2860 0034

245
Item 1

3706 4th St.
Sparks, Nevada 89431

14 March 1978

Mr. John H. Schilling, Director
Nevada Bureau of Mines and Geology
University of Nevada
Reno, Nevada 89507

Re: Quartz Mountain Mo prospect
Nye & Mineral Counties, Nevada

Dear John:

As we discussed the other day, I am enclosing a partial set of data concerning exploration on our claims at Quartz Mountain, near Gabbs. My report on exploration potential, abstracts of the ten holes completed by Cyprus and Amax, and a copy of a memo by Dick Thomssen, Cyprus' consultant, are enclosed.

I am having trouble reproducing the Amax surface geologic map, but will send a copy as soon as possible. I also have geophysical data, Cyprus and Amax reports, and about 70 thin sections from core. Some 300 boxes of core are available.

You are authorized to deposit this material in your files on Nevada exploration records and make it available to the public.

Thank you for your courtesies.

Very truly yours,

Peter H. Hahn

cc: R. H. Kollman

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Item 1

PROGRESS REPORT ON THE EXPLORATION POTENTIAL OF THE QUARTZ MOUNTAIN MINING DISTRICT, NYE AND MINERAL COUNTIES, NEVADA

PETER H. HAHN, 3706 4th St., Sparks, Nevada 89431 21 Feb. 1978

INTRODUCTION

Quartz-molybdenum veinlets in altered quartz-eye porphyry were discovered in the early 1970's on shaft dumps in the old Quartz Mountain district, in the Lodi Hills near Gabbs, Nevada. The camp had a modest lead-silver production; this combination of mineralization and rock type does not crop out in the district. Beginning in 1972, geologic mapping and geochemical sampling of surface and old mine workings, induced polarization surveys, and 9000 feet of drilling (1/3 core) in ten holes have confirmed the existence of a previously undocumented subsurface sulfide system, portions of which are molybdenum-bearing. The system occurs in a complex sequence of metasedimentary and polyphase igneous rocks, many of which are hydrothermally altered. The extent and economic significance of this system is unknown, and, at least to the east and west of Quartz Mountain, untested.

* * *

LOCATION

The Quartz Mountain Mining District is located in the SW/4 of T 14 N, R 36 E (unsurveyed), Nye County, with a small portion in Mineral County. It is about 13 miles north of Gabbs, and is accessible by five miles of graded road, easterly from Nevada Hwy. 23. Mean elevation is 5300 feet, and the topography is gentle.

GEOLOGY AND MINERAL DEPOSITS

The district is described in very general terms by Schrader (U. S. Geological Survey Open File Report, Carson Sink Area, 1947) and by Kral (U. Nev. Bull., Vol. XLV, No. 3, 1951) who repeats Schrader's data. A comprehensive report by Kleinhampl on the geology and mineral deposits of northern Nye County will soon be in press by the Nevada Bureau of Mines and Geology.

Quartz Mountain is underlain by quartzite, quartz siltstone, and minor carbonate units, which are in contact with a nondescript, dark grit-argillite (possibly metadacite) which crops out on the northeast flank of the ridge. The siliceous clastic rocks, locally shattered, rehealed, and pervasively silicified, are intruded by a small alaskite stock containing pegmatite facies and prominent quartz veins. Calcareous rocks have been converted to calc-silicate hornfelses.

Two types of deposits, both predominently oxidized, have been mined at Quartz Mountain, according to Schrader. The most productive have

been Mesozoic (?) lead-silver fissure veins and replacement bodies in limestone and quartzite; ore minerals are cerussite and argentiferous galena. The principal deposits of this type are in and related to the "Lease Vein", which strikes N 40° W and dips 25° NE, in the San Rafael mine. Smaller production has come from Tertiary (?) epithermal lead-silver-gold veins which cut both older sediments and intrusives and the Tertiary volcanic rocks. These ore minerals are cerussite, argentiferous galena, argentite, cerargyrite, and gold. The "Vertical Vein" is of this type, and cuts of the Lease Vein on the 350 Level of the San Rafael.

The San Rafael mine was discovered in 1920, and, according to Schrader, had produced $340,000 by the mid 1930's. It is developed by a 40° decline shaft and 2000 feet of laterals, to a depth of 450 feet. Other mines in the district have had smaller production, and many prospects have not produced.

Molybdenite-bearing quartz veins and porphyritic rocks have been discovered on two dumps, the Calico shaft just northwest of Quartz Mountain, and the Quartz Mountain Metals shaft at the south end of the ridge.

On the Calico dump, quartz-molybdenite veinlets cut quartz-feldspar porphyry with strong quartz-sericite alteration; the molybdenite occurs as tiny flakes disseminated in the veinlets and as flakes and seams on the veinlet margins. On the Quartz Mountain Metals dump, molybdenite occurs in quartz veins and seams in alaskite and porphyry, and some showy specimens have been collected. Sparse wulfenite occurs on the San Rafael dump.

The molybdenum mineralization is subtle and was discovered by breaking rocks on dumps. The quartz-eye feldspar porphyry does not crop out anywhere in the vicinity. Except for the rocks described above, most of the surface around Quartz Mountain is covered by argillized, quartz-veined, Tertiary tuffaceous rocks, originally rhyolite welded and non-welded tuffs. The drill holes cut 135 to 730 feet of volcanics before reaching the pre-volcanic rocks.

* * *

EXPLORATION HISTORY AND RESULTS

A large number of claims were staked around Quartz Mountain in 1971 by Bear Creek Mining Company; and IP survey indicated a large (1500 ft. diameter) "donut" shaped anomaly, interpreted as a pyritic halo around a possible molybdenum porphyry, north and east of the Calico shaft (Priest, report for Cyprus Mines, 6-75). The untested target was dropped, however, when Bear Creek reduced their Nevada exploration program.

In 1972, the author and R. H. Kollman staked the Mac 1-30 and Mac Extension claims, which were taken under option by Cache Creek Exploration Company (Cachex) early in 1973. Cachex also leased the

Big Wash and Big Engine claim groups from John Peterson, et al, and turned the entire group to Cyprus Mines Corp. in August, 1973.

Cyprus renovated the Calico and Hasbrouck shafts and mapped and sampled the workings of both shafts. Molybdenite on fracture coatings and in quartz veinlets was discovered in a leucocratic quartz-sericite-feldspar porphyry in a 400-foot level drift northeast of the Calico shaft. Encouraged by these results, alteration studies, and ground geophysical data, Cyprus carried out a surface drilling program near the Calico shaft. Eight holes, totalling 6955 ft. (1/3 core, 2/3 rotary) were drilled in a 1000-foot by 1600-foot area. The deepest hole, Q-5, is 1246 feet deep. Visible molybdenite was encountered in four of the original rotary holes; subsequent deepening by core drilling intersected molybdenite in five holes, Q-1, 3, 5, 6, and 8. Molybdenite occurs as fracture coatings in potassically altered (pyrite-biotite-quartz veinlets and clots) quartz latite porphyry and calc-silicate hornfels. DDH Q-3 cut highly silicified and sericitized quartz-eye latite porphyry and calc-silicate hornfels, both of which are locally fractured and sheared; hornfels in the bottom 78 ft. of the hole (790-868 ft.) contains disseminated molybdenite with an average grade of .06 Mo, including a 4-foot interval of .35% Mo.

Quartz-tourmaline veinlets are present in leucocratic granite - quartz monzonite basement near the bottom of DDH Q-1 (interval 999-1109 ft.).

However, Cyprus did not find sufficient encouragement to continue their exploration, and terminated their agreement with Cachex in April, 1975.

The claim groups were then leased to Amax Exploration, Inc., in June, 1976. Amax ran 8.5 miles of 1000-foot dipole, time-domain IP (Applied Geophysics, Inc.) and followed up with a 1000-foot dipole "Complex Resistivity" line (Zonge Engineering). Both surveys suffered from severe coupling and noisy data, and definitive interpretation was difficult. Amax elected to test a diffuse IP response southwest of Quartz Mountain, 3500 ft. south of the area drilled by Cyprus. QM-9 and QM-10 went to 1507 ft. and 600 ft., respectively; 30% of this drilling was cored. These holes cut 630-foot and 330-foot volcanic sections, respectively, and encountered pyritic siltite/quartzite, quartz porphyry, calc-silicate hornfels, and granitic rocks. In QM-9, dark hornfels contained visible molybdenite (max. 130 ppm Mo).

Amax terminated their agreement in October, 1977, returning the Cachex groups to Hahn-Kollman and Peterson et al.

LAND STATUS

A. Peter H. Hahn (3706 4th St., Sparks, Nevada 89431) and Ronald H. Kollman (16900 Sylvester Rd., Reno, Nevada 89502) own 82

unpatented claims and fractions (Mac 1-11, 14-30; Mac Extension; Rob 2-40, 43-56).

B. John Peterson (P.O. Box 855, Fallon, Nevada 89406, tel. 702/423-6301) and two partners own the Big Wash and Big Engine groups, 13 unpatented claims. As a result of Cachex' work, these claims are well tied down, and the owners have indicated an interest in dealing on them.

C. Louis D. Gordon Estate (Contact: Valley Propane in Gabbs) owns five unpatented claims. These claims are believed to be available, but may not be immediately pertinent to exploration.

* * *

DATA AVAILABLE

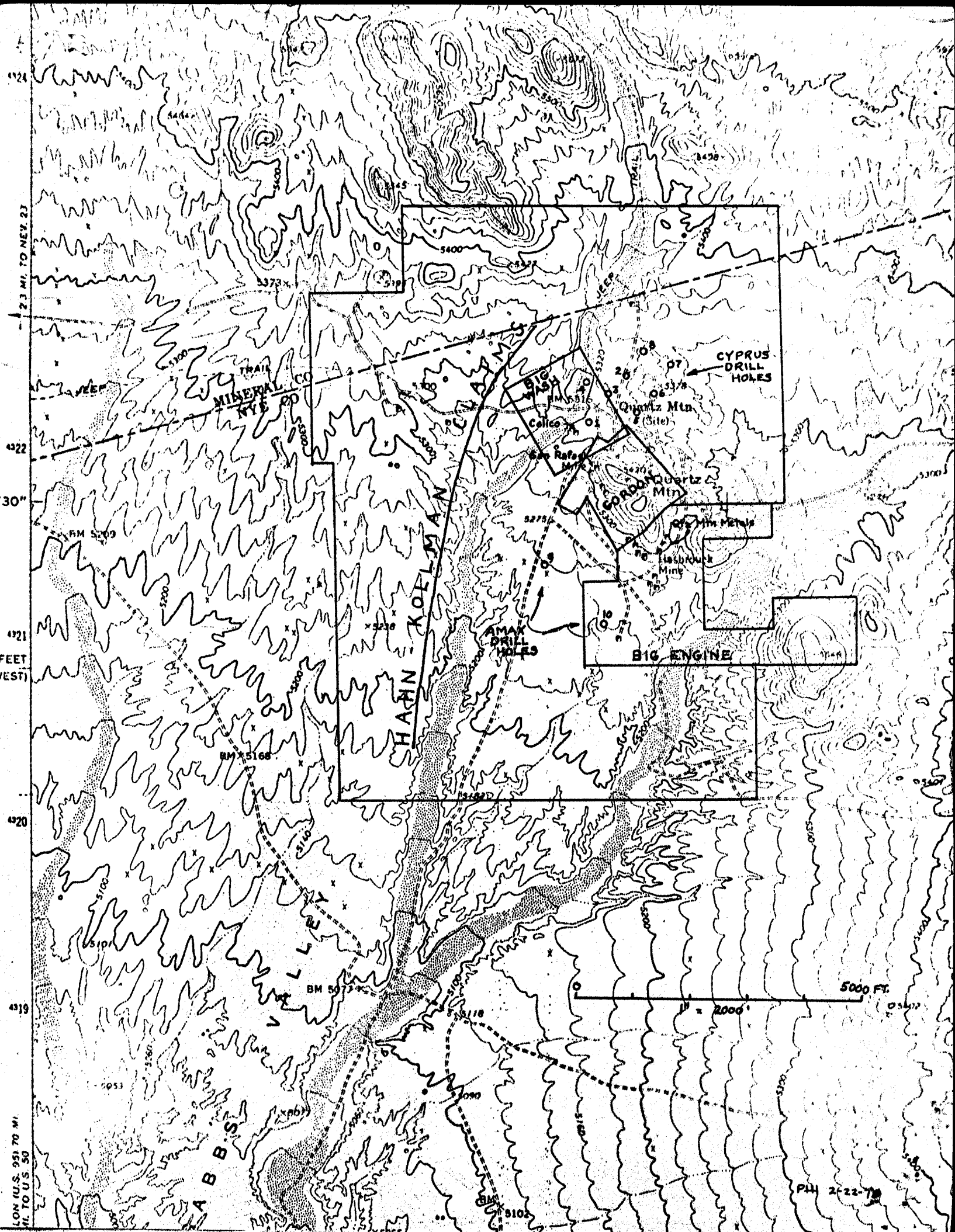
Final report of Cyprus exploration, including drill logs, assays, underground maps and sample results, ground magnetic survey, and thin sections and descriptions.

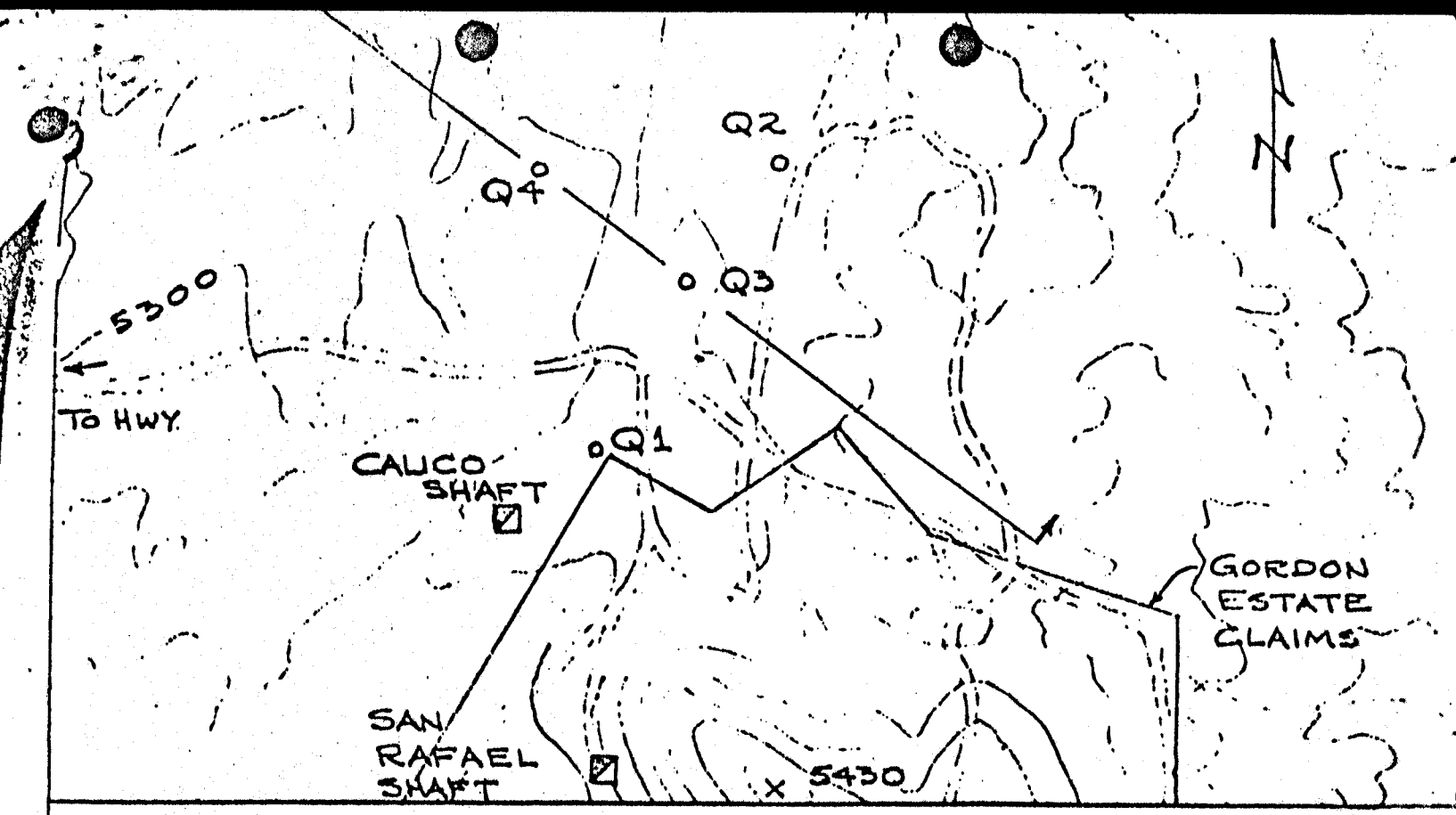
Amax drill logs and assays, IP pseudosections and interpretation, 200 scale surface geologic map and alteration and mineralization map (maps to be reduced to 500 scale for reproduction).

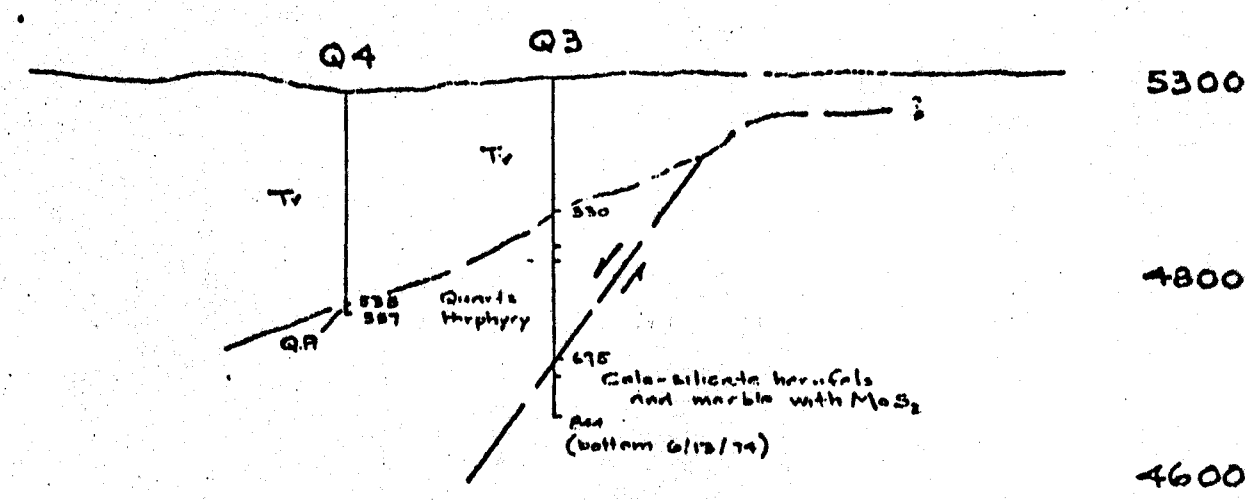
Low altitude color aerial negatives (at Pugh-Nolte & Associates, South San Francisco, California)

Core from Q-1, 3, 5, 6, 8; QM-9, 10 (soon to be moved from Mina to Reno.)

Claim maps, correspondence, misc. data.


CYPRUS DRILL HOLES
Quartz Mtn.
(Site)
BIG MASH
Calico
San Rafael Mine
GORDON
Quartz Mtn.
Qtz Mtn Metals
Flashback Mine
AMAX DRILL HOLES
BIG ENGINE
HAHN
KOLMAN
MINERAL CO
NYE CO
TRAIL
JEEP
5000 FT.
1" = 2000'
BM 5168
BM 5102
23 MI. TO NEV. 23
FEET
(WEST)
30"





LINE OF SECTION - N65°W
LOOKING NORTHEAST

PLAN AND SECTION
QUARTZ MT. PROS.
NYE COUNTY, NV

SCALE: 1" = 500'
RWT 6/13/

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QUARTZ MOUNTAIN, NYE CO. NEVADA Q-1 (CYPRUS)

X - thin section descr.

P. Hahn 2-13-78

0-60, Gravels

60-395 Crystal lithic tuff, iron stained to 290

Base oxidation 290'
Green-grey color

395-415 Qtz porphyry, silicified; minor diss. pyrite, MoS_2

415-525 Qtz monzonite porphyry, minor pyrite & MoS_2

525-745 Qtz porphyry, grey tan, minor pyrite. Partly shattered.

745-755 Fault zone, qtz porphyry & calc-silicate fragments

ROTARY

CORE

757-903 Calc silicate hornfels, light to dark green, heavily sheared at top, 10-30° dip.
Pyrite 1-10% (avg. 2%), str. silicified hr. pyrite veins. Rare MoS_2, diss. in calcite-rich portions

903-959 Calc-silicate hornfels - garnet (grossularite) - qtz - calcite - (?) diopside. Sericite in thin sections. Tr. MoS_2 in qtz veinlets, Tr pyrite

Sheared contact w/ bull quartz

959-999 Quartz porphyry, border phase, sericitized & silicified. Tr pyrite, arsenopyrite.

999-1109 Granite, pink to pinkish white. Cx muscovite, slightly silicified & sericitized. Tr py, arsenopy, hematite. Cut by qtz-tourmaline veins.
Thin sections are quartz-eye porphyry & sericitized granite or qtz monz.

T.D.

1088 (granite), 1091 (aplite)

Depth	Ag	Au	Cu	Mo	Pb	Zn	
			100ppm	25ppm			
			95	25			
			80	25			
			85	25			
			70	20			
			65	25			
			70	35			
			60	20			
			20	25			
			55	25			
			80	45			
			100	80			
			180	15			
			100	30			
			140	15			
			140	25			
			70	19			
			90	15			
			90	17			
			80	12			
			110	60			
			140	30			
			70	35			
			50	15			
			120	105			
			140	75			
			120	40			
			70	30			
			90	75			
			90	25			
			70	40			
			80	40			
			100	25			
			100	35			
			50	25			
			80	30			C.M.S
			.002 %	.002 %			
			.002	.003			Cyprus Res. Lab.
			.005	.002			
	.08 oz.	<.001 oz	.005	25	.005 %	.036 %	
	.04	.002	.003	775	.007	.007	C.M.S.
	.01	.001	.002	25	.002	.002	
	.01	<.001	.001	3	.001	.002	

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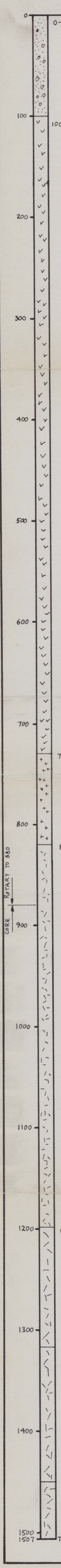
QUARTZ MOUNTAIN, NYE COUNTY, NEVADA QM-9 (AMAX)

P. HAHN 2-18-78



0-100 Gravels

100-730 Crystal lithic tuff & fine grained tuff. Nil to 2% py.

730-820 Hornfels, grey siltstone - qtzt to 770 w/ blk hornfels cont up to 3% py, tr MoS_2. 770-810, 1% py, tr sphalerite, barren qtz veins. 810-820, blk pyritized hfs, tr MoS_2

820-1198 Aplitic granite, grey to grey-green granular qtz-felds texture. Weak propylitic alteration is pervasive; clay alt frac controlled. Tr py. Loc highly frac; occas. aphanitic dikes; qtz & calcite veining.

1198-1317 Granite, med xline, pink - green. Fresh to wk propylitic alt, biotite wkly chloritized. Local crushing, calcite & qtz veins. Tr FeS_2

1317-1450 Granite, equigran. grey-green, med xline. wk propylitic alt, incr downward, w/ clay. Tr FeS_2.

1450-1507 Granite, as above, fresh to wk propylitic alt. Tr FeS_2

HAWLEY, ppm

Au	Ag	Cu	Pb	Zn	Mo
<.02	1.2	5	80	185	6
	0.2		65	135	4
	0.4		55	130	4
	0.2		50	110	4
	<0.2		35	90	4
<.02	<.2	5	35	70	6
	0.2		90	185	4
	<0.2		45	70	4
	<0.2		40	70	4
	<0.2		35	60	2
	1.2		200	15	4
	<0.2		25	15	4
<.02	1.2	20	270	210	80
	0.2	10	305	375	42
	<0.2	5	60	80	22
	0.2	5	145	285	36
	0.2	5	220	370	100
	<0.2	10	125	190	70
	0.4	40	150	245	50
	0.8	75	150	240	120
	3.6	125	235	335	130
	0.2	20	1900	3400	18
	<0.2	15	85	100	12
	<0.2	10	365	680	16
<.02	0.2	5	50	35	4
	0.2	15	60	30	4
	<0.2	5	35	20	2
	<0.2	5	55	40	4
	<0.2	5	40	20	4

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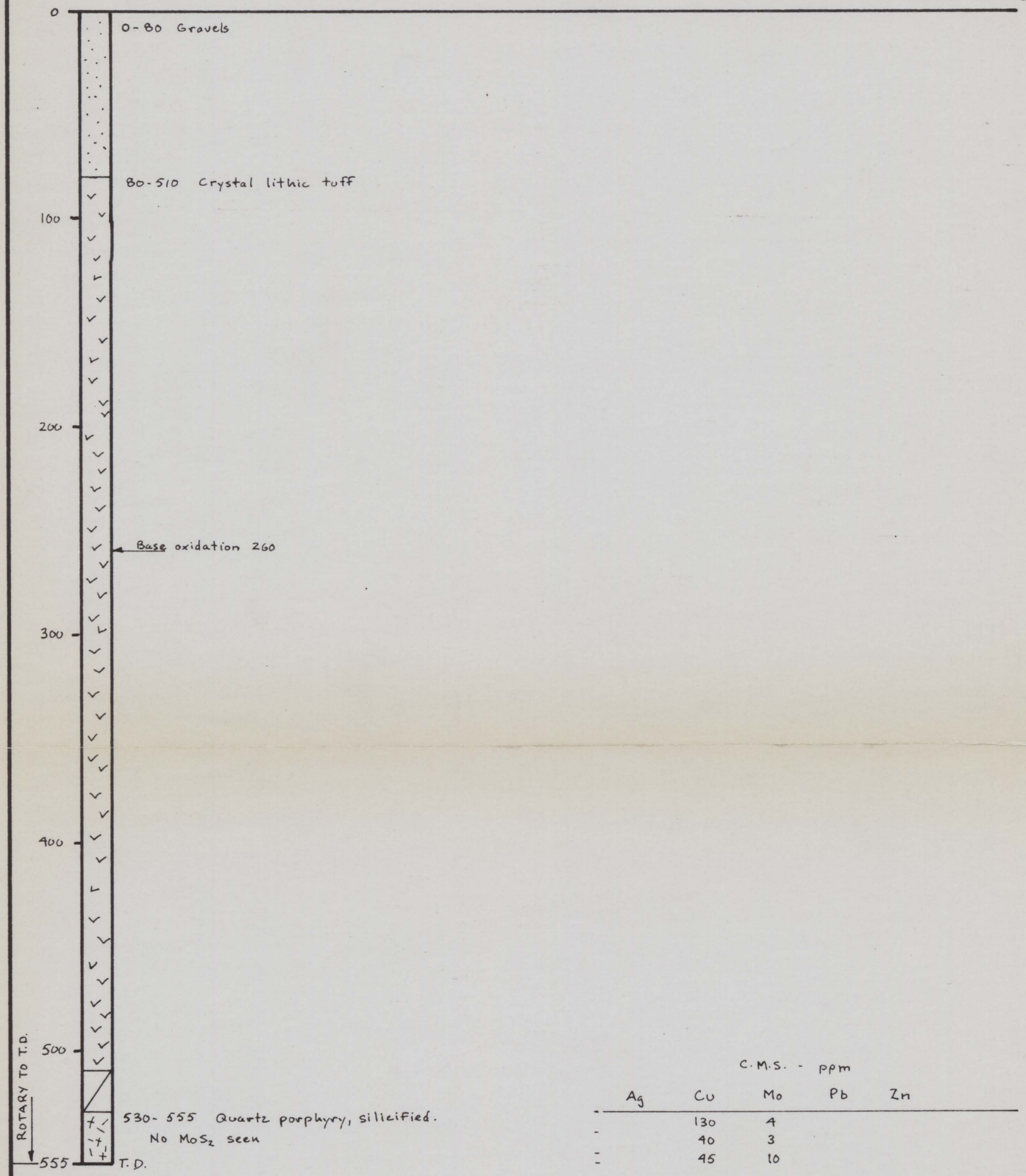
QUARTZ MOUNTAIN, NYE COUNTY, NEVADA

Q-4 (CYPRUS)

P. HAHN 2-14-78



C.M.S. - ppm

Ag	Cu	Mo	Pb	Zn
-	130	4		
-	40	3		
-	45	10		

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QUARTZ MOUNTAIN, NYE COUNTY, NEVADA Q-2 (CYPRUS)

P. Hahn 2-13-78

x thin section descr.

0

0-20 Gravel

20-100 Crystal lithic tuff, lt grn to off-white

100

100-310 Crystal lithic tuff, lt grn to buff. FeOx incr w/ depth

200

300

x 310-415 Quartz porphyry, silicified. Sulfides throughout - highest 310 to 330.

400

419 T.D.

ROTARY TO 415

CORE

Ag	Au	Cu	Mo	Pb	Zn
		130ppm	8 ppm		
		80	13		
		90	13		
		105	9		
		70	9		
		70	5		
		75	7		
		80	8		
.3 ppm		65	4	8ppm	10 ppm

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QUARTZ MOUNTAIN, NYE COUNTY, NEVADA

Q-7 (CYPRUS)

P. HAHN 2-18-78

0

0-245 Crystal tuff, lt grn to cream, heav. arg, FeOx on frac surf to 200'; 2% py below 200'.

100

200 ← Base oxidation?

245-450 Quartz porphyry, med grey, lg K-spar, smaller plag & qtz phenos; light qtz veining. Tr to 5% py loc assoc w/ veins (increases downward)

300

400

450-530 Quartz latite porphyry, silicified, secondary biotite, lt qtz veining, py loc to 2%.

500

Fault zone - v. fine cuttings, mixed lith.

ROTARY TO T.D.

560-570 Calc silicate hornfels, lt grn to white, no sulfides seen.

570 T.D.

C. M. S.

Ag oz	Au oz	Cu %	Mo ppm	Pb %	Zn %
.01	.001	.012	8	.004	.010
.05	<.001	.002	3	.003	.009
.05	.001	.002	1	.006	.022
.02	.002	.002	8	.004	.018
.03	<.001	.001	5	.004	.018

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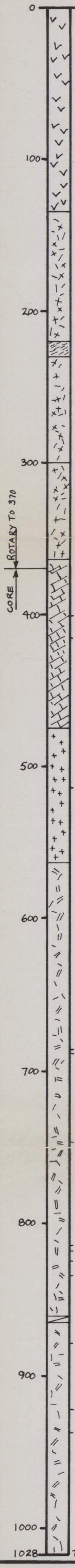
QUARTZ MOUNTAIN, NYE CO., NEVADA — Q-6 (CYPRUS)

P. HAHN 2-18-78



0-135 Crystal tuff, arg. feldspar phenos. Mod to hvy FeOx on frac. surf.

135-220 Quartz porphyry, str. silicified, 1-2% diss. py.

220-230 Argillite? Black, ~fissile, sil., w/tr diss. py.

230-300 Quartz porphyry, dk grey, fresh plag phenos, tr to 1% diss. py, lt FeOx.

300-368 Qtz porphyry as above.

368-474ft Limestone, lt green to dk grey, lt to mod hornfelsed. Lt to str calcite & qtz veining, loc sheared & gougy. MoS_2 conc in gouge, abundant 401-416, tr Mo elsewhere. Tr-2% diss py. AgCl mins 443-457?

474ft-563ft Calc silicate hornfels, wht to lt green. Calcite & qtz veining, qtz flooded locally. Tremolite-diopside-garnet-qtz. Local MoS_2 in qtz veins. Pyrrhotite, pyrite; str pyrite @ lower contact.

563ft-1028 Quartz latite porphyry, med grey to pinkish grey. K-spar phenos 1/4" to 1 1/2"; smaller plag & smoky quartz phenos. Local sil & arg alt, esp near sheared areas. Tr to 2% py, diss pyrrhotite, rare MoS_2 finely diss in frac zones & qtz veins. Secondary biotite in T.S. Local str sericite alt.

C.M.S.

Ag oz	Au oz	Cu %	Mo ppm	Pb %	Zn %
.02	<.001	.003	5	.043	.063
.01	<.001	.005	5	.076	.103
.02	<.001	.008	17	.018	.019
.02	.002	.015	12	.150	.175
.02	.001	.010	17	.015	.018
.02	.001	.033	5	.006	.009
.03	.001	.027	55	.004	.010
.02	.001	.026	70	.002	.024
.04	.004	.028	365	.002	.047
.05	<.001	.005	45	.005	.039
.04	<.001	.002	3	.008	.009
.06	.002	.001	1	.004	.007
.04	<.001	.003	25	.004	.017
.08	<.001	.002	17	.005	.013
.05	.001	.002	20	.005	.020
.02	.002	.017	13	.003	.008
		.003	30		
		.002	8		
		.003	8		

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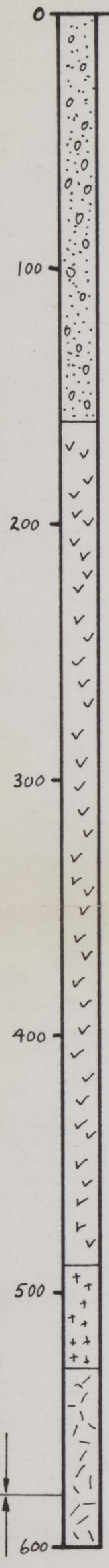
QUARTZ MOUNTAIN, NYE CO., NEVADA QM-10 (AMAX)

P. HAHN 2-18-78



0 - 160 Gravels / alluvium

160 - 490 Crystal lithic tuff

490 - 530 Hornfels w/ minor aplite. Grey-black qtzt - siltstone w/ moderate py.

530 - 600 Granite, pink to green, mod. argillic alteration, sparse qtz veining. <1% py. 596 to 600, str clay alt, mod. sericite.

HAWLEY - ppm

Au	Ag	Cu	Pb	Zn	Mo
<.02	0.4	65	75	175	4
	0.6	40	145	420	8
	0.2	30	55	305	14
	0.2	35	220	770	10
	0.8	70	110	205	10
	2.2	40	315	300	8
	0.2	25	55	80	8
	1.2	5	200	15	4
	<0.2	5	25	15	4

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QUARTZ MOUNTAIN, NYE COUNTY, NEVADA Q-3 (CYPRUS)

x thin section descr. P. HAHN 2-14-78

0-40 No recovery

40-330 Crystal lithic tuff

330-340 No recovery

340-402 Quartz porphyry, grey to tan, local sericitized sections. MoS_2 noted.

402-416 Qtz. porph. as above. Qtz veinlets w/ FeS_2, MoS_2

416 - 450± Calc-silicate hornfels & marble, lt. green. Minor FeS_2. Occas. qtz vein w/ MoS_2.

450± - 625 Quartz porphyry, coarser than above, numerous sericitized sections. FeS_2 diss. & in clots & veinlets. Sparse MoS_2 in veinlets above 500. (Qtz eye porphyry in T.S.)

+2% FeS_2 to 575, - 2% below.

625-695 Quartz porphyry, coarser w/ incr. sericite, secondary biotite. FeS_2 in blebs & veinlets, 1-2%. Tourmaline in T.S.

Fault contact

695-702 Calc-silicate hornfels

702-730± Qtz porphyry, sericitized, tr. MoS_2 Shattered.

730± - 744 Qtz. monz. porphyry, sheared, strong clay-sericite alt.

744-756 No recovery

756-806 Calc silicate hornfels/marble; lt green, dense, shattered.

MoS_2 below fault 788

806-868 Calc silicate hornfels, gougy & shattered, v. poor recovery. MoS_2 diss. & in qtz veins, minor pyrite, tr arsenopyrite.

868 T.D.

ROTARY TO 402

CORE

C.M.S. - all ppm

Ag	Cu	Mo	Pb	Zn
	310	35		
	120	25		
	105	25		
	100	30		
	100	30		
	60	25		
	100	18		
	115	30		
	80	35		
	16	130		
	10	250		
	40	35		
	70	50		
	75	18		
	60	18		
	45	20		
	50	15		
	90	25		
	75	18		
	140	55		
	220	25		
	100	20		
	240	25		
	165	30		
	80	17		
	80	20		
	55	15		
	80	19		
	100	20		
	105	18		
	90	35		
	260	25		
	180	20		
	240	11		
	180	25		
	1020	20		
	660	85		
	120	35		
	100	10		
	130	13		
	90	10		
	260	40		
	240	20		
	90	15		
	50	70		
	60	375		
	40	20		
	220	60		
	40	425		
	30	290		
	50	450		
2.0	40	400	25	90
	20	3570		
	10	720		
	40	70		
	60	100		
	140	80		
	50	350		
	50	750		

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QUARTZ MOUNTAIN, NYE CO., NEVADA — Q-8 (CYPRUS)

P. HAHN 2-18-78

x thin section descr.

0–400 Crystal tuff, orange, FeOx stn, argillized.

Base oxidation ?
- color green, sparse diss. py.

Fault zone ?

400–1086.5 Quartz (latite) porphyry, reddish grey, grey, greenish grey. Mod to hvy silicified, argillized @ sheared areas. Secondary biotite throughout, assoc. w/ py/pyrrhotite. Silicification increases downward. Rare traces MoS_2, local.

Fault ?

Fault ?

ROTARY TO 675

CORE

Arg. zone

Bottom of FeOx/MnOx

Mo

Str arg/chloritic alt, str sheared, poor rec.

Mo

Mo

Hornfelsed limestone - inclusion ?

1086.5–1100 Calc silicate hornfels, reddish grey. Garnet-tremolite-diopside. 1-15% py, tr pyrrhotite.

C.M.S.

Ag oz	Cu %	Mo ppm	Pb %	Zn %
	.004	13		
	.0025	11		
.05	.030	45	.0015	.004
	.003	9		
	.0085	13		
	.0025	17		
	.0065	45		

2860 0034 (245) Item 1

QUARTZ MOUNTAIN, NYE COUNTY, NEVADA — Q-5 (CYPRUS)

x thin section descr. — P. HAHN 2-16-78

Depth	Description	C.M.S Cu ppm	C.M.S Mo ppm	Skyline Cu ppm	Skyline Mo ppm	Skyline Assay Mo ppm	Cyprus Mo %
0	0-175 Crystal lithic tuff.						
100							
	175-190 Quartz porphyry, grey, tr FeS_2.	50	5				
		70	8				
200	190-355 Quartz monzonite, tan to grey, FeOx to 230, tr FeS_2 below	40	3				
		40	8				
		30	8				
	← Base oxidation 230	70	3				
		50	3				
		70	5				
		70	5				
		50	3				
		70	5				
		50	8				
300		90	8				
		50	7				
		50	2				
		90	3				
		80	3				
		60	3				
	355-410 Quartz porphyry, 1% FeS_2, tr MoS_2	50	8				
		120	40				
		130	75				
		240	50				
400		180	55				
	410-430 Quartzite (?) highly siliceous, ~1% FeS_2	250	35				
		180	25				
		120	25				
	430-560 Quartz porphyry w/ ~1% diss. FeS_2	200	45				
		70	55				
		110	55				
		120	17				
		120	45				
		160	40				
500		220	45				
		110	60				
		170	35				
		140	50				
		100	30				
		100	45				
	560-585 Quartz monzonite, altered, minor diss. FeS_2	110	20				
		120	25				
		100	30				
600	585-665 Quartz porphyry, minor FeS_2	130	25				
		140	30				
		130	17				
		130	40				
		130	20				
		150	25				
		170	25				
		120	20				
	665-770 Quartz monzonite, coarse grained, altered, minor FeS_2, tr MoS_2	130	95				
		140	30				
		120	30				
700		180	70				
		260	35				
		210	35				
		160	40				
		140	70				
		90	30				
		100	40				
		40	30				
	793-809 Calc-silicate hornfels, diss. FeS_2 & more abundant (10x incr.) MoS_2. Mixed w/qtz monzonite. Gougy, broken.	40	215				
ROTARY TO 790		80	235				
CORE 800		420	125				
		710	185				
	809-861 Calc-silicate hornfels - diopside-quartz-calcite, dark garnet bands. Tr cpy, py, galena, hematite, MoS_2. Pyrite locally up to 5%, MoS_2 abdt. in flat gouge, diss. throughout.	25	65				
		130	90				
		35	100				
		580	75				
		30	800				
	861-900 Limestone, black, carbonaceous, mod. to str. silicified.	20	65				
		15	5				
		25	8				
		35	325				
900	900-999 Calc silicate hornfels, heavy fault gouge w/ few avg. igneous rock frags. Py & MoS_2 diss. and in local concentrations. Local hematite, cpy, py, sphalerite. Limestone layers, less shearing below 980.	20	975	5	1100	1050	.112
		35	1750	5	2000	2050	.211
		35	325	5	340	340	.034
		35	715	20	615	575	.076
		510	775	395	760	775	.077
		490	350	360	220		.028
		380	400	230	380	400	.044
		200	90	115	36		
		210	90	85	60		
		130	190	70	230		.024
		170	90	65	32		
1000							
	1003-1070 Limestone, ReXl, white to lt grn, sl to mod sil & hornfelsed. Tr diss. py & MoS_2; MoS_2 conc. on shears.						.002
							.002
							.020
							.025
	1070-1102 Calc-silicate hornfels, grades to fault breccia & gouge. Pink dolomite veining, tr MoS_2 & py in gouge.						.002
							.003
1100							.005
	1102-1246 Argillaceous limestone, silicified, dolomite & qtz veins. Up to 1% py w/ qtz veins. Local gouge, tremolite & qtz hornfels frags. No MoS_2						.012
							.002
							.004
							.003
							.019
							.004
							.002
							.008
							.037
1200							.028
							.006
							.003
							<.001
							.002
1246	T.D.						.002