CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the Grover Heinrichs Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

October 6, 1970

TO: H. Lanier

FROM: E. G. Heinrichs

SUBJECT: Cactus Mine, Milford, Utah

Mr. Jack Russell of New York Honduras Rosario Mining Company (Rosario Exploration), was in here about 10:30 this morning.

Mr. Russell is a geologist and a personal friend and was the Project Manager at the Cactus Mine during the exploration phases which have now been temporarily discontinued. He explained to me their objectives and their drilling program, and said the data would be available shortly if desired. He estimates their total expenditure in the area to date amounts to $3-$400,000. They own or have under lease around 600-800 acres in the form of unpatented and patented mining claims, mainly in the area of the Cactus Mine and San Francisco Peak.

He thinks, and apparently his company is backing him in this, that the Cactus property has some future potential and exploration possibilities as yet untested. He outlined briefly what he thought should be done in the area, and on the basis of what little information I have about the Milford area, this sounds reasonable. His recommended program consists of wide dipole spaced (1500-2000') induced polarization surveys over the contact zone between the settlements and the San Francisco Peak quartz monzonite porphyry. The Cactus Mine adit goes back under the hill approximately 200'. It is a very dangerous workings because of bad air and caving, but it was open about a year ago and could be made available for inspection by Essex personnel within a relatively short period of time, the time primarily being to find someone out of Milford who is familiar with starting up the engines to run the compressors and ventilating equipment.

It appears that Rosario is interested in some kind of a joint venture on the property for further exploration and development. In view of our current interest in the area, I recommend that we certainly discuss with them some of these possiblities after we have reviewed their data and reports.

Currently Rosario has an exploration program in southern Arizona and another modest program in Mexico, and they have a small oxide possiblity in Guerrero that Essex perhaps could get a position

in if warranted. They apparently show no interest in the small oxide deposits at the moment. This property reportedly would have a problem of high lime. I will see if I can get more details on this in the near future.

Our contact at the moment with Rosario is either David Moore, Chief Geologist, Boise, Idaho and/or Jack Russell, c/o Eldorado Motel, Nogales, Arizona, and his permanent office is located in Albuquerque, N.M.

For your information, New York Honduras Rosario is a very wealthy, small mining company. Attached herewith is a copy of their annual report for 1968 and in my opinion they would make an ideal partner in the Milford area.

E. G. Heinrichs

EGH:td
attachment

cc: J.R. Burke

assign Prospect No
U011

TO: H. Lanier October 6, 1970

FROM: E. G. Heinrichs

SUBJECT: Cactus Mine, Milford, Utah

Mr. Jack Russell of New York Honduras Rosario Mining Company (Rosario Exploration), was in here about 10:30 this morning.

Mr. Russell is a geologist and a personal friend and was the Project Manager at the Cactus Mine during the exploration phases which have now been temporarily discontinued. He explained to me their objectives and their drilling program, and said the data would be available shortly if desired. He estimates their total expenditure in the area to date amounts to $3-400,000. They own or have under lease around 600-800 acres in the form of unpatented and patented mining claims, mainly in the area of the Cactus Mine and San Francisco Peak.

He thinks, and apparently his company is backing him in this, that the Cactus property has some future potential and exploration possibilities as yet untested. He outlined briefly what he thought should be done in the area, and on the basis of what little information I have about the Milford area, this sounds reasonable. His recommended program consists of wide dipole spaced (1500-2000') induced polarization surveys over the contact zone between the sediments and the San Francisco Peak quartz monzonite porphyry. The Cactus Mine adit goes back under the hill approximately 1200'. It is a very dangerous working because of bad air and caving, but it was open about a year ago and could be made available for inspection by Essex personnel within a relatively short period of time, the time primarily being to find someone out of Milford who is familiar with starting up the engines to run the compressors and ventilating equipment.

It appears that Rosario is interested in some kind of a joint venture on the property for further exploration and development. In view of our current interest in the area, I recommend that we certainly discuss with them some of these possibilities after we have reviewed their data and reports.

Currently Rosario has an exploration program in southern Arizona and another modest program in Mexico, and they have a small oxide possibility in Guerrero that Essex perhaps could get a position

in if warranted. They apparently show no interest in the small oxide deposits at the moment. This property reportedly would have a problem of high lime. I will see if I can get more details on this in the near future.

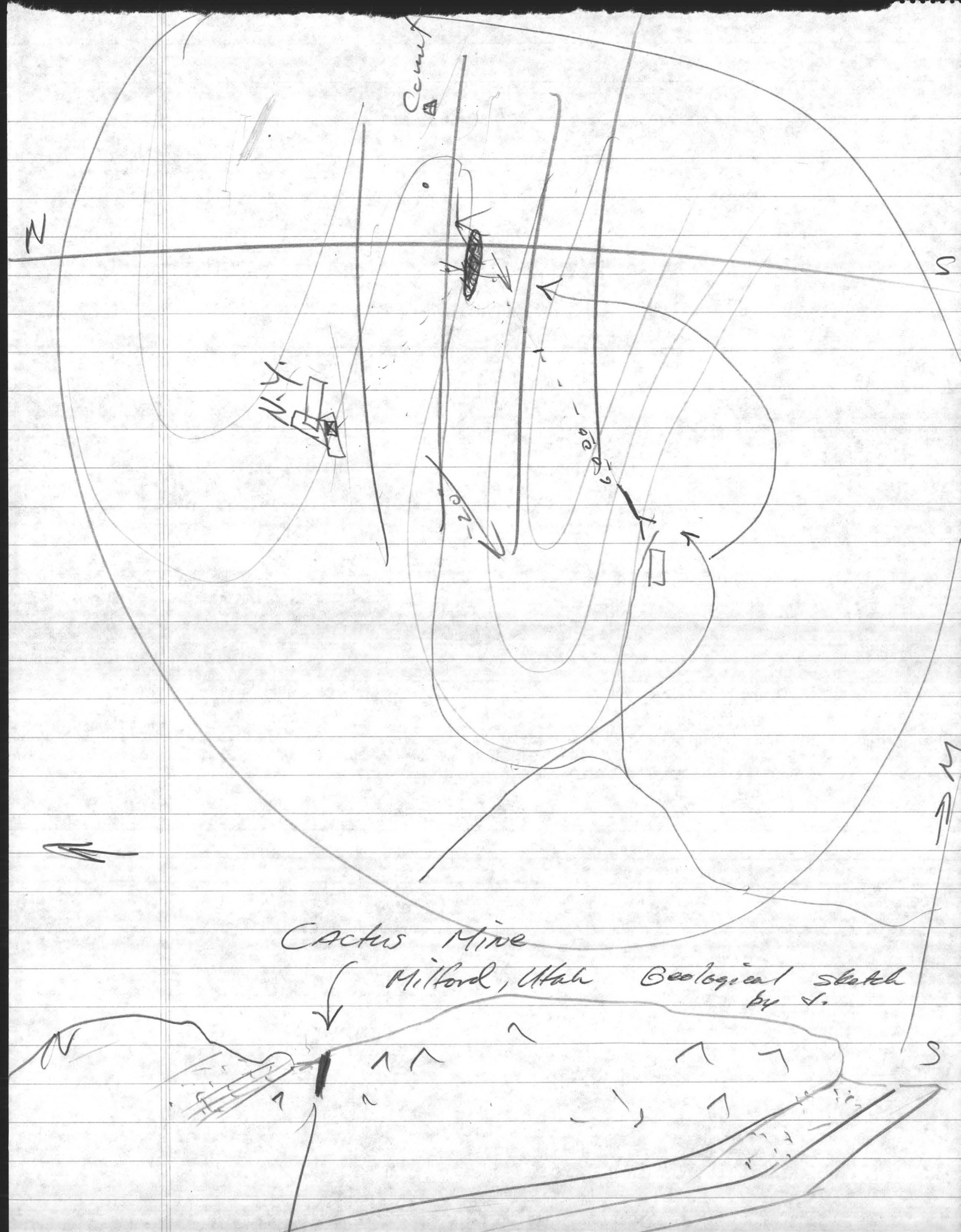
Our contact at the moment with Rosario is either David Moore, Chief Geologist, Boise, Idaho and/or Jack Russell, c/o Eldorado Motel, Nogales, Arizona, and his permanent office is located in Albuquerque, N.M.

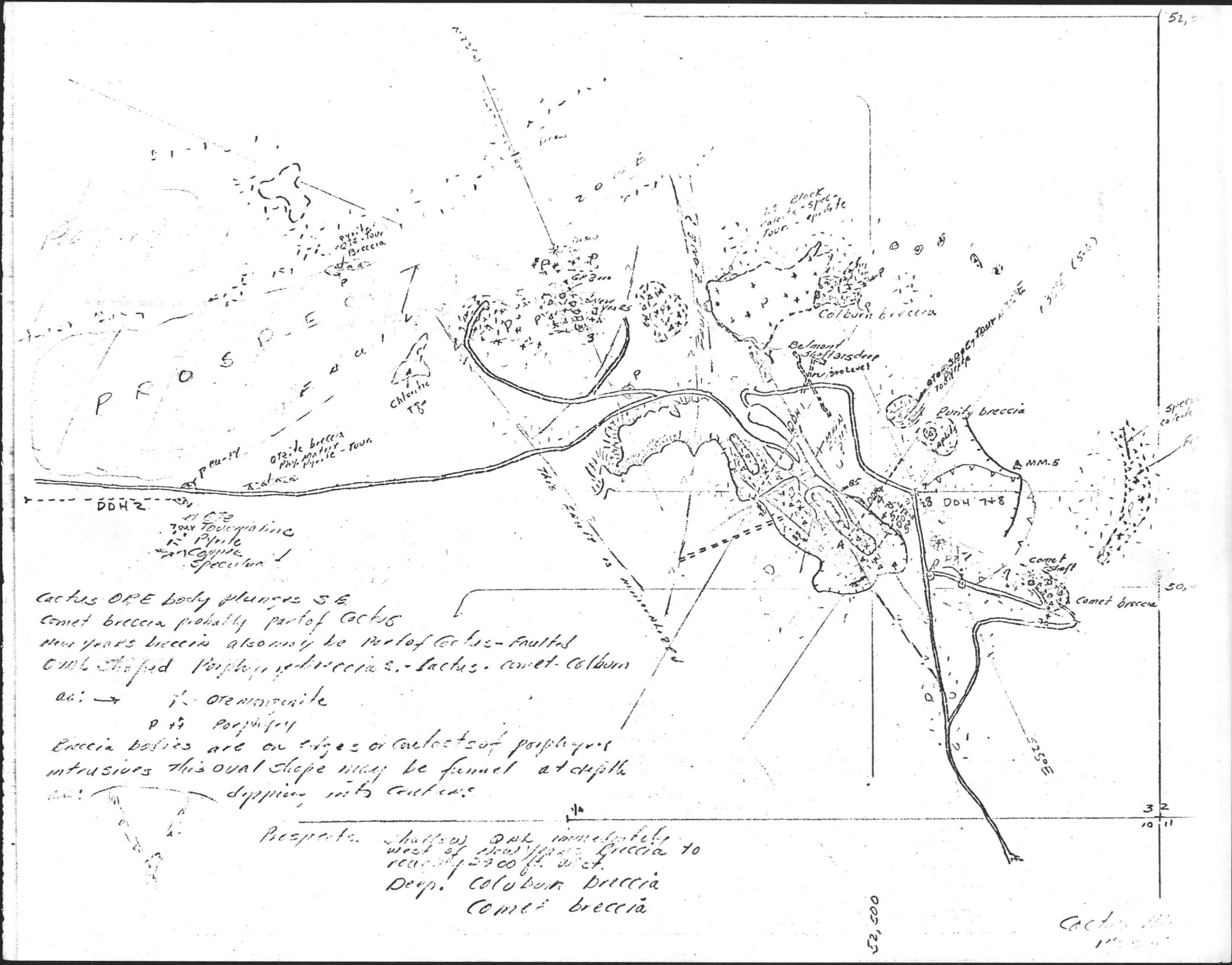
For your information, New York Honduras Rosario is a very wealthy, small mining company. Attached herewith is a copy of their annual report for 1968 and in my opinion they would make an ideal partner in the Milford area.

E. G. Heinrichs

EGH:td
attachment

cc: J.R. Burke


N
S
Cactus Mine
Milford, Utah Geological sketch by L.
N
S



PROSPECT
Pyrite Qtz-Tour Breccia
Chloritic Tgs
Qtzite breccia Phy. Matrix Pyrite - Tour
DDH 2
Qtz Tour Tourmaline Pyrite Copper Specular
Colburn breccia
Belmont Shaft 315 deep
Purity breccia
MM.5
DDH 7+8
Comet Shaft
Comet breccia
52,500
Cactus ORE body plunges S.E.
Comet breccia probably part of Cactus
New years breccia also may be part of Cactus - Faulted
Oval Shaped Porphyry breccias. - Cactus. Comet - Colburn
as: → Qtz monzonite
P ++ Porphyry
Breccia bodies are on edges or contacts of porphyry
intrusives this oval shape may be funnel at depth
dipping into centers
Prospects. Shallow Qtz immediately
west of New Years Breccia to
roughly 2400 ft. west.
Deep. Colburn breccia
Comet breccia

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 2-5-65, 195

AILY ASSAY & TONNAGE REPORT

Signed

Long	WO3	Zinc ~~Cu~~	Fe	Pb ~~Insol~~	AU	AG	Tons Today		Tons To Date
Classifier Overflow		1.00		.90		2.26			
Denver Tails									
Fag Tails									
Stephen Table									
Filter Cakes									

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-27-64, 195

Signed R. B. Horton

AILY ASSAY & TONNAGE REPORT

W & W Ore Drillings	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails Drillhole #1									
Fag Tails									
Stephen Table 5-1P		4.85							
Filter Cakes Unknown		.09							
"		2.10							
"		4.15							
20-25		N.L.							
40-45		3.76							
45-50		9.09							
50-55		.03							
55-60		2.29							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-27-64, 195

Signed R. B. Hoston

AILY ASSAY & TONNAGE REPORT

W & W Ore Drillings	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails Drillhole #4									
Fag Tails									
Stephen Table 5-10		.33							
Filter Cakes 10-15		.55							
15-20		.04							
20-25		.06							
25-30		4.32							
30-35		3.22							
35-40		TR							
40-45		.07							
45-50		TR							
50-55		5.42							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-27-64, 195

Signed R. B. Horton

ILY ASSAY & TONNAGE REPORT

	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
W & W Ore Drillings									
Classifier Overflow									
Denver Tails Drillhole #2									
Fag Tails									
Stephen Table 5-10		.04							
Filter Cakes 10-15		.23							
15-20		.48							
20-25		.34							
25-30		.24							
30-35		.27							
35-40		2.01							
40-45		.66							
Drillhole #3									
15-20		.18							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-29-67, 195

Signed R. B. Hoates

AILY ASSAY & TONNAGE REPORT

W&W Rock Sample	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails									
Fag Tails		4.58			.04	6.04			
Stephen Table									
Filter Cakes									

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-30-64, 195

Signed R. B. Norton

AILY ASSAY & TONNAGE REPORT

W & W Ore Drillings Drillhole #1 Angle	WO3	CU	Fe	Insol.	AU	~~AG~~ Cu	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails 0-5		1.76		70-75		TRACE			
Fag Tails 5-10		1.63		75-80		.07			
Stephen Table 10-15		2.21							
Filter Cakes 15-20		1.35							
20-25		.17							
25-30		.41							
30-35		.11							
35-40		.15							
40-45		.22							
45-50		TRACE							
50-55		TRACE							
55-60		.18							
60-65		.05							
65-70		.08							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-29-67, 195

Signed R. B. Horton

AILY ASSAY & TONNAGE REPORT

W & W Rock Sample	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails									
Fag Tails		14.58			.04	6.04			
Stephen Table									
Filter Cakes									

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-31-64, 195

Signed R. B. Hoston

AILY ASSAY & TONNAGE REPORT

		WO3	CU	Fe	Insol.	AU	~~AG~~ Cu	Tons Today		Tons To Date
W & W Ore Drillings										
Classifier Overflow	Drillhole # 2-B									
Denver Tails	0 - 5		.66		70-75		.08			
Fag Tails	5 - 10		.13		75-80		.03			
Stephen Table	10 - 15		.06							
Filter Cakes	15 - 20		.03							
	20 - 25		.12							
	25 - 30		.08							
	30 - 35		.40							
	35 - 40		4/33							
	40 - 45		.11							
	45 - 50		.08							
	50 - 55		.08							
	55 - 60		.13							
	60 - 65		Trace							
	65 - 70		.01							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-31-64, 195

Signed R. B. Horton

AILY ASSAY & TONNAGE REPORT

W & W Dry Drillings	WO3	CU	Fe	Insol.	AU	~~AG~~ Cu	Tons Today		Tons To Date
Classifier Overflow Drillhole #3-A									
Denver Tails 0-5		.11		70-75		Trace			
Fag Tails 5-10		.09		75-80		Trace			
Stephen Table 10-15		Nil							
Filter Cakes 15-20		.12							
20-25		.22							
25-30		.11							
30-35		Nil							
35-40		Nil							
40-45		Nil							
45-50		Nil							
50-55		Nil							
55-60		Trace							
60-65		.02							
65-70		Trace							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 1-3-65, 195

Signed R. B. Horton

AILY ASSAY & TONNAGE REPORT

W & W Ore Drillings Drillhole #4	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails									
Fag Tails 20-25		N.I.							
Stephen Table 25-30		N.I.							
Filter Cakes 30-35		N.I.							
35-40		Trace							
40-45		Trace							
45-50		Trace							
50-55		N.I.							
55-60		N.I.							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 1-3-65, 195

Signed R. B. Hooker

ILY ASSAY & TONNAGE REPORT

	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
W & W Ore Drillings									
Classifier Overflow Drillhole #5									
Denver Tails 20-25		Nil							
Fag Tails 25-30		Nil							
Stephen Table 30-35		Nil							
Filter Cakes 35-40		Nil							
40-45		Nil							
45-50		Nil							
50-55		Nil							
55-60		Trace							
60-65		Trace							
65-70		Trace							
70-75		Trace							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date L. B. Horton, 195

Signed 12-16-67

AILY ASSAY & TONNAGE REPORT

Castro Ore Drillings	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails Drillhole [redacted] Seven									
Fag Tails									
Stephen Table 0-5		.22							
Filter Cakes 5-10		.09							
10-15		.10							
15-20		.11							
20-25		.01							
25-30		.09							
30-35		.10							
35-40		.14							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-16-64, 195

Signed R. B. Horton

AILY ASSAY & TONNAGE REPORT

Cactus Ore Drillings	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails Drillhole # Eight									
Fag Tails									
Stephen Table Sample # 1		.11							
Filter Cakes " 2		.10							
" 3		.21							
" 4		.21							
" 5		.10							
" 6		.11							
" 7		No Sample							
" 8		.23							

North Star Metal Mines, Inc.

MILFORD, UTAH

Date 12-18-64, 195

Signed R. B. Hoston

AILY ASSAY & TONNAGE REPORT

Cactus Ore Drilling Drillhole # 10	WO3	CU	Fe	Insol.	AU	AG	Tons Today		Tons To Date
Classifier Overflow									
Denver Tails									
Fag Tails 0-5 ft		.99							
Stephen Table 5-10		.77							
Filter Cakes 10-15		1.11							
15-20		.37							
20-25		.19							
25-30		.30							
30-35		.33							
35-40		.[illegible]	.33						
40-45		.30							
45-50		.04							
50-55		.11							
55-60		.14							

CACTUS MINE

DIAMOND DRILL HOLE 1

Location: 50,678 N; 52,156 E.
Collar Elev.: ± 6355 ft.
Bearing: S 30° W
Inclination: Minus 65°
Depth: 814 ft.

Interval (ft.)	Description
0 - 21	Overburden and dump rock.
21 - 210	Medium-grained quartz monzonite, generally closely fractured and locally soft and crumbly. Ferro-mags. partly chloritized. Irregular, altered and softened sections with moderate to strong chloritization, clay alteration and some sericite. Fine, diss. FeS_2, very little $CuFeS_2$ and local weak MoS_2. Few fractures with thin FeS_2 coating. Scattered, small blebs and irregular narrow seams of tourmaline, some with a little sulfide. Minor magnetite.
210 - 240.3	Breccia of sericitized qtz. mon. frags. cemented with strong tour., some qtz., hematite and carb. Good stringers and bunches of $CuFeS_2$ and FeS_2 from 210 to 212.5 feet and from 233 to 240.3 feet. Very weak $CuFeS_2$, FeS_2, and a few specks of MoS_2 from 212.5 to 233 feet.
240.3 - 247	Greenish, well sericitized qtz. mon. Few tiny stringers tour., $CuFeS_2$.
247 - 263	Soft, crumbly, clay altered qtz. mon. Much diss. FeS_2, weak $CuFeS_2$, some tour.
263 - 268	Med. grained hard, fresh qtz. mon. with diss. FeS_2.
268 - 320	Hard fresh, closely fractured qtz. mon. with sections of soft, crumbly, clay altered qtz. mon. Diss. FeS_2, minor $CuFeS_2$. Scattered thin stringers and blebs of tour. some with little sulfide.
320 - 340	Very soft, clayey, crumbly, altered qtz. mon. Specks of FeS_2.
340 - 350	Fairly hard, fresh qtz. mon. Some diss. FeS_2. Chlorite, $CaCO_3$, FeS_2 along small slips and fractures.
350 - 360	Soft, broken qtz. mon. Much chlorite and kaolin. Diss. FeS_2, very little $CuFeS_2$.
360 - 361	Hard fresh qtz. mon. Some FeS_2, very little $CuFeS_2$ along fractures.

Interval (ft.)	Description
361 - 441	Partly altered, pitted quartz monzonite; many tour. rosettes. Much FeS_2 as diss. grains and along fractures. Very little $CuFeS_2$. Irreg. sericitization, local strong chloritization. Irreg. seams partly filled with tour. and pink carbonate giving a weak breccia appearance at 436 feet.
441 - 461	Fairly hard, fresh qtz. mon. with short sections of altered, pitted qtz. mon. containing spots of tour. and chlorite. Considerable diss. FeS_2, little $CuFeS_2$. Some sulfide and chlorite along tight fractures.
461 - 526	Hard fresh qtz. mon. with prominent weakly chloritized ferro-mags. Platy FeS_2, very little $CuFeS_2$, chlorite on tight cracks and seams. Minor diss. sulfide and some magnetite.
526 - 598	Dark gray, fresh qtz. mon. porphyry. Medium grained rock with scattered large felds., qtz. phenocrysts. This rock may be grading from qtz. mon. to qtz. diorite. Contact with qtz. mon. above is gradational. Tiny stringers of FeS_2 with minor $CuFeS_2$. Also some stringers and fracture coatings of FeO_4, Fe_2O_3, chlorite and $CaCO_3$. Sparse diss. sulfide. Two inch orthoclase-qtz.-biotite pegmatite vein at 550 ft.; 1/2-inch qtz., FeS_2, little $CuFeS_2$ stringer at 573 feet. Few scattered weak slips coated with chlorite and weak red FeO.
598 - 814	Hard, generally fresh, equigranular qtz. mon. Ferro-mags slightly chloritized. Some FeS_2, possibly little $CuFeS_2$ on few scattered, tight cracks. Little or no diss. sulfide. Some seams with chlorite and Fe_3O_4 (-). Rock is closely fractured and core is broken from 701 to 719 feet and from 734 to 738 feet. The interval from 793 to 814 feet is closely fractured and there is chlorite with rare specks of sulfide along the fractures.

Average core recovery 21 to 814 ft. = 89%.

Assays: See attached assay list.

CACTUS MINE - DDH 1 Core Sample Assays

Interval (Ft.)	Feet	% Cu	Oz. Au	Oz. Ag
210 - 212.5	2.5	4.4	0.02	0.60
212.5 - 216	3.5	0.15	Tr.	Tr.
216 - 221	5.	0.15	Tr.	Tr.
221 - 226	5.	0.10	Tr.	Tr.
226 - 231	5.	0.15	Tr.	Tr.
231 - 234	3.	0.10	Tr.	Tr.
234 - 237.5	3.5	0.20	Tr.	Tr.
237.5 - 241	3.5	2.00	0.02	0.06
241 - 246	5.	0.50	Tr.	0.10
246 - 251	5.	0.50	Tr.	0.10
251 - 256	5.	0.60	Tr.	0.30
256 - 261	5.	0.30	Tr.	Tr.
261 - 266	5.	0.20	Tr.	Tr.
266 - 271	5.	0.05	Tr.	Tr.
271 - 276	5.	0.05	Tr.	Tr.
276 - 281	5.	0.05	Tr.	Tr.
281 - 286	5.	0.05	Tr.	0.05
286 - 291	5.	0.05	Tr.	Tr.
291 - 296	5.	0.05	Tr.	Tr.
296 - 301	5.	0.05	Tr.	Tr.
301 - 306	5.	0.05	Tr.	Tr.
306 - 311	5.	0.05	Tr.	Tr.
311 - 316	5.	0.05	Tr.	Tr.
316 - 318	2.	0.65	Tr.	Tr.
318 - 320	2.	0.50	Tr.	0.40
320 - 325	5.	0.05	Tr.	Tr.
325 - 330	5.	0.05	Tr.	Tr.
330 - 335	5.	0.05	Tr.	Tr.
335 - 340	5.	0.05	Tr.	Tr.
340 - 344	4.	0.05	Tr.	Tr.
344 - 348	4.	0.10		
356 - 361	5.	0.05		
387 - 394	7.	0.05		
412 - 415	3.	0.05		
433 - 440	7.	0.05		
464 - 472	8.	0.05		
491 - 498	7.	0.05		
517 - 524	7.	0.05		
537 - 544	7.	0.10		
567 - 573	6.	0.10		
590 - 597	7.	0.07		

628 - 636	8.	0.05
657 - 664	7.	0.07
693 - 701	8.	0.05
730 - 740	10.	0.05
772 - 780	8.	0.05
805 - 809	4.	0.05

CACTUS MINE

DIAMOND DRILL HOLE 2

Location: 50,400 N; 49,430 E.
Collar Elev.: ± 6080 ft.
Bearing: Due West
Inclination: Minus 50°
Depth: 1086 ft.

Interval (ft.)	Description
0 - 27	Gravel overburden.
27 - 38	Hard fresh qtz. mon. Rock closely fractured and fractures contain thin, platy FeS_2, Fe_3O_4, little $FeOH$, possibly rare $CuFeS_2$.
38 - 51	Dense, fine grained, light colored dike (qtz., felds., few scattered ferro-mags.) Numerous tight fractures with FeS_2, $FeOH$.
51 - 297	Hard fresh qtz. mon. Numerous random fractures and narrow seams with FeS_2, Fe_3O_4, possibly rare $CuFeS_2$. Few sulfide seams up to 1/4" thick, some containing tiny qtz. crystals, carbonate and chlorite. Very little to no alteration along seams. Scattered disc. FeS_2. Veinlets of qtz. and $CuFeS_2$ up to 1/4 in. with sericitic alteration halos occurring at 246 and 277 feet.
297 - 308	Hard, fresh dark porphyry of prominent felds., few qtz. eyes and ferro-mags in dark groundmass. Considerable disc. FeS_2. Few carbonate seams.
308 - 432	Mostly hard, fresh qtz. mon. Generally well fractured and with considerable FeS_2, some Fe_3O_4, chlorite on seams and fractures. Possibly traces of $CuFeS_2$. Few seams to 1/4 inch with FeS_2, chlorite, carbonate and very minor $CuFeS_2$. Little disc. sulfide. Seams with qtz., $CuFeS_2$ to 1/8 inch with sericitic alteration envelopes at 367, 372 and 382 feet. Few scattered narrow quartz-orthoclase seams. Sections from 326 to 331 feet and 381 to 385 feet are soft and altered with considerable chlorite and clayey material. Few dark basic rock inclusions from 423 to 432 feet.
432 - 440	Dark fine-grained monzonite or diorite. Considerable FeS_2 on tight fractures.
440 - 468	Generally fresh qtz. mon. as 308 - 432 feet. Numerous seams and fractures with FeS_2, little Fe_3O_4, tiny qtz. crystals, chlorite, possibly traces of $CuFeS_2$. Little disc. sulfide.

Interval (ft.)	Description
488 - 492	Fine-grained qtz. mon. with FeS_2 but less than above.
492 - 515	Same as 440 - 488 feet.
515 - 621	Hard, fresh, fine-grained quartz monzonite becoming medium-grained downward. Tight fractures and few seams to 1/8 inch with FeS_2, little chlor., carb. and Fe_3O_4. Possibly traces of $CuFeS_2$. Some diss. sulfide; 1/4 inch orthoclase seam at 614 feet.
621 - 643	Fine-grained fresh quartz mon. FeS_2, chlor., carb. and Fe_3O_4 in small amounts on fractures and in tight seams.
643 - 952	Hard, fresh, medium grained, equigranular quartz monzonite. Scattered fractures and seams to 1/8 in. with FeS_2, Fe_3O_4, chlorite, some carbonate. Some of the FeS_2 is tarnished or possibly thinly coated with $CuFeS_2$. Very few specks of $CuFeS_2$ with the FeS_2. Locally a few disseminated grains of sulfide. Amount of sulfide appears to decrease downward.
952 - 971	Hard, fresh gray porph. of felds., few quartz eyes and biotite in gray groundmass. Scattered blebs and grains FeS_2. Few narrow seams FeS_2 and carbonate.
971 - 983	Fresh, fine grained dark quartz monzonite or diorite, finely fractured. Some FeS_2, Fe_3O_4 and chlorite on fractures.
983 - 1028	Hard, fresh quartz monzonite, same as 643 to 952 feet but somewhat more FeS_2 and Fe_3O_4. Numerous irregular seams FeS_2, Fe_3O_4, some quartz from 1006 to 1012 feet. Small blebs and seams Fe_3O_4, FeS_2 from 1021 to 1025 feet. Very little widely scattered $CuFeS_2$ with the FeS_2. Locally some disseminated sulfide. Sulfide content apparently decreases to some extent below 1025 feet.

Average core recovery 27 to 1028 ft. = 92%.

Assays: See attached assay list.

CACHUS MINE - DDH 2 Core Sample Assays

Interval (ft.)	Zinc	% Cu	% Fe	% FeS2 *
27 - 30	3.	Tr.	0.5	0.9
30 - 36	6.	Tr.	0.5	0.9
59 - 64	5.	Tr.	0.5	0.9
85 - 91	6.	0.05	0.3	0.6
113 - 119	6.	Tr.	0.8	1.5
144 - 151	7.	0.03	0.7	1.3
175 - 181	6.	0.05	0.5	0.9
203 - 209	6.	0.05	1.4	2.6
234 - 239	5.	0.05	1.0	1.9
261 - 267	6.	Tr.	1.0	1.9
S. 246 - S. 247	1.	0.05	2.2	4.1
276 - 278	2.	0.50	2.3	4.3
287 - 292	5.	0.05	1.1	2.0
297 - 300	3.	Tr.	1.9	3.6
319 - 324	5.	0.05	0.4	0.8
352 - 358	6.	0.04	0.5	0.9
378 - 384	4.	0.07	3.5	6.6
407 - 413	6.	0.05	0.8	1.5
438 - 443	5.	0.04	0.8	1.5
464 - 468	4.	0.03	0.7	1.3
490 - 495	5.	0.06	0.5	0.9
520 - 525	5.	0.06	1.0	1.9
556 - 560	5.	0.05	0.7	1.3
582 - 587	5.	0.04	0.8	1.5
612 - 617	5.	0.06	0.4	0.8

sericite holes

635 - 638	3.	0.05	0.5	1.9
643 - 650	7.	0.04	0.5	0.9
705 - 710	4.	0.05	0.8	1.5
733 - 739	6.	0.05	0.4	0.8
766 - 770	4.	0.04	0.4	0.8
785 - 788	2.	0.03	0.4	0.8
808 - 811	3.	0.04	0.5	0.9
832 - 836	4.	0.05	0.3	0.6
861 - 865	4.	0.07	0.2	0.4
890 - 895	5.	0.05	0.3	0.6
917 - 925	8.	0.04	0.3	0.6
953 - 958	5.	0.05	0.7	1.3
973 - 978	5.	0.04	0.5	0.9
1006 - 1011	5.	0.06	1.9	3.6
1033 - 1038	5.	0.03	0.3	0.6
1061 - 1065	4.	0.05	0.5	0.9
1085 - 1088	3.	0.05	0.3	0.6

* % FeS_2 computed from % S assuming all sulfur is with pyrite.

[illegible] MINES

DIAMOND DRILL HOLE 3

Location: 51,170 N; 51,237 E.
Collar Elev.: ± 6365 ft.
Bearing: N 23° W
Inclination: Minus 75°
Depth: 901 ft.

Interval (ft.)	Description
0 - 26	Well altered, bleached, softened porphyry. Brown FeOx on fractures and diss. in rock.
26 - 29	Altered, Fe stained qtz. mon. and fresh qtz. mon. containing diss. FeS_2 from 28 to 29 ft.
29 - 38	Well altered porphyry with much FeOx on fractures and in small diss. blebs.
38 - 266	Weak to moderately strong breccia of well altered porphyry and qtz. mon. fragments. Considerable sericite and chlorite. Breccia min. with qtz., tour., carbonate mineral, iron oxides and local, weak, diss. sulfide, mostly FeS_2. Copper mineralization as follows: 44 ft. - Weak CuOx 51 - 72 ft. - Weak, scattered specks and spots Cu[illegible] 121 ft. - Small bunch $CuFeS_2$, little CuOx. 165 ft. 1-1/2 in. irreg. seam $CuFeS_2$, FeS_2.
266 - 274	Old mine working.
274 - 618	Moderate to strong breccia with sections up to 6 ft. of weak breccia. Well sericitized fragments of qtz. mon. and porph. cemented with tour., qtz., some carbonate mineral and anhydrite. Scattered, weak diss. FeS_2, very minor $CuFeS_2$ in the rock fragments and occasionally with the qtz.-tour. cement. Stronger sulfide mineral as follows: 298 - 320 ft. - Irreg., spotty, bunchy $CuFeS_2$, tetrahedrite (?) with qtz., tour., carbonate and anhydrite; 337 - 340 ft. - Bleby $CuFeS_2$ with tour. and qtz.
618 - 627	Altered qtz. mon. Plagioclase altered to green clay, orthoclase weakly altered. Minor chlor., ferro-mag minerals. Scattered specks FeS_2, traces $FuFeS_2$.
627 - 745	Partly altered qtz. mon. Clay-altered plagioclase, generally fresh orthoclase. Minor chlor. ferromag. minerals. Scattered specks FeS_2, possibly little $CuFeS_2$. Scattered seams and bunches of gypsum. Strong gypsum and well fractured rock from 666 to 682 ft.

745 - 901 Pink qtz. mon. porph. with alternating 2 - 3 ft. sections of moderately altered, well altered and relatively fresh rock. Numerous seams and blebs gypsum and/or anhydrite; 4-in. vein anhydrite at 790 ft. Scattered specks FeS_2 and rare specks $CuFeS_2$.

Average core recovery 26 to 901 ft. = 85%.

Assays: See attached assay list.

CACTUS MINE - DDH 3 Core Sample Assays

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag	% Pb
46 - 51	5.	0.25			
51 - 56	5.	0.65	0.01	0.39	
66 - 72	6.	0.30			
90 - 93	3.	0.10			
115 - 120	5.	0.15	Tr.	Tr.	
120 - 122	2.	0.10	Tr.	Tr.	
141 - 146	5.	0.05			
172 - 176	4.	0.04			
202 - 206	4.	0.03			
235 - 239	4.	0.05			
262 - 267	5.	0.03			
264 - 267	3.	0.03			
267 - 294	7.	0.03			
294 - 297.5	3.5	0.02	Tr.	Tr.	
297.5 - 300	2.5	1.95	0.02	5.48	0.6
300 - 306	6.	0.1	Tr.	0.15	Tr.
306 - 310.5	4.5	0.65	Tr.	0.25	Tr.
310.5 - 315.5	5.	0.4	Tr.	0.30	
315.5 - 318	2.5	0.35	Tr.	0.10	
318 - 320	2.	0.05	Tr.	0.05	
320 - 326	6.	0.03	Tr.	Tr.	
326 - 330	4.	0.05	Tr.	Tr.	
336 - 340	4.	0.1	Tr.	0.15	
357 - 362	5.	0.07			
372 - 377	5.	0.05			
405 - 411	6.	0.04	Tr.	0.10	
427 - 430	3.	0.1	Tr.	0.05	
443 - 445	2.	0.05			
469 - 474	5.	0.05			
499 - 501	2.	0.04			
514 - 519	5.	0.04			
555 - 557	4.	0.04			

581 - 587	6.	0.03
605 - 608	3.	0.09
637 - 642	5.	0.03
674 - 679	5.	0.04
702 - 706	4.	0.04
739 - 745	6.	0.03
778 - 784	6.	0.04
815 - 820	5.	0.04
849 - 855	6.	0.04
880 - 886	6.	0.04
896 - 901	5.	0.05

CACTUS MINE

DIAMOND DRILL HOLE 4

Location: 50,259 N; 52,425 E
Collar Elev.: ± 6327 ft.
Bearing: N 35° E
Inclination: Minus 70°
Depth: 996 ft.

Interval (ft.)	Description
0 - 90	Broken, rubbly, fresh to slightly alt. qtz. mon. with a few specks FeS_2 and $CuFeS_2$. This section of hole apparently drilled through old, filled stope.
90 - 156	Strong breccia - quartz monzonite fragments with quartz, tourmaline, specularite, chalcopyrite and pyrite matrix. The fragments are highly altered near the contact with the development of clay and sericite. The fragments become fresher and larger (up to 1 foot) near the bottom of the section with an increase in the ratio of pyrite to chalcopyrite.
156 - 267	Hard, fresh qtz. mon., locally well fractured and slightly altered. Scattered narrow seams and fractures with FeS_2, little $CuFeS_2$, chlor., carbonate. Fault with 1/2 - 1 inch black clay at 208 ft. Numerous seams with FeS_2, some $CuFeS_2$ from 208 to 235 feet.
267 - 308	Fractured qtz. mon. locally altered to soft clayey material with nodules of fresh rock. Many $CaCO_3$ seams. Weak diss. FeS_2, very little $CuFeS_2$.
308 - 559	Mostly fresh to moderately altered, medium-grained, greenish gray quartz monzonite with thin clay altered zones along fractures which are coated with gypsum, calcite, chlorite, etc. Few scattered specks of sulfides. Hole parallels stringers from 466 to 495 feet. A 2.3-foot stringer of good tourmaline, pyrite, chalcopyrite at 537 feet.
559 - 569	Old open mine working.
569 - 589	Mod. to well altered, medium grained, greenish quartz monzonite with secondary tourmaline, FeS_2, $CuFeS_2$.
589 - 668	Breccia - mod. alt. greenish qtz. monzonite with stringers of tourmaline, FeS_2, $CuFeS_2$, $FeCO_3$, gypsum, etc.; about 1% Cu.
668 - 996	Mod. alt. to fresh, medium grained quartz monzonite with recurring clayey altered sandy zones. Numerous

weak slips with chlorite, serpentine, some red FeOx paint, and thin seams gypsum. Minor scattered specks FeS_2 and a few thin stringers FeS_2 with blebs $CuFeS_2$; 0.6 ft. diseem. $CuFeS_2$, FeS_2, tour. at 765 ft. MoS_2 on slip at 836 feet.

Average core recovery 0 to 996 ft. = 83%.

Assays: See Attached assay list.

CACTUS MINE - DDH 4 Core Sample Assays

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag
90 - 97	7.	3.85	0.03	0.77
97 - 106	9.	2.65	0.01	0.54
116 - 122	6.	3.9	0.02	0.93
122 - 126	4.	1.55	0.01	0.39
126 - 134	8.	4.0	0.02	0.63
134 - 136	2.	0.15	Tr.	0.05
136 - 144	8.	1.4	0.01	0.24
144 - 146	2.	1.35	0.02	0.85
146 - 156	10.	0.8	0.01	0.24
Average: 90 - 156	66.	2.04	0.013	0.43
161 - 166	5.	0.1	Tr.	Tr.
166 - 171	5.	0.07	Tr.	Tr.
171 - 177	6.	0.15	Tr.	Tr.
177 - 182	5.	0.1	Tr.	Tr.
195 - 200	5.	0.04		
208 - 212	4.	0.25		
212 - 216	4.	0.05		
216 - 221	5.	0.04		
221 - 225	4.	0.07		
225 - 230	5.	0.07		
230 - 235	5.	0.10		
263 - 269	6.	0.05		
294 - 298	4.	0.04		
310 - 316	6.	0.30		
316 - 321	5.	0.83		
321 - 326	5.	0.30		
334 - 336	2.	0.05		
343 - 346	3.	0.25		
373 - 376	3.	0.05		
380 - 383	3.	0.65		
387 - 394	7.	0.20		
400 - 406	6.	0.05		
416 - 422	6.	0.30		

426 - 432	6.	0.10		
432 - 438	6.	0.07		
456 - 461	5.	0.05		
461 - 466	5.	0.35		
466 - 474	8.	0.10		
474 - 480	6.	0.15		
480 - 486	6.	2.10	0.04	0.66
486 - 491	5.	1.00	0.01	0.49
Average: 480 - 491	11.	1.60	0.03	0.58
491 - 495	4.	0.10		
495 - 502	7.	0.05		
502 - 508	6.	0.04		
508 - 516	8.	0.07		
516 - 520	4.	0.05		
523 - 526	3.	0.05		
526 - 536	10.	0.04		
536 - 537	1.	0.15		2.28
537 - 539.3	2.3	7.20	0.02	
539.3 - 546	6.7	0.03		
546 - 552	6.	0.25		
552 - 556	4.	0.20		
556 - 559	3.	0.40		
569 - 575	6.	4.30		0.02
575 - 577	2.	8.50	1.88	
Average: 569 - 577	8.	5.35		
577 - 582	5.	0.10		
582 - 586	4.	0.40		
586 - 591	5.	0.35		
591 - 594	3.	1.40		
594 - 597	3.	1.15		
597 - 601	4.	1.80		0.15
601 - 606	5.	0.75	Tr.	0.14
606 - 612	6.	0.60	0.01	Tr.
612 - 616	4.	0.30	Tr.	0.1
616 - 620	4.	0.65	Tr.	0.29
620 - 626	6.	2.15	0.01	0.24
626 - 631	5.	2.40	0.01	0.34
631 - 636	5.	2.40	0.01	0.24
636 - 641	5.	1.85	0.01	0.29
641 - 646	5.	1.75	0.01	0.39
646 - 651	5.	2.50		

651 - 656	5.	2.05	0.01	0.39
656 - 661	5.	1.15	0.01	0.43
661 - 666	5.	0.30	Tr.	0.05
666 - 668	2.	0.85	Tr.	0.30
Average:				
591 - 665	77.	1.46	0.007	0.26
668 - 676	8.	0.10		
698 - 704	6.	0.04		
726 - 735	9.	0.07		
761 - 765	4.	0.07		
765 - 765.6	0.6	15.00		
765.6 - 771	5.4	0.25		
778 - 781	3.	1.10		
830 - 836	6.	0.1		
865 - 872	7.	0.1		
932 - 942	10.	0.05		

CACTUS MINE

DIAMOND DRILL HOLE 5

Location: 50,410 N; 52,720 E
Collar Elev.: ± 6460 ft.
Bearing: S 35° W
Inclination: Minus 65°
Depth: 715 ft.

Interval (ft.)	Description
0 - 462	Shattered and broken, generally fresh qtz. mon. with narrow altered and softened zones. Scattered specks and weak stringers of FeS_2, minor $CuFeS_2$, and tourmaline. Some gypsum and carbonate on fractures. Four inch clay gouge zone at 323 feet.

Core barrel was lost at 462 ft. and, in attempting to recover core barrel, the hole deflected at 418 ft. Following is the log summary of the deflected hole:

418 - 457	Fresh to slightly altered, well broken quartz monzonite containing widely scattered specks and stringers of pyrite and minor chalcopyrite. Some of the fractures are coated with chlorite, gypsum, carbonate and cement from the original hole.
457 - 467	Breccia (?). Mostly greenish, well altered, sericitized quartz monzonite with stringers of quartz, carbonate, tourmaline, gypsum, pyrite and chalcopyrite. Fresh to slightly altered zone between 463 and 467 feet.
467 - 476	Open space.
476 - 481	Well altered qtz. mon. with stringers qtz., tour., weak FeS_2, $CuFeS_2$.
481 - 583	Moderate to strong breccia of well altered qtz. mon. cemented with qtz. tour., siderite, specularite and irreg. good $CuFeS_2$, FeS_2 from 493 to 583 ft.
583 - 600	Clay and gouge zone with rounded nodules slightly to well alt. qtz. mon. Few grains sulfide and some gypsum.
600 - 610	Opening - probably old mine working.
610 - 715	Fresh to slightly altered qtz. mon. with local soft broken spots. Few scattered tour. stns., some with qtz., FeS_2, $CuFeS_2$. Very little diss. sulfide.

Average core recovery 0 to 462 ft. = 71%.
418 to 715 ft. = 53% (deflected hole)

Assays: See attached assay list.

Cactus Mine - DDH 5 Core Sample Assays

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag
81 - 86	5.	0.04		
123 - 125	2.	0.20		
150 - 157	7.	0.02		
157 - 164	7.	0.04		
164 - 169	5.	0.03		
197 - 202	5.	0.05		
214 - 219	5.	0.05		
247 - 252	5.	0.04		
270 - 277	7.	0.05		
298 - 303	5.	0.10		
325 - 332	7.	0.07		
352 - 362	10.	0.05		
387 - 392	5.	0.05		
422 - 431	9.	0.07		
451 - 457	6.	0.05		
457 - 462	5.	0.10		
462 - 467	5.	0.05		
476 - 481	5.	0.12		
481 - 486	5.	0.15		
486 - 492	6.	0.25		
492 - 501	9.	0.45		
Average:				
481 - 501	20.	0.31		
503 - 509	6.	0.90	Tr.	0.05
509 - 513	4.	2.35	Tr.	0.10
513 - 517	4.	0.60	Tr.	0.10
517 - 522	5.	1.30	Tr.	0.10
522 - 528	6.	1.60	Tr.	0.10

Cactus Mine - DDH 5 continued

528 - 533	5.	2.80	0.01	0.09		
533 - 539	6.	1.6	0.02	0.18		
539 - 544	5.	1.9	0.01	0.14		
544 - 549	5.	1.9	0.01	0.19		
549 - 555	6.	1.4	Tr.	0.05		
555 - 560	5.	0.8	Tr.	0.05		
560 - 566	6.	1.4	0.01	0.14		
566 - 570	4.	1.3	0.01	0.14		
570 - 576	6.	1.8	0.02	0.23		
576 - 584	8.	1.35	0.02	0.23		
Average:						
503 - 584	81.	1.52	0.008	0.13		
					% Pb	% Zn
584 - 588	4.	0.1	Tr.	Tr.	Nil	Tr.
588 - 593	5.	0.07	Tr.	Tr.	Nil	Tr.
593 - 600	7.	0.1	Tr.	Tr.	Nil	Tr.
619 - 626	7.	0.05				
642 - 652	10.	0.20				
675 - 684	9.	0.10				
706 - 712	6.	0.05				

CACTUS MINE

DIAMOND DRILL HOLE 6

Location: 50,410 N; 52,720 E
Collar Elev.: ± 6460 ft.
Bearing: S 35° W
Inclination: Minus 85°
Depth: 1172 ft.

Interval (Ft.)	Description
0 - 234	Fresh qtz. mon. with weak alteration along fractures. Few scattered grains FeS_2, possibly a little $CuFeS_2$. Rock is broken and shattered and there are numerous open cracks. Three-foot opening from 60 to 63 ft.
234 - 566	Generally fresh qtz. mon. with weak alteration along fractures and a few clay altered, crumbly zones. FeS_2, Fe_3O_4 and a little $CuFeS_2$ occur as thin films on fractures and as weak disseminations. Altered zone with FeS_2, $CuFeS_2$, tour. from 457 to 463 ft. and more strongly altered zone with up to 10% FeS_2, weak $CuFeS_2$ and tour. from 479 to 483 ft.
566 - 590	Breccia. Well sericitized qtz. mon. with tour., FeS_2, $CuFeS_2$.
590 - 747	Well altered, greenish sericitized quartz monzonite with stringers of tourmaline, pyrite and chalcopyrite and zones of breccia up to 10 feet in width. Open space at 723 to 725 feet.
747 - 755	Open space.
755 - 890	Poorly developed breccia of greenish moderately altered qtz. mon. with tour., anhydrite, qtz. and scattered blebs and specks FeS_2, $CuFeS_2$.
890 - 937	Broken, sandy section with numerous clay gouges.
937 - 1077	Slightly to moderately altered qtz. mon., splotchy qtz., anhydrite, specularite, FeS_2, some $CuFeS_2$. Noticeable lack of tourmaline compared to above section. (Probably a weak breccia.)
1077 - 1081	Altered, clay gouge zone.
1081 - 1172	Fresh to clay altered qtz. mon. Numerous clips. Few, scattered specks FeS_2, Fe_2O_3, Fe_3O_4, $CuFeS_2$.

Average core recovery 0 to 1172 ft. = 82%.

Assays: See attached assay list.

CACTUS MINE - Diamond Drill Hole 6 - Core Sample Assays

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag
201 - 206	5	0.07		
236 - 241	5	0.05		
306 - 310	4	0.05		
325 - 330	5	0.05		
362 - 366	4	0.05		
401 - 407	6	0.05		
457 - 463	6	0.20		
479 - 483	4	0.60		
495 - 501	6	0.60		
510 - 513	3	0.20		
529 - 533	4	0.15		
533 - 539	6	0.60		
539 - 545	6	0.10		
545 - 549	4	0.05		
549 - 555	6	0.10		
555 - 560	5	0.04		
560 - 566	6	0.40		
566 - 572	6	2.40	0.01	0.24
572 - 578	6	3.40	0.01	0.34
578 - 582	4	4.20	0.02	0.58
582 - 586	4	1.30	0.01	0.24
586 - 590	4	1.60	0.01	0.19
Average: 566 - 590	24	2.59	0.01	0.30
590 - 596	6	0.05		
596 - 602	6	0.05		
602 - 606	4	0.05		
606 - 611	5	0.06		
611 - 616	5	0.10		
Average: 590 - 616	26	0.06		
616 - 620	4	0.60		
620 - 626	6	0.80		
626 - 633	7	2.50		

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag
633 - 638	5	0.85		
638 - 643	5	0.12		
643 - 647	4	0.20		
647 - 651	4	0.25		
651 - 655	4	0.80		
655 - 658	3	1.85		
Average:				
616 - 658	42	0.95		
658 - 663	5	0.15		
663 - 668	5	0.20		
668 - 671	3	0.70		
671 - 676	5	0.15		
676 - 680	4	0.15		
680 - 683	3	0.20		
683 - 687	4	1.30		
687 - 693	6	0.05		
693 - 697	4	0.20		
697 - 700	3	0.25		
700 - 702	2	0.65		
Average:				
658 - 702	44	0.32		
702 - 706	4	4.80		
706 - 713	7	3.10		
713 - 715	2	1.70		
715 - 721	6	0.50		
721 - 726	5	0.50		
726 - 731	5	1.20		
731 - 736	5	1.10		
736 - 741	5	0.45		
741 - 747	6	0.80		
747 - 755	8	opening - no core		
755 - 758	3	0.85		
758 - 762	4	1.10		
762 - 767	5	1.40		
767 - 771	4	1.60		
771 - 776	5	0.60		
776 - 781	5	0.90		
781 - 786	5	1.10		
Average:				
702 - 786	84	1.34		
786 - 791	5	0.25		
791 - 796	5	0.30		

Cactus Mine - DDH 6 continued

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag
796 - 801	5	0.20		
801 - 807	6	0.30		
807 - 815	8	0.25		
815 - 821	6	0.30		
821 - 827	6	0.35		
827 - 832	5	0.15		
832 - 837	5	0.45		
837 - 842	5	0.35		
842 - 847	5	0.25		
847 - 852	5	0.35		
852 - 857	5	0.40		
857 - 862	5	0.40		
Average:				
786 - 862	76	0.30		
862 - 867	5	0.90		
867 - 875	8	1.05		
Average:				
862 - 875	13	0.99		
875 - 881	6	0.45		
881 - 886	5	0.25		
886 - 891	5	0.45		
891 - 899	8	0.20		
899 - 903	4	0.15		
903 - 911	8	0.25		
911 - 919	8	0.18		
919 - 926	7	0.15		
Average:				
875 - 926	51	0.25		
926 - 931	5	0.95		
931 - 938	7	0.65		
938 - 945	7	0.55		
945 - 951	6	0.60		
951 - 959	8	0.55		
959 - 964	5	0.50		
964 - 971	7	0.50		
971 - 976	5	0.50		
Average:				
926 - 976	50	0.59		
976 - 980	4	3.00		
980 - 985	5	0.45		
985 - 988	3	1.15		

CACTUS MINE

DIAMOND DRILL HOLE 7

Location: 50,410 N; 52,720 E
Collar Elev.: ± 6460 ft.
Bearing: Due East
Inclination: Minus 85°
Depth: 1073 ft.

Interval (ft.)	Description
0 - 410	Fresh to slightly altered qtz. mon. with few specks FeS_2. Below 125 ft. there are a few, thin tourmaline stringers with a few specks $CuFeS_2$. Three, 2-ft. open spaces were crossed between 228 and 240 ft.
410 - 577	Fresh to slightly altered qtz. mon. Scattered specks FeS_2. Few thin gypsum seams. 8-ft. open space from 426 - 434 ft. Several clay altered, sandy, shear zones between 493 and 520 feet. Few tour. stringers with FeS_2 and a little $CuFeS_2$ below 482 ft.
577 - 642	Broken and shattered fresh to moderately altered quartz monzonite with disseminated specks FeS_2, possibly little $CuFeS_2$. Few tourmaline stringers and small rosettes.
642 - 648	Green clay and chlorite altered quartz monzonite with narrow tourmaline seams containing FeS_2, $CuFeS_2$. Scattered blebs of sulfide in the rock. Some gypsum.
648 - 769	Fresh to moderately altered quartz monzonite cut by few 1 - 3-inch aplite dikes. Scattered tourmaline stringers and blebs, some with FeS_2, $CuFeS_2$. Some disseminated sulfide. Considerable tourmaline with FeS_2, $CuFeS_2$, little MoS_2 from 769 - 776 feet.
769 - 794	Strong tourmaline seams and blebs with FeS_2, $CuFeS_2$, Fe_2O_3 in altered quartz monzonite. May be vein zone.
794 - 805	Fresh to partly altered quartz monzonite. Some chlorite, carbonate on fractures. Weak, disseminated FeS_2, $CuFeS_2$.
805 - 827	Generally hard quartz monzonite with increased orthoclase (orthoclasation ?), considerable tourmaline stringers and blebs, some with FeS_2, $CuFeS_2$. Disseminated fine sulfide. Chlorite, carbonate, gypsum on fractures and weak shears.
827 - 909	Fresh quartz monzonite with narrow clay alteration along fractures. Some FeS_2, $CuFeS_2$ on fractures and disseminated in rock. Few tourmaline stringers and blebs. Scattered fine Fe_3O_4.

CACTUS MINE - Diamond Drill Hole 7 - Core Sample Assays

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Au
135 - 140	5	0.07		
261 - 267	6	0.05		
342 - 344	2	0.25		
375 - 380	5	0.15		
482 - 488	6	0.05		
552 - 557	5	0.07		
642 - 644	2	0.04		
644 - 648	4	2.00		
648 - 652	4	0.07		
665 - 670	5	0.05		
700 - 704	4	0.05		
729 - 734	5	0.05		
734 - 737	3	0.04		
761 - 769	8	0.07		
769 - 776	7	0.05		
776 - 781	5	0.07		
781 - 789	8	0.07		
789 - 794	5	0.25		
794 - 796	2	0.07		
796 - 800	4	0.05		
800 - 805	5	0.07		
805 - 812	7	0.10		
812 - 816	4	0.07		
816 - 821	5	0.12		
821 - 827	6	0.12		
827 - 833	6	0.07		
855 - 860	5	0.17		
909 - 915	6	0.05		
1062 - 1067	5	0.40		

Interval (ft.)	Description
909 - 1073	Fresh qtz. mon. with slight clay alteration along fractures. Little gypsum and/or calcite and specks FeS_2 along some fractures. Thin tour. stringer at 913 ft. Few MoS_2 flakes at 956 ft. One ft. basic dikes at 1020 and 1030 ft.

Average core recovery 50 to 1073 ft. = 79%

Assays: See attached assay list.

CACTUS MINE

DIAMOND DRILL HOLE 8

Location: 50,410 N; 52,720 E
Collar Elev.: ± 6460 ft.
Bearing: S 25° E
Inclination: Minus 65°
Depth: 922 ft.

Interval (ft.)	Description
0 - 321	Shattered and broken, fresh to slightly altered qtz. mon. Pyrite occurs as specks on many fractures and diss. in the rock. Soft, clay altered zone from 69 to 75 ft. and 109 to 122 feet. Few flakes MoS_2 and a little $CuFeS_2$ on few fractures.
321 - 496	Broken, fresh to moderately altered qtz. mon. with specks FeS_2 and more $CuFeS_2$ on fractures and diss. through some sections of the core. Thin plates of gypsum and/or calcite on some fractures and few stringers and blebs of tour. Numerous open spaces up to 2 ft. in width.
496 - 662	Fresh qtz. mon. with alternating, greenish altered zones up to 2 ft. thick. Thin stringers FeS_2, $CuFeS_2$, tourmaline, qtz., and diss. specks sulfide. Thin plates of gypsum on fractures. Numerous open spaces up to 2 ft. wide.
662 - 733	Greenish, fresh to altered qtz. mon. in part a breccia with 1/4-in. tour. stringers, blebs anhydrite, FeS_2, $CuFeS_2$.
733 - 825	Breccia of altered qtz. mon. with blebs and stringers of tourmaline, anhydrite, siderite, FeS_2 and $CuFeS_2$. Considerable specularite and $CuFeS_2$ from 801 to 817 ft.

After drilling to 829 ft. an attempt was made to ream and case the hole. In reaming, the hole deflected at 512 ft. The log summary of the deflected hole is as follows:

512 - 610	Broken, fresh to greenish altered qtz. mon. Scattered thin stringers and specks FeS_2, $CuFeS_2$, tourmaline.
610 - 670	Moderately to well altered qtz. mon. with sericite and qtz. Short sections fresh qtz. mon. Specks and stringers FeS_2, $CuFeS_2$ and tourmaline.
670 - 715	Breccia and altered qtz. mon. with irreg. veinlets tour., qtz., anhydrite, specularite, FeS_2 and $CuFeS_2$. Surrounding altered qtz. mon. frags.
715 - 842	Chloritic-sericitic altered qtz. mon. with tour. stringers and blebs and irreg. blebs and bunches $CuFeS_2$, FeS_2. Does not display good brecciation. Open space from 748 to 750 ft.

842 - 849	Opening - probably old mine working.
849 - 922	Fresh to slightly altered qtz. mon. Few stringers tour. with little FeS_2 and $CuFeS_2$ from 849 to 880 ft. Weaker sulfide below.

Average core recovery 0 to 825 ft. = 64%
512 to 922 ft. = 75% (deflected hole)

Assays: see attached assay list.

[illegible] MINE

DIAMOND DRILL HOLE 2 - Core Sample Assays

Original Hole

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag
496 - 503	9	0.8		
503 - 513	8	1.5		
Average:				
496 - 513	17	1.13		
520 - 533	4	0.4		
549 - 554	5	0.05		
554 - 560	6	0.35		
585 - 590	5	0.10		
610 - 616	6	0.35		
616 - 622	6	0.60		
622 - 628	6	0.15		
628 - 632	4	no sample		
632 - 642	10	0.07		
642 - 650	8	0.05		
650 - 655	5	0.04		
655 - 659	4	0.05		
659 - 665	6	0.15		
665 - 671	6	0.07		
671 - 673	2	no sample		
673 - 682	9	0.07		
682 - 691	9	1.05		
691 - 701	10	0.20		
701 - 713	12	0.70		
713 - 719	6	0.15		
Average:				
610 - 719	100	0.28		
719 - 725	6	1.40		
725 - 733	8	0.15		
733 - 742	9	0.65		
742 - 748	6	1.55		
748 - 752	4	0.65		
752 - 757	5	0.10		
757 - 762	5	1.00		
762 - 767	5	1.50		
767 - 772	5	1.40		
772 - 777	5	1.10		
777 - 782	5	2.65		
782 - 787	5	1.15		
787 - 792	5	2.50		

Cactus Mine

Diamond Drill Hole 8 - continued p. 2

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag
792 - 797	5	1.90		
797 - 801	4	1.20		
801 - 807	6	3.60		
807 - 812	5	10.10		
812 - 817	5	7.20		
817 - 825	8	1.70		
Average:				
719 - 825	106	2.10		

Deflected Hole

610 - 616	6	0.9		
616 - 621	5	0.15		
621 - 629	8	1.3		
629 - 632	3	0.04		
632 - 635	3	0.05		
635 - 639	4	0.3		
639 - 643	4	0.05		
643 - 649	6	0.2		
649 - 653	4	0.3		
653 - 655	2	0.1		
655 - 659	4	0.3		
659 - 663	4	0.05		
663 - 665	2	no core		
665 - 670	5	0.2		
670 - 675	5	3.4		
675 - 677	2	0.15		
677 - 682	5	0.25		
682 - 687	5	0.1		
687 - 692	5	0.3		
692 - 698	6	0.5		
698 - 702	4	0.25		
702 - 707	5	0.8		
707 - 712	5	0.1		
712 - 716	4	0.12		
Average:				
610 - 716	106	0.56		
716 - 722	6	1.05		
722 - 725	3	0.8		
725 - 730	5	0.9		
730 - 732	2	0.75		
732 - 736	4	2.4		
736 - 741	5	1.85		
741 - 746	5	1.05		

Eastern Mine

Diamond Drill Hole 3 - Continued

Interval (ft.)	Feet	% Cu	Oz. Au	Oz. Ag
716 - 718	2	0.9		
718 - 730	12	no core		
730 - 732	2	2.0		
732 - 736	4	1.55		
736 - 741	5	1.55		
741 - 746	5	1.45		
746 - 751	5	1.45		
751 - 755	4	1.55		
755 - 757	2	2.05		
757 - 760	3	1.35		
760 - 765	5	1.25		
765 - 770	5	1.25		
770 - 775	5	1.55		
775 - 780	5	1.4		
780 - 785	5	1.5		
785 - 790	5	2.35		
790 - 795	5	1.65		
795 - 800	5	1.6		
800 - 805	5	2.0		
805 - 810	5	1.55		
810 - 815	5	1.75		
Average: 716 - 842	126	1.46		
842 - 849.5	7.5	no core		
849.5 - 852	2.5	0.75		
852 - 855	3.	0.2		
855 - 859	4	0.1		
Average: 849.5 - 859	9.5	0.3		
917 - 922	5.	0.1		