MINERAL OCCURENSES ON BABCOCK CLAIMS

Pros. # 1--Claim # 8.
In Bank of road 100 ft. NE of culvert on Rabbit Lake fork of Deer Creek. Sulphides and heavy black Gossan.

Pros. # 2--Claim #4.
250 ft. SW of Tunnel # 1. Heavy Gossan in abundance with Sulphides.

Pros. # 3--Claim # 4.
100 ft. NW of Tunnel # 1. Rock is questionable as to being in place in trail.

Pros. # 4--Claim # 1.
Approx. 400 ft. N of Tunnel # 1. Heavy mineralization both in place and scattered, covering an area 80 x 150 ft.

Pros. # 5--Claim # 10.
Approx. 550 Ft. NW of Tunnel # 1. Sulphides and Gossan in Location cut for Claim.

Pros. # 6.
Pros. # 7.--Claim # 9.
Approx. 450 ft. SW of Tunnel # 1. Sulphides and Ochre in slope of road.

Pros. # 8--Claim # 9.
Approx. 200 ft. W on road from SE cor. of Claim # 9. Ochre and Sulphides.

Pros. # 10-Claim # 6.
Approx. 125 ft. East of Tunnel # 5. Old Location site in hard rock formation.

Pros. # 11-Claim # 6.
Approx. 250 ft. East from Tunnel # 5 and on trail.

Pros. # 12-Claim # 6.
Approx. 50 ft. West of point where trail leaves road to go to Tunnel # 5. In slope of road.

Pros. # 13-Claim # 6.
Approx. 500 ft. West of Tunnel # 5. In road slope. 100 ft. East of 2nd Gulch.

Pros. # 15-Claim # 6.
Approx. 435 ft. West of Tunnel # 5, in slope of road.

Pros. # 16-Claim # 6.
Approx. 430 ft West of Tunnel # 5. In road approx. 2 ft. f from ditch. Seems to be a good vein in hard green-stone dipping vertically. Top has been scraped off by road construction.

Pros. # 17-Claim # 6.
Approx. 400 ft. West of tunnel # 5. In slope of road about 5ft. ip from ditch. Sulphides with quartz stringer adjoining.

Pros. # 18-Claim # 6.
Approx. 375 ft. West of Tunnel # 5. Quartz and Sulphides about 8 ft. up from road in slope.

Pros. # 19-Claim # 6.
About 7 ft. North of Pros. # 18 and about 2 ft. above ditch. Extremely heavy in Sulphides and upon working it we found it to be about three ft. wide, extending doen into road and dipping steeply.

(Continued)

Pros. # 20-Claim # 6.
In first creek West of Tunnel # 5. 8 ft. from road. Mineral indication only.

Pros. # 21-Claim # 6.
Approx. 300 ft. East of Tunnel # 5. 8 ft. up in slope of road.

CRIB MINERAL RESOURCES FILE 12

RECORD IDENTIFICATION
RECORD NO............. M061742
RECORD TYPE........... XIM
COUNTRY/ORGANIZATION. USGS

NAME AND LOCATION
DEPOSIT NAME.................. BABCOCK

COUNTRY CODE.................. US
COUNTRY NAME: UNITED STATES

STATE CODE................ OR
STATE NAME: OREGON

COUNTY.................... JOSEPHINE

COMMODITY INFORMATION
COMMODITIES PRESENT.......... CR

EXPLORATION AND DEVELOPMENT
STATUS OF EXPLOR. OR DEV. 8
PRESENT/LAST OPERATOR.... M. A. DELAND

PRODUCTION
YES
SMALL PRODUCTION

ANNUAL PRODUCTION (ORE,COMMOD.,CONC.,OVERBURD.)

ITEM	ACC	AMOUNT	THOUS.UNITS	YEAR	GRADE,REMARKS
1 ORE ACC		.030	TONS	1917	36% CR2O3
21 TOTAL		.030	TONS		36.00 % CR2O3 (WEIGHTED AVERAGE GRADE)

GENERAL REFERENCES
1) THAYER, T. P., 1974, UNPUBL. DATA

CRIB MINERAL RESOURCES FILE 12

RECORD IDENTIFICATION
RECORD NO.............. M061116
RECORD TYPE........... X1M
COUNTRY/ORGANIZATION. USGS
DEPOSIT NO............ DDGMI 100-341A
MAP CODE NO. OF REC..

REPORTER
NAME.......................... JOHNSON, MAUREEN G.
UPDATED....................... 81 02
BY............................ FERNS, MARK L. (BROOKS, HOWARD C.)

NAME AND LOCATION
DEPOSIT NAME.................. BABCOCK COPPER PROSPECT

MINING DISTRICT/AREA/SUBDIST. WALDO

COUNTRY CODE.................. US
COUNTRY NAME: UNITED STATES

STATE CODE................ OR
STATE NAME: OREGON

COUNTY.................... JOSEPHINE
DRAINAGE AREA............. 17100311 PACIFIC NORTHWEST
PHYSIOGRAPHIC PROV........ 13 KLAMATH MOUNTAINS
LAND CLASSIFICATION....... 41

QUAD SCALE	QUAD NO OR NAME
1: 62500	OREGON CAVES

LATITUDE	LONGITUDE
42-12-11N	123-25-55W

UTM NORTHING	UTM EASTING	UTM ZONE NO
4672194.3	464350.0	+10

TWP...... 39S
RANGE.... 06W
SECTION.. 05

COMMODITY INFORMATION
COMMODITIES PRESENT.......... CU

EXPLORATION AND DEVELOPMENT
STATUS OF EXPLOR. OR DEV. 2

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:
MASSIVE SULFIDE
FORM/SHAPE OF DEPOSIT: LENSES

SIZE/DIRECTIONAL DATA
SIZE OF DEPOSIT...... SMALL

DESCRIPTION OF WORKINGS
UNDERGROUND

COMMENTS(DESCRIP. OF WORKINGS):
ABOUT 200 FEET IN ONE ADIT

PRODUCTION
NO PRODUCTION
23 CU, OCCUR CU

GEOLOGY AND MINERALOGY

AGE OF HOST ROCKS............ PERM-TRI
HOST ROCK TYPES.............. METABASALT GREENSTONE

LOCAL GEOLOGY
NAMES/AGE OF FORMATIONS,UNITS,OR ROCK TYPES
1) NAME: APPLEGATE GROUP
AGE: PERM-TRI

GENERAL REFERENCES
1) RAMP, L. AND PETERSON, N.V., 1979, GEOLOGY AND MINERAL RESOURCES OF JOSEPHINE COUNTY, OREGON; DOGMI BULL. 100, 45P

To:
Rough & Ready Timber Co. P.O.Box 519
Cave Junction, OR. 97523.

Date: 4/27/81

Inv.# 810075

REPORT OF ANALYSIS: (all results are expressed in ppm or as noted)

Sample No:	Co
81F-122	306

Little Joe
013
40

To:
Rough & Ready Timber Co.
P.O.Box 519, Cave Junction, OR. 97523.

Date: 6/5/81

Inv.# 810103

REPORT OF ANALYSIS: (all results are expressed in ppm or as noted)

Sample No:	Au oz/ton	Ag oz/ton	Co	Ni	Cu		
Claim 15	BDL	.158	344	58.2	10.62%		

Assay Office

A Division of GOMIL CHEMICAL CO.

MINERS' EXCHANGE BUILDING

432 WEST MAIN STREET - QUINCY, CALIFORNIA 95971

PHONE: 916-283-2280
CABLE ADDRESS:
"TRANSPHERE"
QUINCY, U.S.A.

Claim #4

MEMORANDUM OF ASSAY

MADE FOR Fred R. Krauss - President DATE Apr. 3, 1981

SAMPLE NO.	PER TON OF 2000 POUNDS AVOIRDUPOIS GOLD AT PER OUNCE				SILVER AT PER OUNCE				COPPER, OR COBALT AT PER LB.			LEAD, OR AT PER LB.			TOTAL	
	OZS.	100'S	$	CTS.	OZS.	100'S	$	CTS.	%	$	CTS.	%	$	CTS.	$	CTS.
1.									0.08 = 1.6 lbs./ Ton							

ASSAY NO. ....

BY William E. Miller
WILLIAM E. MILLER, ASSAYER.

CHARGES $ 25.00 Paid W M

CHEMISTRY *Touches* EVERYTHING

Assay Office

A Division of GOMIL CHEMICAL CO.
MINERS' EXCHANGE BUILDING
432 WEST MAIN STREET - QUINCY, CALIFORNIA 95971

PHONE: 916-283-2280
CABLE ADDRESS:
"TRANSPHERE"
QUINCY, U.S.A.

MEMORANDUM OF ASSAY

MADE FOR Fred R. Krauss, President DATE June 22, 1981

SAMPLE NO.	PER TON OF 2000 POUNDS AVOIRDUPOIS								COPPER, OR			LEAD, OR			TOTAL	
	GOLD				SILVER											
	AT		PER OUNCE		AT		PER OUNCE		AT	PER LB.		AT	PER LB.			
	OZS.	100'S	$	CTS.	OZS.	100'S	$	CTS.	%	$	CTS.	%	$	CTS.	$	CTS.
Claim no 15									3.4		84				57	12

ASSAY NO. ....

CHARGES $ 15.00 Paid WEM

BY [signature]
WILLIAM E. MILLER, ASSAYER.

CHEMISTRY *Touches* EVERYTHING

BABCOCK ASSAYS

Sample #	Au oz/t	As ppm	Sb ppm	Cu ppm	Zn	Co	Hg ppb	Pb
118714	-0.001	-14	-5	198	101	66	190	3
118715		14		76	17	131	220	3
118716		17		53	16	63	340	3
118717		-14		54	21	110	20	2
118718		-14		40	37	63	85	1
118719		-14		73	38	119	110	1
118720		-14		79	25	50	125	-1
118721		20		+1500	54	330	105	-1
118722		17		404	103	74	90	6
118723		25		+1500	51	.18%	320	3
118724		25		+1500	53	820	285	1
118725		25		+1500	59	430	115	2
118726		150		+1500	39	570	120	3
118727		31		+1500	92	270	95	3
118728		15		594	140	37	35	-1
118729		31		808	43	260	775	-1
118730		15		93	47	230	35	-1
118731		28		732	104	41	60	2
118732		28		126	18	27	65	5
118733		15		296	70	74	130	3
118734		31		93	82	65	530	3
118735		31		+1500	50	.11%	270	4
118736		12		214	26	79	190	1
119000		23		155	10	34	110	4

118714 Dump grab - meta volcanic frags., massive sulfide frags. and dirt.

118715 Silicious, pyritiferous. Magnetite bearing vein from exhalite.

118716 Sulfide - magnetite qtz. rock from face of adit. (60' long)

118717 Qtz. stringers with disseminate sulfide (pyrite) approx. 3-6% sulfide.

118718 Qtz. blebs and stringers in a volcanic matrix. Disseminate pyrite cubes up to 1/4".

118719 Propylitized volcanics containing hairline veinlets and disseminations of pyrite.

118720 Magnetite - qtz., some disseminated pyrite. 6"-1' beds interbedded with andesite volcanics.

118721 Pyrite-qtz-magnetite exhalite. Minor azurite stain.

118722 Massive pyrite, may be minor qtz. in matrix.

118723 Massive pyrite-chalcopyrite. Minor qtz. 2' thick zone.

118724 High graded sample. Pyrite-chalcopyrite-magnetite-quartz. Local chalcopyrite veinlets cut magnetite.

118725 High grade from massive sulfide lense. Chalcopyrite-magnetite-qtz.

118726 Gossan? Spongy qtz. and punky iron oxides, some fairly massive qtz.

118727 Tuffacious andesite? Contains abundant disseminated pyrite and pyrite as fracture fillings.

118728 Tuffacious andesite? Qtz. phenocrysts? And disseminated pyrite.

118729 Thin zone of spongy fe-ox gossen in andesite.

118730 2" iron oxide stained zone in andesite. Abundant pyrite molds.

118731 Chloritized? Volcanics with pyrite molds and rare disseminate pyrite minor qtz. blebs.

118732 Oxidized and leached andesite. Local strong limonite and hematite stain. Abundant pyrite molds and locally diss. pyrite.

118733 Chip sample adit rib 80' from portal. Andesite. Abundant diss. pyrite, pyrite stringers, qtz.-pyrite stringers.

118734 Chip sample adit rib 40' from portal same as 33

118735 Grab from dump of incline, pyrite-qtz.-magnetite, locally some chalcopyrite.

118736 From rib of adit 25' from portal, qtz.-pyrite-magnetite.

11900 Massive sulfide, magnetite-quartz-pyrite, qtz. white; massive some qtz. veinlets, pyrite and magnetite as massive zones and stringers.

Assay Office

A Division of GOMIL CHEMICAL CO.
MINERS' EXCHANGE BUILDING
432 WEST MAIN STREET - QUINCY, CALIFORNIA 95971

PHONE: 916-283-2280
CABLE ADDRESS:
"TRANSPHERE"
QUINCY, U.S.A.

MEMORANDUM OF ASSAY

MADE FOR Fred R. Krauss, President DATE May 21, 1981

SAMPLE NO.	PER TON OF 2000 POUNDS AVOIRDUPOIS								COPPER, OR			LEAD, OR			TOTAL	
	GOLD				SILVER											
	AT		PER OUNCE		AT		PER OUNCE		AT	PER LB.		AT	PER LB.			
	OZS.	100'S	$	CTS.	OZS.	100'S	$	CTS.	%	$	CTS.	%	$	CTS.	$	CTS.
									2.8		86				48	16

ASSAY NO. [illegible]

CHARGES $ 15.0[illegible] Paid [illegible]M

Clair 15

BY William E. Miller
WILLIAM E. MILLER, ASSAYER.

CHEMISTRY *Touches* EVERYTHING

Cominco American

GEOCHEMICAL SAMPLING

AREA: Babcock Prospect, Josephine County, Oregon
COLLECTOR: M. A. Hepp
DATE: June 4, 1981

SAMPLE NUMBER	LOCATION	REMARKS	TYPE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Co ppm			
60991	Claim 6; Adit 3	Chl sch 5% pyr chip 5'/6"	R	< 10	< .4	3380	< 4	118	286			
60992	Claim 6; Adit 3	90% pyr chip R		10	< .4	1590	< 4	35	1440			
60993	Claim 2; Adit 4	40% mag, 20% pyr High		< 10	< .4	2500	< 4	34	55			
60994	Claim 2; Adit 4	50% pyr, 40% mag High		< 10	< .4	3560	< 4	33	581			
60995	Claim 6; Adit 5	Chl sch 5% pyr chip R		< 10	< .4	811	< 4	68	73			
60996	Little Joe	Chl sch 5% pyr chip R		< 10	< .4	58	< 4	89	148			
60997	Claim 8	90% mag, 1% pyr chip R		< 10	< .4	100	< 4	70	102			
60998	Claim 15; Prospect 2	65% pyr, 25% mag chip R		30	< .4	E8720	< 4	57	1680			
60999	Claim 15	Qtz, 15% pyr High		60	< .4	7670	< 4	43				

E- Value exceeds optimum working range - estimate only

O.B.F.

Assay Office

A Division of GOMIL CHEMICAL CO.
MINERS' EXCHANGE BUILDING
432 WEST MAIN STREET - QUINCY, CALIFORNIA 95971

PHONE: 916-283-2280
CABLE ADDRESS:
"TRANSPHERE"
QUINCY, U.S.A.

MEMORANDUM OF QUALITATIVE SPECTROGRAPHIC ANALYSIS

MADE FOR Fred R. Krauss, President DATE May 21, 1981

LESS THAN 0.01%	.01 TO .10%	.10 TO 1.0%	1.0 TO 10.0%	MAJOR
Magnesium-Trace	Zinc .06	Aluminum .50	Copper 2.6	Carbon, Silica
Strontium-Trace	Lead .02		Iron 18.51	71.91 %
Nickel- Trace			Sulfur 5.4	
			Lime 1.0	
RARE EARTHS None			Spectrographic is not recommended for gold, silver or platinum [illegible] the q[illegible] ore used is too small to record the true value of the above metals.	

ASSAY NO. 5 3683 BY *Willian E. Miller* WILLIAM E. MILLER, ASSAYER.

CHARGES $ 15.00 Paid WEM

Chin 15

CHEMISTRY *Touches* EVERYTHING

Assay Office

A Division of GOMIL CHEMICAL CO.

MINERS' EXCHANGE BUILDING

432 WEST MAIN STREET - QUINCY, CALIFORNIA 95971

PHONE: 916-283-2280

CABLE ADDRESS: "TRANSPHERE" QUINCY, U.S.A.

MEMORANDUM OF QUALITATIVE SPECTROGRAPHIC ANALYSIS

MADE FOR Fred R. Krauss, President DATE Apr. 27, 1981

LESS THAN 0.01%	.01 TO .10%	.10 TO 1.0%	1.0 TO 10.0%	MAJOR
ASSAY No.-Babcock No. 3				
Tungsten-Trace	Lead .01	Sulphur .62	Copper 3.2	Carbon, Silicon
Magnesium-Trace	Zinc .06	Aluminum .51	Iron 8.2	85.80 %
Barium-Trace	Potassium .04	Sodium .42	Calcium 1.0	
		Manganese .14		
Rare Earths None				

Spectography is not recommended for gold, silver or platinum, reason being quantity of ore used is too small to record the true value of the above metals.

ASSAY NO. 4[illegible]

BY William E. Miller
WILLIAM E. MILLER, ASSAYER.

CHARGES $ 15.00 Paid WE,

CHEMISTRY *Touches* EVERYTHING

To:
Rough & Ready Timber Co. P.O.Box 519
Cave Junction, OR. 97523.

Date: 5/7/81

Inv.# 810082

REPORT OF ANALYSIS: (all results are expressed in ppm or as noted)

Sample No:	Au oz/ton	Ag oz/ton	Co	Cu
Little Joe	.013	.060	402	86

Sample Mark:	Gold oz/ton	Silver oz/ton	Copper ppm	Zinc ppm	Cobalt ppm	Nickel ppm
2648 TAB 12 1120	-0.001	0.03	220	75	35	50
49	-0.001	-0.04	100	75	30	35
50	-0.001	0.05	280	80	30	30
51	-0.001	-0.01	210	295	35	40
52	-0.001	-0.01	235	105	30	50
53	-0.001	0.06	160	110	30	40
54	-0.001	0.04	160	110	30	40
55	-0.001	-0.01	120	90	30	45
56	-0.001	0.09	245	85	35	60
57	0.001	0.10	110	85	35	40
58	-0.001	-0.01	55	90	40	35
59 1180	-0.001	0.12	40	85	45	30
60 1180 - 1184.2	0.001	0.10	220	25	225	705
61 1184.2 - 1185	0.005	0.07	0.23%	40	375	675
62	0.001	0.05	20	25	30	95
63	0.001	-0.01	25	25	35	95
64	0.002	0.08	25	30	30	100
65 1200 - 1202.4	0.001	0.11	100	75	90	355
2666 1202.4 - 1204.4	-0.001	0.03	5	25	30	160
3977	-0.001	-0.01	520	10	0.19%	10

BABcock →

HUNTER MINING LABORATORY, INC.

[signature]

Line	Station	222 IP	222 OP	444 IP	444 OP	888 IP	888 OP	1777 IP	1777 OP	3555 IP	3555 OP	~~Elevation~~ Slope in %	Receiver in lead Cable Length	BRG west Comments
B.C.	0+1000 E	-3	-1.1			-2	+1.0			+1	+4.2	+30	46	
	0+900 E	-3	-1.2			-4	+1.2			-2	+5.0	+25		
	0+800 E	-7	-.9			-9	+.9			-9	+3.0	+50		
	0+700 E	-7	-1.2			-7	+.7			-7	+3.5	+50		
	0+600 E	-2	-.9			-2	+2.0			+.5	+7.0	+35		
	0+500 E	-4	-1.2			-5	-.9			-5	-2.4	+30		
	0+400 E	-2	-1.4			-2	-.6			-2.5	+.5	+20		
	0+300 E	-7	-1.6			-7	-1.3			-8	-3.2	+30		
	0+200 E	-4	-1.2			-6	-.9			-5	-3.4	+40 ✓		
	0+100 E	-6	-.9			-5	+1.2			-4	+6.0	+35 ✓		
	0+00	-9	-.7			-8	+1.5			-8	+7.0	+50 ✓	-1	
	0+100 W	-6	-1.0			-6	+1.3			-6	+6.8	+55	-3	
	0+200 W	-7	-1.2			-6.5	+1.4			-6	+7.0	+60 ✓	-5	
	0+300 W	+3	-1.8			+4	+1.9			+6	+9.0	+15 ✓	-8	← STN 450 15 m WATER
	0+400 W	+50	-3.2			+50	+2.6			+52	+13	+5 ✓	~~-7~~	
	0+500 W	+55	-2.8			+55	+2.8			+60	+14	-10 ✓		
												~~+10~~		
												+30		

BABCOCK CAT-W PROS.

Line	Station	IP	OP	IP	OP	IP (888)	OP	IP (1777)	OP	IP (3555)	OP	~~Elevation~~	Cable Length	Comments
[illegible]	0+500 W	-10	[illegible]			-11	+.9			-11	+4.4	+70%	1ω	
	0+[illegible] W	-1.5	-1.2			-2	+.8			-2	+4.[illegible]	+20%	OVERLAP [illegible]	
	0+[illegible] W	-25	-.8			-20	+.8			-22	+3.8	-45		
	0+400 W	-20	-.8			-21	+.9			-21	+4.0	-60		
	0+300 W	-24	-.8			-23	+.5			-24	+3.4	-55		
	0+250 W	-24	-.7			-24	+.[illegible]			-24	+3.5	-55		
	0+200 W	-25	-.7			-24	+.[illegible]			-22	+3.3	-50		
	0+150 W	-20	+.9			-21	+.9			-18	+4.0	-55		
	0+100 W	-14	+7.0			-12	+9.[illegible]			-9	+8.5	-55	NEAR [illegible]	
	0+050 W	-26	+7.9			-27	+9.0			-28	+8.0	-55	[illegible] BELOW ADIT	
	0+[illegible]	-25	-.7			-21	+.9			-20	+4.0	-55	[illegible] BELOW ADIT	
	[illegible] E	-18	-.1			-18	+.5			[illegible]	+3.5	-50		
	[illegible] E	-10	-.9			[illegible]	+.[illegible]			-20	+3.5	-40		
	[illegible]	-17	-1.1			[illegible]	+.8			-16	+3.8	-40		
	[illegible]	+1	-.2			+2	+.9			+2	+5	-25		
	[illegible]	-10	-.8			-10	+.8			-9	+4.5	Ø		
	[illegible]	-3	-1.2			-3	+.7			-3.5	+4.5	Ø		
	0+350 E	-15	-1.2			-14	+.3			-13	+2.1	-25		
	0+400 E	-20	-.7			-20	+.[illegible]			-20	+5.0	-40		
	0+450 E	-13	-1.0			-14	+.9			-11	+4.5	-35		
	0+500 E	-12	-1.1			-12	+.9			[illegible]	+4.5	-35		
	0+550 E	-20	-1.1			-21	+.9			-21	+4.0	-4[illegible]		
	0+600 E	-13	-1.[illegible]			-13	+.[illegible]			-13	+4.5	-40		
	0+650 E	-18	-1.1			-18	+.[illegible]			-17	+3.5	-40		
	0+700 E	-19	-1.1			-19	+.7			-19	+4.0	-40		
	0+750 E	-19	-1.2			-19	+.4			-19	+3.8	-40		
	0+800 E	-17	-1.1			-13	+.6			-18	+4.0	-45		
	0+850 E	-16	-1.2			-19	+.6			-19	+3.8	-60		
	0+900 E	[illegible]	-1.[illegible]			-13	+.7			-13	+4.0	-60	BELOW [illegible]	
	0+950 E	-20 [illegible]	[illegible]			-20 [illegible]	[illegible]			-20	+3.4	-5[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]			-23	+.7			-14	+3.4	[illegible]		

GEOCHEMICAL SAMPLING

COLLECTOR: M. BERNARDI
AREA: OPHIOLITE COBALT RECONNAISSANCE
FIELD MAP:
DATE: SUMMER, 1982

RESULTS PLOTTED BY:
MAP:
DATE:

VALUES IN PPM EXCEPT WHERE NOTED

SAMPLE NUMBER	LOCATION	REMARKS	TYPE: ROCK	SOIL	STREAM	Ni	Cu	Co	Zn	Pb	Ag	Au (ppb)	As	H
301B	BABCOCK PROSPECT	CHLORITIZED GREENSTONE W/5% SULFIDES	X				250	68	48	<2	.2	40		
302B	" "	MASSIVE SULFIDE; 70% PYRITE, 30% QTZ	X				790	1215	8	<2	.3	35		
303B	" "	MAGNETITE-BEARING MASSIVE SULFIDE	X				2.27%	1065	42	<2	.6	75		
304B	" "	SILICEOUS MAGNETITE-RICH ROCK	X				190	61	14	<2	.3	20		
305B	" "	MAGNETITE-BEARING MASSIVE SULFIDE	X				1.04%	940	34	16	.2	30		
306B	" "	" " " "	X				650	775	10	<2	.2	40		
307B	" "	MAGNETITE HORIZON	X				143	40	17	<2	.2	<5		
308B	" "	MAGNETITE HORIZON	X				66	46	20	<2	.2	<5		
309B	" "	QTZ VEIN MATERIAL	X				12	4	12	<2	.2	<5		
310B	" "	GREENSTONE W/5% DIS. SULFIDES	X				80	230	52	<2	.2	30		
311B	" "	CPY.-RICH MASSIVE SULFIDE	X				11.42%	970	63	<2	.8	135		
313B	" "	CHLORITIZED GREENSTONE	X				64	27	62	<2	.3	395		
314B	" "	C.G. GREENSTONE W/TR. SULFIDES	X				220	9	11	<2	.2	95		
315B	" "	GOSSANOUS GREENSTONE	X				580	6	72	<2	.2	45		
316B	" "	GOSSAN	X				310	9	21	<2	.2	45		
317B	" "	PYRITIC GOSSANOUS GREENSTONE	X				910	52	184	<2	.2	405		
318B	" "	GOSSAN W/ST. FeOx	X				350	12	244	<2	.3	135		
319B	" "	STRONGLY QTZ-VEINED GREENSTONE	X				78	18	44	<2	.2	30		
320B	" "	DARK GRAY ARGILLITE	X				68	13	97	7	.2	25		
321B	" "	MAGNETITE HORIZON	X				310	38	10	<2	.2	35		
322B	" "	GREENSTONE W/MAGNETITE + PYRITE	X				2800	187	22	<2	.2	50		
323B	" "	GOSSAN W/QTZ + MAGNETITE	X				780	164	51	<2	.2	10		
324B	" "	GOSSANOUS GREENSTONE W/5%- PYRITE	X				85	92	84	<2	.2	5		
325B	" "	GREENSTONE	X				85	27	69	<2	.2	5		
326B	" "	GREENSTONE	X				54	25	66	<2	.2	10		
327B	" "	SILICEOUS MAGNETITE HORIZON	X				100	3	9	<2	.2	20		
328B	" "	RANDOM CHIP - ADIT #2	X				56	181	31	<2	.2	10		
329B	" "	GOSSAN + SULFIDE FROM DUMP	X				86	200	13	<2	.2	<5		
330B	" "	GREENSTONE W/TR. SULFIDES	X				16	52	44	<2	.2	<5		

GEOCHEMICAL SAMPLING

COLLECTOR: M. BERNARDI

AREA: OPHIOLITE COBALT RECONNAISSANCE

FIELD MAP:

DATE: SUMMER, 1982

RESULTS PLOTTED BY:

MAP:

DATE:

VALUES IN PPM EXCEPT WHERE NOTED

SAMPLE NUMBER	LOCATION	REMARKS	ROCK	SOIL	STREAM	Ni	Cu	Co	Zn	Pb	Ag	Au (ppb)	As	Hg
331B	BABCOCK PROSPECT	GOSSANOUS GREENSTONE FROM PROSPECT	X				57	73	30	<2	.2	<5		
332B	" "	GOSSANOUS GREENSTONE FROM DUMP	X				163	116	37	<2	.2	25		
333B	" "	GOSSAN FROM SMALL PROSPECT PIT	X				96	45	8	<2	.2	35		
334B	" "	QTZ-MAGNETITE GOSSAN FROM DUMP	X				51	10	26	<2	.2	<5		
335B	" "	" " " "	X				67	46	18	<2	.2	15		
336B	" "	PYRITIC MASSIVE SULFIDE FROM DUMP	X				400	116	6	<2	.2	20		
337B	" "	SERP. GREENSTONE W/MASSIVE SULFIDE	X				4600	396	30	<2	.2	15		
338B	" "	MAGNETITE GOSSAN	X				940	1365	14	<2	.2	<5		
339B	" "	PYRITE-RICH MASSIVE SULFIDE	X				161	82	50	<2	.2	15		
340B	" "	PYRITIC GREENSTONE	X				74	120	44	<2	.2	10		
341B	STANDARD PROPERTY	CuOx-STAINED VOLCANIC + VEIN	X				1.68%	77	144	<2	2.3	345		
342B	FITZSIMMONS PROSPECT	FeOx-STAINED MAFIC VOLCANIC	X				110	8	30	<2	.2	5		
343B	BABCOCK PROSPECT	GREENSTONE	X				41	16	22	<2	.2	5		
344B	" "	GREENSTONE	X				9	95	18	<2	.2	20		
345B	" "	GREENSTONE - SERPENTINE CONTACT	X				74	54	25	<2	.2	<5		
346B	" "	GABBRO	X				13	22	69	<2	.2	<5		
347B	" "	GREENSTONE W/1% PYRITE	X				148	21	24	<2	.2	<5		
348B	" "	GREENSTONE	X				945	22	20	<2	.2	<5		
349B	" "	CHLORITIZED VOLCANIC	X				77	35	74	<2	.2	<5		
350B	" "	MASSIVE QUARTZ VEINS	X				17	2	2	<2	.2	<5		
351B	" "	SILICEOUS GREENSTONE	X				48	23	42	<2	.2	<5		
352B	" "	QTZ-VEINED GREENSTONE	X				44	28	50	<2	.2	<5		
353B	" "	SILICEOUS GOSSAN	X				254	11	12	2	.2	5		
354B	" "	GOSSAN FROM ADIT	X				1875	59	32	4	1.1	55		
355B	" "	QTZ-SERICITE GOSSAN	X				309	45	77	5	.2	30		
356B	" "	QTZ-SERICITE GOSSAN	X				367	7	6	3	.2	70		
357B	" "	GREENSTONE	X				72	29	55	2	.2	<5		
358B	" "	SILICEOUS GREENSTONE	X				47	26	46	<2	.2	<5		
359B	" "	MASSIVE SULFIDE W/CPY, PY, MAG	X				10.47%	785	42	4	.9	110		
360B	" "	GOSSANOUS GREENSTONE FROM WINZE	X				1085	51	87	<2	.2	5		

GEOCHEMICAL SAMPLING

COLLECTOR: M. BERNARDI

AREA: OPHIOLITE COBALT RECONNAISSANCE

FIELD MAP:

DATE: SUMMER, 1982

RESULTS PLOTTED BY:

MAP:

DATE:

VALUES IN PPM EXCEPT WHERE NOTED

SAMPLE NUMBER	LOCATION	REMARKS	TYPE: ROCK	SOIL	STREAM				W	Ni	Cu	Co	Zn	Pb	Ag	Au (ppb)	As	Hg
361B	BABCOCK PROSPECT	GREENSTONE	X								425	35	59	2	.2	<5		
362B	" "	QTZ-MAGNETITE GOSSAN	X								1355	79	26	5	.2	50		
363B	" "	QTZ-RICH GOSSAN	X								164	70	9	4	.2	25		
364B	" "	" " "	X								117	13	17	<2	.2	5		
365B	" "	QTZ-MAGNETITE CHIP AT PORTAL	X								1430	83	10	<2	.2	40		
366B	" "	GOSSAN + GREENSTONE 5' CHIP	X								970	112	36	<2	.2	45		
367B	" "	GOSSAN + GREENSTONE 5' CHIP	X								155	35	38	<2	.2	<5		
368B	" "	GREENSTONE 5' CHIP	X								199	135	39	<2	.2	<5		
369B	" "	GREENSTONE	X								57	32	60	<2	.2	<5		
370B	SIX MILE CREEK AREA	CuOx-STAINED SERPENTINITE	X								1.847	246	38	5	.6	10		
371B	SIX MILE CREEK	SERPENTINITE	X								102	37	26	<2	.2	<5		
400B	BABCOCK PROSPECT	GREENSTONE	X								380	30	58	<2	.2	10		
401B	" "	"	X								82	26	66	<2	.2	<5		
402B	" "	GOSSANOUS GREENSTONE W/TR. SULFIDES	X								230	24	57	<2	.2	<5		
403B	" "	SILICEOUS GOSSAN	X								320	151	28	<2	.2	280		
404B	" "	MASSIVE QTZ GOSSAN	X								470	4	9	<2	.2	5		
405B	" "	QTZ GOSSAN	X								230	96	14	<2	.2	30		
406B	" "	GREENSTONE	X								60	34	24	<2	.2	<5		
500B	" "	GREENSTONE W/TR. SULFIDES	X								113	45	60	<2	.2	<5		
501B	" "	QTZ-PYRITE GOSSAN	X								4800	495	17	<2	.2	20		
502B	" "	QTZ-MAGNETITE-PYRITE GOSSAN	X								1500	125	58	<2	.6	70		
503B	" "	QTZ-SERICITE GOSSAN	X								620	19	6	<2	.2	15		
504B	" "	GREENSTONE W/TR. SULFIDES	X								87	26	36	<2	.2	<5		
505B	" "	SILICIFIED GREENSTONE W/TR. SULFIDES	X								103	28	54	<2	.2	<5		
506B	" "	QTZ-MAGNETITE HORIZON W/TR. PYRITE	X								280	114	64	<2	.2	15		
507B	SEIAD CREEK EAST FORK, CA	QTZ-SERICITE SCHIST	X								91	8	35	<2	.2	25		
508B	DIXIE CREEK	PORPHYRITIC BASALT	X						3		47	8	12	2	.2	<5		
509B	JUNIPER ADIT, STANDARD MINE	BLEACHED VEIN FROM ADIT ENTRANCE	X						4		9310	164	395	4	11	225		
510B	STANDARD MINE	ALTERED ANDESITE DIKE	X															
511B	" "	MIN. PORPHYRITIC BASALT	X						2		6840	40	114	2	.2	40		

Mining Clippings From Rogue River Courier--Sept. 5, 1901

Just at the present time the principle topic of discussion in mining circles is the Copper seams and Copper fields of Waldo. W.A. Whipple of the Whipple Copper mines arrived in the City last night bringing with him a bag of ore samples from his property. Much of the ore is one-third Copper while all of it contains from 12 to 30 percent of this metal. Other samples of ore are on exhibition from the newly discovered field on Little Crayback. This rock too is of fine quality, and the ledges from which it is taken are outstanding in their immensity. Claims are rapidly being staked and development will proceed. Little Grayback, which has hitherto been naught but a primeval forest to which the scattered hunters and campers infrequently visited in search of game, is destined to become the richest Copper field of the Pacific Coast.

August 29--1901 ----Copper on Grayback

The recent Copper strike on Little Grayback by Babcock and Kitterman, bids fair to prove itself among the most important yet inside the County. According to reports, the newly discovered lode consists of twelve parralel ledges cutting diagonally through Little Grayback. Each ledge being from 100 feet to 3000 feet apart. (Note: I think this was a typographical error. I think they meant 300 feet). Some of these ledges are of exceptional proportions, being several hundred feet in width, with outcroppings appearing on both sides of the mountain. From these various ledges ore has been removed and assayed. The returns show a presence of from 10 to 18 percent Copper which is a most remarkable showing to be found at the surface.

Grayback Copper District in the Illinois Valley--1901

In the range of mountains across from Waldo, a new Copper District has been discovered and is being opened. The district is located four or five miles South of the old town of Kerby, and directly in the Sucker and Althouse Districts, where Gold was first discovered in Oregon. Here has been found two parallel belts of Serpentine, running almost due East and West. North of these belts of Serpentine, the summit of the hills show much Limestone and Shale, while South of them, huge porphoritic rocks and Diorite, black with Iron and rusted by the rains of several countless ages, crop out and rise to a height of several feet in many instances. These outcrops are Copper Gossan and show the existence of huge ledges of Copper beneath. These ledges run North and South, extending from the low range of hills South of Kerby, in the Grayback range of mountains in the North slope of the Siskiyous.

Several mines but recently discovered in this District are meeting with great success in their development. A number of tunnels have been driven and shafts sunk from them, in all of which good Copper values are found. Gold is also carried in quantity. In fact, many of the outcroppings assayed as high as $120 per ton in Copper and Gold. It would be mere guess work to give the width of the great ledges of this District, but it is known that they underlie the whole outcropping of the Gossan and are practically one huge vein of several hundred feet in width.

The District is an entirely new one in the matter of systematic and extensive development, but it has the appearance of assuring a permanent and important mining District.It is very exceptional that ore running as high in Copper and Gold is found near the surface, as it is here, for it is a well known fact to all Copper miners that Copper will almost entirely leach out, where under the influence of water and the oxidation of the atmosphere.

The formations of the entire District are most favorable for permanent Copper ledges, being Diorite, Porphyry, and Quartzite, the whole course of the belt.

(Continued)

The situation of this belt is all that could be desired, as one can drive a buggy to the foot of the hills and to within a few hundred yards of the workings. At the foot of the hill are fertile valleys watered by Bear and Sucker Creeks and other streams, from which water and power can be derived for nine or more months in the year. There is an abundance of Sugar Pine over all parts of the District to supply timbers for the tunnels and stopes.

Grayback Copper--- 1901

At the recently discovered Copper mines on Little Grayback, Josephine County, there is much activity. Nearly everything has been taken up, representing 50 claims. The greater part are being developed as fast as is possible. In some of the older claims, tunnels have been run to a depth of 50 and 75 feet or opened up by shafts to this depth. The ledges exposed show widths rangeing from 10 to 150 feet, carrying Copper values of 11 to 30 percent.

Copper mine on Little Grayback--1905

Some very handsome specimens of Copper ore were received at the mining exhibit this week from the Little Grayback Copper Mines owned by W.L. Babcock of Althouse, and located on Grayback mountain near the headwaters of Deer Creek.

The ore carries Copper at the rate of 17½ per cent and $3per ton in Gold. The ledge shows a width of 15 feet and upwards. The property is under development and has the most favorable indications for becoming a valuable and productive mine when fully opened up and equipped.

PROJECT NAME: BABCOCK

OWNER(S): FORMERLY: MERIDIAN MINERALS CO (LESSEE, OPERATOR)

METAL(S): COPPER
GOLD
SILVER
COBALT

EXPL. STATUS: EXPLORATION
ACTIVITY STATUS: INACTIVE
(PAST PRODUCER)

MINESEARCH #: 058228

MOST RECENT SOURCE: NOVEMBER 1985

LOCATION

STATE: OREGON
COUNTY: JOSEPHINE
TOWN: KERBY
LONGITUDE: 123.23.46
LATITUDE: 42.14.10

THE PROPERTY IS IN SEC 5 AND 8, T39S, R6W IN JOSEPHINE COUNTY.

GENERAL COMMENTS

MERIDIAN EXPLORED THE PROPERTY UNTIL THE END OF 1984, AT WHICH TIME THE LEASE WAS TERMINATED. (PC 11/85)

WORK HISTORY

1980'S: SEVERAL COMPANIES INVESTIGATED THIS PROSPECT.
1984: MERIDIAN CONDUCTED AN EXPLORATION PROGRAM ON A VOLCANOGENIC MASSIVE SULFIDE DEPOSIT. (OG 4/85)
MERIDIAN PUT DOWN FOUR DD HOLES. THE LEASE WAS TERMINATED THEREAFTER. (PC 11/85)

COMPANY INFORMATION

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BIBLIOGRAPHY

MILS SEQUENCE # 0410330688
Oregon Geology 4/85
Personal conversation 11/85

BABCOCK PROSPECT

JOSEPHINE COUNTY, OREGON

by

Mitchell L. Bernardi

Molycorp, Inc.
Spokane, Washington

January, 1983

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SUMMARY

Of the 15 properties evaluated during the 1982 Klamath Mountains ophiolite cobalt reconnaissance program, the Babcock prospect was determined to have the best potential for cobalt-bearing Cyprus-type massive sulfide mineralization similar to that found at Noranda's Turner-Albright deposit, the premier cobalt-bearing Cyprus-type deposit in the Klamaths. The Turner-Albright serves as the model for this type of mineralization in the region. At the Babcock, cobalt values to 0.14% were found where they occur in magnetite-pyrite-chalcopyrite-bearing material mostly associated with beds and lenses of siliceous magnetite rock. In addition to this cobalt-bearing material, three cupreous gossans of sizeable extent occur at the prospect. Host rocks are ophiolitic greenstone and metapillow basalt of the Applegate Group of Late Triassic age.

Results of detailed geologic and geochemical work on the Babcock indicate an excellent potential for Cyprus-type volcanogenic sulfide mineralization at it. Favorable host rocks, structure, and geochemistry are all present. In spite of this favorability, the small size of the Cyprus-type deposits in the Klamaths, as exemplified by the Turner-Albright, leaves little potential for this deposit type to yield the 60 million pounds of cobalt wanted by Molycorp management. Consequently, no further work is recommended on the Babcock.

LOCATION AND OWNERSHIP

The Babcock prospect is located in secs. 5, 6, 7, and 8, T38S, R6W, Willamette Meridian, Josephine County, Oregon (Fig. 1). This area is approximately 10 miles east of Cave Junction, Oregon and contains Little Grayback Peak and the headwaters region of the Deer Creek South Fork. The property is owned on an equal partnership basis by the local lumber magnate Fred Krauss of Selma, Oregon and Glenn Young of Kerby, Oregon. Currently, their property holdings comprise 14 unpatented lode claims which were originally staked by Mr. Young in 1955 and are on both BLM and Siskiyou National Forest land (Fig. 2).

The property is reached from Grants Pass, Oregon by traveling 28 miles south on U. S. Highway 199 (Redwood Highway) to Selma, Oregon and thence heading east approximately 17 miles up the Deer Creek-Deer Creek South Fork road. From this point, the upper part of the property is reached by continuing on this road which skirts around the headwaters of the Deer Creek drainage to the Rabbit Lake-Little Grayback Peak region, whereas the lower part is reached by taking a spur road which crosses Deer Creek and heads south and west into the heart of the project area (Fig. 1).

HISTORY AND DEVELOPMENT

The Babcock property was submitted to Molycorp in late February, 1982, by Mr. Steve McTimmonds, representative and agent for the property owners. Geochemical data sent to us by Mr. McTimmonds revealed that high-graded samples previously taken at the prospect by the owners contained to 11% Cu and 0.19% Co. As a result of these encouraging assays, I conducted a reconnaissance over the property on March 15. Assay data generated from this reconnaissance substantiated the owners values, and, as a result, further detailed work was recommended and subsequently carried out. This work, the results of which are contained herein, includes detailed mapping, rock sampling, and a magnetometer survey over the property, as well as a regional soil-sampling survey that covers the area and its general surroundings.

The property was originally worked in the early 1900's for copper and gold by Mr. Babcock, a local prospector who the property is named after. Five adits were driven by the prospector, however production records are unknown. Present development consists of these five adits, two of which are now caved and/or filled with water, three copper prospects on Little Grayback ridge, numerous prospect pits, and a number of bulldozed spur roads (Pl. 1). Most of the adits were driven into heavily iron-stained gossan, with the original discovery adit; adit no. 1 (now caved), reported to be over 600-feet long.

GENERAL GEOLOGY

The Babcock prospect lies within greenstone and metapillow basalt of the Applegate Group of Late Triassic age. The Applegate Group is one of the major ophiolitic rock units underlying southwestern Oregon, where it composes the northern half of the Western Paleozoic and Triassic belt, one of four linear west-facing arcuate belts that make up the Klamath Mountain Range (Fig. 3). Within the Klamaths, this belt is one of two which hosts Cyprus-type volcanogenic massive sulfide shows and prospects, of which the Babcock is one.

Volcanic rock types most commonly found composing the Applegate Group include those mentioned above as well as andesite, andesitic tuffs, and flow breccia. In places, these rocks are intruded by abundant diabase and gabbro dikes as is typical of most ophiolite sequences. Metasedimentary rocks in the Applegate Group include argillite, black slaty shale and siltstone, chert, volcanic wacke, quartzite, metaconglomerate, and limestone. Most, if not all, of the above rocks are believed to have formed in a back-arc basin and marginal oceanic crust ophiolitic environment (Churkin and Eberlein, 1977; Irwin and others, 1977).

DETAILED GEOLOGY OF THE PROSPECT

Prior to this evaluation, no detailed mapping of the Babcock prospect and its immediate surroundings were available. General reference was made to the property by Ramp (1979, Table 1, prospect no. 341a) who described it as a volcanogenic copper show with massive pyrite layers and lenses in Triassic Applegate Group metapillow basalt and greenstone. Results of our mapping (Pl. 1), which was carried out at a scale of 1" = 500', revealed that the volcanogenic mineralization has indeed occurred in the above rock types, but that additional rock types indicative of an ophiolite sequence as well as critical lithologic and structural relationships concerning the mineralization were present.

The regional structural trend of the prospect area strikes between N60°E and N70°E and dips 35 to 55 degrees to the southeast. Attitudes were difficult to obtain because of the generally massive nature of the basaltic host rock, however they were measured on gossan and capping black shale and argillite southeast of Deer Creek as well as on individual basaltic flow units along the ridgeline southeast of Little Grayback Peak (Pl. 1). The consistency of the structural trend through the project area is remarkable considering the structural complexities that are generally found associated with the mélange of an ophiolite terrain.

The stratigraphy of the project area, based on the succession of lithologies present and when compared with the typical stratigraphy of ophiolites, appears to be upright with the rocks occurring in ascending order to the southeast. Specifically, greenstone and metapillow basalt lie in the northwestern part of the project area and are overlain by phyllite and cherty metaconglomerate to the southeast. This stratigraphy agrees well with that of typical ophiolite complexes as depicted by Hollister (1981) where pillow basalt and greenstone (layer 3) are overlain by an uppermost chert-sedimentary rock sequence (layer 4). Although abundant pillow structures occur on the backside (northwest) of the project area, their orientations were found to be too variable to be useful in determining the tops and bottoms of flows.

A major fault zone was recognized just southeast of and parallel to the Deer Creek drainage where it is occupied by a number of small serpentinite bodies and lenses (Pl. 1). This fault may be of profound importance as it appears to be a boundary separating mineralization and gossan to the northwest from non-mineralized material to the southeast. Although the adjacent Deer Creek drainage was originally speculated to occupy a fault zone, no evidence supporting this conclusion could be found.

The majority of the host metapillow basalt and greenstone is light to dark gray-green, fine to medium grained, and contains trace disseminated pyrite. Much of the host is chloritized and contains epidote with some light quartz veining. Similar to the host pillow basalts at Noranda's Turner-Albright deposit, the Babcock host rocks do not appear to be altered adjacent to mineralized areas and gossan. Contacts between the host and the gossans, and their associated mineralization are sharp. Hyalclastite breccias indicative of autobrecciation of the host flow rocks are associated with two of the gossans at the Babcock, and, as previously mentioned, abundant pillows are present along the backside of the project area (Fig. 1 and Pl. 1). Both the breccia and the pillows are indicative of deposition in a subaqueous environment.

Additional rock types found in the project area, which help complete the ophiolite stratigraphy, include 1) Triassic Applegate Group black slaty shale and argillite, 2) metaconglomerate composed of chert, quartzite, phyllite, and argillite clasts, 3) diorite and gabbro, 4) serpentinite, and 5) the gossan and cobalt-bearing siliceous magnetite rock described below. All of these rocks are conformable with the overall structural trend of the project area (Pl. 1).

Cobalt mineralization at the Babcock is associated with thin beds and lenses of siliceous magnetite-sulfide rock, whereas copper mineralization is mostly associated with three main areas of gossan. For the purposes of this report, these gossans have been designated as the Main, Deer Creek, and Ridge Top gossans (Pl. 1).

The main gossan, which lies just southeast of the Deer Creek drainage, extends for at least 1,000 feet along a N60°E strike and is between 80-

and 150-feet thick. It is roughly lens shaped and appears to be conformable with the enclosing host rocks. Detailed mapping of adit no. 5 (Fig. 4) driven into the gossan reveals disrupted blocks, clots, and stringers of pyritic sulfide material, pyritic greenstone host rock, and gossanous greenstone below the gossan cap. Similar to gossans at the Turner-Albright deposit which are overlain by thin mudstone layers, the Main gossan is overlain by a thin, black argillite unit that probably was laid down during a period of quiescence following the exhalative event producing the mineralization.

In contrast to the Main gossan, both the Deer Creek and Ridge Top gossans are extremely siliceous. Because of this characteristic, it is speculated that each owes its provenance to originally being slightly metal-enriched cherty horizons that were probably partially remobilized during the low-grade greenschist facies metamorphism that affected the entire Applegate Group terrain. Similar to the Main gossan, gossans of this latter type also exist at the Turner-Albright deposit where they underlie semi-massive sulfide mineralization (McAleer, 1982). It is noteworthy that all three of the Babcock gossans are similar in size to those of the Turner-Albright deposit (Pl. 1 and Cunningham, 1979).

Magnetite horizons with the highest cobalt values (to 0.14%) lie stratigraphically below the Main gossan and above the Deer Creek gossan. Most of the magnetite horizons in the project area are slightly siliceous and may contain the sulfides pyrite and chalcopyrite, or be void of them. Where they do contain both sulfide phases, they are enriched in cobalt (more is said regarding this relationship in the Rock Geochemistry section of this report). None of the horizons are greater than 2-feet thick and all appear conformable with the enclosing greenstone host rocks. Except for a 500-foot long cobalt-rich horizon that extends between adits 3 and 4 (Pl. 1), the majority of them rarely exceed 50 feet in length due to their pinch-and-swelled and overall disrupted nature.

GEOCHEMICAL RESULTS

Rock Sampling

Eighty rock samples were taken concurrent with the detailed mapping to ascertain the overall geochemical signature of the project area and to try to delineate areas and/or zones of cobalt and massive sulfide mineralization. All samples were collected by either myself or summer hire A. Ambrose and each was analyzed for Cu, Zn, Co, Pb, Ag, and Au by Bondar-Clegg Laboratories, Vancouver, B.C., using atomic absorption methods. Sample assays and locations are presented as Plate 2 of this report and sample descriptions are contained in Appendix A.

As was hoped, the assay data clearly define areas of both cobalt and cupreous volcanogenic sulfide mineralization, the former mostly associated with beds and lenses of siliceous magnetite rock, whereas the latter are mainly tied to areas of surface gossan exposures. Generally speaking, the rock geochemistry data reveal that both the cobalt and volcanogenic sulfide mineralization lies within an approximately ½-mile-wide, N65°E-trending zone that parallels the regional geologic trend of the project area (Pls. 1 and 2). This fact is further substantiated by the results of the soil-sampling survey described in the following section. Furthermore and most important in regard to the cobalt mineralization, the rock assay data verify a relationship observed in the field where magnetite rock containing the mineralogical assemblage magnetite-pyrite-chalcopyrite was thought to contain the highest concentrations of cobalt. Specifically, magnetite horizon samples 303B, 305B, and 338B, all with the above mineralogical assemblage, contained 1065 ppm, 940 ppm, and 1365 ppm Co, respectively, whereas samples 321B and 327B of non-sulfide-bearing siliceous magnetite horizon material contained only 38 ppm and 3 ppm Co, respectively (Appendix A; Pl. 2).

Detailed examination of Plate 2 in combination with the geologic map reveals that the Babcock has a geochemical signature that is typical of many Cyprus-type massive sulfide deposits. First, the greatest concentrations of gold and zinc at the prospect are found in the upper portion of the Main gossan as exemplified by samples 317B and 318B that contain 405 ppb and 135 ppb gold and 184 ppm and 244 ppm Zn, respectively. As pointed out by Large (1977), this crude zonation and upward enrichment of gold and zinc has been documented for many Cyprus-type deposits. Second, the rock geochemistry data indicate a lead- and silver-deficient environment at the Babcock which is normal for cupreous Cyprus-type deposits (Hutchinson, 1973; Large, 1977). Lead and silver values at the prospect do not exceed 16 ppm and 1.1 ppm, respectively. Third, high cobalt values are associated with high copper values over magnetite horizons containing the cobalt-bearing mineralogical association mentioned above, however high concentrations of copper also occur independently of high cobalt over areas underlain by gossan. Finally and as previously mentioned, it is important to note that the greatest cobalt values at the prospect occur in the magnetite horizons just stratigraphically below the Main gossan (Pls. 1 and 2; App. A). This crude zonation of cobalt and magnetite is also found just below the gossans and associated mineralization at the Cyprus-type deposits of the Troodos Complex, Cyprus (Constantinou and Govett, 1973).

Table 1 lists the whole-rock geochemistry of two samples of host metapillow basalt and greenstone from the Babcock prospect. Also included in this table for comparison purposes is the whole-rock average chemical composition of 124 spilites as listed in Hyndman (1972). Comparison of the Babcock host rocks with Hyndman's average spilite shows that the former are indeed of spilitic affinity but that they are slightly enriched in Al_2O_3 and MgO, and slightly depleted in CaO, K_2O, and TiO_2. Most important, the Na_2O contents of the Babcock rocks are typical of spilites which are characteristically enriched in sodium.

Regional Soil-sampling Survey

The latter part of October was spent conducting a soil-sampling survey over the Babcock property and a 2½-mile-long area along its general northeasterly geologic trend. The sampling was conducted with the hope that the results

TABLE 1. WHOLE-ROCK GEOCHEMISTRY OF METAPILLOW BASALT AND GREENSTONE HOST ROCK, BABCOCK PROSPECT, SOUTHWESTERN OREGON.

ELEMENT	SAMPLE NO. 367B	SAMPLE NO. 369B	AVERAGE OF 124 SPILITES (FROM HYNDMAN, 1972)
SiO_2	50.50	50.50	48.8
TiO_2	.80	1.00	1.3
Al_2O_3	17.20	17.00	15.7
Fe_2O_3	3.45	5.70	3.8
FeO	7.20	6.05	6.6
MnO	.18	.19	.15
MgO	7.50	6.90	6.1
CaO	5.30	4.50	7.1
Na_2O	3.50	4.60	4.4
K_2O	<.10	<.10	1.0
P_2O_5	--	--	.34
TOTAL	95.73	96.54	95.29

--: not analyzed for

might reveal areas of copper and zinc anomalism similar to those found at and along the trend of Noranda's Turner-Albright deposit. Seven lines were run in the general area of the Babcock with lines trending N25^{o}W, normal to the overall structural grain of the region, and ranging from 3,500 to 5,400 feet in length. A total of 181 samples were taken by myself and D. Antrim with spacing of 100 feet or 200 feet used depending on topography and location of the lines. All of the samples were sent to Bondar-Clegg Labs, Vancouver, B. C., and analyzed for Cu, Zn, Co, Ni, Au, and Ag by atomic absorption methods. Line and sample locations as well as individual overlay sheets for each element are presented as Plates 3 through 8 of this report.

Examination of the overlays in combination with the geologic map reveals the following: 1) anomalous copper values to 5,500 ppm overlie the copper prospects on Little Grayback ridge and the Main gossan area; 2) slightly anomalous cobalt values to 211 ppm occur over areas underlain by serpentinite (as would be expected) and the area at and downslope from the Ridge Top gossan; 3) zinc anomalism to 318 ppm occurs near areas underlain by gossan and in two additional areas that are unexplained; 4) slightly anomalous silver values of 0.6 ppm and 0.4 ppm are in soils overlying the Main gossan; 5) anomalous gold values to 490 ppb overlie the upper part of the Main gossan and correlate well with the locations of the previously mentioned rock samples that are anomalous in gold; 6) an unexplained gold anomaly of 285 ppb occurs on L4; and 7) anomalous nickel values to 2400 ppm are exclusively associated with areas underlain by serpentinite.

In summary, anomalous copper, gold, and some cobalt and zinc values exist mostly at or near areas underlain by gossan. Although the soil survey detected two new areas of zinc anomalism, it did not detect any additional areas of cobalt or copper anomalism that were not discovered during the mapping and rock sampling. It should be mentioned that anomalous concentrations of the above four elements would be expected to and do occur in a Cyprus-type volcanogenic massive sulfide system.

GROUND MAGNETOMETER SURVEY

Because of the occurrence of the cobalt at the Babcock with the magnetite-sulfide rock, a ground magnetometer survey was carried out in an attempt to delineate the zone containing this material and the size and extent of the individual horizons and bodies. The survey was conducted by Molycorp geophysicist C. Campbell and summer hire A. Ambrose during the first half of July. The data were corrected for diurnal variation utilizing short loops of four hours or less and are of good quality as evidenced by its reproducibility. Seven lines were run on a N25°W azimuth, perpendicular to the regional geologic trend, in order to obtain maximum cross-sectional information. Readings were taken every 100 feet with line spacing of 100 feet. Survey line and station locations are presented as Plate 9 of this report and the profiles are presented as Plate 10.

Results of the survey showed that in nearly all instances, there is little character except for a few single point anomalies which represent very small localized distortions of the total magnetic field (Pl. 10). These anomalies were not found to be consistent enough to be utilized in tracing the geologically favorable magnetite horizons. Because it was found that the magnetite occurs in thin beds and lenses generally less than two feet thick, it was concluded that the survey would require very tight station spacing (5 to 15 feet) in order to map the surface trace of the material.

Accordingly and subsequent to the above survey, one of the most favorable magnetite horizons that lies between adit nos. 3 and 4 and contains cobalt values to 0.14% was essentially "mapped" by magnetometer along its strike to check for continuity and extent. The horizon could be traced approximately 400 feet before it was no longer detected. Additional magnetite horizons and the magnetite-chalcopyrite prospects on the Little Grayback Peak ridgeline were also checked but showed only between 10 and 50 feet of strike length, thus yielding little potential for extensive cobalt mineralization.

CONCLUSIONS AND RECOMMENDATIONS

Although results of this evaluation indicate that the Babcock has an excellent potential for hosting cobalt-bearing Cyprus-type mineralization, its lack of potential in attaining any great size requires that no further work be done on it. This conclusion is based on the geologic similarity of the Babcock with Noranda's Turner-Albright deposit, which contains only just over 5 million tons of ore with about 3 million pounds of cobalt (McAleer, 1982). Potential concentrations of cobalt on this order of magnitude are far below Molycorp's goal of finding 60 million pounds of cobalt in any one geographical area.

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APPENDIX A

DESCRIPTIONS AND ANALYSES OF ROCK SAMPLES TAKEN AT

THE BABCOCK PROSPECT

GEOCHEMICAL SAMPLING

COLLECTOR: M. BERNARDI
AREA: OPHIOLITE COBALT RECONNAISSANCE
FIELD MAP:
DATE: SUMMER, 1982

RESULTS PLOTTED BY:
MAP:
DATE:

VALUES IN PPM EXCEPT WHERE NOTED

SAMPLE NUMBER	LOCATION	REMARKS	TYPE: ROCK	SOIL	STREAM	Ni	Cu	Co	Zn	Pb	Ag	Au (ppb)	As	Hg
301B	BABCOCK PROSPECT	CHLORITIZED GREENSTONE W/5% SULFIDES	X				250	68	48	<2	.2	40		
302B	" "	MASSIVE SULFIDE; 70% PYRITE, 30% QTZ	X				790	1215	8	<2	.3	35		
303B	" "	MAGNETITE-BEARING MASSIVE SULFIDE	X				2.2%	1065	42	<2	.6	75		
304B	" "	SILICEOUS MAGNETITE-RICH ROCK	X				190	61	14	<2	.3	20		
305B	" "	MAGNETITE-BEARING MASSIVE SULFIDE	X				1.04%	.940	34	16	.2	30		
306B	" "	" " " "	X				650	775	10	<2	.2	40		
307B	" "	MAGNETITE HORIZON	X				143	40	17	<2	.2	<5		
308B	" "	MAGNETITE HORIZON	X				66	46	20	<2	.2	<5		
309B	" "	QTZ VEIN MATERIAL	X				12	4	12	<2	.2	<5		
310B	" "	GREENSTONE W/5% DIS. SULFIDES	X				80	230	52	<2	.2	30		
311B	" "	CPY.-RICH MASSIVE SULFIDE	X				11.42%	.970	63	<2	.8	135		
313B	" "	CHLORITIZED GREENSTONE	X				64	27	62	<2	.3	395		
314B	" "	C.G. GREENSTONE W/TR. SULFIDES	X				220	9	11	<2	.2	95		
315B	" "	GOSSANOUS GREENSTONE	X				580	6	72	<2	.2	45		
316B	" "	GOSSAN	X				310	9	21	<2	.2	45		
317B	" "	PYRITIC GOSSANOUS GREENSTONE	X				910	52	184	<2	.2	405		
318B	" "	GOSSAN W/ST. FeOx	X				350	12	244	<2	.3	135		
319B	" "	STRONGLY QTZ-VEINED GREENSTONE	X				78	18	44	<2	.2	30		
320B	" "	DARK GRAY ARGILLITE	X				68	13	97	7	.2	25		
321B	" "	MAGNETITE HORIZON	X				310	38	10	<2	.2	35		
322B	" "	GREENSTONE W/MAGNETITE + PYRITE	X				2800	187	22	<2	.2	50		
323B	" "	GOSSAN W/QTZ + MAGNETITE	X				780	164	51	<2	.2	10		
324B	" "	GOSSANOUS GREENSTONE W/1-5% PYRITE	X				85	92	84	<2	.2	5		
325B	" "	GREENSTONE	X				85	27	69	<2	.2	5		
326B	" "	GREENSTONE	X				54	25	66	<2	.2	10		
327B	" "	SILICEOUS MAGNETITE HORIZON	X				100	3	9	<2	.2	20		
328B	" "	RANDOM CHIP - ADIT #2	X				56	181	31	<2	.2	10		
329B	" "	GOSSAN + SULFIDE FROM DUMP	X				86	200	13	<2	.2	<5		
330B	" "	GREENSTONE W/TR. SULFIDES	X				16	52	44	<2	.2	<5		

GEOCHEMICAL SAMPLING

COLLECTOR: M. BERNARDI
AREA: OPHIOLITE COBALT RECONNAISSANCE
FIELD MAP:
DATE: SUMMER, 1982

RESULTS PLOTTED BY:
MAP:
DATE:

VALUES IN PPM EXCEPT WHERE NOTED

SAMPLE NUMBER	LOCATION	REMARKS	TYPE: ROCK	TYPE: SOIL	TYPE: STREAM	Ni	Cu	Co	Zn	Pb	Ag	Au (ppb)	As	Hg
331B	BABCOCK PROSPECT	GOSSANOUS GREENSTONE FROM PROSPECT	X				57	73	30	<2	.2	<5		
332B	" "	GOSSANOUS GREENSTONE FROM DUMP	X				163	116	37	<2	.2	25		
333B	" "	GOSSAN FROM SMALL PROSPECT PIT	X				96	45	8	<2	.2	35		
334B	" "	QTZ-MAGNETITE GOSSAN FROM DUMP	X				51	10	26	<2	.2	<5		
335B	" "	" " " "	X				67	46	18	<2	.2	15		
336B	" "	PYRITIC MASSIVE SULFIDE FROM DUMP	X				400	116	6	<2	.2	20		
337B	" "	SERP. GREENSTONE W/MASSIVE SULFIDE	X				4600	396	30	<2	.2	15		
338B	" "	MAGNETITE GOSSAN	X				940	1365	14	<2	.2	<5		
339B	" "	PYRITE-RICH MASSIVE SULFIDE	X				161	82	50	<2	.2	15		
340B	" "	PYRITIC GREENSTONE	X				74	120	44	<2	.2	10		
341B	STANDARD PROPERTY	CuOx-STAINED VOLCANIC + VEIN	X				1,687	77	144	<2	2.3	345		
342B	FITZSIMMONS PROSPECT	FeOx-STAINED MAFIC VOLCANIC	X				110	8	30	<2	.2	5		
343B	BABCOCK PROSPECT	GREENSTONE	X				41	16	22	<2	.2	5		
344B	" "	GREENSTONE	X				9	45	18	<2	.2	20		
345B	" "	GREENSTONE-SERPENTINE CONTACT	X				74	54	25	<2	.2	<5		
346B	" "	GABBRO	X				13	22	69	<2	.2	<5		
347B	" "	GREENSTONE W/1% PYRITE	X				148	21	24	<2	.2	<5		
348B	" "	GREENSTONE	X				945	22	20	<2	.2	<5		
349B	" "	CHLORITIZED VOLCANIC	X				77	35	74	<2	.2	<5		
350B	" "	MASSIVE QUARTZ VEINS	X				17	2	2	<2	.2	<5		
351B	" "	SILICEOUS GREENSTONE	X				48	23	42	<2	.2	<5		
352B	" "	QTZ-VEINED GREENSTONE	X				44	28	50	<2	.2	<5		
353B	" "	SILICEOUS GOSSAN	X				254	11	12	2	.2	5		
354B	" "	GOSSAN FROM ADIT	X				1875	59	32	4	1.1	55		
355B	" "	QTZ-SERICITE GOSSAN	X				309	45	77	5	.2	30		
356B	" "	QTZ-SERICITE GOSSAN	X				347	7	6	3	.2	70		
357B	" "	GREENSTONE	X				72	29	55	2	.2	<5		
358B	" "	SILICEOUS GREENSTONE	X				47	26	46	<2	.2	<5		
359B	" "	MASSIVE SULFIDE W/CPY, PY, MAG	X				1047	785	42	4	.9	110		

COLLECTOR: M. BERNARDI
AREA: OPHIOLITE COBALT RECONNAISSANCE
FIELD MAP:
DATE: SUMMER, 1982

RESULTS PLOTTED BY:
MAP:
DATE:

VALUES IN PPM EXCEPT WHERE NOTED

SAMPLE NUMBER	LOCATION	REMARKS	TYPE: ROCK	TYPE: SOIL	TYPE: STREAM				W	Ni	Cu	Co	Zn	Pb	Ag	Au (ppb)	As	Hg
361B	BABCOCK PROSPECT	GREENSTONE	X								425	35	54	2	.2	<5		
362B	" "	QTZ-MAGNETITE GOSSAN	X								1355	79	26	5	.2	50		
363B	" "	QTZ-RICH GOSSAN	X								164	70	9	4	.2	25		
364B	" "	" " "	X								117	13	17	<2	.2	5		
365B	" "	QTZ-MAGNETITE CHIP AT PORTAL	X								1430	83	10	<2	.2	40		
366B	" "	GOSSAN + GREENSTONE 5' CHIP	X								970	112	36	<2	.2	45		
367B	" "	GOSSAN + GREENSTONE 5' CHIP	X								155	35	38	<2	.2	<5		
368B	" "	GREENSTONE 5' CHIP	X								199	135	39	<2	.2	<5		
369B	" "	GREENSTONE	X								57	32	60	<2	.2	<5		
370B	SIX MILE CREEK AREA	CuOx-STAINED SERPENTINITE	X								1,849	246	38	5	.6	10		
371B	SIX MILE CREEK	SERPENTINITE	X								102	37	26	<2	.2	<5		
400B	BABCOCK PROSPECT	GREENSTONE	X								380	30	58	<2	.2	10		
401B	" "	"	X								82	26	66	<2	.2	<5		
402B	" "	GOSSANOUS GREENSTONE W/TR. SULFIDES	X								230	24	57	<2	.2	<5		
403B	" "	SILICEOUS GOSSAN	X								320	151	28	<2	.2	280		
404B	" "	MASSIVE QTZ GOSSAN	X								470	4	9	<2	.2	5		
405B	" "	QTZ GOSSAN	X								230	96	14	<2	.2	30		
406B	" "	GREENSTONE	X								60	34	24	<2	.2	<5		
500B	" "	GREENSTONE W/TR. SULFIDES	X								113	45	60	<2	.2	<5		
501B	" "	QTZ-PYRITE GOSSAN	X								4800	495	17	<2	.2	20		
502B	" "	QTZ-MAGNETITE-PYRITE GOSSAN	X								1500	125	58	<2	.6	70		
503B	" "	QTZ-SERICITE GOSSAN	X								620	19	6	<2	.2	15		
504B	" "	GREENSTONE W/TR. SULFIDES	X								87	36	36	<2	.2	<5		
505B	" "	SILICIFIED GREENSTONE W/TR. SULFIDES	X								103	28	54	<2	.2	<5		
506B	" "	QTZ-MAGNETITE HORIZON W/TR. PYRITE	X								280	114	64	<2	.2	15		
507B	SEIAD CREEK EAST FORK, CA	QTZ-SERICITE SCHIST	X								91	8	35	<2	.2	25		
508B	DIXIE CREEK	PORPHYRITIC BASALT	X						3		47	8	12	2	.2	<5		
509B	JUNIPER ADIT, STANDARD MINE	BLEACHED VEIN FROM ADIT ENTRANCE	X						4		9310	164	395	4	11	225		
510B	STANDARD MINE	ALTERED ANDESITE DIKE	X															
511B	" "	MIN. PORPHYRITIC BASALT	X						2		515	40	114	2	.2	40		

APPENDIX B

ANALYSES OF SOIL SAMPLES TAKEN AT THE

BABCOCK PROSPECT

CLIENT: MOLYCORP INC.
GEOLOGIST: M-BERNARDI AGEOLOGIST ,
NUMBER OF SAMPLES: 181 PRIORITY:
SEE APPENDIX FOR EXPLANATION OF DIGESTION,ANALYSIS,SAMPLE TYPE, AND SIEVE SIZE CODES.

REPORT NUMBER: BV122-3609
PROJECT: NONE GIVEN
DATE: 18-OCT-82

REC'D OCT 19 1982

ELEMENT			CU	ZN	AG	NI	CO	AU
DIGESTION / ANALYSIS CODE			J/1	J/1	J/1	J/1	J/1	F/1
REC#	/SAMPLE NUMBER/	T/ S	PPM	PPM	PPM	PPM	PPM	PPB
0001	LO S00	D 1	85	102	0.3	56	24	15
0002	LO S01	D 1	104	114	0.3	64	27	10
0003	LO S02	D 1	55	78	0.2	68	23	L 5
0004	LO S03	D 1	26	38	0.2	44	15	15
0005	LO S04	D 1	48	72	0.2	310	47	L 5
0006	LO S05	D 1	32	64	0.2	222	24	L 5
0007	LO S06	D 1	76	60	0.2	76	19	L 5
0008	LO S07	D 1	360	60	0.6	126	22	490
0009	LO S08	D 1	114	73	0.4	49	32	70
0010	LO S09	D 1	550	318	0.2	44	41	160
0011	LO S10	D 1	158	82	0.2	60	45	L 5
0012	LO S11	D 1	88	92	0.2	52	24	5
0013	LO S12	D 1	200	74	0.2	60	25	65
0014	LO S13	D 1	440	130	0.2	76	77	L 5
0015	LO S14	D 1	148	76	0.2	116	46	L 5
0016	LO S15	D 1	250	72	0.2	36	38	L 5
0017	LO S16	D 1	200	120	0.2	54	43	5
0018	LO S17	D 1	220	94	0.2	52	33	5
0019	LO S18	D 1	131	84	0.2	50	35	L 5
0020	LO S19	D 1	120	102	0.2	60	35	L 5
0021	LO S20	D 1	116	80	0.2	52	33	L 5
0022	LO S21	D 1	92	100	0.2	56	37	L 5
0023	LBO 00	D 1	120	52	0.2	56	40	L 5
0024	LBO 02	D 1	85	76	0.3	56	35	L 5
0025	LBO 04	D 1	148	100	0.2	57	54	L 5
0026	LBO 06	D 1	118	136	0.3	52	38	L 5
0027	LBO 08	D 1	112	104	0.2	50	76	L 5
0028	LBO 10	D 1	123	99	0.2	52	86	L 5
0029	LBO 12	D 1	166	62	0.2	52	107	20
0030	LBO 14	D 1	50	68	0.2	76	105	5
0031	LBO 15	D 1	158	110	0.2	120	71	L 5
0032	LBO 16	D 1	70	96	0.2	57	44	L 5
0033	LBO 18	D 1	96	144	0.2	52	75	10
0034	LBO 20	D 1	116	94	0.2	72	43	L 5
0035	LBO 22	D 1	71	124	0.2	63	40	L 5

Babcock

---CONTINUED NEXT PAGE---

CLIENT: MOLYCORP INC.
GEOLOGIST: M-BERNARDI
NUMBER OF SAMPLES: 181

AGEOLOGIST ,
PRIORITY:

REPORT NUMBER: BV122-3609
PROJECT: NONE GIVEN
DATE: 18-OCT-82

SEE APPENDIX FOR EXPLANATION OF DIGESTION, ANALYSIS, SAMPLE TYPE, AND SIEVE SIZE CODES.

ELEMENT DIGESTION / ANALYSIS CODE REC# /SAMPLE NUMBER/ T/ S			CU J/1 PPM	ZN J/1 PPM	AG J/1 PPM	NI J/1 PPM	CO J/1 PPM	AU F/1 PPB
0036	LB0 24	D 1	38	76	0.3	32	23	L 5
0037	LB0 26	D 1	34	108	0.2	39	26	10
0041	LB0 28	D 1	42	108	0.2	42	21	5
0042	LB0 30	D 1	80	88	0.2	52	32	L 5
0043	L2 00	D 1	72	55	0.2	47	33	L 5
0044	L2 01	D 1	72	88	0.2	45	29	L 5
0045	L2 02	D 1	36	78	0.2	52	19	L 5
0046	L2 03	D 1	59	83	0.2	184	38	L 5
0047	L2 04	D 1	37	54	0.2	92	20	L 5
0048	L2 05	D 1	42	60	0.2	490	40	5
0049	L2 06	D 1	61	88	0.2	128	25	10
0050	L2 07	D 1	230	93	0.2	70	25	15
0051	L2 08	D 1	560	82	0.2	64	37	5
0052	L2 09	D 1	460	100	0.2	76	41	L 5
0053	L2 10	D 1	166	104	0.2	57	34	L 5
0054	L2 11	D 1	260	92	0.2	60	27	L 5
0055	L2 12	D 1	520	88	0.2	57	51	L 5
0056	L2 13	D 1	430	98	0.2	68	44	10
0057	L2 14	D 1	400	96	0.2	57	50	L 5
0058	L2 15	D 1	240	76	0.2	57	32	10
0059	L2 16	D 1	90	130	0.2	59	33	L 5
0060	L2 17	D 1	270	100	0.2	54	39	5
0061	L2 18	D 1	43	166	0.2	44	32	5
0062	L2 19	D 1	72	144	0.2	60	39	L 5
0063	L2 20	D 1	90	90	0.2	64	36	10
0064	L2 21	D 1	114	76	0.2	63	41	L 5
0065	LB2 00	D 1	128	56	0.2	60	52	L 5
0066	LB2 01	D 1	103	138	0.2	53	53	15
0067	LB2 02	D 1	130	132	0.2	64	51	L 5
0068	LB2 04	D 1	124	104	0.2	80	95	L 5
0069	LB2 06	D 1	196	74	0.2	56	88	L 5
0070	LB2 08	D 1	150	114	0.2	52	93	L 5
0071	LB2 10	D 1	230	78	0.2	45	56	5
0072	LB2 12	D 1	103	82	0.2	72	102	5
0073	LB2 14	D 1	82	92	0.2	80	78	L 5

---CONTINUED NEXT PAGE---

CLIENT: MOLYCORP INC.
GEOLOGIST: M-BERNARDI AGEOLOGIST ,
NUMBER OF SAMPLES: 181 PRIORITY:
SEE APPENDIX FOR EXPLANATION OF DIGESTION,ANALYSIS,SAMPLE TYPE, AND SIEVE SIZE CODES.

REPORT NUMBER: BV122-3609
PROJECT: NONE GIVEN
DATE: 18-OCT-82

ELEMENT DIGESTION / ANALYSIS CODE REC# /SAMPLE NUMBER/ T/ S			CU J/1 PPM	ZN J/1 PPM	AG J/1 PPM	NI J/1 PPM	CO J/1 PPM	AU F/1 PPB
0074	LB2 15	D 1	260	100	0.2	84	47	L 5
0075	L3 S-10	D 1	82	80	0.2	65	30	L 5
0076	L3 S-08	D 1	72	94	0.2	56	28	L 5
0077	L3 S-06	D 1	54	124	0.2	61	25	L 5
0081	L3 S-04	D 1	66	106	0.2	58	23	5
0082	L3 S-02	D 1	31	48	0.3	20	13	L 5
0083	L3 S-01	D 1	23	56	0.2	25	11	15
0084	L3 S00	D 1	64	52	0.2	50	26	L 5
0085	L3 S02	D 1	56	86	0.3	1240	211	L 5
0086	L3 S04	D 1	36	102	0.2	52	28	L 5
0087	L3 S05	D 1	42	76	0.3	40	21	5
38	L3 S06	D 1	46	60	0.2	32	16	L 5
0089	L3 S08	D 1	48	62	0.2	42	20	L 5
0090	L3 S10	D 1	28	136	0.2	41	33	L 5
0091	L3 S12	D 1	59	98	0.2	48	33	L 5
0092	L3 S14	D 1	63	82	0.2	53	31	L 5
0093	L3 S16	D 1	30	200	0.3	40	38	15
0094	L3 S18	D 1	46	124	0.2	40	28	L 5
0095	L3 S22	D 1	36	135	0.2	36	31	5
0096	L3 S24	D 1	34	84	0.2	30	17	L 5
0097	L3 S26	D 1	99	98	0.2	44	29	20
0098	L3 S28	D 1	44	110	0.2	46	29	L 5
0099	L3 S30	D 1	76	60	0.3	40	28	10
0100	L4 S-6	D 1	68	126	0.4	151	24	L 5
0101	L4 S-4	D 1	59	108	0.4	188	30	15
0102	L4 S-2	D 1	52	78	0.3	540	55	10
0103	L4 S00	D 1	90	112	0.3	124	52	L 5
0104	L4 S02	D 1	64	94	0.2	60	34	10
0105	L4 S04	D 1	88	126	0.3	100	49	285
0106	L4 S06	D 1	94	106	0.2	251	48	30
0107	L4 S08	D 1	106	80	0.3	620	72	20
08	L4 S10	D 1	88	92	0.4	190	33	35
09	L4 S12	D 1	96	132	0.3	214	53	L 5
0110	L4 S14	D 1	94	82	0.3	66	16	10
0111	L4 S16	D 1	72	80	0.4	37	16	L 5

---CONTINUED NEXT PAGE---

CLIENT: MOLYCORP INC.
GEOLOGIST: M-BERNARDI AGEOLOGIST ,
NUMBER OF SAMPLES: 181 PRIORITY:
SEE APPENDIX FOR EXPLANATION OF DIGESTION,ANALYSIS,SAMPLE TYPE, AND SIEVE SIZE CODES.

REPORT NUMBER: BV122-3609
PROJECT: NONE GIVEN
DATE: 18-OCT-82

ELEMENT DIGESTION / ANALYSIS CODE REC# /SAMPLE NUMBER/ T/ S		CU J/1 PPM	ZN J/1 PPM	AG J/1 PPM	NI J/1 PPM	CO J/1 PPM	AU F/1 PPB
0112 L4 S18	D 1	51	72	0.2	124	39	15
0113 L4 S20	D 1	50	100	0.2	660	62	L 5
0114 L4 S22	D 1	61	104	0.2	380	54	L 5
0115 L4 S24	D 1	44	76	0.3	600	45	L 5
0116 L4 S26	D 1	86	100	0.3	575	66	10
0117 L4 S28	D 1	200	92	0.3	188	38	5
0121 L4 S30	D 1	70	88	0.3	132	34	L 5
0122 L4 S32	D 1	49	72	0.2	175	20	20
0123 L4 S34	D 1	33	84	0.3	2400	152	L 5
0124 L4 S36	D 1	29	34	0.2	1740	108	L 5
0125 L5 S-24	D 1	66	106	0.3	64	37	L 5
126 L5 S-22	D 1	63	128	0.5	56	21	L 5
0127 L5 S-20	D 1	116	118	0.5	76	25	10
0128 L5 S-18	D 1	90	82	0.3	66	29	L 5
0129 L5 S-16	D 1	81	100	0.2	61	28	L 5
0130 L5 S-14	D 1	49	82	0.3	53	26	L 5
0131 L5 S-12	D 1	44	56	0.3	36	18	L 5
0132 L5 S-10	D 1	47	68	0.2	160	25	L 5
0133 L5 S-08	D 1	40	68	0.2	236	30	L 5
0134 L5 S-06	D 1	56	76	0.3	124	20	L 5
0135 L5 S-04	D 1	114	64	0.2	60	28	L 5
0136 L5 S-02	D 1	158	74	0.2	60	39	L 5
0137 L5 S00	D 1	182	85	0.2	72	65	L 5
0138 L5 S02	D 1	84	120	0.3	71	35	L 5
0139 L5 S04	D 1	56	94	0.3	46	27	5
0140 L5 S06	D 1	126	114	0.3	63	40	L 5
0141 L5 S08	D 1	166	126	0.2	104	32	L 5
0142 L5 S10	D 1	116	116	0.2	82	35	5
0143 L5 S12	D 1	162	162	0.2	56	32	L 5
0144 L5 S14	D 1	44	180	0.2	40	27	10
0145 L5 S16	D 1	103	100	0.2	68	32	L 5
0146 L5 S18	D 1	110	90	0.2	42	22	L 5
47 L5 S20	D 1	62	76	0.2	40	21	L 5
0148 L5 S22	D 1	82	104	0.2	56	34	L 5
0149 L5 S24	D 1	45	108	0.3	47	19	L 5

---CONTINUED NEXT PAGE---

CLIENT: MOLYCORP INC.
GEOLOGIST: M-BERNARDI AGEOLOGIST ,
NUMBER OF SAMPLES: 181 PRIORITY:
REPORT NUMBER: BV122-3609
PROJECT: NONE GIVEN
DATE: 18-OCT-82

SEE APPENDIX FOR EXPLANATION OF DIGESTION,ANALYSIS,SAMPLE TYPE, AND SIEVE SIZE CODES.

ELEMENT DIGESTION / ANALYSIS CODE REC# /SAMPLE NUMBER/	T/ S		CU J/1 PPM	ZN J/1 PPM	AG J/1 PPM	NI J/1 PPM	CO J/1 PPM	AU F/1 PPB
0150 L5 S26	D	1	52	80	0.2	47	20	L 5
0151 L5 S28	D	1	47	106	0.2	48	28	L 5
0152 L5 S30	D	1	47	96	0.2	49	32	10
0153 L6 S-8	D	1	172	124	0.2	68	31	L 5
0154 L6 S-6	D	1	124	140	0.2	63	29	L 5
0155 L6 S-4	D	1	360	184	0.2	60	33	L 5
0156 L6 S-2	D	1	137	120	0.2	52	47	5
0157 L6 S00	D	1	5500	124	0.2	53	64	10
0161 L6 S02	D	1	500	89	0.2	53	88	L 5
0162 L6 S04	D	1	63	92	0.2	36	18	L 5
0163 L6 S06	D	1	89	76	0.2	41	37	L 5
0164 L6 S08	D	1	56	108	0.2	60	32	L 5
0165 L6 S10	D	1	92	96	0.2	60	28	L 5
0166 L6 S12	D	1	94	112	0.2	62	31	L 5
0167 L6 S14	D	1	92	94	0.2	48	32	L 5
0168 L6 S16	D	1	60	88	0.2	48	20	L 5
0169 L6 S18	D	1	32	96	0.2	37	23	5
0170 L6 S20	D	1	68	70	0.2	48	20	5
0171 L6 S22	D	1	48	116	0.2	56	34	L 5
0172 L6 S23	D	1	47	64	0.2	44	18	
0173 L6 S24	D	1	44	52	0.2	36	11	5
0174 L7 S00	D	1	52	90	0.2	120	29	L 5
0175 L7 S02	D	1	56	60	0.2	64	32	L 5
0176 L7 S04	D	1	48	64	0.2	60	32	5
0177 L7 S06	D	1	58	120	0.2	78	38	L 5
0178 L7 S08	D	1	78	68	0.2	72	39	L 5
0179 L7 S10	D	1	78	80	0.2	72	35	L 5
0180 L7 S12	D	1	59	80	0.2	64	31	L 5
0181 L7 S14	D	1	66	114	0.2	60	32	L 5
0182 L7 S16	D	1	48	90	0.2	68	27	L 5
0183 L7 S18	D	1	57	126	0.2	116	33	L 5
0184 L7 S20	D	1	56	104	0.2	168	33	10
0185 L7 S22	D	1	125	148	0.2	87	47	20
0186 L7 S24	D	1	48	76	0.2	38	22	10
0187 L7 S26	D	1	43	114	0.2	44	27	L 5

---CONTINUED NEXT PAGE---

CLIENT: MOLYCORP INC. REPORT NUMBER: BV122-3609
GEOLOGIST: M-BERNARDI AGEOLOGIST , PROJECT: NONE GIVEN
NUMBER OF SAMPLES: 181 PRIORITY: DATE: 18-OCT-82
SEE APPENDIX FOR EXPLANATION OF DIGESTION,ANALYSIS,SAMPLE TYPE, AND SIEVE SIZE CODES.

ELEMENT			CU	ZN	AG	NI	CO	AU
DIGESTION / ANALYSIS CODE			J/1	J/1	J/1	J/1	J/1	F/1
REC# /SAMPLE NUMBER/	T/	S	PPM	PPM	PPM	PPM	PPM	PPB
0188 L7 S28	D	1	42	112	0.2	47	27	L 5
0189 L7 S30	D	1	48	130	0.2	48	29	15
0190 L7 S32	D	1	124	126	0.2	56	29	5
0191 L7 S34	D	1	103	76	0.2	66	35	L 5
0192 L7 S36	D	1	70	56	0.2	48	27	L 5
0193 L7 S38	D	1	56	84	0.2	50	21	15

SAMPLE # L6 S23 IS WAITING FOR AU

---END---

BARETTA MINING INC. Laboratory No.: 9077

Sample Mark:	Gold oz/ton	Silver oz/ton	Copper ppm	Zinc ppm	Cobalt ppm	Nickel ppm
2648 TAB 12 1120	-0.001	0.03	220	75	35	50
49	-0.001	-0.04	100	75	30	35
50	-0.001	0.05	280	80	30	30
51	-0.001	-0.01	210	295	35	40
52	-0.001	-0.01	235	105	30	50
53	-0.001	0.06	160	110	30	40
54	-0.001	0.04	160	110	30	40
55	-0.001	-0.01	120	90	30	45
56	-0.001	0.09	245	85	35	60
57	0.001	0.10	110	85	35	40
58	-0.001	-0.01	55	90	40	35
59 1180	-0.001	0.12	40	85	45	30
60 1180 - 1184.2	0.001	0.10	220	25	225	705
61 1184.2 - 1185	0.005	0.07	0.23%	40	375	675
62	0.001	0.05	20	25	30	95
63	0.001	-0.01	25	25	35	95
64	0.002	0.08	25	30	30	100
65 1200 - 1202.4	0.001	0.11	100	75	90	355
2666 1202.4 - 1204.4	-0.001	0.03	5	25	30	160
3977	-0.001	-0.01	520	10	0.19%	10

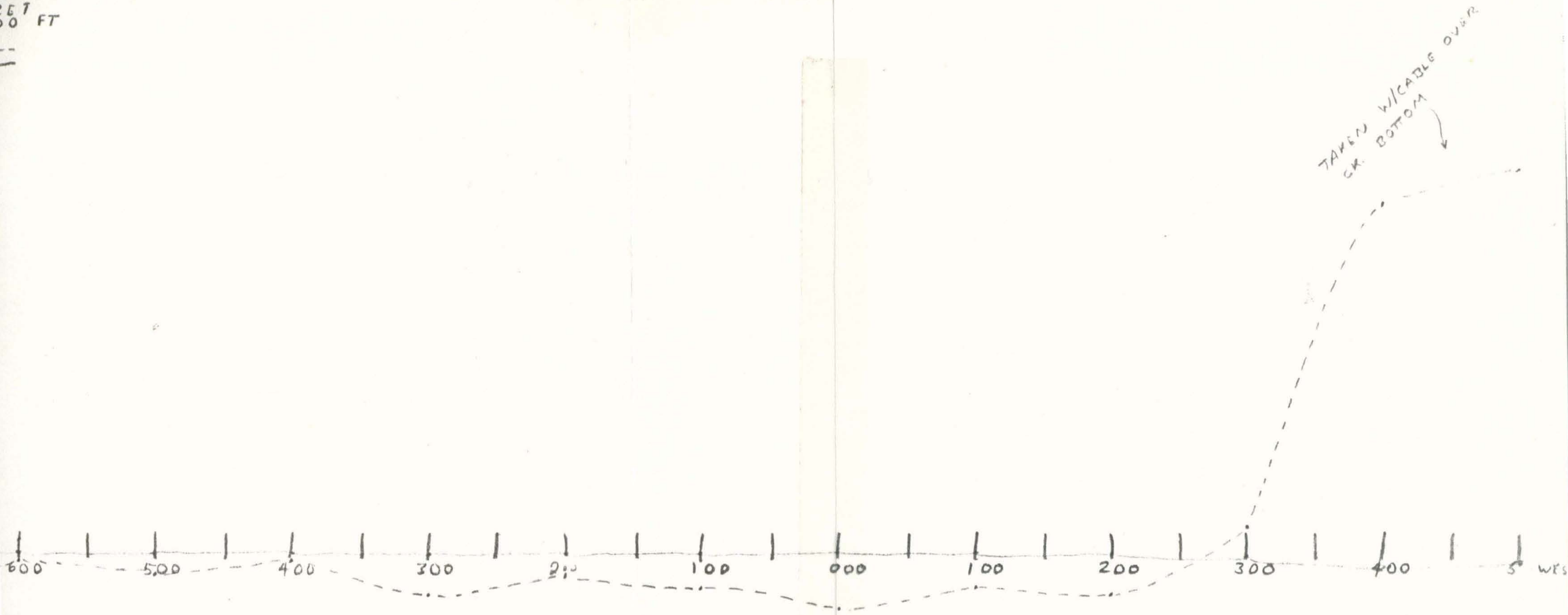
BABcock →

HUNTER MINING LABORATORY, INC.

[signature]

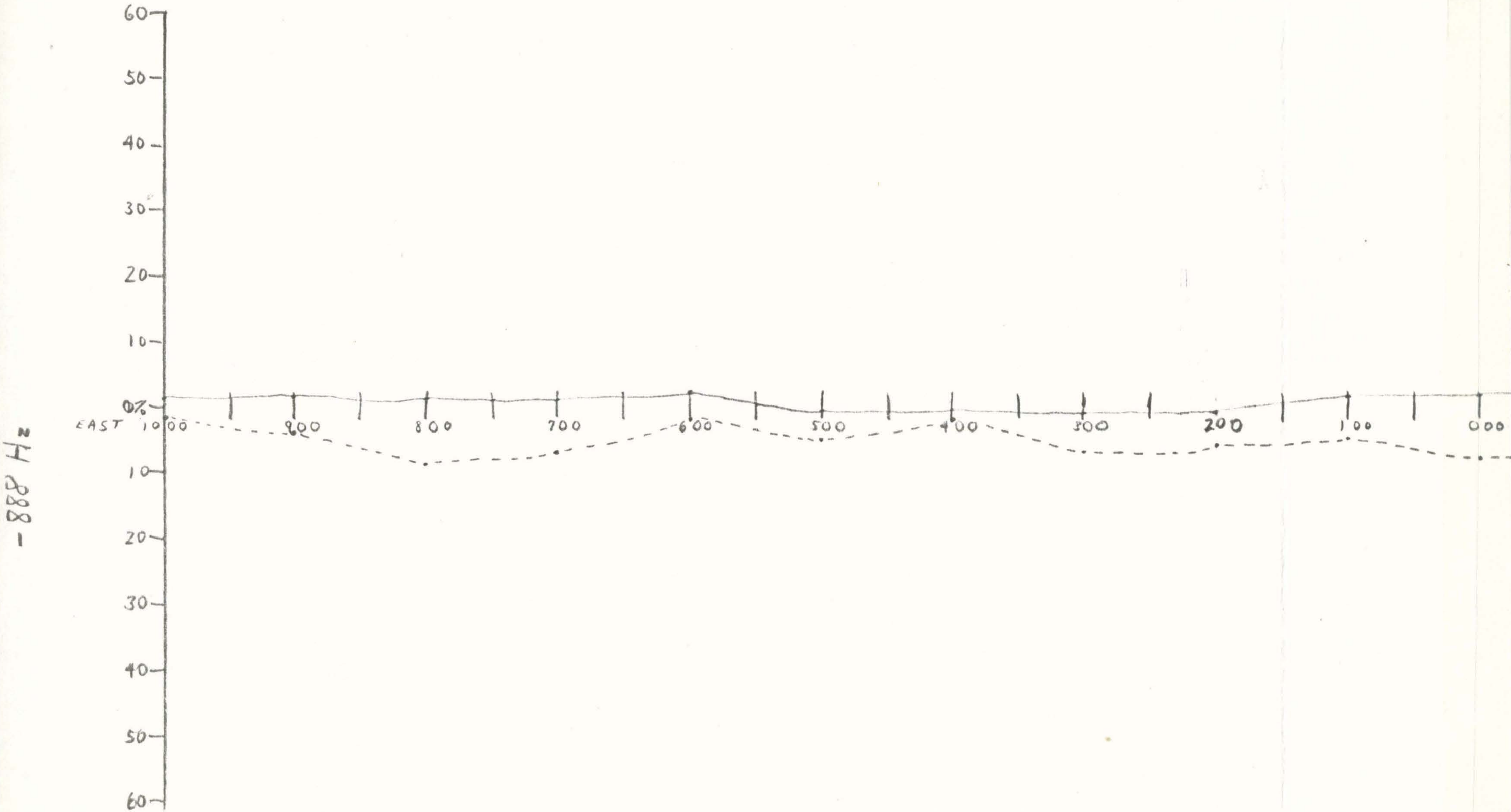
BABCOCK CABIN PROP.

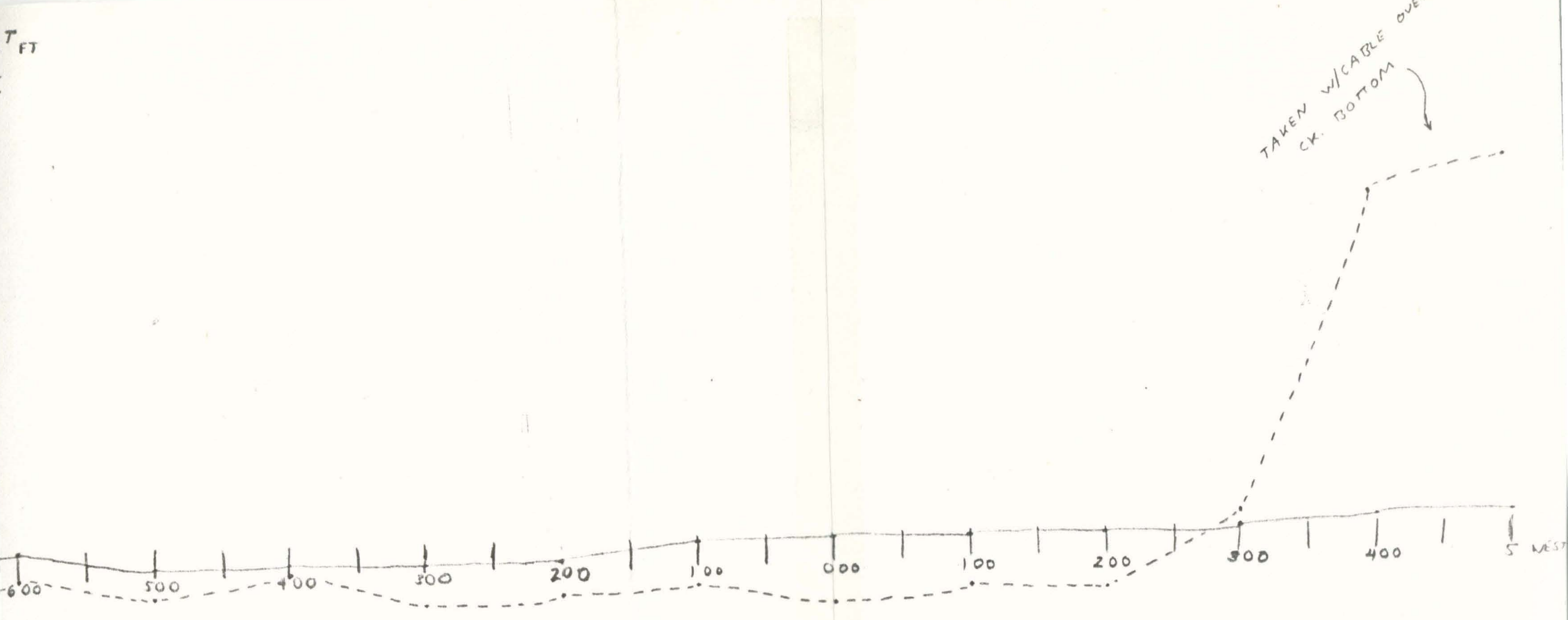
-222 Hz-


FT
600
500
400
300
100
000
100
200
300
400
WES
TAKEN W/CABLE OVER
CK. BOTTOM

BABCOCK CABIN PROS.
LINE SECRET
CABLE 400 FT

IP - - - - - - -
OP ———————

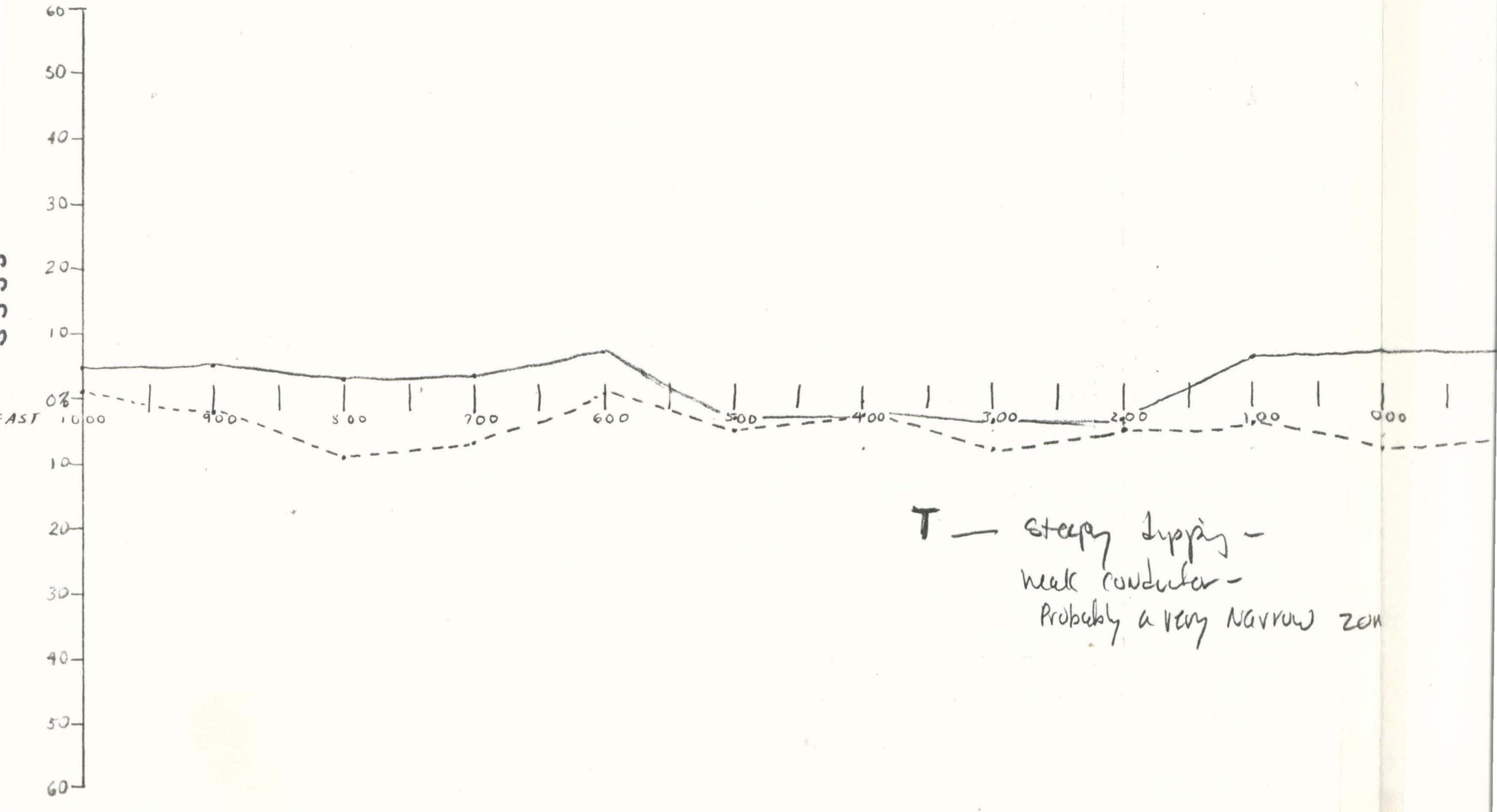


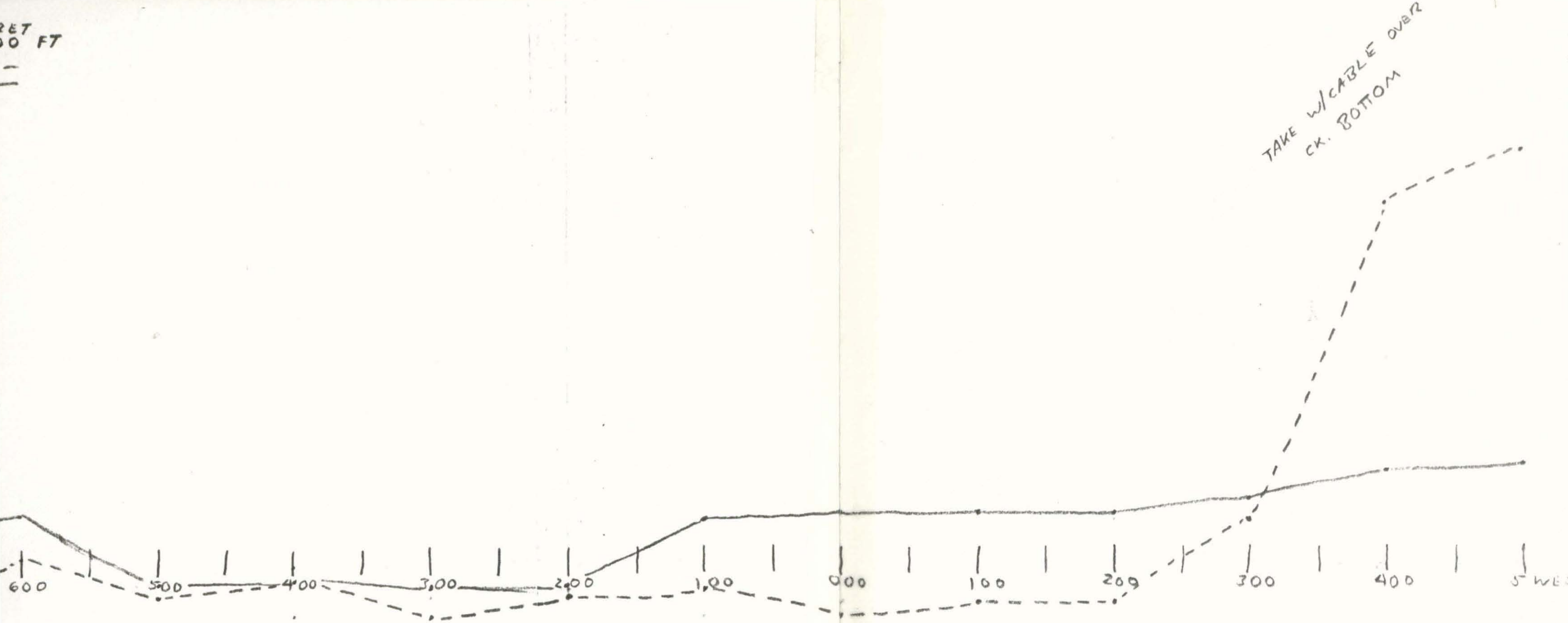

T FT
TAKEN W/CABLE OVER CK. BOTTOM
600
500
400
300
200
100
000
100
200
300
400
5 WEST

BABCOCK CABIN PROS.

LINE SECRET
CABLE 400 FT

IP - - - - -
OP ———





T — steeply dipping -
weak conductor -
Probably a very Narrow zon

SE

Line	Station	IP	OP	IP	OP	IP	OP	IP	OP	IP	OP	~~Elevation~~ SLOPE, IP %	Cable Length	Comments
B.C.	0+1000 E	-3	-1.1			-2	+1.0			+1	+4.2	+30	400	
	0+900 E	-3	-1.2			-4	+1.2			-2	+5.0	+35		
	0+800 E	-7	-.9			-9	+.9			-9	+3.0	+50		
	0+700 E	-7	-1.2			-7	+.7			-7	+3.5	+50		
	0+600 E	-2	-.9			-2	+2.0			+.5	+7.0	+35		
	0+500 E	-4	-1.2			-5	-.9			-5	-2.4	+30		
	0+400 E	-2	-1.4			-2	-.6			-2.5	+.5	+20		
	0+300 E	-7	-1.6			-7	-1.3			-8	-3.2	+30		
	0+200 E	-4	-1.2			-6	-.9			-5	-3.4	+40 ✓		
	0+100 E	-6	-.9			-5	+1.2			-4	+6.0	+35 ✓		
	0+00 —	-9	-.7			-8	+1.5			-8	+7.0	+50 ✓	-1	
	0+100 W	-6	-1.0			-6	+1.3			-6	+6.8	+55 ✓	-3	
	0+200 W	-7	-1.2			-6.5	+1.4			-6	+7.0	+60 ✓	-5	
	0+300 W	+3	-1.8			+4	+1.9			+6	+9.0	+15 ✓	-8	← STA 450 15 1- WATER
	0+400 W	~~[illegible]~~ +50	~~+5.0~~ -3.2			+50	+2.6			+52	+13	+5 ✓	~~8~~	
	0+500 W	+55	-2.8			+55	+2.8			+60	+14	-10 ✓		
												~~+10~~		
												+30		

BABCOCK CABIN PROS.

NW

Station	IP	OP	IP	OP	IP	OP	IP	OP	IP	OP	Elevation SLOPE IN %	Cable Length	Comments
0+500 W	-10	[illegible]			-11	+.9			-11	+4.4	+70%	100	
0+450 W	-1.5	-1.2			-2	+.8			-2	+4.8	+20%	OVER CK (STA IN CK)	
0+400 W	-25	-.8			-20	+.8			-21	+3.8	-45		
0+350 W	-20	-.8			-21	+.9			-21	+4.0	-60		
0+300 W	-24	-.8			-23	+.8			-24	+3.4	-55		
0+250 W	-24	-.7			-24	+.8			-24	+3.5	-55		
0+200 W	-25	-.7			-24	+.7			-22	+3.3	-50		
0+150 W	-20	[illegible]			-21	+1.7			-18	+4.0	-55		
0+100 W	-14.5	+7.0			-13	+9.0			-9	+8.5	-55	NEAR ROAD CUT	
0+50 W	-26	+7.0			-27	+9.0			-25	+8.0	-55	OVER DUMP MAT'L BELOW ADIT	
0+00	-25	-.7			-21	+.9			-20	+4.0	-55	OVER DUMP MAT'L BELOW ADIT	
0+50 E	-18	-1.1			-18	+.5			-18	+3.5	-50		
0+100 E	-19	-.9			-19	+.5			-20	+3.5	-40		
0+150 E	-17	-1.1			-17	+.8			-16	+3.8	-40		
0+200 E	+1	-1.2			+2	+.9			+2	+5	-25		
0+250 E	-10	-.8			-10	+.8			-9	+4.5	∅		
0+300 E	-3	-1.2			-3	+.7			-3.5	+4.5	∅		
0+350 E	-15	-1.2			-14	+3			-13	+2.1	-25		
0+400 E	-20	-.7			-20	+1.2			-20	+5.0	-40		
0+450 E	-13	-1.0			-14	+.9			-11	+4.5	-35		
0+500 E	-12	-1.1			-12	+.9			-12	+4.5	-35		
0+550 E	-20	-1.1			-21	+.9			-21	+4.0	-45		
0+600 E	-13	-1.4			-13	+.9			-13	+4.8	-40		
0+650 E	-18	-1.1			-18	+.6			-17	+3.5	-40		
0+700 E	-19	-1.1			-19	+.7			-19	+4.0	-40		
0+750 E	-19	-1.2			-19	+.4			-19	+3.8	-40		
0+800 E	-17	-1.1			-18	+.8			-18	+4.0	-45		
0+850 E	-19	-1.2			-19	+.6			-19	+3.8	-60		
0+900 E	-11	-1.4			-13	+.7			-12	+4.0	-60	BELOW RD CUT	
0+950 E	-20 [illegible]	[illegible]			[illegible]	[illegible]			-20	+3.4	[illegible]	IN RD CUT	

Assay Office

A Division of GOMIL CHEMICAL CO.
MINERS' EXCHANGE BUILDING
432 WEST MAIN STREET - QUINCY, CALIFORNIA 95971

PHONE: 916-283-2280
CABLE ADDRESS:
"TRANSPHERE"
QUINCY, U.S.A.

Claim no 4

MEMORANDUM OF ASSAY

MADE FOR Fred R. Krauss - President DATE Apr. 3, 1981

SAMPLE NO.	PER TON OF 2000 POUNDS AVOIRDUPOIS								COPPER, OR COBALT			LEAD, OR			TOTAL	
	GOLD				SILVER											
	AT	PER OUNCE			AT	PER OUNCE			AT	PER LB.		AT	PER LB.			
	OZS.	100'S	$	CTS.	OZS.	100'S	$	CTS.	%	$	CTS.	%	$	CTS.	$	CTS.
1.									0.08 = 1.6 lbs./ Ton							

ASSAY NO. ....

BY William E. Miller
WILLIAM E. MILLER, ASSAYER.

CHARGES $ 25.00 Paid W M

CHEMISTRY *Touches* **EVERYTHING**