CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
520-770-3500
http://www.azgs.az.gov
inquiries@azgs.az.gov

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FYI

RECEIVED
MAY 16 1979
EXPLORATION DEPARTMENT

KERR-McGEE RESOURCES CORPORATION
KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

May 14, 1979

Mr. W. L. Kurtz, Manager
Exploration Department
Western U.S.A.
ASARCO Incorporated
P. O. Box 5747
Tucson, Arizona 85703

Dear Mr. Kurtz:

Further to your telephone call to Zeb Jones of May 9 and your letter of May 11 advising us of your interest in the Mansfield Canyon copper project, please find enclosed a data package for your examination. A list is attached to the data package detailing a description of what is enclosed.

We would ask that the data be kept confidential.

Additional data is located here in our files, and the core is stored at Tucson. Both the core and data are available for your examination should you so desire.

Should you develop any new data on this area as a result of your interest in the area, we would appreciate receiving this information. This is, of course, only in the event that a mutually beneficial agreement could not be worked out between our two companies.

You raised the question as to the possibility of combining Red Mountain, Arizona and Mansfield Canyon into one package. At the present time this is not possible, but in the event that we should decide to farmout or joint venture Red Mountain, we could consider this possibility at that time.

We will be happy to hear from you as to your thoughts after reviewing the data package.

Very truly yours,

KERR-McGEE RESOURCES CORPORATION

Douglas C Brockie

Douglas C. Brockie
Manager - Base Metals
Mineral Exploration Division

DCB-ew
Enclosure

cc: Mr. E. E. Jones

MANSFIELD CANYON, SANTA CRUZ COUNTY, ARIZONA

DATA PACKAGE

1. Assessment work drilling results, MC-4, by Russ Corn, 9-6-78.

2. Evaluation and recommended assessment drilling by Russ Corn, 4-14-78, including:

   a) assay logs, MC-1 through MC-3

   b) map showing metal zoning pattern

   c) map showing land status

   d) map showing alteration and mineralization

   e) map showing geochemical lead values

3. Cross section through MC-1 and MC-2 showing alteration and copper values in drill holes.

4. Drill hole logs for MC-1 through MC-4.

D. C. Brockie
May 11, 1979

RUSSELL M. CORN
Registered Geologist
8425 DESERT STEPPES DR.
TUCSON, ARIZONA 85710
PHONE 602 - 298-1770

September 6, 1978

David M. Snyder
Kerr-McGee Resources Corp.
PO Box 25861
Oklahoma City, Oklahoma 73125

SUBJECT: Mansfield Canyon Assessment Work
Drilling Results - DDH MC-4

This short letter report summarizes the assessment work and the drilling completed this summer at Mansfield Canyon. A detailed descriptive log of DDH MC-4 is attached for your records.

Assessment Work:

The assessment work on the project was initiated near the first of July and consisted of approximately four miles of road repair, construction of a drill site, and drilling of the initial 200 feet in DDH MC-4. The drill hole was collared July 7th, 1978, and terminated July 24th, 1978. Although drilling problems were encountered in fault zones in the upper part of the drill hole, there were no apparent problems below a depth of 150 feet and the drill hole could be deepened if desired.

Drilling Results:

DDH MC-4 was collared near the road in the bottom of Mansfield Canyon approximately 1200 feet south of the Hosey Mine on the western edge of a large pyritic altered and mineralized breccia pipe complex. The hole was drilled east at minus 45 degrees and intersected major

fault zones and brecciated and shattered rock through the first 50 feet drilled, with faults spaced at 10 to 15 foot intervals to an angle depth of 130 feet and at a somewhat greater spacing at additional depth.

Brecciated pyritic quartz porphyry (quartz latite (?) porphyry) was present in the upper part of the drill hole but most of the hole was in Josephine granodiorite that exhibited propylitic type alteration, with chlorite, clays, and epidote. Some features, notably the disseminated magnetite, fresh orthoclase and biotite, chlorite, and minor disseminated chalcopyrite, are suggestive that the propylitic alteration observed may be superimposed on an earlier weak potassic - propylitic phase of alteration.

The vertical and lateral interval tested by the drill hole was approximately 150 feet and was not sufficient for the drill hole to penetrate beneath the more intensely pyritized and mineralized breccia exposures to the east. Although mineralization of interest was not encountered within the short interval drilled, it is interesting to note that geochemical copper assays over larger intervals steadily increase with increasing depth. Disseminated chalcopyrite was noted in the dense granodiorite and was the only copper mineral observed.

The shattered rock, faulting, and intense clays noted in core from the lower 10 feet of the hole indicates that the drill hole may be approaching a fault zone and possible abrupt change in alteration and mineralization. The drill hole could be deepened as future exploration or assessment work to test this possibility.

REGISTERED GEOLOGIST
CERTIFICATE NO.
8285
RUSSELL M. CORN
DATE SIGNED
ARIZONA, U.S.A.

Respectfully submitted,

Russell M. Corn

KERR-McGEE RESOURCES CORPORATION
INTERNAL CORRESPONDENCE

TO E. E. Jones

FROM R. M. Corn

DATE April 14, 1978

SUBJECT Evaluation and Recommended Assessment Drilling, Mansfield Canyon Prospect, Santa Cruz County, Arizona

SUMMARY

Previous geologic examinations, geochemical and geophysical surveys, and drilling at the Mansfield Canyon Prospect have indicated that the prospect contains disseminated copper mineralization of interest. Higher grade values are closely associated with a quartz latite porphyry intrusive and with breccia pipes. A review of previous exploration data indicates that a large breccia pipe complex in the western part of the claim block near the Hosey Mine exhibits associated quartz latite porphyry, intense alteration and mineralization, and appears to be the major untested exploration target remaining on the property. A 45° angle drill hole that would test mineralization localized near the margin or within the breccia complex is recommended to comply with assessment requirements.

Annual payments for optioned and leased claims are approximately $4,000 and assessment requirements are $6,500. Analysis of the drilling and associated costs indicates that it would be much more efficient to complete two years assessment requirements at one time rather than to return and carry out a small amount of drilling each year. In addition, the results of a deeper hole could help to determine whether the cost of retaining the leased and optioned claims is justified. The drill hole recommended is a 760 foot angle hole and would be drilled in August and September which would complete assessment work requirements until late summer, 1980. An AFE in the amount of $13,000 for this drilling is attached.

GENERAL

The Mansfield Canyon Prospect is a center of pyritic alteration and base and precious metal mineralization located approximately eight miles northwest of Red Mountain in Santa Cruz County, Arizona. The prospect reflects the upper part of a zoned system of alteration and mineralization similar to the Red Mountain and Thunder Mountain prospects and is localized on a complex of latite porphyry and quartz latite porphyry intrusives, fluidized milled breccias, and other breccia pipes. Past exploration work in the area has consisted of geologic mapping, geochemical sampling, an I.P. survey, and drilling that has demonstrated the presence of copper mineralization of potential interest on the prospect. The previous drilling has been located on the eastern part of the prospect as shown on the accompanying map and included one relatively shallow hole, MC-3 (470') and two deeper holes, MC-1 (3000') and MC-2 (3402'). In addition, Bear Creek drilled a 2188' hole on a breccia pipe

located at the head of Copper Canyon one and one-half miles north of the Hosey Mine and approximately one mile north of the Kerr-McGee claim boundary.

LAND

Land holdings on the prospect include 57 unpatented claims owned by Kerr-McGee, 8 unpatented claims optioned from Joseph Urban, and 9 patented claims leased from the Gross Mining and Investment Company. The Urban option expires August 3, 1979, and the annual land costs for these optioned and leased claims are approximately $4,000 in rental, advance royalty, and taxes with an additional committment of at least $5,000 minimum work required in the prospect area.

EXPLORATION RESULTS

Previous geologic mapping of the prospect indicated that pyritic, argillic, and quartz-sericite-pyrite type alteration occurs in a broad arcuate zone centered on the head of Mansfield Canyon and extending eastward one and one-half miles. The gradient array I.P. survey carried out in 1977 reflected this pattern and indicated a maximum response from higher sulfide content generally coincident with a similar arcuately shaped zone of anomalous geochemical lead values. Surface sampling, geological examinations, and previous drilling results have indicated that there is disseminated copper mineralization of interest in the prospect, that there could be sharp vertical and lateral zoning, and that values have generally increased toward the western drill hole. Higher grade copper-precious metal mineralization in the district is closely associated with breccia pipes and particularly with a quartz latite porphyry intrusive characterized by prominent quartz phenocrysts.

Drill hole MC-3, the shallow eastern-most hole drilled, intersected pyritized feldspar porphyry or latite porphyry breccia and exhibited very weak chalcopyrite mineralization associated with orthoclase-sericite-chlorite alteration. DDH MC-1, approximately 1500 feet west, exhibited prominently anomalous lead, zinc and copper values associated with high pyrite, quartz-sericite-pyrite alteration, quartz latite porphyry and a complex breccia in the upper part of the drill hole. Lower copper values and less intense pyritic alteration were present below 1500' and were associated with brecciated monzonite, andesite, and latite porphyry. DDH MC-2, located approximately 2000 feet northwest of MC-1, exhibited near-surface chalcopyrite mineralization of interest with the 100 foot interval from 300 to 400 feet averaging .30% copper. Copper and other base metal values at depths below 550' were uniformly low except for isolated brecciated zones and reflected less intense, lower sulfide alteration and silicified granite and mixed latite porphyry, monzonite, and monzonite porphyry. The higher metal values in the upper part of the hole were closely associated with a complex breccia and a restricted quartz latite porphyry intrusive, similar to relationships in DDH MC-1. The breccia intersected in the upper 810' of the Bear Creek drill hole two miles to the northwest exhibited intense pyritic alteration and was described as a fragmental breccia of quartz latite tuff and porphyry. Their hole entered chloritic altered, weakly broken monzonite at depth with little or no introduced sulfides. Metal values in both the breccia and monzonite at depth were only slightly anomalous with only a few short intervals containing as much as 200 ppm copper, lead, or zinc and the pyritic breccia appears to be distant from a center of mineralization.

A review of the data and the surface expression of alteration and mineralization indicates that the more intense quartz-sericite-pyrite alteration, prominent copper-silver vein mineralization, and the angular fragmental mineralized breccia pipes are more common in the western part of the altered area and are closely associated with quartz latite porphyry intrusives. The lower sulfide, pervasive feldspar-chlorite alteration observed at depth in MC-1 and MC-2 appears to reflect a more widespread and earlier, weak potassic phase of alteration that

does not have prominent associated metallization or reflect the zoning pattern within the better mineralized material.

EXPLORATION POTENTIAL

The review of the exploration data and surface examinations at Mansfield Canyon has indicated that the major exploration target of potential interest remaining on the property is a large breccia complex approximately 2000 feet in diameter located between MC-2 and the Hosey Mine. This complex includes angular fragmental breccia, milled and fluidized breccia, and exhibits quartz latite porphyry as fragments and dikes. The breccia complex appears to have localized metallization, is reflected by a prominent geochemical lead anomaly and exhibits a close association with copper-silver-arsenic and high pyrite mineralization that was localized in veins and breccia at the northwest margin of the breccia. The Hosey and adjacent mines at this location are recorded as the larger metal producers of the district with records indicating that relatively high grade shipping ore averaged 15% lead, 9% copper, 9 ounces silver and .40 ounces gold. Mineralization found on the dumps is dominantly tennantite-tetrahedrite, contains substantial silver and gold values, and is associated with highly pyritized breccia and wall rocks.

This breccia complex has favorable rock type, metal, and mineral associations indicating that it may contain economic mineralization localized along the margin and/or at depth. The breccia complex is large enough so that a major deposit could occur within it and a drill hole that would test for the presence of mineralization of interest at the margin of and within the breccia complex should provide sufficient data to determine the desirability of retaining the prospect.

DRILLING RECOMMENDATIONS

A 45° angle drill hole that would test for mineralization of interest along the margin of and within the breccia complex in the general vicinity of the Hosey Mine is recommended as assessment work at Mansfield Canyon. Assessment requirements for unpatented claims on the prospect are $6,500. Analysis of drilling and associated costs indicates that charges for mobilization, set-up time, road clean-up, etc. would be duplicated each time drilling is carried out and a hole is deepened and are a substantial part of the required annual $6,500 expenditure. If these charges are incurred on an annual basis the amount of drilling that could be completed each year would be limited and expensive and it would be a much more efficient use of drilling funds to complete two years requirements at one time. It is estimated that if work requirements for 1978 and 1979 were completed at one time, 760 feet of drilling could be completed at a total cost of approximately $17.10 per foot compared with 660 feet when drilled on an annual basis with 300 feet in 1978 and 360 feet in 1979 at a combined cost of approximately $19.70 per foot.

Completion of two years assessment requirements in one deeper hole should help to determine the advisability of retaining the optioned and leased claims. The Urban option on eight unpatented claims will expire in August 1979 and a decision to renew or drop these claims should be reached prior to July 1979. Annual payments of $2,500 in advance royalty and $700 in taxes for a lease on the nine patented Gross Mining and Investment Company claims are a substantial part of the total cost of retaining and exploring the prospect. The deeper drill hole, combining two years assessment work, could provide data that would determine whether the cost of retaining the lease and renewing the Urban option is justified, or whether these agreements should be terminated. In either case, the unpatented claims held by Kerr-McGee would be retained, with no additional assessment work required until late summer, 1980.

Consequently, a deeper drill hole that would complete assessment requirements

for both 1978 and 1979 and result in a more efficient use of drilling funds and annual land payments is recommended. Itemized drilling costs for a 760 foot NX angle core hole include:

Road repair and site preparation	$ 1,100
Drill rig mobilization	500
760 feet of NX core drilling at $14.00 per foot	10,650
Assaying and miscellaneous	750
Total	$13,000

The drill hole proposed is shown on the accompanying maps and is a 45° angle hole that would test for mineralization of interest near the Hosey Mine both at the margin of the breccia and disseminated within it. An AFE for $13,000 for the proposed assessment drilling is attached.

COPY

KERR-McGEE CORPORATION
Assay Log

District Wrightson-Mansfield Canyon
Hole Number DDH MC-1
Spudded 12 April 1972
Completed 4 October 1973
Total Depth 3000'
Driller Joy Mfg. - L. Machen
Logged By R. M. Corn & K. G. Hatfield

County Santa Cruz State Arizona
Claim Uranus Sec. 8 T. 21S R. 15E.
Elevation Approx. 5360'
Hole Size
Core Size 0-993' NC; 993-3000' NX
Hole Angle Vertical
Collar Coords.

GROSS VALUE IN SULFIDE MINERALS*

Hole Depth	Inter-val	Cu	Zn	Pb	Mo	Ag	Au	U_3O_8 ppm	Gross Value	
0'										No Core, Complete Oxidation
15'	15'									
80'	65'	.007		.003	.0005			11		Supergene Enrichment
120'	40'	.16	.009	.077	.0008	.18	.001	43	$ 2.10	
150'	30'	.03	.26	.177	.0008	.10	tr.		$ 1.76	
180'	30'	.03	.173	.078	.0004	.13	tr.		$ 1.25	
220'	40'	.008	.021	.004	.0006					
270'	50'	.008	.079	.018	.0008					
350'	80'	.02	.21	.14	.0006	.06	.001	9		
400'	50'	.006	.045	.004	.0008	.06	.001			
450'	50'	.002	.022	.009	.0011	.07	tr.			
500'	50'	.004	.009	.007	.0017	.03	tr.			
550'	50'	.003	.063	.021	.0021	.11	tr.			
600'	50'	.004	.136	.071	.0013	.11	tr.	18		
650'	50'	.003	.053	.032	.0010	.06	tr.			
710'	60'	.022	.036	.089	.0009	.11	.001			
750'	40'	.177	.021	.038	.0011	.10	.001			Intense Quartz-Sericite- Pyrite Alteration
800'	50'	.008	.014	.022	.0012	.03	.001	13		
850'	50'	.019	.011	.034	.0013	.08	.001			
900'	50'	.010	.009	.023	.0007	.07	.001			
950'	50'	.006	.012	.005	.0010	.04	.001			

*Gross value calculated from copper 50 ¢/pound; lead 15¢/pound; zinc 15 ¢/pound; molybdenum $1.72 /pound; silver $1.50 /ounce; and gold $35.00 /ounce.

COPY

KERR-McGEE CORPORATION
Assay Log

District Wrightson-Mansfield Canyon Page 2
Hole Number DDH MC-1

GROSS VALUE IN SULFIDE MINERALS*										
Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag	Au	%WO_3	U_3O_8 ppm	
950'										
993'	43'	.005	.011	.006	.0013	.01	tr.			
			Drilling stopped May 26, 1972							
			Drilling resumed July 1, 1973							
1000'										
1100'	100'	.0245	.0064	.0034	.0005	.01	.001		11	
1200'	100'	.0138	.0066	.0035	.0010	.01	.001		11	
1300'	100'	.0068	.0085	.0036	.0015	.01	.001		9	
1400'	100'	.0268	.0145	.0058	.0012	.02	.001		15	
1500'	100'	.0146	.0092	.0055	.0022	.01	.001		22	
1600'	100'	.0150	.0146	.0084	.0014	.01	.001		20	
1700'	100'	.0092	.0058	.0033	.0016	.01	.001		18	
1800'	100'	.0048	.0048	.0031	.0024	.02	.001		18	
1850'										Anhydrite
1900'	100'	.0128	.0105	.0048	.0011	.02	.001		20	
1950'	50'	.0105	.0091	.0052	.0013	.02	.001		28	
2000'	50'	.188	.1950	.1490	.0018	.02	.001		31	
2125'	125'	.0166	.0111	.0068	.0025	.02	.001			
2210'	85'	.0462	.0118	.0083	.0013	.04	.001		20	
2300'	90'	.0167	.0083	.0036	.0013	.02	.001		13	
2400'	100'	.0136	.0058	.0051	.0006	.01	.001		16	
2500'	100'	.0134	.0049	.0038	.0010	.01	.001		16	
2600'	100'	.0294	.0164	.0049	.0004	.01	.001	.0030	20	
2700'	100'	.0298	.0103	.0038	.0005	.01	.001	.0025	13	
2800'	100'	.0566	.0197	.0105	.0012	.01	.001		10	
2900'	100'	.0441	.0158	.0088	.0007	.01	.001		10	

*Gross value calculated from copper 50 ¢/pound; lead 15 ¢/pound; Zinc 15 ¢/pound; molybdenum $ 1.72 /pound; silver $ 1.50 /ounce; and gold $35.00 /ounce.

COPY

KERR-McGEE CORPORATION
Assay Log

District Wrightson-Mansfield Canyon
Hole Number DDH MC-1

Page 3

GROSS VALUE IN SULFIDE MINERALS*

Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag	Au	U_3O_8 ppm	Gross Value
2900'									
3000'	100'	.0366	.0115	.0055	.0005	.01	.001	10	
			3000	FEET	IS	TOTAL	DEPTH.		

*Gross value calculated from copper 50 ¢/pound; lead 15 ¢/pound; Zinc 15 ¢/pound; molybdenum $ 1.72 /pound; silver $ 1.50 /ounce; and gold $ 35.00 /ounce

KERR - McGEE RESOURCES CORPORATION

ASSAY LOG

District: Wrightson-Mansfield Canyon
Hole Number: MC-2
Spudded: July 30, 1974
Completed: March 7, 1975
Total Depth: 3402'
Driller: Joy Mfg.
Logged By: V.L. Smith

County: Santa Cruz State: Arizona
Claim: Goldfish 7 Sec 8 T. 21 S. R. 15 E.
Elevation: Approximately 5440'
Hole Size:
Core Size: NC
Hole Angle: Vertical
Collar Coords. N.
E.

Assayer: Southwestern Assayers and Chemists, D. A. Shah

HOLE DEPTH	INTERVAL	Cu %	Zn PPM	Pb PPM	Mo PPM	Au oz/ton	Ag oz/ton		SAMPLE NUMBER
7-100'	93'	.06	416	345	6	nil	.03		30841-30846
100-200'	100'	.108	820	680	9	nil	.12		30847-30850
200-300'	100'	.09	490	306	10	nil	.09		30851-30854
300-400'	100'	.304	270	154	6	nil	.12		30855-30864
400-500'	100'	.02	400	218	6	nil	.03		30865-30874
500-600'	100'	.01	630	520	6	nil	.03		30875-30884
600-700'	100'	.02	88	40	6	nil	.03		30885-30894
700-800'	100'	.03	(Average of samples shown, no						30895-30900 +
			composite made in 700-800' interval).						31701-31704
800-900'	100'	.02	181	84	10	nil	.03		31705-31714
900-1000'	100'	.013	92	24	8	nil	.03		31715-31724
1000-1100'	100'	.024	80	30	4	nil	.03		31725-31734
1100-1200'	100'	.019	188	82	6	nil	.06		31735-31744
1200-1300'	100'	.034	46	102	6	nil	.09		31745-31754
1300-1400'	100'	<.019	48	49	8	nil	.03		31755-31764
1400-1500'	100'	<.01	28	80	17	nil	.03		31765-31774
1500-1600'	100'	.01	8	26	8	nil	.03		31775-31784
1600-1700'	100'	<.01	34	55	7	nil	.03		31785-31794
1700-1800'	100'	.05	72	18	9	nil	.03		31795-31800 +
									32401-32404
1800-1900'	100'	.013	48	13	10	nil	.03		32405-32414
1900-2000'	100'	.012	66	16	10	nil	.03		32415-32424
2000-2100'	100'	.016	44	18	10	nil	.03		32425-32434
2100-2200'	100'	.057	54	13	8	nil	.06		32435-32444
2200-2300'	100'	.08	56	16	6	nil	.06		32445-32454
2300-2400'	100'	.029	26	14	8	nil	.03		32455-32464
2400-2500'	100'	.059	40	13	8	nil	.03		32465-32474
2500-2600'	100'	.035	26	17	9	nil	.03		32475-32484
2600-2700'	100'	.029	28	14	14	nil	.03		32485-32494
2700-2800'	100'	.022	24	10	8	nil	.03		32495-32500 +
									33301-33304
2800-2900'	100'	.016	20	10	7	nil	.03		33305-33314
2900-3000'	100'	.012	36	24	10	nil	.03		33315-33324
3000-3100'	100'	.031	40	14	22	nil	.03		33325-33334
3100-3200'	100'	.018	30	12	10	nil	.03		33335-33344
3200-3300'	100'	.03	36	14	8	nil	.03		33345-33354
3300-3400'	100'	.029	36	14	6	nil	.03		33355-33364

Lithology

0-550', quartz latite porphyry and latite porphyry.

550-968', silicified granite broken by thin andesite and latite por dikes

968-1063' **

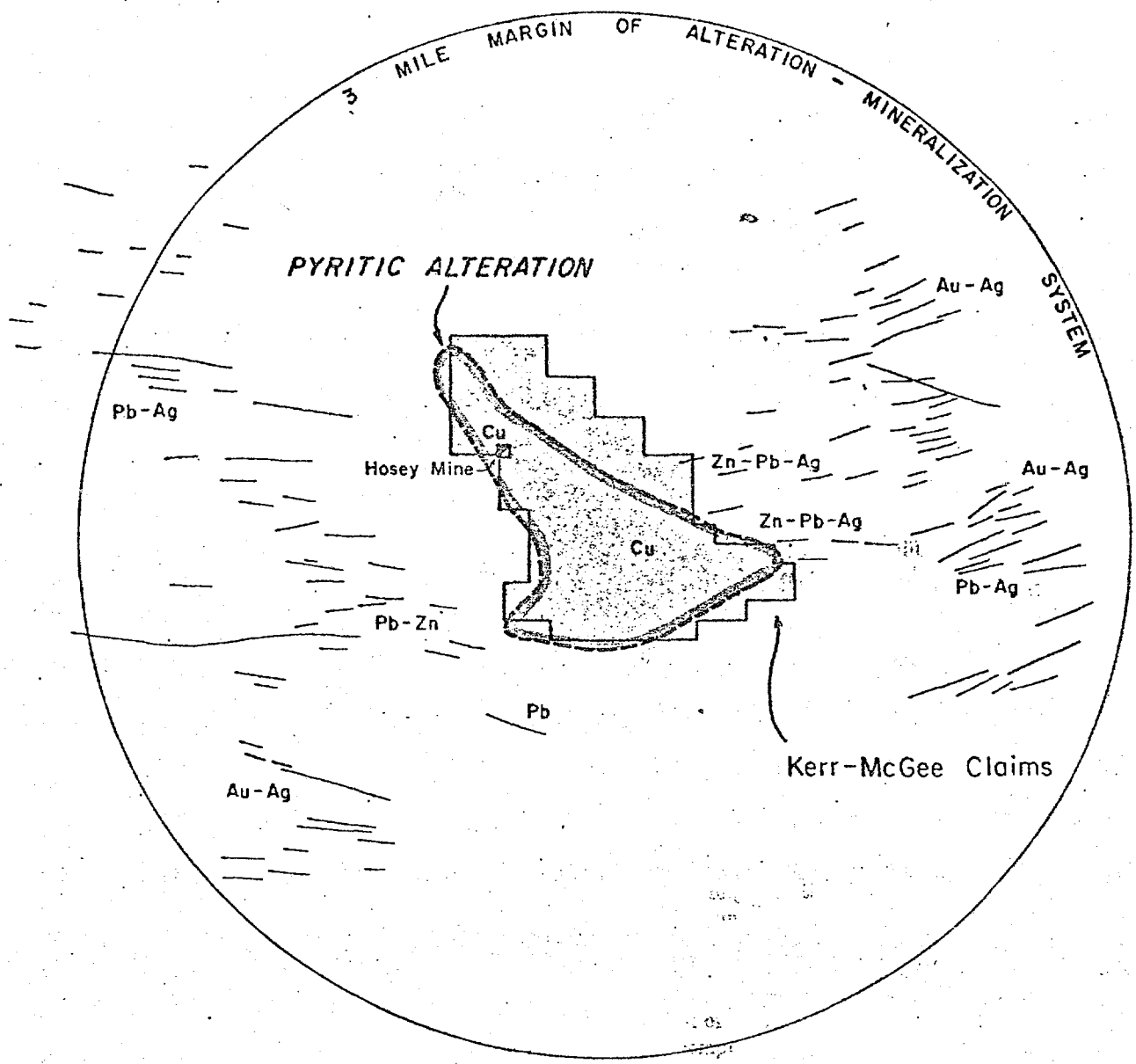
1063-1350', latite porphyry

1350-3402(T.D.) dominant latite monzonite and latite porphyry with some brecciated zones

** 968-1063', late fluidized dark colored Trachyte?

MANSFIELD CANYON
DRILL HOLE MC-3

FOOTAGE	INTERVAL	ppm Cu
26 - 40	14	714*
40 - 100	60	119
100 - 200	100	106
200 - 300	100	128
300 - 320	20	+1,094*
320 - 400	80	109
400 - 470	70	104
		% Cu
*23 - 30	7	0.14
30 - 40	10	0.04
*305 - 312	7	0.18
312 - 314	2	0.41
314 - 320	6	0.09



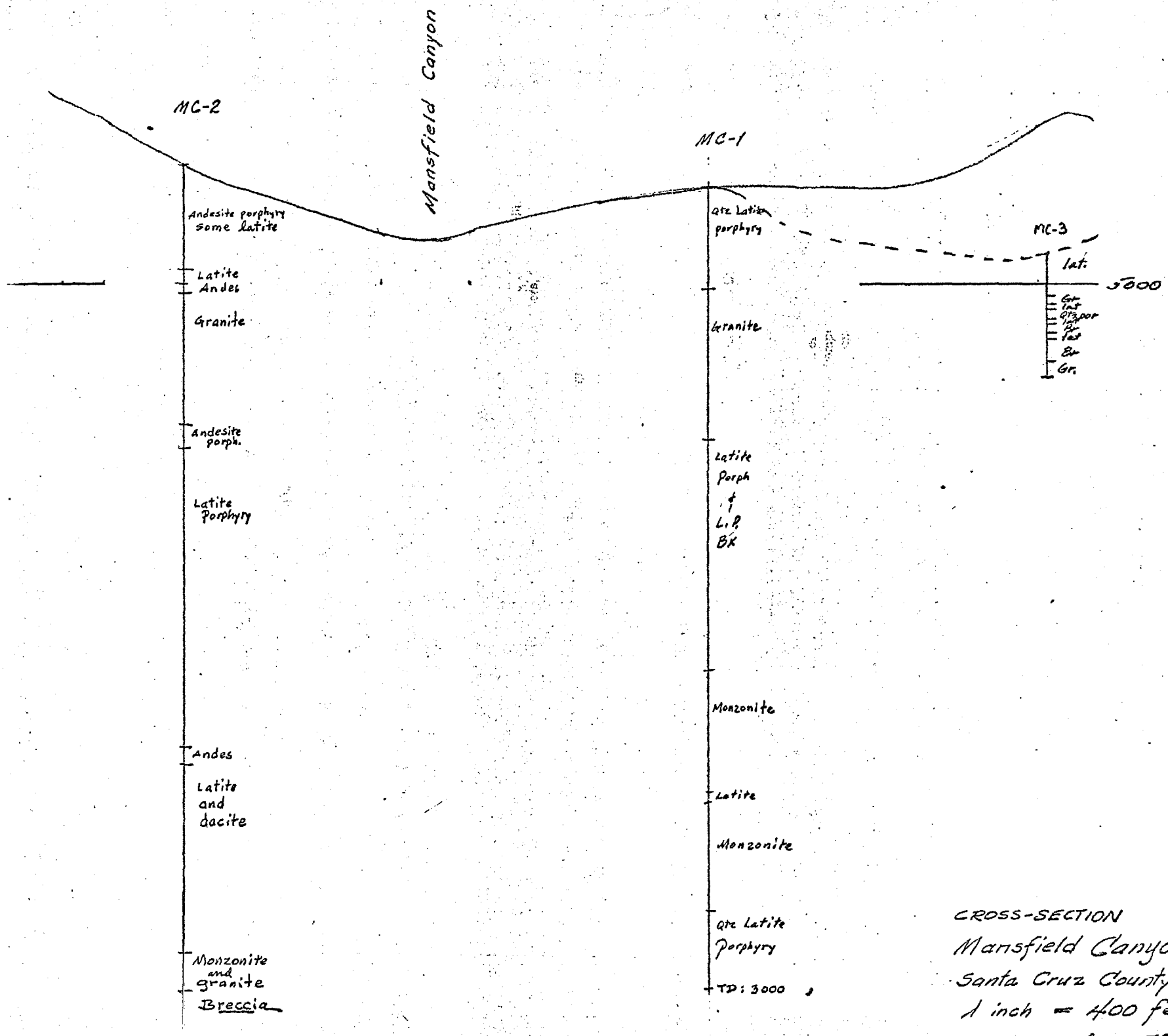
METAL ZONING PATTERN

MANSFIELD CANYON AREA

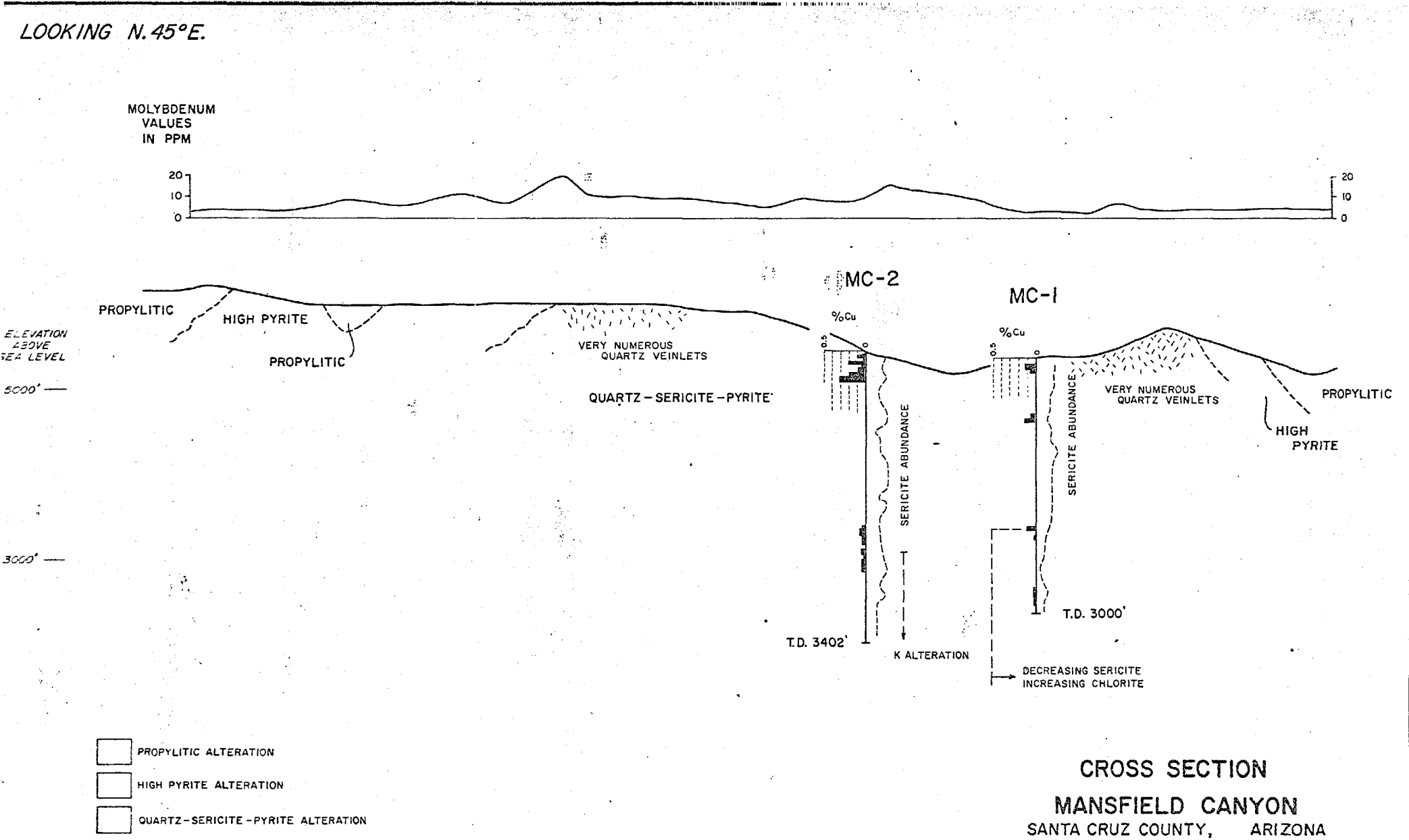
Area 2, Group A, Appendix I

SANTA CRUZ COUNTY, ARIZONA

Scale: 1" = 1 Mile



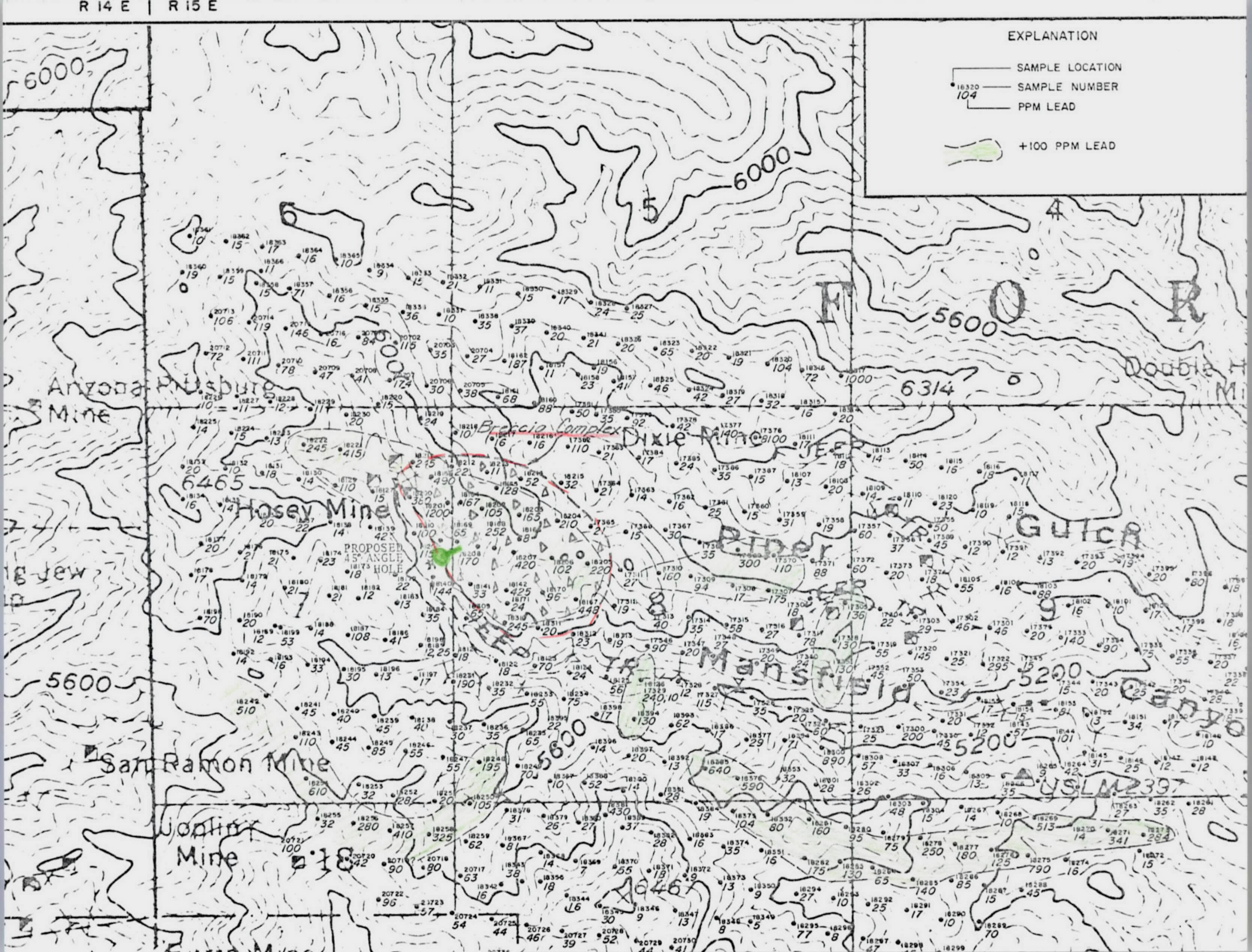
CROSS-SECTION
Mansfield Canyon Project
Santa Cruz County, Arizona
1 inch = 400 feet



CROSS SECTION
MANSFIELD CANYON
SANTA CRUZ COUNTY, ARIZONA

1" = 1000'

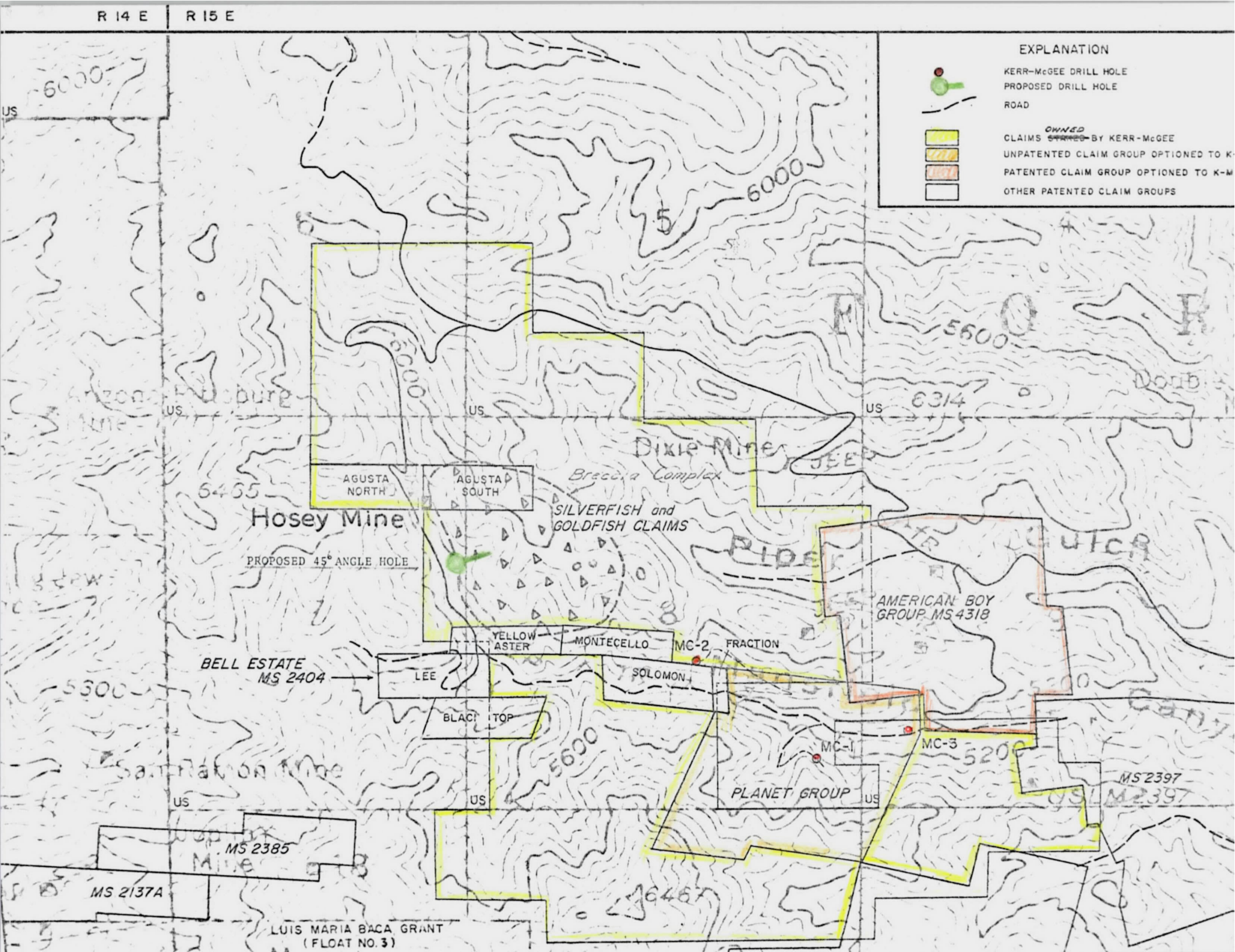
KGH 10 APRIL, 1975

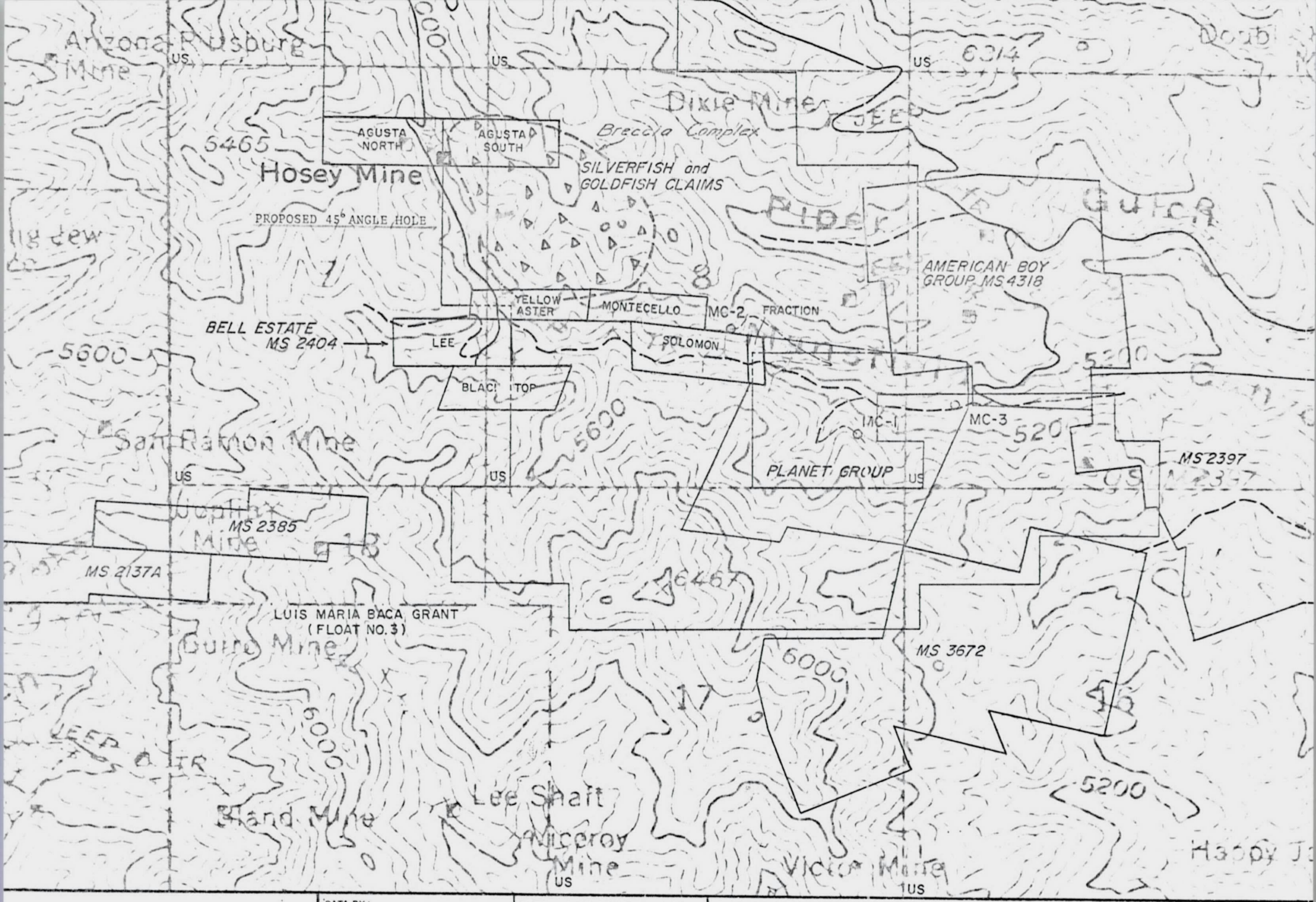

R 14 E | R 15 E
EXPLANATION
SAMPLE LOCATION
SAMPLE NUMBER
PPM LEAD
+100 PPM LEAD
Breccia Complex
Dixie Mine
Hosey Mine
PROPOSED 45° ANGLE HOLE
Arizona Pittsburg Mine
San Ramon Mine
Joplin Mine
Mansfield
Gulch
Double H
USLM 2397
6000
5600
5200
6314
6465
4946

KERR-McGEE CORPORATION MINERAL EXPLORATION DEPARTMENT	DATA BY: ALAN GRANT DRAWN BY: HL NEWMAN	DATE: 1971 SCALE: 1" = 1000'

GEOCHEMICAL LEAD VALUES AT MANSFIELD CANYON
SANTA CRUZ COUNTY, ARIZONA

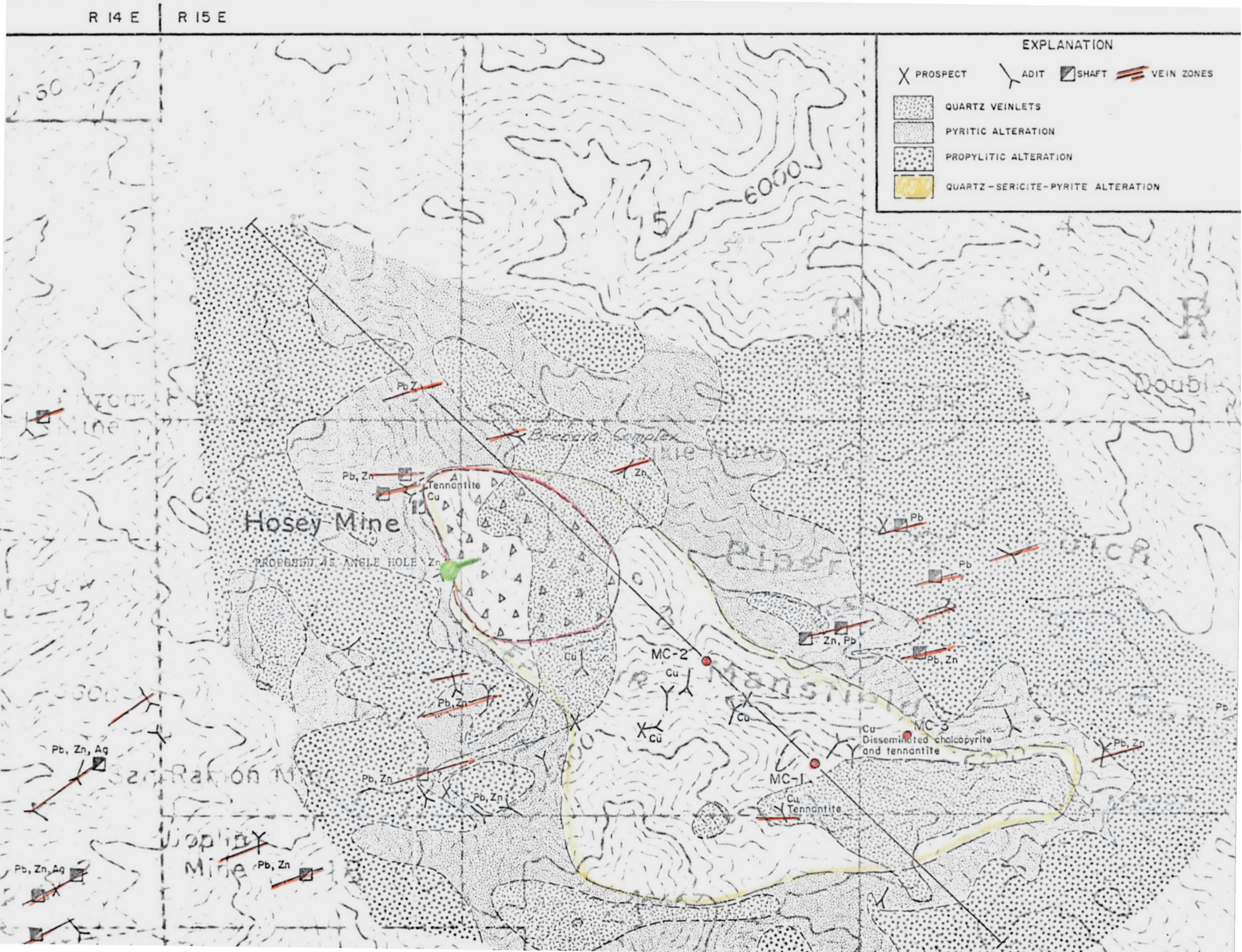
To accompany 1977-1978 assessment memo by R.M. Corn, April 14, 1978


R 14 E
R 15 E
EXPLANATION
KERR-McGEE DRILL HOLE
PROPOSED DRILL HOLE
ROAD
CLAIMS OWNED BY KERR-McGEE
UNPATENTED CLAIM GROUP OPTIONED TO K-
PATENTED CLAIM GROUP OPTIONED TO K-M
OTHER PATENTED CLAIM GROUPS
6000
5600
6314
6465
5300
5200
6467
US
Dixie Mine
Breccia Complex
AGUSTA NORTH
AGUSTA SOUTH
Hosey Mine
PROPOSED 45° ANGLE HOLE
SILVERFISH and GOLDFISH CLAIMS
AMERICAN BOY GROUP MS 4318
YELLOW ASTER
MONTECELLO
MC-2
FRACTION
BELL ESTATE MS 2404
LEE
SOLOMON
BLACK TOP
MC-1
MC-3
PLANET GROUP
MS 2397
MS 2385
MS 2137A
LUIS MARIA BACA GRANT (FLOAT NO. 3)



KERR-McGEE CORPORATION MINERAL EXPLORATION DEPARTMENT	DATA BY:	DATE: FEBRUARY, 1972	MANSFIELD CANYON LAND STATUS SANTA CRUZ COUNTY ARIZONA
	DRAWN BY: HL NEWMAN	SCALE: 1" = 1000'	
	CURRENT TO: JANUARY 1974		

To accompany 1977-1978 assessment memo by R.M. Corn, April 14, 1978


R 14 E
R 15 E
EXPLANATION
PROSPECT
ADIT
SHAFT
VEIN ZONES
QUARTZ VEINLETS
PYRITIC ALTERATION
PROPYLITIC ALTERATION
QUARTZ-SERICITE-PYRITE ALTERATION
6000
5000
Hosey Mine
PROPOSED 45° ANGLE HOLE
Breccia Complex
Tennantite
Cu
Pb, Zn
Pb, Zn, Ag
Pb
Zn
Zn, Pb
MC-2
MC-3
MC-1
Cu
Disseminated chalcopyrite and tennantite
Tennantite
Joplin Mine
Doubl

KERR-McGEE CORPORATION MINERAL EXPLORATION DEPARTMENT	DATA BY: A. GRANT DRAWN BY: HL NEWMAN REVISED: R.M.CORN, FEB. 1972	DATE: 1971 SCALE: 1" = 1000'

MANSFIELD CANYON ALTERATION AND MINERALIZATION
SANTA CRUZ COUNTY ARIZONA

To accompany 1977 - 1978 assessment memo by R.M. Corn, April 14, 1978

KERR-McGEE CORPORATION

District Wrightson-Mansfield Canyon
Hole Number DDH MC-1
Spudded 12 April 1972
Completed 4 October 1973
Total Depth 3000'
Driller Joy Mfg.-L. Machen
Logged By R. M. Corn & K. G. Hatfield

County Santa Cruz State Arizona
Claim Uranus Sec 8 T. 15E. R. 21S.
Elevation Approx. 5360'
Hole Size
Core Size 0-993' NC; 993-3000' NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
0						Quartz	Light grey, fine to	Intense clay alteration in	0-64' Completely oxidized. Limonite stain
15	15	30%				Latite	medium grained porphy-	oxidized zone. Clays and	and in fractures is yellow-brown to orange-
19	4	80%				Porphyry	ritic rock with pheno-	fine-grained sericite are	brown in color with a brownish streak. No
45						45' Fault	crysts of quartz and	dominant although scattered	chalcocite capping observed. Scattered
						2' of gouge	feldspar. Quartz con-	quartz veinlets were ob-	quartz veinlets and limonite filled filled
15-50'	35	100%	20349	.007			tent is relatively low.	served.	fractures are vertical to 20° from vertical.
							Rock is badly shattered		
							to a depth of 46'.		
64									64-69' Several thin 4 to 6" intervals with
									remnant pyrite noted. Rock is badly leach-
								Altered rock appears to be	ed and mostly oxidized with abundant jaro-
								completely converted to	site. Fine-grained disseminated pyrite,
								fine-grained sericite and	approximately 5% or more. Several scattered
								clays. Feldspar pheno-	grains of covellite noted completely re-
						Quartz-		crysts stand out as dark	placing former sulfide, but pyrite is gen-
						Latite-		grey outline against light	erally leached clean.
						Porphyry		grey-tan matrix.	
									73-80' Minor remnant pyrite.
80	30	"	20350	.010					80' Partial oxidation; remnant disseminated
									fine-grained pyrite with numerous spots
									of jarosite discoloration indicating ex-
									treme leaching and partial oxidation.
									Minor, very fine-grained covellite noted
									disseminated in rock.

District Mansfield Canyon Hole Number DDH MC-1 Page Number 2

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
80						Quartz-Latite-Porphyry	Light grey fine to medium grained porphyritic rock. Rock is cut by numerous slips and seams with little offset.	Intense clay alteration. Rock is completely converted to clay and fine-grained sericite. Some pink alunite noted.	Disseminated fine-grained covellite noted. Scattered quartz-pyrite and pyrite veinlets appear vertical or near-vertical.
90	10	90%	20351	.07				Scattered near-vertical quartz and alunite veinlets noted.	90' A thin quartz veinlet shows substantial chalcocite and covellite with minor chalcopyrite in the center of of the chalcocite. Rock is severely leached with thin coatings of chalcocite on pyrite and abundant jarositic discoloration.
100	10	100%	20352	.13			Scattered slip planes at 30° & 60° to core.		105' Disseminated grains of equi-dimensional brownish-black, soft mineral noted. More chalcocite and covellite stain on fracture surfaces.
110	10	100%	20353	.24					109-110' A .50" pyrite-quartz-alunite veinlet at 15° to core carries tennantite or tetrahedrite and substantial covellite. 115' Thin quartz-pyrite-covellite veinlet shows covellite coatings only. However, scattered pieces of core show scattered fine-grained covellite completely replacing former disseminated sulfide.
120	10	100%	20354	.18					

District Mansfield Canyon Hole Number DDH MC-1 Page Number 3

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
120						Quartz-Latite-Porphyry	Greyish-green fine to medium-grained porphyritic rock with minor quartz phenocrysts.	Abundant fine-grained disseminated pyrite. Pervasive sericite and clays.	Weak chalcocite-covellite tarnish noted along fractures. Several thin near-vertical quartz-pyrite-sphalerite veinlets noted.
						124-130' Slip Planes	Numerous slip planes 60° to core and near-vertical.		
130	10	100%	20355	.07				Scattered quartz veinlets noted.	Partial oxidation throughout with spots of jarosite noted. 136' A .50" quartz-pyrite, black sphalerite veinlet noted at 10-15° to axis of core. 137'-144' Thin seams of molybdenite or similar soft silvery sulfide coats slip plane and is not associated with quartz.
140	10	"	20356	.01					
150	10	"	20357	.02					150-155' Scattered thin quartz veinlets contain dark silvery sulfide that appears to be similar to galena but does not have good outer cleavages.
160	10	100%	20358	.02		160-170' Slip Planes	160-170' Numerous near-vertical slip planes in rock.	Partial oxidation.	160-170' Thin quartz-sericite-pyrite veinlets carry minor chalcopyrite and sphalerite with sooty chalcocite coatings
170	10	"	20359	.04				10% or more very fine-grained disseminated pyrite in pervasive clay and sericite alteration.	178' A .25" quartz-pyrite-sphalerite veinlet shows abundant sooty chalcocite or sphalerite.
180	10	"	20360	.02					Partial oxidation, little or no chalcocite mineralization.
190	10	"	20361	.014					
193						193 - Fault 45° to core.	Breccia made up of fluidized granite and quartz-latite-porphyry.	Intense quartz-sericite-pyrite alteration.	
200	10	"	20362	.006					

District Mansfield Canyon Hole Number DDH MC-1 Page Number 4

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
200						Breccia - Fluid-ized Granite	Light grey, fine to medium-grained granite disaggregated and somewhat fluidized.	Rock is converted entirely to quartz, clays, and fine-grained sericite.	Abundant pyrite dominantly disseminated but some pyrite veinlets.
210	10	100%	20363	.004			Scattered fragments of fine-grained material appears to be porphyry.		
211						211-213' Fault 15-30° to core axis.	211-213' Fault plane shows right lateral movement from slickensides in upper part.		Some disseminated grains of black sphalerite noted.
						Mixed Granite-Porphyry Breccia	217-220' Moderately fractured fragments of granite and porphyry are 2 to 4' long.		
220	10	100%	20364	.008					
230	10	100%	20365	.003					
240	10	100%	20366	.005		240-243' Fault Zone	Near-vertical fault. 241-243' Highly broken.	Quartz-pyrite-sericite.	232' Disseminated galena noted associated with sphalerite.
248						Breccia Fault	Fault at 20-30° to core. Gouge exhibits crushed pyrite.		
250	10	100%	20367	.005		Quartz-Latite-Porphyry			250-260' Numerous clay seams and several near-vertical quartz-sericite-pyrite veinlets. Partial oxidation and jarosite stain along fractures.
260	10	100%	20368	.017			Dense rock is dark grey-green color.	Pervasive sericite alteration.	263' Several thin pyrite-dolomite(?) or ankerite veinlets cut core at 90°.
270	10	100%	20369	.012				270' Some light cinnamon colored biotite is present in dense rock. Chlorite and sericite are abundant. Possibly some maghemite.	275' Scattered grains of disseminated chalcopyrite noted in rock with maghemite and chlorite.
280	10	100%	20370	.01				280' Rock shows dominant chlorite, sericite, and clays.	
284							284-291' Highly fractured.		288' Thin near-vertical quartz-sphalerite galena veinlet noted.
290	10	100%	20371	.01					

District Manfield Canyon Hole Number DDH MC-1 Page Number 5

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo	Zn	Rock Type	Rock Description	Alteration	Mineralization
290							Quartz-Latite-Porphyry	Grey-green, fine to medium-grained porphyry with quartz phenocrysts and outlines of feldspar and ferromagnesian minerals.	Pervasive chlorite-sericite alteration. Less disseminated pyrite than in upper part of hole.	Partial oxidation, clays and yellow-orange limonite stain along fractures. Scattered thin quartz-galena-sphalerite-chalcopyrite veinlets noted. Weak disseminated pyrite.
300	10	100%	20372	.02						
310	10	100%	20373	.03						300-310' Minor sooty chalcocite along open veinlets.
313							313' Fracture or slip at 15-20°.		Disseminated maghemite noted.	315' 1" quartz-sericite veinlet with sphalerite, galena, and minor chalcopyrite. Minor sooty chalcocite noted.
320	10	100%	20374	.01						
330	10	100%	20375	.02		.72				
340	10	100%	20376	.01		.15			Minor cinnamon colored biotite noted. Pervasive sericitic alteration; fairly abundant fine-grained disseminated pyrite.	345' Substantial limonite noted along fractures.
350	10	100%	20377	.01						
359							359' Fault Zone 25° to core axis.			
360	10	100%	20378	.01						Weak chalcocite tarnish on pyrite near fractures.
369							Granite Breccia (?)	Contact with fluidized granite is steep 10-20° from vertical.	Granite breccia shows more disseminated pyrite and pervasive sericite.	
370	10	100%	20379	.009						370' Minor jarositic limonite stain and pervasive supergene clays. Rock appears leached.
373							373' Fault Orthoclase-Rich Granite	Pinkish grey, brecciated and disaggregated. No iron magnesian minerals noted.	Scattered 1 or 2 per foot; thin, steeply dipping quartz-pyrite-sericite veinlets noted.	Relatively abundant fine-grained disseminated pyrite.
380	10	100%	20380	.006				380' Pink medium-grained orthoclase-rich rock.	376' Much fresh orthoclase but plagioclase altered to clays and fine-grained sericite.	
390	10	100%	20381	.003				384' Coarse-grained granite; then irregular spots of medium, coarse and fine, suggesting recrystallized breccia.	Fresh orthoclase adjacent to quartz veinlet. Some apparent development of chlorite.	Fairly abundant disseminated maghemite(?) iron oxide that is non-magnetic.
400	10	100%	20382	.001						

District Mansfield Canyon Hole Number DDH MC-1 Page Number 6

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
400						Granite	Brecciated and somewhat dissaggregated ortho-clase-rich granite.	Abundant fresh orthoclase. Scattered quartz-sericite-pyrite veinlets. Plagio-clase altered to sericite	401 Seam of molybdenite at 20° to core shows slickensides at 20° to horizontal.
408	8	90%							
410	10		20383	.001		Brecciated Gran-ite and Breccia	Fluidized granite with rounded fragments, abun-dant irregular frac-tures and quartz vein-lets.	410' Intense quartz-seri-cite and clay alteration of feldspars; abundant quartz.	415' Thin quartz veinlets show tetra-hedrite with a chocolate-red streak, chalcopyrite and pyrite. Also present is a silvery sulfo-salt(?) mineral coating and replacing sphalerite; very soft and sectile.
420	10		20384	.002				420' Fresh orthoclase gradually comes in with much less sericite but fair chlorite noted.	
426		100%				Fault	Fine-grained brecciated granite. Chlorite orthoclase granite.		426' Reddish stained spots around pyrite grains suggest radiation halos.
428	2	90%				Fault			
430	10	100%	20385	.002					
438						Fault			
439						Granite Breccia	White coarse-grained quartz-rich fluidized and brecciated granite.	Pervasive quartz-sericite alteration and supergene clays.	
440	10		20386	.002					440' Numerous horizontal slips and quartz-sericite veinlets. Substantial oxidation and limonite. Some of same sulfo-salt mineral noted previously at 415' is present in quartz veinlets.
443	5	90%							
450	10	100%	20387	.003			Fluidized mixture of fine and coarse-grained granite in breccia. La-ter closely-spaced, shattering.	Pyrite content 6% fine-grained and disseminated. Numerous quartz-veinlets with 15° opposing dip to core.	450' Abundant thin quartz veinlets. 456' Coarse yellow-gray sphalerite in sub-horizontal veinlet.
460	10	90%	20388	.003					
470	10	100%	20389	.003				Fresh orthoclase starts to show. 475' Rock is fine-grained orthoclase-chlorite mater-ial.	
480	10	100%	20390	.003			Irregular mixed fine and coarse-grained gran-ite fragments in fluid-ized granite matrix.	500' Fractured zone with pervasive clays and seri-cite.	Abundant disseminated pyrite. Scattered quartz-pyrite-sericite(?) veinlets. Quartz is dark colored grey.
490	10	100%	20391	.003					
500	10	100%	20392	.007					
502						Fault Zone			
510	10	100%	20393	.003					512' Disseminated dark grey sphalerite noted in granite. 516-520' Silicification; numerous ir-regular quartz veinlets. Some very fine-grained molybdenite.
513						Fault			
520	10	100%	20394	.003					

District Mansfield Canyon Hole Number DDH MC-1 Page Number 7

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
520								Breccia. Large	Breccia composed of	Quartz-sericite-pyrite al-	
								blocks in fluid-	medium-grained frag-	teration. Some fairly	
530	10	100%	20395	.003				ized matrix.	ments in fluidized	fresh orthoclase noted.	530-535' Highly silicified. Several .25"
									matrix.		near-vertical and irregular quartz-
534									534-539' Dark grey-		pyrite-sphalerite veinlets noted.
									green sheared porphyry(?)		Partial oxidation particularly near
539								Fault	Coarse-grained granite.		faults and fractures.
540	10	100%	20396	.006							
											548' Coarse granite with fresh ortho-
										Scattered quartz veinlets	clase exhibits dark minerals with
											orange halos suggestive of radiation
550	10	100%	20397	.002							damage.
557									Coarse-grained granite		557' Minor disseminated chalcopyrite
									cut and surrounded by	Fine-grained fluidized	noted in silicified zones.
									fine-grained fluidized	granite is silicified	
									granitic material.	with more sulfides.	
560	10	100%	20398	.003				Fault	560 Coarse-grained		561' Near horizontal quartz veinlets
									granite.		carry minor chalcopyrite.
											568' Fine-grained molybdenite and chal-
											copyrite noted along a silicified zone
570	10	100%	20399	.003							at 20° to core.
											572' A .25" sphalerite veinlet cuts
										575' Tourmaline noted as	core at 30°.
578								Fault		fairly abundant radiating	
580	10	100%	20400	.003						crystals groups.	580' Partial oxidation, abundant jaro-
											site stain. Minor chalcocite(?) noted
											in near-vertical quartz veinlet.
											588' Near-vertical sphalerite veinlet
590	10	100%	21901	.003							noted.
593								Sheared	593-596' Fine-grained	Abundant chlorite. Scat-	594' Minor chalcopyrite noted in and
								Zone	dark grey-green fluid-	tered quartz veinlets.	near quartz veinlets.
								596-600'Granite	ized porphyry.		597' Minor molybdenite noted in sub-
											horizontal veinlets.
600	10	100%	21902	.006				600"Granite-	600' Abundant irregular		600' Numerous sub-horizontal quartz
								Breccia	quartz veinlets and		veinlets.
									silicification.		608' Substantial oxidation.
610	10	100%	21903	.003							
613								Fault 15°			
620	10	100%	21904	.003				to core	Near vertical fault		
624									and fracture zone.		

District Mansfield Canyon Hole Number DDH MC-1 Page Number 8

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
620						Granite Breccia	Large blocks of fairly coarse-grained granite cut and surrounded by fluidized granitic material.	Quartz-sericite-pyrite.	Partial oxidation, jarosite and limonite stain.
630	10	100%	21905	.003		630' Fault 20° to core.		Fairly abundant clay. Relatively numerous irregular quartz veinlets and silicified zones.	
640	10	100%	21906	.003		Breccia - Fluidized Granite	Smaller granite fragments with considerable silicification.	3-5% disseminated pyrite.	640' Minor fine-grained chalcopyrite and a few scattered grains of a lead(?) mineral noted in silicified zones.
650	10	100%	21907	.003					
653						653' Fault			
657	4	75%							657' Several .25-.50 inch sub-horizontal quartz-pyrite veinlets.
659	2	100%				659' Fault			
660	10		21908	.004			660-670' Highly pyritic chloritized porphyry and granite. Badly sheared with considerable fault gouge.	660' Abundant pyrite and chlorite.	660-670' Scattered quartz-pyrite-minor chalcopyrite veinlets in chloritized rock.
661	2	50%				661' Fault			
663	2	70%				663' Fault			
670	10		21909	.081					
672						672' Fault			
675	3	80%				675' Fault			
676							676' Contact fine-grained fluidized porphyry and granite at 60° to core.		
680	10	100%	21910	.013				Abundant clay alteration.	Partial oxidation; badly leached.
689						689-703' Fault Zone			
690	10	100%	21911	.006			690-703' Gouge and very little recovery.		
703	13	15%							
708		100%							
710	20		21912	.018			Granite fragments(?).	Intense silicification of granite below 710'.	710' Weak disseminated pyrite in intensely silicified granite.
716						716' Fault			
720	10	100%	21913	.008					720' Increasing pyrite content and quartz-pyrite veinlets.
						721' Near-vertical Fault			
725						Quartz-latite Porphyry	725' Intensely silicified porphyritic rock with outlines of medium-grained feldspar phenocrysts.	725' Intense quartz-sericite-pyrite alteration in porphyry.	725' 10% fine-grained pyrite in altered porphyry.
728'						728-729' Badly fractured, near-vertical fractures.			
730	10	100%	21914	.079					730-731' .50-1.0" veinlet of chalcopyrite at 30° to core.

District Mansfield Canyon Hole Number DDH MC-1 Page Number 9

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
730						Quartz-Latite-Porphyry	Medium grey, intensely altered porphyry with 20% former feldspar phenocryst outlines and 5% quartz phenocrysts.	Intense quartz-sericite-pyrite alteration. 10-15% pyrite and relatively coarse-grained sericite.	730-731' A .50-1.0" chalcopyrite veinlet cuts core at 30°. Disseminated pyrite commonly shows chalcopyrite tarnish.
740	10	100%	21915	.61				Quartz crystals developed in vugs.	737' Limonite stain along and near fracture at 30° to core. Some disseminated chalcopyrite partly replaced by chalcocite and bornite noted near fracture.
742						Breccia	Brecciated porphyry with granite(?) fragments.	Extremely coarse-grained sericite in granite fragments.	Limonite stain around chalcocite. Pyrite appears completely fresh.
750	10	100%	21916	Tr.					750' Minor disseminated chalcopyrite noted.
756						Porphyry			
760	10	100%	21917	Tr.					760' Disseminated light grey sphalerite associated with pyrite.
770	10	100%	21918	Tr.		772-776' Breccia			Scattered spots of jarosite stain indicate partial oxidation.
772									
773						773' Fault - 6" gouge @ 15° to core.			
776						Porphyry	Quartz-latite-porphyry similar to above.	Rock is completely altered to quartz-sericite and pyrite.	10-15% disseminated pyrite commonly exhibits chalcopyrite tarnish.
780	10	100%	21919	Tr.					
790	10	100%	21920	.004			Grain size of feldspar phenocryst outlines increase with depth.	Sericite is relatively coarse-grained. Radiating sunbursts of light grey tourmaline noted.	792' Disseminated light grey sphalerite noted.
797						Breccia	Fragments of silicified granite(?).		
800	10	100%	21921	.004			Breccia has numerous open vugs and is very permeable.		800' Coarse pyrite filling irregular vugs and veinlets. Minor amount of white silvery mineral occurring in elongate crystals - brittle; possibly bournonite or boulangerite. Contains lead, copper, zinc and manganese.
810	10	100%	21922	.013					805-820' Scattered spots of limonite noted, closely associated with chalcocite coating and replacing disseminated chalcopyrite.
820	10	100%	21923	.023					

District Mansfield Canyon Hole Number DDH MC-1 Page Number 10

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
820						Quartz-Latite Porphyry	Somewhat fluidized, medium-grained, light-grey porphyry with rectangular outlines of former feldspar phenocrysts and some quartz phenocrysts.	Intense, pervasive quartz-sericite-pyrite alteration. Scattered open vugs with quartz crystals and coarse sericite. 826' Fine clumps of radiating crystals of colorless or light grey tourmaline noted.	Abundant disseminated pyrite; perhaps 10-15% by weight. Partial oxidation with yellow jarositic stained sericite. Pyrite commonly has a chalcopyrite tarnish. 825-828' Irregular, thin vuggy quartz veinlet shows limonite stain and disseminated chalcopyrite coated with covellite. Some disseminated chalcopyrite outside veinlet.
830	10	100%	21924	.010					834' Fine-grained disseminated sphalerite and chalcopyrite coated and partly replaced by covellite and chalcocite.
840	10	100%	21925	.014				Light grey or colorless tourmaline appears to be fairly common.	840-850' Partial oxidation, disseminated limonite stain and bleaching. Sphalerite along several small fractures is coated and partly replaced by metallic chalcocite.
850	10	100%	21926	.035					850-860' Considerable oxidation with jarosite stain and disseminated limonite.
860	10	100%	21927	.008					860-880' Abundant disseminated pyrite but very little chalcocite tarnish although jarositic stain is widespread.
870	10	100%	21928	.003			870-873' Several slip-planes with minor gouge noted.	Tourmaline is darker grey in color. Pyrite dominantly occurs as pyritohedrous in vugs.	
880	10	100%	21929	.008			Rock contains numerous small open vugs lined with quartz and pyrite crystals.	Former feldspar phenocrysts appear to be altered to pyrophyllite rather than sericite.	880' Several near-vertical thin pyrite veinlets noted. 888-890' Relatively abundant disseminated limonite associated with minor chalcocite.
890	10	100%	21930	.027					
892						Breccia	Intensely altered fragmental breccia, formerly coarse-grained granite and porphyry.	Breccia exhibits intense pervasive quartz and sericite alteration with relatively coarse-grained pyrite.	892' A few thin flakes of molybdenite are associated with clusters of tourmaline and quartz crystals.
900	10	90%	21931	.006					

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Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
900						Breccia	Mottled white and dark grey fragmental rock that may have been former coarse-grained granite and porphyry. Rounded outlines suggest pebbles and cobbles.	Rock is completely altered to quartz and sericite. Numerous vugs lined with quartz crystals.	Irregularly distributed, fairly abundant coarse-grained pyrite, as well as fine-grained disseminated pyrite. Scattered jarosite stain indicates partial oxidation.
910	10	100%	21932	.007		910-911' Porphyry 911' Breccia	A 1' thick sill of porphyry noted in breccia.	Carbonate mineral dolomite(?) present in center vug in leached sericitized former feldspar phenocrysts.	910' - Dark grey disseminated sphalerite noted.
919		100%				919-925' Zone of several fractures and faults.			919-925' Chalcocite tarnish on pyrite in and near fault zone.
920	10		21933	.007			921' Breccia with intermittent 6"-1' zones of porphyry with highly irregular contacts.		
925	6	80%							
930	10	100%	21934	.005					935' Coarse pyrite fills irregular openings in breccia.
937						937' Fault zone Poor recovery			
939						939-949' Porphyry			
940	10	90%	21935	.005					Partial oxidation with jarosite stain.
949						949' Breccia	Breccia has a number of fragments of fine-grained non-porphyritic rock and .5-1.0" fragments completely converted to coarse-grained sericite.	Below 950' sulfide content appears to diminish. Numerous vugs and leached holes in breccia.	950' Sulfide content diminishes.
950	10	100%	21936	.004					
960	10	100%	21937	.006					
964						964-965' Fault Zone			964' Coarse pyrite exhibits chalcocite tarnish in fault zone.
970	10	100%	21938	.007			Below 970' breccia is dominantly porphyry fragments.		
980	10	100%	21939	.003					980' Increased pyrite content. Variable but generally 5-10%.
984						984-985' Fault Zone.		Rock completely converted to quartz-sericite and pyrite.	
992						992' Fault 10° to core.			
993	13	100%	21940	.004					

993 FEET IS END OF HOLE

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Drilling resumed at 983' on July 1 , 1973

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu (ppm)	Mo		Rock Type	Rock Description	Alteration	Mineralization
982	to									
1000	18	100%	24776	52			Quartz Latite Breccia	Almost 100% sericite and quartz. Distribution of sericite suggests former presence of feldspars, now completely altered. Sericite flakes 1mm diameter common throughout. Quartz is seen in euhedral masses 2-3mm diameter and in veinlets from hairline to 2-3mm width. Numerous cavities generally somewhat flattened are scattered about.	Intense quartz-sericite. Probably some alunite Cavities generally lined with tiny (1-3mm) quartz crystals, sericite flakes, and sometimes pyrite.	4-5% disseminated sulfides, all pyrite. Pyrite in cavities generally has a modified pyritohedron crystal habit, if not irregular or massive.
1025	25	100%	24777	265				1020-1025' Breccia fragments discernible with some fragments 3-4" across having coarser (up to 8mm) feldspar remnants than elsewhere. More fragmental below 1025' as well.	1038' Breccia fragment is largely alunite; harder than kaolin anyway, which it resembles.	
1050	25	100%	24778	283					1058' Fragment outlines intensified by pale green sericite.	

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
				ppm						
1050	to									
1075	25	100%	24779	338			Quartz Latite Breccia	Very light grey, as above.	Intense quartz-sericite.	4-5% sulfide almost entirely pyrite, both disseminated and in veinlets.
1100	25	100%	24780	93					Some very fine material may be kaolin rather than sericite.	1106' Pyrite veinlet 10-15 mm wide has thin coating of chalcocite.
1125	25	100%	24781	368						1132' Very thin, silvery grey coatings of chalcocite on pyrite.
1150	25	100%	24782	51					Soapy, very soft material here is talc, fairly abundant.	
1175	25	100%	24783	59			1175-1198' Quartz Latite Porphyry	1180' Transition to moderately darker (medium grey) color. Material has finer, more even texture than above. Feldspar remnants more easily identified; appear almost equi-dimensional.		
1200	25	100%	24784	73			1198-1320' Breccia	As above, very light grey. Where brecciation is less intense, this unit resembles the latite porphyry noted between 1175 and 1198', although the feldspars are not quite as sharply defined.	Quartz-sericite.	1209' Sphalerite, barite, minor siderite in cavity.
1225	25	100%	24785	42						
1250	25	100%	24786	26						1268' Hematite and barite with pyrite, quartz, sericite.
1275	25	100%	24787	53						
1300	25	100%	24788	150						

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu (ppm)	Mo		Rock Type	Rock Description	Alteration	Mineralization
1300	to						1320-1334'	As between 1175-1198'.	Quartz-sericite. Intense	4-5% pyrite disseminated in the more
1325	25	100%	24789	63			Quartz Latite	Medium grey, finer	quartz flooding may consti-	porous zones of the breccia units.
							Porphyry	texture.	tute as much as 50% of the	3-4% pyrite in the non-brecciated
									unit in some places, as at	units.
							1334-1357'	As above 1320'.	1336', where a scattering	
							Latite		of minor secondary ortho-	
1350	25	100%	24790	130			Breccia		clase appears.	
							1357-1380'	Grades from very light	1372' Talc or serpentine:	
							Latite	grey to dark grey at	dark color may be attribut-	
							Porphyry	1372-1373'. Grey at	able to some secondary bio-	
1375	25	100%	24791	308				1374'.	tite in this interval.	
							1380' Latite	As above.		1380' Pyrite content has dropped off
							Breccia			to 3-4% in breccia zones as well.
1400	25	100%	24792	567						
1425	25	100%	24793	93						
									1445-1450' Abundant dark	
1450	25	100%	24794	167					grey tourmaline clusters.	
1475	25	100%	24795	237						
1500	25	100%	24796	87				1500'-1600' Gradual		
								transition to tighter		1520' Chalcopyrite crystals in cavities
1525	25	100%	24797	355				denser breccia. Frag-		with pyrite and well-developed quartz
								ments discernible but		crystals.
								finer textured, less		Again at 1532'.
								cavities.	1539' Tiny scalenohedro of	
1550	25	100%	24798	68					calcite.	
1575	25	100%	24799	133						
1600	25	100%	24800	44					1612' Tiny radiating	Some chalcopyrite grains scattered
									clusters of tourmaline.	in zones with tourmaline.

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Depth	Int.	Core Rcvy %	Samp. No.	Assays PPM Cu (ppm)	Mo		Rock Type	Rock Description	Alteration	Mineralization
1600	to						Latite	Grey to light grey;	Quartz-sericite with scat-	3-4% sulfides, mostly disseminated
1625	25	100%	25801	62			Breccia	fragments of generally	tered clusters of radiating,	pyrite but including some chalco-
								fine-textured latite	light grey tourmaline crys-	pyrite grains as well.
								set in tight pattern	tals, generally accompanied	
								with sericitic matrix	by talc (or kaolin?) and	Some sulfide is in veinlets with
								between. Much of rock	chlorite, frequently accom-	quartz, as at 1633'.
								appears more like	panied also by grains of	
								fluidized breccia with	chalcopyrite.	
								very obscure fragmental	1636' Minor veinlet of pink	
								boundaries.	orthoclase.	
1650	25	100%	25802	182						
1675	25	100%	25803	75						
1700	25	100%	25804	48				Brecciated nature of		
								this rock is very ob-		
1725	25	100%	25805	79				scure in much of the		
								core. Pulverized frag-		
1750	25	100%	25806	37				ments and matrix are		
								identical.		
1775	25	100%	25807	32					1775' Minor gypsum on slick-	4-5% pyrite, disseminated.
									enside surface.	
									1780' Abundant gypsum.	
								1791-1798' Numerous		
1800	25	100%	25808	41				fracture surfaces with		
								slickensides and		
1825	25	100%	25809	228				chlorite.		
1850	25	100%	25810	208					1852' Gypsum veinlets en-	
								1860-1880' Gradual	close an ANHYDRITE SEAM	
1875	25	100%	25811	43				transition from grey	1/4" thick.	
							1880'	to reddish-brown due	Top of anhydrite zone.	
1900	25	100%	25812	33			Monzonite	to orthoclase replace-	Abundant orthoclase.	
								ment of plagioclase.		

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Depth	Int.	Core % Rcvy	Samp. No.	Assays Cu (ppm)	Mo		Rock Type	Rock Description	Alteration	Mineralization
1900	to						Monzonite	Brown and grey. Crys-	Orthoclase - anhydrite.	4-5%, finely disseminated sulfides,
1925	25	100%	25813	166				tals and matrix gener-		mostly pyrite.
								ally an even color with	Strong potassic alteration.	
								gradual transition from		
								one color to another		
								reflecting a gradual		
								shift between orthoclase		
								and plagioclase pre-		
								dominance.		
								1918-1924' Scattered	1918' Some chlorite with	
								grey-green zones with	pyrite.	
								chlorite accompanying		
								pyrite. Minor amounts		
								common elsewhere, but		
								not enough to effect		
								overall color.		
1950	25	100%	25814	43				1950' Chlorite abundant		
								along veinlets or frag-		
								ment boundaries; such		
								boundaries generally		
								very obscure.		
								1950-1960' Transition	Shift from strong potassic	1960' 2-3% disseminated pyrite.
								to light grey with	to sericitic alteration.	
								scattered or dissem-		
								inated clusters of		
								chlorite with pyrite.		
								Matrix is sericitic.		
								Orthoclase disappears.		
								Some grey argillic-		
								sericitic remnants of		
								feldspars.		

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Depth	Int.	Core Rcvy %	Samp. No.	Assays Cu	Assays Mo		Rock Type	Rock Description	Alteration	Mineralization
				(ppm)						
1950	to						Monzonite			
1975	25	100%	25815	865			1974-1978' - Vein-Breccia Zone	Open cavities lined with quartz and sulfides.		1974-1978' Sphalerite and chalcopyrite with pyrite in quartz vein zone.
		----------		% Cu	--------		1978' Monzonite	Light to 1984'.	Chloritic-sericitic.	
1985'	10	100%	25816	.72				1989-1994' Brownish-grey with abundant orthoclase. 1994-2014' Grey and greenish-grey with sericite plagioclase traces of chlorite.	Orthoclase noted.	
2000	15	100%	25817	.01						
							2014-2025' Latite Porphyry	Grey, dark and light, argillic remnants of feldspar in a grey matrix of argillic material. Less than 2% quartz phenocrysts. Some chloritic books of altered biotite or possibly augite. Maximum feldspar development 4-5mm.	Argillic - sericitic. 2020' Minute salmon-colored plates, probably barite, in cavity.	2-3% disseminated pyrite.
		----------		(ppm)	--------					
2025	25	100%	25818	115			2025' Monzonite	As above, grey, some greenish zones.	Some orthoclase at 2039'; otherwise mostly sericitic alteration.	2-3% disseminated sulfide, mostly pyrite. Some tarnish on pyrite; possibly traces of chalcopyrite.

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Depth	Int.	Core Rcvy %	Samp. No.	Assays Cu (ppm)	Mo		Rock Type	Rock Description	Alteration	Mineralization
2025	to						Monzonite	Mostly grey, some	Sericitic. Some chloritic	2-4% sulfides, mostly disseminated
2050	25	100%	25819	157				greenish-grey. Breccia	alteration. At 2050', color-	pyrite. Some tarnish on pyrite;
								fragments sometimes	less to black crystals of	possibly traces of chalcopyrite
								outlined with traces	tourmaline.	as well.
								of chlorite.		
							2056-2063'	As in the zone		
							Latite	2014-2025'.		
							Porphyry			
							2063-2092'	As in the zones 1978-		
							Monzonite	2014', 2025-2056', etc.		2067' Open breccia cavity lined with
2075	25	100%	25820	251						pyritohedrons. Similar fracture opening
										at 2068' is lined with cubes of pyrite.
							2092-2097'	Very dark green and	Chloritic	Chlorite abundant in both.
							Andesite	grey, almost purple.		2092-2097' 2% pyrite.
							Dike			
							2097' Monzon-	Light grey, sericitic		2-3% disseminated pyrite. Some
							ite	to 2115', where abrupt		chalcopyrite visible in veinlets,
2100	25	100%	25821	138				change to dark brown-		but very uneven distribution.
								ish-grey occurs with		
								abundant orthoclase	2115' Abundant orthoclase	
								and some chlorite.	and some chlorite, minor	
									sericite, only faint traces	
									of magnetite.	
2125	25	100%	25822	170				Light grey, more seri-		
								cite below 2126', with		
								intermittent alternating	2132' Pale green alunite,	
2140	15	100%	25823	400				light and dark zones	soft, amorphous.	
								below 2135'. Abundant		
2150	10	100%	25824	600				orthoclase @ 2155-2164'.		

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Depth	Int.	Core Rcvy %	Samp. No.	Assays ppM Cu	Assays Mo		Rock Type	Rock Description	Alteration	Mineralization
2150	to									
2160	10	100	25825	200			Monzonite	Light grey, sericitic	Veinlets are numerous and	2-3% sulfides, mostly pyrite both
2170	10	100	25826	210				zones grading to dark	commonly exhibit anhydrite,	disseminated and in veinlets. Some
2180	10	100	25827	244				brown zones rich in	pale green alunite, and	chalcopyrite in veinlets as well, but
								orthoclase.	sulfides.	very uneven distribution.
2190	10	100	25828	119					The sericitic matrix com-	
2200	10	100	25829	436					monly contains clusters of	2202' Splash of chalcopyrite in veinlet
2210	10	100	25830	1900					tiny, black radiating tour-	
2220	10	100	25831	200					maline crystals. Tourmaline	
									is common in some veinlets,	
2230	10	100	25832	200					particularly 2228 to 2238'.	
2240	10	100	25833	100						
2250	10	100	25834	200						
							2257' Latite	Dark grey - same unit		
2275	25	100	25835	145			Porphyry	as 2014-2025', and	Matrix is soft - probably	2% pyrite in hairline veinlets.
								2056-2063', but some-	mixture of alunite and kao-	
								what darker, probably	lin or fine sericite. Feld-	
								because of more biotite,	spars and some pyroxenes	
								less chlorite in matrix.	outlined with alunite, epi-	
								Some biotite flakes	dote; some biotite flakes,	
								with epidote. Feldspars	Weak to moderate magnetite,	
								generally replaced by	possibly an original con-	
								alunite. Some ferromag	stitute rather than an al-	
								outlines discernible.	teration product.	
2300	25	100	25836	127			2300' Monzon-	Grey, sericitic, as	Alunite and sericite, some	2-3% sulfides, mostly pyrite.
2325	25	100	25837	91			ite	above.	chlorite, some quartz-pyrite	
2350	25	100	25838	63					veinlets. Minor tourmaline,	
									minor anhydrite.	

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Depth	Int.	Core % Rcvy	Samp. No.	Assays PPM Cu	Assays Mo		Rock Type	Rock Description	Alteration	Mineralization
2350	to						Monzonite	Light grey, sericitic.	Alunite and sericite matrix	2-3% sulfides mostly pyrite with occa-
2360	10	100	25839	130					with veinlets of quartz and	sional bornite tarnish on pyrite. Rare
									pyrite; some anhydrite.	grain of chalcopyrite in some veinlets.
									Minor tourmaline and chlor-	Pyrite is both disseminated and in
2370	10	100	25840	327					ite.	veinlets with quartz.
							2374-2398'	Dark green at angular	Propylitic alteration. Ex-	1% sulfide - all pyrite.
							Latite	contact; dark grey be-	cept for biotite, no ferro-	
							Porphyry	low. Texture is some-	mag minerals are recognized.	
2380	10	100	25841	178				where between granular	However, where alteration	
								and a true porphyritic	is more intense adjacent to	
								one, with some aphani-	a veinlet at 2393', chlorite	
								tic matrix present.	and sericite are both abun-	
									dant in the matrix material.	
2390	10	100	25842	233					Hence, the conclusion that	
									ferromags remained virtually	
									fresh in the aphanitic ma-	
									trix, prior to the formation	
									of the veinlet. Some pyrite	
									as well as weak magnetite	
									are disseminated throughout.	
							2398'	Light grey to 2410' and	Sericitic at top - ortho-	2% sulfide, mostly pyrite.
2400	10	100	25843	104			Monzonite	gradually becoming	clase and green alunite be-	
								darker with orthoclase	low 2410'. Abundant tourma-	
2410	10	100	25844	360				and green alunite.	line at 2405', diminishing	
								Little evidence of	to negligible at 2420'.	
								brecciation.	Minor anhydrite.	
2425	15	100	25845	72						

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Depth	Int.	Core Rcvy%	Samp. No.	Assays PPM Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
2425	to									
2450	25	100	25846	48			Monzonite	Dark brownish-grey with abundant secondary orthoclase set in a grey to grey-green matrix of alunite.	Orthoclase-alunite-negligible anhydrite. No magnetite.	2% pyrite.
								2451-2472' Sericitic, light grey zone with minor to moderate orthoclase.	Sericitic zone has minor tourmaline clusters.	
								2472-2473' Seam of white, sugary gypsum.	Gypsum seam probably contains some anhydrite.	
2474	25	100	25847	116				2475-2480' Abundant orthoclase.		
								2480-2495' Light grey sericitic zone.	Minor tourmaline in sericitic zone.	
								2495' Dark brownish-grey with abundant orthoclase and biotite as above 2451'.	Weak to moderate magnetite with biotitic zones.	
2500	25	100	25848	184				Very coarse textures. Brecciated "	Some zones have abundant chlorite below 2530'. Feldspars in these zones are more sericitic. ~~No magnetite~~.	2-3% pyrite, mostly in veinlets but some disseminated.
2525	25	100	25849	292				2530' Some zones are greenish-grey with chlorite.		Strong Mgt in Bx Intersections @ 2520
2550	25	100	25850	228				2555' Mostly greenish-grey below with abundant chlorite.		
2575	25	100	25851	201				2588' Light to medium green and grey.	2588' No fresh feldspar; all chlorite, or perhaps green alunite and sericite; minor quartz.	
2600	25	100	25852	455						

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Depth	Int.	Core Rcvy %	Samp. No.	PPM Cu	Assays Mo		Rock Type	Rock Description	Alteration	Mineralization
2600										
2625	25	100	25853	382			Monzonite	Greenish-grey to 2618'.	Chlorite-sericite.	2-3% pyrite.
								Below this, dark brown	2618' Orthoclase, biotite,	
								with abundant ortho-	magnetite.	3-4% pyrite.
2650	25	100	25854	120				clase, biotite and		
								magnetite. Orthoclase	2665' Minor epidote veinlet.	2663' Veinlet
2675	25	100	25855	344				crystals up to 12mm		
								diameter.	2682' Scattered tourmaline	
									needles.	
2700	25	100	25856	346			2696-2703'	Greenish-grey, mostly	Chlorite, sericite.	3-4% sulfides, mostly pyrite, both
							Latite	aphanitic.		disseminated and in veinlets.
							2703-2712'	Brownish-grey, as above.		
							Monzonite			
							2712' Quartz	Transitional contact to	2713' Calcite in some vein-	
							Latite	greenish-grey, aphani-	lets.	
							Porphyry	tic. Numerous minor		
								slickensides and vein-		
								lets, with minor zones		2721' Trace of sphalerite accompanies
								(up to 18") of monzon-		chalcopyrite and pyrite in veinlet.
2725	25	100	25857	827				ite. Becomes porphyri-		
								tic at 2738', with	Feldspars largely altered	
								plagioclase laths up	to sericite.	
								to 4mm set in aphanitic		
2750	25	100	25858	624				matrix. Equidimensional		
								quartz phenocrysts up	2757' Matrix surrounding	2757' Trace of sphalerite in calcite-
								to 3mm constitute up to	some veinlets is mostly	anhydrite veinlet.
								5% of unit in some	alunite.	
								zones, but absent else-		
								where.		
2775	25	100	25859	529				Breccia zone 2775-2778.	Calcite and anhydrite in	
									breccia.	

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Depth	Int.	Core % Rcvy	Samp. No.	PPM Cu	Assays Mo		Rock Type	Rock Description	Alteration	Mineralization
2775	to						Quartz Latite	Grey to greenish-grey.		2-3% disseminated sulfides, mostly
2800	25	100	25860	280			Porphyry	Some zones less than 2'		pyrite. Some in veinlets as well.
								thick moderately brec-		The minor copper values are contained
								ciated. Moderate vari-		in chalcopyrite in veinlets or rarely
2825	25	100	25861	314				ation from almost aphan-	Sericitic- generally neg-	in a light tarnish of bornite on
								itic to typically por-	ligible chlorite, but	other sulfide grains.
								phyritic to almost	enough to give some color	
2850	25	100	25862	413.				granular. Generally	to rock. Veinlets of cal-	
								only moderately frac-	cite and anhydrite are	2872' Bornite, possibly covellite,
								tured. Below 2875'	common.	and chalcocite on pyrite with traces
2875	25	100	25863	535				zones of aphanitic,		of pale green clay, probably a copper
								fractured material	2879' Barite with calcite,	salt.
								more common than por-	anhydrite and quartz.	
								phyritic zones.		2892' Minor sphalerite.
2900	25	100	25864	498						
2925	25	100	25865	424				Quartz-latite apparently	Alunite commonly replaces	
								intruded older monzon-	feldspars several zones.	
2950	25	100	25866	266				ite.	2952' Gypsum plates in	
									cavity. Some calcite.	
2975	25	100	25867	346						2% sulfides, mostly pyrite in fine,
										disseminated grains.
									2995' Gypsum in cavity.	
									Alunite in matrix.	
3000	25	100	25868	428						
							3000	FEET IS END OF HOLE		

KERR-McGEE CORPORATION

District Wrightson (Mansfield Canyon)
Hole No. MC - 2
Spudded July 30, 1974
Completed March 7, 1975
Total Depth 3350'
Driller Joy Mfg.
Logged By U. L. Smith

County Santa Cruz State Arizona
Claim Sec. 8 T.21S R. 15E
Elevation
Hole Size
Core Size NC
Hole Angle Vertical
Collar Coords.

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Assays Mo		Rock Type	Rock Description	Alteration	Mineralization
7-20'	13'	100%	30841	.02			Andesite (?) Porphyry	Andesite (?) porphyry rock texture largly destroyed-some porphyritic texture preserved. 20-25% pseudomorphs after plag laths in chalky white to yellow brown matrix. Scattered black-brown fresh biotite books 2-3mm in size and scattered 1mm grains of magnetite are present. Biotite observed fresh immediately adjacent to vnlt. Bio 2-4%. 33'-35' ground up zone Falul(?)	Total oxidation kaolin (clays)-sericite, quartz and limonite. Mostly kaolin and clays after plag and matrix some sericite present. Hematite coats magnetite grains. Hematite veins with limonite along margins most with bleached halo. Probably former pyrite-sericite veinlets (?) Abundant limonite stain. ~5-6 veinlets per 10 feet.	
20-35'	15'	100%	30842	.03						
35-54'	19'	100%	30843	.03			Quartz, latite porphyry	Change in rock texture at 35' rock is more porphyritic - 35-45% plag laths with no remaining biotite below 40' plag phens take on greenish cast due to increased sericite and possible alunite.	35'-39' strong hematite flooding of matrix with kaolin-sericite replacing plag. Increasing sericite with possible alunite (?) waxy, light green mixture (?) sericite-kaolin-alunite (?) Leisergarg rings developed in core. At 51' is a 1 foot unoxidized interval in which fine chalcocite coats and replaces disseminated pyrite grains ~3-4% pyrite-chalcopyrite.	
54-70'	16'	100%	30844	.17			Quartx, latite porphyry	Latite prophyry with ~ 30-35% phens of plag	Pervasive sericite-kaolin alunite (?) after plag and	Pseudo-morphs of sericite-kaolin vague sericite pseuds after bio.

District Wrightson (Mansfield Canyon) Hole Number MC - 2 Page Number 2

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
									with minor biotite. Green plag pseudomorphs 3-10mm with tan biotite pseuds 2-5mm in light grey white, pinkish matrix. Bio pseuds blend in with matrix, difficult to see.	Abundant sericite and kaolin in matrix. Contains 2-4% disseminated pyrite with coating of chalcocite.	
70-85'	15'	100%	30845	.08				Andesite porph.	70-75' Dark green chloritized zone along near verticle shear. 75-80' Hornblende (?) andesite porph. 25% plag lath and 3-5% yellow-green amphibole pseudomorphs. 83'-87' ground up fault zone.	Pervasive sericite light gray-white plag pseuds. Yellow-green amphibole peuds-sericite (?) and epidote (?). ~1-2% disseminated pyrite with minor chalcopyrite coatings chlorite with minor red hematite 70-75'	
85-100'	15	100%	30846	.02				Quartz-latite(?) porph.	Green crowded latite porphyry ~40% phens light green plag pseuds and rare amphibole pseuds.	Pervasive sericite with alunite (?) after plag sericite with chl. and suls. after biotite-amphibole disseminated pyrite with tr. cc. Rare hairline cc sericite vnlt.	
100-125'	25'	100%	30847	.08				Andesite (?) porph.	Rock becomes darker green chl in matrix(?) phenocrysts more ragged to ~112' below 112' rock is bleached along prominent fault fractured zone.	Pervasive sericite with chlorite(?) kaolinite abundant near sheared fractured interval. Abundant disseminated pyrite and scattered thin pyrite veinlets 5mm Cpy-cc veinlet at 124' at 30° axis to core.	
125-150'	25'	100%	30848	.27					Light grey to 136' badly broken and faulted 125-129' and 131-133' white plag laths in light grey matrix. 135-145' abundant shearing and breaking greenish grey to tan rock.	Pervasive sericite with chlorite minor. Minor chlorite occurs after amphibole (?) phens. Disseminated pyrite cubes and grains with associated white kaolin common trace cpy. disseminated miror thin pyrite vnlts.	
150-175'	25'	100%	30849	.04				Latite(?)porph.	Latite(?) porphyry 15% plag laths 3-5mm buff-brown with 3-5% amphibole chlorite 2-5mm in light greenish grey aphantic	Intense sericite with minor chlorite after amphibole. Abundant disseminated pyrite and tr. cpy.-white kaolin associated with disseminated sulfides.	

District Wrightson (Mansfield Canyon) Hole Number MC - 2 Page Number 3

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
									matrix badly broken 153-162'		
175-200'	25'	100%	30850	.04					As above ~190' below 190' rock is light green with texture more destroyed.	Intense sericite with chlorite. Abundant disseminated pyrite minor disseminated galenor and sphalerite. Thin quartz-pyrite-gr-sl veinlets 1-3mm at 188-192' tr. cc and py at 198'	
200-225'	25'	100%	30851	.11					~ 20-25% plag pseuds. in light green matrix. pyrite fine galena vnlts.	Intense sericite with chl. abundant vugs 202-209'. Abundant thin cpy-py 2-3mm vnlts 215-220'. Abundant disseminated 220-225'	
225-250'	25'	100%	30852	.02					As above to 228'. 228' fresh black biotite books join plag and amphibole phenocrysts 229-236' badly sheared zone-high angle fractures 244-247' gradational change to fresh appearing rock. Below 247' dark grey-purplish	Sericite to 244'. Abrupt drop in sulfides at ~228'. Below 244 very little sericite possibly some biotite after hornblende.	
250-275'	25'	100%	30853	.09				Dacite proph (?) Andesite porph.	black wi 20% plag phens and 5-10% biotite in very fine aphanitic with possible ortho matrix. with abundant mgt. both hornblende, and bio phens. Rock has ~ 30-39% phens At ~267' is near verticle contact with a more crowded porphyry latite(?) with ~ 50% phens Quartz, latite, porph.	Apparently fresh rock to ~258' with possible epidote. 258-268' gradational alteration with plag, sericite and kaolin and hornblende - chl and sericite and mont (?) and finally biotite sericite. Matrix alters to quartz sericite chl. and mgt pyrite. Latite (?) is pervasively sericitized with abundant disseminated pyrite. Very minor disseminated cpy. in dacite (?) fresh. Thin pyrite sericite veinlets ~2/10feet.	
275-300'	25'	100%	30854	.14				Quartz,latite(?) Porph,andesite	Crowded porphyry to 277'. Badly broken latite (?) porphy 277'-288' ~ 20-25% plag rare biotite pseuds. in lt. grey matrix. 288-293' fault gouge and rubble. Below	Total sericitized with kaolin possibly with montm (?) after hornblende. 1-2 veinlets 10feet.	

District Wrightson (Mansfield Canyon) Hole MC - 2 Page 4

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
								293' is plag horn-		
								blende, biotite,		
								porphry possibly		
								equivalant to		
								dacite above (?)		
300-315	15'	100%	30855	.33				Rock is light gray	Total sericitization. 299-301' large /cm clots of cpy	
320	5'		30856	.04				with ~15-20% plag	on vague vein minor disseminated and fracture controlled	
								pseuds, ~5%hornblende	cpy throughout. Abundant pyrite in vugs and vuggy veinlets	
								pseuds, 2-3% biotite	yellowish tan pseuds after hornblende.	
								pseuds in aph.matrix		
								Fault with slickensides		
								dip ~45° at 315'.		
								Below rock is similar		
								but more porphyritic.		
								40-50% phens dominant-		
								ly plag with minor		
								biotite and hornblende		
								pseudomorphs.		
320-330'	10	100%	30857	.14					Total sericitization. Minor chl 323'-330'.	
330-340'	10	100%	30858	.27						
340-350'	10	100%	30859	.41				Light grey porph. with	Total sericitization. Sericite after plag and biotite-sericite	
360'	10		30860	.60				~40% plag. phens	-quartz in matrix. Abundant disseminated pyrite. Thin ~/mm	
								and piotite pseuds	veinlets 2-3 10feet. Abundant disseminated cpy.	
								in light grey matrix.		
360-370	10	100%	30861	.31				Badly broken	Total sericite minor chl 374'-380'.	
380	10		30862	.08						
380-390	10	100%	30863	.45				Near vertical contact		
								between latite(?)		
								porph and quartz monz.		
390-400	10	100%	30864	<.01			Quartz,latite	porphyry-plag laths	Plag phens sericiticed with possible montm. bio-chl+sericite	
410	10		30865	<.01			porph	in quartz monz. porphyry	Matrix rich in ortho maybe 2nd (?) abundant disseminated	
							(Thin sect.	aligned parallel to	pyrite Sericite stronger below 407'. Thin sph. gal-pyrite	
							#MC-3)	contact not so in	veinlet at 408'	
								latite (?) Quartz		
								latite prophyry ~60%		
								phens(plag and biotite		
								with rare quartz)		

District Wrightson (Mansfield Canyon) Hole MC- 2 Page 5

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
							in aph pink ortho rich matrix. Also rare large orth phens (1cm)		
410-420	10	100%	30866	.06		Quartz,latite porph.	Quartz, latite,porph light grey,sericitized	Intense-total sericitization possibly related to large 5-10mm pyrite veins at 417'	
420-430'	10	100%	30867	.01			Green gray plag phens in pink matrix. Near vertical irregular contact at 436' with fine grained latite(?) porphyry. Faulting with hortz slicks ~70° dip at 439'-440'.	Sericite after plag. Some 2ndy bio possibly 2ndy orth in matrix. Abundant disseminated pyrite. Sericite increases near contact.	
440'	10		30868	.06					
440-450	10		30869	.04			15-20% plag laths with minor hornblende in green aphanitic matrix scattered fragments below 447'.	Sericite to 441'..Sericite chl below.	
450-460'	10	100%	30870	<.01		Dacite(?) Bx	Frags of red granite material in kark grey dacite(?) Fresh plag and biotite in grey siliceous matrix abundant mgt.	2ndy biotite in matrix Orth in frags.	
460-470	10	100%	30871	.01		Dacite (?) and granite	Dacite Bx to 465'. Fine grained pink granite below 465'.	Silicification in by. 2ndy biotite in bx and granite possibly 2ndy orth in granite. Thin epidote veinlets common.	
470-480	10	100%	30872	<.01		Granite	Fine grained pink granite ~equigranular 3-5mm.Orth and quartz with less plag very few mafics, minor bro.	Sericite after plag and sericite, chl, pyrite after biotite Thin quartz, sericite, pyrite veinlets 1-2 /10 feet 1-2mm ~1% disseminated pyrite.	
480-490	10	100%	30873	<.01		Dacite with granite.	Aphanitic dacite(?) porphyry with fragments of granite 480-484'. Granite below 484' Veriticle shears 487'-	Sericite quite intense in and below shear zone. Quartz sericite-pyrite veinlets ~1-2/10feet ~1% disseminated pyrite.	
500	10		30874	.01					

District Wrightson (Mansfield Canyon) Hole Number MC - 2 Page Number 6

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
							-494'. Latite(?) porphyry		
							492'-498'. Granit below		
							498'.		
500-510	10	100%	30875	.01		Granite	Fine grained pink	Sericite after plag. Intensify increases below 518'.	
520	10		30876	<.01			granite (Alaskite(?))	Disseminated pyrite in former biotite sites (?) also	
							Essentially equigranular	increases below 518'.	
							1-2mm anhedral to		
							subhedral quartz and		
							orthoclase withlesser		
							plag. Occassional		
							larger 4-6mm plag and		
							orth grains. No mafics		
							observed ~1-2%		
							disseminated pyrite.		
520-530	10	100%	30877	.02				Intensely sericitized zone with open space quartz-pyrite	
								tr galena - tr cpy veinlets 520-524'. Moderate sericite	
								below 524'.	
530-540	10	100%	30878	<.01				Variable sericite strong to intense. Scattered thin sphal-	
550	10		30879	<.01				galena veinlets and thin quartz-pyrite-sericite veinlets	
								2-3/10feet	
550-560	10	100%	30880	<.01		Granite with	553'-556' Black aphanitic	Sericite after plag in granite. Possib 2ndy biotite in	
						andesite	andesite with 5-10%	andes. Thin py-chl veinlets in andesite.	
							plag laths 1-2mm.		
							Abundant magnetite and		
							biotite(?) Sharp contacts		
							show movement-slicks.		
560-570	10	100%	30881	<.01		Granite	Granite as above.	Sericite after plag in granite. 561'-569' intense	
580	10		30882	<.01			Verticle fractures	sericite related to quartz-pyrite-sericite veinlets.	
590	10		30883	.01			common.	Quartz-pyrite-sericite veinlets very rare below 570'.	
600	10		30884	<.01					
610	10		30885	<.01					
620	10		30886	<.01					
620-630'	10'	100%	30887	.01		Granite with	624'-627' Latite(?)	Sericite after plag.	
						latite(?)porph	porph.Quartz-sericite-		
							pyrite vein along		
							contact.		
630-640	10'	100%	30888	.04		Granite with	627'-636' granite 636-	Sericite after plag in granite. Mgt and biotite(?) chl in	
652	12'		30889	.03		andesite	645' andesite with 1'	andesite. Abundant pyrite veinlets and calcite veinlets	
							granite at 643'	(fracture coatings in andesite)	

District Wrightson (Mansfield Canyon) Hole Number MC - 2 Page Number 7

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
							645' Granite.		
652-660	8	100%	30890	.03		Granite	Pink grey granite	Sericite after plag and biotite. Disseminated pyrite in	
670	10		30891	.02			~ equigranular orth-	biotite sites and scattered. Hairline pyrite-sericite	
680	10		30892	.02			quartz with lesser plag	veinlets 1-2+ per foot mostly horizontal. Rare epy	
690	10		30893	.02			and minor biotite	associated with veinlets.	
							pseuds.		
690-700	10	100%	30894	.02		Granite	Totally altered granite	Total sericite. Rock is sericite-quartz in pseud. granitic	
710	10		30895	.02			texture remains. Intense	texture. Disseminated and thin veinlet pyrite. Kaolin	
720	10		30896	.09			high angle fracturing	around shear zone.	
730	10		30897	.01			689'-691'. Intense		
740	10		30898	.01			high angle shearing		
							726'-734' with kaolin.		
740-750	10	100%	30899	.02		Granite and	747'-749' inclusion(?)	Granite as above hornfels (?) variably silicified and	
						hornfels (?)	of hornfels (?) or	pyritized.	
							andesite(?) in granite		
							dark greenish grey		
							badly broken		
750-760	10	100%	30900	.02		Granite	Granite as above. 759'-	Total sericitization. Pyrite-sericite-quartz 1-2/ ft.	
770	10		31701	.01			765' badly broken -	1-2mm all angles.	
780	10		31702	.06			high angle fracture.		
790	10		31703	.01			782' high angle 80°		
							fault gouge.		
790-800	10	100%	31704	.07		Granite with	Hornfels(?) 796'-806'	Total sericitization in granite. Pyrite-sericite- chl (?)	
810	10		31705	.01		hornfels(?)	contact ~45° dip. Brownish	in hornfels (?). Hornfels (?) loaded with pyrite.	
						inclusion	greenish grey		
							aphantic rock.		
810-820	10	100%	31706	.05		Granite	Granite as above	Total sericitization. 1-2/ft. quartz-pyrite with sericite	
830	10		31707	.03				halos. Some open space.	
840	10		31708	.04					
850	10		31709	.03					
850-860	10	100%	31710	<.01			As above. Fault gouge	Abrupt change from total to intense sericitization 895'.	
870	10		31711	.01			and rubble at 883-885'		
880	10		31712	.02			dip ~ 65-70°		
890	10		31713	.02					
890-900	10	100%	31714	<.01			Pink granite ~ equal	Strong-intense sericite after plag. orth is stable.	
910	10		31715	.02			orth and quartz with	Disseminated pyrite 4-8/ 10 feet.	
920	10		31716	.01			minor plag.		
930	10		31717	<.01					

District Wrightson (Mansfield Canyon) Hole Number MC -2 Page Number 8

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
940	10		31718	.01							
								Granite	Pink granite to 969'	Strong sericite after plag. Gypsum along fracture	
940-950	10	100%	31719	<.01					Dacite (?) intrusive into		
960	10		31720	.01					granite at 969'.		
970	10		31721	.01							
970-980	10	100%	31722	.02				Dacite (?)	Dark grey dacite (?)	Orth flooding (?) Sericite after plag (minor) anhyd-chlor-	
990	10		31723	.02					or andesite. 1-5mm	pyrite after mafic mins. Mgt. in matrix (primary) Gypsum	
1000	10		31724	.01					plag laths (5-10%) and	and powdery calcite coal fractures. One thin veinlet at	
									1-5mm hornblende(?)	986'-990' vertical has reddish 2-3mm halo-orthoclase?	
									biotite sites (5-10%)	and clots of green epidote (?)	
									in aphanitic dense matrix		
									Reddish tint suggests		
									abundant orth in matrix.		
1000-1010	10	100%	31725	.03				Dacite with	Dacite (?) as above	As above-ortho is stable in granite xenoliths.	
1022	12		31726	.05				Granite	with pink xenoliths(?)		
1030	8		31727	.01				Xeonlitho (?)	of granite. Some		
									resorbed. Increased		
									orth in dacite adjacent		
									to xenoliths. Xenoliths		
									1cm to 1n+ Shattered		
									1015-1022'.		
1030-1040	10	100%	31728	.01				Dacite with	Xenolith(?) material	Weak to moderate sericite after plag. Anhyd-chl-py after	
1050	10		31729	.01				Granite	very abundant below	hornblende (?) Biotite remains fresh or is 2nd(?) Biotite	
1060	10		31730	.01				Xenolitho (?)	1030'~½ of core.	also in granite xens. Thin pyrite veinlets 3-4/10 feet	
1070	10		31731	.03						One with 2cm sericite halo at 1049'. Gyp-cal-chl fracture.	
										coatings.	
1070-1080	10	100%	31732	.01				Quartz. latite	1067' contact latite	Sericite alteration weak after plag to 1075'. Strong to	
1090	10		31733	.02				porph.	porph. 30-40% plag	intense below 1075' Rare quartz-pyrite-sericite veinlets	
1100	10		31734	.06					phens 1-4mm with ~5%	8mm calcite veinlet at 1120' with quartz-sericite halo.	
1110	10		31735	.02					bio phens in red-pink		
1120	10		31736	.01					aphanitic matrix of orth		
1130	10		31737	.01					and quartz(?) Grey		
									where intensely serici-		
									tized 1105'-1118' badly		
									broken shear zone with		
									clay and chlorite.		
1130-1140	10	100%	31738	.02				Quartz.latite	Red Quartz latite porph	Weak to moderate sericite after plag. Strong sericite below	
1150	10		31839	.01				porph	with scattered xenoliths	1164'. Rare pyrite-sericite-quartz veinlets	

District Wrightson (Mansfield Canyon) Hole MC -2 Page 9

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
1160	10		31740	.01				of diorite(?) 1-3"		
1170	10		31741	.06						
1170-1180	10	100%	31742	.02				Intensly sheared and broken with gouge 1170-1188' near vertical slip planes	Strong to intense sericite below 1188'. Total sericite-clay in shear zone. Thin black tourmaline veinlets 2-3 per 10' below 1190'. Also quartz-pyrite-sericite veinlets 2-3/10 feet	
1190	10		31743	.01						
1200	10		31744	.02						
1210	10		31745	.01						
1210-1220	10	100%	31746	.02					Sericite variable weak to strong. Disseminated pyrite same throughout. Pyrite-sericite-quartz-tourmaline veinlets 2-3/10 feet in sericitized intervals.	
1230	10		31747	.02						
1240	10		31748	.01						
1250	10		31749	.02						
1260	10		31750	.02						
1270	10		31751	.02						
1270-1280	10	100%	31752	.04				Badly broken 1297'-1309'	Anhyd and gyp on fractures below 1200' more abundance in shears below 1270'. Clot of cpy at 1286' with orth(?) veinlet.	
1290	10		31753	.17						
1300	10		31754	.03						
1310	10		31755	.02						
1310-1320	10	100%	31756	.06				Rock takes greenish cast in places due to chlorite(?)	Intense-total seritization with some slilcification and minor chlorite. Total sericitization below 1347'.	
1330	10		31757	.03						
1340	10		31758	.02						
1350	10		31759	.01						
1360	10		31760	<.01						
1360-1370	10	100%	31761	<.01				Shear zone 1430'-1433' high angle with pyrite anhyd-gyp in shears. Rock has green color below to 1438'	Intense to total sericitization minor chl. Minor brecciation 1400-1408' with anhyd and pyrite in vugs. Scattered pyrite sericite veinlets minor anhyd. in veinlets.	
1380	10		31762	.01						
1390	10		31763	.01						
1400	10		31764	.01						
1410	10		31765	<.01						
1420	10		31766	.01						
1430	10		31767	<.01						
1440	10		31768	<.01						
1440-1450	10	100%	31769	<.01			Latite(?) porph	~30-40% plag phens 2-5 mm with scattered hornblende(?) relicts in aph. matrix. Bleached lt. grey.	Total sericitization. Quartz-pyrite veinlets with chl in and around shears 2-3/10 feet silicification around veinlets.	
1450	10		31770	<.01						
1470	10		31771	.01						
1480	10		31772	.01						

District Wrightson(Mansfield Canyon) Hole MC -2 Page 10

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
1480-1490	10	100%	31773	.01				Badly broken intense	Gypsum and anhyd (?) with pyrite veinlets below 1500'.	
1500	10		31774	<.01				shearing Gouge at 1458'	Trace of moly and cpy in pyrite veinlet at 1509'.	
1510	10		31775	<.01				High angle shears with	4" quartz vein at 1487'.	
1520	10		31776	<.01				slickensides 10-15° to		
								core axis slicks.		
								~ horiz.		
1520-1530	10	100%	31777	<.01			Quartz Latite	Intensly altered latite	Variably silicified and sericitized-vaguly defined	
1540	10		31778	.01			Bx (?)	porph with some	"bands" of silicification near horiz (?)	
1550	10		31779	.01				inclusions(?) of fine		
1560	10		31780	<.01				grained volcanics(?)		
1560-1570	10	100%	31781	<.01					Some contorted banding present may be veinlet halos or	
1580	10		31782	.01					reaction rims aroung frags (?)	
1590	10		31783	<.01						
1600	10		31784	<.01						
1600-1610	10	100%	31785	<.01				Badly broken.	Veins of quartz with associated silicificated with	
1620	10		31786	<.01					abundant pyrite ~20° to core axis to horizontal.	
1630	10		31787	<.01						
1640	10		31788	<.01						
1640-1650	10		31789	<.01						
1660	10		31790	<.01						
1670	10		31791	<.01						
1680	10		31792	.01				Contact(?) sharp change	Minor gypsum and anhydrite with quartz veins in vugs.	
								in alteration at 1674'		
								v.low sericite below		
1680-1690	10	100%	31793	<.01			Dark latite	Plag phens 25-35% with	Fresh appearing rock light chl and sericite. Some of orth	
							porph	chloritized mafics in	in matrix may be 2ndy (?) Intense-total sericite below	
								reddish grey matrix of	1690'. Thin pyrite-sericite-chl veinlets horizontal 1-2 ft.	
								plag-orth-mgt- bio(?)		
								Sharp contact(?) at		
								1689' texture virtually		
								identical across contact.		
1690-1700	10	100%	31794	<.01			Latite & Bx.	Bx. with latite matrix(?)	1-Total sericite except 1714-1718' m-s sericite 1" pyrite	
1710	10		31795	<.01				1691- 1713 Latite	vein at 1734'-36 ~10° from axis of core. Abundant thin	
1720	10		31796	<.01				1713- 1720-1736'	pyrite-quartz-sericite veinlets	
1730	10		31797	<.01				strong shearing with		

District Wrightson(Mansfield Canyon) Hole MC - 2 Page 11

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Assays Mo		Rock Type	Rock Description	Alteration	Mineralization
1740	10		31798	< .01				∽horizontal slickes.		
								Some brecciation 1736'		
								-1738'		
1740-1750	10	100%	31799	.10			Quartz Latite	Light grey greenish	Total sericite with weak chlt. Quartz-sericite-pyrite	
1750	10		31800	.09			Porph.	grey plag-biotite-	veinlets 2-3/10 ft.	
1770	10		32401	.04				hornblende(?) Phens		
1780	10		32402	.16				in aphanitic matrix.		
1790	10		32403	.06				1783' high angle shears		
1800	10		32404	.06				∽horizontal slicks		
								dark green andesite(?)		
								below 1789' contact		
								45° dip of dark green		
								andesite(?) with lighter		
								greenish grey latite(?)		
								porph.		
1800-1810	10	100%	32405	.02			Quartz Latite	1801'-1803' gradual	Abundant orth-may be primary. Near vertical pyrite-sericite	
1820	10		32406	.01			Porph	change from grey-green	veinlets 1-2/10 ft. Coatings of gypsum on late verticle	
1830	10		32407	.01				sericitized porphyry	fractures. Abundant vertical fractures. Tourmaline occurs	
1840	10		32408	.01				to pink orth rich	in clots with pyrite and anhydrite.	
1850	10		32409	.01				porphyry. 1815'-1817'		
1860	10		32410	.01				dark grey andesite(?)		
								inclusion(?) latite		
								porph has faint chilled		
								border.		
1860-1870	10	100%	32411	.01			Quartz Latite	Latite pink plag.biotite	Scattered veinlets pyrite-anhydrite-sericite veinlet at	
1880	10		32412	.01			Porph with	and rare amphibole phens	1890'-1892'. Gypsum coats fractures. Tourmaline with	
1890	10		32413	.02			Dacite	in matrix of or and quartz	pyrite clots- disseminated pyrite.	
1900	10		32414	.02				Dacite(dark grey) plag		
								laths and scattered		
								quartz eyes in dark		
								aphe matrix with mgt.		
								Dacite 1863'-1866',		
								1870'-1871'. 1886'-		
								1891', 1895'-1903'		
								Contacts sharp ∽10°		
								from core axis.		
1900-1910	10	100%	32415	.02			Quartz Latite	Pebble dike(?) 1900-1903'	Sharp decrease in disseminated pyrite at 1896' only	
1920	10		32416	.01			Porph with	near verticle rounded	veinlets are gypsum coatings and rare pyrite-chlorite	
1930	10		32417	.02			Dacite	latite(?) frags in	fracture coatings. Thin epidote veinlet at 1908'.	

District Wrightson (Mansfield Canyon) Hole MC - 2 Page 12

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
1940	10		32418	.01				siliceous matrix 1-2"		
								wide Dacite 1905-1907'		
								1908-1911', 1920-1933'		
								Latite and dacite look		
								more alike than above		
								Latite(?) getting darker		
1940-1950	10	100%	32419	.01			Dacite Porph	Dacite-porph 1939-1950'		
1950	10		32420	.01			with Latite	& 1953'-1958'. Dacite	Weak sericite after plag and chl after biotite very thin	
							(Thin sect.	medium dark grey phens	1mm orth-quartz stringers 2-3/10 ft. in dacite.	
							#MC5&MC6)	~15-20% of plag and	Gypsum coats late fractures.	
								biotite in very fine		
								re? to aphanitic		
								matrix of plag. biotite		
								quartz and magnetite		
								Contacts sharp 45°		
1960-1970	10	100%	32421	.01			Quartz Latite	Pink rock 40-50% plag	Weak sericite after plageoclase possibly orthoclase in	
1980	10		32422	.01			Porph.	and biotite phens with	matrix. Very minor chl with trace epidote and ratile	
1990	10		32423	.01				pink orth-quartz rich	after biotite 1-2/10 ft. Fracture coatings 2-3/10 ft.	
2000	10		32424	.01				matrix some orth phens.	Disseminated pyrite mainly in biotite sites.	
								Fault gouge at 1980'		
								6" with 3-4' sericitized		
								zone aroung		
2000-2010	10	100%	32425	.01			Quartz Latite	Dacite 2003'-2004' with	Very weak sericite and chl orth (?) 2-3/10 ft. at 2018'	
2020	10		32426	.01			Porph	~45° contact. Abundant	1 ft. sericite halo around ½" pyrite vein. Rare thin	
2030	10		32427	<.01			(Thin sect.	shears and gyp-chl coated	epidote veinlets. Much sypsum with chl on fractures	
2040	10		32428	.01			#MC-7)	fractures 2023-2045' high		
2050	10		32429	.01				angle 70-80°		
2050-2060	10	100%	32430	.01			Quartz Latite	Gradual increase in	Rare anhydrite veinlets. Quartz-pyrite-sericite veinlets.	
2070	10		32431	.01			Porphyry	orthoclase as matrix	various sizes and attitudes 3-4/10 ft. Also late gypsum-	
2080	10		32432	.02				and as phenocrysts and	chl-clay coatings on shears.	
2090	10		32433	.03				an increase in phen:		
2100	10		32434	.02				ground mass. No quartz		
2110	10		32435	.02				eyes but may be sig.		
								r.f quartz in matrix.		
2110-2120	10	100%	32436	.01				Fault gouge 2118' to	Alteration as above with increased sericite around shear	
2130	10		32437	.01				2126' with near verticle	zones. 2167' pyrite-tourmaline veinlets 3-4cm with total	
2140	10		32438	.05				shear at both ends. chl.	sericite halo	
2150	10		32439	.06				on shear has slickensides		

District Wrightson(Mansfield Canyon) Hole MC - 2 Page 13

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
21	60 10		32440	.04				~ 45° to core.		
21	70 10		32441	.12						
2170-21	80 10	100%	32442	.09				Abundant near verticle	Strong-intense sericite around shears.	
21	90 10		32443	.07				shearing and fracturing		
2190-22	00 10	~100%	32444	.10			Andesite	2191' contact of latite	Intense sericite-chlorite with remnant biotite abundant mgt.	
22	10 10		32445	.04			Dacite	porphyry with dacite	and pyrite disseminated micro veinlets 1-2mm pyrite-chlorite	
22	20 10		32446	.03				andesite ~ 45° to core	with or without sericite halo. trace cp 1-2/ft. Chl. and	
22	30 10		32447	.24				Andesite grey with ~15%	gypsum on late fractures. Trace disseminated cpy.	
22	40 10		32448	.06				plag laths 1-3mm in		
22	50 10		32449	.09				very fine matrix of plag-		
22	60 10		32450	.10				chlorite-biotite-magnetite		
								Scattered clots of chl.		
								biotite indicate former		
								mafic phens. Abundant		
								high angle fractures.		
								Severely sheared and		
								broken 2230'-2260'		
2260-22	70 10	100%	32451	.10			Latite Porphyry	Contact at 2259' badly	Intense sericite 1-2 feet.	
22	80 10		32452	.05				broken. Fault gouge mud		
22	90 10		32453	.06				at 2272'-2273'. Fault		
								plane 10° to core axis.		
2290-23	00 10	100%	32454	.03				~ 30% plag phens with	Sericite after plag. with chl after biotite 1-2 ft. variable	
23	10 10		32455	.02				small irregular biotite	mineralogy. 2-3/10 ft. late (?) 5-2cm shears and fracture	
								chl clots in pink orth	filling.	
								quartz rich matrix.		
								Occassional orth phen.		
2310-23	20 10	100%	32456	.03				Bleached latite porphyry	S-I sericite from 2310'-2325' 2-3 ft. also pyrite and	
23	30 10		32457	.05				Abundant vugs below	quartz in open vugs.	
23	40 10		32458	.02				2325' 1-3 cm vugs.		
23	50 10		3 2459	.04						
2350-23	60 10	100%	32460	.05					Total sericitization. Tourmaline veinlet at 2370'.	
23	70 10		32461	.05						
23	80 10		32462	<.01						
23	90 10		32463	.01						
2390-24	00 10	100%	32464	.01			Latite,Dacite	Dacite porph at 2410'	I-T sericite, strong chl in dacite scattered veinlets	
24	10 10		32465	.04			Porphyry	-2415' with frags	1-2 ft.	

District Wrightson (Mansfield Canyon) Hole MC - 2 Page 14

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
2420	10		32466	.09			of latite porph.		
2430	10		32467	.08			Occasional 2-10cm		
							granite frags in latite		
							porph.		
2430-2440	10		32468	.04		Lactite &	Badly broken and faulted	Weak to medium sericite	and chlorite. 2-3/10 ft. 1/10 ft.
2450	10		32469	.04		Dacite Porph.	2396-2410'. Dacite	horizontal with 1-2ft.	halos. Rare thin orth haloed
2460	10		32470	.02			2461-2467' Contact	veinlets in dacite. Trace of disseminated calcopyrite	
2470	10		32471	.04			2461' ~ 20° from core	in dacite.	
2480	10		32472	.06			axis. Frags of latite		
2490	10		32473	.06			in dacite. Dacite 2471-		
2500	10		32474	.12			2474' Numerous granite		
							frags 1-10cm in latite		
							Granite frag 2489-2495'.		
2500-2510	10	100%	32475	.09		Dacite Porphyry	Contact at 2503' ~ 25°	Chlorite-sericite after	biotite and plag 1-2ft.
							from core of axis. Plag	Disseminated calcopyrite in dacite especially conc. at	
							biotite and rare amphibole	contact essentially no cp. disseminated in latite.	
							and quartz phens in		
							green grey matrix.		
							Lower contact with latite		
							porph at 2511'		
2510-2520	10	100%	32476	.04		Latite Porphyry	Plag laths ~ 30-40% with	Strong to intense sericite alteration 1-2'. The small dacite	
2530	10		32477	.01			ragged biotite clots	interval at 2541' contains disseminated calcopyrite	
2540	10		32478	.02			in pink quartz-or matrix.	which is concentrated along outer margins of	
2550	10		32479	.12			bleaches light grey, white.	sericite halo around pyrite veinlet.	
2560	10		32480	.03			5-6" dacite porph at		
							2541' contact irregular		
							with inclusions of latite		
							in the dacite. Phens in		
							dacite parallel contact		
							2525' ~ Verticle fault		
							with horizontal slicks.		
2560'-2570	10	100%	32481	<.01		Latite Porphyry	As above abundant vugs	Intense sericite-quartz	abundant tourmaline 2560'-2570'.
2580	10		32482	<.01			in latite linch with		
2590	10		32483	<.01			quartz pyrite. Badly		
2600	10		32484	<.01			broken faults with		

District Wrightson (Mansfield Canyon) Hole MC - 2 Page 15

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
2610	10		32485	<.01				gouge and rubble dip ~15° to core at 2569-2575', 2580'-81' 2585',2590-92', 2596-98', 2600'-2602'.		
2610-2620	10	100%	32486	.01				As above fault 2611'-2613' slicks at 2646' 15° from horizontal on fault dipping 10° from core. Abundant vugs and cavites	Total sericitization to 2648 then sharp decrease to moderate sericith-orthoclase stable rock with minor disseminated cp. Quartz-calcopyrite veinlet at 2644' Quartz-pyrite veinlets common 1-2'	
2630	10		32487	<.01						
2640	10		32488	<.01						
2650	10		32489	.04						
2650-2660	10	100%	32490				Dacite (?)	High angle verticle fractur and shears, abundant 2664-2668' 2670-2674',2685-2687' 2690-2694', 2702-2704'	Total sericitization (with chlorite above 2694') Total sericitization below 2674'. Abundant vugs below 2674' Strong to intense sericite below 2703' some orthoclase stable.	
2670	10		32491							
2680	10		32492							
2690	10		32493							
2700	10		32494							
2710	10		32495							
2710-2720	10	100%	32496					25-30% phens Plag laths with biotite books in greenish grey aphanitic matrix. Reddish tint may indicate orthoclase.	Plagioclase lightlyaltered to sericite: biotite moderate altered to chlorite anhyd and epidote. Traces of disseminated calcopyrite. Gypsum on fractures.	
2780	10		32497							
2740	10		32498							
2740-2750	10	90%	32499				Dacite Porphyry	Broken zone rubble at 2742', 2746' and 2752'. Lost 6" core between 2742' and 2743' Rock type is borderline between dacite and andeesite with close to 10% quartz but somewhat variable.	Intense sericitization around abundant pyrite veinlets Clay zone 5" at 2764'.	
2760	10	100%	32500							
2770	10	90%	33301							
2770-2780	10	100%	33302				Quartz Latite	2777' contact moderately coarse texture. Relict	Intense sericite with abundant silica both as quartz eyes and silicification	
2790	10		33303							

District Wrightson(Mansfield Canyon) Hole MC - 2 Page 16

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
2800	10		33304					pheno 3-4mm diameter. Fairly uniform rock.		
2800-2810	10	100%	33305					Few veinlets except pyrite 3mm wide 2-3 per foot.	Biotite books altered to sericite, some chlorite some zones with fresh biotite below 2850' 4-2"	
2820	10		33306							
2830	10		33307							
2840	10		33308							
2850	10		33309							
2850-2860	10	100%	33310						Orthoclase at 2850' may be remnant from primary min. H-1ft. very steep 1" vein at 45° angle.	
2870	10		33311							
2880	10		33312							
2890	10		33313							
2900	10		33314							
2900-2910	10	100%	33315				Dacite Porphyry		2906' Gradually becoming fine grain with alternating zones from wericitic to biotitic with weak k-spar matrix. 2924' Contact mostly biotitic matrix.	
2920	10		33316							
2930	10		33317							
2940	10		33318							
2950	10		33319							
2950-2960	10	100%	33320				Monzonite		2965'-2967' Fault zone	
2970	10		33321							
2970-2980	10	100%	33322				Granite	Quartz vein 3mm wide	2983' Contact.	
2990	10		33323					Quartz vein 2 per 10'		
2990-3000	10	100%	33324							
3010	10		33325				Monzonite			
3020	10		33326				Andesite			3018'-3020' H.
3030	10		33327				Monzonite			3020' H. 2-3"
3030-3040	10		33328				Monzonite		Quartz vein ½" wide 3038'-3041'; Fault zone 3047'-3047½'; Andesite strong sericite above 3060'; generally neglible below. Dark.	
3050	10		33329							
3060	10		33330							
3070	10		33331							
3080	10		33332							
3090	10		33333							

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
3090-3100	10	100%	33334				Bx		3092'-3098' Dacite porphyry. 3098' Breccia of mixed	
3110	10		33335						composition with angular fragments generally ½ to 2"	
3120	10		33336						in diameter; some dark biotitic andesite; some aphanitic	
3130	10		33337						pink latite fragments; some monzonite fragments and	
3140	10		33338						probably a monzonite matrix. 5% open cavities.	
3150	10		33339							
3160	10		33340							
3170	10		33341							
3180	10		33342							
3190	10		33343							
3200	10		33344							
3210	10		33345							
3220	10		33346							
3230	10		33347							
3240	10		33348							
3250	10		33349							
3250-3260	10	100%	33350				Monzonite		3251' Dark monzonite porphyry same as above bx at 3098'	
3270	10		33351						3263'-3264' pink latite. 3264'-3269 breccia as at 3098'	
3280	10		33352						-3251'. Brecciated monzonite with some granite fragments	
3290	10		33353						to 3285'; same again 3310'-3325'; 3332'-3336'.	
3300	10		33354						Unbrecciated monzonite in remaining intervals.	
3310	10		33355							
3320	10		33356							
3330	10		33357							
3330-3340	10	100%	33358						Sericite in series of enechelon fractures or gash	
3350	10		33359						cavities.	

KERR-McGEE RESOURCES CORPORATION
Mansfield Canyon Property
Santa Cruz County, Arizona

STARTED: 8-26-76
COMPLETED: 9-10-76
TOTAL DEPTH: 470 feet

CORE SIZE: NC
LOGGED BY: Verl L. Smith

DISTRICT Wrightson

HOLE MC-3

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DEPTH FROM	DEPTH TO	INTERVAL	% CORE RECOVERY	ASSAY SAMPLE No.	ASSAY Cu ppm	MINERALIZATION % TOTAL SULFIDES	RATIO Cpy/py	PYRITE d	PYRITE v	CHALCO d	CHALCO v	BORNITE d	BORNITE v	MOLY d	MOLY v	OTHER SULFIDES	ALTERATION QUARTZ V.	SILICIF'N	ANHYD. d	ANHYD. v	BIOTITE d	BIOTITE v	CHLOR. d	CHLOR. v	MAGNE. d	MAGNE. v	ORTHO. d	ORTHO. v	SERI. d	SERI. v	OTHER	FRACTS VEINLTS No./ft.		ROCK TYPE	REMARKS
0	23	23																																	No Core - Rock Bit - Overburden
23	30	7	60	3901	1400	3-5		2-4								tr Cc													S		I Kaolin			Latite?	Bleached andesite or latite w/scattered
	40	10	95	3902	439																														penocryst ghosts (sericite - clay after
	50	10	100	3903	93																														plagioclase and hornblende(?) -
	60	10		4	122																														Rock bleached w/intense kaolin
	70	10		5	104																														and sericite. Minor chalcocite
	80	10		6	89																														coating on pyrite.
	90	10		7	87																														Red-yellow stain present
																																			42' to 55' - Fe oxides and jarosite(?) -
																																			Pyrite disseminated as minute blebs and
																																			as octahedra in miarolitic cavities w/
																																			quartz crystals -
																																			Rock texture more distinct at 80' -
																																			Pseudomorphs of sericite - clay after
																																			plagioclase and biotite phenocrysts -
																																			20 - 25% phenocrysts
90	100	10	100	3908	221	2-4		2-4								tr Cc													I		I Kaolin				86' - 103' reddish-brown w/Fe oxide,
	110	10		09	93																														trace chalcocite on pyrite -
	120	10		10	87																														Fault gouge at 105' and 106'
	130	10		11	106																														w/trace chalcocite -
	140	10		3912	94																														Sphalerite in veinlet at 115'
140	150	10		3913	112	2-3		2-3																											Shear zone - fault gouge 154' - 161'
	160	10		3914	187																														
160	170	10	100	3915	121	2-3		2-3																											Porphyritic latite(?) to 165' -
	180	10		16	64																													Granite	Granite 165' to 191' w/minor
	190	10		17	77																														brecciation -
190	200	10	100	3918	120	2-3		2-3																										Latite?	Porphyritic latite - greenish-gray
	210	10		3919	84																														
210	220	10	100	3920	156	2-3		2-										m											T		s Kaolin			Quartz	Lt. gray, totally bleached porphyry - 40%
	230	10		21	73																													Porphyry	phenocryst ghosts, scattered qtz. eyes -
	240	10		22	76																														Gouge 226' - 232'
	250	10		23	74																														
250	260	10	100	3924	175	2-3		2-3																					T		s Kaolin			Breccia	272' - 286' breccia(?) - porphyry
	270	10		25	147																														fragments in siliceous matrix -
270	280	10	100	3926	148	2-3		2-3																											vague texture -
	290	10		27	223																														Below 290', fine-grained fragments in
	300	10		3928	120																														porphyry matrix -

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HOLE MC-3

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DEPTH				ASSAY		MINERALIZATION											ALTERATION															FRACTS VEINLTS		ROCK TYPE	REMARKS
FROM	TO	INTERVAL	% CORE RECOVERY	SAMPLE No.	Cu ppm	% TOTAL SULFIDES	RATIO Cpy/py	PYRITE d	PYRITE v	CHALCO d	CHALCO v	BORNITE d	BORNITE v	MOLY d	MOLY v	OTHER SULFIDES	QUARTZ V.	SILICIF'N	ANHYD. d	ANHYD. v	BIOTITE d	BIOTITE v	CHLOR. d	CHLOR. v	MAGNE. d	MAGNE. v	ORTHO d	ORTHO v	SERI. d	SERI. v	OTHER	No./ft.			
300	305	5	100	3929	44	2-3																													Fault zone 304' - 316' -
	312	7		30	1760																														chlorite shear and breccia at 306',
312	314	2		31	0.41%																														also at 313' - 315' w/chalcocite -
	320	6		32	890																													latite?	Latite or andesite (porphyritic)
																																			below 316'-
320	330	10	100	3933	136	1-2	1-2																S				w-m		I						Trace galena in veinlet 318' -
	340	10		34	108																														Greenish-gray latite or andesite
	350	10		35	88																														w/variable brecciation -
																																			Badly broken throughout -
350	360	10	100	3936	94	1-2	1-2				tr					tr galena							m-s				m		I					latite?	Irregular textured latite(?) breccia
	370	10		3937	125																													Breccia	w/scattered orthoclase rich
	380	10		3938	91																														granite fragments or zones -
																																			Traces of chalcopyrite and galena
																																			in vague pyrite-sericite
																																			veinlets and clots -
380	390	10	100	3939	121	1-2	1-2				tr												m-s				s		m					Breccia	Irregular texture -
	400	10		40	112																														Numerous crushed zones
	410	10		41	133																														
410	420	10	100	3942	120	2-3	2-3				tr												w-m				I		w				Granite	Porphyritic granite or monzonite
	430	10		43	139																												or Monzonite	sericitized plagioclase phenocryst
	440	10		44	49																														in a pink orthoclase rich
	450	10		45	43																														matrix. Scattered biotite phenocrysts.
	459	9		46	73																														A few poorly defined pyrite
	470	11		3947	171																														veinlets present w/traces of
	T.D.																																		chalcopyrite. Pyrite has
																																			a dark tarnish.
																																			Core is badly broken.
																																			Andesite(?) inclusions at 468' - 470'.

KERR-McGEE CORPORATION

District Wrightson - Mansfield Canyon
Hole No. DDH MC - 4
Spudded July 7, 1978
Completed July 24, 1978
Total Depth 200 feet
Driller Joy Mfg
Logged By R. M. Corn

County Santa Cruz State Arizona
Claim Silverfish No. 19 Sec. W½ 8 T. 21S R. 15 E
Elevation Approx. 5520
Hole Size NC 0 - 20 ft, NX 20 - 200 ft.
Core Size
Hole Angle Minus 45 degrees East
Collar Coords.

Depth	Int.	Core Rcvy	Samp. No.	Assays ppm Cu	Mo	Au	oz/T Ag	Rock Type	Rock Description	Alteration	Mineralization
0 to 18	18	0						Alluvial Fill & loose boulders			
43	(25)	40%	(18-43)	89				Shattered &	Completely shattered	Pyritic alteration with	5-10% fine-gr. dissem. pyrite with so
46	3	60%						Brecciated	& brecciated rock with	scattered thin quartz vlts	possible dissem. sphalerite. Qtz vlt
51	5	40%						quartz porphyry	fault gouge & numerous	& some calcite vlts -	zones are open & generally brecciated.
								& granodiorite	slip planes, to 55'	Abundant clays.	Very little oxidation evident.
								43 - Josephine			
60	(17)	80%	(43-60)	94				Granodiorite	Granodiorite is fine-	Granodiorite exhibits prop-	Granodiorite is magnetic & does not
								Faults at 65'	med. gr. with minor	ylitic type alteration with	contian dissem. sulphides. Serpentin-
68	8	100%						67' & 68'	qtz, fair K-feldspar	superimposed late seams of	ized slip planes have been hematized
								68-70' Flt Gge	content and abdt.	calcite & serpentine. Clays	(red black serpentine) & exhitit
70	2	50%							magnetite	developed in & near shattered	scattered grains of pyrite & chalcopy
										zones	
74	4	75%						74-77' Flt Zne			70-80' Numerous thin calcite vlts.
77	3	15%						Breccia			
78	1	90%									
80	2	90%						81-84' Fault -	50% of int is gouge.		
84	4	70%									
87	(27)		(60-87)	116				87-93' Veinlet			87' - Numerous closely-spaced dark qt
								zone			& calcite vlts nearly parallel to cor
92	5	80%						92.5 Fault	93-99' Highly shat-	Fgr. dissem. pyrite, abdt	Very fgr dissem. pyrite, galena &
93	(6)	80%	(87-93)	59	.001	0.11		6 in. gouge	tered & altered	clay & serpentine.	chalcocite or other black sulphide.
94	1	100%							Josephine granodiorite		
99	(6)	"	(93-99)	119	.001	0.07		Josephine			
104	5	"						Granodiorite		propylitic alteration.	
108	4	"								Little or no sulphides	
111	3	"									

District Wrightson - Mansfield Canyon Hole Number DDH MC-4 Page Number 2

Depth	Int.	% Core Rcvy.	Sample No.	ppm Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
111								Josephine	Fine-med gr. dark gray	Propylitic alteration	
to								Granodiorite	rock, with minor qtz,	with clay and chlorite	
113	2	100%							fair K-feldspar, and		
116	3	70%						113-117' Fault	abundant magnetite		
								Zone - sand &			
117	1	30%						Pebble breccia			117' - Hematized zones along serpen-
119	2	90%						118.5-121' Fault	Fault Gouge	Intense clay, serpentine,	tinized slip planes are prominent.
120	1	100%								& talc in fault zone.	
124	4	90%								Dense granodiorite exhib-	123' - Dense granodiorite contains
125	(26)		(99-125)	127						its fresh orthoclase,	minor disseminated chalcopyrite.
128	3	100%						128-130' Fault,		chlorite & epidote, plag.	
133	5	"						6 inches gouge		& abdt dissem. magnetite.	
137	4	"								No original ferromag	Thin slip planes exhibit seams of
141	4	"								minerals are evident.	calcite & serpentine ? Disseminated
144	3	"									pyrite associated with scattered
149	5	"									thin qtz-calcite veintets.
154	5	"						154' Fault	Dense, relatively	Some possible secondary	145-154' Very fgr pyrite is localized
									unfractured granodiorite	"bronze" biotite noted.	in thin veinlets along slip planes.
159	5	"									
164	5	"									
169	5	"									
174	5	"						174-175' Fault	More calcite vlts noted		
175	(25)		(150-175)	138					below the fault		
179	5	"									
184	5	"									
188	4	"						189-200' Shat-	Numerous slip planes	190' - Chlorite & dark	
193	5	"						tered & broken	Rock has a shattered	green serpentine on slip	No sulphides notedin zone of intense
194	1	50%							and broken appearance	planes. Rock between	clay alteration.
198	4	80%								exhibits intense clay alt.	
200	2	80%								Green montmor. after ortho.	
								200 Feet is End Of Hole.			

ASARCO

JDSell

Exploration Department
Western USA

W. L. Kurtz
Manager

June 12, 1979

F.T.G.

Mr. Douglas C. Brockie
Kerr-McGee Corporation
P.O. Box 25861
Oklahoma City, Oklahoma 73125

Mansfield Canyon
Arizona

Dear Mr. Brockie:

Thank you for allowing us to examine the Mansfield Canyon data which I am returning to you. Our interest level is only moderate and we would like to examine the core -- sometime in late summer or early fall when we get some of our people back from the Nevada-California scene. Hopefully the property will still be available at that time.

Very truly yours,

W.L. Kurtz
W. L. Kurtz

WLK:lb
Encs.

cc: FTGraybeal
EEJones

WLK suggests, and I agree, that Kerr-McGee's notorious inability to misinterpret porphyry Cu systems merits an examination of their core. Will you do it later in Summer or shall I find someone else.

What ever comes along.

Jed

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703
1150 North 7th Avenue (602) 792-3010