				
			10.0			0.6
24.8	10.0	99				
			10.0		125	3
35.6	10.0	98				
			10.0		500	2.0
45.6	10.0	100				
			10.0		[illegible]	.06
53.6	7.8	97				
			10.0		68	1.5
61.0	7.5	101				
			10.0		780	1.4
71.2	10.0	98				
73.0	1.6	91				
78.4	5.4	100				
			10.0		61	8.4
88.6	9.9	97				
			10.0		41	0.6
98.7	10.0	99				
			10.0		[illegible]	0.4

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PROPERTY ______ SCALE 1" = 10' ______ COORD. N ______ E ______ SEC 21 T ______ R 12W STATE ______ DIP -90 COLLAR ELEV ______ DRILL HOLE NO. ______ START ______ COMPLETED ______ SHEET NO. ______ BY ______

ROCK TYPES & STRUCTURES

Typ-schate granite porphyries above

125.8 3 mm [illegible] clay gouge @ [illegible] to core

137.9 - 140.0 mixed clay gouge + rk chips @ est. 30° to core

146.1 - 151.0 bx zone - poor recovery - mixed clay + rk chip

≈151.0 contact metarg. w/ Tgp - prob. fault contact @ uncertain orient.
metaargillite is f.gr, massive bedded, and charcoal gray in color. Numerous thin remob. qtz veins in varying orientations present; may be a xenolith;

159.0 1 cm gry clay gouge w/ rk chips @ 30° to core

164.6 - 165.9 intense bx zone w/ minor clay gouge + rock chips @ uncertain orient. to core
166.5 - 167.5 intense bx zone - clay gouges + rk chips @ uncertain orient.
169.1 contact [illegible] / Tgp @ uncertain orient.

175.6 1 cm yel-buff clay gouge w/ rk chips @ 70° to core

193.8 2 mm clay gouge + sand @ 45° to core

195.6 5mm yel clay gouge @ 60° to core

MINERALIZATION AND ALTERATION

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	0.4
[illegible]	9.8	97	10.0		[illegible]	[illegible]
125.9	10.0	100	10.0		16	0.6
136.1	10.1	99	10.0		32	1.1
			5.0		13	0.8
141.5	[illegible]	88				
[illegible]	[illegible]	[illegible]	10.0		30	0.9
[illegible]	[illegible]	[illegible]				
156.9	1.1	61				
160.4	2.8	[illegible]	10.0		110	0.3
161.6	1.4	127				
163.3	1.4	100				
165.9	1.8	72				
167.3	1.4	100				
171.3	.8	95	6.0		95	0.4
175.0	4.5	96				
180.1	5.2	102	10.0		19	[illegible]
183.2	3.1	100				
184.0	1.6	89				
189.1	2.5	49	10.0		45	2.2
190.3	1.7	67				
192.4	1.0	50				
193.9	0.6	40				
197.6	3.6	97				
198.2	0.3	67	10.0		45	[illegible]

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PROPERTY ______ SCALE 1" = 10' COORD. N ______ E ______ SEC 21 T 23S R 12W BEARING ______ STATE ALASKA DIP -90 COLLAR ELEV ______ DRILL HOLE NO. DDH-22 START ______ COMPLETED ______ SHEET NO. ______ BY ______

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
200	
201.4 2 cm Fe-ox stn. clay gouge @ 80° to core	
202.1 2 mm Fe-ox stn. clay gouge @ 35° to core	203 ... to core
Top: ...	
207.2 3 mm Fe-ox stn. clay and gouge @ 20° to core	
209.6 ... @ 20° to core	
210	
212.0 4 mm Fe-ox stn. clay gouge @ 65° to core	
	217.7 - 218.8 near vert. hairline ... FeOx ...
220	
224.5 2 mm Fe-ox stn. clay gouge w/ ... @ ~60° to core	
230	
237.0 - 241.0 very bx zone w/ minor clay + ... chips @ 40° and 65° to core	
240	
	242.2 - 247.8 near vert. hairline qtz-sulf + FeOx vn.
250	250.4 - 252.0 1 cm qtz-tourm vn w/minor asp, cp, + sph. @ 11° to core.
259 - 260.0 bx zone w/ sand + ... clay gouge as shown	
260	
262.0 3-4 mm yel-brn clay gouge @ ~70° to core	
	266.2 - 267.5 3 mm qtz-tourm-cass-sph-cp-py vn @ 4° to core; no qtz flood margin.
270	
280	
290	
300	

SAMPLE HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	ASSAY			
201.4	8.1	97						
208.6	5.0	78	10.0		36	8.2		
214.2	5.1	91						
			10.0		45	6.7		
222.3	7.9	99						
			10.0		51	0.9		
232.4	9.8	97						
239.4	5.4	77	10.0		34	1.2		
245.8	5.6	88						
			10.0		25	1.2		
255.5	9.9	102						
			10.0		325	1.7		
265.1	8.9	93						
			10.0		1000	3.2		
274.3	8.9	97						
			10.0		18	0.7		
284.3	9.6	96						
			10.0		14	0.3		
294.1	9.8	100						
			10.0		23	0.7		

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PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC 21 T 22S R 12W STATE ____ BEARING ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-22 START ____ COMPLETED ____ SHEET NO. 4 of 6 BY ____

OCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
300 Tga – [illegible] granite porphyry as above	
	[illegible] [illegible] @ [illegible]° to core
310	
	316.2 – 316.0 2mm qtz-tourm [illegible] + py. @ 15° to core.
320	
330	
334.4 1cm bull qtz vn @ 58° to core.	334.1 – 335.0 1mm qtz-sph-py-asp vn @ 12° to core
	336.6 – 337.1 2-1mm qtz-py vns @ 14° to core
340	
	341.0 – 343.8 Incipient pyritization along irregular hairline fracs, w/1-2% diss tourm; total py < 1%
350	350.8 – 353.0 near vert. 2mm qtz-py vn; total py < 1%
	352.3 1cm bull qtz vn w/ tr. moly at 55° to core.
	355.0 – 355.7 < 1% diss py w/ tr. sph + asp in irreg hairline vns
	356.8 – 358.2 2mm qtz-sph-cass-cp-asp vn @ 3° to core. cass:cp:sph:asp :: 3:3:3:1
360	
	365.2 – 368.8 near vert. hairline qtz-py vn.
370	370.4 1cm bull qtz vn w/ lepidolite? + tr. moly. @ 60° to core.
	376.4 – 377.2 hairline qtz-py vn @ 16° to core
380	
390	392.9 – 395.3 1mm qtz-sph-py-cp :: 7:2:1 vn @ 4° to core.
397.0 1 cm gy [illegible] [illegible] gouge & rockchips @ [illegible]° to core	
400	

HOLE DEPTH	CORE RECOVERED	% RECOVERY
[illegible]	9.7	98
[illegible]	10.[illegible]	[illegible]
32[illegible].9	10.0	99
331.4	7.1	99
341.5	10.0	99
351.6	9.9	98
361.2	9.6	100
361.8	0.6	100
371.9	9.8	97
381.9	9.8	98
391.9	10.0	100
39[illegible]	4.7	85

INTERVAL	NUMBER	Sn	Zn
10.0		7	[illegible]
10.0		57	1.0
10.0		175	0.9
10.0		310	1.1
10.0		14	0.5
6.0		17	1.3
10.0		395	[illegible]
10.0		12	0.3
[illegible]		14	0.4
5.0		19	0.3
10.0		130	1.1

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PROPERTY Cont. SCALE 1" = 10' COORD. N ___ E ___ SEC 21 T 22S R 12W BEARING ___ STATE NM DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-22 START ___ COMPLETED ___ SHEET NO. 5 of 6 BY ___

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
– Typ. sericite granite porphyry as above	400.2 - 405.5 1mm qtz-sericite-py vn @ 80° to core; amorphous sericite	403.6		100				
410					10.0		2010	1.3
		413.5	10.2	97				
420					10.0		27	0.4
	427.9 - 428.5 4mm qtz-tourm-sph-cass-py vn @ 7° to core; 2% diss sph + minor diss py + 3mm qtz flood margin.	423.7	10.0	98				
430					10.0		590	0.7
	434.1 - 434.7 hairline to 1mm irregular qtz-py-tourm vns. 436.4 - 437.2 pyritization of groundmass of gr. porph along 2 hairline fracs @ 39° to core	431.8	10.1	100				
440					10.0		18	0.4
	445.9 - 446.3 3mm qtz-tourm vn @ 18° to core	440.0	9.8	99				
	448.9 - 449.0 1cm qtz-tourm-py vn @ 37° to core.	448.5	9.7	99				
450					10.0			0.3
	456.5 - 457.2 2mm qtz-sph-py vn @ 20° to core, w/ 30% diss tourm + 3% diss sph + py in 1cm qtz flood margin.	458.6	10.0	99				
460					10.0		23	0.4
		467.4	8.3	94				
470					10.0		17	0.3
		477.2	9.9	101				
480					10.0		6	0.2
	481.0 - 482.3 2 - 1.5mm qtz-musc-py vns, X-cutting w/ tr. moly. 482.1 - 484.5 near vert. 1mm qtz-asp-py vn	487.1	9.9	100				
490					10.0		18	0.3
494.0 - 494.4 12cm dike of f. gr. aplitic porphyry @ 67° to core.	493.8 - 497.0 near vert hairline qtz-musc-tourm vn w/ tr. of asp + cp. 497.3 - 498.0 3mm qtz-musc. greisen vn.	497.5	10.0	98		DDH-22		
500					10.0		19	0.2

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PROPERTY ______ SCALE 1" = 10' COORD. N ______ E ______ SEC 21 T 22S R 12W BEARING ______ STATE Az DIP -90 COLLAR ELEV ______ DRILL HOLE NO. DDH-22 START ______ COMPLETED ______ SHEET NO. 6 of 6 BY ______

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
500 Tgp [illegible] porphyry [illegible]	499.8-505.9 [illegible]
	[illegible] 506.8 [illegible]
510	512.5-515.1 [illegible] @ 25° to core [illegible]
520	
530	
531.0 3-4mm lt gry clay gouge @ ~90° to core.	
537.4 1cm gry clay gouge + rock chips @ 55° to core	
540	
541.6 contact Tgp w/ Tap (peg. phase) @ 55° to core; dendritic biotite @ 551.8-555.4.	
550	
555.4 T.D.	555.4 T.D. DDH-22 6/6
560	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Cu	Ag
507.3	10.0	100	10.0		15	0.3
517.1	9.7	99	10.0		22	0.3
527.3	10.2	100	10.0		12	0.2
538.5	9.5	93	11.6		57	0.4
547.8	10.2	99				
554.7	5.6	81				
555.4	0.4	57	13.8		14	0.2

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PROPERTY Cool SCALE 1" = 10' COORD. N E SEC T R BEARING STATE DIP 90° COLLAR ELEV DRILL HOLE NO. DDH-23 START 7/21/82 COMPLETED 8/?/82 BY SHEET NO. 1

OCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		Ag
0.0-4 overburden No recovery								
4.0-100.5 ... graywacke ... reddish ... color; rock appears to have been broken extensively, then rehealed, doubtedly the result of intrusion of granite porphyry; many blocks are rotated but do not appear to have moved more than a few inches before rehealing		4.0						
	8.0-10.2 qtz-tourm-asp-cass vn @ 8° to core.	8.4	3.9	91				
					5.9		7.0	
		13.8	5.8	100				
20.7-21.0 ... porphyry dike @ 50° to core					10.0		325	1.0
21.0 ... Fe ox stn ... @ 30° to core	20.7-21.0 4% diss sph: cp: asp py ... aplitic granite porphyry dike							
	23.6-24.0 near-vert 4-6 mm qtz-tourm cass: asp: sph: py: 6:2:3 tr.	24.0	9.8	96				
					10.0		3450	1.7
30.0 2 mm ... clay gouge @ ~ 2° to core	31.0-31.? ... qtz-tourm-asp vn @ 41° to core							
		34.0	10.1	101				
	36.3-37.3 2 2 mm qtz-asp vns ... 25° to core							
					10.0		110	0.7
		44.1	10.1	100				
					10.0		65	0.5
		54.1	10.0	100				
	61.8-62.3 2 mm qtz-asp-minor sph vn @ 16° to core				10.0		35	0.4
		64.1	10.0	100				
66.7-67.5 ... gouge ... 15° to core								
68.6 1-2 mm ye... @ 45°- 75° to core								
70.0 Fe-ox stn ... @ 60° to core					10.0		30	0.3
		74.0	10.0	101				
					10.0			
		84.4	10.4	100				
	87.2-87.6 8 mm qtz-py-asp vn @ 26° to core							
					10.0		30	
		94.7	10.1	98				
					10.0		30	0.2

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PROPERTY ____ SCALE 1" = 10' ____ COORD. N ____ E ____ SEC ____ T ____ R ____ BEARING ____ STATE ____ DIP 90° ____ COLLAR ELEV ____ DRILL HOLE NO. ____ START ____ COMPLETED ____ SHEET NO. 2 ____ BY ____

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		Ag
Extensively broken and rehealed silic as above.	101.9–102.1 2 cm bull qtz vn @ 45° to core; 103–103.3 qtz vn @ 55° to core							
		104.8	10.0	95				
	106.9–107.2 2 mm qtz tourm vn @ 70° to core							
109.3–114.7 aplitic granite porphyry dike, orientation uncertain	109.6–110.0 2 mm qtz-sericite-py vn @ 7° to core				10.0		145	0.7
	near ... to 1 mm barren qtz ... vns in apl gr porph.							
		114.9	10.0	100				
118.0 ...								
119.5–125 zone of bx ... numerous clay gouge ... @ 15° to core					10.0		45	0.5
123.0–150.4 aplitic granite porphyry dike @ ~35° to core	... near ... to ... mm qtz vns in apl gr porph	125.1	10.0	98				
130					10.0			0.2
		135.3	10.0	100				
140					10.0		65	0.4
143 ...		144.0	7.5	86				
146 – 147.0 ...		148.0		90				
150					10.0			0.8
158.0 – 162.5 intense bx zone ... clay gouge @ 45° to core	156.0–159.4 5 to 8 mm ... qtz tourm asp py sph ...	158.0	9.9	99				
160		159.6	.5	96	10.0		40	1.
162.7 – 166.6 ... bx zone ...		163						
165.0 contact ... dike @ ... to core		164.2	1.3	16	5.0		65	0.5
	166.9–168.3 barren qtz-musc greisen vns as shown	166.6	2.4	100				
170								
171.5 – 181.6 thick bx fault zone ... numerous clay ... zones @ various angles to core		172.1	5.7	100				
					6.0		47.5	
		176.6	.9					
180								
181.6 contact ... granite ...				83	3.6		120	0.9
183.3 – 196.0 ... fault ... with numerous ... angles to core 55° @ 191		184	2.5	86				
					3.6		83	0.6
190		190.3	3.3					
192.0 contact ... @ ... core								
		196.0	4.2		10.0		15	0

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OCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	SAMPLE: HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	ASSAY: Sn	Ag
200 … 1.5 cm Fe ox … brecciated graywacke as above. … 15 - 218.2 highly … Fe ox … core and all other orient			2.0					
204.8-211.5 aplitic granite porph … dike orientation uncertain		207.5	6.4	100			25	0.9
210	2.3-21 … qtz-tour … Fe ox … @ 28° to core	211.0	1.8	57				
		215.4	4.5	102	10.0		325	2.2
		218.2	2.2	79				
220	…-226 near vert … qtz-tour-asp …							
					10.0		29	0.9
229.0 0.5 cm Fe-ox stn clay gouge … @ 7…		228.7	9.9	94				
230	…-233.1 … qtz-tour … diss. asp … 20° to core							
237.1-237.4 irregular bleb of aplitic gran porphyry					10.0		140	1.3
		237.9	9.3	101				
240.4-241.1 irregular bleb of apl gran porph; 243.3-245.4 aplitic gran porphyry dike orientation uncertain; 244.5 … clay gouge @ ~25 to core; 245.8-245.9 … qtz vn @81° to core		245.2	7.3		10.0		95	0.6
250.5 1 cm yel brn clay gouge … @ 85 to core; 254.0-255.0 aplitic gran porph dike @ 2… to core; 256.5-257.? … @ 30° to core		253.1	5.6	0…				
256.0 1-2 cm Fe-ox stn clay gouge @ ~15° to core	256.5-256.7 4% diss … 5:2:3 in apl gran porph dike				10.0		85	0.6
259.0-260.0 highly brx zone … clay gouge @ … to core								
260; 263.0 5 …	260.3-260.9 1 cm qtz tourm-sph-asp vn @ ~25 to core	260.9	6.7	0…				
265.2-266.0 aplitic gran porph dike, orientation un…; 266.…-267.… … brx zone w/ 12 cm … of brn clay gouge … @ … orientation … core					10.0		275	4.8
		268.0	6.9	97				
270; 271.5-272.7 … aplite dike @ 30° to core								
275.6 2 … @ 5…	274.0-276.0 2mm qtz-tour … Fe ox …	273.0	5.…	…				
					10.0		230	1.2
		277.8	4.4	92				
280; 280.4-283.7 … brx zone … up to 4 cm thick @ 5…		280.4	1.9	73				
284.1-285.0 … gray gouge … @ 50° to core … @ 284.2		284.3	3.9	100	10.0		140	0.8
289.0 Fe ox stn clay gouge …		288.0	3.6	97				
290; 290.0-290.7 apl gran porph dike, orientation uncertain; 293.0-294.5 … dike @ …; 293.6 1 cm soft … @ 30° to core	290.0-290.4 5% diss … in apl gran porph dike							
					10.0		58	0.9
300		297.9	9.6	02				

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PROPERTY ___ SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___ BEARING ___ DIP -90° COLLAR ELEV ___ DRILL HOLE NO. DDH-23 START ___ COMPLETED ___ SHEET NO. 3 BY ___

GMC DATA REPORT 3 2 7

SCALE 1" = 10 COORD. N E SEC. T. R. STATE DIP 90° COLLAR ELEV START COMPLETED DRILL HOLE NO. SHEET NO. BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
Silic graywacke, as above. 300 / 301.2 Contact w/aplitic gran porph. @ 25° to core / ... 70° to core / ...	301.4 302.6 3mm qtz sph:asp:cp:py::3:4:3:1 vn @ 13° to core, w/ 1 diss sp: py: po::6:2:2 in 3cm altered margin.	306.2	8.0	101	10.		350	1.0
		[illegible]	1.9	106				
		316.1	2.1	95				
313.2 ... 75° to core / ... 4mm Fe ox. ... @ ...		318.1	7.9	99	10.0		37	6.5
		318.8	0.6	86				
... 0.3 ... / 321.6-325... @ uncertain orient. to core ... / 330 ... along Fr @ 20° to core	321.6-322.1 7mm bull qtz vn w/ tr moly @ 21° to core / 323.8-324.0 2mm qtz-tourm-asp-sph vn @ 19° to core.	328.1	9.7	18	0.0		24	0.7
338.8-3... bx rock w/ minor clay zones @ ~ 60° to core / 340	331.0-333.5 3% diss sph:py:po:cp::5:2:1:2, w/ 3mm qtz-tourm-asp vn @ 18° to core @ 332-333.1 / 334.2-334.8 4mm qtz tourm-asp vn @ 17° to core	334.6	5.5	93	10.0		500	6.4
343.0 ... Fe-ox ... @ 65° to core / 344.0 ... / 349.0 ... @ ... / 350		344.6	3	93	10.0		16	0.4
359.0-36... bx ... to core / 360		354.8	10.1	99	10.0		24	0.4
		360.0	5.2	90				
361.0-36... / ~ 55° to core / 365.8-366... @ 25° to core / ... 4m gry ... 35° to core / 370 / 371.5 5mm Fe-ox ... gouge along m... fx @ 30° to core.	360.0-360.3 6mm qtz-sph vn mostly oxidized, @ 17° to core / 360.7-361.2 5mm qtz-asp:sph:cass:: 5:3:2 vn @ 19° to core	366.5	6.5	100	10.0		1000	16
375.1-375.8 ... in bx ... to core. / 377.4-380.0 bx rock + ms ... along fx @ ... to core / 376.0-379.0 ... / 380	377.2-377.7 6mm qtz asp vn @ 14° to core	376.8	10.0	97	10.0		65	0.3
383.7 3mm Fe-ox ... / 3...-393.4 fault zones ... shown.		384.0	7.0	97	3.0		670	14
390		388.3	4.1	95				
	398.1-400.5 near vert. 4mm qtz-fluorite-tourm-asp-py vn	395.7	6.7	89	0.0		17	0.4
400		399.5	3.6	93				

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
silicified graywacke brecciated and rotated then rehealed, as above.	398.0 - 402.4 5mm qtz-tourm- ... fluorite-asp-... cass vn near vertical
404 - 406 ... clay ... breccia bx @ ... 8° to	
407.0 bx rock ... @ ...	
410	
418.4 Contact ... of ... aplite	
419.5 Fe ox ... gouge ... 30° to core.	
420	
aplite porphyry, consists of ...% subhedral ... phenos ... mm diam, 3% subhedral Ksp phenos ... in ... aplitic groundmass	421.2 - 422.2 3mm qtz-tourm- ... cass ... 2 vn @ 9° to core 3% diss sph-po: cp ... fld margin.
425.2 ... altered ... w/ clay @ ~20° to core	426.2 - 427.7 2% diss sph:po:c ... diam clot of tourm cass ... @ 92 ...
426.0 Fe ox ... gouge (5mm) @ 60° to core	427.6 ... mm qtz-tourm ...
430	
435.5 5mm Fe ox ... chips @ 05° to core	436.7 - 438.0 2mm ... sph ... 3 ... tourm ... cass:sp:py 6:2:2 vn @ 21° to core ... diss ... 6:4 in 3cm qtz flood margin.
439.0 ... @ 50° to core	438.4 - 439.3 2% diss sph:cp:po ...
441.0 - 445 ... gel-bull clay ... fault ... to core	
450	
450.5 - 460.5 ... zone w ... @ 70° to core	451.0 - 453.0 ... mm qtz-asp:py:po:cass ... near vertical 2% diss sp ... qtz flood margin
460	
464.9 - 475.6 ...	
470	
4... arg...	
474.6 1cm rock chips w minor clay @ ~60° ... to core	
79.0 3-4mm gry clay gouge @ 65° to core	479.2 - 480. 2-2mm qtz moly: minor bismuthinite vns @ 22° + 36° to core
480	
490	492.6 - 493.5 2-4mm qtz-asp vns @ 20° 2 ° to core
94.0 - 494.7 bx ... clay gouge @ ...	
497.6 ... @ 60° to core	
500	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	?
404.2	4.7	100				
406.5	1.9	83	10.0		230	24
410.0	3.3	94				
			12.0		21	0.4
420.2	10.2	100				
426.3	6.1	100				
			10.0		6550	43
430.6	3.3	77				
			10.0		960	4
439.3	9.0	103				
445.7	5.0	75				
			10.0		145	[illegible]
			5.0		[illegible]	
454.5	8.6	98				
			10.0		[illegible]	0.9
464.7	10.0	98				
			5.0		7	.07
471.5	6.6	97				
475.6	4.4	107				
			10.0			.3
484.2	8.9	103				
			10.0		[illegible]	3.1
491.9	7.6	99				
498.0	6.2	102	10.0		25	0.5

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PROPERTY ... SCALE 1" = 10 COORD N ... E ... SEC ... T ... R ... STATE ... BEARING ... DIP -90° COLLAR ELEV ... DRILL HOLE NO. DDH-23 START ... COMPLETED ... SHEET NO. 5 of 7 BY ...

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PROPERTY ____ SCALE 1" = 10 ____ COORD N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP ____ COLLAR ELEV ____ DRILL HOLE NO. DDH 23 ____ START ____ SHEET NO. ____ COMPLETED ____ BY ____

ROCK TYPES & STRUCTURES

500

[illegible] -504.7 2 [illegible] to core

505.0-508.0 [illegible]

506.4 3 [illegible] @ 70° to core

506.6 1 mm [illegible] 6 ° to core

507.0 2 [illegible] @ 50° to core

510

512.3 contact [illegible] @ [illegible]° to core

5[illegible].4 [illegible] 50 [illegible] @ [illegible]

520

[illegible] 52[illegible] fxd rock w/ minor clay gouge @ 35°, 45° + 75° to core

521 [illegible] contact [illegible] argillite @ ~ to core

525.0 2 [illegible] @ ° to [illegible]

529.0 [illegible] @ ~ 70° to core

530

5[illegible] [illegible] clay gouge + [illegible] ~5 to core

53[illegible] [illegible] gouge @ 35° to core

536.7-542.5 [illegible]

540

540.[illegible]-543.0 [illegible] clay [illegible] @ 10° to [illegible]

542.5-548.0 A[illegible] fault contact [illegible] argillite at 545.0

548.0 2 [illegible] @ 55° to core

550

555.0-561.0 [illegible] bx rock [illegible] p to 12 cm [illegible] @ ~65° + 60° [illegible] core

556.0-567.0 [illegible]

560

568.8 5 mm [illegible] clay gouge @ [illegible] to core

570

580

590

590.5 contact [illegible] w/ Top Quench [illegible] in Tap [illegible] @ 80° to core well developed [illegible] texture [illegible] 603.5

600

MINERALIZATION AND ALTERATION

502.0-502.4 massive sulfide [illegible] in zone: 25% sulfides po:sph:asp [illegible]

508.5 608.6 2 mm qtz-musc greise [illegible] @ 25° to core

5[illegible].0-5[illegible] [illegible] harrise to [illegible] greisen [illegible] as shown

[illegible].8-518.9 2% diss sph [illegible] qtz flood zone.

541.2-542.[illegible] 3 mm qtz [illegible] py [illegible] 2% [illegible] sph [illegible] in 2 cm qtz flood [illegible]

545.7-54[illegible] 6 3 mm qtz-tourm [illegible] py [illegible] sph [illegible] @ [illegible]° to [illegible] sph in 2 cm [illegible]

563.7-564.4 1 mm qtz-musc greise [illegible] w/ [illegible] asp @ 1° to core

591.7-595.7 [illegible] to [illegible] qtz-musc greisen [illegible] shown

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
501.[illegible]	3.0	97				
[illegible]4.7	3.5	97				
507.5	2.7	97	10.0		[illegible]	[illegible]
512.2	4.5	90	5.0		[illegible]	0.5
522.4	10.0	98	10.0		2[illegible]	[illegible].0
528.2	5.4	93				
531.4	3.3	103	10.0		[illegible]	0.2
537.[illegible]	5.0	88				
543.6	6.0	92	10.0		.05	[illegible].4
553.3	7.7	79	10.0		[illegible]5	0.4
557.6	4.4	102	5.0		[illegible]	0.5
565.6	7.2	90	10.0		30	0.3
575.5	9.9	100	10.0		[illegible]	[illegible]
585.7	10.0	98	10.0		[illegible]	[illegible]
595.7	10.1	10.1	10.0		[illegible]	[illegible]

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PROPERTY Cca. SEC 21 T 22S R 12W STATE [illegible] DRILL HOLE NO. DDH-23 SHEET NO. 7 of 7

SCALE 1" = 10' COORD. N ___ E ___ BEARING ___ DIP -90° COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

ROCK TYPES & STRUCTURES

600

Pegmatitic phase of aplite porphyry (Tap) as above. Gradational contact from 613.0 - 621.0 into more typical aplite porphyry w/ 5% subhed. qtz phenos 1-2 [illegible] dia., ~5% K spar phen. [illegible] ~3mm dia, ~2% subhed plag 5-1mm diam, and ~3-4% biotite (mostly 2nd phlogopite?)

620

630

640

650

[illegible]5.0-65[illegible] [illegible] lt. gray [illegible] gouge @ ~70° to core

65[illegible] 2 [illegible] lt gr [illegible] @ 80° to core

660

[illegible]60.0-66[illegible] [illegible] zone [illegible] gouge @ ~60° to core

[illegible]4.8 - 666.0 [illegible] @ 80° [illegible]

[illegible]68.7 [illegible]

670

680

690

692.8 T.D. 692.8 T.D.

700

MINERALIZATION AND ALTERATION

[illegible] - 692.8 [illegible] greisen [illegible] as shown

666.8 - 667.8 [illegible] zone w/ 2% diss py:sph:cp: 3:5:2

675.9 - 676.3 qtz-musc greisen zone w/1% diss py.

678.6 - 680.[illegible] 3mm tourm-py:sph [illegible] vn @ 8° to core w/2[illegible] diss py:sph:cp:cass: 5 [illegible] 2.1 in 4cm qtz flood margin

681.8 - 683.1 7mm qtz-asp:py:cass [illegible] vn @ 80° to core, tr diss py in 3cm qtz flood margin.

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SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		
605.8	9.9	98				
			10.0		[illegible]	[illegible]
612.7	6.8	99				
			10.0		9	0.2
622.7	9.8	98				
			10.0		5	0.[illegible]
632.8	9.9	98				
			10.0		[illegible]	0.[illegible]
642.9	10.1	100				
646.4	[illegible].0	86				
			10.0		[illegible]	[illegible]
652.9	[illegible]	100				
658.1	4.5	87	10.0		[illegible]	[illegible]
660.4	1.1	49				
662.9	2.4	96				
667.5	4.5	98	10.0		100	2.0
675.3	7.8	100				
			10.0		[illegible]	0.8
685.2	10.0	101				
			10.0		205	[illegible]
690.4	4.5	87				
692.8	1.6	87	4.8		9	[illegible]

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
0	
10	9.7-98.7 hairline to 3mm qtz tourm vns, as shown
	13.8-14.1 3mm qtz-asp:py::9:1 vn @ 32° to core
20	20.1-20.3 3mm qtz asp vn @ 30° to core
	22.8-23.0 6mm qtz tourm-sph:cass:asp:cp::5:3:1:1 vn @ 37° to core; 1% diss sph:cp:asp::7:3:tr in 5mm qtz flood margin
	25.9-26.2 3cm qtz tourm vn @ 65° to core, tr sph+asp
	27.2-27.5 8mm tourm vn @ 33° to core; 20% diss tourm in 2cm qtz flood margin
	28.2-28.9 2-2mm qtz-tourm-sph:py:asp::5:4:1 vns @ 47° + 33° to core
30	30.8-31.8 3 to 4 mm qtz-asp:py:sph::8:2:tr vn @ 14° to core, 15% diss tourm in 2cm qtz flood margin.
40 … 30° to.	
50	
	56.2-61.2 5-1mm qtz-tourm-sulf → FeOx, minor cass vns @ 34° to 51° to core
60	
70	70.3-70.6 2 mm qtz-tourm-asp:cass::5:5 vn @ 29° to core
	72.1-72.7 2mm qtz-asp vn @ 18° to core; 15% diss tourm in 1cm qtz flood margin.
80	
	87.4-87.6 3mm tourm vn @ 45° to core, w/1% diss asp + 5% diss tourm in 1.5cm qtz flood margin
… qtz vn w/ tr moly @ 88.8	88.3-89.2 4mm qtz-asp vn @ 15° to core, 1% diss asp:cass::9:1 in 2cm qtz flood margin
90	94.0-94.2 2mm qtz-sph:asp:cass:cp:py::tr:6:2:1:1 vn @ 38° to core
	96.7-98.2 4-1 to 2 mm qtz-py:sph:cp:asp::4:4:1:1 vns @ 53° to 47° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
9.5						
12.2	2.1	91				
13.4	1.0	83				
			5.5		1075	2.2
18.6	4.4	85				
23.2	4.4	96				
			10.0		230	4.5
33.4	10.2	100				
			10.0		97	5.0
			5.0		29	0.7
43.5	10.1	100				
			7.0		22	0.5
			5.0		1050	1.2
53.7	10.2	100				
			10.0		1000	2.4
63.9	9.9	96				
			10.0		155	0.8
74.0	9.9	98				
			10.0		110	2.0
84.2	10.2	100				
			5.0		205	1.7
			5.0		240	1.4
94.7	10.0	95		DDH-24		

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SCALE 1" = ___ COORD N ___ E ___ BEARING N5E DIP -50° COLLAR ELEV ___ START 8/3/82 COMPLETED 8/11/82

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	[illegible]	Ag
[illegible] porphyry [illegible] alteration	100.8-100.9 1mm qtz [illegible] vn @ 41° to core; 101.4-101.5 1mm qtz tourm py sph::8:2 vn @ 47° to core				10.0		91	[illegible]
		105.0	10.0	97				
	108.4 108.5 4mm qtz tourm sulf [illegible] vn @ 51° to core				5.0		530	2.2
110	113.1 113.3 1mm qtz tourm asp vn @ 35° to core				5.0		19[illegible]	2.9
	115.7-115.9 2mm qtz-py:sph:cp::5:3:2 vn @ 49° to core	115.1	10.1	100				
120	122.0-122.2 1mm qtz-sph:py:cp:asp::6:2:1:1 vn @ 40° to core				10.0		8[illegible]	1.7
		125.3	10.1	99				
130					10.0		32	5.4
	135.1-135.3 2 mm qtz-sph:py:cp:asp::6:2:1:1 vn @ 48° to core	135.4	9.9	98				
140					10.0		68	0.9
	145.9-146.0 5mm bull qtz vn w/tr moly @ 67° to core; 146.4-146.5 2mm qtz-tourm sph:py::7:3 vn @ 58° to core	145.6	10.1	99				
	149.0-149.2 1mm qtz tourm asp vn @ 35° to core; 149.8-155.5 4-1 to 2mm qtz-tourm-sph:py:asp:cass:cp::4:2:2:1:1 vns @ 41° to 48° to core.							
150					10.0		53	2.6
		155.8	10.2	100				
160	160.1-160.3 1mm qtz tourm py:sph:cp:asp::6:2:1:1 vn @ 58° to core.				10.0		185	4.0
16[illegible] [illegible] gouge @ 20° to [illegible]	165.2-165.3 1mm qtz py:cp:asp::8:1:1 vn @ 49° to core	166.1	10.2	99				
	168.0-168.2 2mm qtz tourm sph:py:cp::7:2:1 vn @ 29° to core; 169.2-169.9 2mm qtz-tourm-py vn @ 45° to core							
170					10.0		330	1.3
	175.9-176.0 1mm qtz-cp py 9:1 vn @ 43° to core	176.4	10.0	99				
180 [illegible] @ 50°					10.0		1[illegible]5	1.5
[illegible]	184.0-185.9 2 [illegible] 3mm qtz tourm sulf asp vns @ 39° & 44° to core	186.4	10.1	99				
190 [illegible]					10.0		425	0.8
[illegible]		194.7	6.3	81				
		200.8	5.1	77				

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SCALE 1" = ___ COORD N ___ E ___ BEARING N/SE DIP ___ COLLAR ELEV ___ START ___ COMPLETED ___

ROCK TYPES & STRUCTURES | MINERALIZATION AND ALTERATION | SAMPLE | ASSAY | SCALE 1" = | COORD N | E | BEARING | DIP -50° | COLLAR ELEV | START 8[illegible]-34 | COMPLETED

ROCK TYPES & STRUCTURES

200 ... porphyry as above.

210

220

... gouge ...

230

240

... gouge ...

250

... 60° to core

... gouge @ 40° to ...

260

270

280

... gouge ...

290

... gouge ... to core

MINERALIZATION AND ALTERATION

205.0-205.1 2mm qtz-sulf → FeOx-tourm vn @ 52° to core

229.8-230.1 2+1mm qtz-sulf → FeOx vns @ 49° + 58° to core; 3% diss sulf → FeOx + 3% diss tourm in 3cm coalescing qtz flood margin

240.1-240.5 1mm qtz-sulf → FeOx vn @ 11° to core; 3% sulf → FeOx in 2 cm qtz flood margin

240.9-241.1 2mm qtz-tourm-sulf → FeOx vn @ 58° to core; 1% sulf → FeOx in 2cm qtz fld margin

265.8-266.1 2mm qtz-sulf → FeOx vn @ 55° to core; 2% diss sulf → FeOx + 5% diss tourm in 3cm qtz fld margin

268.5-286.5 silicified zones as shown, w/2-10% diss tourm and tr. diss py + sph; no definite vein structures but zones are oriented @ 40°-55° to core.

290.5-290.8 4mm qtz-cass:aspy:sph :: 7:1:2 vn @ 61° to core; 4% diss sulf → FeOx in 3cm qtz flood margin

294.5-294.9 2-1mm qtz-sulf → FeOx vns @ 59° + 57° to core; 1% diss sulf → FeOx in coal. 2cm qtz fld margins.

295.5-300.0 silic zones as shown, w/2-4% diss tourm + tr sulf → FeOx, oriented 45°-70° to core.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Au	Ag
200.8			10.0		39	0.1
208.0	5.3	74				
			10.0		335	0.8
213.8	3.4	59				
222.3	7.8	92	10.0		16	0.8
223.2	0.8	89				
225.9	0.9	33				
			5.0		18	0.6
227.5	1.1	69				
			8.0		62	0.9
237.2	9.3	96				
			5.0		71	0.6
243.0	5.6	97				
245.1	1.8	86	5.0		345	1.4
253.2	4.5	56				
			10.0		11	0.6
256.0	1.0	36				
258.8	2.6	93				
264.6	4.3	74	10.0		17	0.4
269.7	5.0	98	5.0		94	0.7
274.0	3.9	91				
			5.0		9	0.5
			8.0		60	0.6
284.0	9.7	97				
288.5	3.2	71				
290.3	1.1	61				
			10.0		1900	1.3
294.6	3.8	88				

DDH-24

3/8

GMC DATA REPORT 327

ROCK TYPES & STRUCTURES

Tap. sericite granite porphyry, as above 302

310

313.9 ? mm Fe ox stn. clay gouge @ 30° to core.

320

321.4 13mm qtz-asp-cass vn offsets older 1mm barren qtz albite vn @ described @ 316.1-318.9

328.8 ?mm Fe ox stn clay gouge @ 40° to core

330

340

346.8 ? mm clay gouge @ 50° to core

347.7 - 348.? white clay gouge w/ rx chips @ 55° to core

350

349.7 1mm Fe-ox stn. clay gouge @ 45° to core

360

360.0 ?mm Fe ox stn. clay gouge @ 50° to core

367.5 1cm Fe ox stn. clay gouge w/ rx chips @ 35° to core

370

380

390

400

MINERALIZATION AND ALTERATION

302.1-302.6 ?mm ... qtz-tourm-sph:cass::6:4 vn @ ?? ... 72° to core, 3% diss asp:sph::8:2 in coal. qtz flood margin

304.7-306.1 ... mm tourm-cass-sph:py::7:2:1 vn @ 41°

306.0-3?6.? 4mm qtz tourm cass sulf-?? vn @ 42° to core; 2% diss sulf ?? + 4% diss tourm in ?cm qtz flood margin

307.7-308.9 ?-1mm qtz-alb? vns w/minor py:sph::8:2 @ 27° to 34° to core; 1% diss py:sph::6:4 in 2cm qtz fld. margins

314.2-315.8 2-2mm and 1-1mm qtz-py:sph:cass::?:asp::4:3:2:1 vns @ ?5°, 65 and 53° to core; 2% diss py:sph:cass::4:4:2 in 3cm qtz flood margins

316.1-318.9 7-1mm qtz-alb-minor py:sph::5:5 @ 35° to 40° to core; <1% diss py:sph:cass:po::4:3:1:2 in 5mm to 1cm qtz flood margin

320.8-321.6 1-4mm and 1-13mm qtz-cass:asp:sph::5:4:1 vns @ 51° and 63°; 5% diss sph:cass:py::6:2:2 in coal. qtz flood margins

325.0-325.3 2-2mm qtz-cass:sph:asp::6:3:1 vns @ 55° and 80° (sulfide free) to core; 3% diss py:sph:cass::3:4:3 in ?cm qtz flood margin, 4% diss tourm

331.3-332.2 2-2mm qtz-sph:cass:asp::6:2:2 vns @ 64° and 66° to core; 2% diss sph:py::9:1 in coal qtz flood margin; 2% diss tourm.

333.1-335.2 1-2mm + 1-10mm qtz-py:sph::9:1 vns @ 57° + 69° to core, w/ << 1% diss py:sph:cp:cass::5:3:1:1 in coal. qtz musc greisen margin

335.7-337.6 3-2mm qtz-sph-py:cp:cass::7:2:1:tr vns @ 46° to 56° to core; 2-3% diss tourm in 1-8mm qtz flood margin

341.9-342.2 3mm qtz-sph:asp:cp:py::6:2:1:1 vn @ 45° to core; 1% diss py:sph::4:6 in 2cm qtz flood margin.

343.7-345.5 3-2mm + 1-6mm qtz-sph:py:asp::4:2:4 vns @ 52° to 56° to core; 2-4% diss sph:py::7:3 in 2-3cm qtz flood margins

347.9-353.0 1-12mm, 1-10mm, 1-6mm, 3-2mm, 2-1mm and 3 hairline qtz-asp:cass:sph:cp: 8:1:1:tr @ 50° to 59° to core, 6% diss sph:py:po:cp:cass:asp::6:2:1:<1:1:tr in coalescing qtz flood margins

353.6-356.1 2-4mm qtz-tourm-sph:py::7:3 vns @ 55° + 53°; 2-3% diss sph-py:cp::5:4:1 in 3cm qtz fld. margin.

357.8-357.9 2mm qtz-py:sph:asp::5:3:2 vn @ 53° to core

358.7-358.9 2mm qtz-sph-py::4:6 vn @ 56° to core; 1% diss sph + py in 1.5cm qtz flood margin.

361.9-362.1 4mm qtz-asp vn @ 55° to core

362.6-362.9 6mm qtz-asp:sph::7:3 vn @ 71° to core; 1% diss sph + py in 3cm qtz flood margin.

365.4-368.2 qtz-musc-2nd biotite greisen zone, w/tr. diss py + po throughout; 2-1mm qtz vns @ 65° to core w/tr. py @ 366.8-367.0; 1-2% diss tourm throughout.

370.4-378.5 1-3mm qtz vns w/tr py + po + sph, 3mm to 10mm qtz flood margins, as shown, @ 39° to 52° to core

379.8-380.1 2-2mm qtz-tourm-sph:py::7:3 vns @ 34° and 64° to core; tr sph + py in 2cm qtz fld margin.

381.4-382.? ?-2mm qtz-tourm-sph:py:cass::5:3:2 vn @ 61° to core; 1% diss sph + py in 1cm qtz fld. margin.

385.9-386.0 1mm qtz-py:sph::8:2 vn @ 71° to core; 2% diss py:sph::6:4 in 1cm qtz flood margin.

389.8-390.0 1mm qtz-py:sph::7:3 vn @ 58° to core; 2% diss cass:sph:py::4:3:3 in 2cm qtz flood margin

391.6-391.9 2mm qtz-tourm-cass vn @ 47° to core; 1% diss sph:py::7:3 in 2cm qtz flood margin

394.6-399.1 series of qtz vns @ 45°-50° to core, as shown, w/ tr po, py, ± cp

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
303.0	7.8	93	10.0		435	0.9
313.0	9.6	96	10.0		240	1.2
			5.0		485	2.2
321.4	8.7	104				
			5.0		5400	5.4
			5.0		2300	0.7
331.2	9.7	99				
			10.0		635	5.6
341.7	10.1	97				
			5.0		210	2.2
352.0	10.3	100				
			10.0		3500	22.0
355.3	2.2	67				
			5.0		975	12.0
			5.0		49	4.2
365.4	9.9	98				
			10.0		150	3.0
375.5	10.1	100				
			10.0		890	3.6
385.8	10.0	97				
			10.0		200	1.2
395.9	9.9	98		DD14-24		

SCALE 1" = 10'

COORD N

E

BEARING

DIP -50°

COLLAR ELEV

START

COMPLETED

BY

4/8

SCALE 1" = 10' — COORD. N — E — BEARING — DIP — COLLAR ELEV — START — COMPLETED — BY

ROCK TYPES & STRUCTURES

- Tqp seriate granite porphyry, as above.
- 403.7 contact of peg. phase of Tqp @ ~ 55° to core, med. to coarse gr. pegmatitic facies between 409.0 and 432.2, especially well developed between 413.7 and 427.5
- Tqp is subaplite porphyry w/5% subhed qtz phenos 1.5-4 mm diam, 3% sub-anhed. K spar phenos 0.5-1.5 mm diam in subaplitic groundmass;
- 427.8 3 mm yel wht clay gouge @ 60° to core
- 3 mm ... clay gouge (Fe ox stn) @ ~ 35° to core
- 441.0 1-2 cm yel & Fe ox stn clay gouge w/ ... @ 30° to core
- 444.2-444.6 ... w/ minor Fe ox stn clay gouge @ 45° to core
- Flowbanding in Tqp @ ~ 52° to core.
- 453.1 ... lt brn clay gouge @ 55° to core
- 455.0 1-2 cm lt brn yel clay gouge @ 50° to core
- 458.2 3 mm lt yel-brn clay gouge w/ rx chips @ 35° to core
- 478.0 ... Fe ox stn clay gouge @ 30° to core
- 486.5 ... Fe ox stn clay gouge @ 25° to core

Depth marks: 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500

MINERALIZATION AND ALTERATION

- 407.2-407.3 2 mm qtz-asp:cass:sph::4:3:3 vn @ 49° to core
- 408.1-408.3 2 mm qtz-sph:asp:py:cass::4:3:2:1 vn @ 40° to core; 1% diss sph:cass:py::5:3:2 in 2 cm q.f.m.
- 409.5-410.1 2 mm qtz-py:cass::6:4 vn @ 49° to core, w/ 3% diss cass:py:sph::5:2:3 in 6 cm qtz f.m.
- 411.4-412.5 1-2 mm qtz-asp vn and 1-1 mm qtz-sph:py ::9:1 vn @ 54° and 69° to core, w/ 3% diss sph:cass:asp:py::7:1:1:1 in coalescing q.f.m.
- 412.6-412.8 2-1 mm qtz-sph:asp:py::5:3:2 vns @ 43° + 47° to core; 2% diss cass:sph:py::5:4:1 in coal. qtz.f.m.
- 414.6-418.3 6-1 mm qtz-sph:cass:py:asp::3:2:2:3 vns @ 57° to 61° to core.
- 426.0-500.0 hairline to 2 mm qtz-musc greisen vns as shown.
- 431.0-431.4 silica flood zone w/5% diss sph:py::7:3
- 437.3-437.9 2-2 mm qtz-sph:py::6:4 vns @ 46° + 44° to core; 4% diss cass:sph:py::4:3:3 in coal. q.f.m.
- 451.4-452.5 2-1 mm qtz-sulf → FeOx vns @ 59° + 56° to core; 3-4% diss sulf → FeOx in 2 cm qtz.f.m.
- 470.5-472.7 2-1 mm and 1-5 mm qtz-py:asp:sph::5:2:3 vns @ 68° to 71°; 4% diss sph:py:cp:asp:cass::4:3:1:1:1 in coal. q.f.m.
- 485.3-485.5 3 cm qtz-musc greisen zone w/1% diss py.
- 486.9-489.7 qtz musc greisen zone w/<<1% diss py+sph
- 491.9-493.8 qtz-musc greisen zone w/<<1% diss py.

Core runs

HOLE DEPTH	CORE RECOVERED	% RECOVERY
406.1	10.0	98
416.3	10.0	98
418.2	1.9	100
427.2	2.7	30
431.4	3.2	76
441.5	9.8	97
447.7	5.6	90
451.5	2.8	74
458.5	4.9	70
462.0	1.8	51
472.2	10.1	99
480.8	8.2	95
486.5	5.6	98
496.5	9.8	98

Samples

INTERVAL	NUMBER	Sn	Ag
10.0		42	1.2
10.0		2860	15.0
10.0		1630	3.4
10.0		835	6.4
5.0		1620	11.0
5.0		135	1.4
5.0		1570	5.6
10.0		650	6.2
10.0		395	1.1
10.0		1600	7.5
7.0		77	1.0
10.0		1550	2.1

DDH-24

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
500 Top - aplite porphyry, as above.	hairline to 4 mm qtz-musc greisen vns as shown.
506.0 - 507.0 [illegible] clay gouge [illegible] @ 40° to core	
510	
505.0 - 512.0 Gradual textural change to typical aplite porphyry, subophitic groundmass, qtz and K spar phenos 1-2 mm diam, plag phenos .5-1 mm diam.	513.8 - 520.6 1-2 cm, 2-4 to 8 mm and 1-3 mm qtz-asp:cass:sph::7:2:1 vns @ 53°-55° to core; 3% diss po:sph:py:cp:cass::4:3:2:<1:<1 in 6-15 cm qtz m. and coalescing qtz-musc greisen borders.
520	
520.6 - 520.7 [illegible] Fe-ox stn clay gouge @ 50° to core	521.9 - 522.2 qtz-musc greisen zone w/ <1% diss sph.
521.0 3 cm Fe-ox stn clay gouge @ 40° to core	524.3 - 525.3 qtz-musc greisen w/ tr. diss py.
528.0 [illegible] Fe-ox stn clay gouge @ 55° to core	
528.6 6 mm Fe-ox stn clay gouge w/ 75° to core	529.4 - 529.6 qtz-musc greisen zone
530	
531.4 [illegible] clay gouge @ 50° to core	532.4 - 533.1 5% diss sph:py:cp::5:4:1 in qtz-musc greisen border around 3 mm qtz-sph vn @ 55° to core.
533.9 [illegible] clay gouge @ 75° to core	
534.0 5 cm yel-brn clay gouge @ uncertain orient to core	
536.0 - 539.0 [illegible] clay gouge @ 60° to core	
540	
541.2 - 541.6 5 cm grey clay gouge @ 40-50° to core	540.2 - 540.4 3 mm qtz-cass:asp:sph::5:4:1 vn @ 50° to core, w/ 3% diss sph:cass:py::6:2:2 in 2 cm qtz-musc greisen margin.
550	
550.4 Fe-ox stn clay gouge w/ rx chips @ 60° to core	
551.9 1 cm Fe-ox stn clay gouge w/ rx chips @ 40° to core	554.8 - 555.5 3-1 to 2 mm qtz-cass:py:sph:asp::4:3:2:1 vns @ 46° to 51°, w/ 2% diss sph:py::6:4 in coalescing qtz m.
552.1 - 552.9 [illegible] Fe-ox stn clay gouge @ 70° to core	
560	
570	
576.6 1 cm Fe-ox stn clay gouge w/ rx chips @ 75° to core	
580	
580.0 - 580.5 [illegible] clay gouge @ ~90° to core	
	587.7 - 587.9 3 mm qtz-asp:cass:sph::4:3:3 vn @ 53° to core, 2% diss sph+py in 1 cm qtz m.
590	
	592.7 - 592.9 3 mm qtz-sph:py::5:5 vn @ 41° to core, 1% diss py+sph in 2 cm qtz-musc greisen margin.
600	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
			10.0		33	0.5
506.5	10.0	100				
			8.0		1200	1.9
516.6	9.5	94				
			10.0		3200	7.3
523.8	7.1	99				
			5.0		995	2.6
529.1	4.8	91				
535.0	5.6	95				
538.0	1.6	53	10.0		941	3.6
541.8	2.3	61				
			10.0		1100	4.2
550.3	9.0	106				
552.1	1.1	61				
552.9	0.7	88	5.0		180	0.9
			5.0		2120	4.1
562.8	9.5	96				
			10.0		110	0.4
572.4	9.9	103				
			10.0		30	1.8
580.0	7.4	97				
588.8	8.8	100	10.0		185	0.6
597.6	8.8	100	10.0		49	0.3

DDH-24

6/8

SCALE 1" = 10'
COORD N
E
BEARING
DIP
COLLAR ELEV
START
COMPLETED
BY

ROCK TYPES & STRUCTURES

bip aplite porphyry as above.

MINERALIZATION AND ALTERATION

hairline to 3mm qtz-musc greisen vns as shown

606.8-607.5 1-12mm qtz-topaz-asp:cass:py::6:2:2 vn @ 51° and 1-3mm qtz-sph:py::9:1 vn @ 37° to core; 4% diss sph:py:cass::3:6:1 in qtz musc. greisen margins.

609.3-610.6 4mm qtz-asp:sph:cass:py::5:3:1:1 vn @ 54° to core; 6% diss sph:py:cass:cp::3:5:1:1 in qtz musc greisen zone

611.9-630.3 1-20mm, 1-16mm, 2-15mm, and 3-10mm qtz-asp:sph:cass::8:1:1 vns @ 59°-60° to core; 1-20mm, 1-16mm, 1-12mm, and 2-7mm qtz-asp:cass::9:1 vns @ 35° to 49° to core; 1-6mm qtz-asp:sph::3:7 vn @ 50° to core; 2% diss asp:cass:py:sph::7:1:1:1 in coalesc. q.f.m. from 613.8-623.1, 6% diss po:sph:asp:cp:cass::6:2:1:1:tr in qtz-musc greisen zones from 611.9-613.8 and 623.1-630.3, as shown.

632.1-632.8 2-1mm qtz-cass:po::5:5 vns @ 46° + 52° to core; 5% diss po:py:sph::4:3:3 in coal. qtz-musc greisen margin

641.6-641.9 2mm qtz-sph:py:cass::4:3:3 vn @ 40° to core; 6% diss py:sph:cass::5:4:1 in 3cm q.f.m.

643.9-644.2 3mm qtz-musc-cass:py::9:1 greisen vn @ 46° to core; 1% diss sph+py in 2cm qtz-musc greis margin

645.3-646.8 1-8mm qtz-musc-asp:cass::8:2 vn @ 51° and 1-5mm qtz-sph:asp:py:cass::6:2:1:1 vn @ 49° to core; 5% diss sph:py:cp:asp:cass::6:4:tr:tr:tr in coal. qtz musc. greis. margin

659.3-660.1 10mm qtz-py:sph:cass::4:4:2 vn @ 37° to core, 4% diss py:po:sph:cass::4:2:3:1 in 6cm qtz-musc. greis margin.

661.5-661.9 1mm qtz-py:sph:cass::4:4:2 vn @ 47° to core; tr. py in 6cm qtz musc greisen margin.

665.1-665.8 qtz musc greisen zone w/ tr. moly + bismuthinite

666.2-666.3 clot of py:sph::6:4

670.0-671.2 2-3mm qtz-musc vns w/ tr. bismuthin., py, cass @ 47° + 42°; 3% diss po in 2-4cm qtz musc greisen margin

672.1-673.2 2-3mm qtz-musc-py:cass:asp:sph::4:2:3:1 vns @ 38° + 43° to core, w/ 7% diss py:sph:cass:po::3:3:2:2 in coal qtz-musc greisen margins.

674.4-677.1 2-1 to 2mm qtz-musc-py:cass:sph::4:4:2 vns @ 44° + 47°, 1-12mm + 1-7mm qtz-asp:sph:cass::7:2:1 vns @ 44° + 45° to core; 6% diss py:po:sph:cp:cass::3:3:3:1:tr in coal. qtz musc greisen margin.

678.8-679.1 4mm qtz-musc-sph:bismuthin::10:tr greis vn @ 58° to core; tr. sulf in 3cm qtz musc greis. margin.

681.4-685.0 2-6mm qtz-musc-tourm-py:sph::6:4 vns @ 48° + 55° to core; 5% diss py:po:sph::3:4:3 in 5-8 cm qtz-musc greisen margin

687.3-688.1 19mm qtz-asp:cass::9:1 vn @ 50° to core w/ 4% diss py:sph:cass:asp::4:3:2:1 in 7cm qtz-musc greis. margin.

690.3-691.0 qtz-musc greisen zone w/ 4% diss py:sph:cass:asp::4:4:1:1

696.2-696.3 2mm qtz-musc-py:sph::7:3 greis. vn, @ 52° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY
607.6	9.9	99
617.5	9.8	99
627.2	9.7	100
637.2	10.0	100
647.4	9.9	97
657.5	10.1	100
667.7	10.1	99
677.9	10.2	100
688.1	10.0	98
698.2	10.0	99

INTERVAL	NUMBER	Sn	Ag
5.0		115	0.3
6.0		670	0.9
10.0		4800	15.0
11.0		6100	19.0
5.0		2260	2.0
10.0		1170	0.5
5.0		1790	6.3
5.0		33	0.3
10.0		270	1.0
5.0		390	1.6
10.0		1580	7.0
5.0		2110	3.3
6.0		3740	3.2
		105	0.6

DDH-24

7/8

SCALE 1" = 10'

COORD N ___ E ___

BEARING ___

DIP ___

COLLAR ELEV ___

START 8/1-?? COMPLETED ___

BY

ROCK TYPES & STRUCTURES | MINERALIZATION AND ALTERATION

... as above

700 · 710 · 720 · 730 · 740 · 750 · 760 · 770

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
708.3	9.9	98				
			10.0		19	0.4
718.2	9.8	99				
			10.0		150	0.4
728.5	10.3	100				
			10.0		45	0.4
738.5	10.0	100				
			10.0		115	0.4
748.7	10.2	100				
			10.0		17	0.4
759.0	10.3	100				
			10.0		25	0.5
769.4	10.4	100				
			10.0		125	0.3

PROPERTY ___ SEC ___ T ___ R ___ STATE ___ DRILL ___

SCALE 1" = 10' COORD N ___ E ___ BEARING ___ DIP ___ COLLAR ELEV ___

803 T.D.

DDH-24 8/8

PROPERTY Coal SCALE 1" = 10' COORD. N ___ E ___ SEC 21 T 22S R 12W STATE ALASKA BEARING N15E DIP -50 COLLAR ELEV ___ DRILL HOLE NO. DDH-25 START 7/22/82 COMPLETED 7/31/82 SHEET NO. 1 of 8 BY ___

GMC DATA REPORT 327

ROCK TYPES & STRUCTURES

0.0 - 11.8 Overburden no recovery

12.0 ... clay gouge ... chips @ ≈ 40° to core

Tgp - sonate granite porphyry; detailed description below

18.0 3-4 mm wht clay gouge @ uncertain orient'n to core

34.8 yel. clay gouge @ ≈ 25° to core

37.2 - 41.0 3x zones of clay gouge & rk chips 6-10 cm thick @ 25° and 2° + 90° (fault)

78.5 3mm wht-yel. clay gouge & rk chips @ 35° to core

MINERALIZATION AND ALTERATION

18.7 - 99.0 hairline to 1mm qtz-tourm vns, as shown

45.3 - 45.4 1mm qtz-tourm-sulf → FeOx vn @ 40° to core

50.2 - 50.3 2mm qtz-tourm-sph-asp?-py vn @ 50° to core; mostly oxidized; 3mm qtz flood margin

53.1 - 53.3 3mm qtz-sph:py:asp:cp :: 5:3:1:1 vn @ 47° to core

63.2 - 63.3 6mm qtz-tourm-sulf → FeOx vn @ 47° to core

65.1 - 65.3 1mm qtz-asp:sph :: 8:2 vn @ 41° to core

70.1 - 70.2 1mm qtz-sulf → FeOx vn @ 57° to core; 5mm qtz flood margin.

70.5 - 70.6 3mm qtz-tourm-sulf → FeOx vn @ 65° to core; 5mm qtz flood margin.

88.3 - 88.4 2mm qtz-sulf → FeOx vn @ 67° to core, 1% diss sulf → FeOx in 7 mm qtz flood margin.

91.5 - 91.7 2mm qtz-sulf → FeOx vn @ 42° to core; 1% diss sulf → FeOx in 5mm qtz flood margin

96.0 - 96.1 1mm qtz-sulf → FeOx vn @ 60° to core; 4% diss sulf in 3mm qtz flood margin.

98.0 - 98.2 3mm qtz-tourm-sulf → FeOx vn @ 75° to core w/5% diss sulf in 2cm qtz flood margin; 5% diss tourm

SAMPLE / ASSAY

Hole Depth	Core Recovered	% Recovery	Interval	Number	Sn	Ag
11.8			NO SAMPLE			
17.0	1.2	23				
18.7	1.7	100	8.2		38	0.6
23.4	4.2	89				
27.5	4.0	98				
30.4	1.4	48	10.0		27	0.7
34.9	2.0	44				
38.6	0.8	22	10.0		21	0.8
44.4	4.9	84				
48.8	4.2	95	10.0		80	1.3
58.3	8.2	86	10.0		44	3.0
63.6	3.4	64				
			10.0		41	2.9
72.0	5.8	69				
79.0	1.5	21	10.0		76	6.5
87.1	1.4	17				
			10.0		98	4.8
95.0	6.6	84				
101.0	6.1	102	10.0		315	3.9

DDH-25 1/8

PROPERTY Coal
SCALE 1" = 10'
COORD. N
E
SEC 21 T 22S R 12W STATE AK
BEARING N15E DIP -50
COLLAR ELEV
DRILL HOLE NO. DDH-25
START
COMPLETE
SHEET

ROCK TYPES & STRUCTURES

100 — ate granite porphyry as above

105.5 Intensely broken core w/ 12 cm of yel. clay gouge + rock chips from 107.0–107.5 @ ~60° (?) to core

110

15 cm yel. clay gouge + rock chips @ 50° to core

120

130

140

brown yel. clay gouge + rock chips @ 20° to core

150

160

6mm bull qtz vn @ 21° to core

170

m Fe-ox. stn. clay gouge w/ rock chips 65° to core

180

190

MINERALIZATION AND ALTERATION

100.9–101.0 1mm qtz-sulf → FeOx-tourm vn @ 64° to core
101.1–101.3 5mm qtz-cass:sph 4:6 vn @ 50° to core w/3% diss sulf → FeOx + 6% diss tourm in 12mm qtz flood margin

108.0–108.5 2–3mm qtz-tourm-cass-sulf → FeOx vns @ 48° + 60° to core, w/2% diss sulf → FeOx in 5mm qtz flood margin

112.2–112.8 1–5mm + 1–2mm qtz-asp vns @ 38° + 53° to core; 3mm qtz flood margin on 5mm vn

176.7–177.0 2cm silic. zone @ 40° to core w/2% diss sulf-sph + asp?, mostly oxidized, + 5% diss tourm

183.4–183.6 3mm qtz-tourm-sulf → FeOx vn @ 50° to core

187.1–187.6 hairline and 3mm qtz-sulf → FeOx vns @ 43° and 46° to core resp. 8mm + 2cm qtz flood margins w/ 1-2% diss sulf → FeOx + 3% diss tourm.

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
107.5	4.7	72				
			10.0		2010	8.9
111.4	3.2	82				
114.0	2.7	104				
			10.0		70	3.9
120.8	6.8	100				
128.7	5.0	63				
130.1	0.4	29	10.0		75	1.7
131.5	1.0	71				
133.8	1.3	57				
134.7	0.5	56				
			10.0		31	2.4
144.8	3.1	31				
146.3	1.3	87				
147.3	0.6	60				
			10.0		1700	5.9
151.7	3.7	84				
156.0	3.4	79				
160.3	4.1	95	10.0		51	2.6
169.7	9.1	97	10.0		160	3.0
174.6	4.4	90				
			10.0		35	1.5
184.7	7.4	73				
			10.0		75	1.3

PROPERTY (Cal) SCALE 1" = 10' COORD N E SEC 21 T 22S R 12W BEARING STATE NISE DIP -90 COLLAR ELEV DRILL HOLE NO. DDH-25 START COMPLETED SHEET NO. 3 of 8 BY

ROCK TYPES & STRUCTURES

- 200: Tgp-sericite granite porphyry as above.
- 218.0-219.0 bx rock w/ 1-2 cm Fe-ox stn clay gouge @ 60° to core
- 236.0 3-4 mm yel-wht clay gouge @ 50° to core
- 241.6 3 mm clay gouge @ ~40° to core
- 255.7 2 mm Fe-ox. stn. clay gouge @ 60° to core
- 279.0 1-2 mm Fe-ox stn clay gouge @ 35° to core
- 297.0 3 mm Fe-ox. stn. clay gouge @ ~65° to core
- 297.7 5 cm bull qtz vn @ 87° to core.

MINERALIZATION AND ALTERATION

201.3-201.5 1 mm qtz-asp vn @ 47° to core; 1% diss sulf→FeOx in 5 mm qtz flood margin.
204.0-204.2 3 mm qtz-tourm-sulf→FeOx vn @ 58° to core, w/2% diss sulf in 2 cm qtz flood margin, mous oxid.
204.8-205.5 4-1 mm qtz-sulf→FeOx vns @ 52° to 60° to core w/1% diss sulf→FeOx in coalescing qtz flood margin.
210.0-210.1 2 mm qtz-asp-py vn @ 59° to core
211.2-211.5 1 mm qtz-sph-py-cp vn @ 46° to core
212.9-214.0 4-1 mm qtz-sulf→FeOx vns @ 32°-42° to core, w/1% diss sulf→FeOx in coalescing qtz flood margin
214.2-214.6 2-2 mm qtz-sulf→FeOx vns @ 48° to core w/ 1 cm qtz flood margin.
214.6-215.4 silic. zone w/ 2% diss sulf→FeOx.
221.2-221.5 3 mm qtz-sulf→FeOx vn @ 38° to core; <1% diss sulf→FeOx in 3 cm qtz flood margin.
237.1-237.2 2 mm qtz-sulf→FeOx vn @ 48° to core; 5 mm qtz flood margin.
273.3-273.5 1 mm qtz-sulf→FeOx vn @ 43° to core
275.0-275.8 2-2 mm qtz-tourm-cass-sulf→FeOx vns @ 31° and 66° to core; 5% diss sulf→FeOx and 10% diss tourm in coalescing qtz flood margin.
276.9-277.5 3-1 mm qtz-sulf→FeOx vns @ 63°-64° to core, one of which has 2 cm qtz flood margin w/3% diss sulf→FeOx
277.7-278.1 3-2 to 3 mm qtz-sulf→FeOx vns @ 52°-55° to core w/5% diss sulf→FeOx in coal. qtz flood margin.
278.8-280.8 3-1 mm qtz-sulf→FeOx vns @ 39°, 36° + 48° to core; 2-4% diss sulf→FeOx in 1 to 2 cm qtz flood margin.
281.8-284.3 8-1 to 2 mm qtz-sulf→FeOx vns @ 42° to 48° to core, w/ 3% diss sulf + 5% diss tourm in 2-3 cm qtz fld. margins.
287.4-287.9 2-2 mm qtz-cass-sulf→FeOx vns @ 48° and 49° to core; 7% sulf→FeOx + 10% tourm in coal. qtz flood margin.
288.5-290.4 5-1 to 2 mm qtz-sulf→FeOx vns @ 47°-60° to core, w/ 3% sulf + 6% tourm (sulf→FeOx) in coal. qtz flood margins
291.1-292.1 2-2 mm qtz-cass-sulf→FeOx vns @ 50° + 61° to core, w/3% diss sulf→FeOx + 5% tourm in 2 cm qtz fld. margin.
293.7-294.6 3-1 mm qtz-sulf→FeOx vns @ 49°, 56° to core, w/3% diss sulf→FeOx + 5% diss tourm in 2 cm qtz fld. margins
295.2-296.5 3-2 mm qtz-cass-sulf→FeOx vns @ 46°-49° to core 5% diss cass + sulf→FeOx in coal. 4 cm qtz flood margins.
298.1-298.4 2 mm qtz albite vn @ 34° to core w/ 20% diss tourm in 1.5 cm qtz flood margin

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY
201.6	9.3	102
207.1	4.6	84
216.8	9.3	96
220.6	3.0	79
227.5	6.5	94
231.5	3.1	78
241.2	9.8	101
250.9	9.3	96
258.1	6.6	92
264.5	6.2	97
274.4	9.9	100
284.3	9.8	99
294.3	9.6	96

ASSAY

Depth	INTERVAL	NUMBER	[illegible]	[illegible]
210	10.0		195	3.4
220	10.0		580	3.7
230	10.0		235	1.7
240	10.0		100	1.0
250	10.0		27	1.0
260	10.0		30	1.4
270	10.0		34	0.8
275	5.0		30	0.8
287	12.0		2160	5.9
297	10.0		1800	4.0

DDH-25 3/8

PROPERTY Coal SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___ BEARING ___ DIP -50° COLLAR ELEV ___ DRILL HOLE NO. DDH-25 START ___ COMPLETED ___ SHEET NO. 4 of 8 BY ___

ROCK TYPES & STRUCTURES

300

304.0-304.6 bx zone w/ clay gouge matrix @ 50° to core

309.0 Fe-ox, qtz, clay gouge in slip (5mm) @ 65° to core

310

319.7 2 zones up to 3cm Fe-ox, slm, clay gouge + rx chips @ 25° + 50° to core.

320

330

340

350

353.5-353.7 1cm aplite porphyry dike (v.f.gr) @ 50° to core

360

370

380

390

400

MINERALIZATION AND ALTERATION

300.6-303.3 4-1mm qtz-sulf→FeOx vns @45° to 52° to core; cass in vn @ 300.6; 4% diss sulf→FeOx in 2cm qtz fld margins

309.9-310.6 3mm qtz-cass-sulf→FeOx vn @ 44° to core, w/5% diss sulf→FeOx + 5% tourm in 8cm qtz flood margin

311.0-312.9 3-2mm qtz-sulf→FeOx, cass? vns @ ~47° to core w/ 2-3% diss sulf→FeOx + 5% tourm in 2 to 4 cm qtz fld. margin

315.4-315.9 3mm qtz-tourm-sulf→FeOx vn @ 48° to core w/ 2% diss sulf→FeOx + 4% tourm in 4 cm qtz fld. margin

316.5-317.6 3-2 to 3mm qtz-asp vns @ 55° to 58° to core; 5% diss sulf→FeOx in coalescing qtz flood margins

322.6-323.1 1-9mm + 1-2mm qtz-cass-asp vns @ 56° + 58° to core, w/4% diss sulf→FeOx in coal. 2 to 3 cm qtz flood margins

325.5-325.7 1mm qtz-tourm-sulf→FeOx vn @ 58° to core; tr. sulf→FeOx in 1cm qtz flood margin

329.8-330.3 1mm qtz-sulf→FeOx vn @65° to core w/4% diss sulf→FeOx + tr cass in 5cm qtz flood margin

332.6-332.8 3mm qtz-tourm-asp-py-sph vn @ 62° to core; asp:py:sph: 5:3:2; tr. sulf + 30% tourm in 3cm qtz fld marg

336.7-336.9 2mm qtz-cass-asp-sph vn @ 51° to core w/2% diss sulf→FeOx in 2-3cm qtz flood margin

339.0-340.3 3-2mm and 1-8mm qtz-tourm-sulf→FeOx vns @ 41°-43° and 61° respec. Minor cass in 8mm vn. 2% diss sulf→FeOx in 2-4 cm qtz floodmargins

342.2-343.3 3-2mm qtz-asp-cp-sph vns @50° to 65° to core; 4% diss sph+cp+asp+py mostly oxidized, in coal. qtz fld. margins

347.8-348.3 8mm qtz-asp:sph:cp:cass::7:1:1:1 vn @55° to core; 4% diss sph:cp:py:cass::5:4:1:tr in 5cm qtz flood margin

349.4-350.4 3-2mm qtz-sph:py:cass:8:1:1 vns @ 48° to 49° to core; 3% diss sph:py:asp:cp:cass: 6:1:1:1:tr in coal. qtz fld margins

351.7-351.9 3mm qtz-sulf→FeOx vn @ 55° to core; 3% diss sulf→FeOx in 1cm qtz fld. margin.

358.0-359.0 2-1mm qtz-sph-py vns @ 44° + 47° to core w/1% diss sulf→FeOx in 1cm qtz flood margin

361.3-361.8 4mm qtz-sulf→FeOx vn @ 40° to core, w/ 3% partially oxid. sph+po in 3cm qtz flood margin

374.9-376.7 1 to 2% diss py:sph::8:2 in 2cm qtz flood margins of 2 hairline qtz vns.

379.4-379.9 3-1mm qtz-sph:cp:py::5:3:2 vns @ 50° to 75° to core, w/2% diss sph:asp:py:cass::3:3:1:3 in coal. qtz flood margins

381.5-381.9 2-2mm qtz-alb? vns @ 44° + 48° to core, w/ 1% diss sph+py in 2cm qtz fld. margin

383.2-383.6 13mm qtz-sph:asp:cp::5:4:1 vn @51° to core w/ tr. diss cass + 1% sph+py in 3cm qtz flood margin.

386.0-386.2 1mm qtz-sph-cass vn @ 50° to core, tr. bismuthinite

392.1-392.6 5mm qtz-sph:cass::6:4 vn @ 58° to core, w/ 2% diss sph+py in 2cm qtz flood margin; 2% diss tourm.

395.3-398.5 3-2mm qtz-sph:py:asp:cass:4:1:4:1 vns @ 50°-55° to core; 1% diss py+sph in 1.5-2cm qtz fld. margins

399.3-400.0 2-1mm qtz-sph-py vns @ 48° to 50° to core, w/ 1-2% diss py+sph in coal. qtz fld. margin

HOLE DEPTH	CORE RECOVERED	% RECOVERY
304.4	9.9	98
314.4	9.8	98
324.5	9.9	98
334.8	9.7	94
345.0	9.8	96
355.3	10.1	96
365.4	10.0	99
375.4	9.6	96
385.4	9.8	98
395.5	10.0	99

INTERVAL	NUMBER	Sn	Ag
10.0		1200	1.8
11.0		3250	14.0
11.0		590	3.0
10.0		235	4.1
5.0		2550	7.6
10.0		1750	12.0
10.0		1020	3.7
10.0		130	1.2
10.0		685	2.0
12.0		490	1.3

DDH-25

4/8

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ BEARING ____ STATE ____ DIP -50° COLLAR ELEV ____ DRILL HOLE NO. DDH-25 START ____ COMPLETED ____ SHEET NO. 5/8 BY ____

ROCK TYPES & STRUCTURES

- 400: Tgp - seriate granite porphyry, as above.
- 405.4-405.7 f.gr aplite porphyry dike @ 37° to core
- 429.0-431.0 fld rk w/ 1cm [?] clay gouge zones @ 35°+45° to core
- 467.4-469.0 fxd rock w/ 4 3mm Fe-ox. stn. clay gouge zones @ 45° to core
- 471.2 2cm gry clay gouge + rk chips @ 45° to core
- 495.0 1cm gry clay gouge w/ rock chips @ 45° to core

MINERALIZATION AND ALTERATION

400.0-401.5 1-2mm and 3-3 to 5mm qtz-sph:cass:asp:py::5:2:2:1 vns @ 45° to 55° to core; 2% diss sph+asp in coalescing qtz flood margins.
403.6-405.3 3-2mm qtz-sph-py vns @ 35° to 45° to core, and 1-9mm qtz-asp-cass vn @ 3[?]° to core, w/2% diss sph+py, tr asp in coalescing qtz flood margins.
405.7-408.0 4-2mm qtz-sph-py vns @ 35° to 54° to core, w/2% diss sph:py:cass::3:3:5 in coalescing qtz flood margins.

410.0-410.2 4mm qtz-topaz-sph-asp-py vn @ 47° to core, w/ 1% diss sph+py in 1cm qtz flood margin.
411.1-411.3 2mm qtz vn @ 44° to core w/2% diss sph+py in 3cm qtz flood margin.
414.8-416.2 2-2mm qtz-sph-py-cass vns @ 51° and 48° to core; tr. sulf. in 2mm qtz flood margin
416.7-417.5 4cm qtz-cass-sph vn @ 58° to core, w/3% diss sph:py:cass::7:2:1 in 5cm qtz flood margin.
418.6-420.1 1-3mm + 1-12mm qtz-sph:asp:cass:py::2:3:4:1 @ 40° + 44° to core respectively

423.6-423.8 3mm qtz-cass:asp:py::5:3:2 vn @ 38° to core

425.0-425.2 2mm qtz-albite? vn @ 46° to core, w/1% diss sph+py in 2cm qtz flood margin.
427.4-427.6 2mm qtz-py-sph vn @ 51° to core, [illegible] qtz fld. margin

432.0-432.4 hairline qtz-albite? vn @ 56° to core w/2% diss py+sph in 3cm qtz flood margin.

441.0-441.3 3-1mm qtz-py-sph vns @ 44°-50° to core, w/1% diss sph+py in 5mm qtz flood margins.
442.4-442.7 8mm qtz-cass:sph:py::5:4:1 vn @ 41° to core
444.9-445.1 12mm qtz-cass:sph:py:bismuthinite::4:4:2:tr vn @ 44° to core
445.4-450.4 4-1mm, 4-2mm, + 2-3mm qtz-sph:asp:cass:cp:py::3:3:2:1:1 vns @ 45° to 62° to core, ave ~55°, 5% diss sph:py:cass:po:cp::3:3:1:2:1 in coalescing qtz flood margins

451.0-452.0 2-2mm qtz-sph:cass:asp:py:cp::5:2:1:1:1 vns @ 48° + 56° to core, w/3% diss sph:py:po:cp:asp::4:4:<1:1:<1 in 3 to 5 cm qtz flood margins.
452.6-454.1 2-2mm + 2-5mm qtz-sph:py:cass:asp::5:2:1:2 vns @ 49°-58° to core; 1% diss sph:py:po::3:4:3 in coalescing qtz fld. margins
454.7-459.5 3-2 to 3mm qtz-sph:asp:py:cass::5:2:2:1 vns @ 46° to 56° to core, w/1% diss sph:py:asp:po::4:4:<1:2 in 3mm to 2cm qtz flood margin.

465.8-466.2 2-1mm qtz-py vns @ 62° to core w/<1% diss py in coal. 1.5cm qtz flood margins

470.2-471.4 1-1mm + 1-5mm qtz-sph:cp:asp::5:3:2 vns @ 51° + 45° to core, w/3% diss sph:py:cass::5:4:1 in 2 + 5cm qtz fld. margin.
473.6-474.0 1mm qtz-sph-py vn @ 34° to core, w/1% diss py + sph in 4cm qtz flood margin.
475.3-479.3 6-2mm, 1-3mm and 1-2cm vn @ 45° to 56°, ar [illegible]: 2 to 3mm vns → qtz-sph:py:asp::6:2:2, w/4% diss sph:py:po:cp:cass::4:2:1:2:1 in 4-5cm qtz flood margins; 2cm vn → qtz + cass, w/ <1% diss sph + tr. bismuthinite in 2cm qtz flood margin.

485.6-486.9 4-2mm qtz-sph-py vns @ 48°-54° to core and 1-10mm qtz-asp:sph:cass:py::6:2:1:1 vn @ 57° to core, 3% diss sph:py:po:cass:cp::4:3:2:1:tr in coalescing qtz flood margins

496.6-496.8 2mm qtz-sph:cass::6:4 vn @ 44° to core, w/2% diss sph + py in 4mm qtz flood margin.

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY
405.5	9.8	98
415.0	9.9	99
425.0	9.9	99
435.0	9.6	96
436.0	1.0	100
446.0	10.0	100
456.0	10.0	100
466.2	10.0	98
476.2	9.9	99
486.2	10.0	100
496.2	9.6	94

ASSAY

INTERVAL	NUMBER	Sn	Ag
12.0		2500	9.1
10.0		750	18.0
10.0		855	1.0
9.0		360	1.5
10.0		1050	7.7
10.0		2650	35.0
8.0		310	0.9
5.0		69	0.8
10.0		780	15.0
5.0		14.	0.4
5.0		750	19.0
10.0		750	1.1

DDH-25

5/8

PROPERTY ____ Coal SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP -50° COLLAR ELEV ____ DRILL HOLE NO. DDH-25 SHEET NO. ____ START ____ COMPLETED ____ BY ____

'OCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Typ. sericite granite porphyry, as above. (500)	500.5-500.8 1mm qtz-sph-py vn @ 47° to core w/ 1% diss sph + py in 2cm qtz flood margin 503.8-504.0 hairline qtz-py vn @ 39° to core, w/ 1% diss py:sph:cass::1:5:4 in 2cm qtz flood margin 504.6-505.3 9mm qtz-py-sph vn @ 41° to core w/ 2% diss py:sph:cass::5:4:1 in 5cm qtz flood margin 506.1-506.8 3-1mm qtz-py-sph-cass vns @ 48° to core, w/ 2% diss py:cass::7:3 in coalescing 4cm qtz flood margins 507.5-508.3 1-4mm qtz-cass-sph-py::3:3:4 vn and 1-1cm qtz-py vn @ 51° to core; 3% diss cass:py:sph::4:4:2 in 4-5cm qtz flood margin.
(510) 512.4-512.5 f.gr. aplite porph. dike (1cm) @ 55° to core 516.8-517.0 mineralized zone (asp, sp) with ... clay @ 40° to core 519.8 5mm rock chips + clay gouge @ 55° to core	511.8-513.8 2-2mm qtz-py-sph vns @ 51° and 53° to core, w/ 1% diss cass:py:sph::6:2:2 in 2cm qtz flood margins 514.8-515.4 2-5mm qtz-asp:sph:py::6:1:3 vns @ 46° and 48° to core w/ 1% diss sph-py in coal. 2cm qtz flood margins 515.6-518.1 15cm clay gouge zone w/ 20% asp:sph::7:3 @ 39° to core; 1% diss asp:sph:cp::5:5:tr in 15-18 cm qtz flood margin 518.9-521.1 3-1mm qtz-sph-py vns @ 49°-52° to core, w/ <1% diss sph-py in 1cm qtz fld margins
(520) 525.9-526.1 2 cm bull qtz vn @ 40° to core.	521.2-523.9 1-1cm qtz-asp:cass::9:1 vn @ 10° to core and 1-6mm qtz-sph:cass::7:3 vn @ 46° to core w/ 4% diss sph:cass:po:py::4:3:2:1 in coalescing qtz flood margins; 3% diss tourm 528.0-528.9 6mm qtz-sph:cass::8:2 vn @ 40° to core, w/ 3% diss cass:py:sph::6:3:1 in 8cm qtz flood margin
(530) 532.5 4mm lt grey clay gouge w/ rock chips @ 55° to core 533.0 1mm lt grey clay gouge @ 50° to core 537.8 1-2mm lt grey clay gouge @ 70° to core	531.1-532.2 3mm qtz-sph:py::8:2 vn @ 55° to core, w/ 3% diss cass:py:sph:po::3:3:2:2 in 8cm qtz flood margin 533.9-534.6 3mm qtz-sph:cass::8:2 vn @ 53° to core, w/ 4% diss cass:sph:py:cp::3:3:2:2 in 5cm qtz flood margin. 536.2-536.9 2-1mm qtz-py:sph:cass:asp::4:4:1:1 vns @ 42° to core; 4% diss cass:sph:po:asp:py::3:3:2:1:1 in coalescing 5cm qtz flood margins
(540) 541.5 3mm grey clay gouge @ 45° to core	542.8-545.8 4-3mm qtz-sph:py:asp::4:5:1 vns @ 39°-53° to core; 5% diss py:cass:sph:asp:cp::5:3:2:tr:tr in 2cm qtz flood margins
(550)	549.5-550.7 1cm qtz-musc-cass-sph:py::6:3:1 greisen vn @ 40° to core, w/ 5% diss py:sph:asp::6:3:1 in 13-15cm qtz flood margin. 552.1-554.9 2-3mm qtz-sph-py vns @ 47° + 51° to core w/ 2% diss py:sph:cass::5:3:2 in 4-5cm qtz fld margins 557.7-558.5 2cm massive tourm vn w/ minor py @ 80° to core, w/ 2% diss sph:py:cass:cp::4:4:1:1 in 10cm qtz fld. margin
(560)	564.2-565.1 2-2mm and 2-1mm qtz-sph:py:asp:cass::4:3:2:1 vns @ 42° to 52° to core, w/ 5% diss cass:py:sph::2:5:3 in coalescing qtz fld. margins; 8% diss tourm. 565.4-566.1 1-8mm and 1-14mm qtz-sph:cp:cass::7:2:1 vns @ 42° to core, w/ 3% diss py:cass:sph::5:3:2 in coalescing 3cm qtz flood margin; 6% diss tourm.
(570)	571.4-574.0 4-1mm qtz-py:sph:cass::6:4:tr @ 51° to 62° to core and 1-11mm tourm-qtz-minor sph vn @ 36° to core; 3% diss py:sph:cass::6:3:1 in 2-3cm qtz flood margins. 4% diss tourm. 576.0-576.1 2mm tourm-asp:py::9:1 vn @ 58° to core 577.4-579.1 2-2mm qtz-py:cass:sph::4:3:3 vns @ 54° and 59° to core; 1% diss py:sph:asp::7:1:2 in 1-2cm qtz flood margins.
(580) 582.6-582.7 f.gr. aplite porphyry dike (2cm) @ 32° to core 585.5-588.5 f.gr. aplite dike - irreg contact @ ~40° to core	584.5-585.1 2-2mm qtz-py:sph::8:2 vns @ 47° and 49° w/ <1% diss sph in 1cm qtz flood margin
(590) 595.7 1cm grey clay gouge @ ~40° to core	590.2-595.4 8-2 to 3mm qtz-sph:py:asp:cass::5:3:tr:2 vns @ 44° to 54° to core; 1-5mm qtz-asp:cass::9:1 vn @ 56° to core; average of 4% diss sph:py:po:cass:cp:asp::3:2:2:2:<1:<1 in coalescing qtz flood margins 596.1-600.0 6-2 to 3mm qtz-sph:py:asp:cass:cp::4:2:2:1:1 vns @ 49°-58° to core; 1-2cm massive tourm-minor py vn @ 50° to core; ave. of 3% diss sph:py:cass:asp:po::4:3:2:<1:<1 in coalescing qtz flood margins. (600)

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
505.5	9.3	103				
			10.0		1550	1.7
515.9	10.4	100	5.0		105	0.6
			5.0		335	14.0
525.4	9.2	97	5.0		5600	10.0
			5.0		2000	1.7
535.8	9.8	94				
			10.0		2500	13.0
545.5	9.5	98				
			11.0		2100	4.6
555.4	9.9	100				
			10.0		590	2.4
565.4	9.9	99				
			9.0		1100	3.7
575.4	10.0	100	5.0		1560	6.6
			5.0		975	1.9
585.6	10.2	100				
			10.0		315	0.4
595.5	9.8	99				
			11.0		4150	11.0

DDH-25 6/8

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PROPERTY ____ SCALE 1" = 10' COORD. N Cal ____ E ____ SEC 21 T 22S R 12W BEARING Use STATE AK DIP -50° COLLAR ELEV ____ DRILL HOLE NO. DDH-25 START ____ COMPLETED ____ SHEET NO. 7 of 8 BY ____

ROCK TYPES & STRUCTURES

600 — Tgp - seriate granite porphyry, as above.

610

620

630

632.2-635.0 dike of pegmatitic aplite porphyry @ 40° to core; biotite (phlogopite) and felds. in dendritic growth patterns.

640

641.9 contact w/ f.gr. to pegmatitic aplite porphyry @ 35° to core

650

650.2-657.8 coarse feldspar-qtz-biotite pegmatite especially well developed.

658.0-665.9 med gr. biotite granite, w/ ~15-20% biotite content.

660

661.0-661.5 fault zn w/ gry clay gouge @ 50° to core

661.6 4 mm Fe-ox. stn. clay gouge @ 40° to core

670

678.0 re altered + wd to lt gry-grn clay; no movement indicated.

680

690

700

MINERALIZATION AND ALTERATION

601.6-602.1 1-9mm qtz-py-cass-musc greisen vn @ 49° and 1-1mm qtz-sph:py:cass:: 4:4:2 vn @ 53° to core; 4% diss sph:py:cass:: 3:4:3 in coalescing qtz flood margins

603.7-604.7 1-15mm + 1-20mm qtz-tourm-asp:cass:sph:6:4: tr vn @ 54° to core; 3% diss sph:py:cp:cass:: 5:3:1:1 in

605.2-606.2 2-2mm qtz-py:sph::5:5 vns coalescing qtz fld. margins @ 43° to core, + 1-5mm massive tourm.-cass vn @ 24° to core; 2% diss sph:py:cass:po:: 4:3:1:2 in coal. qtz flood margins

607.5-608.1 1-30mm + 1-3mm qtz-cass:sph:py:: 6:3:1 vns @ 54° + 59° to core; 2% diss cp:sph:cass:: 4:4:2 in coal. qtz flood margins

610.0-611.9 1-1mm, 2-3mm, + 1-5mm qtz-asp:py:cass:sph :: 5:2:2:1 vns @ 51°-60° to core; 2% diss sph:py:cp:cass:: 4:3:2:1 in 2-4cm qtz flood margins

614.7-617.0 3-1mm qtz-sph:py:: 6:4 vns @ 51°-56° to core; 1% diss sph + py in 1cm qtz flood margins

617.9-618.7 1-12mm qtz-sph:cass:asp:py:: 4:3:1:2 vn @ 59° to core; 5% diss sph:py:cass:cp:: 4:4:1:1 in 8cm qtz fld margins

619.4-620.0 1-2mm + 2-1mm qtz-asp:cass:py:sph: 4:3:2:1 vns @ 44°-49° to core; 4% diss sph:py:cass; 4:3:3 in 1-2cm qtz flood margins

621.5-622.9 2-4 to 5mm qtz-cass:asp:py:sph:: 4:4:1:1; 2% diss sph + py in 1 to 3 cm qtz flood margins

623.5 - 700.0 hairline to 2mm qtz-musc greisen vns as shown

635.4-635.9 2mm qtz-cass vn @ 58° to core; 3% diss sph:py:: 4:6 in 6cm qtz flood margin.

636.1-637.7 1-2mm + 1-7mm qtz-py:cass:: 7:3 vns @ 46° and 59°, w/ 1-2% diss py:sph:cass:: 7:2:1 in 2-3cm qtz flood margin

639.4-641.1 2-2mm qtz-cass:asp:sph:: 5:4:1 vns @ 38° + 46° to core; 2% diss py:sph:cass:asp :: 3:4:2:1 in 5-10mm qtz flood margins

642.7-644.9 2-1mm qtz-py:sph:: 3:7 vns @ 44° and 43° to core.

658.1-658.2 5mm qtz-cass:sph: 8:2 vn @ 58° to core.

666.9-668.6 7-1 to 2mm qtz-py:sph:asp:: 4:4:2 vns @ 48° to 65° to core; 7% diss sph:py:cp:asp:: 5:3:2:1 in coalescing qtz flood margins.

671.7-671.9 qtz-musc greisen w/ 2% diss sph:py:: 6:4

673.6-674.0 3mm qtz-cass:sph:py:: 5:3:2 vn @ 54° to core; 3% diss sph:py:cass:: 6:3:1 in 3 cm greisen (qtz-musc) margin

674.7-674.9 2mm qtz-musc-sph:cass:: 9:1 greisen vn @ 43° to core; 2% diss sph:py:: 5:5 in 6mm qtz-musc-greisen margin

675.6-676.0 2mm qtz-sph:py:: 9:1 vn @ 61° to core; 3% diss sph:py:cp:: 7:2:1 in 3cm qtz-musc greisen margin.

676.2-677.1 2-1mm qtz-musc-sph greisen vns @ 39° + 48°, and 1-5mm qtz-asp:sph:: 8:2 vn @ 50° to core; 5% diss sph:py:: 7:3 in coalescing qtz-musc greisen margin.

677.8-681.0 3-2mm, 2-3mm, and 1-5mm qtz-musc-cass: asp:sph:: 3:6:1 greisen vns @ 42°-50° to core; 5% diss py:sph:cp:: 4:3:3 in coalescing qtz-musc greisen margins

686.7-688.2 1-4mm qtz-cass:sph:: 9:1 vn and 1-2mm qtz-sph:cp:: 8:2 vn @ 46° and 49° to core; 5% diss asp:sph:py:cp:cass :: 4:3:1:2:tr in coalescing qtz musc greisen margins

692.9-693.3 2mm qtz-musc-cass:sph:py:asp:: 5:3:1:1 vn @ 49° to core; 2% diss py in 3cm qtz-musc greisen margin

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY
605.2	9.8	101
615.8	9.8	92
625.8	10.0	100
636.0	10.1	99
646.1	10.0	99
656.3	10.0	98
666.0	8.6	89
676.0	9.2	92
685.8	9.7	99
693.3	8.3	111

ASSAY

INTERVAL	NUMBER	Sn	Ag
9.0		3700	7.6
5.0		880	7.6
5.0		2250	4.6
10.0		3600	0.5
5.0		1560	0.4
5.0		3350	0.9
10.0		180	0.3
10.0		195	0.2
10.0		395	10.0
5.0		2250	2.0
5.0		6700	25.0
5.0		2150	13.0
5.0		2900	18.0
5.0		920	0.7

DDH-25 7/8

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
700 Tap - aplite porphyry - subaplitic porph. w/subhed. k spar phenos ~5%, 1.5-3mm diam; subhed. qtz phenos ~5%, 2-4mm diam., subhed. plag phenos <2%, 1.5-2.5 mm in groundmass of K spar 35%, plag 30%, qtz 20% and biotite <5%.	700.0-783.0 hairline to 2 mm qtz-musc greisen vns, as shown
710	
720	
725.8 1-2mm lt grn. clay gouge @ 20° to core	
730	
740	
750	
750.8 minor grn clay gouge @ 45° to core	751.8-752.0 3mm qtz-musc-sph:cp:py::6:2:2 vn @ 41° to core.
	754.3-754.5 and 755.2-755.9 qtz-musc greisen w/2% diss sph:py:cass::5:3:2
760	
770	
780	
784.0 1mm lt yel-grn. clay gouge @ 35° to core	783.0-783.1 3mm qtz-musc-sph greisen vn @ 46° to core
	789.4-790.1 2-1mm qtz-musc-py:asp:sph::4:3:3 greisen vns @ 43° and 41°, w/3% diss sph:asp:py:cass:: 3:2:3:2 in cool. qtz-musc greisen margins
790	792.8-792.9 4mm qtz-musc-tourm-sph:py:asp::4:3:3 vn @ 50° to core.
796.0 1 cm yel-grn. clay gouge @ 30° to core	
800.3 T.D.	
800	

GMC DATA REPORT 3 2 7

SAMPLE					ASSAY	
HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
702.1	7.8	89				
704.3	2.2	100	10.0		105	0.2
708.2	3.9	100				
			10.0		39	0.2
717.2	9.3	103				
			10.0		60	0.2
726.8	9.2	96				
733.0	6.2	100				
			10.0		17	0.2
742.5	9.5	100				
			10.0		32	0.2
752.2	9.8	101				
			10.0		59	0.2
762.2	9.9	99				
			10.0		455	0.3
772.3	9.8	97				
			10.0		9	0.3
782.1	9.6	98				
			10.0		27	0.2
792.0	9.9	100				
			10.0		390	0.6
800.3	8.3	100	5.3		13	0.5

DDH-25

8/8

PROPERTY Coal SCALE 1" = 10' COORD. N E SEC T R BEARING N15E STATE DIP -50° COLLAR ELEV DRILL HOLE NO. DDH-25 START COMPLETED SHEET NO. 8 of 8 BY

DDH-26

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
0 Overburden - no recovery	
10	
Intbdd f gr dk gray silic. argill. and creamy buff to reddish silic. siltstone.	
Rock is intensely fractured from top of bedrock down to 31.1 ft. Rock appears to have undergone intense deformation, poss. soft sed. deform. in part, from 16.0 - 37.3.	
20	
29.0 - 37.3 cream to buff colored massive f. gr. sdtstone, acc pyrrhotite << 1% in irreg. diss. blebs.	
30	
37.3 - 43.0 black f. gr silic argill	
40	Several thin bands of syngenetic py/po + chert; sulf chert :: 3:2, bands ~5 mm thick
43.0 - 44.1 greenish gray silic siltst. Acc po ~ 1%; flt. contact @ 40.1	
44.1 - 47.0 distinctive banded black silic argill + white to gray f gr. chert; flt contact @ 47.0	v. minor (<< 1%) po in irreg blebs < 2 mm dia
47.0 - 55.4 Intbdd. black silic argill. + reddish-gray silic siltstone	
50	
gradational contact 54-55.4 with banded blk. silic argill. + white to gray chert 55.4 - 63.7	
Beds near vertical	
60	
63.7 - 67.7 white to gray silic argill, highly contorted, gradational over a few inches into	
67.7 - 71.4 finely laminated greenish to white to gray to reddish chert, poss. lapilli tuff unit ~2 mm thick	diss. to near-massive sulfides, probably syngenetic in very thin bands ≤ 3 mm thick. 67.7-71.4
70	
71.4 - 95.0 gray to creamy brown intbdd silic siltst. Beds vary from ~ to 15° to core, and evidence of drag folding is widespread; no indication whether or not the axis of a major fold has been crossed	
80	
90	
106.8 Intbdd dk gray f gr argill. and alternate med gray f. gr. chert; tr of diagenetic syngenetic sulfide (py-po) in cherty bdd	

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag Cu	Pb/Zn
16.0							
	3.1	50					
22.2							
24.7	2.0	80					
27.5	2.9	104					
30.2	1.6	59	14.?	130	0.5	43	7/74
	9.3						
40.3		92	10.0	5	0.7	50	6/50
	9.3						
50.2		94	10.0	5	0.8	39	5/1975
	9.2						
60.4		90	10.0	6	0.9	33	32/515
~~60.8~~	~~0.3~~	~~75~~					
	9.8						
70.5		101	10.0	7	0.8	33	25/294
80.3	9.6	98					
89.2	6.3	71					
94.1	5.4	110					

Not sampled.

DDH-26

SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T 26 R 12W STATE ALASKA BEARING ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-26 START 6/9/82 COMPLETED 6/12/ SHEET NO. 1/3

PROPERTY COAL SCALE 1" = 10' COORD. N ____ E ____ SEC 20 T 6S R 12W STATE ALASKA DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH 26 START 6/9/82 COMPLETED 6/12/82 BY ____ SHEET NO. ____

OCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
106.8–120.9 Intbdd dk gray argill and v. f. gr off white cherty beds, w/0.5% – 2% finely diss po in cherty beds. Beds from 0.5–1.5 cm thick. Beds dip from 5° to 22° to core	
120.9 – 153.4 Intbdd dk gray argill and thin bedded to massive v.f. gr lt gray sandstone; sandstone and argill are delicately banded in part w/a few ss. beds to 15 cm thick	
Beds dip from 5° to 34° to core, average ~20°	
153.4–205.1 Intbdd dk gray argill and v.f. gr off white cherty beds, as above. Tr to 2% diss po., v.f. gr., limited to particular thin strata in chert beds.	
Beds dip 0° – 23° to core, averaging ~15°	

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	ASSAY
103.0	2.0	69			
113.0	10.0	100			NOT SAMPLED
120.7	6.7	87			
129.1	3.4	100			
132.0	6.7	85			
140.2	8.1	99			
147.0	5.6	82			
151.9	4.6	94			
161.1	9.1	99			
168.0	6.1	88			NOT SAMPLED
172.0	3.2	80			
178.2	5.6	90			
186.4	8.2	100			
196.2	8.8	90			

DDH-26 2/3

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	ASSAY	
205.1-206.3 ft. interbedded dk gray argil. and massive gray sandstone, v. f. gr.		206.3	9.6	95			NOT	SAMPLED
206.3 TD								
210								

PROPERTY Coal SEC T R STATE DRILL HOLE NO. DDH 26 SHEET NO. 3 of 3

SCALE 1" = 10' COORD. N E BEARING DIP COLLAR ELEV START COMPLETED BY

DDH-26

3/3

PROPERTY Coal SEC 20 T 22S R 12W STATE ALASKA DRILL HOLE NO. DDH-27 SHEET NO. 1 of 2

SCALE 1" = 10' COORD. N ____ E ____ BEARING ____ DIP -90 COLLAR ELEV ____ START 6/12/82 COMPLETED 6/14/82 BY ____

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
0.0-41.0 overburden - no recovery		41.0				
41.0 - 55.0 predom. dk gry-blk argillite w/ irreg. beds of gry fxl grwke, rock very fx w/ FeOx stn. in fx. soft sed. deform. structures evid. Tr.-1% py diss. + along hairline fx in argill.		50.4	7.5	80		
	52.0 1mm py vn. @ 25° to core					
55.0-88.0 predom. lt gry-dk gry fxl grwke intermixed w/ blk argill. Bd. very contort. rock v. fx w/ bx frag. along some fx. and FeOx stn. + py filling others. (Tr-1%)		59.5	9.1	100		
		63.2	2.8	76		
		73.2	10.0	100		
75.0-75.6 ~6cm wide fxl aplite(?) dike lt gry-buff vuggy, w/ sulf→FeOx; mica lines cavities + fxs	75.0-75.6 sulf. po? → FeOx in cavities + fx fillings w/in aplite(?) dike					
77.0-77.4 0.3-1cm FeOx stn. clay gouge w/ rk chips @ 10° to core						
81.0-82.0 intense bx zone w/ clay gouge + rk chips @ ~50° to core		83.6	9.9	95		
88.0-109.0 gry + blk argillite w/ minor gry fxl graywacke. Bd contorted; soft sd. slump structures evident; fx rk. - hairline fx. filled w/ py.	88.0-106.0 Tr-1% py in hairline fx at all angles to core	91.8	8.2	100		

NOT SAMPLED

DDH-27

1/2

PROPERTY Coal SCALE 1" = 10' COORD. N E SEC 20 T 22S R 12W STATE ALASKA BEARING DIP -90 COLLAR ELEV DRILL HOLE NO. DDH-27 START 6/12/82 COMPLETED 6/14/82 SHEET NO. 2 of 2 BY

DDH-27 2/2

ROCK TYPES & STRUCTURES

100

107.8 3mm Fe-ox stn. + gry clay gouge @ 55° to core

110

109.0-113.0 blk argill. grades into fxl lt gry graywacke w/ 1-2% diss. po; then grades back into blk arg.

113.0-144.0 predom. blk arg. + med gry m.gr. w/ lesser gry fxl grywke; bd. v. contorted, slump struct. evident, where visible, bd. at v. small angle to core (~0-20°).

120

123.0-125.3 shattered zone w/ 2-3mm gry clay gouge @ 50° to core

125.0-125.3 shatter zone w/ gry clay gouge + rk chips 4-6 cm wide @ ~70° to core

126.4-126.7 shatter zone. 4 cm gry clay gouge and rock chips @ 55° to core

130

137.0-144.0 bx of gry-blk argillite

138.8-139.5 gry clay + rk chip bx zone @ ~70° (?) to core

140

143.0-144.0 fault zone. gry clay gouge + rk chips (@ 50° (?) to core

144.0-159.0 interbed. blk arg. + lt gry-wht chert irreg. banding from 0.3-3cm thick. fx. occas. lined w/ minute, clear drusy qtz. xtals.

150

153.5 1cm gry clay gouge + rk chips @ uncertain orient. to core

157.7-159.0 fault zone w/ gry clay + rk chips (frags up to 1.5cm) @ 60° to core

160

159.0-172.8 irreg. bed. dk gry arg. + meta-siltstone silicified (?) and lt red-brown chert. Contorted bd. - some siltst. clasts w/in chert. laminat. of chert ~ 1cm - 2cm thk.

170

170.0-170.5 gry cly + rk chips @ ≈ 60° (?) to core

172.8 TD

180

190

200

MINERALIZATION AND ALTERATION

109.0-113.0 1-2% po diss. + as fx fillings in fx graywke.

113.0-137.0 Tr. py + po along hairline fxs. @ all ∡s to core.

159.0-172.8 Tr. diss. py in meta-siltst.

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
102.0	10.4	102		
111.7	9.9	102		
115.0	3.0	91		
119.0	3.4	85		
125.3	5.9	94		
126.7	1.1	79		
129.9	2.4	75		
~~130.4~~	~~0.3~~	~~60~~		
140.4	10.0	100		
144.0	3.0	88		
147.5	2.7	77		
157.0	6.5	68		
159.0	2.3	77		
161.4	0.0	0		
167.7	0.8	13		
172.8	3.4	67		

NOT SAMPLED

PROPERTY Coal **SCALE** 1" = 10' **COORD. N** ____ **E** ____ **SEC** 20 **T** 22S **R** 12W **STATE** ALASKA

BEARING ____ **DIP** -90 **COLLAR ELEV** ____ **DRILL HOLE NO.** DDH-28 **SHEET NO.** 1 of 1

START 6/14/82 **COMPLETED** 6/17/82 **BY** ____

ROCK TYPES & STRUCTURES

0.0–16.5 overburden
No recovery

16.5–27.0 predom. f gr. gry graywacke w/ sparse irreg. qtz vns up to 1cm wide (gen. < 3mm)

27.0–58.0 dk gry-blk f.gr. argillite; Bd. where visible is highly distorted; generally at steep angle to core.
Occas. minor zones of gry f.gr. graywacke interbeds.

45.5 dk gry clay gouge + rk chips (2-3cm) @ uncertain orient. to core

47.0–49.9 several zones of gry clay gouge (up to 14cm thick) w/ rk chips @ ~60° to core

58.0–63.0 mixed f gr gry graywacke + blk argillite. Contorted bd. w/ minor intermixed qtz-rich zones (chert?)

61.8 ~2cm gry clay gouge w/ rk chips @ unknown orient. to core

63.0–91.6 more regularly bedded gry graywke and blk argillite. Bd. gen. 40–50° to core and range from < 1mm to ~1cm thick.

91.6 T.D.

~76.8% Recovery

MINERALIZATION AND ALTERATION

16.5–91.6 tr to 1% py+po in hairline fx as shown.

53.0 3mm qtz-py:po vns (2:1) @ ~45° to core

56.0–57.0 f gr. colorless fluorite(?) lining fx.

59.5 1mm qtz-py vnl @ 20° to core

86.0 blebs + masses (up to 2mm) of diss. po along 2-3mm bed in argill. @ 45° to core

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
16.5				
18.4	1.9	100		
24.4	5.2	87		
34.9	10.2	97		
39.2	4.2	98		
45.8	6.7	103		
48.8	2.0	67		
49.9	0.6	55		
54.1	1.5	36		
57.8	3.1	84		
63.0	4.9	94		
72.8	3.5	36		
82.3	7.5	79		
83.9	1.3	81		
85.0	1.0	91		
88.6	3.2	89		
90.6	0.8	40		
91.6	0.2	20		

DDH-28 1/1

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC 21 T 22S R 12W STATE ALASKA BEARING ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-29 START 6/17/82 COMPLETED 6/20/82 BY ____ SHEET NO. 1 of 3

NOT SAMPLED

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
0.0-0.5 overburden	
4.5-97.5 laminated lt grey-grey ... & ... med grey fxl ... lamination 0.2-1.5 cm thick. ... bands often ... w/ ...	
laminat. @ 45-60° to core; ... sequence is interrupted in several places by ... sed. slump + marbling textures where noted below. Tr. to 1% py + po diss. in ... + remob. along hairline fxs.	15.0 py in hairline to ... fx ~ 30° to core ...
19.8 4mm lt gry-brn clay gouge + rockchips @ 65° to core	
20.3-20.9 buff-wht fxl aplitic intrus(?) or cherty horizon w/ fxl diss po along margins. (<1%)	23.8 py in hairline fx ~ 5° to core
21.4 0.5 cm clay gouge w/ rx chips @ 60° to core	
21.4-23.7 silicified meta-... w/ 3-5% diss. po + py most → Fe ox.	29.0-29.4 hairline fx w/ ... → Fe ox. @ vert. to core
37.5-47.6 buff/lt gry chert bx mixed w/ gry fxl grywke - upper 1/2 ~ 70% chert bx - clasts up to 2.5 cm across	37.5-47.6 Tr. py in hairline to 1mm fx in chert-grywke bx - all orientations
40.1 3mm yel. clay gouge @ 17° to core	
47.0 2 mm yel-brn clay gouge @ 60° to core	
54.2 2-3mm fe-ox stn clay gouge @ 55° to core	
61.0 3mm FeOx stn. clay gouge w/ rk chips @ 60° to core	
66.0-85.0 series of graded beds - chert + grwke clasts up to 2cm long grading downhole to fxl silt. size. Top appears to be downhole direction	66.0-85.0 Tr. py in hairline to 1mm fx in fxl parts of graded bds @ all orient. to core
	67.2-67.6 Tr-1% py in hairline fx ~ vert. to core
89.0-90.0 olive grn + dk grey 0.3-1 cm banded meta siltstone @ 80° to core	89.0-90.0 Tr-1% py + po in hairline-1mm fx
95.0 1-2mm yel. clay gouge @ 50° to core	
97.5-129.4 mixed zone of gry chert, gry-... lt gry siltstone, gry graywke, and dk gry-blk argillite (where noted). contact is	

HOLE DEPTH	CORE RECOVERED	% RECOVERY
4.1	2.8	78
8.4	4.3	100
18.2	9.8	100
22.1	3.9	100
23.7	1.2	75
26.5	2.7	96
35.0	8.0	94
39.6	4.6	100
47.6	6.6	83
57.5	9.8	99
67.6	8.4	83
77.9	1.6	13
87.7	9.6	98
97.9	10.1	99

DDH-29

1/3

GMC DATA REPORT 327

PROPERTY Cal SEC 21 T 22S R 12W STATE AK DRILL HOLE NO. DDH-29 SHEET NO.

SCALE 1" = 10' COORD. N E BEARING DIP -90 COLLAR ELEV START 9/17/82 COMPLETED 9/20/82 BY

ROCK TYPES & STRUCTURES

gradational.

104.0 - 104.7 intense bx zone w/ 3mm clay gouge and rx chips @ 10° to core

108.2 - 108.6 blk argill
109.5 - 110.3 blk argill.

110

111.5 - 118.2 interbd gry siltstone + blk argil. bds 0.2 - 1 cm thk

120

124.2 2mm Fe-ox stn. clay gouge @ 70° to core

128.5 - 129.5 bx w/ 2mm lt brn clay gouge @ 45° to core

130

129.4 - 176.5 dk gry 6xl. graywke w/o distinct bedding, graywke grades in + out of siltstone.

140

150

160

170

176.5 - 192.8 distinctly bd. graywke + meta-siltstone: gry to dk gry-brn. Bds graded + 1-10 cm thick. Top uphole(?) bd 55° to core

180

183.8 3-4mm lt brn clay gouge @ 55° to core

190

192.8 - 295.7 distinct to indistinctly bd graywke + siltst. as above, w/ structures as shown.

194.0 1cm gry clay gouge + rk chips @ 60° to core

195.4 - 196.6 - intensely br rk w/ ~6cm lt brn gy clay gouge + rk chips @ 40° to core

200

MINERALIZATION AND ALTERATION

107.5 - 110.8 1% sulf. (py-po) along bd. in argil. and in hairline to 1mm qtz vn ⊥ to bed

111.5 - 112.3 same as above.

138.6 - 170.0 sparse hairline to 1mm qtz-ab(?) - py-po? vns @ 2-5° to core.

179.0 2mm qtz-ab? vn(?) with py @ 55° to core

183.9 2mm grand. qtz vn. w/ diss. py (1%) @ 60° to core - conform w/ bd.

192.0 2mm qtz-ab? - carb? vn w/ tr. py @ 90 + 95° to core

193.3 3-4mm qtz-carb-ab? vn w/ 1% py, tr cpy @ 15° to core

193.8 - 3mm qtz-carb-ab? vn w/ 5% sulfs: py + tr. asp. @ 10° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
106.1	8.7	106		
115.3	9.2	100		
125.1	9.8	100		
134.6	9.2	98		
141.0	6.5	102		
148.0	7.0	100		
155.1	6.8	96		
160.4	5.3	100		
163.4	2.7	90		
164.9	1.7	113		
171.9	5.8	83		
176.0	4.3	105		
178.6	3.0	115		
182.7	3.0	73		
192.0	9.3	100		
196.7	4.7	100		

NOT SAMPLED

DDH-29

2/3

PROPERTY Coal(?) SCALE 1" = 10' COORD. N ____ E ____ SEC 21 T 22S R 12W STATE AK. BEARING ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-29 START ____ COMPLETED ____ SHEET NO. 3 of 3 BY ____

ROCK TYPES & STRUCTURES

200.5 5 mm clay gouge [illegible] @ 17° to core
203.0 1 cm gel. clay [illegible] @ 70° to core

210

220

230

240

250

260

267.5 gel. clay gouge (@ 1 cm) @ uncertain orient. to core

270

280

290

294.0 1-2 mm Fe ox-stn clay gouge @ 35° to core

295.7 E.O.H.

300

MINERALIZATION AND ALTERATION

195.0 2 one mm qtz [illegible] [illegible] in one + [illegible] (?) [illegible] @ 10° + 30°
197.0 3 mm qtz-ab vn [illegible] @ 20° to core
200.0 - 295.7 [illegible]
[illegible]
[illegible]
200.0 1-2 mm qtz-ab vn w/ 5% [illegible] po - 4:3:1 tr @ 20° to core
209.5-210.0 2 mm qtz-ab vn w/ 5% po: [illegible] sph 4:3:1 tr. @ [illegible] to core

238.8-239.6 5 mm qtz-ab? - tourm? vn. w/ 5-7% Asp: cass: sph. - 4:1:1 tr. @ 10° to core

246.0-246.8 1 mm qtz - w/ 3% aspy: sph: po = 3:2:1 @ 15° to core

285.0 1 mm qtz-mu vn @ 2° to core

292.6-293.0 1 mm qtz-mu-MoS2 vn (tr-[illegible]) @ 10° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
205.2	8.3	96		
214.0	8.3	94		
220.3	6.7	106		
225.0	4.2	89		
234.9	9.5	96		
243.8	8.8	99		
252.8	8.9	99		
259.1	6.5	103		
266.3	6.7	93		
267.9	1.0	63		
271.0	2.8	90		
275.5	4.8	107		
281.2	5.7	100		
284.3	3.1	100		
293.2	8.8	99		
295.7	2.5	100		

NOT SAMPLED

DDH-29 3/3

PROPERTY ____ SEC 21 T 22S R 12W STATE ALASKA DRILL HOLE NO. DDH-30 SHEET NO. 1 of 2

SCALE 1" = 10' COORD. N ____ E ____ BEARING ____ DIP -90 COLLAR ELEV ____ START 6/20/82 COMPLETED 6/2[illegible]/82 BY ____

ROCK TYPES & STRUCTURES

8.0 - 116.6 [illegible] (graded [illegible]) w/ highly [illegible] [illegible]

22.3 [illegible] clay gouge [illegible] @ 30° to core

24.4 - 24.9 [illegible] clay gouge [illegible] @ 45° to core

38.0 - 35.0 graded bed set - bx rock - top [illegible]

39 - 48.1 graded bed set - top ↑

49.5 - 60.9 [illegible] graded bed sets - top [illegible]

96.2 [illegible] clay gouge [illegible] @ 60° to core

MINERALIZATION AND ALTERATION

[illegible]

[illegible] @ 30° to core

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
8.0				
10.1	2.4	114		
13.7	2.3	63		
14.6	0.6	67		
22.3	6.8	91		
24.7	1.5	63		
28.6	3.2	82		
30.2	0.9	56		
31.0	0.3	38		
33.6	1.6	62		
38.6	4.6	92		
42.3	2.7	73		
43.1	0.7	88		
48.2	4.9	96		
50.6	2.2	92		
51.8	1.1	92		
60.2	7.7	92		
61.1	0.8	[illegible]		
64.2	0.9	27		
68.6	0.4	9		
72.0	1.5	44		
73.5	1.3	87		
75.8	1.8	78		
78.0	2.1	95		
80.8	2.5	89		
86.5	5.3	95		
90.2	3.5	103		
95.2	4.6	92		
97.5	1.9	83		

ASSAY

NOT SAMPLED

DDH-30 1/2

GMC DATA REPORT 327

PROPERTY ___ SCALE 1"= ___ COORD. N ___ E ___ SEC 21 T 22S R 12W STATE ALASKA DRILL HOLE NO. DDH-30 SHEET NO. ___
BEARING ___ DIP -90 COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER				
[illegible] "stockwork" [illegible]		107.0	9.5	100	10.0		57	0.5		
110										
116.6-125.1 [illegible]	[illegible]	116.6	7.5	78	10.6		40	0.9		
120										
121.4 3mm [illegible] @ 40° to core	121.4 [illegible]									
125.1-133.7 [illegible]	125.1 [illegible] 125.1-133.7 [illegible]	124.7	7.6	96	8.5		80	0.3		
		127.9	3.2	100						
130										
	133.0 Two 2-3mm [illegible] @ 20°	133.7	5.3	91	8.6		93	0.6		
133.7 T.D.					DDH	-30		2/2		
140										

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PROPERTY Coal SCALE 1" = 10' COORD. N E SEC 21 T 37S R 12W STATE Alaska DIP -90 COLLAR ELEV DRILL HOLE NO. DDH-31 START COMPLETED BY SHEET NO. 1 of 5

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Overburden - no recovery	
Tgp - sericite granite porphyry	7.5 - 8.5 3 - 2 to 5 mm qtz-tourm vns near vert, bifurcating toward surface
	16.6 - 17.6 4 - 2 mm to 1 cm qtz tourm vns @ 7° to core; no sulfides.
19.0 - 19.2 1 cm clay gouge @ 22° to core	21.0 - 27.9 11 - hairline to 1 mm qtz tourm vns from near vert to 12° to core; no sulfides
24.0 - 24.2 1 cm clay gouge @ 21° to core	
55 - 100 chloritic alteration of granite, w/ chlorite preferentially attacking and replacing feld phenos that are < .5 mm diam, in some short zones also replacing part of feld component of groundmass. Intensity increases w/ depth, especially in the vicinity of mineralized and qtz flooded vn margins	61.7 - 62.1 1 mm qtz tourm vn @ 12° to core w/ 5% diss py in 1 cm qtz flood margin
	68.5 - 68.8 3 mm qtz-sph-cp-py-asp vn @ 27° to core, sph:cp:py:asp: 4:3:3:tr; no qtz flood margin present.
75.5 - 75.7 near vert 1 cm wide f.gr. aplite porphyry dike	75.6 - 75.9 1 mm qtz-asp vn at 17° to core, no qtz flood margin
	80.1 - 80.5 2 mm qtz tourm vn., tr. of diss asp in 1 cm qtz flood margin.
87.9 - 88.1 chloritic clay gouge and rock chips @ 18° to core	87.3 - 88.0 4 mm qtz tourm vn
	90 - 99.9 4 hairline qtz-tourm vns.

HOLE DEPTH	CORE RECOVERED	% RECOVERY
7.5		
10.0	2.3	88
15.4	5.1	94
23.3	7.9	94
33.1	9.8	100
43.4	9.9	96
50.1	6.7	100
51.4	0.7	54
61.3	9.6	97
71.2	9.9	100
78.4	6.7	93
87.0	7.9	92
97.5	10.1	96

INTERVAL	NUMBER	Sn	Ag
7.5			
10.5		31	1.0
10.0		43	1.7
10.0		41	0.4
10.0		18	0.4
10.0		24	0.4
10.0		145	0.8
10.0		92	2.0
10.0		290	4.0
DDH-31			1/5
10.0		27	0.8

PROPERTY COAL
SCALE 1" = 10'
COORD N ___ E ___
SEC ___ T ___ R ___
BEARING ___ STATE ___
DIP -90 COLLAR ELEV ___
DRILL HOLE NO. DDH 31
START [illegible] COMPLETED [illegible]
SHEET NO. 2 of 5 BY ___

ROCK TYPES & STRUCTURES

120.0-135.8 seriate granite porphyry is highly fractured, but can be pieced back together, the most prominent fracture set is between 10°-20° to core.

136.0-137.2 chloritic clay gouge and rock chips on several small faults @ ~22° to core

137.2-146.4 rock is broken, but w/no indication of relative movement between blocks.

146.2 contact - granite porphyry above, f. gr aplitic border phase of granite porphyry below; minor pegmatitic texture intermittently 148.0-170

150.0-150.8 chloritic clay gouge + rock chips @ ~25° to core.

156.0-162.7 rock chips and chloritic clay gouge in chaotic mess; rock chips 156.0-161.0 appear to be siliceous sediment, then back to chloritized aplitic porphyry

163.3-165.9 several throughgoing fracs @ 20-22° to core w/ highly frac. chloritized aplitic porph. Very broken.

170.0 contact w/siliceous argillite sed.; both rock units are highly broken and gouge bearing, impossible to be sure of orientation of contact but probably a fault contact.

184.6 Reduced to IAX size core

184.7 contact w/ aplitic granite porphyry, includes chlorite% alt. [illegible]

193.9 contact w/ [illegible]

199.3 contact w/ highly broken aplitic [illegible]

MINERALIZATION AND ALTERATION

106.3-108.9 5 - hairline to 1mm qtz-[illegible] vns @ 15°-20° to core.

114.0-118.6 2mm qtz-sph-py vn

121.9-122.5 2 - hairline - 1mm qtz-sph-py vns near vert.

124.0-124.3 1mm qtz-sph-cp-py vn @ 14° to core

127.4-127.9 2 - 1mm qtz-sph-py-asp vns @ 17° to core

130.4-131.3 3mm qtz tourm vn w/tr asp in 1cm qtz flood margin

131.3-131.8 2mm qtz-sph-py-cp vn

133.9-134.9 2 - 2mm qtz-sph-asp-cp vns @ 17° to core

137.8-139.6 2 - 1mm qtz-sph-py vns @ 19° to core w/2% diss sph+py in selvage, 2cm qtz flood zone

141.3-143.1 3 - hairline to 1mm qtz-sph-py vns @ 20°-22° to core, w/2% diss sph+py in 2cm qtz flood margin (coalescing).

148.2-148.6 2mm qtz-asp vn @ 22° to core

149.6-151.6 near vert. 1mm qtz-sph-py vn w/1% diss sph+py in 1cm qtz flood margin

153.8-156.0 3mm qtz-asp vn @ 4° to core, tr. of cp; vn margins heavily tourmalinized

168.8-169.8 near vert 1mm qtz-sph-py vn, w/4% diss sph:py:cp:asp::6:4:tr:tr.

189.8-189.5 2mm qtz-py-sph vn, near vert., w/1% diss. py in >1cm qtz flood margin.

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
106.9	9.6	97	10.0		155	1.7
116.5	9.9	98	10.0		345	3.0
126.7	10.0	98	10.0		360	4.6
137.2	10.2	97	10.0		235	11.0
145.3	7.0	86	10.0		1930	20.0
151.8	6.0	92				
157.8	4.5	75	10.0		660	28.0
162.3	2.2	45				
167.7	4.5	90	10.0		120	2.2
173.5	4.2	88				
177.6	0.5	10	10.0		350	11.0
181.3	0.5	14				
181.7						
184.6	1.3	45	10.2		160	15.0
193.3	1.8	21		DDH-31		
195.4	1.4	67				
196.9	0.7	47	10.0		165	1.6
199.0	1.4	67				
200.1	0.6	55				

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PROPERTY
SCALE 1" = 10'
COORD. N E
SEC 21 T 22S R 12W STATE ALASKA
BEARING DIP -90 COLLAR ELEV
DRILL HOLE NO. DDH-31 START COMPLETED
SHEET NO. 3 of 5 BY

ROCK TYPES & STRUCTURES

Top, f gr. aphanitic [illegible] porphyry [illegible]

218.2 [illegible] @ [illegible] to core

[illegible] @ [illegible] to core

255.2 contact siliceous [illegible] w/ [illegible] feldspar porphyry dike @ uncertain orient. to core; rock is composed of 5% qtz. phenos 1-2mm diam., 15% feld phenos & [illegible] in aphanitic groundmass

261.8 - 273.1 fault zone - w/ fault bx and clay gouge zones @ 55° to core

273.1 fault contact [illegible] w/ greywacke
273.8 3mm gry clay gouge @ 50° to core

94.3 - 295.8 v. f gr. black shale w/ 3-4% diss py, probably epigenetic.

MINERALIZATION AND ALTERATION

255.2 - 261.8 next rest. hairline qtz-po vns, w/minor Xcutting qtz-po vns.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Cu	[illegible]
200.9	[illegible]	90				
202.1	1.0	[illegible]				
204.0	[illegible]	[illegible]				
205.1	0.7	[illegible]				
[illegible]	[illegible]	20	7.6		[illegible]	[illegible]
[illegible]	6.1	88				
216.7	[illegible]	79				
			12.4		[illegible]	[illegible]
218.7	1.2	60				
220.4	[illegible]	95				
226.0	1.4	88				
227.7	[illegible]	94	10.0		[illegible]	1.1
231.6	3.1	80				
233.0	1.0	71				
235.0	2.1	105				
236.3	1.7	131				
			10.0		74	0.6
243.8	7.3	97				
247.0	3.0	94	10.0		[illegible]	[illegible]
250.7	3.2	87				
255.2	4.3	96	7.0		58	0.7
259.0	3.4	89				
263.8	3.2	67				
			10.0		105	3.9
273.1	4.6	49	8.0		50	1.0
275.3	2.1	95				
276.4	0.9	82				
279.4	1.1	37				
[illegible]	1.0	77				
283.1	1.6	67	10.0		65	1.2
286.0	1.2	41				
288.1	1.6	76				
290.2	[illegible]	18				
[illegible]	0.9	47	10.0		115	[illegible]
[illegible]	1.9	61				
300.6	5.4	102				

DDH-31

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GMC DATA REPORT 3 2 7

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PROPERTY [illegible] SCALE 1" = 10' COORD. N ____ E ____ SEC 31 T 22S R [illegible] BEARING ____ STATE ____ DIP -90° COLLAR ELEV ____ DRILL HOLE NO. DDH-31 START ____ COMPLETED ____ SHEET NO. 4 of 5 BY ____

ROCK TYPES & STRUCTURES

300 [illegible] gray graywacke, [illegible]

310 — 310.9 dk grey, [illegible] clay gouge 60 – 35° to core

320 —

330 —

333.0 3 mm dk grey clay gouge @ 65° to core

335.3 2 mm dk grey clay gouge @ 65° to core

340 —

349.2 3 mm dk grey clay gouge w/ rk chips @ 55°

350 —

360 —

362.7 2-3 mm grey clay gouge + rk chips @ 80° to core

370 —

380 —

390 —

400 —

MINERALIZATION AND ALTERATION

302.6-302.7 [illegible]

307.1-307.3 [illegible]

311.2-311.1 [illegible]

342.2-342.3 1.5 mm qtz-sph-py-minor asp vn @ 14° to core

360.5-360.8 1mm qtz-py-sph vn @ 18° to core

379.2-379.9 2mm qtz-minor py-asp vn @ 13° to core

391.6-392.0 qtz-topaz?-asp-cos? vn, 2mm wide, @ 19° to core

395.7-396.2 3mm qtz-py-minor asp vn @ 37° to core

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY
301.?	0.5	56
302.?	[illegible]	[illegible]
309.0	6.9	100
311.0	1.9	95
313.4	2.3	96
315.?	[illegible]	95
318.9	0.5	15
320.1	1.2	100
330.2	9.5	94
336.4	6.4	103
339.5	3.1	100
348.1	8.7	101
349.4	1.2	92
355.8	6.3	98
363.0	6.7	93
365.7	2.8	104
366.5	0.9	113
371.0	4.2	93
375.0	4.5	113
385.0	9.8	98
388.5	3.3	94
394.8	6.3	100
396.8	2.0	100
398.5	1.7	100
400.7	2.2	100

ASSAY

INTERVAL	NUMBER	[illegible]	[illegible]
10.0		[illegible]	[illegible]
10.0		45	0.8
10.0		40	0.5
10.0		86	0.4
10.0		340	0.8
10.0		26	0.6
10.0		55	0.5
10.0		45	0.5
10.6		110	0.4
10.0		130	0.8

DDH-31 4/5

PROPERTY Coal SEC 21 T 22S R 12W STATE DRILL HOLE NO. DDH-31 SHEET NO. 5 of 5

SCALE 1" = 10' COORD. N E BEARING DIP -90° COLLAR ELEV START COMPLETED BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		
400 [illegible] graywacke, as above		407.1	1.3	93	10.0		[illegible]	[illegible]
		408.0	1.2	67				
		[illegible]	1.2	[illegible]				
	[illegible]	409.7	1.2	88				
410		411.2	4.6	107				
	413.6–415.0 [illegible] @ [illegible] 27° to core				10.0		[illegible]	1.3
	415.0–415.3 [illegible] @ 30° to core	415.0	4.0	100				
		417.3	1.9	83				
		418.5	1.1	92	5.5		[illegible]	0.5
420 418.5 E.O.H.							DDH-31	5/5
430								

GMC DATA REPORT 327

PROPERTY | SCALE 1" = 10' | COORD. N | E | SEC | T | R | BEARING | STATE | DIP -70 | COLLAR ELEV | DRILL HOLE NO. | START | COMPLETED | SHEET NO. | BY

ROCK TYPES & STRUCTURES

Overburden - no recovery

Tgp: granite porphyry

10

15.5 1cm clay gouge @ ~75° to core

20

23.8 1cm clay gouge + rock chips @ 78° to core

30

32.7-32.8 3cm clay gouge + rock chips @ 77° to core

40

40.9-41.1 4 cm clay gouge @ 48° to core

50

57.0-57.3 10 cm clay gouge @ 90° to core

60

70

72.0-72.2 3cm clay gouge @ 48° to core

80

90

100

MINERALIZATION AND ALTERATION

11.7-12.15 near vert. qtz-sulf vn w/ tourm. [illegible]

18.3-20.9 1mm qtz-sph-py-cass vn @ 5° to core sph:py:cass::6:3:1

18.0-24.0 qtz-tourm vns up to 2 cm wide, Xcut by qtz sulf vning

24.5-28.1 2mm qtz-sph-py-cass vn @ 5° to core 1% diss py in 1cm qtz flood margin; sph:py:cass:: 7:2:1

34.3-37.9 near vert 1cm qtz-tourm? vn w/tr of asp.

37.7-[illegible] 2 to 3 mm qtz-sph:py:cass ::4:3:3 vn @ 3° to core, Xcut by 4 mm qtz-asp-cass vn @ 13° to core; acc tourm in both vns; 7% diss sph+py in 2 cm wide qtz flood margin.

41.8-42.7 1mm qtz-sph-py-minor po vn @ 5° to core, 5% diss sph in 2 cm qtz flood margin.

43.6-44.8 2 mm qtz-sph-py-po-cass vn @ 20° to core, 2% diss sulf mostly py+po in 3 cm qtz flood margin; sph:py:po:cass::6:2:2:tr.

54.4-56.0 4mm qtz-asp-cp-cass-sph vn @ 7° to core, sph:asp:cp:cass::1:5:2:2; 2% diss sph+cp in 2 to 3 cm qtz flood margin

57.8-59.0 1mm qtz-sph-py vn @ 6° to core; 3% diss sph+py in 2 cm qtz flood margin.

68.4-69.7 1mm qtz-sph vn @ 10° to core, w/ 2% diss sph: cp:asp:po::6:2:1:1 in 2 cm qtz flood margin

69.8-70.8 7 mm qtz-asp-sph-cass-py-cp vn @ 20° to core w/ 4% diss py+po in 2cm qtz flood margin asp:sph:cass:py:cp::4:3:2:<1:<1 in vn.

72.3-82.8 6-2 to 6 mm qtz-sulf-cass vns @ 15°-18° to core w/ coalescing qtz flood margins. Total sulf for interval ~7%, w/ sph:py:asp:cp:cass:po::6:1:1:<1:1:<1

84.0-85.4 2 to 5 mm qtz-sph:py:cp::8:1:1 vn @ 13° to core. 1% diss sph in 1cm qtz flood margin

89.3-99.3 near vert. 2mm qtz-sph-py vn w/ 2% diss sph-py in 1 to 2 cm qtz flood [illegible], Xcut and offset by ~4mm by 4mm qtz-asp-sph cass vn @ 20° to core @ 93.6 and 98.9

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY
2.3		
7.3	4.0	100
12.6	5.1	96
16.3	3.7	100
26.5	[illegible]	[illegible]
36.5	9.6	96
46.9	10.1	97
57.0	10.1	100
66.8	9.5	97
74.7	7.9	100
84.7	9.9	99
94.7	10.0	100

ASSAY

INTERVAL	NUMBER	Sn	Ag
9.5		3400	1.5
10.0		795	2.6
10.0		2110	2.4
10.0		3300	13.0
10.0		3605	7.3
10.0		2200	31.0
5.0		850	9.3
10.0		3300	38.0
10.		2640	18.0
10.0		4180	25.0

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PROPERTY ___ SCALE 1" = 10' COORD. N ___ E ___ SEC 21 T 22S R 12W STATE ___ BEARING ___ DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-32 START 6/27/82 COMPLETED ___ SHEET NO. 2 ___ BY ___

ROCK TYPES & STRUCTURES

Top - seriate granite porphyry, as above

128.0 - 139.6 4 - identifiable fault zones, 68°-88° to core, w/ highly broken granite porphyry between them.

144.9 - 145.3 15 cm clay gouge @ 54° to core

149.9 - 150.2 10 cm clay gouge and rock chips @ ~80° to core.

154.7 - 155.2 15 cm clay gouge and rock chips @ 71° to core

164.0 - 165.4 clay gouge and rock chips @ 74° to core.

197.5 - 199.7 8 cm clay gouge and rock chips @ 68° to core

(Depth marks: 110, 120, 130, 140, 150, 160, 170, 180, 190, 200)

MINERALIZATION AND ALTERATION

101.5 - 102.2 hairline qtz-sph-py vn @ 14°, ... 3% diss sph+py in 2 cm qtz flood margin.
102.8 - 106.2 2 mm qtz-sph-asp vn w/4% diss sph+py in 3 cm qtz flood margin.

107.0 - 109.5 2 mm qtz-sph-asp-py-cass vn @ 12° to core, w/ 3% diss sph+py in 1 cm qtz flood margin. Sph:asp:py:cass :: 5:2:3:tr.

110.6 - 111.9 1 mm qtz-sulf vn → FeOx, w/ 7% diss sulf → FeOx in 3 to 4 cm qtz flood margin.

113.0 - 116.1 2 - 1 mm qtz-sulf → FeOx vns @ 11° to core, w/ 6% diss sph+py, now mostly FeOx, in 4 cm qtz flood margin.
116.6 - 120.9 1 mm qtz-sph-py vn, near vert; 1% diss in 5 mm qtz flood margin.

123.3 - 124.0 2% diss sph+py in 1 cm qtz flood zone about hairline frac. @ 19° to core.
125.7 - 128.0 3 - 1 mm qtz-sph-py vns @ 12°-19° to core w/ 5% sph+py (diss) in coalescing qtz flood margins.

144.4 - 147.8 3 - 1 mm qtz-sulf → FeOx vns @ 17°-30° to core; no diss sulf.

157.5 - 158.1 2 mm qtz-sulf → FeOx @ 10° to core w/ 3% diss sulf → FeOx in 1 cm qtz flood margin; acc tourm ~8%.

162.0 - 165.0 1 cm qtz-topaz? vn @ 8° to core, 4% acc diss tourm., tr. of sulf → FeOx

166.4 - 166.9 2 mm qtz-sulf → FeOx vn @ 32° to core; 2% diss sulf → FeOx in 1 cm qtz flood margin.

170.4 - 174.1 2 - 3 mm qtz-sulf → FeOx vns @ ~30° to core w/ coalescing 8 cm qtz flood margins w/ ~5% diss sulf → FeOx or leaving open vugs.
174.8 - 179.3 3 - 3 to 12 mm qtz-asp-cass vns @ 11° to core, w/ 2 - 1 mm qtz-sph vns @ 6° to core, all partially oxidized; 3% diss sulf → FeOx in coalescing 2 to 5 cm qtz flood margins

182.2 - 185.8 2 - 1 mm qtz-sulf → FeOx vns @ 13° to core

189.1 - 189.5 4 mm qtz-sulf → FeOx vn @ 24° to core

192.8 - 194.4 2 - 3 mm qtz-sulf → FeOx vns @ 22° to core w/ coalescing qtz flood margins containing 1% diss sulf → FeOx.

196.0 - 198.6 3 mm qtz-sulf → FeOx vn @ 21° to core 1% diss sulf → FeOx in 2 cm qtz flood margin

CORE RECOVERY

HOLE DEPTH	CORE RECOVERED	% RECOVERY
105.0	10.2	99
115.1	10.1	100
125.3	10.2	100
132.2	5.7	83
142.4	5.4	53
148.3	5.9	100
157.1	8.1	92
165.4	7.9	95
173.6	7.8	95
182.3	8.7	100
192.1	9.8	100

SAMPLE / ASSAY

INTERVAL	NUMBER	Zn	Ag
10.0		2570	40.0
10.0		1110	23.0
10.0		1250	[illegible]
12.0		1165	5.4
10.0		340	1.8
10.0		410	2.9
10.0		210	5.4
10.0		5100	27.0
10.0		120	1.0
10.0		215	2.5

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PROPERTY ______ SCALE 1" = 10' COORD. N ______ E ______ SEC ______ T ______ R ______ BEARING ______ STATE ______ DIP -90 COLLAR ELEV ______ DRILL HOLE NO. DDH-32 START ______ SHEET NO. 3 of 8 COMPLETED ______ BY ______

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Tgp - seriate granite porphyry, as above ...-206.1 granite is v. broken w/ fault gouge, but orientation of fracs is unknown 206.0-206.1 3 cm clay gouge and rock chips @ 78° to core.	208.3-208.6 1 mm qtz-sulf → FeOx vn @ 17° to core w/ 5% diss sulf → FeOx + 3% acc. diss tourm. 209.0-210.1 2 - qtz-sulf → FeOx-cass vns 3 mm + 1 mm wide, w/ coalescing 1 cm qtz flood zones @ 30° + 35° to core. 213.5-214.9 near vert. 2 mm qtz-... vn mostly → FeOx.
210	
220	
225.4-225.5 3 cm clay gouge and rock chips @ 72° to core. 225.9 + 226.3 2 - 1 cm clay gouge zones at 82° + 76° respectively.	226.9-228.9 3 - 1 mm qtz-sulf → FeOx-cass vns @ 22° to core w/ 6% diss sulf → FeOx; 20-25% acc. diss tourm.
230	
232.7 1 cm clay gouge @ 86° to core	235.0-235.5 1 mm qtz-sulf → FeOx vn @ 24° to core.
240	
245.1-245.4 12 cm clay gouge and rock chips @ 80°	243.0-244.6 near vert. qtz-sulf → FeOx vn just cuts edge of core.
250	
253.7 0.5 cm clay gouge @ 80° to core	254.1-254.5 1 mm qtz-py-cass vn @ 22° to core w/ 2% acc. tourm.
260	259.7-265.9 near vert. 1 mm qtz-cass-sulf → FeOx vn
266.0-266.1 1 cm clay gouge @ 86° to core.	
270.7-270.8 1 cm clay gouge @ 90° to core.	
270	270.8-271.1 1 mm qtz-cass-sph-asp-py vn, near vertical 272.0-272.8 2 - 1 mm qtz-cass-asp-py vns @ 14° to core 273.0-277.5 5 mm qtz-tourm. vn @ 30° to core
280	283.9-284.3 1 mm qtz-asp-py vn @ 30° to core
290	289.5-290.7 } all of these are segments of the same near vert. 1 mm qtz-cass-sph-py-asp vn 292.3-293.5 296.0-300.6 near vert. 1 mm qtz-cass-sph-py-asp vn; cass:sph:py:asp:4:2:2:2
300	

HOLE DEPTH	CORE RECOVERED	% RECOVERY
201.5	8.1	86
204.9	1.2	96
208.2	3.0	71
216.4	4.4	54
225.5	8.1	89
233.6	7.4	91
243.5	9.9	100
252.2	8.6	99
262.2	9.8	99
272.8	10.4	98
282.5	9.7	100
292.8	10.3	100

INTERVAL	NUMBER	Sn	Py
7.0		375	3.6
10.0		1300	8.0
8.0		12	0.4
7.0		2300	1.7
8.0		14	0.8
10.0		35	0.8
10.0		305	0.9
10.0		1300	1.0
10.0		125	1.0
10.0		71	0.4
10.0		920	0.5

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PROPERTY ______ SCALE 1" = 10' ______ COORD N ______ E ______ SEC ______ T ______ R ______ STATE ______ BEARING ______ DIP -90 ______ COLLAR ELEV ______ DRILL HOLE NO. DDH 32 ______ START ______ COMPLETED ______ SHEET NO. ______ BY ______

OCK TYPES & STRUCTURES

Type - seriate granite porphyry as above.

— 310

312.4 - 316.3 dike of f.gr aplite porphyry @ 15° to core

— 320

327.3 - 327.5 8 cm clay gouge + rock chips @ 78° to core

— 330

337.7 - 337.8 2 cm clay gouge @ 47° to core
338.2 - 338.3 2 cm clay gouge @ 61° to core
339.3 - 339.4 3 cm clay gouge + rock chips @ 81° to core

— 340

341.1 - 341.4 12 cm clay gouge + rock chips @ 72° to core

— 350

354.0 - 354.1 3 cm clay gouge @ ~90° to core

— 360

367.4 - 367.5 3 cm clay gouge + rock chips @ 78° to core

— 370

373.7 - 374.4 20 cm clay gouge @ ~90° to core

— 380

380.1 - 380.2 1 cm clay gouge @ ~85° to core.
382.2 contact w/ f.gr aplite porphyry @ 60° to core
386.8 contact w/ seriate granite porphyry @ 85° to core

— 390

392.2 - 393.4 30 cm clay gouge @ ~90° to core.
393. fault contact - seriate granite porphyry above, f.gr. aplite porphyry below
396.0 - 411.7 intermittent patches of pegmatitic texture, consisting of <10% total rock volume
399.0 - 399.1 3 cm clay gouge @ 90° to core

— 400

MINERALIZATION AND ALTERATION

305.5 - 307.2 2 - 2 mm qtz - sph - py - cass. fluor vns @ 20° to core, w/ 2% diss sph + py in 3 cm qtz flood margins
307.0 - 308.7 2 - 1 mm qtz - sulf ± FeOx vns @ 2° and 27° to core; 2% diss sph + py in 5 mm qtz flood margin
310.9 - 312.0 hairline qtz - sph vn @ 3° to core, w/ tr to 1% diss py + po + sph in 1 cm qtz flood margin
313.0 - 314.3 near vert. qtz - sph - py vn (1 mm) w/ 3% diss py + po in 1 cm qtz flood margin, tr. cass.
316.0 - 323.2 near vert 2 mm qtz - sph - cass - py vn w/ 2% diss sph + py in 1 to 2 cm qtz flood margin; sph : cass : py : : 6 : 2 : 2 : tr.

331.1 - 331.5 1% diss sph : py : cass : : 5 : 3 : 2 in qtz flood zone adjacent to hairline greisen vn.
332.5 - 336.2 near vert. hairline qtz - py - sph. vn

364.3 - 367.3 near vert. 2 mm qtz - cass - sph - py vn cass : sph : py : : 6 : 3 : 1

378.1 - 378.3 2 mm qtz - py - sph vn @ 27° to core

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391.6 - 393.2 2 mm qtz - sulf ± FeOx vn, near vert.

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HOLE DEPTH	CORE RECOVERED	% RECOVERY
302.8	10.0	100
312.7	9.7	98
322.8	9.9	98
332.8	10.0	100
342.2	8.5	91
352.3	10.0	99
361.0	7.7	88
368.6	7.5	98
375.8	6.9	96
384.5	8.8	102
393.7	7.5	82
399.4	4.6	90

INTERVAL	NUMBER	Sn	Ag
5.0		360	[illegible]
10.0		1665	5.8
10.0		3200	5.5
10.0		1165	1.1
10.0		215	1.0
10.0		12	0.8
5.0		16	1.1
10.0		4500	2.6
10.0		91	1.1
10.0		215	4.4
10.0		360	2.4

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PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ BEARING ____ STATE ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH 32 START ____ COMPLETED ____ SHEET NO. 5/8 BY ____

ROCK TYPES & STRUCTURES

Irregular pegmatitic qtz-feld-musc patches down to 436.5, w/ phenos up to 2 cm diam

415.5 - 415.8 2-1cm clay gouge w/ rock chips @ 81° to core.

— 420

415.5 - 415.8 2-1cm clay gouge w/ rock chips @ 81° to core.

— 430

430.7 - 430.8 1cm clay gouge @ 72° to core.

— 440

444.8 - 444.9 1cm unoxidized clay gouge @ 80° to core

— 450

— 460

467.0 - 467.2 8 cm clay gouge w/ rock chips @ 87° to core.

— 470

— 480

— 490

— 500

MINERALIZATION AND ALTERATION

400.5 - 405.0 5 hairline to 1mm apparently barren qtz-musc greisen vns

415.2 - 417.6 2-mm vertical hairline qtz-py vns w/ sulf + cass diss in pegmatitic wall rock. Total sulfides ~ 4%, w/ sph:cass:py:po :: 5:4:1:tr.

421.8 - 424.6 1cm qtz-asp-cass vn @ 9° to core, w/ diss sph:asp:cp:py:cass :: 3:2:2:2:1 in 7% 3cm qtz flood margin; asp:cass: 8:2 in vn.

426.9 - 427.1 2% diss cass in pegmatitic host rock

433.0 - 436.0 qtz-musc-py greisen, w/ tr. of cass; py ~6%; greisen becomes more chloritic downhole and becomes chloritically altered aplite porph. @ 436.0

440.1 - 443.8 2-1mm qtz-sph-py-po vns w/ coalescing qtz flood margins carrying 7% finely diss sph:po:py:cass :: 4:5:<1:<1

450.2 - 454.6 qtz-musc greisen, w/ 5% diss po:sph:cp:cass :: 7:2:<1:<1

455.8 - 460.8 8 cm greisen vn w/ cass, cp, py + asp. Found at 458.2 - 459.4, w/ 4% diss po:sph :: 9:1 in qtz-musc greisen, tr. of cass in greisen

462.5 - 464.5 qtz-musc. greisen w/ 5% diss po:sph:py :: 6:3:1; tr. of cass

475.1 - 475.8 5mm qtz-sph-py-cass-asp vn @ 14° to core; sph:py:cass :: 4:4:2, w/ 8% diss sph:py :: 8:2 in 4 cm qtz flood margin (really qtz-musc. greisen)

481.4 - 482.2 1mm qtz-sph-cp-py vn @ 11° to core

483.7 - 484.4 3mm qtz-sph:cass:asp:py :: 5:2:1:2. vn @ 18° to core

490.6 - 491.5 5mm qtz-asp-cass-py vn @ 11° to core asp:cass:py :: 4:4:2; 3% diss po in 1cm qtz flood margin

495.1 - 496.3 2mm qtz-sph-py vn @ 14° to core, w/ 5% diss sph-py in 8 cm qtz flood margin

496.3 - 497.2 1mm qtz-asp-cass-sph-py vn @ 10% to core, w/ 2% diss finely diss cass in 2cm qtz flood margin.

Core recovery

HOLE DEPTH	CORE RECOVERED	% RECOVERY
407.1	7.8	93
417.3	8.9	93
420.2	2.9	100
429.0	8.0	92
437.5	8.5	100
447.2	9.5	98
448.0	1.0	125
458.1	9.5	94
468.3	9.7	95
478.6	9.6	93
488.5	9.9	100
498.4	9.9	100

Samples

INTERVAL	NUMBER		
10.0		140	5.0
10.0		3900	7.8
5.0		3500	7.4
10.0		2800	3.0
10.0		900	5.0
10.0		120	1.4
10.0		3500	25.0
10.0		400	2.7
5.0		3800	8.6
10.0		1920	5.0
10.0		3600	9.0

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PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ BEARING ____ STATE ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO DDH-32 START ____ COMPLETED ____ SHEET NO 6 of 8 BY ____

ROCK TYPES & STRUCTURES

Top: aplite porphyry, as above

510

513.7-513.8 1cm clay gouge @ 74° to core

520

530

540

550

560

569.0 - 593.7

570

580

590

593.7-598.0

598.0 - 601.5

600

MINERALIZATION AND ALTERATION

50[illegible] 1mm qtz-asp-sph-py-cass vn @ 7° to core, w/ 3% diss po+sph+py; 2 573.2 in 7 cm qtz flood margin

505.3 - 507.4 qtz-musc greisen w/ 7% finely diss po+sph+cass+py 2:2:3:1?

507.4 - 515.0 qtz-musc greisen, less intense than above w/ acc chlor? & phlogopite w/ 3% diss sph+po

516.1 - 520.4 qtz-musc greisen, as above, w/ 3% diss sph+po+py and traces of cass.

523.3 - 524.0 2mm qtz-sph-py-cass vn @ 9° to core w/ 2% diss sph+po in 2cm qtz flood margin

525.6 - 526.3 2mm qtz-asp-sph-py vn @ 12° to core, w/ 6% diss sph+py+po in 2 cm qtz flood margin

529.8 - 538.1 2mm near vert qtz-musc-cass-py greisen vn; 5cm vn margin greisenized @ 535.9-538.1

544.3 - 547.5 near vert 1mm qtz-musc greisen vn w/ minor sph+py.

559.0 - 562.6 2mm qtz-musc greisen vn @ 3° to core, w/ asp+py, and tr. of cass

566.5 - 569.6 near vert. 1to2mm qtz-musc. greisen vn w/ trace of py, asp, & cass.

587.2 - 591.5 near vert 1mm qtz-musc greisen vn w/ traces of py

593.0 - 598.1 1mm near vert qtz-musc greisen vn w/ traces of py

Sample data

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
506.3	9.9	100				
			10.0		2000	4.6
517.3	8.2	92				
			10.0		5010	5.6
527.5	9.9	97				
			10.0		2750	6.6
537.0	9.7	102				
			10.0		3500	2.9
546.5	9.5	100				
			10.0		325	0.7
556.3	9.8	100				
			10.0		42	0.4
566.2	10.0	101				
			10.0		56	0.6
576.0	9.8	100				
			10.0		12	0.5
586.0	10.0	100				
			10.0		45	0.3
595.7	9.9	100		DDH-32		
			10.0		28	0.3

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
Tqp - aplite porphyry, as above.	604.9 - 608.5 1cm qtz py-cass-sph vn @ 5° to core; py:cass:sph::4:2; 2% diss sph+py in 3 cm qtz flood margin	605.3	10.1	100	10.0		13000	1.7
610	612.0 - 621.2 near vertical hairline to 2mm qtz-musc. greisen vns. w/ tr. of py	615.9	8.1	100				
		617.8	1.9	100	10.0		21	0.5
620	625.8 - 629.2 near vert. barren hairline greisen vns as shown.	628.4	10.6	100	10.0		38	0.7
630	629.3 - 631.2 2mm qtz-topaz? vn @ 7° to core, w/ trace of diss sph+py in 2 cm qtz flood margin; 1 cm qtz-cse. musc. alt zone flanking qtz flood zone. 635.3 - 635.9 2mm qtz-topaz? vn @ 14° to core, w/ tr. of py in 2 cm qtz flood/qtz-musc alt zone. 636.5 - 640.6 2mm near vert. qtz-musc. greisen vn w/ minor asp:py::7:3.	638.4	10.0	100	10.0		17	1.0
640	635.9 - 650.7 near vert. hairline to 2mm barren? qtz-musc. greisen vns, as shown.	648.5	10.1	100	10.0		39	0.5
650	657.9 - 674.9 near vert. hairline barren? qtz-musc. greisen vns, as shown	658.6	10.1	100	10.0		6	0.3
660 - 665.0 - 667.8 gradational contact w/ [illegible]		668.8	10.2	100	10.0		6	0.3
670 - 671.0 - 672.0 gradational contact back to aplite porphyry, as above.	672.9 - 673.8 2mm qtz-musc vn w/ trace of py @ 6° to core,	678.9	10.1	100	10.0		45	0.2
680	681.8 - 683.6 2 - 1cm + 2 cm vns respec., qtz-py-asp-sph-cass vns, w/ 5% diss sph+py in coalescing qtz flood margins; py:asp:sph:cass::4:3:2:1 685.1 - 688.1 hairline qtz-musc. greisen vns, as shown.	689.0	10.1	100	10.0		750	3.0
690 - 695.1 - 695.3 5cm clay gouge + rock chips @ 90° to core.	696.0 - 703.0 hairline barren? qtz-musc vns. as shown.	699.8	9.9	91	10.0		15	0.2
700								

PROPERTY ___ SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___ BEARING ___ DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-32 START ___ COMPLETED ___ SHEET NO. 7 of 8 BY ___

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PROPERTY ______ SCALE 1" = 10' COORD. N ______ E ______ SEC ______ T ______ R ______ BEARING ______ STATE ______ DIP -90 COLLAR ELEV ______ DRILL HOLE NO. DDH 32 START ______ COMPLETED ______ SHEET NO. 8 of 8 BY ______

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
Top: aplite porph. as above	704.3 - 708.0 near vert. 2 mm qtz-sph-py-musc cass vn, w/ tr. of 5mm pyr sph in 8mm qtz-flood margin; sph:py:casp:cass ...	709.3	7.5	100	10.0		880	1.?
709.3 - 709.4 3 cm clay gouge & rock frags @ 55° to ca. (710)								
	715.0 - 721.9 near vert. hairline barren qtz-musc greisen vn, as shown	718.2	9.4	95	10.0		45	0.2
(720)	724.1 - 727.8 3% disc sph + py in qtz-musc greisen	727.5	7.5	83	7.5		1650	1.3
727.5 TD (730)								

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PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC 21 T 22S R 12W STATE ALASKA BEARING ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-33 START 7/?/82 COMPLETED 7/?/82 SHEET NO. 1 of 8 BY ____

ROCK TYPES & STRUCTURES

Overburden no Recovery

– Tgp – sericite granite porphyry

15.6-15.7 2 cm clay gouge + rock chips @ 83° to core

18.2 1 cm clay gouge @ 81° to core

25.7-25.9 1 cm clay gouge @ 38° to core

92.6-92.7 2 cm clay gouge w/ rock chips @ 70° to core

MINERALIZATION AND ALTERATION

3.2-10.0 barren to low qtz-tourm vns as ...

16.7-17.6 qtz-tourm-albite? vn. @ 9° to core, w/ 1cm qtz flood margin w/10% diss tourm

20.0-40.0 barren to low qtz-tourm vns as above, except as noted.

31.2-32.3 3mm qtz-asp-py vn @ 80° to core, w/ 15% acc. tourm.

34.3-36.3 2-1mm qtz vns @ 12° to core, w/ 5mm qtz flood margin containing 20% diss tourm

48.8-49.6 3mm qtz-tourm vn w/ 1cm qtz flood margin w/10% diss tourm.

50.0-99.0 barren to low qtz-tourm vns as above, except as noted below

61.5-62.3 1mm qtz vn @ 18° to core w/ 3cm qtz flood margin w/ 15% diss tourm.

63.6-65.4 2mm qtz-tourm vn @ 4° to core

71.8-74.0 2mm qtz + minor gph-asp-py vn @ 2° to core, w/5% diss tourm in 1cm qtz flood margin

75.5-78.6 1mm qtz-sulf → FeOx vn w/ 30% diss tourm in 5mm qtz flood margin, ...

82.7-83.6 2mm qtz-sulf → FeOx vn @ 17° to core, w/ 1% diss sulf → FeOx in 1-2 mm qtz-flood margin, 8% acc diss tourm.

85.0-87.4 near vert. 1mm qtz-sulf → FeOx vn, w/ 2% diss sulf → FeOx + 20% acc diss tourm in 3-5mm qtz flood margin

96.6-100.0 1mm qtz-tourm vn, near vert, w/ tr. of po; 5% acc tourm diss in 1cm silic margin

SAMPLE

Hole Depth	Core Recovered	% Recovery	Interval	Number		
3.2						
6.1	2.9	100				
9.9	2.2	83	6.8			
18.7	9.3	100	10.0		3200	1.7
22.8	3.5	85				
			10.0		45	1.3
32.4	8.9	93				
			10.0		145	1.2
42.9	10.1	96				
43.9	0.6	60				
			10.0		93	1.5
53.8	9.5	96				
57.5	3.1	84				
			10.0		175	2.9
67.5	9.7	97				
			10.0		270	3.6
74.7	7.2	100				
			10.0		100	2.4
82.0	7.3	100				
			10.0		75	1.6
92.1	10.1	100				
			10.0		33	0.7

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PROPERTY COAL SEC 21 T 22S R 12W STATE AK. DRILL HOLE NO. DDH 33 SHEET NO. 2 of 6

SCALE 1" = 10' COORD. N ____ E ____ BEARING ____ DIP -90 COLLAR ELEV ____ START [illegible] COMPLETED [illegible] BY ____

'OCK TYPES & STRUCTURES

Tgp - sericite granite porphyry

110

116.3 - 117.8 highly brx'd gran. porph

117.8 - 124.0? high angle fault, w/ clay gouge and rock chips up to 3 cm diam.

120

Exact orientation uncertain, recovery poor. Loss of core may be due in part to complete disintegration of altered, mineralized and weathered ore.

126.0 - 126.2 3 cm greenish white clay gouge @ 90° to core

130

137.5 - 138.5 high angle fault w/ lt. greenish white gouge + f. rock chips

140

150

160

170

170.0 - 170.2 3 cm red clay gouge + v.f. rock chips @ 64° to core

176.2 1 cm bull qtz vn @ 30-35° to core (barren)

180

184.4 - 184.6 2 cm red clay gouge @ 15° to core

190

200

MINERALIZATION AND ALTERATION

102.8 - 103.2 near vert [illegible] qtz-tourm vn w/ 3-5% diss tourm in [illegible] qtz flood margin [illegible] in [illegible] margin.

[illegible] - 105.6 2 mm qtz-sulf→FeOx-albite? vn @ 35° to core, 1% diss sulf→FeOx + 2% diss tourm in same qtz flood margin

106.0 - 109.8 2-3 [illegible] qtz-albite [illegible] @ 5° to core; 5% diss tourm in same qtz flood margin

112.9 - 113.3 hairline qtz-sulf→FeOx vn; no qtz flooding or margin.

113.3 - 115.3 [illegible] qtz-sulf→FeOx [illegible] margin [illegible] diss sulf + 3% diss tourm in 1 cm qtz flood margin

115.2 - 117.3 2 mm qtz-sulf→FeOx vn @ 10° to core, w/ tr of sulf + tourm in 1 cm qtz flood margin

122.0 - 138.8 Because of poor recovery, individual vns are difficult to distinguish, but recovered rock has been variably silicified and argillized, w/ diss. sulf. now weathered out leaving vuggy appearance; greenish cast to clay may be due to scorodite (oxidized arsenopyrite).

145.0 - 151.8 at least 4 - 1 mm qtz-sulf→FeOx vns at 2-5° to core, w/ coalescing qtz flood margin w/ 5% diss sulf→FeOx.

157.8 - 164.4 at least 6 - 1 to 2 mm qtz-sulf→FeOx vns @ near vert to 12° to core, w/ coalescing qtz flood margins containing 6-7% diss sulf→FeOx.

167.6 - 173.0 at least 4 - 1 mm qtz-sulf→FeOx vns @ near vert. to 15° to core, w/ 3-5% diss sulf→FeOx in coalescing qtz flood margins; 3% acc tourm (diss).

175.0 - 175.9 hairline qtz-sulf→FeOx vr @ 2° to core.

176.2 - 177.6 2 mm qtz-sulf→FeOx vn w/ trace of cass + acc tourm + topaz @ 15° to core, w/ 2% diss sulf→FeOx in 1-2 cm qtz flood margin.

179.3 - 180.0 2 mm qtz-sulf→FeOx-cass vn @ 15° to core; 1% diss sulf→FeOx, 3% tourm, tr. cass in 2 cm qtz flood margin

180.8 - 181.2 2 mm qtz-sulf→FeOx vn @ ~20° to core, w/ 2% diss sulf in 1 cm qtz flood margin, now FeOx.

181.5 - 186.5 2 mm qtz-sulf→FeOx [illegible] vn @ 7° to core w/ 3% diss sulf→FeOx in 10-15 cm qtz flood margin; 5% diss tourm.

187.2 - 188.2 1 mm qtz-sulf→FeOx vn @ 15° to core; tr. oxid. sulf. in 2 cm qtz flood margin.

194.0 - 198.0 3 mm qtz-sulf→FeOx-cass vr @ 15° to core; 2% diss. sulf→FeOx in 2-4 cm qtz flood margin

198.5 - 200.3 2 mm qtz-sulf→FeOx-cass vn @ 10° to core; 3-5% diss sulf→FeOx in 2 cm qtz flood margin.

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		
103.0	9.9	100				
			10.0		75	0.3
112.9	10.3	99				
			10.0		80	9.1
121.4	6.3	70				
123.0	1.2	46				
130.0	3.4	49	10.0		235	13.0
131.1	0.2	18				
136.3	0.8	15				
138.7	1.3	54				
			10.0		580	19.0
143.8	3.9	76				
145.4	0.8	50				
150.6	1.7	33	10.0		920	13.0
158.0	5.5	72				
			10.0		1000	5.7
165.4	6.1	82				
			10.0		380	10.0
172.2	4.7	69				
177.2	4.5	90				
			10.0		1700	3.6
184.3	6.3	89				
			10.0		1800	5.2
191.3	5.8	83				
200.1	8.7	99	10.0		[illegible]	3.7

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PROPERTY ______ SEC 21 T 22S R 12W STATE AK DRILL HOLE NO. DDH-33 SHEET NO. [illegible]

SCALE 1" = 10' COORD. N ______ E ______ BEARING ______ DIP -90 COLLAR ELEV ______ START ______ COMPLETED ______ BY ______

OCK TYPES & STRUCTURES

Tpp - schiste 'granite porphyry' as above

[illegible] 1cm [illegible] qtz vn @ [illegible] to core

— 210

218.0 3 cm [illegible] qtz vn @ 30° to core

— 220

— 230

231.9 - 232.0 2cm clay gouge @ 90° to core

239.3 8 cm bull qtz vn @ 40° to core

— 240

— 250

— 260

— 270

— 280

280.5 - 280.9 13 cm clay gouge + cse rock frags @ 83° - 88° to core

282.6 7 mm bull qtz vn @ 60° to core.

— 290

MINERALIZATION AND ALTERATION

200.6 - 201.5 [illegible] qtz-topaz-sulf → FeOx [illegible] in 5mm qtz flood margin

[illegible] - 208.7 qtz [illegible] albite [illegible] of [illegible] sulf → FeOx.

206.9 - 206.1 near vert 2mm qtz-sulf → FeOx vn w/ 2% diss sulf → FeOx in 1cm qtz flood margin.

208.2 - 208.6 2 - 1mm qtz-sulf → FeOx vns @ 10° to core, w/ 3% diss sulf → FeOx in coales. qtz flood margins

208.9 - 209.9 1mm qtz-sulf → FeOx vn @ 4° to core with sulf in 1cm qtz flood margin.

212.5 - 213.6 1mm qtz-sulf → FeOx vn @ 9° to core w/ 1% diss sulf → FeOx in 1cm qtz flood margin

215.8 - 216.2 hairline qtz-sulf → FeOx vn @ 9° to core

216.5 - 222.7 3 - 1mm qtz-sulf → FeOx-cass vns, near vert, w/ 1% diss sulf → FeOx in coalescing 2cm qtz flood margins.

227.0 - 228.6 2 - 2mm qtz-topaz-sulf → FeOx-cass vns @ 14° to core, w/ <1% diss sulf → FeOx in coalescing qtz flood margins

233.0 - 234.2 3mm qtz-sulf → FeOx vn @ 13° to core, w/ 2% diss sulf → FeOx in 1.5 cm qtz flood margin

235.6 - 237.6 2 qtz-aspy-[illegible]-cass vns @ 9° to core, 4mm + 1mm wide, w/ 6% diss sulf in coalescing 2cm qtz flood margin; all sulf partially oxidized

239.3 - 241.1 3 - 2 to 3mm qtz-sulf-cass vns @ ~10° to core, sulf mostly oxidized; 3% diss sulf → FeOx in coalescing qtz flood margins.

256.2 - 256.5 1mm qtz-sulf → FeOx vn @ 15° to core; 1% diss sulf in 1cm qtz flood margin.

272.7 - 277.6 3 - 3mm qtz-sulf → FeOx vns @ 15° to core, w/ 5% diss sulf → FeOx in 2-3 cm qtz flood margin, 10% acc tourm. as diss. + vn filling.

285.3 - 287.5 2 - 2mm qtz-topaz-sulf → FeOx-cass? vns @ 7° to core, w/ 3% diss sulf → FeOx + tr. cass in coalescing 4 cm qtz flood margin; 30% tourm diss in qtz flood margin

293.1 - 294.0 1mm qtz-sulf → FeOx @ 12° to core, w/ 2% diss sulf → FeOx in 2 cm qtz flood margin. Acc tourm. 4%

HOLE DEPTH	CORE RECOVERED	% RECOVERY
207.5	6.5	81
216.6	8.5	92
223.5	6.7	97
230.1	6.6	97
240.0	9.7	98
244.6	4.0	81
253.5	8.7	97
263.6	10.1	100
273.6	9.6	96
282.3	8.3	95
287.1	4.7	98
295.1	7.2	90

INTERVAL	NUMBER	Sn	A
10.0		340	5.8
10.0		705	5.2
10.0		395	3.9
10.0		675	13.0
10.0		2900	3.0
10.0		20	0.5
10.0		635	1.4
10.0		3800	4.9
10.0		5700	4.6
10.0		105	1.2

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PROPERTY ___ **SCALE 1" =** 10' **COORD. N** ___ **E** ___ **SEC** 21 **T** 22S **R** 12W **STATE** Ariz **BEARING** ___ **DIP** -90 **COLLAR ELEV** ___ **DRILL HOLE NO.** DDH-33 **START** ___ **COMPLETED** ___ **SHEET NO.** ___ **BY** ___

ROCK TYPES & STRUCTURES

Top - same as granite porphyry, as above.

358.3 - 358.6 9 cm FeOx stained clay gouge w/ rock chips @ 70° to core

MINERALIZATION AND ALTERATION

312.7 - 316.0 2 - 2 mm qtz-sulf-FeOx vns, near vert., w/ 2% diss sulf in [illegible] qtz flood margin [illegible] diss tourm in qtz flood zone.

334.3 - 337.8 2 - 6 mm qtz-asp-sph vns @ 13° to core, w/ 4% diss sulf in 2 to 4 cm qtz flood margin; 3% diss tourm

339.1 - 340.6 2 mm qtz-sph-py vn at 12° to core; 2% diss sulf (sph+py) + 20% diss tourm in 2 cm qtz flood margin

350.8 - 354.3 2 mm qtz-sph-py-asp vn @ 5° to core; sph:py:asp :: 5:5:tr; 1% diss sph+py in 2 to 3 cm qtz flood margin; 5% acc tourm (diss).

358.6 - 362.2 8 - 1 to 2 mm qtz-sph-py-cp-asp vns @ near vert. to 35° to core; sph:py:cp:asp :: 5:4:1:tr; all vns appear to be subsid. fracs. from larger structure that was not cored. 2% diss sph:py :: 7:3 in coalescing qtz flood margin w/ 5% diss tourm.

365.2 - 366.1 3 cm qtz float zone w/ 2% diss sph:asp:py :: 4:4:3, offset 4 cm by barren hairline qtz vn @ 45° to core, vn? assoc w/ diss sulf; ass is not cut by core.

367.4 - 367.7 tr of diss sph+py+asp around 2 mm barren qtz-albite? vn.

372.7 - 374.5 qtz-albite vn (2 mm) @ 12° to core, w/ tr diss sph+py+asp in 1 cm qtz flood margin.

382.6 - 383.7 barren 1 mm qtz-albite? vn @ 7° to core w/ tr. sph in 15 cm qtz flood margin

397.2 - 397.4 [illegible] pieces of broken core w/ near vert 2 mm qtz-sulf-FeOx-ass vn

399.8 - 400.4 3 mm qtz-sph-py :: 7:3 vn @ 9° to core, w/ 2% diss sph+py in 3 cm qtz flood margin

SAMPLES

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER			
30[illegible]	9.6	99					
306.6	3.3	[illegible]	10.0		[illegible]	1.8	
317.7	8.7	9[illegible]	10.0		305	3.8	
327.3	9.6	99					
328.8	1.5	100	10.0		37	1.1	
338.9	9.8	97	10.0		3000	11.0	
344.2	5.3	100	10.0		2.8	0.8	
351.0	6.7	99	5.0		150	7.3	
358.1	6.4	90	10.0		450	12.0	
367.7	8.9	85	10.0		275	2.0	
377.7	10.1	101	10.0		2.0	0.7	
388.1	10.0	96	10.0		[illegible]	[illegible]	
398.1	9.7	97		DDH-33			4/8

PROPERTY ___ SCALE 1" = ___ COORD. N ___ E ___ SEC 21 T 22S R 12W STATE ___ DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-33 START ___ COMPLETED ___ SHEET NO. ___ BY ___

ROCK TYPES & STRUCTURES

Type seriate granite porphyry, as above

[illegible] 1cm [illegible] clay gouge [illegible] to core

— 410

418.6 3mm clay gouge at 85° to core

— 420

421.0 - 428.8 high angle fracturing and oxidation w/o any apparent movement of breccia

428.5 - 428.9 1cm dike of subaplite @ 55° to core

— 430

— 440

441.7 - 442.0 1cm dike of aplite porphyry @ 18° to core

— 450

— 460

464.9 - 465.4 1.5 cm dike of subaplite @ 12° to core

467.0 1cm bull qtz vn @ 85° to core

— 470

472.1 - 472.3 6cm bull qtz vn @ 65° to core

473.0 - 473.3 9cm bull qtz vn @ 75° to core, w/ [illegible] greisen patches containing tr. diss py

— 480

482.3 - 485.3 f.gr. aplite porphyry, w/ [illegible] of granite porphyry [illegible]

488.3 - 488.7 f.gr. aplite porphyry

— 490

[illegible] 1cm bull [illegible]

[illegible] aplite porphyry [illegible] to [illegible]

— 500

MINERALIZATION AND ALTERATION

405.0 - 408.0 [illegible] qtz-albite [illegible] granite porphyry [illegible] (?) phenos

408.0 - 410.0 qtz flood zone w/ [illegible] diss sph [illegible] + [illegible]

410.0 - 415.5 qtz flood zone w/ [illegible] pyrophyllite [illegible] + [illegible] diss pyrite [illegible] + 3% diss [illegible]

416.1 - 416.2 [illegible] 2mm qtz-alb(?) vn w/ 1cm [illegible] qtz flood [illegible]

424.4 - 425.9 2mm qtz-alb? vn @ [illegible] to core w/ 5mm qtz flood margin

444.0 - 449.0 silic. granite porphyry w/ [illegible] diss py

455.4 - 456.6 greisen-[illegible] granite porphyry, w/ silicification + [illegible]. Tr. 1% finely diss [illegible] py : [illegible] 4 : 4 : 3 : tr.

458.6 - 462.4 silic. zone w/ 5% coarsely xtaline py : [illegible] asp : cass :: 4 : 4 : 2 : tr in [illegible] cavities up to 4 cm diam. w/ [illegible] 3%, [illegible] 10%, + [illegible]

473.9 - 474.2 2mm qtz-alb vn @ 55° to core w/ minor sph [illegible]

477.0 - 481.5 near vert 3mm qtz-alb vn w/ [illegible] sph [illegible] diss sph-py in 1cm qtz [illegible] margin. [illegible] of [illegible] + pyroph 2cm diam @ 481.0

HOLE DEPTH	CORE RECOVERED	% RECOVERY
400.2	9.7	96
415.2	9.6	96
422.7	4.4	98
430.3	7.8	103
440.6	10.2	99
450.8	10.1	99
460.9	10.1	100
471.1	9.7	95
481.1	9.9	99
[illegible]	[illegible]	[illegible]
501.0	9.7	99

INTERVAL	NUMBER	[illegible]	Ag
10.0		133	0.8
10.0		77	2.2
10.0		12	0.5
10.0		7	0.6
10.0		13	2.4
10.0		26	0.4
10.0		1580	4.4
10.0		46	1.2
10.0		400	2.8
10.0		45	0.2

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PROPERTY CORL SCALE 1" = 10' COORD N ___ E ___ SEC 21 T 27S R 12W STATE ___ BEARING ___ DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-33 START ___ COMPLETED ___ SHEET NO. 6 of 8 BY ___

ROCK TYPES & STRUCTURES

Top - aplite porphyry - subaplite porph w/ Kspar 1-8 mm diam (euhedral) 15%, qtz 1-3 mm diam (subhed) 10%, plag 1-2 mm (euhedral) 3% in groundmass of Li-Bte 5%, Kspar 25%, plag 30%, qtz 20%, groundmass ≤ .5 mm diam

.0-509.3 Gradational contact into subaplitic - 510

granite w subhedral qtz + Kspar phenos 2-4 mm diam 15% + 10% respec. and minor plag in a groundmass of Li-Bte 10% Kspar 20%, qtz 20%, plag 25%, all groundmass grains ≤ 1 mm diam.

— 520

— 530

— 540

Top - aplite porphyry - trends back to finer grain size, especially in groundmass, near vn or massive greisen mineralization or alteration, then back to coarser grained variety described above away from alt. or minlz.

— 550

— 560

— 570

573.0 8 mm unoxidized clay gouge, greenish gray, @ 78° to core

— 580

— 590

— 600

MINERALIZATION AND ALTERATION

519.3 - 519.7 2 mm qtz musc greisen vn @ 20° to core, barren

526.0 - 531.1 near vert hairline to 1 mm qtz musc greisen vns as shown

534.2 - 535.0 ≪1% sph + py f. diss. in 8 mm qtz-musc greisen vn @ 25° to core

535.8 - 545.0 near vert hairline to 1 mm qtz musc greisen veins as shown

544.9 - 547.4 1-2 mm barren qtz-albite? vn @ 8° to core; <1% diss py:sph::7:3 + tr. cass + flourite in 1 cm qtz musc. greisen margin.

551.4 - 553.9 4 - 1 mm qtz-py-sph-cp-cass vns @ 20° to core X-cut by 6 mm qtz-asp-cass vn @ 11° to core Py:sph:cp:cass::7:3:tr:tr in 1 mm vns; 5% diss. sph:py:po:cass::5:2:3:tr in coalescing qtz flood margins

553.6 - 556.0 near vert. 1 mm qtz-hbl? vn w/ 1-3 cm qtz musc greisen margin containing 2% diss po:sph:8:2

556.4 - 557.5 3 mm qtz-sph-py-cass vn @ 22° to core w/ 7% diss sph:py:cp:cass::[illegible] in 12 cm qtz musc greisen margin.

560.6 - 565.5 3 mm qtz-minor py + sph vn @ 14° to core 1% diss po:py:sph:5:3:2 in 8 cm qtz-musc greisen margin.

571.0 - 585.2 near vert. hairline to 2 mm qtz-musc. greisen vns. as shown

587.7 - 590.1 qtz musc greisen w/ 1% cass:py:sph:4:4:2 in f. gr. diss.

590.1 - 591.1 silic zone w/ 5% diss sph:asp:py:asp::5:3:1:1

594.2 - 595.5 qtz-musc greisen zone w/ 2% diss py:sph:cass:: 5:3:2

596.5 - 599.9 3 - 1 mm qtz-sph:cp:asp:py::6:1:1:2 vns @ 30°-45° to core X-cut by 9 mm qtz-asp:py::9:1 vn @ 9° to core; tr. sulf in 1 cm qtz flood margin; 1% diss py in 3 cm flanking qtz-musc greisen margin.

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		
501.0	9.7	98	10.0		10	[illegible]
511.0	9.9	99	10.0		75	0.4
520.9	9.8	99	10.0		27	0.4
531.6	8.6	89	10.0		550	0.3
541.9	9.6	93	10.0		450	0.4
551.7	9.7	99	10.0		635	4.3
561.9	9.9	97	10.0		745	3.1
571.9	10.0	100	11.0		58	0.9
581.9	10.0	100	11.0		32	0.3
591.0	9.9	111	10.0		2200	5.9

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	[illegible]	[illegible]
[illegible] porphyry, as above.	603.8 - 604.7 7% diss [illegible] in silic [illegible]; 606.4 - 606.9 [illegible] silic [illegible] diss [illegible]?; 607.5 - 607.8 [illegible] silic [illegible]	601.4	10.0	100	10.0		[illegible]	3.4
		611.3	9.9	100	10.0		35	0.4
622.7 - 628.9 Occasional lithophysae up to 5mm diameter w/euhedral qtz, feld + musc projecting into open space.		621.3	10.0	100	10.0		12	0.3
635.1 - 640.4 Occasional lithophysae w/euhedral qtz, feld + musc. as above.		631.3	10.0	100	10.0		13	0.9
		641.4	10.1	100	10.0		18	2.4
		651.5	10.1	100	10.0		16	0.2
	659.0 - 661.3 2mm qtz musc greisen vn w/ py: sph:: 7:3 @ 8° to core; 1% diss py:sph::9:1 in 1 cm greisen margin	661.7	10.2	100	10.0		500	0.5
678.0 - 680.2 Occasional lithophysae, as above.		671.9	10.1	99	10.0		10	0.3
		681.9	10.0	100	10.0		8	0.2
	690.0 - 694.2 6mm qtz - topaz? - feld - sph - py - cass vn @ [illegible] to core sph:py:cass::[illegible]; tr to 1% diss py in 6 cm qtz vn greisen margin. 694.2 - 696.1 [illegible] vert 3 mm qtz - topaz? - py - cass - sph vn; py:cass:sph::[illegible]; tr diss py in 3 cm greisen margin. 698.9 - 702.2 see next sheet for description	691.9	10.0	100	5.0		126	5.5

620 630 640 650 660 670 680 690 700

PROPERTY [illegible] SCALE 1" = 10' COORD. N [illegible] E SEC T R BEARING STATE DIP -90 COLLAR ELEV DRILL HOLE NO. [illegible] START COMPLETED SHEET NO. [illegible] BY [illegible]

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Tep-aplite porphyry, as above.	[illegible] of mosaic breccia surrounded by [illegible] [illegible] 9868-700 [illegible]
710	
716.0 - 717.2 ~ 1cm zone of pale green clay gouge @ 80° to core	712.5 - 712.6 [illegible] qtz vein [illegible] 10° to core.
720	720.5 - 722.9 4mm qtz-asp-sph vn @ 40° to core w/ 3% diss asp+sph+cp±??(?) in [illegible] qtz flood margin
722.0 - 723.0 [illegible] pale green clay gouge [illegible] 726.0 [illegible] clay gouge [illegible] @ 50° to core 726.0 [illegible] rock frags @ 40° to core	
730	
732.0 - 20cm zone of pale green-grey clay gouge + rock frags. @ ~ 55° to core. 736.5 ~ 3cm clay gouge + rock frags. @ 60° to core	
740	

746.9 TD

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	[illegible]	Ag
[illegible]	10.0	97	[illegible]		[illegible]	0.5
712.3	9.9	96	10.0		[illegible]	0.6
			5.0		110	0.2
720.5	6.0	97				
724.6	3.4	83				
			10.0		5200	3.0
729.0	2.4	55				
734.9	2.5	42				
737.0	1.0	50	10.0		340	0.4
746.9	5.8	59	9.9		61	0.5

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PROPERTY ____ Cont SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP ____ COLLAR ELEV ____ DRILL HOLE NO. DDH-33 START ____ COMPLETED ____ SHEET NO. 8 of 8 BY ____

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Hg
0-4.9 overburden		4.9						
metaargillite ... banding ... 0.5 ...	7.6-8.4 3mm qtz-asp-sph-cass ... @ ... to core ...							
12.2-14.3 ...	9.4-10.0 3mm qtz-musc-tourm greisen vn @ ... to core; tr. po	10.0	5.1	100				
	10.4-11.4 3mm qtz-tourm-sph-asp-cass ... @ 12 to core							
	12.0-17.9 2mm qtz-sulf-FeOx cass vn @ ... to core				10.1		610	2.7
	15.2-15.5 1mm qtz-tourm ... cass vn @ ... to core							
	18.4-19.1 3mm qtz-tourm sph ... @ 17° to core	20.1		00				
	22.2 ... 2mm qtz-sulf FeOx cass ...							
28.1 0.5 cm FeOx stn ... gouge + ... @ 85° to core	26.7-26.6 2mm qtz tourm-sph ... @ 15° to core ...	25.3	7.6	94	10.0		545	.4
29.4-30.0 aplite dike @ 45° to core								
30.5 1-2 cm FeOx stn ... gouge + ... @ 8° to core	31.8-38.9 near vert ... 1mm qtz-tourm ...							
		33.9	7.4	91	10.0		335	1.0
		39.9	5.3	96				
43.0-44.5 ... dike	41.4-41.9 3mm qtz-tourm-asp-cass vn @ ... to core							
43.7 ...					10.0		125	0.2
47.5-4... ... @ ~10° to core								
	48.0-54.5 2 near vert ... qtz-asp ...	49.0	9.4	94				
55.5 contact Tgp (?) with metaargillite @ ...	55.7-58.8 3 ... to 4 mm qtz ... @ 18° ... to core; ... sph:py:asp:cass ...				10.0		2500	0.4
gp is aplite border ...	... sph:py: 3:5:2 ...	59.1	10	100				
	63.2-64.0 3mm qtz sph-py vn @ 9° to core							
	63.2-73.0 at least 9 1 to 2 mm qtz sph py & cass & asp vns @ 4°-2° to core; 6% average diss sph:py:po: asp:cp:cass: 5:3:1:1 tr:tr in coalescing qtz flood margins				10.0		500	10.0
		69.4	10	98				
	73.7-74.4 2mm qtz-sph:cp ... 7:2:1 vn @ 18° to core w/ 4% diss sph:py:cp:asp:po:fl ... tr:tr:2 in 3cm qtz flood margin				10.0		3500	19.0
	75.2-76.8 4% diss sph:py:po:cp:asp:... 4:2 ... in qtz flooded zone; no apparent veining							
	79.2-85.0 at least 5 ... 2mm qtz-sph-py vns @ ... 15° to core w/ 7% diss sph:cp:py:asp:cp:... 4:2:1 ... tr in coalescing qtz flood margins	79.6	9.8	97				
86.9-87.2 10 cm thick zone of yellow clay gouge + rk chips @ 35° to core					10.0		2200	9.1
92.0 irreg. contact meta-argillite w/ Tgp @ ≈65° to core		90.0	10.2	98	5.0		460	5.3
95.4 irreg. contact Tgp w/ meta-argillite @ ≈10° to core		94.6	4.0	96				
102.2 ... 10-12 cm thick yellow clay gouge with ... @ 70°-85° to core		98.6	2.9	78				
					10.0		600	2.1

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PROPERTY ___ SCALE 1" = 10' ___ COORD. N ___ E ___ SEC ___ T ___ R ___ BEARING ___ STATE ___ DIP -90 ___ COLLAR ELEV ___ DRILL HOLE NO. DDH-34 ___ START 7/10/82 ___ COMPLETED 7/17/82 ___ BY ___ SHEET NO. 1 of 6

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC 21 T 32S R 13W STATE ____ BEARING ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-34 START 7/10/92 COMPLETED ____ SHEET NO. ____ BY ____

ROCK TYPES & STRUCTURES

107.0 - 116.0 intense bx w/ 4 zones of 1-4 cm thick yellow clay gouge + rx chips @ 5° and 50° to core

110

117.5 1-2 cm yellow clay gouge + rx chips @ 30° and 40° to core

120

123.0 1 cm yellow clay gouge w/ core chips @ 10° and 70° to core

125.0 - 126.5 intense bx w/ intervening clay gouge @ 15° and 80° to core

127.0 contact metaarg. w/ Tgr - orient. uncertain

127.0 - 128.0 8 cm yel-gry clay gouge @ ≈ 50° to core

130

140

146.5 - 147.0 10 cm yel. clay gouge + rx chips @ uncertain orient. to core

150

153.0 3 cm yel. clay gouge w/ rx chips @ 65°

156.8 1 cm brown clay gouge w/ rx chips @ 60° to core

160

160.5 - 163.8 intense bx + clay gouge zone w/ ~30 cm of gry clay gouge @ ~60° to core

170

172.0 1 cm clay gouge @ 65° to core

177.4 contact Tgr (?) w/ meta-argillite @ ~65° to core

180.2 contact meta-arg. w/ Tgr @ 50°

180

190

191.1 contact Tgr (?) w/ meta-arg @ 35°

195.5 1 cm Fe-ox stained clay gouge @ 5° to core

197.5 1 cm wht-yel. clay gouge @ 5°

200

MINERALIZATION AND ALTERATION

100.0 - 108.9 fragments of qtz-sulf → FeOx vn in small pieces of core; orientation or extent of mineralization is difficult to judge, but does not look particularly dense, or thoroughgoing

116.0 - 117.5 0% diss sph-py ± cs in qtz flood zone

120.0 - 120.6 near vert. 2 mm qtz-cass-sulf → FeOx vn

120.8 - 121.2 2 - 1 mm qtz-cass-sulf → FeOx vns @ ≈ 10° to core; 5% diss sulf → FeOx in 3 cm qtz flood margin

131.3 - 131.5 3 mm qtz-tourm-sulf → FeOx vn.

139.6 - 139.9 1 mm qtz-sulf → FeOx vn @ 20° to core

140.0 - 140.3 3 mm qtz-cass-sulf → FeOx vn @ 14° to core

143.4 - 143.6 2 mm qtz-tourm-sulf → FeOx vn @ 30° to core

146.2 - 146.5 2 mm qtz-sulf → FeOx vn @ 28° to core

150.0 - 150.5 5 mm qtz-tourm-asp-py-gl vn @ 18° to core

177.4 - 179.9 near vert. 3 mm qtz-cass-asp-sl-gl vn, w/ 10% acc tourm, tr diss asp in 1-2 cm qtz flood margin

192.6 - 193.5 2 mm qtz-tourm-sulf → FeOx vn @ 8° to core

196.4 - 197.4 2 mm qtz-sph-py-cass vn @ 7° to core, w/ 3% diss py-sph in 3 cm qtz flood margin

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Hg
102.2	2.9	47				
106.9	1.4	95				
108.0	1.0	93				
			10.0		900	6.2
111.0	2.0	97				
111.8	0.8	82				
112.7	1.0	100				
114.9	0.4	33				
120.0	4.9	96	10.0		2900	3.4
121.0	1.0	100				
123.5	2.1	84				
126.5	3.0	100				
128.6	2.1	100				
			10.0		265	6.3
139.0	3.0	29				
			10.0		100	2.0
144.2	4.6	88				
147.0	2.7	96				
			10.0		1440	2.5
153.0	5.2	87				
154.5	0.9	60				
159.8	5.0	94	10.0		150	0.4
165.2	2.6	76				
167.1	2.4	62				
			10.0		130	1.5
172.4	4.9	92				
177.7	4.6	91				
			10.0		2800	1.2
183.2	4.6	51				
			10.0		190	0.8
193.3	9.6	97				
			10.0		3200	0.5

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PROPERTY ____ SCALE 1" = ____ COORD. N ____ E ____ SEC 11 T ____ R ____ BEARING ____ STATE ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-34 START ____ COMPLETED ____ SHEET NO. 3 of 6 BY ____

ROCK TYPES & STRUCTURES

[illegible] - 210.0 [illegible] pegmatitic texture alternating w/ fine qtz-feldspar [illegible] (border phase of granite porphyry); [illegible] porphyritic.

211.8 [illegible] yel. clay gouge @ 60° to core

[illegible] meta-[illegible] @ ≈30° to core

226.7 - 227.0 15cm yel. clay gouge @ 60° to core

[illegible] - 229.[illegible] [illegible] clay gouge + [illegible] 60° to core

231.8 3cm yel. clay gouge + rock chips @ 65°
231.8 contact [illegible] w/ Tgp (≈[illegible])

235.0 - 235.[illegible] micro aplite or [illegible] Tgp [illegible] @ 85° to core (irreg.)
[illegible] contact Tgp (sil) w/ meta-[illegible] @ 45° to core

240.9 - 241.4 meta-argillite @ ≈60° to core

24[illegible] contact meta-[illegible] w/ Tgp @ 50°

24[illegible] 2cm Fe ox-stn clay gouge @ 60°
249.[illegible] [illegible] Fe ox stn. clay gouge @ 70°

[illegible] aplite dike @ [illegible] irreg.
[illegible]
[illegible] Fe ox stn. clay gouge + rock chips @ [illegible] to core
257.8 [illegible] @ 80° to core

267.5 - 268.7 very irreg. contact of Tgp and meta-argillite - contact [illegible] 15° to core

Tgp - seriate granite porphyry; border phase is equivalent of qtz porphyry. 5% qtz phenos 2-4mm diam, 2% euhedral feldspars phenos 1-2mm diam in aphanitic groundmass
274.4 5mm yel clay gouge @ 30° to core

2[illegible] gray clay gouge (1cm) w/ rock chips @ uncertain orient.

Gradual coarsening of granite porphyry phenos and groundmass; typical seriate granite porphyry below 305.0'

MINERALIZATION AND ALTERATION

200.[illegible] - 20[illegible] [illegible] alteration [illegible]

[illegible] - [illegible] 1% [illegible]

219.3 - 220.6 near vert. [illegible] qtz-tourm-sulf + FeOx vn.

269.3 - 270.5 3 - hairline qtz-tourm vns w/ trace of py; 5mm qtz flood margin barren

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
200.3	8.2	91				
			10.0		46	0.6
210.3	9.4	94				
			10.0		24	0.9
222.4	100	99				
227.3	4.6	94				
			10.0		36	1.0
231.1	3.1	82				
			5.0		17	1.0
240.2	9.1	100				
			10.0		28	0.4
249.9	8.8	91				
			10.0		75	1.6
258.0	8.0	99				
			10.0		35	0.2
268.5	5.4	51				
			5.0		<5	0.4
278.9	9.9	95				
			10.0		40	0.6
288.9	3.6	36				
			10.0		<5	0.3
297.7	7.9	84				
			10.0		8	0.5

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PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC 21 T 22S R 12W STATE ALASKA BEARING ____ DIP -90 COLLAR ELEV ____ DRILL HOLE NO. DDH-34 START ____ COMPLETED ____ SHEET NO. 4 of 6 BY ____

ROCK TYPES & STRUCTURES

... qtz & K spar phenos appear about normal size (2-4 mm, 0.5-8 mm) ... plag ph. & groundmass are finer gr. through 310', suggesting the contact may be fairly nearby (laterally?)

320

330

340

342.7-343.4 0.5 to 1.0 cm dike of f. gr. aplite porph @ 21° to core.
344.2 15cm bull qtz vn @ 60° to core

349.8-349.9 5cm bull qtz vn @ 55° to core 350

356.2 1.5cm ... w/ planar core ... @ 60° to core

360

365.0 2 or 7 cm aplite dikes (?) w/ tourm ... margins @ 15° to core

370

372.0 1cm wht-gry clay gouge w/rxchips @ 60° to core

380

382.2 0.5 cm aplite dike cut & offset by qtz ... @ 18° to core
385.0 1cm ... clay gouge @ ... to core
387.8 2 cm ... clay gouge @ 75° to core
385.1-385.3 2cm aplite porphyry dike (f. gr.) @ 40° to core.

390

392.3 4mm ... clay gouge @ 50° to core
393.6-394.1 Xing 1cm & 1.5cm aplite porphyry dikes @ 20° & 40° respectively

400

MINERALIZATION AND ALTERATION

321.4-322.0 2mm qtz-albite vn w/tr. sph, py, moly
322.3-327.8 ? 1 to 2mm qtz-albite? vns w/tr. of po, py, sph, & moly. @ 20°-30° to core.

336.1-336.5 8mm qtz-tourm-albite vn @ 27° to core; tr po

381.5-381.5 2cm qtz-albite? vn w/tr. py & tourm @ 40° to core
383.2-383.9 qtz-alb?-musc greisen vn (3cm) @ 50° to core; tr py

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		
308.8	9.9	98	10.0		.25	0.5
319.2	9.8	99	10.0		.25	0.4
328.5	10.0	97	10.0		26	0.6
338.9	10.1	97	10.0		15	0.5
348.2	8.2	99	10.0		18	0.5
357.4	9.8	96	10.0		16	0.5
367.9	8.7	82	10.0		6	0.4
378.2	10.0	97	10.0		13	0.4
388.6	10.0	96	10.0		10	0.5
393.4	4.6	96		DDH-34		4/6
397.4	3.5	88	10.0		6	0.7

PROPERTY [illegible] SCALE 1" = 10' COORD. N ___ E ___ SEC 21 T 22S R 12W STATE ALASKA BEARING ___ DIP -90 COLLAR ELEV ___ DRILL HOLE NO. DDH-34 START ___ COMPLETED ___ SHEET NO. ___ BY ___

ROCK TYPES & STRUCTURES

400

[illegible] @ 65° to core

[illegible]

410

[illegible]

420

425.3-425.4 3cm aplite porphyry dike @38° to core

430

438.2 contact [illegible] @ ~10° to core

438.2-469.5 aplite porphyry very fine grained groundmass w/qtz + /K-spar phenos 1-2mm max dimension, intermittent pegmatite, espec. 460.9-467.0.

440

448.0 ~1cm [illegible] clay gouge [illegible] @ 65° to core

450

457.0 2-3mm yel clay gouge @ 60° to core

460

467.0 2mm yel clay gouge [illegible] @ 65° to core

470

477.7 2mm [illegible] clay gouge @ 65° to core

480

490

MINERALIZATION AND ALTERATION

413.6-414.4 2mm qtz-cass-asp-sph vn @ 8° to core cass:asp:sph::5:3:2

429.5-429.9 2mm qtz-sph-asp-py vn @ 11° to core sph:asp:py::5:4:1

433.7-434.5 1 to 2mm qtz-tourm-minor sph vn @ 12° to core.

435.1-436.5 2mm qtz-sph vn @ 6° to core.

441.5-442.7 2mm qtz-musc-sph-asp greisen vn @ 8° to core.

449.6-452.7 3mm qtz-tourm-cass vn @ 4° to core

454.7-500.0 hairline to 1mm qtz-musc greisen vns as shown

477.0-477.3 pegmatitic qtz, feld + musc w/<1% cass sph

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]				
409.0	[illegible]	[illegible]	10.0		30	0.6
412.8	[illegible]	[illegible]				
			10.0		350	1.0
421.6	9.6	100				
423.0	1.1	73				
			10.0		30	0.7
433.0	9.8	99				
			10.0		15	0.5
443.5	9.6	91	5.0		95	0.4
453.0	[illegible]	71	10.0		1120	0.8
463.2	7.2	74	10.0		25	0.5
			5.0		16	0.7
473.2	9.7	97				
			10.0		74	0.5
483.1	9.8	98				
			10.0		34	0.3
490.0	[illegible]	[illegible]				
			10.0		12	[illegible]

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PROPERTY ___ SEC ___ T ___ R ___ STATE ___ DRILL HOLE NO. ___ SHEET NO. ___
SCALE 1" = ___ COORD. N ___ E ___ BEARING ___ DIP ___ COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

ROCK TYPES & STRUCTURES

500 Top-aplite porphyry as above.

- 504.4 1 cm wht clay + rx chips @ 50° to core
- 515.0 - 515.2 [illegible] to core
- 518.5 - 518.9 [illegible] @ ~45° to core(?)
- 521.0 2 mm wht clay gouge @ 50° to core
- 525.0 - 526.1 [illegible]
- 534.1 - 537.0 gry sand + broken rock.

593.0 T.D.

MINERALIZATION AND ALTERATION

552.6 - 553.3 3 cm qtz-albite? vn w/tr. bismuth + asp @ 30° to core; 5 mm qtz-musc greisen margins.

556.6 - 558.5 2 mm qtz-musc greisen vn w/tr. py - near vert.

557.2 - 557.4 2 cm qtz-alb? vn w/tr. bismuth + py.

558.5 - 559.5 3 cm qtz-alb? vn w/tr. bismuthinite, py, asp + sph.

565.3 - 569.5 Silic. zone w/ tr. py, asp, + bismuthinite

572.1 - 572.9 qtz-musc greisen zone

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	[illegible]	[illegible]
[illegible]	10.0	[illegible]				
503.[illegible]	[illegible]	[illegible]	[illegible]		10	[illegible]
512.[illegible]	4.[illegible]	[illegible]				
[illegible]	2.9	[illegible]				
519.[illegible]	3.[illegible]	35	10.0		[illegible]5	0.5
521.1	[illegible]	[illegible]				
526.1	4.3	[illegible]	10.0		10	1.4
531.1	0.5	10				
533.8	0.5	19				
535.0	0.7	58				
537.2	0.6	27				
540.0	0.9	[illegible]	10.0		10	0.9
546.[illegible]	2.6	42	10.0		6	1.8
555.7	9.5	100				
559.5	4.0	105	10.0		35	5.0
569.5	9.8	98	10.0		28	2.8
572.9	3.4	100	10.0		10	[illegible]
582.6	9.7	100				
583.6	1.0	100				
593.0	9.[illegible]	[illegible]	13.0		6	0.2

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PROPERTY Coal SCALE 1" = 10' COORD. N E SEC 21 T R BEARING DIP COLLAR ELEV DRILL HOLE NO. DDH 35 START 8/8/82 COMPLETED 8/15/82 BY SHEET NO. 1 of 5

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		
0.0-1.0 overburden (0)		1.0						
Aplitic border phase of seriate granite porphyry w/3% 1-2mm euhedral qtz phenos, 1% eroded Kspar phenos in sub-aplitic groundmass		8.0 / 9.5	4.8 / 1.5	69 / 100	9.5		1.5	
9.8 1-2cm ... @ 45 to core; 17.5 2mm ... @ 45 to core	16.9-17.3 3-1 to 2mm qtz-sulf → FeOx vns @ 50°-55° to core; 4% diss sulf... in coal. qtz-seric altered zone.	11.8 / 19.9	2.3 / 6.5	100 / 91	10.0		0.22	
(20)		26.3			10.0			
(30) 33.7-46.0 Intermittent subpegmatitic ... 1-3% ...; 36.6 3mm ... @ 15° to core	32.1-32.3 3mm qtz-sph vn @ 53° to core.	34.0	7.4		10.0			
(40) 46.0-57.8 typical seriate granite porphyry	46.0-46.2 3mm qtz-... vn @ 60° to core; 47.2-47.6 2mm qtz-sph:cass:py:asp ... 5:3:1:1 vn @ ...° to core; 1% diss sph:py:asp ... in 2cm ...	44.0	10.0	100	6.0			
(50) 57.8-72.2 Gradational between aplitic border phase of granitic porphyry and subpegmatitic granite porphyry both described above.	50.0-50.3 6mm qtz-sph:...:py:cass ... vn @ 54° to core; 4% diss ... in 3 ... ; 52.0-52.1 2mm qtz-sph:py ... vn @ 57° to core	54.1	8.5	87				
(60) 60.8 2mm FeOx ... @ 45 to core		63.3	9.8	107	10.0		.53	
(70) ...-72 ... 2mm ... @ ... to core; 72.2-82.8 aplitic phase of granite porphyry as described above		73.5	10.0	98	10.0		.95	0.0
(80) 81.3 2mm FeOx ... @ 35 ...; 82.8-95.0 about 80% by vol ... subpegmatitic granite porphyry	78.2-81.2 3 1 to 2mm qtz sph:py ... vns 49°-53° to core; 82.3-82.5 3mm qtz sph:py:asp 5:4:1 vn @ 49° to core; 85.3-85.5 9mm qtz-sph:asp:... vn @ 47° to core; 2% diss sph:py 7:3 in 1cm ...	83.1	9.8	96	10.0			
(90) aplitic phase of granite porphyry as ...	91.9-93.9 2-5mm and 1 1mm qtz-sph:asp:py:cass 3:4:2:1 vns @ 48°-50° to core; 4% diss sph:py:cp 6:4:tr in 5mm ...; 96.6-99.8 2-1mm and 1-4mm qtz-sph:py ... vns @ 44°-49°	93.8	10.0	99	5.0 / 5.0	DDH-35	.55	

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SAMPLE ASSAY

PROPERTY SCALE 1" = 10' COORD. N E SEC T R STATE BEARING DIP COLLAR ELEV DRILL HOLE NO. START COMPLETED SHEET NO. BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER		
Aplitic phase of granite porphyry, as described above	100.2-104.2 2-1mm qtz-sph:py:: 6:2 vns @ 51°+48° to core.		10.1	99				
	10.1 - 112.4 1-7mm and 1-2mm qtz-asp:py: cass:: 3:4:3 vns @ 50°+44° to core. 115.4 122.0 3-2mm and 2-8mm qtz-sph:asp:py: cass:: 7:1:1:1 vns @ 42°-58° as shown	114.3	10.0	98	10.0			
		124.3	10.0	100	5.0			
130.5 ... 45 ... 133.0 - 35.5 ...		133.0	8.5	98	10.0		505	
		144.8		93	5.5		91.2	
147.5-155.3 Subpegmatitic phase of granite porphyry, as described above. Fe-ox ...	148.1 - 48.2 4mm qtz-sph vn @ 48° to core	149.5	5.6	102				
155.3-173.7 Aplitic phase of granite porphyry as described above.		154.0	4.4	98	10.0			3
160.5 162.5 bx ...		164.2		100	10.0		875	5.4
173.7-200.0 Subpegmatitic phase of granite porphyry 174 ... 1mm Fe-ox ... @ 50°		1?4.4	10.	99	10.0		455	2.8
181.0-188. ... along ... @ all orient to core		184.5	9.9	98	10.0		500	2.7
		190.3	5.5	95				
19? ... w/ Fe-ox. along fxs. @ all orient fracture predom 40-60° to core ... clay gouge	193.3 193.4 2mm qtz-sph vn @ 47° to core.						8.5	5.3
		200.?		9?				

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PROPERTY ____ SCALE 1" = 10' ____ COORD. N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP -50° ____ COLLAR ELEV ____ DRILL HOLE NO. DDH 35 ____ START ____ COMPLETED ____ SHEET NO. 3 of [illegible] ____ BY ____

ROCK TYPES & STRUCTURES

200
Subpegmatitic phase of granite porphyry, w/ qtz, feld, musc and [illegible] biotite in f-med grained aggregates.

210
211.5-2[illegible] [illegible] @ all [illegible]

220
222.0 [illegible] core
223.5-237.2 Aplitic phase of granite porphyry

230

240

250
250.8 252.2 Aplitic phase of granite porphyry

260
[illegible] 4mm [illegible] .5° to c[illegible]

270

280
282.0 2mm [illegible] @ 25° to core

288.1-300.0 Aplitic phase of granite porphyry

290
291.0 3mm Fe-ox. cl gouge w/ [illegible] @ 40° to [illegible]
293.5-301.7 Fairly well developed set of 1-2mm barren qtz vns near [illegible]

300

MINERALIZATION AND ALTERATION

205.8-206.2 2-3mm qtz-sph vns @ 59°-62° to core

211.5-215.0 1-4mm and 1-2mm qtz-sph:cass:py ::6:3:1 vns @ 60° to core.

249.8-252.8 3-[illegible]mm qtz sulf-stack vns @ 62°-66° to core

259.9-262.7 2-1mm qtz-sph:py::6:4 vns @ 58°-55° to core.

271.0-271.4 2-1mm qtz-py:sph::7:3 vns @ 59° to core

290.[illegible]-291.9 2-1mm and 1-2mm qtz-sph:py::6:4 vns @ 58°-59° to core.

SAMPLE / ASSAY

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Cu	Ag
			10.0		1760	53
210.4	[illegible]	[illegible]				
			10.0		955	5.
220.[illegible]	[illegible]	97				
			10.0		340	3.3
230.0	9.[illegible]	[illegible]				
			10.0		[illegible]	2.[illegible]
[illegible]	9.0	95				
			10.0		400	3.7
249.4	[illegible]	100				
			10.0		655	5.1
256.[illegible]	[illegible]	103				
			[illegible].0		[illegible]	2.5
266.2	[illegible]	100				
			5.0		48	.4
[illegible]	9.9	96				
			[illegible].0		[illegible]30	[illegible]
284.8	7.8	93	5.0		140	2.6
291.[illegible]	5.5	87				
			[illegible]		[illegible]	[illegible]

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
as described above.	30[illegible] 30° [illegible] to core.
304.8 - 310.4 intermittent subordinate units of subpegmatitic phase of granite porphyry	
324.0 - 328.4 Minor units of subpegmatitic phase of granite porphyry	
35[illegible].8 [illegible] @ 40° to core	
358.2-358.5 [illegible] dike @ 50° to [illegible]	
361.0 [illegible] @ 40° to core	
356.8 - 400 brecciated and rehealed silicified qtzite and argillite; blocks are rotated but probably have not moved very far.	
368.0 2 mm [illegible] to core	

Depth marks: 310, 320, 330, 340, 350, 360, 370, 380, 390, 400

SAMPLE: HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	ASSAY: S.	Ag
			10.0		570	4.6
310.9	9.6	99				
			10.0		185	.9
319.0	7.5	93				
322.9	3.7	95				
			[illegible]		135	1.[illegible]
331.3	8.3	102				
			10.0		700	2.2
341.1	9.8	97				
			10.0		330	.5
348.4	7.0	96				
			10.0		175	2.0
358.5	9.8	97				
362.5	3.0	75				
364.4	0.6	32	10.0		275	1.1
368.3	3.6	92				
370.2	1.2	63				
			10.0		23	0.5
376.8	3.2	48				
381.7	4.7	96				
385.9	4.2	10[illegible]	10.0		29	0.8
391.2	3.2	60			NO SAMPLE	
396.0	4.3	[illegible]				
399.3	3.2					

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PROPERTY ________ SCALE 1" = 10' COORD. N ________ E ________ SEC ________ T ________ R ________ BEARING ________ STATE ________ DIP ~50° COLLAR ELEV. ________ DRILL HOLE NO. ________ START ________ COMPLETED ________ SHEET NO. 4 of 5 BY ________

GMC DATA REPORT 327

SCALE 1" = 10' COORD. N ___ E ___ BEARING ___ DIP -50 COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

DRILL HOLE NO. ___ SHEET NO. ___

ROCK TYPES & STRUCTURES

Massive to bedded, silicified graywacke as above; ≤c 1% diss po, probably diagenetic throughout this unit
404.2 - 414.8 thin to medium bedded interbedded graywacke and siltstone beds dip ~50° to core

— 410

414.8 Massive silicified graywacke, grading downward at 425.6 - 427.0 to med.-gr. qtz pebble conglomerate

— 420

427.0 - 446.5 interbedded thin bedded to massive siltstone and subordinate graywacke, beds dip ~59° to core.

— 430

— 440

446.5 - 457.0 interbedded graywacke and fine to coarse gr. qtz pebble conglomerate;

— 450

conglomerate crudely stratified, w/ coarsest pebbles in bottom indicating beds are right side up(?)

457.0 - 500.7 massive f. gr. graywacke typically reddish in color.

— 460

— 470

— 480

— 490

— 500

MINERALIZATION AND ALTERATION

435.5 - 435.9 chlorite/musc. alt. to po

451 - 459.6 6 1mm qtz asp:po: 3:7 vns @ 49° to 60° to core.

454.0 - 454.2 3mm qtz-tourm asp:sp:po 4:3:3 vn @ 39° to core.

500 TD

NOT SAMPLED.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
404.3	5.0	[illegible]		
410.3	5.7	95		
415.1	4.6	96		
421.7	6.8	103		
427.4	5.4	95		
437.4	9.8	98		
446.5	8.6	95		
450.4	3.7	95		
460.4	9.8	98		
463.4	2.3	77		
470.7	7.1	97		
474.3	3.4	94		
477.7	2.7	79		
483.6	6.1	103		
487.4	3.1	82		
491.5	3.9	[illegible]		
492.7	[illegible]	100		
495.6	[illegible]	83		
500.0	5.0	98		

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
... granite porphyry	2.2-3.4 2mm qtz-cass-sulf → FeOx vn @ 32° to core; 20% diss tourm in 6mm q.f.m
	7.7-7.8 2mm qtz-asp vn @ 42° to core, 5% tourm in 1.5cm q.f.m
... @ 40° to core	15.6-16.0 2-1mm qtz-sulf → FeOx vns @ 50° + 60° to core; 2% diss tourm in 1cm qtz flood margins
	20.5-20.9 6mm qtz-tourm-asp vn @ 45° to core; 1% diss sulf → FeOx + 1% diss tourm in 3cm qtz f.m
	21.2-21.4 6mm qtz-tourm-sph:cass::8:2 vn @ 45° to core
	35.8-36.6 2-2mm qtz-sulf → FeOx vns and 2-8mm qtz-tourm-cass vns @ 49° + 50° and 44° + 45° respect. 5% diss sulf → FeOx + 10% diss tourm in 2cm q.f.m.
	40.1-40.7 2mm qtz-tourm-asp vn @ 59° to core; 1% diss asp + 3% diss tourm. in 4 cm qtz flood margin
... gouge of core chips	51.1-51.4 2mm qtz-tourm-cass:asp::9:1 vn @ 37° to core; 2% diss sph:py::7:3 in 1cm q.f.m.
	52.1-52.3 2mm qtz-tourm-cass vn @ 34° to core; 10% diss tourm in 1cm q.f.m
	53.8-54.8 2-2mm qtz-sulf → FeOx vns @ 42° + 44° to core tr. sulf → FeOx in 1-2cm q.f.m.
... @ 60° to core	64.2-64.4 7mm qtz-asp:cass:sph::5:3:2 vn @ 47° to core 2% diss sph:py::8:2 in 1cm qtz.f.m.
	67.0-67.3 4mm qtz-cass:sph:asp::8:1:1 vn @ 44° to core 1% diss sph:cass::5:5 in 1cm q.f.m.
	68.0-69.5 2-2mm qtz-sulf → FeOx vns @ 46° + 56° to core
	74.8-75.1 2-1mm qtz-sulf → FeOx vns @ 44° + 47°; 4% diss sulf → FeOx + 2% diss tourm in cool. 2cm q.f.m.
	82.1-84.3 2-1mm qtz-sph:asp:cass:py::7:1:1:1 vns @ 42° + 54° to core.
	88.5-89.1 1mm qtz-py vn @ 52° to core; 6% diss sph:py:cass::5:4:1 + 10% diss tourm in 7cm q.f.m.
	90.0-90.3 1% diss sph:asp:py:cp::6:1:2:1 + 5% diss tourm in silic zone.
	92.9-93.7 2-4mm qtz-asp:cass::8:2 vns @ 51° + 53° to core; 5% diss sph:asp:cass::6:3:1 in cool. 3cm q.f.m
	94.0-94.8 1-4mm qtz-tourm-asp? vn @ 35° and 2-1mm qtz-sulf → FeOx vns @ 45° + 47° to core; 5% diss sulf → FeOx in cool q.f.m.
	97.0-97.5 4mm qtz-tourm-asp:cass::9:1 vn @ 50° to core; 3% diss sph:py::9:1 in 3cm q.f.m
	97.5-99.7 2-1mm qtz-tourm-asp vns @ 40° to core 3-5% diss sulf → FeOx in 2cm q.f.m.

HOLE DEPTH	CORE RECOVERED	% RECOVERY
1.0		
1.1	1.6	145
5.7	1.8	104
7.9	2.2	100
12.6	3.5	74
15.1	1.6	64
25.2	8.8	87
27.9	3.9	144
38.1	9.7	95
48.2	10.0	99
52.8	4.6	100
62.8	10.0	100
73.1	9.5	92
83.3	10.1	99
93.4	9.7	96

INTERVAL	NUMBER	Sn	Ag
1.0		50	7.1
10.0		86	3.4
10.0		215	3.9
5.0		32	2.0
10.0		1530	7.8
10.0		750	3.0
10.0		340	3.1
10.0		1610	1.8
10.0		85	1.2
5.0		310	3.6
10.0		1810	11.0

Depth marks: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

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SCALE 1" = ___ COORD. N ___ E ___ BEARING ___ DIP ___ COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

GMC DATA REPORT 327

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
[illegible] ... granite porphyry, as above	[illegible] 1 to 2 qtz-tourm-[illegible] 6:3:1 vns [illegible] to core; [illegible] in 1cm q.f.m's
	[illegible] 106.5 4-1mm and 1-3mm qtz-sph:cass:py:cp ::5:2:2:1 vns @ 36° to 45° to core; 2% diss sph:py:asp:: 6:3:1 in .5-2cm q.f.m's
	108.2-112.4 6-1 to 2 mm qtz-tourm-sph:py::[illegible]:2 vns @ 36°-41° to core; 2% diss sph:py::6:4 in .5-1cm qtz f.m's
110	
	113.0-114.7 3-2mm qtz-sph:py:cp:asp::6:3:1:tr vns @ 48° to 57° to core; 3% diss sph:py:asp:cass::5:4:1:tr in 2 cm q.f.m's
	115.2-115.4 2-2mm qtz-sph:cass:py:asp::3:4:2:1 vns @45° to core
	117.4-120.6 2 1mm and 2-4mm qtz-sph:py::7:3 vns @41° to 46° to core; 6% diss sph:py:po:cp:asp:cass::5:3:2:tr:tr:tr in 2-4 cm qtz flood margins.
120	
	122.5-125.5 3-2mm qtz-sph:py:asp:cass::5:4:1:tr vns @ 49°-51° to core; 5% diss sph:py:po:cp:cass::4:2:2:1:tr in 3cm q.f.m
	125.8-125.9 4mm qtz-asp:sph::8:2 vn @ 50° to core.
	128.7-132.2 4-1 to 2mm qtz-sph:asp:py::4:4:2 vns @ 42° to 52° to core; 2% diss sph:py:cass::6:4:tr in 2cm q.f.m's.
130	
	137.4-1[illegible].9 1-3mm and 1-2mm qtz-asp:py:sph::7:2:1 vns @ 54° and 47° to core
140	
142.0-142.4 [illegible] wet clay [illegible] 70° to core	143.0-147.0 5-1mm qtz-sulf → FeOx vns @ 42° to 65° to core.
[illegible] @ 45° to core [illegible] clay gouge [illegible]	
150	
	150.4-151.0 7mm qtz-asp:cass::6:4 vn @ 41° to core; 1% diss sph:asp::5:5 in 5 cm q.f.m.
	152.3-152.7 3mm qtz-asp:sph:py::9:1:tr vn @40° to core; 2% sulf → FeOx in 4 cm q.f.m.
	157.6-160.0 3-1mm qtz sulf → FeOx vns @ 48°-51° to core; 3% diss sulf → FeOx in 1 to 2 cm q.f.m.
160	
	165.0-167.2 3-2mm qtz-tourm-asp:py::7:3 vns @ 49°-51° to core + 1-3mm qtz-asp vn @ 52° to core; 1% diss sph:py::6:4 in .3-1cm q.f.m.
170	
	172.4-178.2 7-3 to 4 mm qtz-tourm-asp:cass:sph::6:2:2 vns @ 51°-61° to core; 3% diss sph:py::6:4, ~½ → FeOx, in coalescing q.f.m's
180	
	180.0-180.2 3mm qtz-sph:py::9:1 vn @ 49° to core
	182.3-182.4 2mm qtz-cass:asp vn @ 40° to core; 1cm clot of cass:asp::6:4 in vn ::9:1
	186.8-186.8 1mm qtz-tourm-cass vn @ 57° to core; 1% ~~diss~~ cass in 2cm qtz flood margin
	188.6-188.8 1mm qtz-cass vn @ 50° to core.
190	
191.3-191.5 2-1cm FeOx stained clay gouge fracs @ 39° to core	190.5-191.6 2-2mm qtz-sph:py:asp::6:3:1 vns @ 38° + 40° to core; 3% diss sph:mp:py::4:2:4 in coal. q.f.m's
	194.0-195.2 3-1mm qtz-sulf → FeOx vns @ 63°-67° to core; 2% diss sulf → FeOx in coal. q.f.m's.
	195.8-195.9 3mm qtz-asp:sph:cass::4:4:2 vn @ 58° to core; 2% diss sulf → FeOx in 1cm q.f.m.
200	

HOLE DEPTH	CORE COVERED	% COVERY	INTERVAL	NUMBER	Sn	Ag
103.6	9.9	97	5.0		1600	3.7
113.3	9.3	96	10.0		910	4.4
123.3	10.0	100	10.0		1500	11.0
133.2	9.6	97	10.0		1940	13.0
142.9	9.3	96	10.0		395	4.5
151.9	6.5	72	10.0		460	3.6
159.8	6.7	85				
161.4	0.9	56	10.0		140	2.0
170.2	8.5	97	5.0		175	2.6
180.3	10.1	100	10.0		1510	14.0
190.2	9.9	100	10.0		5590	2.5
199.?	8.9	98	10.0		1910	11.0

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SCALE 1" = ___ COORD. N ___ E ___ BEARING ___ DIP -50° COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

SCALE 1" = 10' COORD. N E BEARING DIP COLLAR ELEV START COMPLETED BY

ROCK TYPES & STRUCTURES

Top [illegible] granite porphyry as above.

[illegible] 19 [illegible] clay gouge, orientation uncertain

215.2 - 215.7 5 cm clay gouge + rock chips @ 65° to core

220

220.7 - 225.7 2 cm clay gouge + rock chips @ 16° to core

230

236.4 - 236.7 8 cm clay gouge + rockchips, FeOx stained, @ 49° to core

240

250

260

265.9 266.0 1 cm FeOx stained clay gouge @ [illegible] to core

270

281.6 - 282.1 8 cm locally FeOx stained clay gouge + minor rock chips @ 37° to core

280

290

300

MINERALIZATION AND ALTERATION

204.8 - 216.6 7 - 1 mm qtz-sulf → FeOx vns @ 48° - 52° to core; 2% - 3% diss sulf → FeOx in 1-2 cm q.f.m.

220.4 - 220.9 1-1 mm and 1-2 mm qtz-sulf → FeOx vns @ 64° + 68° to core; 2% diss sulf → FeOx in coal q.f.m.

233.0 - 237.1 at least 4 - 2 mm qtz-sulf → FeOx vns @ 48° to 56° to core, and 1 - 4 mm qtz-cass-sulf → FeOx vn @ 51° to core; ~ 6% diss sulf → FeOx in coalescing q.f.m's

238.9 - 239.5 4 1 to 2 mm qtz-sulf → FeOx vns @ 53° to 58° to core; 5% diss sulf → FeOx in coal. q.f.m's

251.4 - 251.6 2 mm qtz-sulf → FeOx vn @ 47° to core; 1% diss sulf → FeOx in 2 cm q.f.m.

253.7 - 258.8 1 mm qtz-sulf → FeOx vn, @ 47° to core; 5% diss sulf → FeOx + minor cass in 10 cm q.f.m

255.6 - 261.0 5 - 1 to 2 mm qtz-sulf → FeOx vns @ 41° to 45° to core; 1-2% diss sulf → FeOx in 1 to 2 cm q.f.m's

262.6 - 262.9 2 - 1 mm qtz-sulf → FeOx vns @ 49° to core

265.1 - 267.9 2 - 4 mm qtz-sulf → FeOx - cass vns @ 37° + 54° respec; 4% diss sulf → FeOx in 4 cm q.f.m's.

268.9 - 270.3 2 - 2 mm qtz-sph:py:cass :: 5:3:2 vns @ 49° + 29° respec; 2% diss sph:py:cass :: 6:3:1 in 3 cm q.f.m's.

271.0 - 272.0 2 - 1 mm qtz-sph:py :: 4:6 vns @ 38° + 41° to core; 3% diss sph:py:cass :: 6:4: tr in 3 cm q.f.m's

272.3 - 274.7 2 - 1 mm and 3 - 6 to 9 mm qtz-tourm-cass:sph:py:asp :: 3:3:2:2 vns @ 38° - 42° to core; 4% diss sph:py :: 5:5 in 3-5 cm qtz flood margins

275.8 - 277.1 2 - 1 mm qtz-py:sph :: 7:3 vns @ 51° + 58° to core; 2% diss sph:py:cass :: 4:3:3 in 5 to 7 cm q.f.m's

277.8 - 281.4 2 - 7 to 8 mm qtz-sph:asp:py:cass :: 4:2:2:2 vns @ 38° + 39° to core; 4% diss sph:py:cass :: 5:4:1 in 8 cm q.f.m's.

283.2 - 286.9 1 - 2 mm and 1 - 5 mm qtz-sph:py :: 7:3 vns @ 58° + 47° to core; 1 - 16 mm qtz-asp:cass :: 9:1 vn @ 48° to core; 6% diss sph:py:cp:cass :: 6:3:1:tr in coalescing q.f.m's

289.5 - 290.9 2 - 2 mm qtz-sulf → FeOx vns @ 42° + 40° to core; 4% diss sulf → FeOx + 2% diss tourm in coal q.f.m's

293.3 - 296.4 7 - 1 to 2 mm qtz-sph:py:asp:cass :: 2:3:3:2 vns @ 37° - 56° to core; 3% diss cass:sph:py:po :: 2:4:3:1 in coalescing q.f.m's

296.8 - 300.5 4 1 mm qtz-py:cass:sph :: 5:4:1 vns @ 38° - 42° to core; 1 - 10 mm qtz-asp:cass :: 9:1 vn; 4% diss py:cass:sph :: 7:2:1 in 31.4 cm q.f.m's

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
202.7	2.8	96				
209.7	5.7	78	11.0		46	1.3
215.5	3.8	66				
			10.0		425	1.4
222.3	6.7	99				
			5.0		810	1.4
227.9	4.9	79				
235.0	5.6	82	10.0		2370	11.0
245.5	10.5	100	10.0		2090	15.0
255.2	6.7	69	10.0		680	3.3
261.1	5.5	93				
			10.0		1160	5.5
267.9	6.8	100				
275.1	6.9	16	10.0		3590	6.5
282.5	7.1	96				
			10.0		2970	13.0
292.6	10.1	100				
			10.0		2010	12.0

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ROCK TYPES & STRUCTURES

[illegible] granite porphyry as above [illegible] grey [illegible] 35° to [illegible] ≤1mm diam, 2% anh [illegible] in aphanitic groundmass [illegible] contacts

[illegible] FeOx stained clay gouge [illegible] chips @ 35° to core

310

[illegible] 15cm FeOx stained clay gouge + fine rock chips @ 63° to core

320

330

[illegible] 349.5 stockwork barren qtz veining well developed

340

350

360

370

380

381.6 381.9 l gr aplite porph dike 5cm wide @ ~35° to core

384.6 387.0 well devel stockwork of barren qtz vns hairline - 2mm wide

390

398.2 Contact between granite porphyry above and l gr aplite porphyry below, @ 31° to core, distinct [illegible] banding @ contact, well developed stockwork of hairline [illegible] qtz musc greisen vns

400

MINERALIZATION AND ALTERATION

300.2 - 318.0 well developed stockwork of barren qtz vns, hairline 3mm in width; predominant dip is 50°-70° to core.

303.0 - 304.3 2 - 4mm qtz-sulf → FeOx vns @ 41°, 44° to core, 2-3% diss sph:py::7:3 in 2-3cm q.f.m's.

305.9 - 311.1 6 - 1mm qtz-py:sph:asp:cass::6:1:1:3:tr vns @ 52°-54°; 1% diss sph:py:cass::6:4:tr in 2-3cm q.f.m's.

311.3 - 315.6 1 - 1mm qtz-asp vn @ 51°, 3 - 3 to 4mm qtz-py±asp:cass:sph::3:4:2:1 vns @ 41°, 46°, + 51° to core; wire silver in open space of 4mm vn @ 312.5; 1-2% diss sph + py in 4-5cm q.f.m's.

316.3 - 318.6 2 - 3mm, 1 - 2mm, and 1 - 1mm qtz-musc-sph:py:cass:asp::2:3:3:2 vns @ 41°-48° to core, 1% diss sph:py:cass:cp::7:3:tr:tr in 2-4cm qtz-musc. greisen margins

321.4 - 321.5 - 3mm qtz-asp vn @ 61° to core

321.7 - 322.6 3 - 1mm qtz-musc-cass:asp:py:po::2:3:2:3 vns @ 51°-55° to core; 1% diss sph:py::3:7 in coal. qtz-musc greisen margins

326.6 - 326.9 1mm qtz-py:sph:asp::7:2:1 vn @ 54° to core; 1% diss sph:cass::4:6 in 5cm q.f.m.

327.4 - 327.6 2mm qtz-asp:sph:py::4:3:3 vn @ 46° to core, 1% diss py:sph in 2cm q.f.m.

331.2 - 331.5 1mm qtz-py:sph:cass::6:4:tr vn @ 40° to core; 1% diss sph:py in 4cm q.f.m.

332.9 - 333.3 2mm qtz-py:sph::9:1 vn @ 38° to core; 1% diss py:sph::7:3 in 2cm q.f.m.

337.1 - 337.5 8mm qtz-asp:sph:cass::6:3:1 vn @ 40° to core; 1% diss sph:py:cass::7:3:tr in 3cm q.f.m

337.8 - 341.2 5 - hairline to 1mm qtz py vns @ 40°-59° to core.

343.1 - 343.3 1mm qtz-sulf → FeOx vn @ 53° to core; 2% diss sulf → FeOx in 3cm q.f.m.

351.1 - 353.9 3 - 2mm qtz-py:sph:cass::5:5:tr vns @ 56°-60° to core; 1% diss sph:py::6:4 in 1-3cm q.f.m's

354.4 - 356.1 2 - 2mm and 1 - 1mm qtz-sph:py:cp::4:4:2 vns @ 52°-57° to core; 4% diss py:sph:po::3:6:1 in 3-5cm q.f.m's

357.4 - 360.6 8 - 1mm, 2 - 2mm, and 1 - 5mm qtz-sph:py:cass::4:5:1 vns @ 37°-59° to core; 5% diss py:sph:cp:cass::5:3:1:1 in coalescing q.f.m's.

360.9 - 364.5 6 - 2mm, 6 - 1mm, 1 - 4mm, and 1 - 7mm qtz-sph:py:asp:cp:cass::4:1:2:1:2 vns @ 48°-59° to core, 2-3% diss sph:py:po:cp:asp::5:2:tr:1:2 in coal. q.f.m's

365.3 - 369.0 7 - 1mm, 3 - 2mm, 1 - 3mm, and 1 - 6mm qtz-sph:py:asp:cass:cp::4:2:1:2:1 vns @ 44°-49° to core; 4% diss sph:po:cp:py::4:2:1:3 in coal q.f.m's.

371.5 - 373.1 1 - 3mm and 1 - 4mm qtz-tourm-cass:py::8:2 vns @ 45° + 44° resp.; 1% diss sph in 2cm q.f.m's

373.6 - 373.7 1mm qtz-sph vn @ 48° to core; 1% diss sph-py in 2cm q.f.m.

374.5 - 374.7 4mm qtz-cass:sph:py::5:3:2 vn @ 56° to core; 1% diss sph in 1cm q.f.m.

374.9 - 379.6 5 - 1mm, 3 - 2mm qtz-sph:asp:py:cass::4:2:3:1 vns @ 48°-58° to core; 3% diss sph:py:cp:asp::4:3:2:1 + 1% diss acc tourm in coal q.f.m's

380.2 - 383.0 10% diss sph:po:py::3:5:2 in silic zone; no well defined vns

384.6 - 384.8 6mm qtz musc-py:sph::8:2 greisen vn @ 43° to core; 2% diss py:sph::9:1 + 2% diss tourm in 3cm qtz-musc greisen margin

394.9 - 395.5 5mm qtz-sph:py:cass::4:3:3 vn @ 50° to core; 4% diss sph:py:cp::6:3:1 in 4cm q.f.m.

399.0 - 399.2 4mm qtz minor py vn @ 62° to core w/ barren 1cm qtz-musc greisen margins

HOLE DEPTH	CORE RECOVERED	% RECOVERY
302.7	10.3	99
313.3	10.3	97
320.6	7.3	100
330.7	10.1	100
340.7	10.0	100
350.7	10.0	100
360.8	10.1	100
370.9	10.1	100
381.2	10.1	98
391.3	10.0	99

INTERVAL	NUMBER	Sn	Ag
9.0		2410	14.0
10.0		4160	15.0
9.0		2620	18.0
8.0		110	1.4
6.0		210	0.6
7.0		285	3.0
10.0		840	1.2
10.0		3780	20.0
5.0		7150	260
5.0		3740	2.2
10.0		2440	19.0
10.0		70	1.5

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SCALE 1" = 10'
COORD. N
E
BEARING N 15° E
DIP -50
COLLAR ELEV
START
COMPLETED
BY

GMC DATA REPORT 327

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
(... phase of aplite porphyry, as above	
... from stained clay gouge ... @ 35° to core	
410	
410.5 - 411.4 f - cse qtz. feldspar pegmatite in near vertical shoots, comprising ~10% of core by volume.	
410 - 418.0 well developed stockwork of barren qtz vns and qtz-musc greisen vns hairline to 2mm thick.	
420	
425.2 - 429.0 f - cse gr. pegmatites (qtz feld) comprising ~5% of core.	
426 - 497.2 well developed stockwork of	
430	
barren qtz vns and qtz musc greisen vns, hairline to 2mm thick, taking on a preferred near-vert orientation @ 170 - 497.2	
433.6 - 433.8 5cm clay gouge @ 37° to core	
435.9 - 441.1 Remnant of granite porphyry; contact @ 65° to core	436.2 - 437.2 3-1mm qtz-sph:py:asp:cass::4:3:2:1 vns @ 47°-51°; 1-2% diss sph+py in 1-2cm qtz-musc greisen margin
	438.3 - 439.2 1-2% diss py+ minor sph in qtz-musc greisen zone.
440	440.6 - 441.0 1% v.f.gr. diss py in qtz-musc greisen zone.
443.7 - 447.0 remnant of granite porphyry, w/cloudy groundmass feld phenos, broken K spar phenos	
446.9 - 447.0 1cm clay gouge @ 46° to core	
449.5 - 450.9 contact metasomatically eroded granite porph remnant, as above.	
450	
460.6 - 461.3 med gr. qtz-feld pegmatite.	458.9 - 459.7 qtz-musc-tourm-minor py greisen zone @ 39° to core.
460	
461.8 - 467.5 contact metasomatically altered gran. porph remnant, as above.	
470	470.1 - 470.3 2mm qtz-py:sph::6:4 vn @ 44° to core.
	477.6 - 477.9 2mm qtz-musc-asp:sph::6:4 vn @ 42° to core; 2% diss sph:asp:cass::5:3:2 in 3cm qtz-musc greisen margin.
480	479.8 - 479.9 2mm qtz-tourm-cass:py::7:3 vn @ 85° to core, tr sulf in 1cm qtz-musc greisen margin
	484.5 - 484.7 2mm qtz-musc-sph:py::6:4 vn @ 40° to core; tr py in 8mm qtz-musc greisen margin
490	
491.6 - 418 ... Gradational contact to contact-metasomatically altered granite porphyry @ 55° to core.	
500	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
401.5	10.0	98	10.0		215	2.5
411.3	9.5	97	10.0		100	1.0
421.4	10.1	100	10.0		325	2.4
431.7	10.0	97	10.0		220	0.8
436.9	5.0	96	5.0		595	3.2
446.0	9.2	101				
447.5	1.5	100	10.0		31	2.2
455.6	6.5	80	10.0		56	0.6
465.8	10.2	100	10.0		175	0.5
475.9	10.1	100	10.0		475	1.8
486.0	10.1	100	10.0		270	1.2
496.2	10.2	100	10.0		67	0.8

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SCALE 1" = 10 COORD. N E BEARING DIP -50 COLLAR ELEV START COMPLETED BY

GMC DATA REPORT 327

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Contact [illegible] altered granite porphyry, [illegible] feldspar phenos commonly recrystallized [illegible] qtz and mega plates of k-spar [illegible] appearance.	501.8 - 502.1 2mm barren qtz vn @ 29° to core, w/ tr diss py in 1cm qtz musc greisen margin
510	
	514.2 - 514.5 1mm barren qtz vn @ 49° to core, w/ tr. diss py + 1% diss tourm in 1cm qtz musc greisen margin
520	519.6 - 522.9 1-9mm and 2-2mm qtz-sph:py:cass :: 5:3:2 vns @ 50°, 50° and 38° respec.; 1-2% diss sph:py :: 9:1 in qfm @ 520.2 - 521.5, w/ qtz-musc greisen in remainder of interval.
	527.1 - 527.8 2-1mm qtz-asp:sph:py :: 5:3:2 vns @ 42° and 40°; tr. diss py in 1cm qtz-musc greisen margins
530	529.8 - 530.5 8mm qtz-sph vn @ 41° to core; 2% diss sph:py :: 8:2 in 6cm qtz-musc greisen margin
532.0 - 535.1 v. broken and gougy zone: faults not well preserved, gran porphyry decomposed; 3cm bright red clay at 534.9 - 535.0	534.5 - 535.0 4% diss sph:py :: 9:1 in qtz-musc greisen zone; badly broken
	535.3 - 535.7 2mm qtz-asp:sph.cass :: 5:3:2 vn @ 48° to core, 4% diss sph:py :: 8:2 in 3cm q.f.m.
	536.6 - 537.6 1mm qtz-sph vn @ 51° to core; 3% diss sph:py:cass :: 8:1:1 in 7cm qtz-musc greisen margin
540	541.0 - 541.9 9mm qtz-asp:cass:py :: 4:4:2 vn @ 38° to core; 4% diss sph:cass:py:cp :: 8:1:1:tr in 6cm qtz-musc greisen margin
	543.2 - 543.8 5% diss sph:py :: 9:1 in qtz-musc greisen zone
546.9 clay fault gouge, orientation uncertain	545.2 - 547.3 2-1mm qtz-cass vns @ 35° + 45° to core; 3% diss sph:py:cass :: 7:3:tr in qtz musc greisen margin
	548.8 - 549.8 1-3mm and 1-1mm qtz-sph:py:asp:cass :: 5:1:2:2 vn @ 46° + 45° to core; 1% diss sph:py :: 8:2 in 2cm qtz-musc greisen margins.
550	550.2 - 551.6 2-4mm qtz-cass:py:sph :: 6:3:1 vns @ 36° and 49° to core; 2-3% diss sph:py:cp :: 5:5:tr in coal. qtz musc greisen margins; 2% acc diss tourm.
	556.2 - 556.8 12mm qtz-cass:asp:py :: 4:3:3 vn @ 57° to core; 1-2% diss sph:py :: 6:4 in 6cm qtz-musc greis margins
	556.9 - 558.3 6mm qtz-cass vn @ 30° to core. 4% diss cass:sph:py :: 3:4:3 in qfm through rest of interval.
560	560.6 - 561.3 3mm qtz-asp:cass :: 9:1 vn @ 72° to core; 6% diss sph:py:cp:asp:cass :: 5:1:2:1:1 in 8cm qfm.
	563.3 - 563.9 3% diss sph:py :: 7:3 in qtz flood zone
570	570.6 - 570.9 2mm qtz-cass vn @ 50° to core, tr sph in 2cm qtz-musc greisen margin
573.3 - 573.4 1cm chloritic gouge @ 52° to core	574.0 - 578.8 Incipient qtz-musc-chlor greisen zone
579.[illegible] - 5[illegible] [illegible] chloritic gouge w/ calcite chips @ 85° to core	
580	
	584.0 - 584.3 3mm qtz-sph:py:cass :: 4:3:3 vn @ 36° to core; 2% diss sph:cass :: 10:tr in 1cm qtz-musc greis margin
	586.9 - 587.5 4mm qtz-musc-cass:asp:sph :: 2:6:2 vn @ 43° to core; 2% diss sph:py:cp :: 6:3:1 in 5cm qtz-musc greisen margin w/ 2% diss [illegible] tourm.
590	590.7 - 591.4 5mm qtz-asp:cass :: 5:5 vn @ 48° to core; 2% diss sph:cass :: 7:3 in 4cm qtz-musc greisen margin
	594.6 - 595.5 4mm qtz-asp:sph:cass :: 4:4:2 vn @ unk orient; 2% diss sph:py:cass :: 6:3:1 in 5cm q-m greis margin
	596.5 - 597.4 1% diss py:cass:sph :: 5:3:2 in qtz-musc greisen zone.
	599.3 - 599.8 1% diss sph:py :: 3:7 in q-m greisen [illegible]

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
506.3	10.1	100				
			10.0		200	0.8
516.6	9.9	96				
519.0	2.0	81	10.0		20	0.5
			6.0		2590	17.0
529.0	10.0	100				
534.9	5.5	93	10.0		680	4.3
536.6	1.8	106				
			7.0		2110	9.4
544.7	7.6	94				
547.3	2.5	96				
			10.0		2510	11.0
557.4	10.0	99				
561.1	2.5	68	10.0		10740	9.5
564.1	3.0	100				
572.8	7.9	91	10.0		960	1.0
578.8	5.4	90				
582.1	3.0	73	10.0		105	0.6
587.7	4.5	94				
589.7	1.9	95				
			10.0		2250	1.6
594.5	4.2	88				
599.5	4.0	80				

SCALE 1" = 10'
COORD N
E
BEARING N35E
DIP -50
COLLAR ELEV
START 9/2?/80
COMPLETED

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SCALE 1" = 10' | COORD. N | E | BEARING | DIP -50 | COLLAR ELEV | START | COMPLETED | BY

ROCK TYPES & STRUCTURES

- [illegible] chloritic clay gouge @65° [illegible]
- 610
- 61[illegible] - 61[illegible] [illegible] chloritic clay gouge @48° to core
- 620
- 62[illegible] - [illegible] 10 cm chloritic clay gouge orient. uncertain.
- 62[illegible] - [illegible] 3cm chloritic clay gouge - orientation uncertain
- 630
- 63[illegible] - 63[illegible] 6cm chloritic clay gouge - orient. uncertain
- 636.8 - 645.9 1-3mm chloritic clay filled fractures parallel w/ axis of core, causing v. broken core.
- 640
- 648.7 - 649.9 f. gr aplite porphyry dike @25° to core
- 650
- 660
- 665.9 - 667.1 1-10cm + 1-4cm chloritic clay gouge fault zones @ 58 and 62° to core
- 670
- 672.2 - 677.6 f. gr aplite porphyry dike @45° to core
- 680
- 690

MINERALIZATION AND ALTERATION

- 601.7 - 602.0 2mm qtz sph:py:asp:cp::3.5:4:3:tr vn @ 52° to core; 2% diss sph:py::6:4 in 2cm q-m greis marg.
- 605.5 - 603.6 4mm qtz - asp:cass::4:6 vn @ unk. orient. 2% diss sph in 1cm q-m greisen margin.
- 611.1 - 611.3 8mm qtz - asp:cass::6:4 vn @ 36° to core, 2% diss sph:cp:cass::6.3:1 in 2cm g-m greisen margin.
- 612.0 - 612.2 15mm qtz asp:cass::8.2 vn @ 57° to core; 5% diss sph:cass::8:2 in 2cm q-m greisen margin
- 613.0 - 613.2 2mm qtz - sph:py:cass; 4:3:3 vn @ 42° to core; 3% diss sph:py:cp:cass::6:2:2:tr in 2cm q-m greisen margin
- 614.9 - 615.4 2% diss sph:cp:py::5:3:2 in q-m greisen zone
- 620.4 - 620.8 3% diss sph:py:cp::6:2:2 in q-m greisen margin.
- 621.6 - 623.5 6% diss sph:py:cp:cass::6:3:1:tr in q-m greisen zone
- 627.8 - 628.2 8mm qtz - musc - asp:sph:py::5:3:2 vn @ 52° to core, 5% diss sph:py::7:3 in 3cm q-m greisen margin
- 630.0 - 632.5 6mm qtz - musc - sph:cass::7:3 vn @ 44° to core; 4% diss sph:py:cp:cass:asp::5:3:1:1:tr in q-m greisen zone in remainder of interval.
- 633.4 - 633.6 5% diss sph:cp:asp::5:4:1 in q-m greisen zone.
- 636.3 - 636.6 3% diss sph:cp:asp::6:2:2 in q-m greisen zone.
- 651.2 - 651.9 2-1mm qtz-musc-py vns @ 40° to core <1% diss py:sph:7:3 in cool. qtz-musc greisen margin
- 655.6 - 655.8 1mm qtz - sph-musc vn @51° to core, 2% diss sph:py::5:5 in 2cm q-m greisen margin
- 657.6 - 657.9 2% diss sph:py:cp:asp::5:2:2:1 in q-m greisen zone.
- 661.9 - 662.1 1% diss py, tr cp in q-m-tourm greisen zone.
- 665.6 - 665.9 3mm qtz - sph:py:cass::6:1:3 vn @ 65° to core; 1% diss sph:py::7:3 in 3cm q-m greisen margin
- 673.2 - 673.7 10mm qtz - py:asp:cass::5:2:3 vn @ 53° to core; 1% diss sph in 2cm q-m greisen margin
- 685.2 - 685.4 4mm qtz - sph:py:asp::4:3:3 vn @ 48° to core; 2% diss sph:py:asp::3:5:2 in q-m greisen margin 2cm wide
- 689.7 - 689.8 2mm qtz-py vn @ 45° to core; 2% diss sph:py::6:4 in 1cm q-m greisen margin

SAMPLE

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
			10.0		1700	3.6
603.0	1.8	80				
605.5	2.4	96				
611.4	4.4	75	10.0		2510	8.3
614.9	2.2	63				
619.4	3.7	82	8.0		3290	4.0
622.5	1.7	55				
			5.0		5650	35.0
629.6	7.1	100				
630.5	1.1	122				
636.6	4.1	67	10.0		2680	20.0
642.2	5.2	79				
			10.0		960	4.2
650.8	8.9	78				
			10.0		270	11
657.6	5.5	81				
			10.0		790	3.8
667.0	8.2	87				
675.0	7.8	98	10.0		1300	1.4
684.0	8.2	91				
			10.0		31	0.5
692.1	8.9	97				
			10.0		320	1.8

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
	703.8-704.1 2% diss sph:py::5:5 in g-m greisen zone
710	
711.6 - 722.6 wedge aplite porphyry dike, orient. uncertain	
720	
	725.7-726.1 8mm qtz-asp:py:sph:cp:cass::5:4:1:tr:tr @ 35° to core; 3% diss sph:py:cass::7:2:1 in 2cm g-m greisen margin.
	727.0-727.7 2mm qtz-sph:py::9:1 vn @ 46° to core; 5% diss sph:cp:py:asp:cass::6:1:3:tr:tr in 5cm g-m greisen margin.
730	
740	
	743.2-743.4 6mm qtz-musc-sph:cass::6:4 vn @ 42° to core.
750	
757.8-758.6 25cm white clay gouge w/rock chips @ 68°-70° to core; fault contact of Tgp and metasediments	
760	
761.4 - 761.7 8cm white to dark gray clay gouge @ 71° to core	
770	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
701.7	8.7	96				
704.4	2.7	93	10.0		970	1.9
711.0	6.3	91				
			10.0		335	1.4
717.5	6.1	94				
721.1	3.5	97				
			10.0		89	0.4
728.4	7.2	96				
735.7	6.4	90	10.0		260	6.2
745.8	10.0	99	10.0		1300	0.8
755.6	9.4	96	10.0		100	0.5
759.2	3.4	94				
762.8	2.8	78	7.8		86	1.0

DDH-36

8/8

SCALE 1" = 10

COORD. N ___ E ___

BEARING N5E

DIP -50

COLLAR ELEV. ___

START 8-2-80

COMPLETED ___

BY ___

GMC DATA REPORT 327

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ STATE ____ DRILL HOLE NO. DDH 37 SHEET NO. 1 of 2
BEARING N55E DIP -50 COLLAR ELEV ____ START 8/15/82 COMPLETED 8/19/82 BY ____

ROCK TYPES & STRUCTURES

0–4.0: overburden — No Recovery

Tgp – sericite granite porphyry

16.8–17.5 2 mm clay gouge @ 14° to core

65.2–65.9 10 cm FeOx stained clay gouge + rock chips @ 38° to core

91.4–92.2 aplite xenolith @ 50° to core

MINERALIZATION AND ALTERATION

19.6–22.7 2–1 mm qtz-po:asp: 1:1 vns @ 50° to core

32.3–32.9 2mm qtz-po:asp:sph::4:2:4 vi @ 35° to core, 10% diss sph:po: 6:4 in 5cm q.f.m.

35.0–35.6 2mm qtz-py vn @ 33° to core, 10% diss py in 5mm q.f.m.

74.8–75.1 2 to 3mm qtz-sph-py: 5:5 vn @ 50° to core

77.0–77.2 4mm qtz-tourm-asp vn @ 40° to core

79.0–79.3 10mm qtz-asp:sph:py:: 4:4:2 vn @ 50° to core; 10% diss asp:sph:py:cp:: 3:3:2:2 in 2cm q.f.m.

82.8–83.2 5to10mm qtz vn w/ tr moly @ 50° to core

94.0–94.2 8mm qtz-sph:cp asp:: 6:2:2 v @ 60° to core

94.8–95.1 3 to 4 mm qtz-tourm asp:sph:: 6:4 vn @ 45° to core

96.0–96.2 3mm qtz tourm vn w/ tr sph & cass @ 55° to core.

SAMPLE / ASSAY

Hole Depth	Core Recovered	% Recovery	Interval	Number	Sn	Ag
4.0	0.0					
12.8	7.4	84	10.0		94	1.5
19.7	4.6	67	10.0		110	2.0
30.4	9.9	93	10.0		290	1.7
38.0	7.7	101	10.0		180	0.8
47.2	8.5	92	10.0		290	1.7
57.4	10.2	100	10.0		135	0.6
65.9	8.0	94	10.0		225	0.6
75.7	10.2	102				
84.	7.5	91	10.0		185	1.6
93.3	9.2	100	9.9		30	1.0

DDH-37

1/2

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Tqp-sericite granite porphyry as above	100.5-101.0 2- to 3mm qtz-sph:cp:py 6:4 vns @ 32° to core
	106.0-106.2 2mm qtz-sph vn @ 50° to core
	111.0 4mm qtz-sulf → FeOx v @ 45 to core
	111.6 6-8mm qtz-sulf → FeOx vn @ 35° to core
	112.6-113.4 Silicified zone w/5% diss sulf → FeOx.
120.7-120.8 1 cm heavily FeOx stained clay gouge @ 81° to core	121.5-121.7 2mm qtz-sph:aspy:py:cp 3:2:3:2 vn @ 20° to core
	133.0-133.6 qtz-tourm vn @ 45° to core, 7% diss aspy:py:sph 3:3:4 in 3cm qtz-f m.; 8% diss tourm
	135.8-136.1 2mm qtz-sph-py:[illegible] 6:3:1 vn @ 40° to core; sph:py:cp:[illegible] 4:2:3:1 5% diss 2cm qtz fld margin
	138.7-138.8 4mm qtz-cp:py:sph:cass 3:1:3:3 vn @ 55° to core; [illegible] tourm
150.7-151.0 7cm clay gouge + rock chips @ [illegible] above	150.2-150.9 Silica flood zone w/ 5% diss tourm + 5% diss sp [illegible]
154.0-160.0 [illegible] clay gouge + rock chips [illegible] [illegible] [illegible] between 40° and [illegible] void @ ~158.0-161.0	
172.8-17[illegible] clay gouge + rock chips @ 5[illegible]° to core	
177.2-179.1 clay gouge + rock chips @ 40° to core	
184.6-184.9 4cm clay gouge + rock chips @ 42° to core	

Depth markers: 110, 120, 130, 140, 150, 160, 170, 180, 190, 200

HOLE DEPTH	CORE RECOVERED	% RECOVERY
103.1	10.0	98
113.3	10.0	98
119.8	5.9	91
127.8	8.0	100
136.3	7.9	93
142.6	5.9	94
151.0	8.1	96
157.9	1.5	22
168.7	3.8	35
170.3	1.6	100
172.6	1.8	78
175.0	1.4	58
179.3	3.1	72
184.4	1.1	22
185.9	1.2	80
188.7	2.0	71
190.6	1.1	58
196.3	0.4	11

INTERVAL	NUMBER	Sn	Ag
10.0		240	1.4
10.0		1080	3.0
10.0		600	2.6
10.0		1100	2.5
10.0		1730	5.2
10.0		[illegible]55	3.6
10.0		190	2.4
10.0		270	1.0
10.0		70	1.6
12.5		325	1.6

DDH-37 2/2

SCALE 1" = ___ COORD. N ___ E ___ SEC. ___ T ___ R ___ STATE ___ BEARING ___ DIP -50 COLLAR ELEV. ___ DRILL HOLE NO. DDH-37 START ___ COMPLETED ___ SHEET NO. 2 of 2 BY ___

PROPERTY COAL SCALE 1" = 10' COORD. N ____ E ____ SEC 21 T 22 R 2W BEARING N15E STATE ALASKA DIP -50 COLLAR ELEV ____ DRILL HOLE NO. DDH-38 START 8/19/82 COMPLETED 9/?/82 BY ____ SHEET NO. 1 of 6

ROCK TYPES & STRUCTURES

Overburden - No Recovery

4.0-7.5 - Intbdd graywacke and argillite

7.5-11.1 chert pebble conglomerate limonite stained along fractures

11.1-16.0 Intbdd silty graywacke and sltst., 2" thick cht. pebble cong. @ lower contact; bedding @ 35° to core.

16.0-24.5 f.-med gr. graywacke w/ subord. thin sltst. interbeds; bedding @ 40° to core.

24.5-29.0 argillite w/ intbdd graywacke and sltst, grading downward to graywacke w/ subord. sltst and argill.

29.0-58.3 Graywacke w/ subord sltst. interbeds Bedding @ 50° to core.

Bedding @ 55° to core

58.3-59.5 8 cm clay gouge + rock chips, lt. FeOx stain @ 24° to core

59.5- Graywacke, f.-med gr. typically reddish in color.

73.6-76.0 Several thin chert interbeds

Bedding @ 50° to core

MINERALIZATION AND ALTERATION

tr. diss po in diagenetic + epigenetic hairline qtz vns

29.0-30.6 1mm qtz - po: asp: 8:2 vn @ 15° to core.

43.0-44.5 hairline vns w/minor po @ 30° to core.

44.9-45.2 2mm qtz vn w/ po @ 25° to core

76.8-78.0 2-3% diss asp + po in silic zone

NOT SAMPLED

HOLE DEPTH	CORE RECOVERED	% RECOVERY
4.0		
11.0	6.6	94
18.4	7.0	95
24.5	7.3	120
26.8	2.3	100
37.1	9.8	95
40.3	3.1	97
46.1	4.9	84
53.5	6.0	81
63.5	9.7	97
68.5	2.7	54
78.3	9.8	100
85.2	6.7	97
94.1	9.0	101

DDH-38 1/6

PROPERTY ___ SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R 12W STATE ___ BEARING ___ DIP ___ COLLAR ELEV ___ DRILL HOLE NO. DDH 38 START ___ COMPLETED ___ SHEET NO. 2 of 6 BY ___

ROCK TYPES & STRUCTURES

100.0–116.1 f-med gr. graywacke w/ siltstone interbeds, bedding @ 65° to core

110

116.1–120.0 silty argillite and graywacke w/ subord. siltst. intbds, bdng @ 65° to core

120

120.0–1?(.9 f-med gr. graywacke, as above

130

140

150

154.4–155.4 white chert(?) w/ csc gr. biotite

160

Bedding at 50°

170

174.9–180.8 chert pebble conglomerate w/ minor intbdd siltstone; bedding @ 60° to core

180

180.8–192.0 f-med gr. graywacke w/ subord intbdd chert pebble cong; bedding @ 60° to core

190

192.0–200.0 f-med gr graywacke w/ interbedded siltstone.

200

MINERALIZATION AND ALTERATION

101.0–102.0 5-10% diss po in irreg patches in graywacke

104.0–105.2 2mm qtz-po vn @ 5° to core

132.3–133.2 3-1mm qtz-asp vns @ 25° to core

154.4–155.4 f. diss blue gray sulfide (Mos. ?) in v. thin laminations

161.0–161.3 2mm qtz-fluorite vn @ 65° to core

184.2–184.4 2mm qtz-asp vn @ 75° to core

191.0–198.2 3-1mm qtz-po asp 7:3 vns @ 57° 62° to core.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
104.0	9.6	97		
114.1	9.7	96		
122.2	5.6	69		
126.3	3.7	90		
136.7	10.2	98		
144.2	7.2	96		
154.2	10.5	105		
164.3	10.0	99		
174.5	10.3	101		
184.5	10.1	101		
194.7	10.3	101		

NOT SAMPLED

DDH-38 2/6

PROPERTY COAL SEC 6 T 22 R 1W STATE AK DRILL HOLE NO. DDH-38 SHEET NO. 3 of 6

SCALE 1" = 10' COORD. N E BEARING N15E DIP -50 COLLAR ELEV START COMPLETED BY

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
200.0-215.4 f-med grained graywacke w/intbdded siltstone, bedding @ 65° to core 202.0-203.0 3 cm wide greisenized granite dike @ 20° to core	
210	211.4-214.0 3-3mm qtz-musc vns @ 10°-15° to core.
215.4-242.7 argillite w/intbdd siltstone and graywacke; bedding @ 75° to core.	
220	224.7-225.2 3 to 4% diss asp in brecciated graywacke
230	
240	
242.7-259.7 Intbdd graywacke, argillite and siltstone, bedding @ 50° to core.	
250	
259.7-282.0 siliceous graywacke w/abundant remobilized qtz blebs, f-med gr, massive bedding	
260	
270	
280	
282.0-326.0 f-med gr. massive graywacke and siltstone in ~ equal proportion	286.2-287.0 green epidote(?) altered zones w/minor carbonate and asp on vnlts @ 60° to core
290	29[illegible]-297.2 5% diss py + asp in altered graywacke; epidote(?)
300	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
201.4	6.5	97		
211.4	10.0	100		
219.5	7.6	94		
223.6	4.4	107		
231.7	7.3	90		
234.1	2.4	100		
241.1	6.7	96		
248.7	7.4	97		
257.4	8.7	100		
264.4	6.3	90		
274.5	10.0	99		
284.8	10.2	99		
293.9	6.4	70		
295.5	1.0	63		
300.5	5.4	108		

NOT SAMPLED

DDH-38 3/6

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP ____ COLLAR ELEV ____ DRILL HOLE NO. DDH-38 START ____ COMPLETED ____ SHEET NO. 4 of 6 BY ____

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
282.0-319.0 f-med gr. massive graywacke and siltstone; bedding ≥ 60° to core	
310	
319.0-326.0 f gr. silty graywacke at 65° to core	
320	
326.0-344.5 f-med gr. graywacke w/ subord. intbdd silty argillite	
330	
340	
344.5-357.0 f-med gr. graywacke, pale grayish green, n cobbly bedding @ 65° to core	
350	
357.0-420.2 f-med gr. graywacke, as above, w/ subord. intbdd - siltstone	
360	
370	
380	
graywacke is increasingly recrystallized w/ greater depth, becoming more siliceous; irregular zones w/ v. f. garnet(?) + biotite, compositionally controlled	
390	
400	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
304.8	4.0	93		
308.6	1.2	31		
310.8	2.5	105		
312.6	1.3	72		
316.3	2.6	70		
319.5	1.2	38		
321.8	1.8	78		
326.0	4.5	107		
329.0	2.8	93		
333.9	4.4	90		
337.0	2.8	90		
342.5	5.2	95		
346.5	3.8	95		
353.3	6.9	101		
356.1	2.2	79		
358.5	1.4	58		
360.5	1.5	75		
363.5	1.9	63		
372.0	8.5	100		
394.4	5.6	95		
375.0	1.7	16		
396.0	0.4	40		

NOT SAMPLED

DDH-38 4/6

PROPERTY ______ SCALE 1" = 10' COORD. N ______ E ______ SEC ______ T ______ R ______ STATE ______ BEARING ______ DIP ______ COLLAR ELEV ______ DRILL HOLE NO. DDH-38 START ______ COMPLETED ______ SHEET NO. 5 of 6 BY ______

ROCK TYPES & STRUCTURES

f. med gr recrystallized graywacke w/ v. subord. siltstone interbeds as above.

420.2–427.2 abundant garnet(?)-bearing recrystallized zones w/i the graywacke

427.2–431.2 slightly recrystallized silty graywacke + silty argillite!

440.1–443.0 less recrystallized silty graywacke w/biotite + garnet(?): bedding at 75° to core.

482.8–489.0 Reddish-brown, massive garnet-rich graywacke.

MINERALIZATION AND ALTERATION

447.4–447.6 greisenized aplite dike 8 cm. wide, w/acc. tourm + minor cp, @ 20° to core

452.8–453.3 5 cm greisenized aplite dike @ 70° to core.

459.7–461.0 2–1mm qtz-musc-tourm-fluor vns @ 60° to core.

464.4–464.6 8mm qtz-musc-tourm-asp vn @ 65° to core.

477.5 6mm qtz-tourm-fluorite-calcite vn @ 65° to core.

482.6–486.8 3–15 to 20mm qtz-tourm-fluorite-asp: cass::8:2 vns @ 75° to core.

489.0–491.0 5cm bluish-green greisenized pegmatite dike w/ acc. tourm, fluorite + acc. musc @ 12° to core

493.0–493.2 12mm qtz-fluorite-clay vn @ 50° to core.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
405.0	8.5	94		
407.0	1.7	85		
414.4	6.5	88		
420.4	5.8	97		
427.2	6.8	100		
435.0	7.6	97		
445.1	10.1	100		
455.1	9.4	94		
464.0	8.8	99		
469.9	5.2	88		
479.5	10.0	104		
489.5	9.7	94		
495.0	4.6	88		
497.3	1.3	57		

NOT SAMPLED

410 420 430 440 450 460 470 480 490 500

DDH-38 5/6

PROPERTY
SCALE 1" = 10'
COORD. N
E
SEC
T
R
BEARING
STATE
DIP
COLLAR ELEV
DRILL HOLE NO. DDH-38
START
COMPLETED
SHEET NO. 6 of 6
BY

ROCK TYPES & STRUCTURES

500.0 547.2 f.-med gr. graywacke, recrystallized as noted, w/ secondary biotite & garnet as noted.

503.4-504.0 aplite porphyry dike, 3% qtz + feldspar phase, 4 cm wide, @ 10° to core.

510

516.6-520.7 abundant biotite clots in recrystallized graywacke

520

530

534.2-534.5 Greisenized aplite dike, 1 cm wide, @ 20° to core

539.4-541.4 1 cm greisenized aplite dike @ 10° to core

540

542.3-542.4 1 cm greisenized aplite dike @ 25° to core.

550

MINERALIZATION AND ALTERATION

505.7-506.0 12 mm qtz-musc-fluorite-asp-cass(?) vn @ 65° to core.

533.8-534.1 6mm qtz-sph:asp: 7:3 vn @ 70° to core.

538.5-538.8 6mm qtz-sph:cass: 8:2 vn @ 60° to core.

539.7-540.0 11 mm qtz sph vn @ 60° to core.

542.2-542.5 5mm qtz tourm vn @ 60° to core.

547.2 TD.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
507.6	8.4	82		
514.7	7.3	103		
518.7	3.2	80		
522.5	3.8	100		
524.0	1.4	93		
524.8	0.8	100		
527.5	2.3	85		
532.2	2.2	47		
535.7	3.4	97		
538.0	1.9	83		
539.4	1.4	100		
542.3	2.5	86		
545.7	2.9	85		
547.2	1.2	80		

NOT SAMPLED

DDH-38 6/6

PROPERTY [illegible] SEC 21 T [illegible] R [illegible] STATE ALASKA DRILL HOLE NO. DDH 39 SHEET NO. 1 of 7

SCALE 1" = 10' COORD. N E BEARING N15E DIP -50 COLLAR ELEV START 8/19/82 COMPLETED 9/2/82 BY

ROCK TYPES & STRUCTURES

Overburden
No Recovery

Tgp - sericite granite porphyry

26.1-26.3 Coarse rock chips + subordinate clay gouge; orientation of fault uncertain

33.5-34.1 2-1 cm clay gouge + rock chips; zones @ 46° + 48° to core

48.0-48.1 2cm FeOx stained clay gouge + rock chips @ 85° to core

48.1-56.0 fine to coarse rock chips w/ intermixed clay gouge; most of gouge probably washed out; orientation of zone uncertain

54.4-54.5 1cm FeOx stained clay gouge + rock chips @ 49° to core

96.9-99.4 1-2cm clay gouge filled fault @ 44° and 1-1cm clay gouge + rock chip fault @ 52° w/crushed granite porphyry between.

MINERALIZATION AND ALTERATION

8.0-8.7 3-1mm qtz-tourm-asp vns @ 51°-55° to core.

9.9-10.0 2mm qtz-tourm-asp vn @ 43° to core.

16.3-16.5 2-6mm qtz-asp vns @ 52°-53° to core

23.1-23.2 1mm qtz-tourm-sulf → FeOx vn @ 37° to core

23.6-24.0 1% diss asp + 4% diss tourm in silic zone

38.2-45.9 Intermittently qtz-seric altered Tgp as shown w/tourm veining and tr. diss py + asp.

47.2-47.7 2% diss sulf → FeOx + 5% tourm in qtz flood zone

57.2-57.3 1mm qtz-sulf → FeOx vn @ 51° to core

64.8-69.9 3-4mm qtz-cass:asp::7:3 vns @ 43°-47° to core; 1% diss asp:sph::8:2 in coal. q.f.m's.

73.1-74.0 2-4mm and 1-2mm qtz-sph:asp:py::2:7:1 vns @ 51°-52° to core; 3% diss sph:py::5:5 in coal. q.f.m's.

74.6-75.6 2-2mm qtz-sph:py::6:4 vns @ 63°+61° to core; 3% diss py:sph::5:5 in 1cm q.f.m

76.2-77.0 2-4mm qtz-tourm-asp:sph:py::6:3:1 vns @ 44°+49° to core; 6% diss sph:py:asp::5:4:1 in coal. q.f.m's.

79.2-83.5 3-3mm qtz-py:sph::7:3 vns @ 51°-55° to core; 3% diss py:sph:po::6:3:1 in 2-4cm q.f.m's.

87.3-91.2 5-4mm qtz-tourm-py:sph::6:4 vns @ 38°-57° to core, as shown; 2% diss py:sph:asp::8:2:tr in 1-2cm q.f.m's.

95.2-95.3 4mm qtz-asp:py::8:2 vn @ 85° to core.

Hole Depth	Core Recovered	% Recovery	Interval	Number	Sn	Ag
9.6	2.9	81				
10.[illegible]	[illegible]	88	6.0		320	2.6
13.[illegible]	2.5	93				
20.4	6.0	95	10.0		96	1.5
23.[illegible]	1.7	100				
29.0	3.6	61				
30.2	0.8	67	10.0		260	18
38.0	[illegible]	91				
39.2	1.2	100	10.0		120	0.6
43.4	8.9	97	10.0		250	1.8
53.3	0.9	18				
61.2	6.8	91	10.0		[illegible]	[illegible]
64.8	0.5	13				
69.6	2.8	58	10.0		1630	16.0
79.0	9.2	98				
80.9	1.9	100	10.0		690	8.0
91.2	10.0	97	10.0		1300	[illegible]
			10.0			

DDH-39

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GMC DATA REPORT 3 2 7

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PROPERTY ___ DRILL HOLE NO. DDH-39 SHEET NO. 2 of 7

SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R ___ STATE ___

BEARING N15E DIP -50 COLLAR ELEV ___ START ___ COMPLETED ___ BY ___

ROCK TYPES & STRUCTURES

Tgp - seriate granite porphyry, as above

110

118.7-118.8 1cm FeOx stained clay gouge + rock chips @ 47° to core

120

130

140

150

160

170

180

190

200

MINERALIZATION AND ALTERATION

106.0-106.6 2-1mm qtz-tourm-sulf→FeOx vns @ 47°-49° to core; tr diss sulf→FeOx + 10% diss tourm in 2cm q.f.m's

107.4-107.5 8mm qtz-tourm-cass vn @ 55° to core.

112.5-113.2 2-2mm qtz-py:sph::7:3 vns @ 54°-63° to core; 1+2% diss py:sph::5:5 + 6% diss tourm in 1-3cm q.f.m's.

117.4-119.2 3-2mm qtz-tourm-sulf→FeOx-minor cass vns @ 49°-53° to core; tr. sulf→FeOx + 5% tourm in 1cm. q.f.m's.

126.6-127.1 2-3mm qtz-sulf→FeOx vns @ 56°+61° to core; 3% diss sulf→FeOx + 1% tourm in 2cm q.f.m's.

129.2-130.8 3-3 to 4mm qtz-sulf→FeOx vns @ 46°-52° to core; 4% diss sph:po:py::4:4:2 in coal. q.f.m's.

131.2-136.3 5-hairline to 1mm qtz-py:sph::7:3 vns @ 45°-55° to core; tr py in 1cm q.f.m's.

145.5-145.6 8mm qtz-tourm-asp vn @ 54° to core

165.3-165.7 5mm qtz-asp vn @ 25° to core

172.1-172.9 1-15mm and 1-6mm qtz-tourm-sulf→FeOx vns @ 49°+53° to core; 3% diss sulf→FeOx + 10% diss tourm in 5cm q.f.m

176.6-176.9 8mm qtz-tourm-sulf→FeOx vn @ 51° to core; 2% diss sph:py::9:1 in 3cm q.f.m.

177.9-178.2 2-1mm qtz-tourm-py:sph::7:3 vns @ 44°+60° to core.

188.5-188.7 7mm qtz-tourm-asp vn @ 43° to core

192.4-192.5 8mm qtz-asp vn @ 51° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag	
101.2	9.3	93					
[illegible]	[illegible]	84					
					820	1.4	
[illegible]	[illegible]	96	10.0				
121.0	9.0	96	10.0		560	2.1	
131.1	9.9	98	10.0		550	4.4	
			9.0		75	1.6	
141.3	10.4	102					
			10.0		105	1.4	
151.3	10.0	101					
			10.0		180	1.7	
161.3	10.3	102					
			10.0		140	2.3	
171.5	10.2	100					
179.8	8.0	96	10.0		605	4.2	
190.3	10.3	95	10.0		47	1.0	
				DDH-39			2/7
200.3	9.9	99	10.0		87	1.2	

GMC DATA REPORT 327

SCALE 1" = 10' COORD. N ___ E ___ SEC ___ T ___ R 12W STATE ___ BEARING ___ DIP ___ COLLAR ELEV ___ DRILL HOLE NO. DDH-39 START ___ COMPLETED ___ SHEET NO. 3 of 7 BY ___

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION
Tgp - seriate granite porphyry as above.	
210	209.9-210.1 8mm tourm-qtz-minor sulf→FeOx vn @ 49° to core, 2% diss sph:py:po::7:1:2 in 1cm g.f.m.
	210.7-210.9 3mm qtz-tourm-sph:py:cass::5:2:3 vn @ 40° to core, 5% diss sph:py:cp::9:1:tr in 1cm g.f.m.
	212.2-212.7 1-4mm and 1-2mm qtz-tourm-topaz-asp:sph:py::6:3:1 vns @ 53°+47° to core; 1% diss sph:py::6:4 in 5cm g.f.m.
	213.1-213.9 1-2mm qtz-tourm-py vn and 1-17mm qtz-asp:cp:sph:py::4:4:2:tr vn @ 35°+46° resp; 1-2% diss sph:py::7:3
220	in 1-2cm g.f.m's.
	216.2-217.9 2-1mm qtz-sph:py::8:2 vns @ 42°+62° respec.
	218.6-219.3 3% diss asp:po:cp::4:6:tr + 6% diss tourm.
	223.7-228.1 5-8 to 14mm qtz-asp:cass:sph::3:6:1 vns @ 34°-49° as shown; distinctive rhythmic deposition layering on some veins.
230	
	232.9-233.3 2mm qtz-sph:cass:cp::4:4:2 vn @ 31° to core
	235.5-237.9 2-2mm qtz-sph:py:cass:asp::6:2:1:1 vns @ 54°+42° to core.
240	
	244.4-245.8 3-3 to 4mm qtz-tourm-sph:py:cp::6:2:2 vns @ 49°-58° to core; 2% diss sph:py::8:2 in 1cm g.f.m's
250	
	254.3-254.6 11mm qtz-asp:sph:cass::4:3:3 vn @ 42° to core; 5% diss asp:sph:py::5:5:tr in 2cm g.f.m.
260	
	264.1-265.0 1-6mm and 1-12mm qtz-tourm-py:sph:asp::4:4:2 vns @ 44°+58° respec.; 1% diss sph:py::6:4 in 1-2cm g.f.m's
	266.3-267.3 2-2mm qtz. sulf→FeOx vns @ 42°+48° to core; tr. sulf→FeOx in 4cm g.f.m's.
270	
	277.1-277.3 6mm qtz-sph:cp:asp::5:3:2 vn @ 58° to core; 1% diss sph:py::7:3 in 2cm g.f.m
280 — 280.0-280.1 3mm FeOx stained clay gouge @ 66° to core. 280.0-280.5 conspicuous clots of secondary? biotite	
	283.0-284.5 1-5mm and 1-8mm qtz-tourm-cass:py::9:1 vns @ 36°+31° to core; tr. diss py in coal. g.f.m.
	286.7-287.4 2-1mm qtz-sph:py::7:3 vns @ 46°+48° to core; 2% diss sph:py::8:2 in coal. g.f.m's
290	
	292.3-292.5 3mm qtz-sph:py::6:4 vn @ 44° to core; 3% diss sph:py::8:2 in 3cm g.f.m
	294.9-295.4 3% diss sph:py:asp::8:2:tr in silic. zone
	296.2-298.7 3-2mm qtz-sph:py:cass::6:3:1 vns @ 51°-53° to core; 2% diss sph:py::6:4 in 2cm g.f.m's.
300	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
210.5	10.3	101	9.0		74	[illegible]
220.8	10.3	100	11.0		1000	12.0
231.0	10.2	100	10.0		7340	5.4
241.1	10.1	100	10.0		380	4.3
251.2	10.2	101	10.0		260	7.6
261.3	10.2	101	10.0		1600	2.6
271.3	10.2	100	10.0		855	6.7
282.0	10.0	95	10.0		375	2.6
290.2	7.5	92	10.0		1530	4.8
300.5	10.3	99	10.0		[illegible]	6.6

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
Tgp - seriate granite porphyry, as above	300.9-303.2 5-1 to 2mm qtz-py:sph:asp:cass::3:5:2:tr vns @ 52°-56° to core; 1% diss sph:py:6:4 in coalescing q-f-ms							
	304.5-305.2 4% diss sph:po::?:4 in silic zone							
	306.2-306.5 2mm qtz-sulf → FeOx vn @ 72° to core, 5% diss sph:py:po:cass::6:2:2:tr in 4cm q-f-m							
309.6-309.7 1cm FeOx stained clay gouge + rock chips @ 51° to core		310.5	8.9	89	10.0		1820	9.6
	311.5-311.9 6mm qtz-sph:asp::5:5 vn @ 50° to core; 2% diss sph:py::9:1 in 5cm q-f-m							
	315.1-318.2 3-3 to 4mm qtz-tourm-sph:py:cp::7:2:1 vns @ 48°-57° to core; 4% diss sph:py::7:3 in 1cm q-f-m							
	319.0-319.8 2mm qtz-sph:py::8:2 vn @ 51° to core; 3% diss sph:asp:po:cp::4:4:2:tr in rest of int.				10.0		550	6.2
321.0-321.2 2cm clay gouge + rock chips @ 59° to core	320.8-322.4 1-8mm, 1-5mm and 2-3mm qtz-sph:asp:cass:py::3:3:3:1 vns @ 48°-52° to core; 4% diss sph:asp:po::5:3:2 in coalescing q-f-m's	320.5	10.1	99				
	324.7-324.9 3mm qtz-sph vn @ 49° to core; 4% diss sph:tr cp in 1cm q-f-m							
	330.0-330.3 tr sph + cp in qtz-seric zone				10.0		3650	19.0
334.7-334.8 1cm heavily FeOx stained clay gouge + rock chips @ 54° to core	334.6-339.8 3-2 to 3mm and 1-6mm qtz-sph:py::6:4 vns @ 58°-64° to core, tr cass	330.5	10.1	99				
	341.6-342.0 2cm clot tourm + 3% diss sph:py::7:3 in silic zone @ 56° to core				10.0		560	7.4
	344.3-345.0 2-3 to 4mm qtz-sph:asp:py::6:2:2 vns @ 53°-55° to core; 1% diss sph:py::7:3 in 1cm q-f-m	341.0	10.1	100				
	349.1-349.4 5mm qtz-tourm-cass vn @ 43° to core; 4% diss sph:py:cp::4:3:3 in 3cm q-f-m				10.0		1890	5.8
	350.5-350.7 3mm qtz-sph:asp::6:4 vn @ 52° to core	351.2	10.1	99				
					10.0		590	1.9
		361.4	9.7	95				
	369.4-369.8 8mm qtz-tourm vn w/ tr. moly @ 50° to core				10.0		115	1.4
373.2-379.8 gradational contact into subaplite porphyry w/ 5% 1-2mm qtz phenos. (eroded margins) Probably altn phase of gran porph. rather than dike.	373.0-373.2 5mm qtz-sph:py::7:3-tourm vn @ 48° to core; 1% diss sph in 1cm q-f-m	371.5	10.1	100				
	376.8-378.0 2-4mm qtz-sph:py::1:9-tourm vns @ 43° + 53° to core; 1% diss py:po::3:7 in coal. q-f-m's.				10.0		850	8.6
	378.3-379.2 2-2mm qtz-sph:py::9:1 vns @ 44°-54° to core	381.6	10.1	100				
383.5-387.9 subaplite porphyry as described above	386.5-387.1 5mm qtz-sph:asp::7:3 vn @ 47° to core; 2% diss sph:po::8:2 in 4cm q-f-m							
					10.0		570	4.6
	390.6-391.9 3% diss sph:py::6:4 in silic zone	391.7	10.1	100				
	394.7-397.9 2-9mm and 2-3mm qtz-sph:py::6:4 vns @ 52°-56° to core; 3% diss sph:py:asp::7:3:tr in 3-4cm q-f-m's				10.0		1000	3.0

Depth marks: 310, 320, 330, 340, 350, 360, 370, 380, 390, 400

SCALE 1" = 10'

PROPERTY — COORD. N — E — SEC — T — R — BEARING — STATE — DIP — COLLAR ELEV — DRILL HOLE NO. DDH-39 — START — COMPLETED — SHEET NO. 4 of 7 — BY

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GMC DATA REPORT 327

PROPERTY — SCALE 1" = 10' — COORD. N — E — SEC 21 — T 22S — R 16W — STATE — BEARING — DIP — COLLAR ELEV — DRILL HOLE NO. DDH-39 — START — COMPLETED — SHEET NO. 5 of 7 — BY

ROCK TYPES & STRUCTURES	Depth (ft)	MINERALIZATION AND ALTERATION
Tgp - sericite granite porphyry, as above.	400	400.0 - 402.7 3 - 3 to 4mm qtz - tourm - sph:py:cp:asp:cass::3:1:1:2:3 vns @ 49°-52° to core; 2% diss sph:po:py::6:2:2 in 2 cm q.fm's.
		404.2 - 404.6 6mm qtz - cass:sph:py::7:2:1 vn @ 54° to core. 3% diss sph:py:asp:: 6:3:1 in 3 cm q.fm.
	410	415.4 - 416.9 2-2mm qtz - sph:py:cp::6:2:2 vns @ 51°-53° to core; 1% diss sph:py:po:asp: 5:3:2:tr in coal. q.fms.
		418.0 - 418.2 10mm qtz - cass:py::9:1 vn @ 44° to core
		419.4 - 421.2 3-3mm qtz - clay - asp:sph:py::6:3:1 vn @ 44°-52° to core; 4% diss asp:sph:py::4:3:3 in coal q.fm.
	420	422.7 - 423.7 2-2mm qtz - sph:py::8:2 vns @ 43° to core
		425.7 - 427.8 tr diss py + sph in qtz seric altn zone
	430	431.6 - 431.9 5% diss sph:py::8:2 in silic zone
	440	
448.2 - 448.9 6 cm brecciated granite porphyry @ 15° to core.	450	455.3 - 455.6 10mm qtz - tourm - asp:cass::6:4 vn @ 62° to core
	460	
465.7 granite porphyry progressively gets finer gr. downward, becoming aplitic at contact	470	
476.6 - 476.9 contact between aplitic granite porphyry/silic + brecciated graywacke; breccia is now completely rehealed	480	
	490	
	500	

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
401.7	10.1	101				
			7.0		3180	3.1
409.3	7.5	99				
			7.0		145	1.4
419.5	10.0	98				
			7.0		3030	31.0
429.6	10.1	100				
			10.0		1810	9.8
439.8	10.2	100				
			10.0		485	5.3
449.9	10.1	100				
			10.0		270	2.2
460.0	10.1	100				
			10.0		1530	5.0
			5.0		72	0.6
470.1	9.7	96				
			10.0		[illegible]	1.8
480.2	10.0	99				
			10.0		53	0.2
490.3	10.1	100				
			10.0		69	0.7
500.0	10.0	98				

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ROCK TYPES & STRUCTURES

Brecciated and rehealed silicified graywacke as above.

510

514.6–536.8 Predominantly thin to medium-bedded silic graywacke, w/ subordinate qtz pebble conglomerate

520

530

536.8–565.0 Brecciated and rehealed silic. graywacke, as above.

540

550

560

565.0–576.5 clay and subordinate chlorite gouge, w/ minor rock frags < 2 cm diam

570

580.0 Fault contact of silic graywacke w/

580

580.0–633.5 Seriate granite porphyry, varying from medium to coarse grained throughout interval, suggesting hole is near the edge of the intrusion; rock is texturally similar to granite porphyry in the bottom of DDH-31

590

600

MINERALIZATION AND ALTERATION

546.0–546.2 1-2mm asp-py-qtz vn @ 57° to core

550.4–550.5 4mm qtz-chlor-asp vn @ 57° to core

555.0–555.2 12mm qtz-asp-sph-py 5:4:1 vn @ 45° to core

557.6–558.2 2–20mm fluorite-asp-qtz vns @ 48°–50° to core.

580.0–633.5 granite porphyry is slightly chloritically altered throughout w/ minor diss v.f. gr. py.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sr	Ag
501.0	10.5	98				
			10.0		87	0.2
510.5	9.7	102				
			10.0		63	0.2
521.0	10.1	96				
			10.0		40	0.2
529.7	8.5	98				
			10.0		49	0.6
538.8	9.0	94				
545.9	5.6	79				
			10.0		120	0.6
			7.0		82	0.2
556.8	10.4	105				
			11.0		330	1.7
566.1	8.3	80				NO SAMPLE
569.5	2.0	59				
573.5	1.4	35				
576.5	1.7	57				
579.4	1.2	41				
580.0	0.3	45				
588.1	3.0	38				
			10.0		33	0.3
591.2	3.0	97				
592.4	0.8	67				
600.1	6.3	82	10.0		1630	1.3

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PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP ____ COLLAR ELEV ____ DRILL HOLE NO. DDH 39 SHEET NO. 6 of 7 START ____ COMPLETED ____ BY ____

PROPERTY ______ SEC ______ T ______ R ______ STATE ______ DRILL HOLE NO. DDH-39 SHEET NO. ______

SCALE 1" = 10' COORD. N ______ E ______ BEARING ______ DIP ______ COLLAR ELEV. ______ START ______ COMPLETED ______ BY ______

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag	
Sericite granite porphyry, as described above.	600.0 - 633.5 granite porphyry is slightly chloritically altered throughout, w/ v.f. gr. diss. py <1%	604.5	4.3	98					
610					10.0		1130	5.6	
		613.3	7.3	83					
		619.2	4.6	78	10.0		42	0.4	
620									
		629.1	7.5	78	10.0		57	0.4	
630		630.2	0.3	25					
633.5 - 645.4 chloritic black shale, massive, somewhat recrystallized; orientation of contact unknown, may be fault contact		633.5	0.9	28					
		634.2	0.2	29	5.0		295	18.0	
		638.5	3.3	77					
		639.1	0.2	33					
640		640.5	1.2	86					
		641.5	0.7	70					
		643.2	0.9	53					
		644.5	0.5	38					
		645.4	0.8	89	10.4		8	0.2	
645.4' T.D.						DDH-39			7/7
650									
660									

GMC DATA REPORT 327

PROPERTY ______ SCALE 1" = 10' COORD. N ______ E ______ SEC ______ T ______ R ______ BEARING ______ STATE ______ DIP -50 COLLAR ELEV ______ DRILL HOLE NO. DDH-40 START 9/2/82 COMPLETED 9/6/82 SHEET NO. 1 of 3 BY ______

ROCK TYPES & STRUCTURES

Overburden no recovery

7.5 – 14.3 Dark gray silty argillite thin bedded to medium bedded @ 25–30° to core

14.3 – 25.3 Bluish gray silty argillite w/minor graywacke

25.3 – 36.2 Brownish gray graywacke fine grained massive bedding @ 28–35° to core.

36.2 – 41.0 Bluish gray silty argillite

41.0 – 58.6 Brownish gray graywacke, f. gr., massive bedding as above

58.6 – 61.1 Reddish brown recrystallized graywacke, garnet(?) bearing w/ abundant remobilized irregular gray qtz lenses; bedding @ 35°

61.1 – 76.3 Grayish green massive quartzite, somewhat recrystallized

73.7 – 74.3 Greisenized aplite dike @ 25° to core

76.3 – 237.4 Massive, fine grained graywacke; local faint bedding @ 30° to core; local zones of irregular to vein-like gray quartz. Graywacke varies in color from reddish brown to greenish gray

MINERALIZATION AND ALTERATION

62.2 – 62.9 3mm qtz-asp:sph cass:cp::3:3:2:2 vn @ 37° to core

66.8 – 67.1 5mm qtz-asp vn @ 35° to core.

71.1 – 71.4 3mm qtz-sph vn @ 45° to core.

74.0 – 74.3 5mm qtz-asp cass: 6:4 vn @ 45° to core.

78.3 – 85.3 5 – 2 to 3 mm qtz-musc-tourm-fluorite-po:asp:sph:cass::5:3:2 tr vns @ 48° – 61° to core

85.3 – 92.2 3-[illegible] qtz-musc-po:asp::7:3 vns @ 55°–70° to core

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
7.5				
8.5	0.5	50		
9.0	0.4	80		
9.9	1.0	111		
11.0	1.1	100		
11.8	0.7	88		
14.3	2.3	92		
19.0	4.8	102		
26.2	6.8	94		
35.0	8.3	94		
36.8	1.8	100		
41.0	4.0	95		
46.7	5.0	88		
49.7	2.8	93		
53.2	2.7	77		
54.7	1.3	87		
56.4	1.4	82		
61.4	4.2	84		
65.2	3.5	92		
69.7	3.7	82		
76.7	7.0	100		
86.0	9.2	99		
95.2	8.7	95		

NOT SAMPLED

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PROPERTY ______ SCALE 1" = 10' COORD. N ______ E ______ SEC ______ T ______ R ______ BEARING ______ DIP ______ STATE ______ COLLAR ELEV ______ DRILL HOLE NO. DDH-40 START ______ COMPLETED ______ SHEET NO. 2 of 3 BY ______

ROCK TYPES & STRUCTURES

Massive bedded f. gr. graywacke, as above, faint bedding @ ~30°-35° to core.

MINERALIZATION AND ALTERATION

100.0-100.3 10 mm qtz-clay-asp:sph:cp:: 6:3:1 vn @ 45° to core.

122.3-122.5 5mm qtz-asp vn @ 50° to core.

135.6-135.8 1 to 2mm qtz-tourm py:cass::8:2 vn @ 35° to core.

154.5-154.8 6 to 7% diss sph:cp:asp::6:2:2 in silic. zone bordering vn desc. below

154.8-155.5 8-10mm qtz-fluorite-asp:py:sph:cass ::3:2:3:2 vn @ 18° to core.

168.4-168.6 8mm qtz-minor asp vn @ 70° to core

171.0-171.3 12mm qtz-fluorite clay-asp vn @ 15° to core.

174.4-175.6 4 to 15mm vuggy qtz-fluorite-cass: asp::6:4 vn @ 25° to core.

179.3-179.7 20mm qtz-minor asp+py vn @ 55° to core.

181.4-181.7 3mm qtz-fluorite-clay-cass:asp:: 6:4 vn @ 45° to core

182.7-183.0 2% cp+sph in qtz vn and diss. in silic. graywacke wall rock

192.0-192.3 2mm qtz-asp:po:cp::7:3:tr @ 43° to core

194.7-195.0 1 to 2mm qtz-asp vn @ 45° w/ tr. cass.

199.7-200.1 3mm qtz-clay-minor cass vn. @ 30° to core.

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
101.6	5.4	84		
107.2	5.2	93		
111.8	3.7	73		
113.2	1.1	58		
116.8	3.2	89		
120.5	3.3	89		
122.4	0.4	21		
123.4	0.4	40		
128.4	4.5	90		
131.0	2.4	92		
132.6	1.3	81		
136.4	3.6	95		
137.2	0.3	38		
141.7	3.5	78		
144.0	1.9	83		
146.4	1.8	75		
150.7	2.7	63		
152.9	1.4	64		
154.0	1.0	91		
159.0	4.7	94		
163.7	4.6	98		
164.8	1.1	100		
169.3	4.4	98		
173.7	4.4	100		
180.9	6.8	94		
185.9	4.9	98		
193.7	7.8	100		

NOT SAMPLED

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ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER
Massive bedded, f. gr. graywacke as above.		201.9	8.2	100		
	204.2-204.6 2-4mm qtz-sph:cp:po::4:4:2 vn @ 37° to core 206.3-206.6 15mm qtz vn @ 35° to core, tr. py 207.7-207.9 2mm qtz-asp vn @35° to core.	208.0	3.6	59		
210	211.0-211.3 3mm qtz tourm-asp:cass::9:1 vn @ 55° to core,	211.1	2.0	65		
		213.5	1.3	54		
	215.0-215.4 15mm qtz clay-cass:asp::6:4 vn @ 40° to core. 216.6-216.8 15mm qtz-asp:cass::10:tr vn @ 50° to core 217.0-217.3 20mm qtz-asp vn @ 40° to core 217.6-217.9 3 mm qtz-fluorite-asp:cass::8:2 vn @ 30° to core,					
220	218.3-220.5 3-4% diss asp in silica flood zone; minor dk. green clay	220.8	7.7	105		
		223.8	0.7	23		
		226.7	0.3	10		
230		229.3	1.6	62		
		231.0	1.3	76		
		233.3	1.1	33		
		235.9	1.7	65		
		237.4	1.1	73		
240	237.4 TD.					

NOT SAMPLED

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SCALE 1" = 10' COORD. N E SEC. T R STATE BEARING DIP COLLAR ELEV. DRILL HOLE NO. DDH-40 SHEET NO. 3 of 3 START COMPLETED BY

PROPERTY ______ SEC. 21 T 22S R 12W STATE NM DRILL HOLE NO. DDH-41 SHEET NO. 1 of 3
SCALE 1" = 10' COORD. N ______ E ______ BEARING ______ DIP ______ COLLAR ELEV ______ START 9/5/82 COMPLETED 9/6/82 BY ______

ROCK TYPES & STRUCTURES

0–10: Overburden - recovery of ~7.0 feet of exotic, glacially derived? boulders in dark greenish gray clay matrix

48.8–: Medium grained subequigranular biotite granite; granite is highly decomposed from 48.8 - 79.5 and much of it apparently washed away during drilling especially from 48.8 - 69.2

MINERALIZATION AND ALTERATION

HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
48.8						NO SAMPLE
69.2	1.4	7				
79.2	4.1	41				
83.1	3.3	85				
			10.0		260	1.4
92.8	7.1	73				
			10.0		29	2.0

DDH-41 1/3

PROPERTY
SCALE 1" = 10'
COORD. N — E
SEC 21 T 22 R 12W
BEARING
STATE AK
DIP -50
COLLAR ELEV.
DRILL HOLE NO. DDH 41
START
COMPLETED
SHEET NO. 2 of 3
BY

ROCK TYPES & STRUCTURES

Subequigranular medium grained biotite granite, as above.

110

120

130

131.3-170.2 Variable pervasive alteration has recrystallized granite, leaving eroded phenocrysts of all major constituents, w/~ 10-20% subaplitic groundmass

140

150

160

170

170.2-174.0 Med. gr. subequigran. biotite granite as above.

174.0-176.1 Recrystallized granite, as above.

176.1-215.1 Med. gr. subequigranular granite, as above

180

190

200

MINERALIZATION AND ALTERATION

139.8-140.2 1mm qtz-musc greisen vn. w/ 2 cm qtz-musc-chlor. altn on vn margin; vn @ 79° to core

140.8-145.9 6-hairline qtz-musc greisen vns, w/ 2-4mm qtz-musc-chlor altn on vn margins; vns @ 54°-68° to core.

149.7-152.1 2-1mm qtz-musc-chlor. vns @ 67° + 66° to core; 15mm qtz-musc-chlor. altn on vn margins.

160.7-165.5 3-1mm greisen vns (qtz-musc) @ 58°-65°; 1-5mm qtz-musc chlorite altn on margins.

171.0-172.7 2 hairline qtz-musc greisen vns @ 49° + 53° to core; 3mm qtz-musc-chlorite altn on margins

Hole Depth	Core Recovered	% Recovery
103.9	7.8	70
105.8	1.2	63
110.8	2.3	46
112.6	1.5	83
114.1	0.9	60
120.1	1.0	17
124.8	3.0	64
127.8	1.7	57
134.0	7.0	113
143.2	8.9	97
150.8	7.8	105
160.8	10.1	101
171.0	10.3	101
178.8	7.7	99
184.5	6.0	105
194.6	10.2	101

Interval	Number	Sn	Ag
10.0		44	2.0
20.0		350	1.9
10.0		280	1.1
10.0		355	0.7
10.0		385	0.6
10.0		200	0.6
10.0		165	0.9
10.0		125	0.8
10.0		320	0.7

DDH-41 2/3

ROCK TYPES & STRUCTURES	MINERALIZATION AND ALTERATION	HOLE DEPTH	CORE RECOVERED	% RECOVERY	INTERVAL	NUMBER	Sn	Ag
Medium grained, subequigranular biotite granite, as above.		204.9	10.1	98	10.0		245	1.2
		215.1	10.3	101	10.1		105	1.2
215.1 TD.								

PROPERTY ____ SCALE 1" = 10' COORD. N ____ E ____ SEC ____ T ____ R ____ STATE ____ BEARING ____ DIP -50 COLLAR ELEV ____ DRILL HOLE NO. DDH-41 START ____ COMPLETED ____ SHEET NO. 3 of 3 BY ____

DDH-41 3/3

COAL ANNUAL REPORT

1981

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TABLE OF CONTENTS (CON'T)

TABLE OF CONTENTS (CON'T)

TABLE OF CONTENTS (CON'T)

CONCLUSIONS AND RECOMMENDATIONS

Surface exposure of intrusive rock hosting tin mineralization in the prospect area is approximately 1700 feet by 600 feet. Bulk mineable ore grade intercepts are encountered within 175 feet of the surface and as deep as 700 feet below the surface. The mineralized zones are open in all directions at this time, with a size potential of greater than 40 million tons. Although the drill-indicated grade presently averages about 0.25 percent tin, actual values derived from subsequent bulk sampling of this particular type of tin deposit worldwide are known to average 30 percent to 70 percent higher than drill-indicated grade. Realization of this potential tonnage and grade would make the COAL prospect one of the best tin ore bodies in the world.

A core drilling program of 25 to 30 drill holes (19,000 feet) on a 200 foot grid is required to prove or disprove the existence of such an orebody. Additional drilling (3,000 feet) of several other untested intrusive targets in the immediate vicinity should proceed simultaneously, with success enhancing the total tonnage potential in the area.

INTRODUCTION

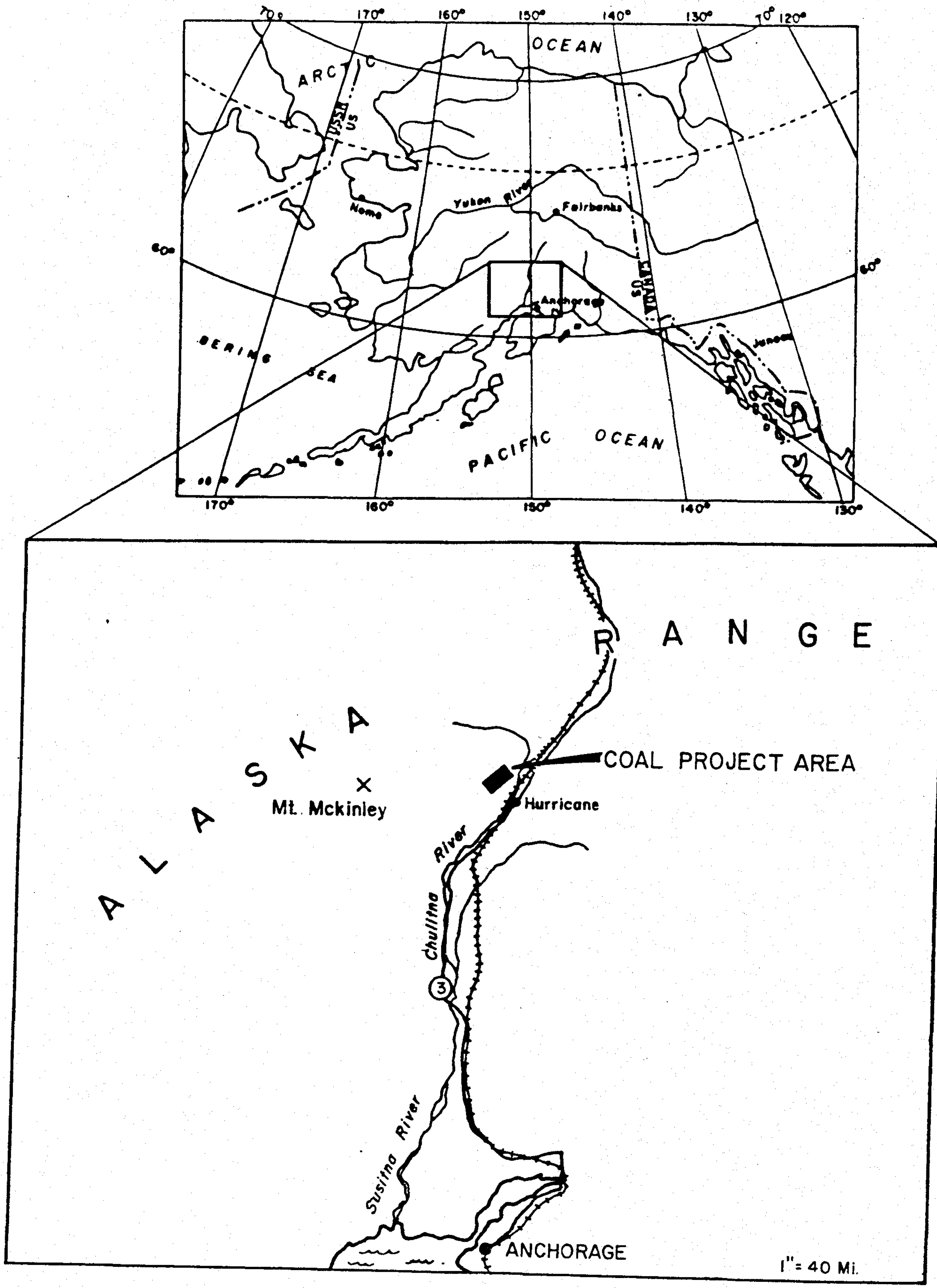
The COAL project is located 125 miles due north of Anchorage, Alaska, and five miles west of Hurricane rail station on the Parks Highway (see Figure 1). The property consists of 289 state mining claims of 40 acres each, encompassing a total of 11,560 acres. The work in 1981 was concentrated on and around granitic stocks hosting tin mineralization on the southern half of the claim block. For additional background information, the reader is referred to the COAL 1980 Annual Report.

PROSPECT AREA

Geology

Most new geologic data in the prospect area has been derived from the core drilling completed in 1981. DDH-10, DDH-12, and DDH-17 have shown that granite porphyry extends continuously under alluvium for about 1700 feet north-south and averages 600 feet in width (see Plate 2). A shallowly buried intrusion extending as much as 700 feet east of DDH-9 is strongly suggested by irregularly intruded masses of quartz aplite porphyry and near vertical subparallel mineralized veins. Four distinct phases of intrusive rock have been identified thus far in drill core. A detailed description of each type is given below, and photographs are to be found in Appendix I.

Granite Porphyry (Tgp): Seriate granite porphyry, with phenocrysts up to 8 mm in maximum dimension. Phenocrysts compose about 75% of rock volume, in the following proportions: quartz:25, K-feldspar:35, plagioclase:35, muscovite:4, biotite:1. The groundmass is very fine-grained, in the



COAL PROJECT AREA

GMC DATA REPORT 3 2 7

FIGURE I

following proportions: quartz:65, K-feldspar:20 and plagioclase:15. Sericitic alteration is very common, thus the muscovite content may range up to 20% at the expense of the feldspars. Quartz phenocrysts are euhedral to subhedral and 3 to 5 mm in diameter. K-feldspar is also euhedral to subhedral, and range from 1 to 8 mm in maximum dimension. Plagioclase is subhedral and 1 to 4 mm in diameter. All intrusive outcrop found in the prospect area is granite porphyry or a chilled aplitic border phase of the granite porphyry labeled Tqap (quartz aplite porphyry).

Quartz Porphyry (Tqp): medium-grained quartz-feldspar phenocrysts in an aphanitic groundmass. Phenocrysts compose 25% of the rock, in the following proportions: quartz:45, K-feldspar:34, plagioclase:18, muscovite:2, biotite:1. The groundmass is very fine-grained, in the following proportions: quartz:30, K-feldspar:40, and plagioclase:30. Quartz phenocrysts are subhedral and 1 to 3 mm in maximum diameter, K-feldspar is euhedral to subhedral and 1 to 3 mm in diameter, with an occasional twinned lath 5 to 6 mm in long dimension; plagioclase is subhedral and 1 to 3 mm in diameter. Biotite occurs as random plates about 1 mm in long dimension, while muscovite is disseminated and very fine-grained. Quartz porphyry has been identified in drill core from DDH-12, DDH-15, and DDH-17.

Aplite Porphyry (Tap): the appearance of aplite porphyry varies widely, with the variations probably due to deuteric alteration by a volatile-rich fluid phase that accompanied intrusion. Phenocrysts comprise from 20% to 30% of rock volume in the following proportions: quartz:50, K-feldspar: 30, and plagioclase:20. The groundmass is fine-grained, composed of quartz: 35, K-feldspar:25, and plagioclase:25 to 30, with accessory biotite: 1-2 and muscovite:2-5. Deuteric alteration has created patches of pegmatitic texture, especially near upper contacts, with very coarse quartz, feldspar, and muscovite from a few centimeters to about 30 cm maximum dimension as seen in drill core.

Biotite Granite (Tbg): fine to coarse grained biotite-bearing granite, with the following composition: quartz:35, K-feldspar:30, plagioclase: 30, biotite:2, muscovite:3. Texture is granular, with subhedral quartz and feldspars 2 to 4 mm in diameter, and with about 5 percent of the K-feldspars occurring as euhedral laths up to 6 mm in long dimension. Biotite occurs as subhedral books 1 to 2 mm in maximum dimensions. The biotite granite has been identified in DDH-12, and as fine-grained narrow dikes near the bottom of DDH-11 and DDH-16.

Relative age relationships between intrusive phases are consistent throughout the core. From oldest to youngest, the order of intrusion is granite porphyry, aplite porphyry, quartz porphyry, and biotite granite. Significant volumes of all phases except quartz porphyry are indicated by intercepts in 1981 drilling (see Plates 3A-D). Granite porphyry averages about 400 feet thick beneath the central part of the main intrusive outcrop in DDH-11, DDH-12, DDH-15, and DDH-16; aplite porphyry is greater than 190 feet thick in DDH-15, and biotite granite is greater than 80 feet thick at the bottom of DDH-12. Quartz porphyry may exist in narrow dikes and as remnants along the upper surface of intrusion of the biotite granite.

Although whole rock analyses of the various phases have not been completed, Table 1 shows whole rock analyses of granite porphyry completed on the least altered intervals of DDH-1 in the spring of 1981. The high silica and low CaO and MgO indicate a very highly differentiated granite, geochemically most closely resembling tin granites in Czechoslovakia,

Table 1: Whole rock analyses of 1980 drill core. All samples are granite porphyry from DDH-1. All values in percent.

Interval	30'-40'	130'-140'	150'-160'	220'-230
SiO_2	74.7	75.5	74.9	73.9
Al_2O_3	13.6	13.7	13.8	13.4
Fe_2O_3	2.06	1.95	2.14	3.08
TiO_2	.02	.01	.01	.02
MgO	.04	.03	.03	.04
MnO	.08	.06	.10	.13
Na_2O	2.97	2.98	2.83	.87
K_2O	4.30	4.54	4.50	4.30
CaO	.47	.40	.50	.50
P_2O_5	.06	.07	.06	.06

Tasmania, and the Seward Peninsula - eastern Siberia province of Alaska and Russia (Taylor, 1979, p. 90-91). Thin section studies indicate low Ca content (generally less than 10 percent) of plagioclases from all phases, suggesting that all phases are very similar geochemically.

Alteration

Alteration is systematically zoned about hairline to one cm. wide near-vertical fractures that served as conduits for hydrothermal fluids and mineralization, progressing outward from silicification, through quartz-sericite and sericite alteration to fresh intrusive. The thickness of each successive zone generally increases with depth, thus the silicified margins of the strongest veins at the surface are less than one mm. wide, at about 250 feet below the surface silicified margins are one to four cm in width (DDH-11), and at 600 feet below the surface, silicification is four to seven cm wide (DDH-12). A progressive replacement of K-feldspar phenocrysts by fine-grained sericite can occasionally be observed in core specimens, which are in turn replaced by quartz and/or tourmaline and finally by sulfides nearer the mineralized fracture (see Figures S-X, Appendix I).

Silicification is characterized by complete replacement of feldspar phenocrysts and the feldspar component of the groundmass by anhedral quartz 0.01 to 0.05 mm in diameter. Quartz phenocrysts are still recognizable, but are eroded along the crystal boundaries. Occasional isolated grains of fluorite and topaz are seen in thin section.

Quartz-sericite alteration is characterized by complete destruction of feldspar phenocrysts and replacement by quartz and sericite, with recrystallization and replacement of the feldspar component of the groundmass by quartz and sericite.

Sericitic alteration is widespread in the granite porphyry, and consists of partial replacement of feldspar phenocrysts by fine-grained sericite. Minor patches of chloritic alteration are seen in DDH-10, and consist of partial replacement of feldspar phenocrysts and the feldspar component of the groundmass by dark green, magnesium-rich chlorite. This weak alteration suggests that DDH-10 is very high in or peripheral to the hydrothermal system.

Mineralization

Mineralization consists of fracture fillings and disseminations of sulfides, cassiterite, and minor wolframite in a quartz gangue with subordinate tourmaline, fluorite, and topaz (see Figures V-Z, Appendix I). Major sulfide phases are sphalerite and arsenopyrite, with subordinate pyrite, chalcopyrite, pyrrhotite, and minor stannite. Cassiterite occurs as microscopic grains to very coarse crystals, varying from nearly black in color and translucent to flesh-colored and opaque in hand specimen. Total sulfide content of the mineralizing system is low, rarely exceeding 5 percent of the total rock volume for any 10 foot interval of core.

Mineralization is directly related to near vertical fractures one cm or less in thickness trending roughly east-west across the intrusive and outward into metasediments east of DDH-9 (see Plate 2). Each strike and dip shown on the map is an average of at least five measurements of individual fractures on the outcrop. Figure 2, a poles-to-planes lower hemisphere projection of all outcropping mineralized veins, illustrates this predominant near vertical east-west trend.

The distribution of sulfides and cassiterite is confined almost entirely to fracture fillings and disseminations replacing original feldspar phenocrysts within the silicified zone bordering the fractures. Polished and thin section studies by Billiton Exploration (unpub. rept., 1981) and the HIMCO staff show cassiterite as zoned crystals greater than 1 mm to less than 0.1 mm in maximum dimension, often surrounded and partially replaced by sphalerite; in other cases cassiterite is fractured, with vein quartz and arsenopyrite deposited in the fractures (see Figures Y and Z, Appendix I). On the basis of available evidence, the paragenesis of these minerals seems to be early cassiterite with later arsenopyrite and sphalerite. Quartz was probably being deposited throughout the mineralizing event. Very minor stannite usually occurs with sphalerite, either as exsolution blebs or as embayed grains.

Ore grade mineralization has been intersected within 175 feet of the surface in DDH-1 and DDH-11 and as deep as 700 feet below the surface in

MINERALIZED VEINS IN SURFACE OUTCROPS

POLES TO PLANES LOWER HEMISPHERE PROJECTION

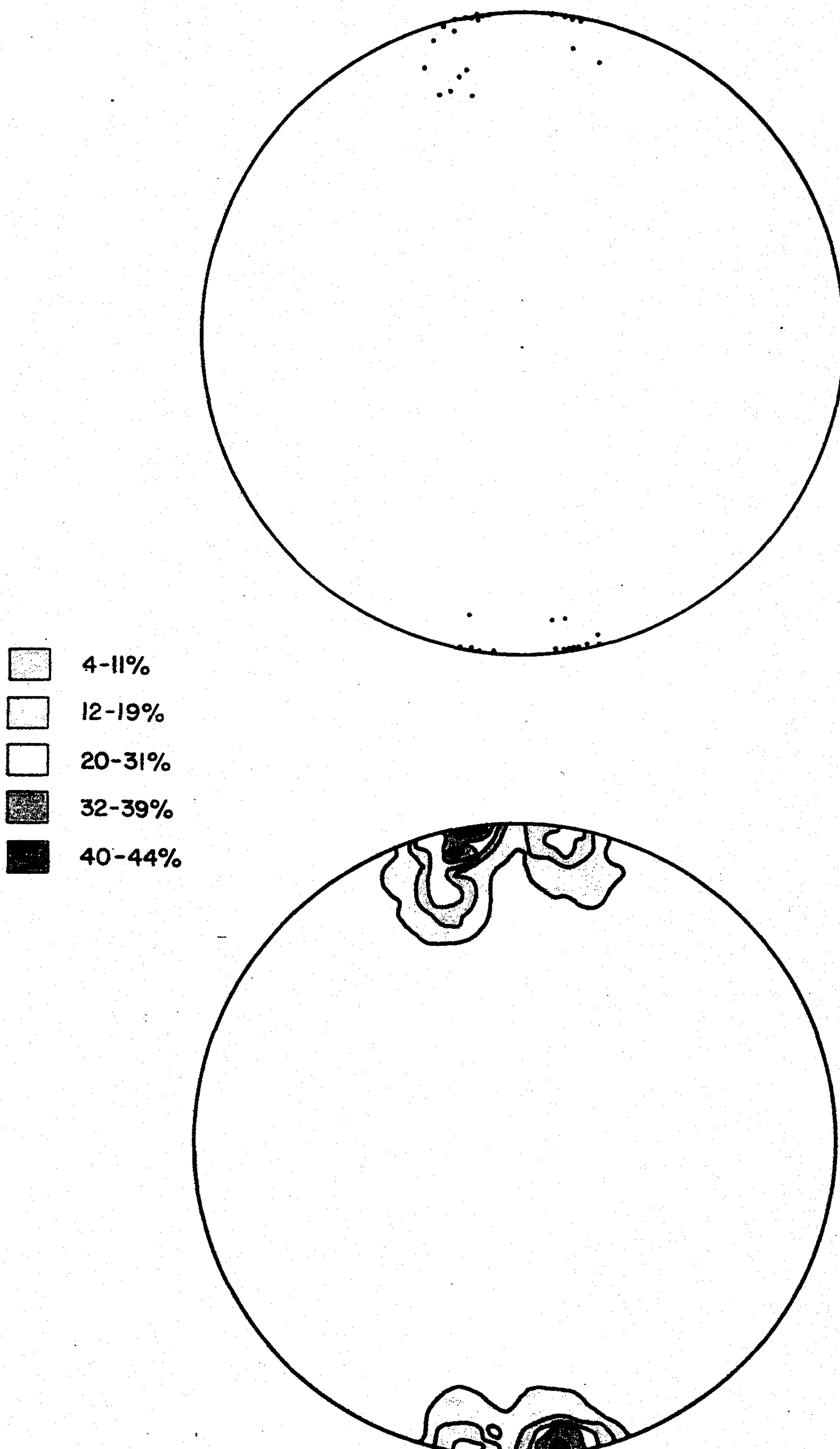


FIGURE-2

DDH-12, with ore grade intercepts occurring in all igneous phases encountered to date. Thin section work has shown that the lowermost and youngest phase, the biotite granite, is essentially unaltered a short distance away from mineralized fractures, where as the other three phases show widespread sericitic alteration of variable intensity. This evidence suggests the biotite granite is the last phase, and no additional phases are to be found immediately beneath the drill intercept of biotite granite in DDH-12. For this reason, our working hypothesis on the genesis of the mineralization is: 1. biotite-granite melt intruded earlier phases rather passively, with the outer shell cooling first, surrounding still molten core; 2. as cooling of the core progressed, volatiles, sulfide phases, and metals were concentrated, collecting beneath the solidified outer shell; 3. structural readjustment caused vertical east-west fracturing, tapping the reservoir of trapped volatiles and allowing upward and outward migration of silica-rich magmatic fluids; 4. deposition of sulfide, silicate, and oxide phases from these fluids in and around fractures occurred in response to declining temperature and pressure.

Drill Results

Table 2 lists the ore grade intercepts drilled in 1981, with weighted average grade for tin, silver and tungsten. Although results are not yet available, a tantalum credit is also anticipated. Other metal values in the intercepts shown are low, averaging 250 ppm for copper, 2300 ppm for zinc, and 0.002 ounces per ton for gold. Ore grade mineralization encountered in drilling is open in all directions at this time. Drill logs and assay records for all drill holes can be found in Appendix II and III, respectively.

Table 2. Composites of ore grade intercepts, 1981 core drilling

Drill Hole		Interval	Footage	Weighted Average Sn	Ag	W
DDH-11		202.0-317.0	115.0	0.211%	6.4 ppm	.010%
		356.0-377.0	21.0	0.410%	11.7 ppm	.010%
	or	202.0-377.0	175.0	0.201%	7.2 ppm	.010%
DDH-12		740.0-810.0	70.0	0.188%	2.6 ppm	.015%
DDH-15		300.0-540.0	240.0	0.294%	7.3 ppm	.012%
DDH-16		540.0-620.0	80.0	0.317%	10.9 ppm	---
		710.0-750.0	40.0	0.208%	4.5 ppm	---
DDH-17		260.0-360.0	100.0	0.183%	4.5 ppm	.005%

Although the drill-indicated grade presently averages about 0.25 percent tin, actual values derived from subsequent bulk sampling of this particular type of tin deposit worldwide are known to average 30 to 70 percent higher than drill indicated grade. This is presumably due to the brittleness of cassiterite and its susceptibility to loss during coring and sampling of core (DeVere, pers. comm., 1981). Size potential for the prospect, given the intrusive outcrop size of 1700 feet by 600 feet and a vertical range of greater than 500 feet, exceeds 40 million tons.

These grades and tonnages compare very favorably with tin deposits worldwide. Table 3 shows reserves as given by Taylor (1979, p. 244-245) for the only three deposits of comparable size and grade known to exist.

Table 3: Reserves of Tin Deposits Geologically Similar to the COAL Prospect (after Taylor, 1979).

Name of Deposit	Approximate Tonnage X 10^6	Grade
Hub (Erzgebirge, Czech.)	30-40	0.30% Sn
Catari-Salvadora Stock (Bolivia)	100-1000	0.20-0.50?
San Pablo Stock Oruro (Bolivia)	100-1000	0.20-0.50?

ADDITIONAL PROSPECTS

Potential for intrusive hosted tin mineralization similar to that found in the prospect area exists in four other locations on the COAL claim group (see Plate 1). These areas are discussed separately below.

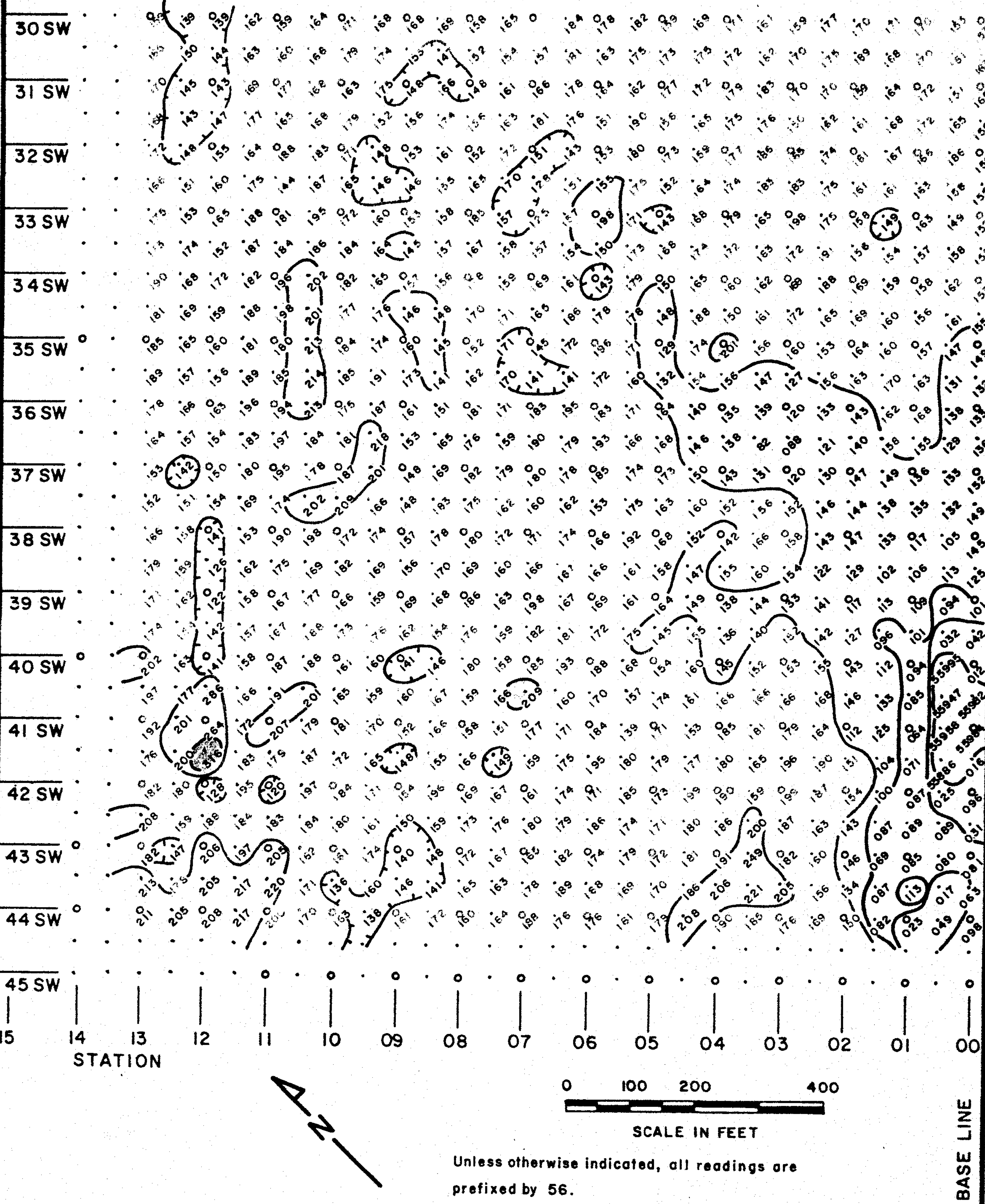
1. Outcropping subequigranular granite (Tgr) is centralized within a soil geochemical anomaly of up to 600 ppm tin (see Figures 4A-B) about 2,000 feet northeast of the prospect area. Although DDH-13 intersected tin-anomalous granite its entire depth of 196 feet, no indication of hydrothermal mineralization was noted in the core. Trace element geochemistry is underway to help determine the relationship of this intrusive to intrusive phases intersected in drilling in the prospect area. If these results suggest that a mineralized phase may be present, a drill hole will be required to test this possibility.

2. The "bench area" lies from 600 to 3,500 feet west and south of the prospect area, and is composed of mixed metasedimentary and mineralized granite porphyry float. Closely spaced soil sampling produced excellent tin and zinc soil anomalies (see Figures 3A-C), but subsequent drilling (DDH-18) was lost in alluvium at a depth of 47 feet without penetrating bedrock. A magnetometer survey failed to show a distinctive "low" indicating an intrusive, but this is inconclusive considering thick overburden and a fluctuation of only 25 gammas crossing an exposed sediment/granite contact in the prospect area. Several shallow drill holes are required to determine the potential of this area.

3. Irregular pods and dikes of quartz aplite porphyry outcropping in an area of high relief just north and east of the prospect area, in addition

to anomalous tin soil geochemistry (29 to 38 ppm), indicate the possible presence of a shallowly buried intrusive. One or two drill holes are required to test for mineralization in this location.

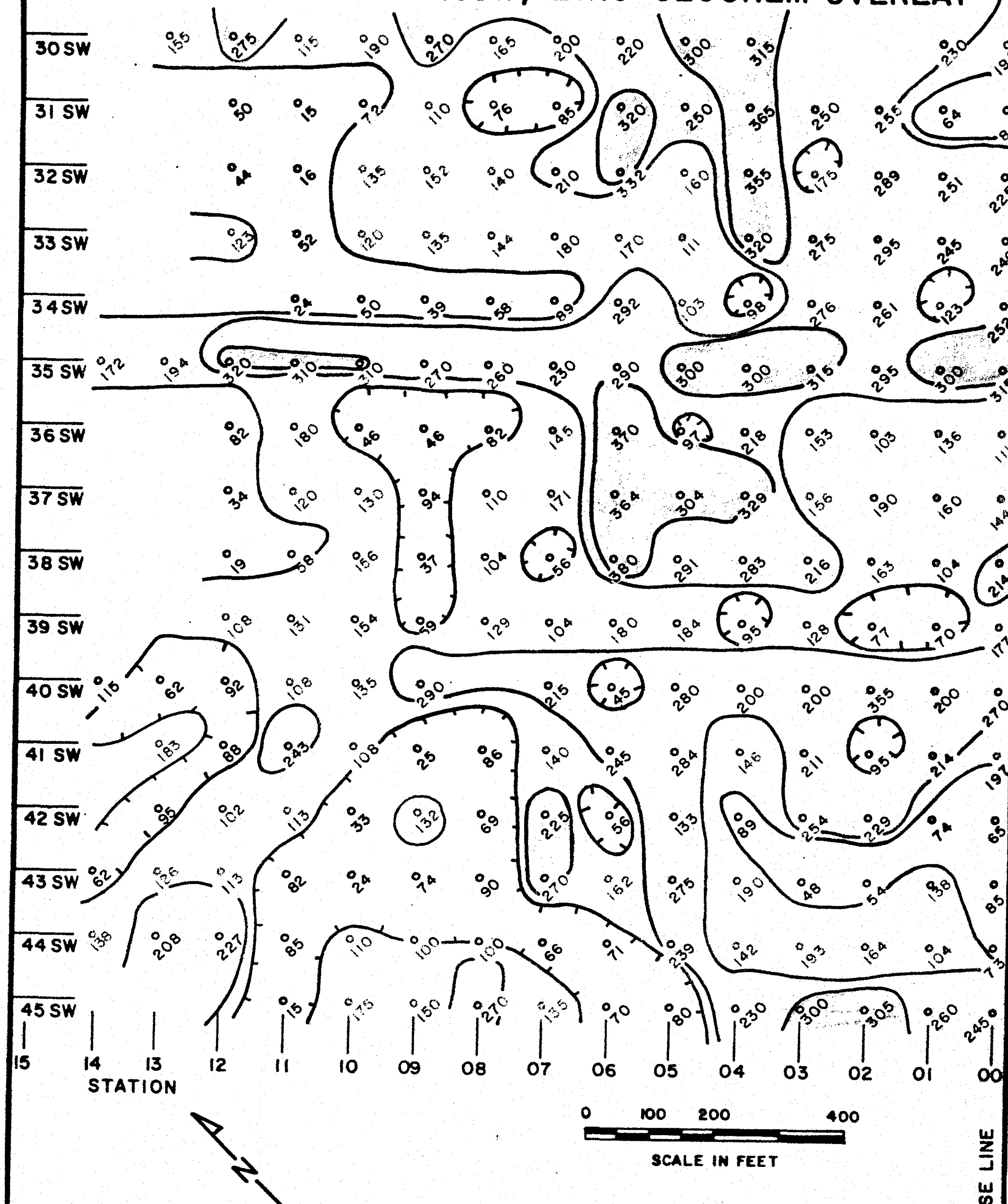
BENCH AREA — GROUND MAGNETIC SURVEY



Unless otherwise indicated, all readings are prefixed by 56.
Readings are in gammas.

FIGURE 3A

SOIL LINES L30SW-45SW, ZINC GEOCHEM OVERLAY



Values in parts per million.

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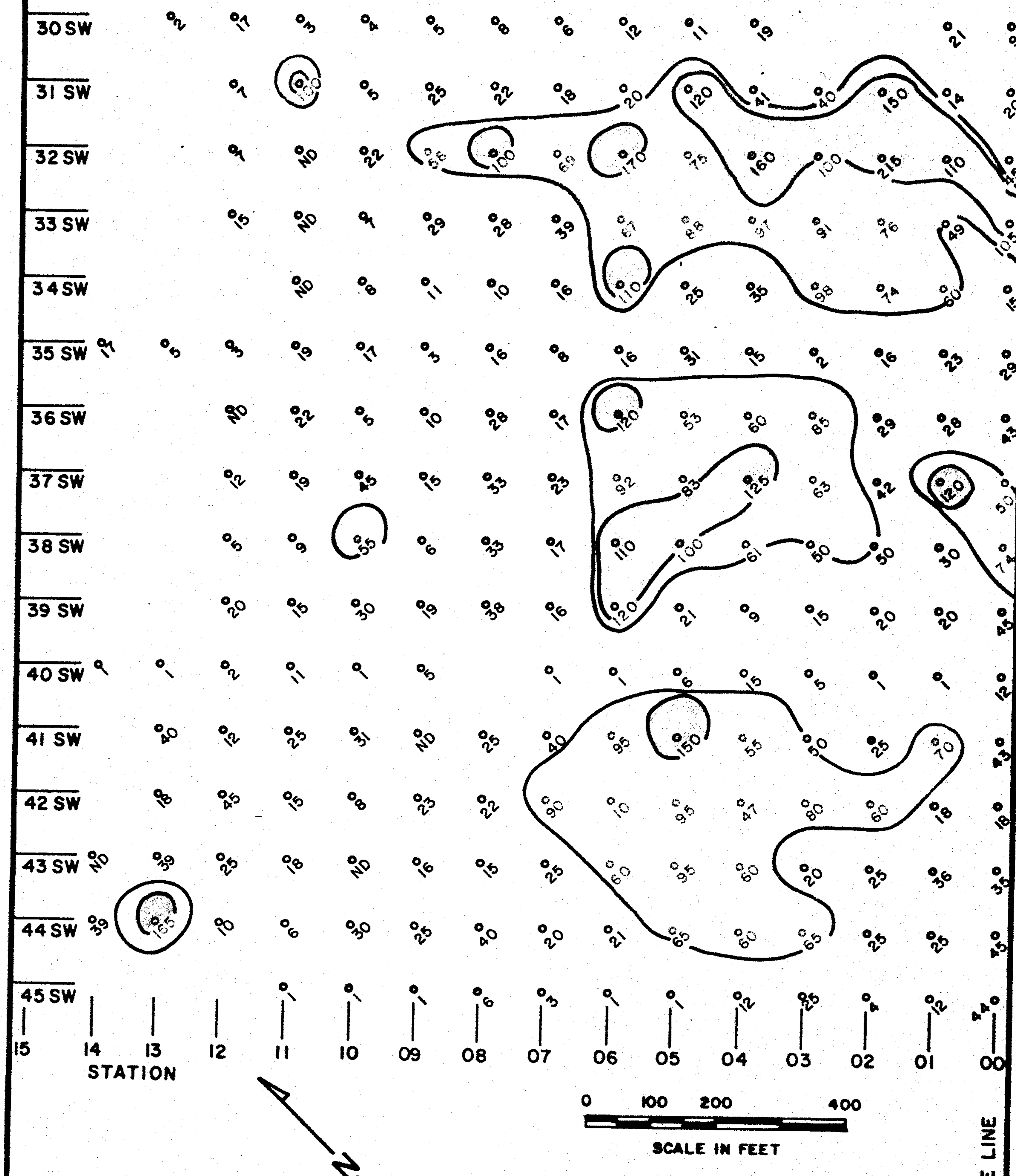
FIGURE 3B

SOIL LINES L30SW-45SW, TIN GEOCHEM OVERLAY



Values in parts per million.

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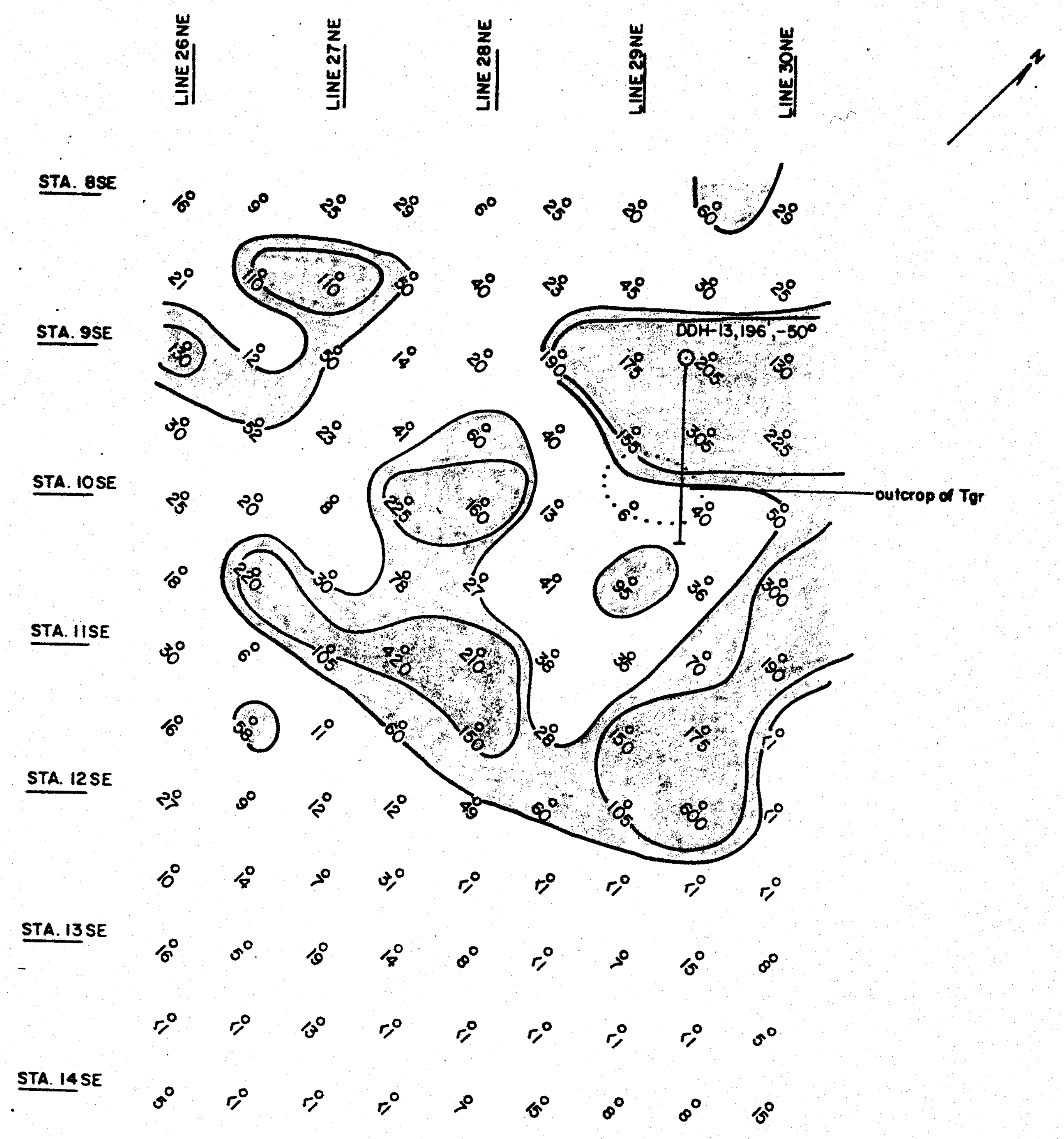
FIGURE 3C



EXPLANATION

0–50 ppm

50–100 ppm

>100 ppm

FIG. 4A

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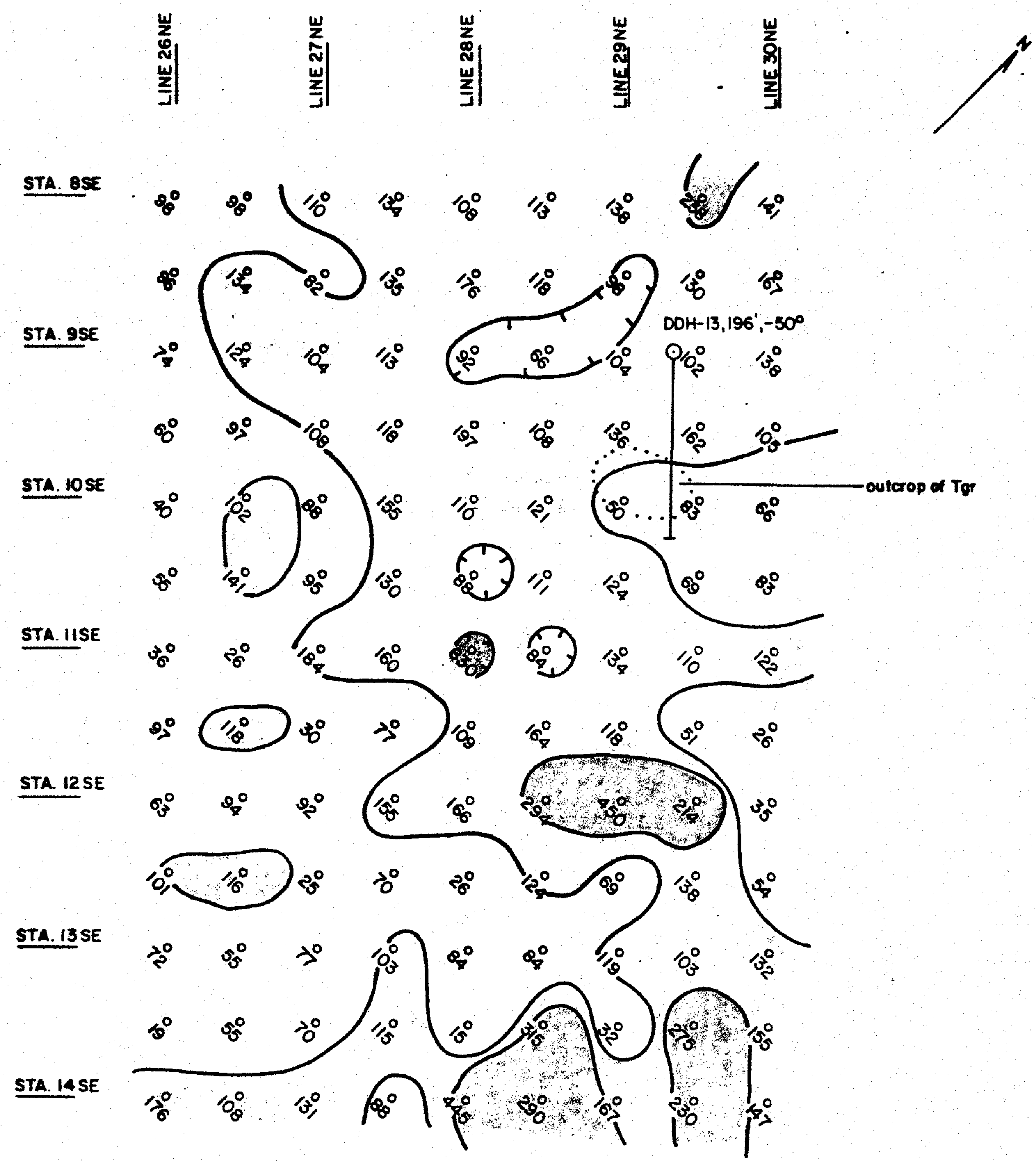
100 50 0 100 200

SCALE IN FEET

COAL PROJECT
AREA NEAR DDH-13
TIN SOIL GEOCHEMISTRY

COMPILED: G. Thurow, 8/81
DRAFTED: M. Rust, 2/82
SCALE: 1" = 100'
DATE: 2/8/82



EXPLANATION

0-100 ppm

100-200 ppm

>200 ppm

FIG.-4B

COAL PROJECT
AREA NEAR DDH-13
ZINC SOIL GEOCHEMISTRY

COMPILED: G. Thurow, 8/81
DRAFTED: M. Rust, 2/82
SCALE: 1" = 100'
DATE: 2/8/82

100 50 0 100 200
SCALE IN FEET

REFERENCE CITED

Taylor, R. G., 1979, Geology of Tin Deposits, Elsevier Scientific Publishing Company, N.Y., N.Y., pp. 241-254.

COAL EXTENSION

ANNUAL REPORT

1981

CONCLUSIONS AND RECOMMENDATIONS

Reconnaissance mapping and sampling indicate low potential for the Talkeetna Mountains and Cantwell areas covered in 1981. The Canyon Creek, Partin Creek, and Long Creek prospects have limited near-surface precious metal potential, in addition to deeper tin granite potential at Canyon Creek and Long Creek. In each case, tonnage potential is low to moderate, and indicated precious metal grade from surface sampling is marginal. Because of the probable size and grade limitations, these prospects would be of interest only if a mineable deposit were proven at COAL and the mill life could be lengthened by handling additional precious metal ores.

Projected assessment work overruns at COAL in 1982 should make it possible to hold all COAL EXTENSION claims, including those covering the Long Creek prospect, through 1986, with no additonal required expenditures. This is deemed a wise move for both geological and political reasons. Because of the limited potential, it is unlikely that exploration will be undertaken by a competitor on either the Partin Creek or Canyon Creek prospects; therefore any decision regarding additional work should be delayed pending results at COAL in 1982.

INTRODUCTION

The COAL EXTENSION area of interest extends approximately 60 miles east, four miles west and 30 miles north of the COAL area. Each of the several areas examined in detail and on a reconnaissance basis within the area of interest are discussed separately below. For additional background information the reader is referred to the 1980 Annual Report.

LONG CLAIM BLOCK

Summary

Extensive detailed geologic mapping and geochemical sampling along the trend of EM conductors delineated in a 1980 airborne survey failed to locate any new significant mineral occurrences. The conductors appear to coincide, without exception, with carbonaceous shale and argillite stratigraphic units, some of which contain graphitic zones due to shearing. Because of the negative results of the 1981 sampling, no further work is recommended.

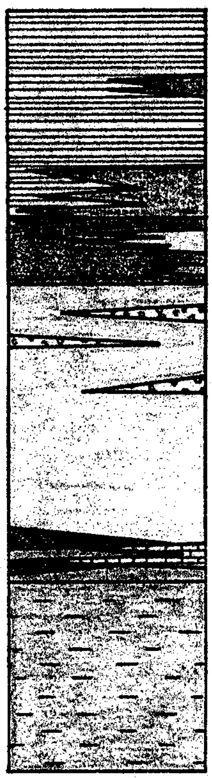
Introduction

The LONG claim block consists of 346 state claims and adjoins the COAL/GUN claim block on its northeast corner. A program consisting of detailed geologic mapping and soil, rock, and stream sediment/pan concentrate sampling initiated to follow up airborne EM and magnetic anomalies generated in 1980 was completed in about four weeks.

Geology

The sedimentary rock package exposed on the LONG claims represents basin margin deposition of clastic sediments as turbidites and fans grading seaward into carbonaceous shales and deep water cherts (see Plate 4A-C and Figure 6). Subsequent to deposition, major deformation, possibly associated with Jurassic mountain building in the Alaska Range to the northwest, resulted in open to near-isoclinal folding of the strata, with wavelengths on the order of one mile and amplitudes perhaps greater than one mile. These major folds are commonly sheared out on one limb, especially in interbedded

?



?

Medium-bedded to massive chert, light tan or buff-colored, with subordinate interbedded cherty argillite becoming more prominent near lower contact.

Carbonaceous shale with subordinate interbedded chert and cherty argillite; siltstone and graywacke in some areas; disseminated pyrrhotite and pyrite up to 5 percent common.

Interbedded graywacke, siltstone and shale, with lenses of chert or chert/argillite pebble conglomerate; local graded bedding.

Gray medium-grained limestone, fossiliferous in part, occasionally accompanied by carbonaceous argillite.

Dark gray massive argillite, commonly, somewhat slaty, with occasional wispy siltstone lamellae; this unit has been recognized only on the COAL claims east of the prospect area.

Units are not necessarily drawn to scale.

COAL/COAL EXTENSION

GENERALIZED STRATIGRAPHIC COLUMN

FIG.-6

sequences of variable composition. Late Cretaceous to early Tertiary plutonism resulted in emplacement of andesitic to rhyolitic dikes and small quartz diorite to granite stocks.

Sampling Results

The results of the sampling program, shown on Plates 4A-C, are generally negative. Two pan concentrate samples in Sec. 36, T.20S., R.11W., show anomalous gold which is believed to be related to small quartz-sulfide veins reported near the head of the drainages from which the samples were taken. One rock chip sample high graded from a one inch wide shear zone in Sec. 1, T.21S., R.11W. is interesting but not economically important. No significant tin values were reported.

LONG CREEK

Summary

Two potential ore targets are present at Long Creek. Silver-gold mineralization of economic grade and tonnage may be present at shallow depth (less than 300 feet) in a 100 foot wide northeast trending structural zone. In addition, tin mineralization may be present at depth associated with a granite stock from which the quartz feldspar porphyry dikes emanated. By comparison with the system at the prospect area, it appears likely that if a tin ore zone is present it would be at a depth of at least several hundred feet below the present erosion level. Both targets could be evaluated from a single drill pad located at station 00 on line 2 N by drilling one angle hole to the southeast and one vertical hole.

Introduction

At Long Creek, anomalous silver values were found in a rock chip sample taken during reconnaissance mapping. To determine the type and extent of mineralization the area was mapped at 1"=50' and soil samples were taken every 50' over a 500' X 500' area. The land in this area is currently controlled by the HIMCO-Billiton joint venture as part of the Coal Extension.

Geology

Bedrock consists of thinly-bedded black argillite with a 100 foot thick interbed of chert pebble conglomerate (see Plates 5A-C). Bedding strikes northeast and dips steeply to the southeast. Several small dikes of quartz-feldspar porphyry have been emplaced along structures subparallel to bedding.

The intrusive dikes are composed of small quartz and K-feldspar phenocrysts in a finely crystalline to aphanitic groundmass. Intense pervasive silicification of the dikes is accompanied by local areas of weak to moderate sericitization. The degree of silicification roughly correlates with the amount of pyrite present which ranges from 2 to 5 percent and occurs as tiny disseminated grains and in quartz veins. Tin and silver concentrations, up to 96 and 37 ppm respectively, are anomalous in all of the intrusive rocks.

Mineralization is also present as quartz-sulfide veins in northeast trending faults and shear zones in the sediments. One 5 foot chip sample across bedding in quartz-veined argillite near the dikes contained 21.8 oz/ton silver. A 15 foot chip sample across a shear zone in chert pebble conglomerate yielded 4.5 oz/ton silver.

The mineralization in this area is probably the top of a hydrothermal system associated with the emplacement of a granitic plug. The mineralization and composition of the dikes at Long Creek are similar to those in the outer zones of the hydrothermal system now being drilled at the prospect area.

CANYON CREEK (READY CASH)

Summary

Mineralization at the Ready Cash prospect consists of disseminated to massive sulfides of exhalative origin and quartz-sulfide veins probably associated with a buried intrusive. The exhalative mineralization is predominantly pyrrhotite. Although the massive sulfide bodies are anomalous in copper, zinc, lead, gold and silver, none approach ore grade. Vein type mineralization is characterized by bull quartz, arsenopyrite, chalcopyrite, pyrrhotite, and galena filling shear zones and open fractures. These zones contain significant concentrations of gold (up to 2.4 ppm), silver (up to 8.3 oz/ton), and tin (up to 0.18 percent). The veins found during the 1981 field season are too small to be of economic importance. However, completion of the mapping and sampling may lead to the discovery of more continuous veins.

Canyon Creek may also be underlain by a tin-bearing granite stock similar to the Ohio Creek stock 2.5 miles to the northwest. To help evaluate this possibility, a detailed investigation of all intrusive rocks in the area should be made. This work should include whole rock analysis, petrographic investigation, and expansion of the map area to determine if any large alteration patterns are evident.

Introduction

Canyon Creek is located approximately eleven miles north of the prospect area. Eleven patented claims covering the core of the area are held by Hughes Mining Co., Twin Bridges, Montana; adjacent ground is held as unpatented claims by Chulitna Mining Corp., Anchorage, Alaska. Due to bad weather near the end of the summer, only about a quarter of the prospect was evaluated.

Geology

Bedrock at Canyon Creek consists of Triassic basalt, limestone, argillite, graywacke, and silica-rich exhalite (see Plate 6). In the southern part of the mapped area, these have been intruded by a single rhyolite porphyry dike. The silica exhalite is interbedded with and gradational into the argillite. In the central part of the area the basalt has been altered to serpentine.

Mineralization

Sulfide mineralization is widespread at Canyon Creek, and can be separated into stratabound and vein type occurrences. Stratabound mineralization consists predominantly of pyrrhotite with traces of arsenopyrite and chalcopyrite. These occur as finely disseminated grains and bands in all of the sedimentary and volcanic units. In addition, zones of massive sulfide up to 20 feet wide and 50 feet long are present in the silica exhalite, argillite, and basalt. In the areas of disseminated sulfide, geochemical values are uniformly low for all metals analyzed. Values are somewhat higher in the massive sulfide zones with anomalous copper, gold and silver. However, these values are still well below ore grade.

Vein type mineralization consists of bull quartz veins and mineralized shear zones which locally contain pyrrhotite, arsenopyrite, chalcopyrite, and galena. These zones are normally 4 to 20 feet wide and up to 100 feet in length. All of the high tin analyses and most of the high gold and silver values are from these vein type occurrences. Tin ranges from 400 to 1800 ppm accompanied by up to 2.4 ppm gold and 8.3 oz/ton silver.

It is likely that the vein type mineralization is part of an epithermal vein system overlying an intrusive plug. Two possible sources of mineralization are suggested by this theory. One is that the source of the metals was the sulfide-bearing sedimentary and volcanic rocks and that the intrusive only served as a heat pump for convection of meteoric water which scavenged metals out of the sediments and deposited them in the shear zones. The second possibility is that part of the hydrothermal fluid and some or most of the metals were derived directly from the intrusive. At Canyon Creek both processes may have occurred. The following evidence suggests a dual model.

1. Canyon Creek lies within a belt of Triassic rocks known to contain volcanogenic copper, zinc, lead, gold, and silver mineralization. The Partin Creek occurrence lies in the belt six miles to the southwest.

2. The exposed massive sulfide pods contain sufficiently high concentrations of copper, lead, zinc, gold and silver to have been the source for these metals in the veins.

3. At the Partin Creek occurrence, tin values are very low.

4. Tin values are very low in the volcanogenic mineralization except when quartz veins are present.

5. Tin-bearing greisen is present in the granite stock at Ohio Creek 2.5 miles northwest of the Ready Cash claims.

I suggest that a tin-bearing granite plug may have been emplaced below Canyon Creek and that the rhyolite porphyry outcrop represents high level diking from this plug. Heat from the plug set up convection cells which scavenged metals from the volcanogenic sulfide horizons and deposited them in the veins and shear zones. In addition, hydrothermal fluids migrating upward from the cooling margin carried tin and possibly additional base metals into the vein system. If this is indeed the case then a tin-bearing greisen and/or vein system similar to that at the prospect area may exist at depth. If present, such a tin ore zone would be at too great a depth for open pit mining. However, most of the Canyon Creek prospect is 1,000 feet above valley level, and it might be possible to drift in from Ohio Creek and block cave such an ore body.

PARTIN CREEK

Summary

Stratiform sulfide mineralization of exhalative origin is present in a sequence of graywackes, volcaniclastics, argillites, and limestones. Anomalous copper, silver, and gold values are present in some units, with one graywacke-argillite bed containing between 2 and 10 ppm gold over a strike length of approximately 500 feet.

This gold mineralization is significant enough to warrant further field investigation in the area. Several more samples should be taken across the gold-bearing horizon to get a better idea of average grade. In addition, a detailed examination of the gold-bearing zones should be made

to determine if any characteristics are present that would help in recognizing other such zones in the field. Mapping and sampling should be expanded to the north and west along the strike of the sulfide-bearing units. A regional reconnaissance of the belt of Triassic rocks containing the Partin Creek prospect is also recommended. Sulfide-bearing sediments are visible along strike for several miles in each direction from Partin Creek, and other zones of mineralization may be present.

Introduction

The Partin Creek prospect is located approximately six miles northwest of the prospect area on the east side of Partin Creek. Mineralized rock crops out on several narrow ridges separated by snow fields and talus slopes. Elevations range from 4,500 to 6,000 feet. The terrain is very steep with many slopes in excess of 70°. Ropes will be required to complete the mapping. Mapping planned for the 1981 field season was approximately one-half completed when heavy snowfall made the area inaccessible.

Geology

The Partin Creek prospect is located within the same belt of Triassic sedimentary and volcanic rocks as the Ready Cash prospect. At Partin Creek, this unit includes graywackes, volcaniclastics, diabase, massive sulfide, limestone, argillite, cherty dolomite, chert, and black shale (see Plates 7A-B). These have been intruded by small plugs and dikes of granodiorite and dikes of quartz-latite porphyry.

The sedimentary-volcanic package strikes north-northeast and dips 35° to 65° to the northwest. Interbedding and lateral gradation is common between the graywacke, volcaniclastics, argillites, and limestones. The chert and cherty dolomite units may be wholly or partly chemical precip- itates of exhalative origin.

Numerous dikes, plugs, and sills of medium-grained, biotite granodiorite are scattered throughout the mapped area. In addition, two widely spaced dikes or sills of finely-crystalline quartz latite porphyry are present. The emplacement of the intrusive was passive, and had relatively little effect on the sediments or stratiform mineralization. Weak hornfelsing of the argillite adjacent to the granodiorite contact and minor remobilization of sulfides into faults and fractures were the only effects evident in the field.

Mineralization

At the Partin Creek prospect, mineralization is characterized by disseminated to massive stratiform sulfides. These sulfides are generally accompanied by several percent silica and occasionally by carbonates. Pyrrhotite is the predominant sulfide with minor amounts of chalcopyrite and arsenopyrite present at some locations. Disseminated sulfide content of the sediments commonly reaches 10% or more. In addition, sulfide and/or silica sulfide bands and stringers are common in several units. The origin of the mineralization is believed to be syngenetic chemical precipitation on the sea floor with a volcanogenic exhalative source for the metals.

Rock chip samples were taken at 31 locations and analyzed for copper, zinc, lead, tin, silver and gold. Lead and zinc values are uniformly low over the entire area. A low level (14-42 ppm) tin anomaly is present in a sulfide rich zone of mixed volcaniclastics and graywacke. There is a positive correlation between the copper, silver, and gold values. The maximum copper and silver values encountered are 9900 ppm and 38 ppm respectively. Although anomalous, these are too low to be considered of economic importance. Gold values are highly anomalous in two horizons. The volcaniclastic-graywacke units beneath the massive sulfide contained 1.4 ppm Au in a 40 foot chip sample across the bed. A pyrrhotite-arsenopyrite vein cutting through this unit contained 9.6 ppm gold in a 5 foot chip sample. Two samples taken 300 feet apart from what is inferred to be the same sulfide-rich argillite-graywacke bed contained 10 ppm and 2.3 ppm gold. This bed is exposed for approximately 500 feet along strike and is 5 to 8 feet thick.

It is apparent, therefore, that the highest potential for economic mineralization at Partin Creek is in the gold-bearing stratiform horizons. These need to be studied in detail and their lateral extent more clearly defined.

OHIO CREEK

Summary

The Ohio Creek stock is a complex multi-phase granitic pluton probably differentiated from a single magma source. This magma contained a high background concentration of tin now reflected by a low level tin anomaly across the entire stock. During cooling of the later phases, volatiles including tin, boron and fluorine collected in small restricted zones near the roof of the pluton. If any sizeable areas of greisen ever developed within the boundaries of the exposed part of the stock they have now been eroded off by the Ohio Creek Glacier. The greatest potential for ore grade mineralization is beneath the sediments to the northwest of the

stock. For over 1,000 feet in this direction the Cretaceous argillite is highly anomalous in fluorine (up to 1.6 percent) and tin (18-32 ppm).

No additional work is recommended at the Ohio Creek stock at this time because of land status. However, if a change in the McKinley Park boundary opens this area for exploration, most of sections 7, 8, 17 and 18, T.20S., R.12W. should be staked. If this occurs the stock should be remapped, dividing out as many phases as possible, and emphasis should be placed on determining the relationship between the mineralization and each of the phases. In addition, mapping should be extended to the northwest with special attention placed on locating areas of alteration in the sediments.

Introduction

The Ohio Creek prospect is located approximately 12 miles north of the prospect area and 2.5 miles northwest of the Ready Cash prospect. A granite porphyry stock with zones of greisen mineralization crops out on both sides of the Ohio Creek glacier. The topography is characterized by steep talus covered slopes cut by deep stream canyons. Elevations range from 2700 to 5000 feet. This property is currently within the boundaries of the Mt. McKinley National Park. The stock and surrounding sediments were mapped at 1"= 100' and 61 rock chip samples were analyzed for copper, zinc, silver, gold, tin and fluorine.

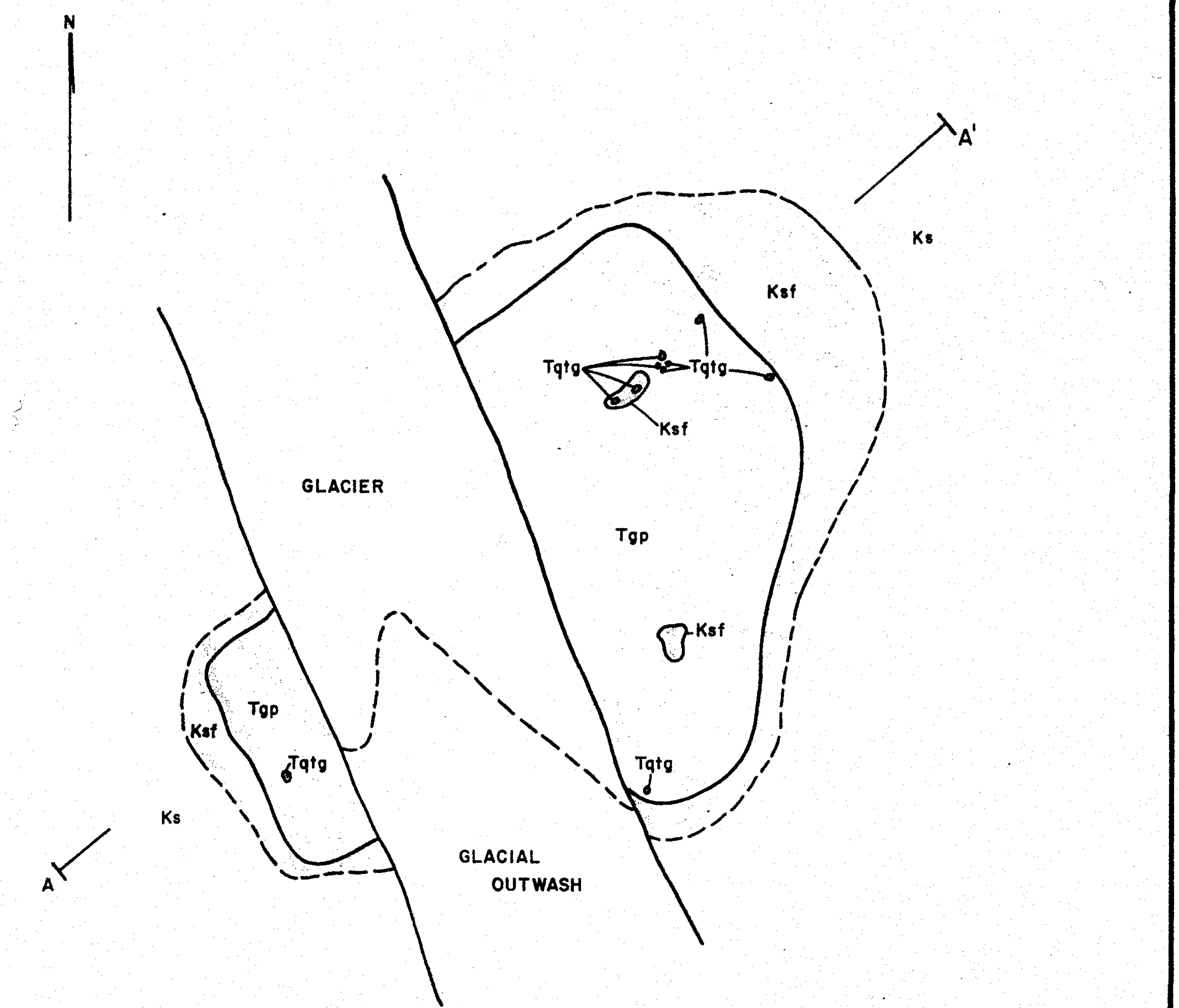
Geology

Bedrock is composed of Cretaceous argillites, graywackes and minor conglomerates which have been intruded by a multi-phase Tertiary granitic stock (see Figures 7A-B). The sediments generally strike north northeastly and have steep dips. Near the contact with the stock, strong biotite hornfels is developed in the argillite and graywacke. Outward from the contact, biotite decreases and an erratic zone of feldspar hornfels can be distinguished. Visible indications of mineralization in the sediments are generally absent except adjacent to the stock where a few quartz veins are present.

The Ohio Creek stock is composed of at least five separate phases of granite and granite porphyry. There is a biotite granite, a garnet-bearing muscovite granite, a tourmaline granite, and at least two additional phases of muscovite-bearing granite. During field mapping only the biotite granite and a few areas of tourmaline granite were mapped separately. Numerous small dikes of aplite, biotite granite, and muscovite granite intrude the sediments near the contacts of the stock. Greisen mineralization appears to be related to those phases of the stock containing primary tourmaline. However, additional mapping and sampling would be necessary to verify this hypothesis. Textures in all intrusive types except the garnet-bearing granite range from equigranular to porphyritic. The garnet-bearing granite is finely-crystalline and equigranular with tiny, pink garnets which are probably spessartine in composition.

Mineralization and Alteration

Mineralization consists of small isolated greisen pods and a few scattered quartz-sulfide veins. Greisen zones characteristically contain coarse muscovite, quartz, and tourmaline plus or minus fluorite, arsenopyrite, chalcopyrite, pyrite, sphalerite, and cassiterite. The largest of the greisen zones is 20 to 30 feet in diameter. Seven of the ten pods of



Tqtg Greisen: quartz-tourmaline-muscovite ± sulfides and cassiterite.

Tgp Granite: muscovite bearing granite and granite porphyry with minor garnet, biotite and tourmaline bearing phases.

Ksf Hornfels: Cretaceous argillite and graywacke altered to biotite and/or feldspar hornfels.

Ks Sediments: Cretaceous argillite, graywacke and conglomerate.

FIGURE 7A

COAL PROJECT
OHIO CREEK
STOCK GEOLOGY

COMPILED: G. Thurow, 11/81
DRAFTED: M. Rust, 12/81
Scale: 1" = 1000'   Date: 12/14/81

1000 500 0 1000 2000
SCALE IN FEET

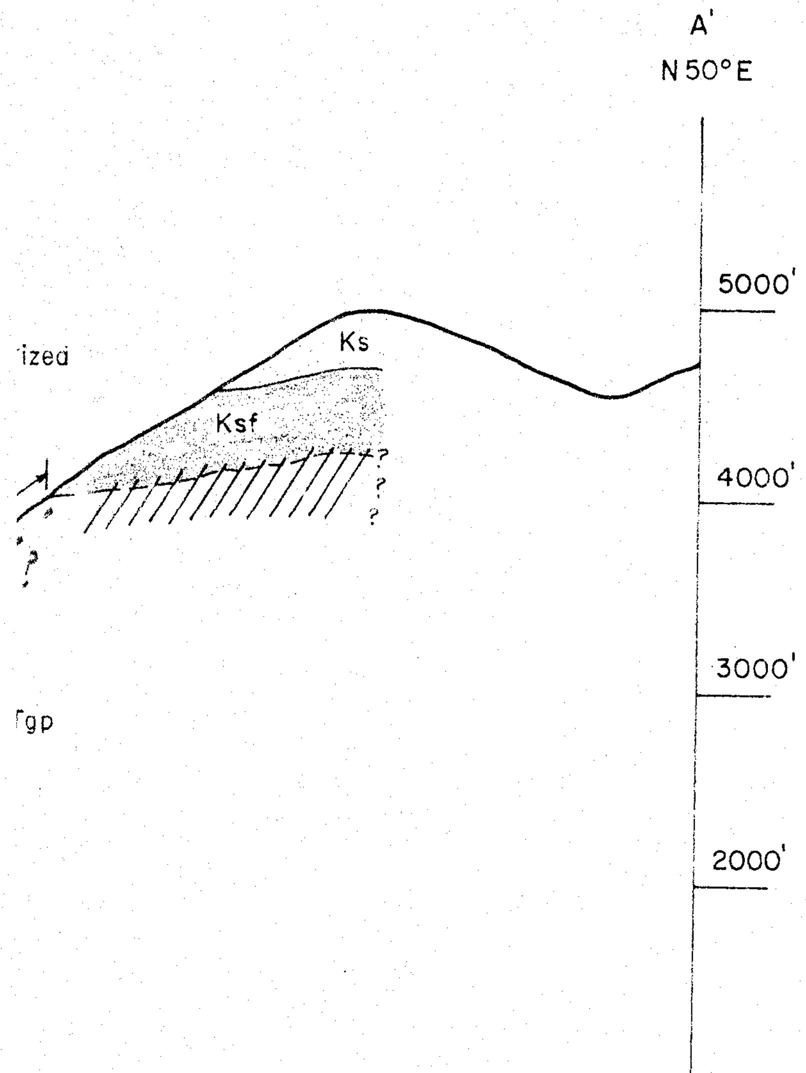


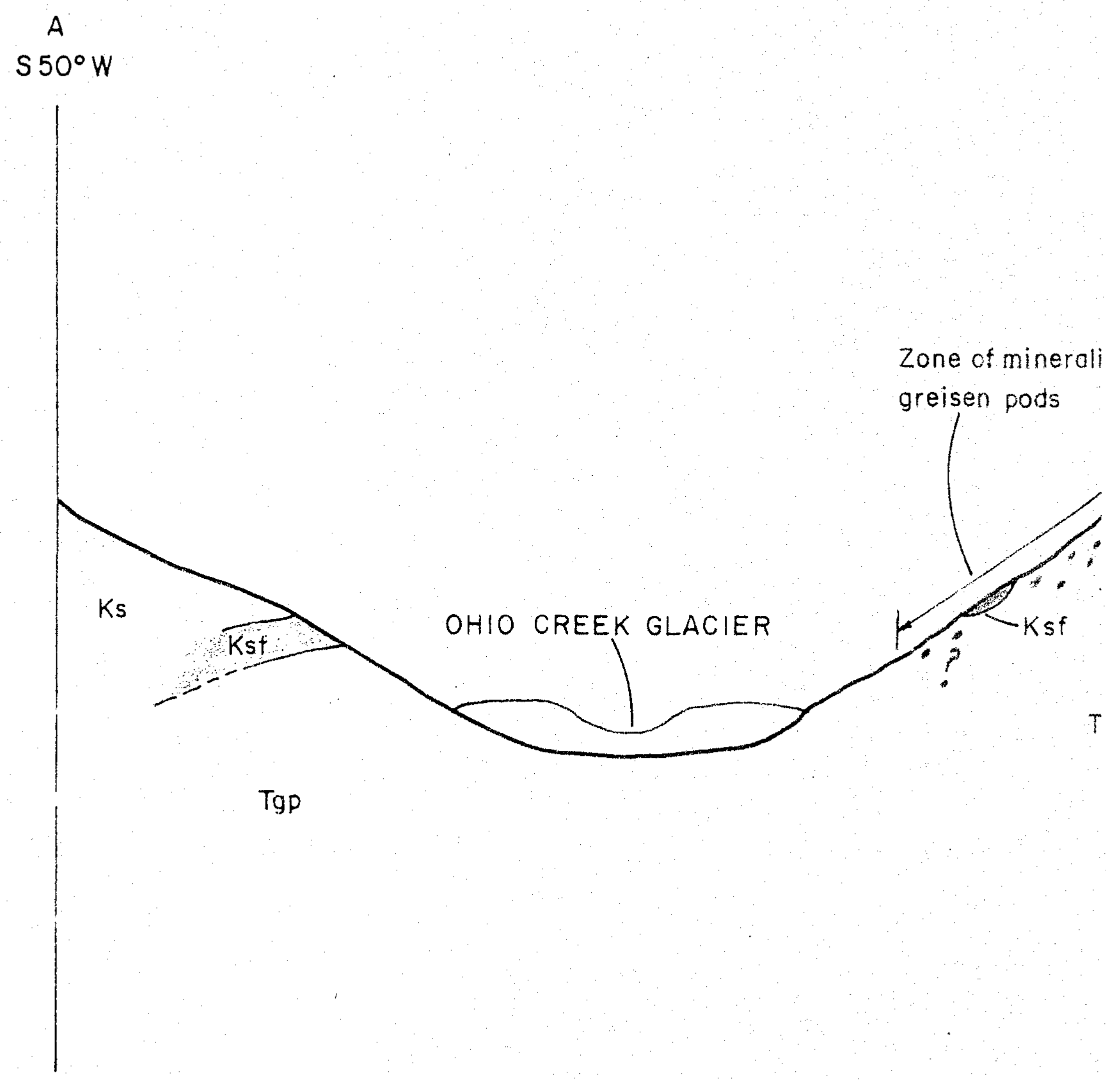
FIGURE 7B

COAL PROJECT

OHIO CREEK

CROSS SECTION, A-A'

COMPILED: G. Thurow, 11/81
DRAFTED: M. Rust, 12/81
Scale 1"=1000'
Date 12/14/81



Tqtg Greisen: quartz-tourmaline-muscovite ± sulfides and cassiterite.

Tgp Granite: muscovite bearing granite and granite porphyry with minor garnet, biotite and tourmaline bearing phases.

Ksf Hornfeis: Cretaceous argillite and graywacke altered to biotite and/or feldspar hornfels.

Ks Sediments: Cretaceous argillite, graywacke and conglomerate.

Area of greatest potential for economic tin mineralization.

1000 500 0 1000 2000

SCALE IN FEET

greisen mapped form a northeast trending zone 1,000 feet long and 200 feet wide. Tin grades within these pods range from 36 to 20000 ppm with an average of 0.37 percent. The other greisen zones at Ohio Creek contain between 62 and 90 ppm tin.

Quartz-tourmaline veins are scattered throughout the stock. These are generally barren, although arsenopyrite, sphalerite, chalcopyrite, and pyrrhotite were noted at a few locations. One high grade sample from an arsenopyrite-rich vein contained 20000 ppm tin. However, it should be noted that the volume of rock represented by this sample is extremely small.

Overall hydrothermal alteration of the stock is weak. Clay alteration of the feldspars is widespread with local zones of sericite and silica-sericite present near some of the greisen pods. There are no significant alteration envelopes surrounding the quartz-tourmaline-sulfide veins.

TALKEETNA MOUNTAINS

Summary

Most of the results from the Talkeetna Mountains Recon were negative. The geochemical anomalies obtained by the U.S.G.S. were not confirmed by this study. In areas where the U.S.G.S. obtained concentrates with greater than 1000 ppm tin, most of the HIMCO samples contained none and all contained less than 20 ppm. The cause of the discrepancy between values reported by the U.S.G.S. and those obtained by HIMCO is unknown.

Introduction

The area of the reconnaissance is in the western Talkeetna Mountains north and west of Indian River and south of Honolulu Creek. The objective of the study was to investigate an area of anomalous tin values in stream sediment pan concentrates outlined by a U.S.G.S. study. A similar area of tin anomalies just south and west of Indian Creek was not examined because of its inclusion within Denali State Park.

Geology

Bedrock consists of Triassic and Cretaceous sediments which have been intruded by a Tertiary granitic batholith (see Plate 8). Sedimentary rocks are mostly argillite, graywacke, and arkosic sandstone accompanied by subordinate chert and conglomerate. The main intrusion phase is a biotite-bearing granite porphyry which contains xenoliths of biotite-rich granodiorite and finely crystalline biotite aplite. Near the contacts with sediments the biotite granite is cut by numerous barren quartz veins, siliceous finely-crystalline aplite dikes, and quartz-K feldspar pegmatites, all of which occasionally extend into the surrounding sediments.

Mineralization and Alteration

During this study only a few areas of mineralization were delineated. In Secs. 17, 20 and 29, T.22S., R.9W. there are a few areas of silicification and pyritization in the argillite adjacent to some biotite granite dikes. An area of clay-sericite alteration is associated with a finely crystalline felsic phase of the batholith in Sec. 4, T.22S., R.10W. One rock chip sample from this area was anomalous in tin and fluorine and one pan concentrate contained 11 ppm silver. Two diamond drill holes of unknown depth are present. In Sections 14 and 15, T.22S., R.10W. small areas of clay and clay-sericite alteration are cut by a few quartz and quartz-pyrite veins. A rock chip sample from the mostly intensely altered of these areas contained 75 ppm tin and 8 ppm silver.

CANTWELL AREA

In the Reindeer Hills area east of Cantwell, a regional tin reconnaissance program was conducted using pan concentrates of stream sediment samples as the primary exploration tool (see Plate 9). This program was undertaken because bedrock in the Reindeer Hills consists of the same Paleozoic units that are present at the prospect area and are intruded by a Tertiary biotite-bearing granitic stock. Sampling in this area was not completed due to lack of time at the end of the field season.

Results from this recon are mostly negative. Only one pan concentrate contained more than 10 ppm tin and none of the samples were anomalous in any other metals. The area to the north and west of sample 995644 (33 ppm tin) was not examined at all during this study and a brief follow up survey should be made to determine the source of this tin anomaly.

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Geochemical Lab Report

FROM: Houston International Minerals Corp. REPORT NUMBER: 122-0735

PROJECT: NOT LISTED DATE: May 26, 1982

Rare Earth elements done by Neutron Activation

SAMPLE NUMBERS	La ppm	Nd ppm	Sm ppm	Ce ppm	Lu ppm	Eu ppm	Yb ppm	Tb ppm
8100529 - 531 apl. porph	14	25	12	66	1	L 1	11	2
8100540 - 542 apl porph	14	25	13	52	1	L 1	9	3
8100549 - 552 apl porph	2	15	4	16	L 1	L 1	2	1
8100554 - 556 gran. porph	6	15	4	16	L 1	L 1	L 1	L 1
8100557 - 558 gran porph.	6	5	3	16	L 1	L 1	1	1
8100561 - 564 ?	7	25	3	16	L 1	L 1	L 1	L 1
8100566 - 568 ?	7	10	3	18	L 1	L 1	1	L 1
8100797 - 800 apl. porph.	8	20	6	30	L 1	L 1	3	1
8101443 - 447 gran. porph	5	L 5	4	20	L 1	L 1	L 1	1
8101463 - 467 gran. porph.	6	15	4	20	L 1	L 1	1	1
8117606 - 610 gran. porph	6	20	4	20	L 1	L 1	1	L 1
8117674 apl. porph	13	15	9	48	1	L 1	7	2
8117675 - 677 qtz porph.	12	30	9	44	1	L 1	7	1
8117678 - 680 biot. gran.	14	25	12	54	1	L 1	8	2
8117685 - 688 biot gran.	15	20	12	60	1	L 1	9	2
8117690 - 693 ?	13	25	10	50	1	L 1	8	2
8117697 - 700 ?	13	20	8	46	1	L 1	8	2
8117811 Tqap	8	15	9	26	L 1	L 1	5	2
8117812 - 813 Seds	16	10	4	30	L 1	1	2	L 1
8117894 - 895 Tqap	8	25	5	20	L 1	L 1	1	1

L denotes 'less than'

GMC DATA REPORT 327

FOR METHOD, EXTRACTION AND FRACTION USED – SEE ATTACHED

BONDAR-CLEGG & COMPANY LTD.

130 PEMBERTON AVENUE, NORTH VANCOUVER, B.C. (604) 985-0681 TLX: 04-352667

Geochemical Lab Report PAGE 1A

FROM: Houston Oil & Minerals Exploration REPORT NUMBER: 122 - 0735

PROJECT: NOT LISTED DATE: May 26, 1982

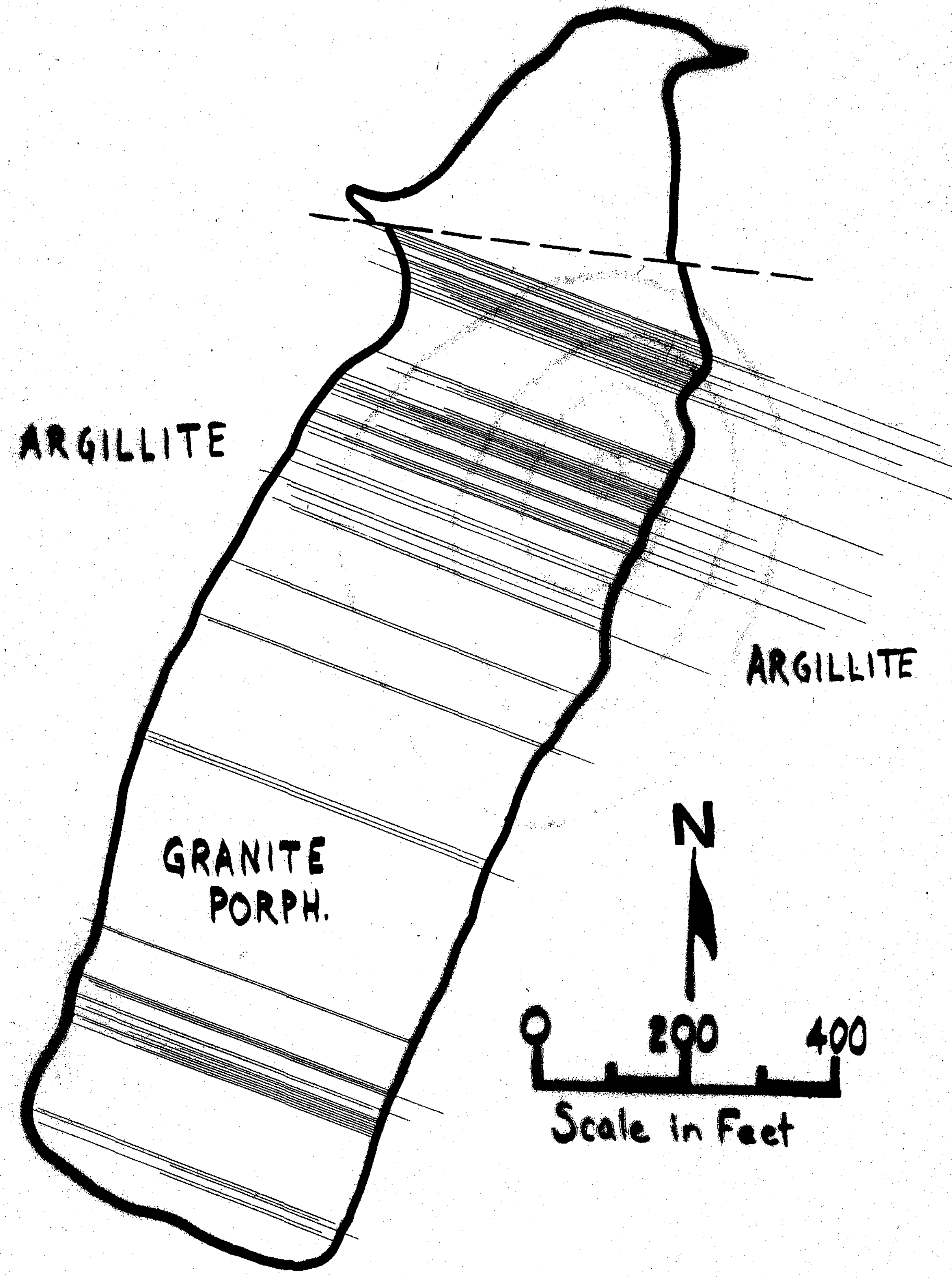
SAMPLE NUMBERS	* Y ppm	* Rb ppm						
8100529 - 531	115	755						
8100540 - 542	125	725						
8100549 - 552	19	245						
8100554 - 556	7	275						
8100557 - 558	7	255						
8100561 - 564	L 5	240						
8100566 - 568	6	240						
8100797 - 800	38	380						
8101443 - 447	25	460						
8101463 - 467	14	305						
8117606 - 610	10	220						
8117674	84	545						
8117675 - 677	88	395						
8117678 - 680	110	720						
8117685 - 688	125	790						
8117690 - 693	105	680						
8117697 - 700	92	600						
8117811	64	190						
8117812 - 813	6	95						
8117894 - 895	27	390						

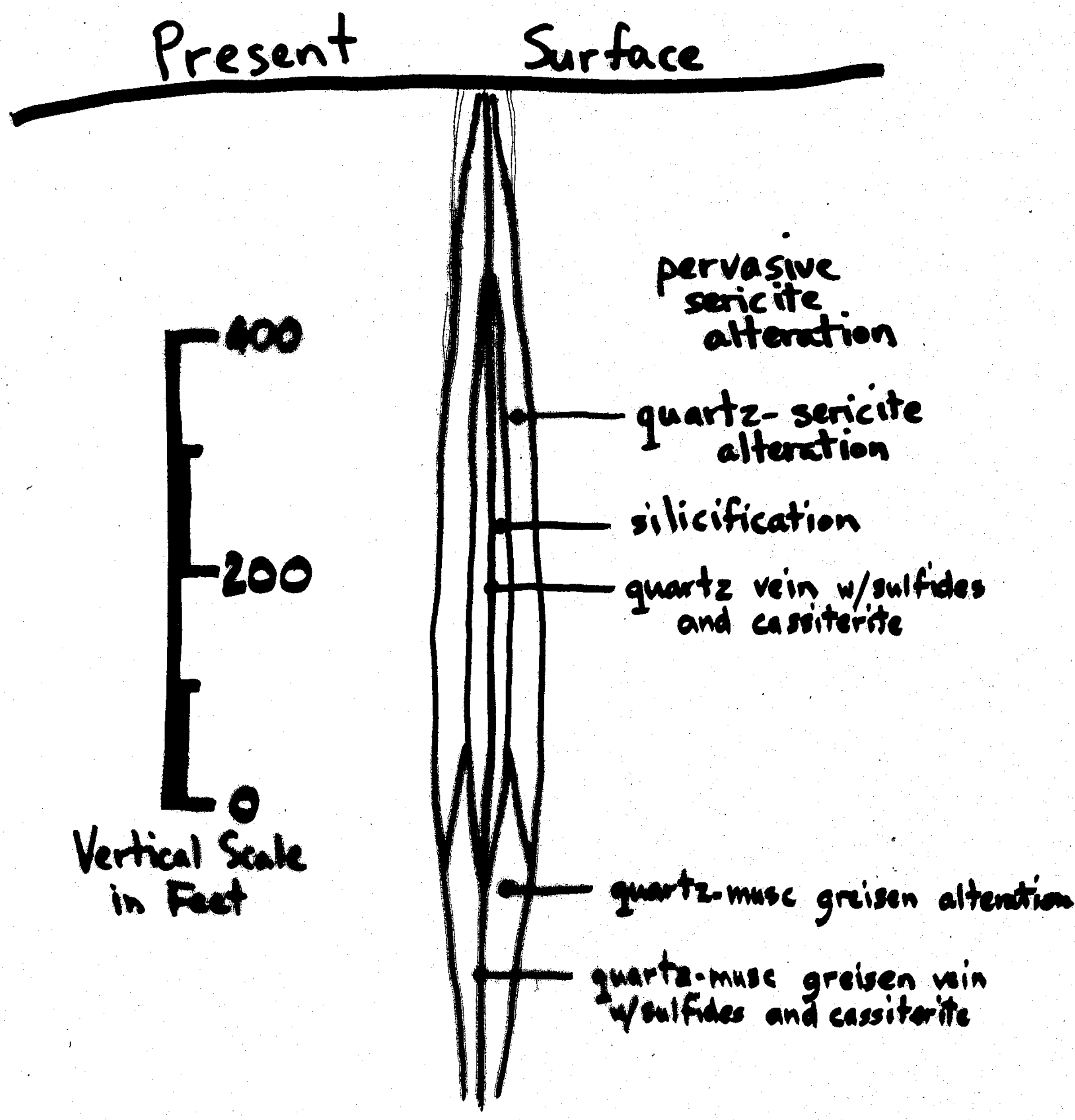
* No Charge for these two elements

L denotes 'less than'

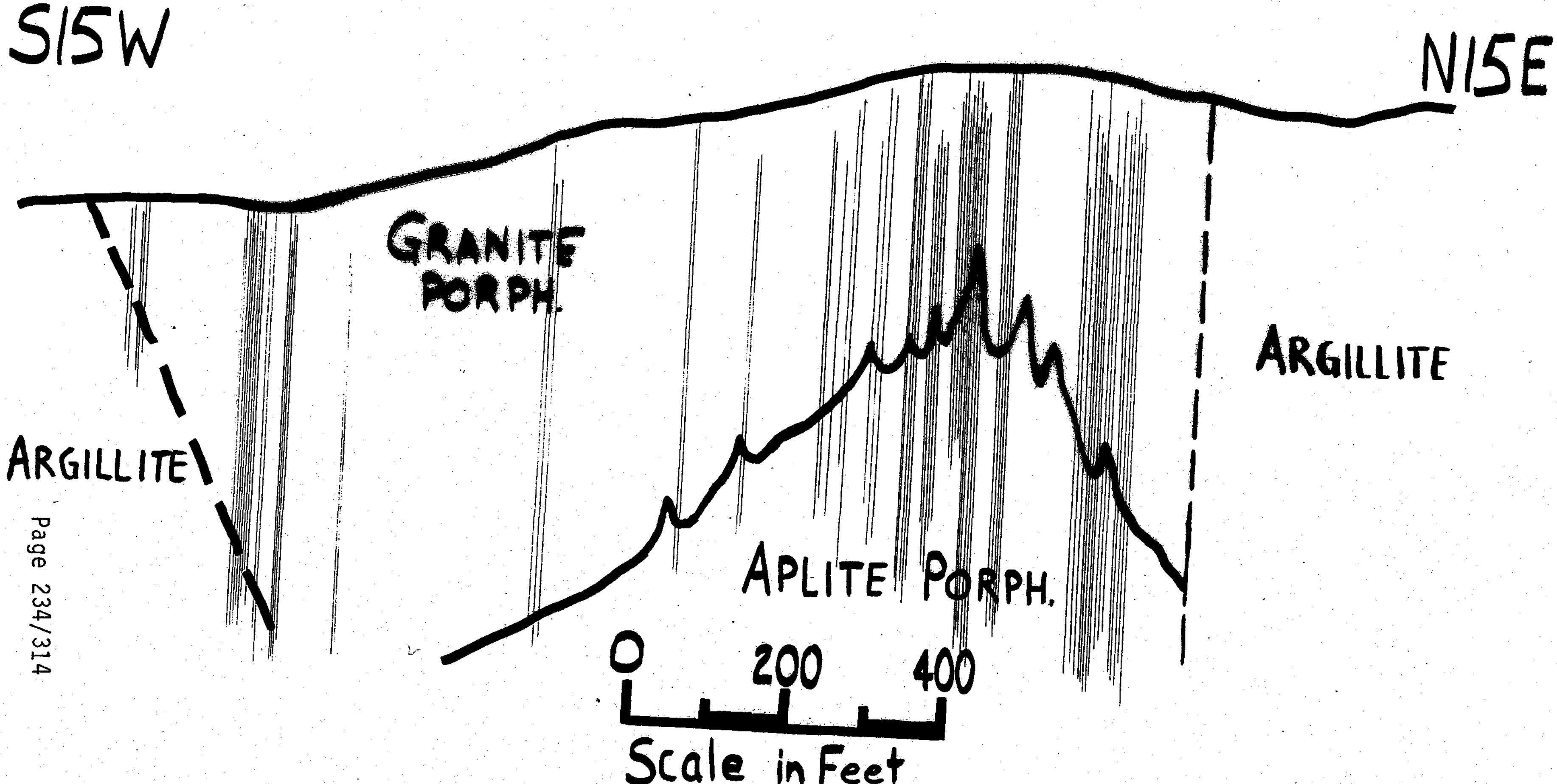
GMC DATA REPORT 3 2 7

FOR METHOD, EXTRACTION AND FRACTION USED – SEE ATTACHED


ARGILLITE
ARGILLITE
GRANITE PORPH.
N
0
200
400
Scale in Feet



Idealized Vein/Alteration Assemblage Relationships


S15W
N15E
GRANITE PORPH.
ARGILLITE
ARGILLITE
APLITE PORPH.
0
200
400
Scale in Feet

APPENDIX II

Drill Logs - 1981 NX Core Drilling

DDH-10/DDH-17 previously enclosed.

APPENDIX III

Assay Records - 1981 Core Drilling

DDH-10 / DDH-17

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

ole No. DDH-10

Date Started 6/5/81 Date Stopped 6/12/81

epth of Hole 270.0' Coord. N. ______ Reason Hole Stopped Bad ground

ollar Elev. 2920' MSL Coord. E. ______ Project COAL Property COAL

earing S14W Dip -50° Alaska, Quadrangle Talkeetna Mtns. D-6 Sec. 21 T. 22S R. 12W Sheet # 1 of 3

ample o.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES Sn ppm	Ag ppm						Remarks
8101365	10.0	20.0	10.0	8.8	125	1.0						
8101366	20.0	28.4	8.4	7.0	100	0.7						
8101367	28.4	39.0	10.6	7.4	150	0.6						
8101368	39.0	46.4	7.4	7.3	1050	1.4						
8101369	46.4	53.0	6.6	6.3	145	2.3						
8101370	53.0	59.5	6.5	6.5	165	2.0						
8101371	59.5	64.0	4.5	3.9	455	2.3						
8101372	64.0	70.0	6.0	5.8	295	1.1						
8101373	70.0	80.0	10.0	7.2	83	1.4						
8101374	80.0	87.0	7.0	6.0	120	1.9						
8101451	87.0	93.0	6.0	4.1	400	1.6						
8101452	93.0	101.0	8.0	7.6	170	1.2						
8101453	101.0	110.0	9.0	5.0	1090	2.4						
8101454	110.0	120.0	10.0	8.3	125	1.3						

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES Sn ppm	Ag ppm					Composites	Remarks
8101455	120.0	125.0	5.0	4.0	180	0.6						
8101456	125.0	130.0	5.0	4.5	1100	1.1						
8101457	130.0	136.0	6.0	5.3	275	2.6						
8101458	136.0	144.0	8.0	6.0	240	1.8						
8101459	144.0	150.0	6.0	4.1	220	2.8						
8101460	150.0	155.0	5.0	4.3	390	2.8						
8101461	155.0	160.0	5.0	4.6	720	2.4						
8101462	160.0	165.5	5.5	4.5	220	0.9						
8101463	165.5	174.0	8.5	6.9	55	0.8						
8101464	174.0	179.0	5.0	5.1	40	0.6						
8101465	179.0	184.0	5.0	4.6	27	0.4						
8101466	184.0	189.0	5.0	5.2	105	2.9						
8101467	189.0	195.0	6.0	4.3	150	3.6						
8101468	195.0	200.0	5.0	3.9	50	0.5						
8101469	200.0	206.0	6.0	5.7	435	3.7						
8101470	206.0	214.0	8.0	6.3	220	3.2						
8101471	214.0	221.0	7.0	6.8	85	2.0						
8101472	221.0	228.0	7.0	5.7	125	1.2						
8101473	228.0	235.0	7.0	5.9	76	1.3						

DDH-10 cont.

ample o.	Interval From	To	Thick-ness	Rec. Core	GRADES Sn ppm	Ag ppm					Composites	Remarks
3101474	235.0	240.0	5.0	4.0	220	1.8						
3101475	240.0	249.0	9.0	5.9	130	1.0						
3101476	249.0	258.0	9.0	7.0	47	1.5						
3101477	258.0	270.0	12.0	3.1	55	1.4						
	270.0' T.D.		Overall Recovery = 80.4%									

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

Hole No. DDH-11

Depth of Hole 405' **Coord. N.** ______ **Date Started** 6/13/81 **Date Stopped** 6/24/8

Collar Elev. 2880' MSL **Coord. E.** ______ **Project** COAL **Reason Hole Stopped** Lost string in caving grounc

Bearing N14E **Dip** -50° **Alaska, Quadrangle** Talkeetna Mtns. D-6 **Property** COAL

Sec. 21 **T.** 22S **R.** 12W **Sheet #** 1 of 4

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppb Au	Composites	Remarks
8101478	0.0	8.0	8.0	6.6	115	2.0						
8101479	8.0	15.0	7.0	7.8	305	3.0						
8101480	15.0	23.0	8.0	7.2	93	2.4						
8101443	23.0	30.0	7.0	7.2	96	1.8						
8101444	30.0	38.0	8.0	7.5	540	3.2						
8101445	38.0	43.0	5.0	5.1	71	1.2						
8101446	43.0	51.0	8.0	6.2	135	2.8	108	17	350	25		
8101447	51.0	58.0	7.0	6.7	505	4.5	80	29	186	5		
8101448	58.0	65.5	7.5	7.6	125	3.4	48	27	250	45		
8101449	65.5	73.0	7.5	7.3	205	0.9	47	6	405	100		
8101450	73.0	80.0	7.0	6.7	180	1.7	76	8	460	50		
8101551	80.0	87.0	7.0	7.0	500	1.3	49	12	340	120		
8101552	87.0	93.0	6.0	7.2	445	2.7	121	14	645	160		
8101553	93.0	100.0	7.0	9.5	1680	16.0	[illegible]	[illegible]				

nple .	Interval From	Interval To	Thick-ness	Rec. Core	GRADES Sn ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Au ppb	Composites	Remarks
01554	100.0	108.0	8.0	7.6	715	3.8	116	19	211	30		
01555	108.0	116.0	8.0	8.1	1700	10.0	196	46	440	15		
01556	116.0	123.0	7.0	6.0	550	9.0	190	101	134	10		
01557	123.0	133.0	10.0	4.7	260	5.8	112	14	122	30		
01558	133.0	138.0	5.0	4.8	345	6.0	210	11	400	10		
01559	138.0	146.0	8.0	7.0	500	6.8	178	4	140	10		
01560	146.0	154.0	8.0	7.1	435	5.1	67	23	135	10		
01561	154.0	161.0	7.0	6.2	68	1.3	75	4	144	15		
01562	161.0	170.0	9.0	6.6	125	4.8	175	13	320	15		
01563	170.0	176.0	6.0	6.3	110	1.8	47	7	160	35		
01564	176.0	183.0	7.0	6.9	280	5.4	111	24	340	190		
01565	183.0	189.0	6.0	5.8	190	6.4	220	69	400	20		
01566	189.0	195.0	6.0	5.8	390	4.7	130	26	625	35		
01567	195.0	202.0	7.0	6.7	495	4.4	178	30	440	10		
01568	202.0	209.0	7.0	7.3	1400	4.6	138	35	1270	10	202' - 377' ≈ 175' of 0.2(Sn and 7.2 ppm Ag	
01569	209.0	215.0	6.0	6.6	220	1.2	57	7	280	10	or	
01570	215.0	223.0	8.0	8.0	1010	2.0	89	17	580	10	238' - 377' ≈ 139' of 0.228% Sn & 8.3 ppm Ag	
01571	223.0	231.0	8.0	7.6	1420	4.8	189	20	745	30	or	
01572	231.0	238.0	7.0	6.2	670	1.6	58	7	1060	15	238' - 317' ≈ 79' of	

mple o.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES Sn ppm	Ag ppm	Cu ppm	Pb ppm	An ppm	Au ppb	Composites	Remarks
101573	238.0	245.0	7.0	6.5	1550	2.2	76	11	265	25		
101574	245.0	252.0	7.0	6.7	2320	2.0	63	13	545	10		
101575	252.0	262.0	10.0	8.3	1630	5.0	140	31	1480	10		
01576	262.0	268.0	6.0	6.6	11400	20.0	680	149	5600	5		
01577	268.0	276.0	8.0	7.5	1840	7.4	148	46	3000	10		
01578	276.0	284.0	8.0	7.6	2630	10.0	210	75	2400	5		
01579	284.0	291.0	7.0	7.3	2790	11.0	310	81	3500	10		
01580	291.0	299.0	8.0	7.8	1970	9.7	250	140	2150	35		
01581	299.0	307.0	8.0	7.5	1130	5.8	105	92	1490	10		
01582	307.0	317.0	10.0	9.2	1550	8.2	139	81	730	30		
01583	317.0	324.0	7.0	7.1	125	2.7	60	37	425	10		
01584	324.0	333.0	9.0	7.6	1250	5.9	186	37	1320	90		
01585	333.0	341.0	8.0	7.7	810	8.0	220	139	1280	35		
01586	341.0	349.0	8.0	7.6	250	3.2	60	47	600	35		
01587	349.0	356.0	7.0	7.3	630	7.6	190	47	1500	5		
01588	356.0	363.0	7.0	7.2	1590	5.3	77	40	2200	5		
01589	363.0	371.0	8.0	7.7	7510	12.0	330	110	3300	L 5		
01590	371.0	377.0	7.0	6.9	2130	16.0	330	187	4000	5		
01591	377.0	384.0	7.0	5.7	245	8.0						

DDH-11 cont.

mple	Interval		Thick-ness	Rec. Core	GRADES							Remarks
	From	To			Sn ppm	Ag ppm	Cu ppm	Pb ppm			Composites	
101592	384.0	392.0	8.0	6.7	28	1.6						
01593	392.0	397.0	5.0	5.3	28	0.5						
01594	397.0	405.0	8.0	7.7	235	0.8						Hole T.D. - 405'

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

le No. DDH-12

pth of Hole 874.0' Coord. N. ______

llar Elev. ______ Coord. E. ______ Project COAL Property COAL

aring N14E Dip -50 Alaska, Quadrangle TALKEETNA MTNS. D-6 Sec. 21 T. 22S R. 12W

Date Started 6/24/81 Date Stopped 7/20/81

Reason Hole Stopped Bottomed the mineralization

Sheet # 1 of 5

mple .	Interval From	Interval To	Thickness	Rec. Core	GRADES (ppm)			Sn	Ag		Composites	Remarks
17601	8.0	14.0	6.0	6.0				370	1.0			
2	14.0	20.0	6.0	4.7				145	0.2			
3	20.0	30.0	10.0	10.0				355	0.3			
4	30.0	40.0	10.0	9.5				490	0.3			
5	40.0	50.0	10.0	9.8				54	0.2			
6	50.0	60.0	10.0	9.2				160	0.2			
7	60.0	70.0	10.0	10.0				36	0.2			
8	70.0	80.0	10.0	9.4				39	0.6			
9	80.0	90.0	10.0	9.9				23	0.8			
7610	90.0	100.0	10.0	9.6				70	0.2			
11	100.0	110.0	10.0	9.2				14	0.2			
12	110.0	121.0	11.0	11.0				5	0.2			
13	121.0	130.0	9.0	8.9				70	0.2			
14	130.0	139.0	9.0	6.5				600	50.0			

mple .	Interval From	To	Thick-ness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
17615	139.0	146.0	7.0	6.8				56	0.7			
16	146.0	153.0	7.0	6.9				30	0.2			
17	153.0	160.0	7.0	6.3				43	2.0			
18	160.0	167.0	7.0	6.9				36	3.0			
19	167.0	177.0	10.0	10.0				375	7.8			
7620	177.0	188.0	11.0	10.7				850	13.0			
21	188.0	194.0	6.0	6.3				120	2.6			
22	194.0	200.0	6.0	6.1				400	2.1			
23	200.0	210.0	10.0	9.8				49	1.0			
24	210.0	220.0	10.0	10.0				250	1.9			
25	220.0	230.0	10.0	9.3				490	0.9			
26	230.0	240.0	10.0	9.5				700	1.5			
27	240.0	250.0	10.0	9.8				990	4.3			
28	250.0	260.0	10.0	9.6				780	4.7			
29	260.0	271.7	11.7	11.1				115	4.5			
7630	271.7	290.0	18.3	8.6				90	2.5			
31	290.0	300.0	10.0	9.0				21	1.2			
32	300.0	310.0	10.0	9.5				61	3.6			
33	310.0	320.0	10.0	9.5				515	2.5			

ple	Interval From	Interval To	Thick-ness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
17634	320.0	330.0	10.0	9.6				315	7.1			
35	330.0	340.0	10.0	9.7				520	31.0			
36	340.0	350.0	10.0	9.9				63	2.0			
37	350.0	360.0	10.0	9.9				425	2.2			
38	360.0	370.0	10.0	9.7				190	5.2			
39	370.0	380.0	10.0	9.7				95	1.2			
40	380.0	390.0	10.0	9.7				675	2.4			
41	390.0	400.0	10.0	9.0				1545	1.2		390-440'	
42	400.0	410.0	10.0	9.9				1625	2.8		50' — 0.145% Sn	
43	410.0	420.0	10.0	9.6				535	1.8		3.3 ppm Ag	
44	420.0	430.0	10.0	7.7				2000	3.1			
45	430.0	440.0	10.0	9.8				1520	4.2			
46	440.0	450.0	10.0	10.4				92	1.4			
47	450.0	460.0	10.0	8.9				825	1.5			
48	460.0	470.0	10.0	10.1				315	1.1			
49	470.0	480.0	10.0	9.8				590	3.9			
50	480.0	490.0	10.0	10.1				370	3.2			
51	490.0	500.0	10.0	10.3				490	2.4			
52	500.0	510.0	10.0	10.6				60	4.9			

ple	Interval		Thick-ness	Rec. Core	GRADES (ppm)						Composites	Remarks
	From	To						Sn	Ag			
17653	510.0	520.0	10.0	9.7				120	0.5			
54	520.0	530.0	10.0	9.6				46	2.4			
55	530.0	540.0	10.0	10.1				26	0.3			
56	540.0	550.0	10.0	10.0				130	0.6			
57	550.0	560.0	10.0	9.9				105	0.7			
58	560.0	570.0	10.0	9.7				535	1.4			
59	570.0	580.0	10.0	9.8				465	1.7			
7660	580.0	590.0	10.0	9.5				615	4.2			
61	590.0	600.0	10.0	9.4				285	1.2			
62	600.0	610.0	10.0	10.8				285	0.7			
63	610.0	620.0	10.0	8.4				860	7.7			
64	620.0	630.0	10.0	8.7				71	0.3			
65	630.0	640.0	10.0	9.2				90	0.9			
66	640.0	650.0	10.0	9.3				325	1.8			
67	650.0	660.0	10.0	9.8				52	0.2			
68	660.0	670.0	10.0	10.0				30	0.4			
69	670.0	680.0	10.0	10.5				2750	2.1		670-700'	
7670	680.0	690.0	10.0	9.7				210	1.0		30'- 0.134% Sn	
71	690.0	700.0	10.0	9.4				1060	0.9		1.3 ppm Ag	

mple .	Interval From	Interval To	Thick- ness	Rec. Core	GRADES (ppm)			Sn	Ag		Composites	Remarks
117672	700.0	710.0	10.0	10.9				60	0.5			
73	710.0	720.0	10.0	10.0				22	0.6			
74	720.0	730.0	10.0	8.6				220	0.7			
75	730.0	740.0	10.0	9.8				780	5.1			
76	740.0	750.0	10.0	9.9				3500	6.2		740-810'	
77	750.0	760.0	10.0	9.8				1525	5.2		70' - 0.188 % Sn	
78	760.0	770.0	10.0	10.3				550	0.3		2.6 ppm Ag	
79	770.0	780.0	10.0	9.9				220	0.3			
7680	780.0	790.0	10.0	8.9				420	1.3			
81	790.0	800.0	10.0	9.1				4850	3.4			
82	800.0	810.0	10.0	9.5				2060	1.2			
83	810.0	820.0	10.0	10.0				165	0.3			
84	820.0	830.0	10.0	10.1				580	3.0			
85	830.0	844.0	14.0	8.6				125	0.2			
86	844.0	854.0	10.0	8.7				55	0.4			
87	854.0	864.0	10.0	9.5				135	0.2			
17688	864.0	874.0	10.0	9.8				40	0.2			
	T.D.	874.0'										

GMC DATA REPORT 327

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

Hole No. DDH-13

Depth of Hole 196.0 Coord. N. ____

Collar Elev. ____ Coord. E. ____ Project COAL

Bearing S45E Dip -50 Alaska, Quadrangle TALKEETNA MTNS D-6

Date Started 7/21/81 Date Stopped 7/23/81

Reason Hole Stopped Hole lost when anchor washed c and blocked hole

Property COAL

Sec. 29 T. 22S R. 12W Sheet # 1 of 1

Sample No.	Interval From	Interval To	Thickness	Rec. Core	ppm Sn	ppm Ag	GRADES				Composites	Remarks
8117689	32.0	60.0	28.0	7.5	40	1.0						
90	60.0	70.0	10.0	5.3	55	0.8						
91	70.0	80.0	10.0	9.3	115	0.2						
92	80.0	90.0	10.0	8.7	97	0.3						
93	90.0	100.0	10.0	7.7	30	0.4						
94	100.0	110.0	10.0	9.7	ND	0.2						
95	110.0	120.0	10.0	9.8	6	0.2						
96	120.0	130.0	10.0	9.9	ND	0.2						
97	130.0	140.0	10.0	9.7	80	0.2						
98	140.0	150.0	10.0	10.0	12	0.4						
99	150.0	160.0	10.0	9.3	275	0.4						
3117700	160.0	170.0	10.0	8.6	53	0.6						
3117899	170.0	187.0	17.0	6.9	125	0.4						
3117900	187.0	196.0	9.0	6.8	83	0.4		T.D.	196.'0			

GMC DATA REPORT 3 2 7

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

Hole No. DDH-14

Date Started 7/24/81 Date Stopped 8/1/81

Depth of Hole 376' Coord. N.

Reason Hole Stopped No intrusive found

Collar Elev. Coord. E. Project COAL Property COAL

Bearing S83 E Dip -70 Alaska, Quadrangle TALKEETNA MTNS D-6 Sec. 29 T. 22S R. 12W Sheet # 1 of

Sample No.	Interval From	Interval To	Thickness	Rec. Core	Cu	Pb	Zn	Sn	Ag	Au	Composites	Remarks
					GRADES (ppm)							
8117801	16.0	24.0	8.0	7.0				41	1.2			
802	24.0	30.0	6.0	5.8				40	1.2			
803	30.0	40.0	10.0	8.7				ND	1.2			
804	40.0	50.0	10.0	9.7				ND	0.7			
805	50.0	60.0	10.0	9.5				ND	0.4			
806	60.0	70.0	10.0	10.0				ND	0.2			
807	70.0	80.0	10.0	9.9				ND	0.2			
808	80.0	90.0	10.0	9.6				ND	0.2			
809	90.0	98.0	8.0	9.2				ND	0.5			
810	98.0	107.0	9.0	8.1				ND	1.4			
811	107.0	115.0	8.0	8.3				40	0.4			
812	115.0	122.0	7.0	6.8				29	0.7			
813	122.0	130.0	8.0	8.2				ND	0.6			
814	130.0	140.0	10.0	7.9				ND	0.6			

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES (ppm)			Sn	Ag		Composites	Remarks
8117815	140.0	150.0	10.0	8.2				ND	0.4			
816	150.0	160.0	10.0	7.3				ND	0.2			
817	160.0	170.0	10.0	8.3				ND	0.2			
818	170.0	180.0	10.0	4.7				ND	0.4			
819	180.0	190.0	10.0	6.4				ND	0.2			
820	190.0	200.0	10.0	9.7				ND	0.3			
821	200.0	210.0	10.0	9.4				ND	0.3			
822	210.0	220.0	10.0	8.9				ND	0.2			
823	220.0	230.0	10.0	9.7				ND	0.3			
824	230.0	240.0	10.0	8.2				ND	0.3			
825	240.0	250.0	10.0	8.8				ND	0.4			
826	250.0	260.0	10.0	9.1				ND	0.4			
827	260.0	270.0	10.0	9.8				24	0.4			
828	270.0	280.0	10.0	10.1				ND	0.3			
829	280.0	290.0	10.0	9.4				ND	0.3			
830	290.0	300.0	10.0	9.7				ND	0.3			
831	300.0	310.0	10.0	9.5				ND	0.2			
832	310.0	320.0	10.0	10.1				ND	0.3			
833	320.0	330.0	10.0	10.2				ND	0.4			

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES (ppm)			Sn	Ag		Composites	Remarks
3117834	330.0	340.0	10.0	10.1				15	0.3			
835	340.0	350.0	10.0	10.0				ND	0.2			
836	350.0	360.0	10.0	9.1				ND	0.3			
837	360.0	369.0	9.0	9.2				ND	0.2			
3117838	369.0	376.0	7.0	6.7				ND	0.2			
	T.D.	376.0'										

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

Hole No. DDH-15

Depth of Hole 570'   Coord. N. ____

Date Started 8/2/81   Date Stopped 8/25/81

Reason Hole Stopped Bottomed the mineralization

Collar Elev. ____   Coord. E. ____   Project COAL   Property COAL

Bearing ____   Dip -90   Alaska, Quadrangle TALKEETHA MTNS D-6   Sec. 21 T. 22S R. 12W   Sheet # 1 of 4

Sample No.	Interval		Thick-ness	Rec. Core	GRADES (ppm)						Composites	Remarks
	From	To						Sn	Ag			
8117839	7.0	14.0	7.0	6.8				125	3.4			
840	14.0	20.0	6.0	6.1				95	2.3			
841	20.0	30.0	10.0	8.7				430	6.6			
842	30.0	40.0	10.0	9.4				77	3.0			
843	40.0	50.0	10.0	10.2				900	6.0			
844	50.0	60.0	10.0	9.4				185	3.3			
845	60.0	70.0	10.0	9.6				715	17.0			
846	70.0	80.0	10.0	9.6				350	8.0			
847	80.0	92.5	12.5	11.9				325	12.0			
848	92.5	100.0	7.5	7.4				25	2.8			
849	100.0	110.0	10.0	9.9				19	0.3			
850	110.0	120.0	10.0	9.9				1050	0.2			
851	120.0	130.0	10.0	9.7				630	0.6			
852	130.0	140.0	10.0	9.8				17	0.2			

mple	Interval		Thick-	Rec.	GRADES (ppm)						Composites	Remarks
.	From	To	ness	Core				Sn	Ag			
117853	140.0	150.0	10.0	8.9				205	0.8			
100501	150.0	161.0	11.0	9.6				55	1.2			
502	161.0	170.0	9.0	5.7				275	4.9			
503	170.0	180.0	10.0	6.9				310	8.8			
504	180.0	190.0	10.0	8.1				510	11.0			
505	190.0	200.0	10.0	8.2				81	1.8			
506	200.0	215.0	15.0	7.5				27	1.5			
507	215.0	230.0	15.0	8.8				14	1.0			
508	230.0	240.0	10.0	7.7				440	2.1			
509	240.0	250.0	10.0	9.3				130	3.7			
510	250.0	260.0	10.0	9.8				190	6.0			
511	260.0	270.0	10.0	9.9				37	3.6			
512	270.0	280.0	10.0	9.5				320	8.4			
513	280.0	290.0	10.0	9.2				415	7.2			
514	290.0	300.0	10.0	9.7				185	3.3			
515	300.0	310.0	10.0	9.9				2000	24.0			
516	310.0	320.0	10.0	6.6				4500	17.0			
517	320.0	330.0	10.0	6.7				2300	7.1			
518	330.0	340.0	10.0	8.9				7300	16.0			

Sample No.	Interval From	Interval To	Thickness	Rec. Core	GRADES						Composites	Remarks
								Sn	Ag			
8100519	340.0	350.0	10.0	8.7				135	4.3			
520	350.0	360.0	10.0	7.1				795	12.0			
521	360.0	370.0	10.0	9.0				220	3.6			
522	370.0	380.0	10.0	9.6				6	0.5		300 – 540'	
523	380.0	390.0	10.0	10.0				ND	0.6		240' –	0.294% Sn
524	390.0	400.0	10.0	9.4				840	6.0			7.3 ppm Ag
525	400.0	407.0	7.0	6.4				2350	13.0			
526	407.0	414.0	7.0	7.0				>20000	39.0			
527	414.0	420.0	6.0	4.7				1650	5.0			
528	420.0	430.0	10.0	8.7				1050	7.7			
529	430.0	440.0	10.0	9.1				185	1.8			
530	440.0	450.0	10.0	9.2				220	1.6			
531	450.0	460.0	10.0	9.0				585	2.0			
532	460.0	470.0	10.0	7.8				4500	4.4			
533	470.0	480.0	10.0	6.5				2800	1.2			
534	480.0	490.0	10.0	9.6				2200	1.6			
535	490.0	500.0	10.0	9.3				1000	6.8			
536	500.0	510.0	10.0	9.3				1550	6.7			
537	510.0	520.0	10.0	9.5				>20000	8.1			

Sample No.	Interval From	Interval To	Thickness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
8100538	520.0	530.0	10.0	10.2				1030	1.8			
539	530.0	540.0	10.0	10.9				715	0.6			
540	540.0	550.0	10.0	9.8				180	0.3			
541	550.0	560.0	10.0	9.6				130	0.5			
542	560.0	570.0	10.0	9.4				13	0.3			
	T.D.	570.0'										

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

Hole No. DDH-16

Depth of Hole 866'   Coord. N.   Date Started 8/4/81   Date Stopped 8/]7/81

Collar Elev.   Coord. E.   Reason Hole Stopped Approaching DDH-12

Project COAL   Property COAL

Bearing   Dip -70°   Alaska, Quadrangle TALKEETNA MTNS D-6   Sec. 21 T. 22S R. 12W   Sheet # 1 of 5

Sample No.	Interval From	Interval To	Thickness	Rec. Core	Cu	Pb	Zn	Sn	Ag		Composites	Remarks
3117854	0	18.0	18.0	7.4				59	0.3			
855	18.0	30.0	12.0	9.9				130	2.0			
856	30.0	40.0	10.0	10.2				31	1.0			
857	40.0	50.0	10.0	10.2				7	0.3			
858	50.0	60.0	10.0	10.1				67	1.5			
859	60.0	70.0	10.0	11.0				115	0.4			
860	70.0	80.0	10.0	9.3				47	0.3			
861	80.0	90.0	10.0	9.2				79	2.0			
862	90.0	100.0	10.0	10.2				430	2.5			
863	100.0	110.0	10.0	8.4				325	1.8			
864	110.0	120.0	10.0	10.1				120	0.8			
865	120.0	130.0	10.0	8.9				115	0.7			
866	130.0	140.0	10.0	9.0				65	0.7			
867	140.0	150.0	10.0	8.7				65	0.5			

ample o.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
117868	150.0	160.0	10.0	9.3				24	0.5			
869	160.0	170.0	10.0	9.5				19	0.6			
870	170.0	180.0	10.0	9.9				ND	0.4			
871	180.0	190.0	10.0	10.2				12	0.4			
872	190.0	200.0	10.0	9.3				14	0.3			
873	200.0	210.0	10.0	9.3				20	0.4			
874	210.0	220.0	10.0	5.4				26	0.4			
875	220.0	230.0	10.0	7.3				ND	0.4			
876	230.0	240.0	10.0	10.3				12	0.2			
877	240.0	250.0	10.0	9.8				70	0.6			
878	250.0	260.0	10.0	8.3				33	0.7			
879	260.0	270.0	10.0	6.9				33	1.3			
880	270.0	280.0	10.0	6.5				31	1.2			
881	280.0	290.0	10.0	9.9				28	0.9			
882	290.0	300.0	10.0	10.8				25	1.3			
883	300.0	310.0	10.0	9.5				19	0.4			
884	310.0	320.0	10.0	9.5				ND	0.3			
885	320.0	330.0	10.0	9.5				46	0.3			
886	330.0	340.0	10.0	9.5				33	0.3			

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
117887	340.0	350.0	10.0	9.5				290	0.4			
888	350.0	360.0	10.0	7.5				40	0.4			
889	360.0	380.0	20.0	9.5				39	0.5			
890	380.0	390.0	10.0	8.6				395	5.5			
891	390.0	400.0	10.0	5.0				64	1.0			
892	400.0	410.0	10.0	8.2				39	1.3			
893	410.0	420.0	10.0	10.0				500	2.0			
894	420.0	430.0	10.0	9.7				305	4.4			
895	430.0	440.0	10.0	9.1				90	3.8			
896	440.0	450.0	10.0	10.0				1700	1.5			
897	450.0	460.0	10.0	7.9				77	1.1			
898	460.0	470.0	10.0	8.7				1050	>50.0			
100761	470.0	480.0	10.0	9.1				62	0.8			
762	480.0	490.0	10.0	9.4				635	2.0			
763	490.0	500.0	10.0	9.9				55	0.6			
764	500.0	510.0	10.0	10.2				39	1.1			
765	510.0	520.0	10.0	10.7				285	6.7			
766	520.0	530.0	10.0	9.3				730	10.0			
767	530.0	540.0	10.0	9.9				510	7.5			

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
8100768	540.0	550.0	10.0	9.7				3700	6.0			
769	550.0	560.0	10.0	9.9				5600	31.0			
770	560.0	570.0	10.0	9.8				1095	3.8			
771	570.0	580.0	10.0	9.7				2640	12.0			
772	580.0	590.0	10.0	9.8				705	5.6		540-620'	
773	590.0	600.0	10.0	10.0				920	10.0		80' - 0.317% Sn 10.9 ppm Ag	
774	600.0	610.0	10.0	9.8				1730	6.7			
775	610.0	620.0	10.0	9.9				9000	12.0			
776	620.0	630.0	10.0	10.2				575	3.9			
777	630.0	640.0	10.0	9.4				200	2.4			
778	640.0	650.0	10.0	10.3				100	1.4			
779	650.0	660.0	10.0	9.7				56	1.2			
780	660.0	670.0	10.0	9.8				790	1.1			
781	670.0	680.0	10.0	9.7				24	0.8			
782	680.0	690.0	10.0	9.5				22	0.6			
783	690.0	700.0	10.0	9.6				14	0.5			
784	700.0	710.0	10.0	9.8				335	0.5			
785	710.0	720.0	10.0	9.3				1170	1.2		710-750'	
786	720.0	730.0	10.0	7.8				57	0.4		40' 0.208% Sn 4.5 ppm Ag	

Sample No.	Interval From	Interval To	Thickness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
100788	740.0	750.0	10.0	9.0				4200	15.0			
789	750.0	760.0	10.0	9.0				140	1.0			
790	760.0	770.0	10.0	8.6				34	1.0			
791	770.0	780.0	10.0	9.5				1010	3.0			
792	780.0	790.0	10.0	7.6				27	0.8			
793	790.0	800.0	10.0	7.6				ND	0.8			
794	800.0	810.0	10.0	7.6				10	0.5			
795	810.0	820.0	10.0	8.8				53	0.9			
796	820.0	830.0	10.0	10.1				19	0.7			
797	830.0	840.0	10.0	9.7				235	0.7			
798	840.0	850.0	10.0	8.9				60	0.6			
799	850.0	858.0	8.0	7.9				400	0.5			
100800	858.0	866.0	8.0	7.7				170	1.0			
	T.D.	866.0'										

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

Hole No. DDH-17

Depth of Hole 501.0' Coord. N. ______

Collar Elev. ______ Coord. E. ______

Bearing N14E Dip ______

Date Started 8/25/81 Date Stopped 8/27/81

Reason Hole Stopped Budget and geologic considerat

Project COAL Property COAL

Alaska, Quadrangle TALKEETNA MTNS D-6 Sec. 21 T. 22S R. 12W Sheet # 1 of 3

Sample No.	Interval From	Interval To	Thickness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
100543	12.0	20.0	8.0	8.2				1290	1.5			
544	20.0	30.0	10.0	9.5				785	1.0			
545	30.0	40.0	10.0	10.3				585	1.4			
546	40.0	50.0	10.0	9.1				945	1.3			
547	50.0	60.0	10.0	9.4				835	2.4			
548	60.0	70.0	10.0	10.1				620	2.8			
549	70.0	80.0	10.0	9.9				265	3.0			
550	80.0	89.0	9.0	9.3				115	0.5			
551	89.0	95.0	6.0	5.7				53	0.6			
552	95.0	104.0	9.0	9.3				165	3.4			
553	104.0	110.0	6.0	6.4				450	0.8			
554	110.0	120.0	10.0	9.0				68	0.8			
555	120.0	130.0	10.0	10.2				305	1.1			
556	130.0	140.0	10.0	9.5				420	1.5			

GMC DATA REPORT 327

ample o.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES							Remarks
								Sn	Ag		Composites	
100557	140.0	150.0	10.0	9.1				54	0.9			
558	150.0	160.0	10.0	9.4				45	0.7			
559	160.0	170.0	10.0	9.9				81	1.3			
560	170.0	180.0	10.0	9.3				20	0.5			
561	180.0	190.0	10.0	9.7				375	0.7			
562	190.0	200.0	10.0	7.3				69	0.9			
563	200.0	210.0	10.0	9.8				61	0.7			
564	210.0	220.0	10.0	7.9				86	1.2			
565	220.0	230.0	10.0	9.0				35	0.7			
566	230.0	240.0	10.0	9.0				96	2.4			
567	240.0	250.0	10.0	3.8				52	1.3			
568	250.0	260.0	10.0	9.4				49	3.4			
569	260.0	270.0	10.0	8.3				2695	10.0		260-360'	
570	270.0	280.0	10.0	9.1				2015	2.9		100' —	
571	280.0	290.0	10.0	8.8				2055	3.6		0.183% Sn	
572	290.0	300.0	10.0	8.4				2250	2.7		4.5 ppm Ag	
573	300.0	310.0	10.0	10.3				135	2.3			
574	310.0	320.0	10.0	9.8				2050	10.0			
575	320.0	330.0	10.0	8.9				975	2.5			

Sample No.	Interval From	Interval To	Thickness	Rec. Core	GRADES			Sn	Ag		Composites	Remarks
3100576	330.0	340.0	10.0	8.3				1720	4.1			
577	340.0	350.0	10.0	9.2				435	2.2			
578	350.0	360.0	10.0	9.5				3965	4.6			
579	360.0	370.0	10.0	6.8				430	1.2			
580	370.0	380.0	10.0	6.0				155	0.7			
581	380.0	390.0	10.0	8.1				445	1.0			
582	390.0	400.0	10.0	8.8				180	1.7			
583	400.0	410.0	10.0	8.4				230	1.1			
584	410.0	420.0	10.0	8.9				1845	1.7			
585	420.0	430.0	10.0	7.3				70	0.6			
586	430.0	440.0	10.0	5.4				82	0.4			
587	440.0	450.0	10.0	6.9				91	0.3			
588	450.0	460.0	10.0	7.0				40	0.3			
589	460.0	470.0	10.0	7.3				20	0.2			
590	470.0	480.0	10.0	7.8				2960	0.5			
591	480.0	490.0	10.0	9.0				300	0.4			
100592	490.0	501.0	10.0	9.3				360	0.7			
	T.D.	501.0'										

APPENDIX 3

ASSAY REPORTS

1982 ... -19 to
DDH-41

SLRC bulk sample

higher priority sample ~ ≥.2 pct Sn

lower priority sample ~>.1pct but <.2pct Sn

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

le No. DDH-19

Date Started 6/9/92 Date Stopped 6/19/82

pth of Hole 693.3' Coord. N. ____ (200' N 30° W from DDH 15)

Reason Hole Stopped Drilled beyond mineralization

llar Elev. ________ Coord. E. ________ Project COAL

Property Prospect Area

aring ________ Dip -90 Alaska, Quadrangle Talkeetna Mtns. Sec. 21 T. 22S. R. 12W. Sheet # 1 of 5

ıple	Interval From	Interval To	Thick-ness	Rec. Core	GRADES Sn	GRADES Ag	Composites	Remarks
7001	5	10	5	3.5	2100	19.0		
7002	10	20	10	9.3	105	3.8		
7003	20	28	8	8.4	47	3.3		
7004	28	37	9	9.0	390	5.1		
7005	37	47	10	10.0	500	2.6		
'006	47	57	10	10.0	280	2.5		
'007	57	63	6	6.0	620	8.3		
'008	63	71	8	7.7	1480	14.0		
009	71	78	7	6.4	140	4.0		
010	78	88	10	8.0	1000	8.0		
011	88	98	10	8.2	180	4.1		
)12	98	108	10	8.4	205	3.7		
)13	108	115	7	6.1	110	6.1		

mple .	Interval From	To	Thick-ness	Rec. Core	GRADES Sn	Ag	Composites	Remarks
17014	115	125	10	8.8	32	2.4		
17015	125	135	10	7.5	160	4.4		
17016	135	145	10	9.8	820	6.3		
17017	145	154	9	8.9	90	4.2		
7018	154	164	10	9.8	1500	4.4		
7019	164	174	10	9.9	25	1.3		
7020	174	179	5	5.0	1000	11.0		
7021	179	189	10	9.9	1000	2.1		
7022	189	199	10	9.5	180	4.7		
7023	199	207	8	7.9	135	2.4		
7024	207	213	6	5.9	535	18.0		
7025	213	220	7	7.0	830	2.8		
026	220	225	5	4.9	80	4.8		
027	225	235	10	9.8	475	3.1		
028	235	245	10	10.0	36	5.8		
050	245	253	8	7.9	L 5	0.4		
029	253	261	8	8.0	595	8.1		
030	261	271	10	10.0	1070	2.2		
051	271	281	10	9.9	19	9.2		

ample o.	Interval From	To	Thick-ness	Rec. Core	GRADES Sn	Ag	Composites	Remarks
217052	281	290	9	9.0	3150	6.5		
217053	290	300	10	9.4	1750	9.2		
217054	300	309	9	8.0	1000	9.9		
217055	309	319	10	10.0	390	2.0	.188 over 103'	
217056	319	329	10	10.0	3175	9.2		
17057	329	339	10	10.0	4000	6.3		
17058	339	350	11	10.9	3250	25.0		
17059	350	360	10	9.6	315	1.1		
17060	360	370	10	9.6	2300	3.5		
17061	370	380	10	9.1	28	1.0		
17062	380	391	11	9.9	330	1.4		
17063	391	401	10	9.7	57	1.2		
17064	401	411	10	9.3	L 5	0.5		
17065	411	421	10	9.3	12	0.4		
17066	421	428	7	6.8	13	0.4		
7067	428	438	10	9.2	770	3.6		
7068	438	448	10	10.0	100	0.4		
7069	448	458	10	9.8	65	0.4		
7070	458	468	10	9.8	295	1.8		

mple .	Interval From	To	Thick- ness	Rec. Core	GRADES Sn	Ag	Composites	Remarks
17071	468	478	10	9.7	225	7.5		
17073	478	488	10	9.5	6000	7.5		
17074	488	498	10	9.7	2200	2.6		
17075	498	508	10	9.8	225	0.8	.304 over 50'	
17076	508	518	10	9.8	2400	8.0		
17077	518	528	10	9.9	4360	16.0	.213 over 35 Ft	
17078	528	538	10	10.0	415	1.2		
17072	538	548	10	10.0	175	2.4		
.7079	548	553	5	5.0	28	0.4		
7080	553	563	10	9.9	2700	2.0		
7081	563	573	10	10.0	210	0.3		
7082	573	583	10	10.0	713	0.3		
7083	583	593	10	9.9	195	0.2		
7084	593	603	10	10.0	87	0.2		
7085	603	613	10	10.0	660	2.6		
'086	613	623	10	10.0	1000	1.9		
087	623	633	10	10.0	41	0.2		
088	633	643	10	10.0	365	0.3		
089	643	653	10	10.0	215	0.2		

ole No. DDH-19

ample o.	Interval From	To	Thick-ness	Rec. Core	GRADES Sn	Ag	Composites	Remarks
217090	653	663	10	10.0	29	0.2		
217091	663	673	10	10.0	26	0.2		
217092	673	683	10	10.0	62	0.2		
217093	683	693.3	10.3	10.3	77	0.2		

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

No. DDH-20

Date Started 6/20/82 Date Stopped 6/29/82

h of Hole 609.8' Coord. N. 9915 Reason Hole Stopped Bottomed the mineralization

ar Elev. 2943 Coord. E. 9790 Project COAL Property Prospect Area

ing ______ Dip -90 Alaska, Quadrangle Talkeetna Mtns. Sec. 21 T. 22S R. 12W Sheet # 1 of 4

le	Interval From	To	Thick-ness	Rec. Core	ppm Sn	ppm Ag	Composites	Remarks
)94	0	8	8	7.8	L 9	5.8		
)95	8	17	9	8.8	160	6.6		
)96	17	27	10	9.7	195	1.4		
)97	27	37	10	9.4	205	2.4		
)98	37	47	10	9.6	545	1.5		
)99	47	52	5	5.0	3450	3.6		
00	52	59	7	7.0	2320	3.5		
01	59	69	10	9.8	210	2.0		
02	69	79	10	9.8	2590	7.4		
)3	79	87	8	7.9	3000	2.6		
)4	87	97	10	9.8	385	1.0		
)5	97	107	10	9.8	1800	1.8		

No. DDH-20

le	Interval From	Interval To	Thick-ness	Rec. Core	ppm Sn	ppm Ag	Composites	Remarks
106	107	117	10	9.6	6300	14.0		
07	117	127	10	7.8	7350	20.0		
08	127	137	10	7.5	500	2.7		
09	137	147	10	9.7	210	1.4		
10	147	157	10	9.8	185	2.9		
11	157	167	10	8.5	3050	2.2		
12	167	177	10	9.4	3900	1.4	.26pct on 175'	
13	177	187	10	8.9	1800	2.9✓		
14	187	197	10	8.9	5700	4.5		
15	197	207	10	8.6	2200	3.2		
6	207	217	10	8.2	1900	5.3		
7	217	222	5	4.6	3860	3.1		
8	222	232	10	9.5	110	1.4		
9	232	242	10	9.8	380	0.9		
)	242	252	10	9.8	820	0.6		
'	252	262	10	9.4	4360	8.5		
	262	272	10	9.5	615	3.2		
	272	282	10	9.8	600	6.0		
	282	293	11	10.8	690	2.6		

GMC DATA REPORT 327

ole No. DDH-20

mple).	Interval From	To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
17125	293	303	10	9.8	4200	9.2		
17126	303	313	10	9.8	325	4.0		
17127	313	323	10	10.0	110	1.6		
17128	323	333	10	10.0	3800	6.6		
17129	333	343	10	10.0	530	3.3	.16pct over 191ft	
17130	343	353	10	9.9	29	0.8		
17131	353	363	10	9.9	1400	3.7		
17132	363	373	10	10.0	32	0.6		
7133	373	383	10	10.0	1200	4.0		
7134	383	393	10	9.8	8500	35.0		
7135	393	403	10	9.4	125	0.5		
7136	403	413	10	9.2	2700	18.0		
7137	413	423	10	8.9	140	0.7		
7138	423	433	10	9.5	38	0.2		
139	433	443	10	9.8	210	0.6		
140	443	453	10	9.8	220	2.9	.087pct over 75ft	
141	453	463	10	9.5	1900	12.0		
142	463	473	10	10.0	725	11.0		
143	473	483	10	10.0	2750	0.5		

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Hole No. DDH-20

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217144	483	487.3	4.3	4.3	550	3.3		

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

Hole No. DDH-21

Date Started 6/30/82 Date Stopped 7/12/8

Depth of Hole 653.8 Coord. N. 9656 Reason Hole Stopped Reached target depth

Collar Elev. 2848 Coord. E. 9740 Project COAL Property Prospect Area

Bearing ____ Dip -90° Alaska, Quadrangle Talkeetna Mountains Sec. 21 T. 22S R. 12W Sheet # 1 of 4

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217238	10	20	10	9.3	29	1.7		
8217239	20	30	10	9.3	26	0.9		
8217240	30	40	10	9.7	77	0.7		
8217241	40	50	10	9.7	165	0.4		
8217242	50	60	10	9.9	21	1.4		
8217243	60	70	10	9.8	26	1.0		
8217244	70	80	10	9.9	54	0.8		
8217245	80	90	10	10.0	46	2.8		
8217246	90	100	10	10.0	43	3.7		
8217247	100	110	10	10.0	11	0.7		
8217248	110	120	10	9.8	13	1.8		
8217249	120	130	10	9.8	32	3.6		
8217250	130	140	10	9.7	26	9.0		

Hole No. DDH-21

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217251	140	150	10	9.6	15	2.4		
8217252	150	160	10	9.6	22	1.5		
8217253	160	170	10	9.1	11	0.8		
8217254	170	180	10	9.4	9	1.7		
8217255	180	190	10	8.3	360	1.3		
8217256	190	200	10	6.3	134	4.5		
8217257	200	210	10	7.0	35	1.4		
8217258	210	220	10	8.6	20	1.2		
8217335	220	230	10	9.2	82	1.5		
8217336	230	240	10	9.3	42	0.9		
8217337	240	250	10	9.6	27	0.8		
8217338	250	260	10	9.8	54	1.9		
8217339	260	270	10	10.1	25	0.5		
8217341	270	280	10	10.0	57	1.3		
8217342	280	290	10	9.8	11	0.5		
8217340	290	300	10	9.6	175	1.1		
8217343	300	310	10	9.8	430	2.5		
8217344	310	320	10	8.1	155	3.1		

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217345	320	330	10	9.4	100	6.5		
8217346	330	340	10	9.6	200	4.9		
8217347	340	350	10	9.4	800	9.0		
8217348	350	360	10	9.7	740	2.6		
8217349	360	370	10	8.1	2000	17.0		
8217350	370	380	10	7.2	28	1.6	.085 over 60ft	
8217351	380	390	10	9.6	440	2.9		
8217352	390	400	10	9.5	1100	0.4		
8217353	400	410	10	8.8	30	0.6		
8217355	410	420	10	10.3	L 5	0.4		
8217356	420	430	10	9.8	11	0.5		
8217357	430	440	10	9.9	6	0.4		
8217358	440	450	10	9.9	6	0.6		
8217359	450	460	10	9.9	L 5	0.4		
8217360	460	470	10	9.7	19	0.4		
8217361	470	480	10	9.7	66	0.5		
8217362	480	490	10	9.9	31	0.2		
8217363	490	500	10	8.8	69	0.2		
8217364	500	510	10	9.0	270	0.4		

Hole No. DDH-21

Sample No.	Interval From	To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217365	510	520	10	9.0	11	0.2		
8217366	520	530	10	9.7	18	0.2		
8217367	530	540	10	9.8	12	0.2		
8217368	540	550	10	9.8	7	0.2		
8217369	550	560	10	10.0	22	0.4		
8217370	560	570	10	10.0	12	0.2		
8217371	570	580	10	10.0	17	0.3		
8217354	580	590	10	9.9	9	0.2		
8217372	590	600	10	9.9	3600	0.5		
8217373	600	610	10	9.7	1800	0.3		
8217374	610	620	10	9.8	855	0.2		
8217375	620	630	10	9.9	38	0.2	.128 over 55'	
8217376	630	635	5	4.9	105	0.4		
8217377	635	645	10	9.2	700	0.6		
8217378	645	653.8	8.8	6.3	13	0.2		

E.O.H.

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

Hole No. DDH-22

Date Started 7/13/82 Date Stopped 7/20/8

Depth of Hole 555.4' Coord. N. 9484

Reason Hole Stopped Bottomed the mineralization

Collar Elev. 2811 Coord. E. 9640 Project COAL Property Prospect Area

Bearing ____ Dip -90 Alaska, Quadrangle Talkeetna Mountains D-6 Sec. 21 T. 22S R. 12W Sheet # 1 of 4

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217418	10	20	10.0	10.0	85	0.6		
8217419	20	30	10.0	9.5	125	1.3		
8217420	30	40	10.0	9.6	500	2.0		
8217421	40	50	10.0	9.9	26	0.6		
8217422	50	60	10.0	9.9	68	1.5		
8217423	60	70	10.0	9.8	780	1.4		
8217424	70	80	10.0	9.8	61	0.4		
8217425	80	90	10.0	9.7	41	0.6		
8217432	90	100	10.0	9.9	27	0.4		
8217426	100	105	5.0	4.8	70	0.4		
8217427	105	115	10.0	9.7	205	0.7		
8217428	115	125	10.0	10.0	16	0.6		
8217429	125	135	10.0	9.9	32	1.1		

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217430	135	140	5.0	4.5	13	0.4		
8217431	140	151	11.0	7.3	30	0.9		
8217446	151	161	10.0	4.7	110	0.3		
8217447	161	169	8.0	7.5	95	0.4		
8217448	169	179	10.0	9.6	19	1.0		
8217449	179	189	10.0	7.4	45	2.2		
8217450	189	199	10.0	7.4	45	1.7		
8217451	199	209	10.0	8.4	70	4.2		
8217452	209	219	10.0	9.5	45	6.7		
8217453	219	229	10.0	9.7	31	0.9		
8217454	229	239	10.0	8.5	34	1.2		
8217455	239	249	10.0	9.3	25	1.2		
8217456	249	259	10.0	9.9	325	1.7		
8217457	259	269	10.0	9.5	1000	2.2		
8217458	269	279	10.0	9.7	18	0.7		
8217459	279	289	10.0	9.8	14	0.3		
8217460	289	299	10.0	9.9	23	0.7		
8217461	299	309	10.0	9.9	7	0.4		
8217462	309	319	10.0	9.9	57	1.0		

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217463	319	329	10.0	9.9	175	0.9		
8217464	329	339	10.0	9.9	210	1.1		
8217465	339	349	10.0	9.8	14	0.5		
8217466	349	355	6.0	6.0	17	1.3		
8217467	355	365	10.0	9.9	395	1.2		
8217468	365	375	10.0	9.7	12	0.3		
8217469	375	385	10.0	9.9	14	0.4		
8217470	385	390	5.0	5.0	19	0.2		
8217471	390	400	10.0	9.2	130	1.1		
8217472	400	410	10.0	9.8	2010	1.8		
8217473	410	420	10.0	9.8	27	0.4		
8217474	420	430	10.0	9.9	540	0.7		
8217475	430	440	10.0	9.9	18	0.4		
8217476	440	450	10.0	9.8	16	0.3		
8217477	450	460	10.0	9.8	38	0.4		
8217492	460	470	10.0	9.6	17	0.3		
8217478	470	480	10.0	10.1	6	0.2		
8217479	480	490	10.0	9.9	15	0.3		
8217480	490	500	10.0	9.9	19	0.2		

Hole No. DDH-22

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	ppm Sn	ppm Ag	Composites	Remarks
8217481	500	510	10.0	10.0	15	0.3		
8217482	510	520	10.0	9.9	22	0.3		
8217483	520	530	10.0	9.8	12	0.2		
8217484	530	541.6	11.6	11.1	57	0.4		
8217485	541.6	555.4	13.8	12.2	14	0.2		

555.4 T.D.

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

Hole No. DDH-23

Date Started 7/22/82 Date Stopped 8/7/82

Depth of Hole 692.8' Coord. N. 9915 Reason Hole Stopped Reached target depth - bottomed the mineralization

Collar Elev. 2884 Coord. E. 10090 Project COAL Property Prospect Area

Bearing ______ Dip -90 Alaska, Quadrangle Talkeetna Mtns. Sec. 21 T. 22S R. 12W Sheet # 1 of 5

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	GRADES ppm Ag	Composites	Remarks
8217535	4.1	10	5.9	5.5	70	1.2		
8217536	10	20	10.0	9.8	325	1.0		
8217537	20	30	10.0	9.9	3450	1.7		
8217538	30	40	10.0	10.0	110	0.7		
8217539	40	50	10.0	10.0	63	0.5		
8217540	50	60	10.0	10.0	25	0.4		
8217541	60	70	10.0	10.1	20	0.3		
8217542	70	80	10.0	10.0	28	0.3		
8217543	80	90	10.0	9.9	36	2.5		
8217544	90	100	10.0	9.8	32	0.2		
8217545	100	110	10.0	9.9	145	0.7		
8217546	110	120	10.0	9.9	45	0.5		
8217547	120	130	10.0	9.9	100	0.2		

Hole No. DDH-23

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217548	130	140	10.0	9.3	45	0.4		
8217549	140	150	10.0	9.0	24	0.4		
8217550	150	160	10.0	9.8	40	1.1		
8217551	160	165	5.0	3.1	65	0.5		
8217552	165	175	10.0	9.2	475	G 50.0		
8217553	175	181.6	6.6	5.6	2270?	0.9		
8217554	181.6	186	4.4	3.5	83	2.6		
8217555	186	196	10.0	6.5	150	1.0		
8217556	196	206	10.0	6.9	25	0.9		
8217557	206	216	10.0	8.5	325	2.2		
8217558	216	226	10.0	8.9	39	0.9		
8217559	226	236	10.0	9.8	740	1.3		
8217560	236	246	10.0	10.1	95	0.6		
8217561	246	256	10.0	9.9	85	0.6		
8217562	256	266	10.0	9.5	275	4.8		
8217563	266	276	10.0	9.9	230	1.2		
8217564	276	286	10.0	9.0	140	0.8		
8217565	286	296	10.0	10.0	58	0.9		
8217566	296	306	10.0	10.1	350	12.0		
8217567	306	316	10.0	9.9	37	0.5		

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217568	316	326	10.0	9.8	24	0.7		
8217569	326	336	10.0	9.6	500	6.4		
8217570	336	346	10.0	10.2	16	0.4		
8217571	346	356	10.0	9.9	24	0.4		
8217572	356	366	10.0	10.0	1000	1.6		
8217573	366	376	10.0	9.7	65	0.8		
8217574	376	386	10.0	9.7	670	1.4		
8217575	386	396	10.0	9.2	17	0.4		
8217576	396	406	10.0	9.4	30	0.4		
8217577	406	418	12.0	11.8	21	0.4		
8217578	418	428	10.0	9.7	6350	6.8		
8217579	428	438	10.0	9.2	1960	4.1		
8217580	438	448	10.0	8.4	145	2.0		
8217647	448	453	5.0	4.9	1050	2.0		
8217648	453	463	10.0	9.8	54	0.9		
8217649	463	468	5.0	4.9	17	0.7		
8217650	468	478	10.0	10.2	12	0.3		
8217651	478	488	10.0	10.1	27	3.1		
8217652	488	498	10.0	10.1	22	0.5		

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217653	498	508	10.0	9.7	L 5	0.5		
8217654	508	513	5.0	4.6	14	0.5		
8217655	513	523	10.0	9.8	340	2.0		
8217656	523	533	10.0	9.4	L 5	0.2		
8217657	533	543	10.0	9.0	165	0.4		
8217658	543	553	10.0	8.0	445	0.4		
8217659	553	558	5.0	5.0	27	0.5		
8217660	558	568	10.0	9.2	30	0.3		
8217661	568	578	10.0	9.9	9	0.2		
8217662	578	588	10.0	9.9	7	0.2		
8217705	588	598	10.0	10.0	9	0.2		
8217706	598	608	10.0	9.8	10	0.2		
8217707	608	618	10.0	9.8	9	0.2		
8217708	618	628	10.0	9.8	L 5	0.2		
8217709	628	638	10.0	9.9	12	0.2		
8217710	638	648	10.0	9.6	8	0.2		
8217711	648	658	10.0	9.3	22	0.3		
8217712	658	668	10.0	8.5	160	2.0		
8217713	668	678	10.0	10.0	26	0.8		

Missing Data between DDH-23 and DDH-33 enclosing Field Report 1991 Bureau of Mines.

Pages 25 thru 32 From Field Report 1991
by Tracy V.L. Parker
Bureau of Mines, Dept of Interior JVL

DDH	FROM (ft.)	TO (ft.)	RECOVERY (ft.)	Sn (ppm)	Ag (ppm)
23	376	386	9.7	670	1.4
23	386	396	9.2	17	0.4
23	396	406	9.4	30	0.4
23	406	418	11.8	21	0.4
23	418	428	9.7	6350	6.8
23	428	438	9.2	1960	4.1
23	438	448	8.4	145	2.0
23	448	453	4.9	1050	2.0
23	453	463	9.8	54	0.9
23	463	468	4.9	17	0.7
23	468	478	10.2	12	0.3
23	478	488	10.1	27	3.1
23	488	498	10.1	22	0.5
23	498	508	9.7	5	0.5
23	508	513	4.6	14	0.5
23	513	523	9.8	340	2.0
23	523	533	9.4	5	0.2
23	533	543	9.0	165	0.4
23	543	553	8.0	445	0.4
23	553	558	5.0	27	0.5
23	558	568	9.2	30	0.3
23	568	578	9.9	9	0.2
23	578	588	9.9	7	0.2
23	588	598	10.0	9	0.2
23	598	608	9.8	10	0.2
23	608	618	9.8	9	0.2
23	618	628	9.8	5	0.2
23	628	638	9.9	12	0.2
23	638	648	9.6	8	0.2
23	648	658	9.3	22	0.3
23	658	668	8.5	160	2.0
23	668	678	10.0	26	0.8
23	678	688	9.7	205	4.2
23	688	693	3.7	9	0.6
24	10	15	4.6	1025	2.2
24	15	25	9.3	230	4.5
24	25	35	10.0	97	5.0
24	35	40	5.0	24	0.7
24	40	47	7.0	22	0.5
24	47	52	5.0	1050	1.2
24	52	62	9.7	1600	2.4
24	62	72	9.8	155	0.8
24	72	82	10.0	210	2.0
24	82	87	4.9	205	2.7
24	87	92	4.8	240	1.4
24	92	102	9.7	940	2.8
24	102	107	4.9	550	2.2
24	107	112	5.0	190	5.9
24	112	122	9.9	83	1.7
24	122	132	9.8	32	5.6
24	132	142	9.9	68	0.9
24	142	152	10.0	53	2.6
24	152	162	9.9	185	4.0
24	162	172	9.9	330	1.3
24	172	182	9.9	125	1.5
24	182	192	9.0	425	0.8
24	192	202	8.0	59	0.7
24	202	212	6.4	355	0.8
24	212	222	9.0	16	0.8

DDH	FROM (ft.)	TO (ft.)	RECOVERY (ft.)	Sn (ppm)	Ag (ppm)
24	222	227	2.8	18	0.6
24	227	235	7.5	62	0.9
24	235	240	4.8	21	0.6
24	240	245	4.6	345	1.4
24	245	255	5.1	11	0.6
24	255	265	7.7	17	0.4
24	265	270	4.9	94	0.7
24	270	275	4.6	9	0.5
24	275	283	7.8	60	0.6
24	283	293	7.8	1900	1.3
24	293	303	9.2	435	0.9
24	303	313	9.6	210	1.2
24	313	318	5.2	985	2.2
24	318	323	5.0	5400	5.4
24	323	328	4.9	2300	0.7
24	328	338	9.8	635	5.6
24	338	343	4.9	210	2.2
24	343	353	9.7	3500	22.0
24	353	358	4.2	975	12.0
24	358	363	4.9	49	4.2
24	363	373	9.9	150	3.0
24	373	383	9.8	890	3.6
24	383	393	9.8	200	1.2
24	393	403	9.8	42	1.2
24	403	413	9.8	2860	15.0
24	413	423	6.5	1630	3.4
24	423	433	6.0	835	6.4
24	433	438	4.9	1620	11.0
24	443	448	4.5	1370	5.6
24	448	458	7.2	650	6.2
24	458	468	7.7	395	1.1
24	468	478	9.7	1600	7.5
24	478	485	6.8	77	1.0
24	485	495	9.8	1550	2.1
24	495	505	10.0	33	0.5
24	505	513	7.6	1200	1.4
24	513	523	9.7	3200	7.3
24	523	528	4.6	995	2.6
24	528	538	8.2	941	3.6
24	538	548	8.6	1100	4.2
24	548	553	4.4	180	0.9
24	553	558	4.8	2120	4.1
24	558	568	10.0	110	0.4
24	568	578	10.0	30	1.8
24	578	588	9.9	185	0.6
24	588	598	10.0	49	0.3
24	598	603	4.9	115	0.3
24	603	609	5.9	670	0.9
24	609	619	9.9	4800	15.0
24	619	630	11.0	6100	19.0
24	630	635	5.0	2260	2.0
24	635	645	9.8	1170	0.5
24	645	650	4.9	1790	6.3
24	650	655	5.0	33	0.3
24	655	665	9.9	270	1.0
24	665	670	5.0	390	1.6
24	670	680	10.0	1580	7.0
24	680	685	4.9	2110	3.3
24	685	691	5.9	3740	3.2

DDH	FROM (ft.)	TO (ft.)	RECOVERY (ft.)	Sn (ppm)	Ag (ppm)
24	691	701	9.9	105	0.6
24	701	711	9.8	19	0.4
24	711	721	9.9	150	0.4
24	721	731	10.0	45	0.4
24	731	741	10.0	115	0.4
24	741	751	10.0	17	0.4
24	751	761	10.0	25	0.5
24	761	771	10.0	125	0.3
24	771	779	8.0	165	1.6
24	779	789	9.7	695	3.7
24	789	795	5.8	7790	3.7
24	795	803	6.7	9999	3.4
25	11	20	3.9	38	0.6
25	20	30	8.5	27	0.7
25	30	40	4.0	21	0.8
25	40	50	9.0	80	1.3
25	50	60	8.2	44	3.0
25	60	70	7.4	41	2.9
25	70	80	1.5	76	6.5
25	80	90	4.2	98	4.8
25	90	100	8.6	315	3.9
25	100	110	7.8	2010	8.9
25	110	120	9.9	70	3.9
25	120	130	6.2	75	1.7
25	130	140	4.4	31	2.4
25	140	150	5.8	1700	5.9
25	150	160	8.7	51	2.6
25	160	170	9.4	160	3.0
25	170	180	8.1	35	1.5
25	180	190	8.7	75	1.3
25	190	200	10.1	760	5.7
25	200	210	9.1	195	3.4
25	210	220	8.8	580	3.7
25	220	230	9.1	235	1.7
25	230	240	9.7	100	1.0
25	240	250	9.7	27	1.0
25	250	260	9.3	30	1.4
25	260	270	9.9	34	0.8
25	270	275	5.0	30	0.8
25	275	287	9.8	2160	5.9
25	287	297	9.7	1000	4.0
25	297	307	9.8	1000	1.8
25	307	318	10.8	3250	14.0
25	318	329	10.6	590	3.0
25	329	339	9.5	235	4.1
25	339	344	4.8	2550	7.6
25	344	345	9.8	1750	12.0
25	354	364	9.9	1020	3.7
25	364	374	9.6	130	1.2
25	374	384	9.8	685	2.0
25	384	396	11.9	490	1.3
25	396	408	11.8	2500	9.1
25	408	418	9.9	250	18.0
25	418	428	9.8	855	1.0
25	428	437	8.6	360	1.5
25	437	447	10.0	1050	7.7
25	447	457	10.0	2650	35.0
25	457	465	7.8	310	0.9
25	465	470	4.9	69	0.8

DDH	FROM (ft.)	TO (ft.)	RECOVERY (ft.)	Sn (ppm)	Ag (ppm)
25	470	480	9.9	780	15.0
25	480	485	5.0	14	0.4
25	485	490	4.8	750	19.0
25	490	500	9.7	750	1.1
25	500	510	10.1	1550	1.7
25	510	515	5.0	105	0.6
25	515	520	4.9	335	14.0
25	520	525	4.8	5600	10.0
25	525	530	4.7	2000	1.7
25	530	540	9.6	2500	13.0
25	540	551	10.9	2100	4.6
25	551	561	9.9	540	2.4
25	561	570	9.0	1100	3.7
25	570	575	5.0	1560	6.6
25	575	580	5.0	975	1.9
25	580	590	10.0	315	0.4
25	590	601	11.0	4150	11.0
25	601	610	8.6	3700	7.6
25	610	615	4.6	880	7.6
25	615	620	4.9	2250	4.6
25	620	630	10.0	3600	0.5
25	630	635	4.9	1560	0.4
25	635	640	5.0	3350	0.9
25	640	650	9.9	180	0.3
25	650	660	9.4	195	0.2
25	660	670	9.0	395	10.0
25	670	675	4.6	2250	2.0
25	675	680	4.9	6700	25.0
25	680	685	4.9	2150	13.0
25	685	690	5.3	2900	18.0
25	690	695	5.0	920	0.7
25	695	705	9.1	105	0.2
25	705	715	10.2	39	0.2
25	715	725	9.8	60	0.2
25	725	735	9.9	17	0.2
25	735	745	10.0	32	0.2
25	745	755	10.0	59	0.2
25	755	765	9.9	455	0.3
25	765	775	9.7	9	0.3
25	775	785	9.9	27	0.3
25	785	795	10.0	390	0.6
25	795	800	5.3	13	0.5
26	16	30		130	0.5
26	30	40		5	0.7
26	40	50		5	0.8
26	50	60		6	0.9
26	60	70		7	0.8
26	70	80			
30	96	106	9.7	57	0.5
30	106	117	8.5	40	0.9
30	117	125	8.1	80	0.3
30	125	134	8.2	93	0.6
31	7	18	9.4	21	1.0
31	18	28	9.7	43	1.7
31	28	38	9.8	41	0.4
31	38	48	9.8	18	0.4
31	48	58	8.9	24	0.4
31	58	68	9.9	145	0.8
31	68	78	9.5	92	2.0

DDH	FROM (ft.)	TO (ft.)	RECOVERY (ft.)	Sn (ppm)	Ag (ppm)
31	78	88	9.2	240	4.0
31	88	98	9.6	27	0.8
31	98	108	9.7	155	1.7
31	108	118	9.8	335	3.0
31	118	128	9.8	360	4.6
31	128	138	9.7	235	11.0
31	138	148	8.8	1930	20.0
31	148	158	8.2	660	28.0
31	158	168	6.7	120	2.2
31	168	178	4.3	350	11.0
31	178	188	2.7	160	15.0
31	188	198	3.8	165	1.6
31	198	205	4.1	66	1.6
31	205	218	10.1	70	1.4
31	218	228	9.0	54	1.1
31	228	238	9.5	74	0.6
31	238	248	9.5	72	0.7
31	248	255	6.4	58	0.7
31	255	265	7.1	105	3.9
31	265	273	4.0	50	1.0
31	273	283	6.7	65	1.2
31	283	293	4.5	115	2.6
31	293	303	8.4	54	0.7
31	303	313	9.8	45	0.8
31	313	323	7.0	40	0.4
31	323	333	9.6	86	0.4
31	333	343	10.1	340	0.8
31	343	353	9.9	26	0.6
31	353	363	9.5	55	0.5
31	363	373	10.0	45	0.5
31	373	383	10.0	110	0.4
31	383	393	9.8	130	0.3
31	393	403	9.7	63	1.8
31	403	413	9.8	750	1.2
31	413	418	5.0	97	0.5
32	3	13	9.3	2400	1.3
32	13	23	9.9	795	2.6
32	23	33	9.7	2110	2.4
32	33	43	9.7	3300	13.0
32	43	53	9.9	365	7.3
32	53	63	9.8	2200	31.0
32	63	68	4.9	850	9.3
32	68	78	10.0	9300	38.0
32	78	88	9.9	2640	18.0
32	88	98	10.0	4190	25.0
32	98	108	9.9	2870	40.0
32	108	118	10.0	1110	23.0
32	118	128	9.4	1250	13.0
32	128	140	5.6	1165	5.4
32	140	150	9.2	340	1.8
32	150	160	9.3	410	2.9
32	160	170	9.5	210	5.4
32	170	180	9.8	5100	27.0
32	180	190	10.0	120	1.0
32	190	200	8.8	245	2.5
32	200	207	4.2	375	2.4
32	207	217	5.6	1800	8.0
32	217	225	7.2	12	0.4
32	225	232	6.3	2300	1.7

DDH	FROM (ft.)	TO (ft.)	RECOVERY (ft.)	Sn (ppm)	Ag (ppm)
32	232	240	7.6	14	0.8
32	240	250	9.9	38	0.8
32	250	260	9.9	305	0.9
32	260	270	9.8	1880	1.0
32	270	280	9.9	125	1.0
32	280	290	10.0	91	0.4
32	290	300	10.0	920	0.5
32	300	305	5.0	360	0.6
32	305	315	9.8	1660	5.8
32	315	325	9.8	3200	5.5
32	325	335	9.8	165	1.1
32	335	345	9.3	215	1.0
32	345	355	9.5	12	0.8
32	355	360	4.5	16	1.1
32	360	370	9.6	4500	2.6
32	370	380	9.9	91	1.4
32	380	390	9.1	215	4.4
32	390	400	8.7	360	2.4
32	400	410	9.3	140	5.0
32	410	420	9.5	6000	7.8
32	420	425	4.6	3500	22.0
32	425	435	9.7	2200	3.0
32	435	445	9.9	900	5.0
32	445	455	9.7	130	1.4
32	455	465	9.5	3500	50.0
32	465	475	9.4	460	2.7
32	475	480	4.7	3800	8.6
32	480	490	10.0	1920	5.0
32	490	500	10.0	3600	9.0
32	500	510	9.8	2680	4.6
32	510	520	9.4	3010	3.6
32	520	530	9.9	2750	6.6
32	530	540	10.1	3500	2.3
32	540	550	10.0	425	0.7
32	550	560	10.0	42	0.4
32	560	570	10.1	560	0.6
32	570	580	10.0	12	0.5
32	580	590	10.0	5	0.3
32	590	600	10.0	28	0.4
32	600	610	10.0	9999	0.7
32	610	620	10.0	21	0.5
32	620	630	10.0	28	0.7
32	630	640	10.0	17	1.0
32	640	650	10.0	39	0.5
32	650	660	10.0	6	0.3
32	660	670	10.0	6	0.3
32	670	680	10.0	5	0.2
32	680	690	10.0	750	2.0
32	690	700	9.1	15	0.2
32	700	710	9.9	880	1.2
32	710	720	9.3	5	0.2
32	720	728	6.0	1650	1.3
33	3	10	5.5	20	0.5
33	10	20	9.7	2200	1.7
33	20	30	9.1	45	1.3
33	30	40	9.5	145	1.2
33	40	50	9.5	93	1.5
33	50	60	9.2	175	2.9
33	60	70	9.8	220	3.6

DDH	FROM (ft.)	TO (ft.)	RECOVERY (ft.)	Sn (ppm)	Ag (ppm)
33	70	80	10.0	100	2.4
33	80	90	10.0	77	1.6
33	90	100	10.0	32	0.7
33	100	110	9.9	73	0.8
33	110	120	7.9	80	3.1
33	120	130	5.6	235	13.0
33	130	140	3.3	580	19.0
33	140	150	4.8	920	13.0
33	150	160	7.2	1060	5.7
33	160	170	7.6	2800	10.0
33	170	180	8.5	1000	3.6
33	180	190	8.6	1800	5.2
33	190	200	9.8	1950	4.7
33	200	210	8.9	840	5.8
33	210	220	9.4	705	5.2
33	220	230	9.7	855	3.9
33	230	240	9.8	675	13.0
33	240	250	8.9	2900	3.0
33	250	260	9.9	20	0.5
33	260	270	9.7	635	1.4
33	270	280	9.5	2800	4.9
33	280	290	9.5	3700	4.6
33	290	300	9.5	105	1.2
33	300	310	9.2	105	1.8
33	310	320	9.7	205	3.8
33	320	330	9.9	37	1.1
33	330	340	9.7	3000	11.0
33	340	350	9.9	28	0.8
33	350	355	4.6	150	7.3
33	355	365	8.7	450	12.0
33	365	375	9.9	275	2.0
33	375	385	9.7	20	0.7
33	385	395	9.6	20	0.9
33	395	405	9.6	180	2.8
33	405	415	9.6	770	2.2
33	415	425	9.9	12	0.5
33	425	435	10.0	7	0.6
33	435	445	9.9	13	0.4
33	445	455	9.9	26	0.4
33	455	465	9.8	1580	4.4
33	465	475	9.7	46	1.2
33	475	485	9.9	900	2.8
33	485	495	9.9	5	0.2
33	495	505	9.9	10	0.2
33	505	515	9.9	75	0.4
33	515	525	9.5	27	0.4
33	525	535	9.3	550	0.3
33	535	545	9.5	450	0.4
33	545	555	9.8	635	4.3
33	555	565	9.8	745	3.1
33	565	576	11.0	58	0.9
33	576	587	11.5	32	0.3
33	587	597	10.4	2200	5.9
33	597	607	10.0	305	3.4
33	607	617	10.0	25	0.4
33	617	627	10.0	12	0.3
33	627	637	10.0	13	0.9
33	637	647	10.0	18	0.4
33	647	657	10.0	16	0.2

DDH	FROM (ft.)	TO (ft.)	RECOVERY (ft.)	Sn (ppm)	Ag (ppm)
33	657	667	9.9	500	0.5
33	667	677	10.0	10	0.3
33	677	687	10.0	8	0.2
33	687	692	5.0	9999	5.5
33	692	702	9.9	365	0.8
33	702	712	9.6	275	0.6
33	712	717	4.8	110	0.2
33	717	727	8.3	5200	3.0
33	727	737	4.5	340	0.4
33	737	747	5.8	61	0.5
34	5	15	10.1	610	2.7
34	15	25	9.6	545	1.4
34	25	35	9.2	335	1.0
34	35	45	9.7	125	0.2
34	45	55	9.8	2500	0.4
34	55	65	9.9	500	10.0
34	65	75	9.7	3500	19.0
34	75	85	9.7	2200	9.1
34	85	90	4.9	260	5.8
34	90	100	8.3	600	2.1
34	100	110	5.6	900	6.2
34	110	120	8.4	2900	3.4
34	120	130	8.5	265	6.3
34	130	140	3.8	100	2.0
34	140	150	8.9	1440	2.5
34	150	160	8.9	150	0.4
34	160	170	7.7	130	1.5
34	170	180	8.7	2800	1.2
34	180	190	9.2	190	0.8
34	190	200	9.3	3200	0.5
34	200	210	9.3	46	0.6
34	210	220	9.7	24	0.9
34	220	230	9.2	36	1.0
34	230	235	4.8	17	1.0
34	235	245	9.5	28	0.4
34	245	255	9.5	75	1.6
34	255	265	6.5	35	0.2
34	265	270	2.9	5	0.4
34	270	280	8.5	40	0.6
34	280	290	4.4	5	0.3
34	290	300	8.7	8	0.5
34	300	310	9.7	5	0.4
34	310	320	9.5	5	0.4
34	320	330	9.7	26	0.6
34	330	340	9.7	15	0.5
34	340	350	9.8	18	0.5
34	350	360	9.3	16	0.3
34	360	370	8.5	8	0.4
34	370	380	9.2	13	0.4
34	380	390	9.6	10	0.5
34	390	400	8.7	8	0.7
34	400	410	7.9	50	0.6
34	410	420	9.5	350	1.0
34	420	430	9.5	30	0.7
34	430	440	9.4	15	0.5
34	440	445	4.2	48	0.4
34	445	455	7.2	1120	0.8
34	455	465	7.7	25	0.5
34	465	470	4.8	18	0.7

Hole No. DDH-33 33

Sample No.	Interval From	Interval To	Thickness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217329	692	702	10	9.9	365	0.8		
8217330	702	712	10	9.6	275	0.6		
8217331	712	717	5	4.8	110	0.2		
8217332	717	727	10	8.3	5200	3.0		
8217333	727	737	10	4.5	340	0.4		
8217334	737	746.9	9.9	5.8	61	0.5		

Missing Data between DDH-23 and DDH-33

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

Hole No. DDH-34

Date Started 7/10/82 Date Stopped 7/17/82

Depth of Hole 593.0 Coord. N. 10001 Reason Hole Stopped Reached target depth - bottomed the mineralizati

Collar Elev. 2919 Coord. E. 9940 Project COAL Property Prospect Area

Bearing ______ Dip -90 Alaska, Quadrangle Talkeetna Mtns. D-6 Sec. 21 T. 22S R. 12W Sheet # 1 of 4

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES Sn	GRADES Ag	Composites	Remarks
8217379	4.9	15	10.1	10.1	610	2.7		
8217380	15	25	10	9.6	545	1.4		
8217381	25	35	10	9.2	335	1.0		
8217382	35	45	10	9.7	125	0.2		
8217383	45	55	10	9.8	2500	0.4		
8217384	55	65	10	9.9	500	10.0		
8217385	65	75	10	9.7	3500	19.0		
8217386	75	85	10	9.7	2200	9.1		
8217387	85	90	5	4.9	260	5.8		
8217388	90	100	10	8.3	600	2.1		
8217389	100	110	10	5.6	900	6.2		
8217390	110	120	10	8.4	2900	3.4		
8217391	120	130	10	8.5	265	6.3		

Hole No. DDH-34

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remark
8217392	130	140	10	3.8	100	2.0		
8217393	140	150	10	8.9	1440	2.5		
8217394	150	160	10	8.9	150	0.4	.139 pct over 155'	
8217395	160	170	10	7.7	130	1.5		
8217396	170	180	10	8.7	2800	1.2		
8217397	180	190	10	9.2	190	0.8		
8217398	190	200	10	9.3	3200	0.5		
8217399	200	210	10	9.3	46	0.6		
8217400	210	220	10	9.7	24	0.9		
8217401	220	230	10	9.2	36	1.0		
8217402	230	235	5	4.8	17	1.0		
8217403	235	245	10	9.5	28	0.4		
8217404	245	255	10	9.5	75	1.6		
8217405	255	265	10	6.5	35	0.2		
8217406	265	270	5	2.9	L 5	0.4		
8217407	270	280	10	8.5	40	0.6		
8217408	280	290	10	4.4	L 5	0.3		
8217409	290	300	10	8.7	8	0.5		
8217410	300	310	10	9.7	L 5	0.4		

Hole No. DDH-34

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	ppm Sn	ppm Ag	Composites	Remark
8217411	310	320	10	9.5	L 5	0.4		
8217412	320	330	10	9.7	26	0.6		
8217413	330	340	10	9.7	15	0.5		
8217414	340	350	10	9.8	18	0.5		
8217415	350	360	10	9.3	16	0.3		
8217416	360	370	10	8.5	8	0.4		
8217417	370	380	10	9.7	13	0.4		
8217041	380	390	10	9.6	10	0.5		
8217042	390	400	10	8.7	8	0.7		
8217043	400	410	10	7.9	50	0.6		
8217044	410	420	10	9.5	350	1.0		
8217045	420	430	10	9.5	30	0.7		
8217046	430	440	10	9.4	15	0.5		
8217047	440	445	5	4.2	48	0.4		
8217048	445	455	10	7.2	1120	0.8		
8217049	455	465	10	7.7	25	0.5		
8217433	465	470	5	4.8	18	0.7		
8217434	470	480	10	9.8	74	0.5		
8217435	480	490	10	9.9	24	0.3		

Hole No. DDH-34

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remar
8217436	490	500	10	9.9	12	0.7		
8217437	500	510	10	10.0	10	0.6		
8217438	510	520	10	9.8	L 5	0.5		
8217439	520	530	10	5.6	10	1.4		
8217440	530	540	10	2.8	10	0.9		
8217441	540	550	10	6.4	6	1.8		
8217442	550	560	10	10.1	35	3.0		
8217443	560	570	10	9.8	28	2.8		
8217444	570	580	10	10.0	10	0.3		
8217445	580	593	13	12.9	6	0.2		
	593 T.D.							

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

Hole No. DDH-35

Date Started 8/8/82 Date Stopped 8/1

Depth of Hole 500.7 Coord. N. 9054 Reason Hole Stopped Bottomed the mineralization-crossed contact into metasedi

Collar Elev. 2760 Coord. E. 9214 Project COAL Property Prospect Area

Bearing ______ Dip -50 Alaska, Quadrangle Talkeetna Mtns. D-6 Sec. 21 T. 22S R. 12W Sheet # 1 of 3

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remark
8217726	1.0	10	9.0	6.8	110	1.5		
8217732	10	20	10.0	9.5	1000	3.3		
8217733	20	30	10.0	10.0	725	1.1		
8217734	30	40	10.0	9.8	400	3.2		
8217735	40	50	10.0	9.3	1200	2.9		
8217736	50	60	10.0	9.8	1500	2.7		
8217737	60	70	10.0	10.0	95	0.6		
8217738	70	80	10.0	9.7	565	2.2		
8217739	80	90	10.0	9.8	665	5.0		
8217740	90	95	5.0	4.9	1850	10.0		
8217741	95	100	5.0	5.0	1550	3.8		
8217742	100	110	10.0	9.8	785	2.3		

Hole No. DDH-35

Sample No.	Interval From	To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remark
8217743	110	120	10.0	9.9	2400	12.0		
8217744	120	125	5.0	5.0	910	17.0		
8217745	125	135	10.0	9.7	505	3.7		
8217746	135	140	5.0	4.6	315	4.2		
8217747	140	145	5.0	4.8	452	7.4		
8217748	145	155	10.0	10.0	860	3.9		
8217794	155	165	10.0	10.0	875	5.0		
8217795	165	175	10.0	9.9	455	2.8		
8217796	175	185	10.0	9.8	500	2.7		
8217797	185	195	10.0	9.7	815	5.3		
8217798	195	205	10.0	9.9	1760	5.3		
8217799	205	215	10.0	9.9	955	5.1		
8217800	215	225	10.0	9.8	340	3.3		
8217801	225	235	10.0	9.7	270	2.2		
8217812	235	245	10.0	9.8	400	3.7		
8217813	245	255	10.0	10.3	685	5.1		
8217814	255	265	10.0	10.0	240	2.5		
8217815	265	270	5.0	4.8	48	1.4		
8217816	270	280	10.0	9.5	260	2.8		

Hole No. DDH-35

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217817	280	285	5.0	4.6	140	2.6		
8217818	285	295	10.0	9.2	440	2.1		
8217819	295	305	10.0	9.8	570	4.6		
8217820	305	315	10.0	9.7	185	1.9		
8217821	315	325	10.0	9.6	135	1.1		
8217822	325	335	10.0	10.0	700	2.2		
8217823	335	345	10.0	9.7	330	1.5		
8217824	345	355	10.0	9.7	175	0.9		
8217825	355	365	10.0	7.5	275	1.1		
8217826	365	375	10.0	6.4	23	0.5		
8217827	375	385	10.0	9.0	20	0.8	Last sample DDH-35 - remainder of hole in argillite.	

HOUSTON INTERNATIONAL MINERALS CORPORATION
ASSAY RECORD

Hole No. DDH-36

Depth of Hole 762.8 Coord. N. 9732

Date Started 8/12/82 Date Stopped 8/19/8

Reason Hole Stopped Bottomed the mineralization - crossed fault zone into argil

Collar Elev. 2871 Coord. E. 9794

Project Coal Property Prospect Ar

Bearing N15E Dip -50 Alaska, Quadrangle Talkeetna Mts. Sec. 21 T. 225 R. 12W Sheet # 1 of 5

Sample No.	Interval From	Interval To	Thickness	Rec. Core	GRADES Sn	GRADES Ag	Composites	Remarks
8217828	3	10	7.0	7.3	50	2.7		
8217829	10	20	10.0	7.8	86	3.4		
8217830	20	30	10.0	10.0	215	3.4		
8217831	30	35	5.0	4.8	32	2.0		
8217832	35	45	10.0	9.8	1530	7.8		
8217833	45	55	10.0	10.0	750	3.0		
8217834	55	65	10.0	9.8	340	3.1		
8217835	65	75	10.0	9.3	1610	1.8		
8217836	75	85	10.0	9.8	85	1.2		
8217837	85	90	5.0	4.8	310	3.6		
8217838	90	100	10.0	9.7	1810	11.0	.118 over 190'	
8217839	100	105	5.0	4.8	1600	3.7		
8217840	105	115	10.0	9.6	910	4.4		

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217841	115	125	10.0	9.9	1500	11.0		
8217842	125	135	10.0	9.7	1940	13.0		
8217843	135	145	10.0	9.2	395	4.5		
8217844	145	155	10.0	7.6	460	3.6		
8217845	155	165	10.0	8.0	140	2.0		
8217846	165	170	5.0	4.8	125	2.6		
8217847	170	180	10.0	10.0	1510	14.0		
8217848	180	190	10.0	10.0	5590	2.5		
8217849	190	200	10.0	9.8	1910	11.0		
8217850	200	210	10.0	8.1	46	1.3		
8217851	210	220	10.0	8.2	425	1.4		
8217852	220	225	5.0	4.5	810	1.4		
8217853	225	235	10.0	8.1	2370	11.0		
8217854	235	245	10.0	10.0	2090	15.0		
8217855	245	255	10.0	7.0	680	3.3		
8217856	255	265	10.0	9.6	1160	5.5		
8217857	265	275	10.0	9.7	3590	6.5	.24 pct Sn over 98 Ft	
8217858	275	285	10.0	9.7	2970	13.0		

Hole No. DDH-36

Sample No.	Interval From	Interval To	Thick- ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217859	285	295	10.0	10.0	2010	12.0		
8217860	295	304	9.0	8.9	2410	14.0		
8217861	304	314	10.0	9.7	4160	15.0		
8217862	314	323	9.0	9.0	2620	18.0		
8217863	323	331	8.0	8.0	110	1.4		
8217864	331	337	6.0	6.0	210	0.6		
8217865	337	344	7.0	7.0	285	3.0		
8217866	344	354	10.0	10.0	840	1.2		
8217867	354	364	10.0	10.0	3780	20.0		
8217868	365	369	5.0	5.0	7150	26.0		
8217869	369	374	5.0	4.9	3740	2.2		
8217870	374	384	10.0	9.8	2440	19.0		
8217871	384	394	10.0	9.9	710	1.5		
8217872	394	404	10.0	9.8	215	2.5		
8217873	404	414	10.0	9.8	100	1.0		
8217874	414	424	10.0	9.9	325	2.4		
8217875	424	434	10.0	9.7	220	0.8		
8217876	434	439	5.0	4.9	595	3.2		

Hole No. DDH-36

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	GRADES ppm Ag	Composites	Remarks
8217877	439	449	10.0	9.9	31	2.2		
8217878	449	459	10.0	8.9	56	0.6		
8217879	459	469	10.0	10.0	175	0.5		
8217880	469	479	10.0	10.0	475	1.8		
8217881	479	489	10.0	10.0	270	1.2		
8217882	489	499	10.0	10.0	67	0.8		
8217883	499	509	10.0	9.9	200	0.8		
8217884	509	519	10.0	9.4	20	0.5		
8217885	519	525	6.0	6.0	2590	17.0		
8217886	525	535	10.0	9.6	680	4.3		
8217887	535	542	7.0	6.9	2110	9.4		
8217888	542	552	10.0	9.7	2510	11.0		
8217889	552	562	10.0	8.8	10740	9.5		
8217890	562	572	10.0	9.3	960	1.0		
8217891	572	582	10.0	8.3	105	0.6	.28 pct Sn over 116 ft	
8217892	582	592	10.0	9.2	2250	1.6		
8217893	592	602	10.0	8.2	1700	3.6		
8217894	602	612	10.0	8.2	2510	8.3		

Hole No. DDH-36

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217895	612	620	8.0	5.6	3290	4.0		
8217896	620	625	5.0	3.9	5650	35.0		
8217897	625	635	10.0	9.2	2680	20.0		
8217898	635	645	10.0	8.5	960	4.2		
8217899	645	655	10.0	9.0	270	1.1		
8217900	655	665	10.0	8.5	790	3.8		
8217901	665	675	10.0	9.6	1300	1.4		
217902	675	685	10.0	9.2	31	0.5		
217903	685	695	10.0	9.7	320	1.8		
217904	695	705	10.0	9.5	970	1.9		
217905	705	715	10.0	9.2	335	1.4		
217906	715	725	10.0	9.6	89	0.4		
217907	725	735	10.0	9.3	260	6.2		
17908	735	745	10.0	9.8	1300	0.8		
17909	745	755	10.0	9.6	100	0.5		
17910	755	762.8	7.8	6.8	86	1.0		
		762.8	TD					

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

Hole No. DDH-37

Date Started 8/16/82 Date Stopped 8/18/8

Depth of Hole 194.3 Coord. N. 9200

Reason Hole Stopped Lost in badly broken granite porphyry

Collar Elev. 2750 Coord. E. 9454 Project COAL Property Prospect Area

Bearing N15E Dip -50 Alaska, Quadrangle Talkeetna Mtns. Sec. 21 T. 22S R. 12W Sheet # 1 of 2

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217911	4	14	10.0	8.2	94	1.5		
8217912	14	24	10.0	7.8	110	2.0		
8217913	24	34	10.0	9.6	290	1.7		
8217914	34	44	10.0	9.6	180	0.8		
8217915	44	54	10.0	9.7	2190	1.7		
8217916	54	64	10.0	9.6	135	0.6		
8217917	64	74	10.0	10.0	225	0.6		
8217918	74	84	10.0	9.3	185	1.6		
8217919	84	94	10.0	10.0	89	1.0		
8217920	94	104	10.0	9.8	210	1.4		
8217921	104	114	10.0	9.8	1680	3.0		
8217922	114	124	10.0	9.5	600	2.6		
8217923	124	134	10.0	9.6	1100	2.5		

Hole No. DDH-37

Sample No.	Interval From	To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remar
8217924	134	144	10.0	9.4	1730	5.2		
8217925	144	154	10.0	7.5	295	3.6		
8217926	154	164	10.0	2.8	190	2.4		
8217927	164	174	10.0	6.1	270	1.0		
8217928	174	184	10.0	4.6	70	1.6		
8217929	184	194.3	10.3	4.8	335	1.8		
T.D.	194.3							

		Rec. Core	ppm Sn	ppm Ag,
8217940	101-111	8.5	830	1.1
8217941	111-121	9.1	75	1.6
8217942	121-131	10.1	105	1.4

GMC DATA REPORT 3 2 7

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

Hole No. DDH-39

Depth of Hole 645.4 Coord. N. 9831 Date Started 8/19/82 Date Stopped 9/2/8

Collar Elev. 2856 Coord. E. 9403 Project COAL Reason Hole Stopped Bottomed the mineralizatio

Bearing N15E Dip -50 Alaska, Quadrangle Talkeena Mtns. Property Prospect Area

Sec. 21 T. 22S R. 12W Sheet # 1 of 4

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217930	6	12	6.0	4.7	320	2.6		
8217931	12	21	9.0	8.0	96	1.5		
8217932	21	31	10.0	7.2	260	1.8		
8217933	31	41	10.0	9.3	120	0.6		
8217934	41	51	10.0	7.8	250	1.8		
8217935	51	61	10.0	7.2	220	2.0		
8217936	61	71	10.0	4.6	1630	16.0		
8217937	71	81	10.0	9.8	690	8.0		
8217938	81	91	10.0	9.7	1300	5.0		
8217939	91	101	10.0	9.3	150	1.2		
8217940	101	111	10.0	[illegible]				

GMC DATA REPORT 3 2 7

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	ppm Sn	ppm Ag	Composites	Remark
8217943	131	140	9.0	9.1	75	1.6		
8217944	140	150	10.0	10.1	105	1.4		
8217945	150	160	10.0	10.2	180	1.7		
8217946	160	170	10.0	10.0	140	2.3		
8217947	170	180	10.0	9.6	605	4.2		
8217948	180	190	10.0	9.8	47	2.0		
8217949	190	200	10.0	9.9	87	1.2		
8217950	200	209	9.0	9.1	74	1.2		
8217951	209	220	11.0	11.0	1000	12.0		
8217952	220	230	10.0	10.0	7340	5.4		
8217953	230	240	10.0	10.0	380	4.3		
8217954	240	250	10.0	10.1	260	7.6		
8217955	250	260	10.0	10.1	1800	2.6		
8217956	260	270	10.0	10.0	855	6.7		
8117957	270	280	10.0	9.6	375	2.6		
8117958	280	290	10.0	9.3	1530	4.8		
8217959	290	300	10.0	9.9	415	6.6		
8217960	300	310	10.0	8.9	1820	9.6		

Hole No. DDH-39

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remark
8217961	310	320	10.0	9.9	550	6.2		
8217962	320	330	10.0	9.9	3650	19.0		
8217963	330	340	10.0	10.0	500	7.4		
8217964	340	350	10.9	9.9	1890	5.8		
8217965	350	359	9.0	9.5	890	1.9		
8217966	359	369	10.0	9.9	115	1.4		
8217967	369	379	10.0	10.0	850	8.6		
8217968	379	389	10.0	10.0	520	4.8		
8217969	389	401	12.0	12.1	1600	16.0		
8217970	401	408	7.0	6.9	3180	3.1		
8217971	408	415	7.0	6.9	145	1.4		
8217972	415	422	7.0	6.9	3030	31.0		
8217973	422	432	10.0	10.0	1810	9.8		
8217974	432	442	10.0	10.0	485	5.3		
8217975	442	452	10.0	10.0	270	2.2		
8217976	452	462	10.0	9.9	1530	5.0		
8217977	462	467	5.0	4.8	72	0.6		
8217978	467	477	10.0	9.8	40	1.8		

Sample No.	Interval From	Interval To	Thick-ness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
8217979	477	487	10.0	10.0	53	0.2		
8217980	487	497	10.0	9.9	69	0.7		
8217981	497	507	10.0	10.1	87	0.2		
8217982	507	517	10.0	9.8	63	0.2		
8217983	517	527	10.0	9.7	40	0.2		
8217984	527	537	10.0	9.9	49	0.6		
8217985	537	547	10.0	8.5	120	0.6		
8217986	547	554	7.0	7.2	82	0.2		
8217987	554	565	11.0	8.4	330	1.7		
8217988	580	590	10.0	4.8	33	0.3		
8217989	590	600	10.0	8.2	1630	1.3		
8217990	600	610	10.0	9.0	1130	5.6		
8217991	610	620	10.0	8.0	42	0.4		
8217992	620	630	10.0	7.0	57	0.4		
8217993	630	635	5.0	1.7	295	18.0		
8217994	635	645.4	10.4	7.1	8	0.2		
	645.5 T.D.							

HOUSTON INTERNATIONAL MINERALS CORPORATION

ASSAY RECORD

Hole No. DDH-41 Date Started 9/5/82 Date Stopped 9/6/8

Depth of Hole 215.1' Coord. N. 12254 Reason Hole Stopped Reached target depth

Collar Elev. 2695 Coord. E. 11729 Project COAL Property NE Area

Bearing N35E Dip -50 Alaska, Quadrangle Talkeetna Mtns. D-6 Sec. 21 T. 22S R. 12W Sheet # 1 of 1

Sample No.	Interval From	Interval To	Thickness	Rec. Core	GRADES ppm Sn	ppm Ag	Composites	Remarks
	75	85	10.0	6.4	260	1.4		
	85	95	10.0	7.4	29	2.0		
	95	105	10.0	7.0	44	2.0		
	105	125	20.0	9.7	350	1.9		
	125	135	10.0	9.6	280	1.1		
	135	145	10.0	9.9	355	0.7		
	145	155	10.0	10.2	385	0.6		
	155	165	10.0	10.1	200	0.6		
	165	175	10.0	10.0	165	0.9		
	175	185	10.0	10.2	125	0.8		
	185	195	10.0	10.1	320	0.7		
	195	205	10.0	9.8	245	1.2		
	205	215.1	10.1	10.2	105	1.2		

215.1 T.D.