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James Doyle Sell Mining Collection

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rm 12 p.

Copper Deposits — gen file

TO TOM OSBORNE NEW YORK OFFICE PAGE 1

Best rated PART A

COPPER DEPOSITS WITH PRODUCTION POTENTIAL OF 75,000 TPY, OR MORE

	PLANNED YEARLY COPPER PRODUCTION*	START OF PRODUCTION*	RESERVES*
1. SAR CHESMEH IRANIAN GOVT.	145,000(M)	1978	412M TONS 1.12(CU 1ST 5-10 YRS1.5(
2. LA CARIDAD, SON.MEXICO MEXICANA DE COBRE (GOVT.44(, PRIVATE 56(	100,000(M)	SEPT. 1978	700M TONS .70(CU 1ST 5-10 YRS .80(
3. CERRO COLORADO, PAN. TEXAS GULF S AND PANANANIAN GOVT.	200,000(M)	1982(?)	+600M TONS .70(CU
4. OK TEDI, NEW GUINEA GOVT.-20(, OPERATOR, BHP-30(, AMOCO-30(GESELLSCHAFT-20(	120,000(M)	1985	250M TONS .94(CU .5GMS AU
5. DISPUTADA,CHILE EXXON	300,000(M)	1985( )	+500M TONS(M) AT 1.2 PCT. CU.
6. TENKE FUNGURUME,ZAIRE SOC.MINIERE DE T. F.	130,000(M)	NN.	55M TONS AT 5.6 PCT. CU , .45 PCT. ~~CU~~ Co
10 ~~7.~~ MICHIQUILLAY,PERU MINEROPERU 51 PCT. JAPANESE 49 PCT.	130,000(M)	NN	460M TONS AT .75 PCT +1ST 5 YRS,90 PCT CU
13 ~~8.~~ QUEBRADA BLANCA CHILE, CODELCO	100,000(M)	NN	+165M TONS 1.00(CU
9. SAFFORD - PHELPS DODGE		NN	400M TONS .72(CU OR/+-200M TONS .90 PCT. CU
7 ~~10.~~ ANDACOLLA, CHILE ENAMI, NORANDA			350M TONS .70 (CU
11. TOROMOCHO, PERU CENTROMIN	100,000(M)	NN	330M TONS .78PCT CU
12. VALLEY COPPER, B.C. COMINCO (81PCT.)	70,000(M)		800M TONS .48PCT CU
8 ~~13.~~ EL ABRA, CHILE CODELCO			1,500M TONS 1.00PCT CU

Revised numbers on list phoned to TCO 1-25-78

JHC

14.	STIKINE,B.C. KENNECOTT-HUDSON BAY			138M TONS 1.38PCT CU
17 ~~15.~~	EL ARCO, MEXICO INDUSTRIAL MINERA MEXICO			630M TONS .60PCT CU
16.	EL PACHON, ARGENTINE ST. JOE	100,000(M)	NN	780M** TONS .59PCTCU
15 ~~17.~~	QUELLAVECO CENTROMIN			200M TONS .80 PCT CU

* METRIC TONS EXCEPT IN USA AND CANADA
** MILLION
NN --- NOT KNOWN

J. H. COURTRIGHT

HAROLD THE FOLLOWING IS A LIST OF COPPER DEPOSITS NOT YET ON STREAM WITH CAPACITY TO PRODUCE MORE THAN 75,000 TONS CU/YEAR. PARTLY DEVELOPED DEPOSITS LISTED HIGHEST IN POTENTIAL ORDER OF DEVELOPMENT THEN FROM THERE BY GRADE WITH OPEN PIT FAVORED OVER UNDERGROUND AND SOME CONIDERATIONS FOR POLITICS AND GEOGRAPHY - WHICH CAN NOT BE IGNORED. LOCATION AND OWNERSHIP YOU ALREADY KNOW.

1. SAR CHESHMEH
2. LA CARIDAD
3. ANDACOLLO
4. TENGE-FUNGURUME
5. DISPUTADA
6. QUELLEVECO
7. EL ABRA
8. QUEBRADA BLANCA
9. OK TEDI
10. TORO MOCHO
11. MICHIQUILLAY
12. CERRO COLORADO

(+75,000 TONS CU/YR POSSIBLE FROM HERE UP - UNLIKELY FROM HERE DOWN)

13. PD SAFFORD
14. HANNA GETTY - CASA GRANDE
15. EL ARCO
16. STIKINE
17. PACHON
18. SANTA ROSA-PILARES
19. VALLEY CU (0.48 PCT. CU)
20. HELVETIA E — 200 M .55
21. GREATER BUTTE

I MADE THE ASSUMPTION THAT WITH LESS THAN 0.9 PCT. CU BLOCK CAVE OR LESS THAN 0.5 PCT. CU OPEN PIT WOULD NOT EXCEED 75,000 TONS OF COPPER PER YEAR.

F.T.G.

2/27/91

F. T. GRAYBEAL, NYO — COPPER DEPOSITS

Sal Anzalone and I have put together a list of North-South American copper deposits that we consider candidates for production in the 90's.

	DEPOSIT	LOCATION	OWNER	MILLIONS TONS	GRADE Cu%	
1.	COLLAHUASI	CHILE	FALCONBRIDGE	240	1.5	.04% Mo
2.	CANDALARIA	CHILE	PHELPS DODGE	+390	1.14	+ gold large part open pittable
3.	Mt Milligan	CANADA	PLACER DOME	+300	.23	.019 oz/t gold
4.	Quebrada Blanca	CHILE	COMINCO	65	1.5	enriched ore additional primary ore
5.	WINDY CRAGGY	CANADA	GEODES	165	1.8	
6.	HELVETIA	USA	ASARCO	280	.63	.02 Mo
7.	ELY	USA	MAGMA/ALTA	257	.62	.007 oz/t Au
8.	EL ABRA	CHILE	CODELCO	1,300 (150-200)	.6 1.0	includes
9.	BAJO LA ALUMBRERA	ARGENTINA	STATE	350	.55	.02 oz/t Au
10.	CERRO COLORADO	PANAMA	STATE?	1,000	.6	

OF NOTE

COCHISE (BISBEE)	PD	USA	170	.5	chalcocite; may be leachable
New CORNELIA (ASO)	PD	USA	209	.5	
COPPER BASIN	PD	USA	175	.55	.021 Mo environmental problems
Vekol	PAPAGO TRIBE	USA	105	.56	.014 Mo

WLK 2/27/91

cc: S. ANZALONE

FAX

2/27/91

FROM: W. L. KURTZ

TO: F. T. GRAYBEAL

CRANDON, WISC.

DINGUS SAYS ORE RESERVE AT CRANDON:

		Cu	Pb	Zn	Ag	Au
massive:	43Mt	.6	.73	8.4	1.67	.043
stringer:	25Mt	1.8	.03	.7	.31	.01

Say 80% recovery for massive Cu, Zn, Ag, Au and "good" smelter schedule:

$1 Cu x .6% x .8 x 20 = $9.60

$.60 Zn x 8.4 x .8 x 20 = 80.64

$3.50 Ag x 1.67 x .8 = 4.67

350.00 Au x .043 x .8 = 12.04

106.95 say $107.00

$107/ton recoverable x 43 Mt = $4,601,000,000

W/o further study, if not screwed by the smelter looks like a lot of margin for: purchase
royalty
mine dev – mill capital
direct operating costs

Do you want to pursue? Kurtz? Worthington?

cc: S. ANZALONE

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royalty
mine dev – mill constr.
direct operating costs

Do you want to pursue? Kurtz? Worthington?

May 14, 1990

RECEIVED
MAY 15 1990
EXPLORATION DEPARTMENT

MEMORANDUM TO: Messrs. R.L. Brown
F.T. Graybeal

Silver and Copper
Closed Mines or Inactive Deposits

Several months ago, Mr. R. de J. Osborne requested that I put in motion an activity to create lists of all former silver and copper mines which still contain substantial mineral reserves, i.e., which have been shut down because of economics. He also wants, in the same lists, a statement of all the known orebodies which have been drilled off to sufficient extent to establish reserves, even if no production has been forthcoming in the past.

This lists should show barebone data on each deposit listed, giving approximate tonnage and grade, last known production if any, last known ownership, etc.

As I've taken so long to get around to setting this in motion, I would much appreciate your pushing ahead with the activity as quickly as possible, as I expect to be asked about the progress one of these days. The copper list should not present a problem, as we all prepared numerous lists of known copper deposits in the 1970s, and it will mostly be a case of updating these old lists which appear in our files. I would think Jim Sell and Bill Kurtz could put the copper list together pretty quickly from data they have on hand in Tucson or can put their hands on.

Silver will be more difficult. You should have someone coordinate the preparation of the silver list, perhaps John Balla or Doug Smith. Since there are many very small silver deposits around the world, some discretion will have to be exerted as to size. In general, we are not looking for an exhaustive list of tiny mineral bodies, but rather something that would serve as a guide for possible acquisition.

I should add that in both cases, the lists should include foreign deposits as well as domestic ones.

TCO

T.C. Osborne

RECEIVED
MAY 14 1990
EXPLORATION DEPT.

TCO/fs

Table 2.—MEC copper properties included in this study

Country and property name	Ownership	Current status[1]	Mining method[2]	Milling method[3]	Deposit type[4]	Year of initial production[5]	Recoverable copper,[6] 10^3 mt/yr
Argentina:							
Bajo la Alumbrera	Yacimientos Agua del Dionisio	E	S	F	S	NAP	52.4
El Pachon	Cia Minera Aguilar S.A.	E	S	F	S	NAP	97.4
Paramillo Sur	Fabricacionces Militares	E	S	F	S	NAP	50.8
Australia:							
Benambra	Western Mining, BP Australia	E	U	F	O	NAP	15.0
CSA	Cobar Mines, CRA	P	U	F	O	1907	10.6
Cadia	Pacific Copper Ltd, Homestake Australia	E	S	F	O	NAP	3.7
Chesney	Cobar Mines, CRA	E	U	F	O	NAP	7.2
Golden Grove	North Broken Hill Holdings	E	S	F	M	NAP	10.1
Lady Annie	Traiko Mines, Mount Isa Mines	E	S	L	S	NAP	6.1
Mount Isa	Mount Isa Mines Ltd	P	U	F	M	1931	164.6
Mount Lyell	Mount Lyell Mining & Railway	P	U	F	M	1935	19.5
Olympic Dam	Western Mining, BP Australia	D	U	F	S	1988	53.4
Botswana: Selebi, Phikwe	BCL Ltd	P	U	F	O	1974	9.2
Brazil:							
Camaqua	Cia Brazileira de Cobre	P	U	F	P	1981	11.6
Jaguari (Caraiba)	Caraibas Metais S.A.	P	C	F	P	1982	63.0
Pedra Verde	Promisa, Caraibas Metais S.A.	E	U	F	P	NAP	7.4
Burma: Monywa	Burmese Government	P	S	F	P	1984	15.5
Canada:							
Afton	Teck Corp., Iso Mines Ltd	P	S	F	P	1977	17.0
Bell	Bell Copper (Noranda)	T	S	F	P	1972	22.1
Barg	Kennco Explorations (Western)	E	S	F	P	NAP	55.0
Bethlehem	Bethlehem Copper Ltd	T	S	F	P	1962	23.0
Brenda	Brenda Mines (Noranda)	P	S	F	P	1970	12.6
Casino	Casino Mining Co.	E	S	F	P	NAP	26.4
Catface	Falconbridge, Catface Copper	E	S	F	P	NAP	30.7
Copper and Needle Mountains	Mines Gaspe (Noranda)	T	U	F	P	1955	49.3
Copper Rand	Northgate Exploration Ltd	P	U	F, L	O	1959	10.6
Coppermine River	Coppermine River Ltd	E	S	F	M	NAP	6.5
Detour project	Selco Mining Corp. Ltd	P	C	F	O	1981	14.1
Galore Creek	Stikine Copper Ltd	E	S	F	P	NAP	47.4
Geco	Noranda Mines Ltd	P	U	F	M	1957	18.9
Gibraltar	Gibraltar Mines Ltd	P	S	F, L	P	1972	36.4
Granisle	Noranda Mines Ltd	T	S	F	P	1966	16.9
Great Lakes Nickel	Boliden Canada Ltd	E	U	F	O	NAP	10.3
Heath Steel	Heath Steel, Noranda, ASARCO	P	U	F	M	1957	7.9
High Lake	Kennarctic Explorations	E	U	F	P	NAP	8.7
Highmont	Highmont Mining Corp	T	S	F	P	1981	20.5
Huckleberry Mountain	Kennco Explorations Ltd	E	S	F	P	NAP	13.6
Island Copper	Utah Mines Ltd	P	S	F	P	1971	61.8
Izok Lake	Texasgulf, Inc.	E	S	F	M	NAP	17.9
JA Zone	Bethlehem Copper Ltd	E	U	F	P	NAP	24.8
Kidd Creek	Kidd Creek Mines Ltd	P	U	F	M	1966	129.7
Lornex	Lornex Mining Corp. Ltd	P	S	F	P	1972	91.2
Maggie	Bethlehem Copper Corp	E	S	F	P	NAP	13.7
Poison Mountain	Long Lac, Copper Giant	E	S	F	P	NAP	14.1
Ruttan	Sherritt Gordon Mines Ltd	P	U	F	M	1973	20.5
Sam Goosly	Equity Mining, Placer Development	P	S	F	P	1980	8.6
Schaft Creek	Teck Corp., Liard Copper Mines	E	S	F	P	NAP	29.8
Similkameen	Newmont Mining Corp	P	S	F	P	1925	23.5
Summers Creek	Global Energy Corp	E	S	F		NAP	15.9
Sustut	Falconbridge Ltd	E	S	F	P	NAP	39.7
Thierry	Union Miniere S.A.	T	U	F	O	1976	13.5
Valley Copper	Valley Copper Mines Ltd	P	S	F	P	1983	127.3
Chile:							
Andacollo	Noranda Mines Ltd	E	S	F	P	NAP	90.8
Andina	CODELCO-Chile	P	U	F	P	1970	102.7
Cerro Colorado	Cerro Colorado Mine Development Co.	E	U	F	P	NAP	54.5
Chuquicamata	CODELCO-Chile	P	S	F	P	1915	462.5
El Abra	..do	E	S	F, L	P	NAP	47.4
El Salvador	..do	P	U	F, L	P	1959	106.3
El Soldado	Exxon Minerals Co.	P	U	F	P	1800's	52.7
El Teniente	CODELCO-Chile	P	U	F	P	1906	293.3
La Cascadas	Sociedad Minera Pudahuel (SMP)	P	S	L	P	1970	19.4
La Escondida	Utah International, Getty Oil	E	S	F	P	NAP	210.0
Lo Aguirre	Sociedad Minera Pudahuel (SMP)	P	S	L	P	1980	14.0
Los Bronces	Exxon Minerals Co.	P	S	F	P	1962	36.3
Los Pelambres	Anaconda Co. (ARCO)	E	F	F	P	NAP	102.2
Mantos Blancos	Empresas Sudamericana Cons	P	S	L	P	1961	58.4
Portrerillos	CODELCO-Chile	E	U	F	P	NAP	14.2
Quebrada Blanca	ENAMI, Falconbridge Ltd	E	S	F	P	NAP	99.8
Fiji: Namosi	Viti Copper Ltd.	E	S	F	P	NAP	58.4
Finland:							
Keretti	Outokumpu Oy	P	U	F	M	1957	14.8
Pyhasalmi	..do	P	U	F	M	1962	6.0
India:							
Ambaji	Gujarat Mineral Development	E	U	F	M	NAP	3.4
Khetri, Kolihan	Hindustan Copper Ltd.	P	U	F	O	1973	27.9
Malanjkhand	..do	P	S	F, L	O	1982	23.5
Mosaboni	..do	P	U	F	O	1965	12.0
Rakha	..do	P	U	F	O	1919	2.8
Surda, Pathagora, Kendadi	..do	P	U	F	O	1975	7.4

See explanatory notes at end of table.

Table 2.—MEC copper properties included in this study—Continued

Country and property name	Ownership	Current status[1]	Mining method[2]	Milling method[3]	Deposit type[4]	Year of initial production[5]	Recoverable copper,[6] 10^3 mt/yr
Indonesia: Ertsberg	Freeport Indonesia Inc.	P	U	F	P	1972	70.2
Iran: Sar Cheshmeh	Iranian Government	P	S	F	P	1983	137.5
Israel: Timna	Israel Chem. Ltd. (Government)	P	U	F	S	1959	4.2
Japan:							
Hanaoka	Dowa Mining Co. Ltd.	P	U	F	M	1973	17.1
Kosaka	..do	P	U	F	M	1898	6.6
Jordan: Wadi Dana	Jordanian Government	E	S	L	S	NAP	31.7
Malaysia: Mamut	Overseas Mineral Resource Development	P	S	F	P	1975	28.7
Mauritania: Akjoujt	Societe Miniere de Mauritania	E	S	F	S	NAP	24.0
Mexico:							
Arroyos Azules	Comision de Fomento Minero	E	U	F	O	NAP	9.1
Cananea	Industrial Minera Mexico	P	S	F, L	P	1963	165.9
El Arco	Industrial Minera Mexico, ASARCO	E	S	F	P	NAP	155.3
La Caridad	Mexicana del Cobre	P	S	F	P	1980	174.0
La Verde	Compania Cuprifera la Verde	E	S	F	P	NAP	27.6
Santo Tomas	Industria Minera Penoles	E	S	F	P	NAP	79.5
Morocco: El Bleida	Societe Minerie de Bou Gaffer	P	U	F	O	1977	15.3
Nambia:							
Klein Aub	Klein Aub Kooermaatskappy	P	U	F	S	1966	4.2
Kombat, Asis West	Tsumeb Corp. Ltd.	P	U	F	O	1965	9.0
Otjihase	Tsumeb Corp. Ltd., Otjihase Ltd.	P	U	F	O	1982	12.6
Tsumeb	Tsumeb Corp. Ltd.	P	U	F	M	1900	7.6
Norway: Tverrejellet	Folldal Verk A/S	P	U	F	M	1968	5.9
Oman: Sohar Project	Oman Mining Company	P	U	F	M	1982	17.8
Pakistan: Saindak	Resource Development Corp. (Government).	E	S	F	P	NAP	12.3
Panama:							
Cerro Colorado	Empresa de Cobre Cerro Colo	E	S	F	P	NAP	172.1
Cerro Petaquilla	Panamanian Government	E	S	F	P	NAP	32.4
Papua New Guinea:							
Bougainville	PNG Government, CRA, Public, Panguna	P	S	F	P	1972	172.1
Freida River	Conzinc Rio Algom	E	S	F	P	NAP	90.4
OK Tedi	Dampier, My Fugilan, Kupfer	P	S	F	P	1984	92.3
Yandera	Trialco, Buka, Broken Hill	E	S	F	P	NAP	74.2
Peru:							
Antamina	Minero Peru	E	S	F	P	NAP	123.2
Berenguela	..do	E	S	F	S	NAP	7.9
Cerro Verde	..do	P	S	F, L	P	1977	62.2
Cobriza	Centromin	P	U	F	S	1967	38.2
Coroccohuayco	Minero Peru	E	U	F	O	NAP	17.6
Cuajone	Southern Peru Copper Corp	P	S	F	P	1976	126.7
El Aguila	Empressa Minera el Aguila	P	S	F	P	1978	11.2
Michiquillay	Minero Preu, Michiquillay Copper Co.	E	S	F	P	NAP	83.1
Quellaveco	Minero Peru	E	S	F	P	NAP	85.0
Tintaya	Minero Peru, Centromin, Cofide	P	S	F, L	P	1985	60.4
Toquepala	Southern Peru Copper Corp.	P	S	F	P	1960	111.6
Toromocho	Centromin	E	S	F	P	NAP	60.3
Philippines:							
Amacan (North Davao)	North Davo, Private	P	S	F	P	1983	32.5
Basay	Southern Star Mining, Ind. Corp.	T	S	F	P	1979	13.4
Batong-Buhay	Development Bank of Philippines	T	U	F	P	1983	16.0
Biga (Atlas)	Atlas Consolidated Mining & Development	P	S	F	P	1962	39.3
Boneng-Lobo	Western Minolco Corp.	T	S	F	P	1974	23.4
Carmen (Atlas)	Atlas Consolidated Mining & Development	P	S	F	P	1977	65.0
Copper Shield Project	Various claim holders	T	U	F	P	1969	3.2
Dizon	Benguet Consolidated Ltd.	P	S	F	P	1980	21.5
Hinobaan	Negros Copperfield Mines Inc.	D	S	F	P	1986	28.9
Inayawan	Denmag (Philippines) Inc.	E	S	F	P	NAP	16.2
Ino-Capayang	Consolidated Mines Inc.	T	S	F	P	1978	22.5
Lutopan (Atlas)	Atlas Consolidated Mining & Development	P	U	F	P	1966	66.2
Mapula, Masara	Apex Mining Co.	E	S	F	P	NAP	6.9
Sabena	Sabena Mining Co.	T	S	F	P	1979	20.2
San Antonio	Marcopper Mining Corp.	E	S	F	P	NAP	68.7
Santo Nino	Baguio Gold Mining Co.	T	U	F	P	1972	5.6
Santo Tomas	Philex Mining Corp.	P	U	F	P	1957	30.8
Sipalay	Maricalum Mining Corp.	T	S	F	P	1957	51.1
Tapian	Marcopper Mining Corp.	P	S	F, L	P	1969	33.8
Tawi-Tawi	Benguet Consolidated Inc.	E	S	L	P	NAP	5.1
Taysan	..do	E	S	F	P	NAP	22.5
Trident (Sulat)	Trident Mining & Industrial Co.	E	S	F	P	NAP	10.5
Portugal:							
Aljustrel	Empressa Minera Mines	P	U	F	S	1982	9.0
Neves-Corvo	RTZ Metals Ltd. Edma	D	U	F	S	1987	59.0
Saudi Arabia: Jabal Sayid	Saudi Arabian Government	E	U	F	M	NAP	15.6
South Africa, Rep. of:							
Black Mountain	Phelps, Dodge, G.F.S.A.	E	U	F	M	NAP	18.0
Broken Hill	..do	P	U	F	M	1980	5.6
Messina	Messina (Transvaal) Development Ltd.	P	U	F	O	1906	7.1
O'Okiep	O'Okiep Copper Co. Ltd.	P	U	F	O	1965	24.6
Palabora	Palabora Mining Co.	P	S	F	P	1965	122.3
Spain:							
Aznalcollar	Andaluza de Pititas, S.A.	P	S	F	M	1979	13.9
Cerro Colorado	Rio Tinto Patino S.A.	P	U	F	M	1873	33.7
Santiago	..do	P	S	F	M	1975	8.3
Sotiel	Cia Brazileira de Cobre	P	U	F	O	1983	2.6

See explanatory notes at end of table.

Table 2.—MEC copper properties included in this study—Continued

Country and property name	Ownership	Current status[1]	Mining method[2]	Milling method[3]	Deposit type[4]	Year of initial production[5]	Recoverable copper,[6] 10^3 mt/yr
Sudan: Hofrat en Nahas	Sudan Government	E	E	F	O	NAP	24.3
Sweden:							
Aitik	Boliden Metall AB	P	S	F	O	1968	38.2
Stekenjokk	..do	P	U	F	M	1975	6.8
Viscaria	Luossavaara-Kirunauaara AB	P	U	F	S	1983	12.0
Turkey:							
Cayeli	Etibank, Phelps Dodge	E	U	F	O	NAP	16.5
Ergani-Madeni	Etibank	P	S	F, L	P	1980	11.0
Espiye	Etibank, KBI	D	C	F	M	1986	7.5
Murgul	Etibank, Black Sea Copper	P	S	F	M	1972	41.8
Siirt	Etibank, Preussag Metall	E	U	F	M	NAP	13.4
Uganda: Kilembe	Ugandan Government	E	U	F	O	NAP	6.9
United States:							
Alaska:							
Arctic Camp	Bear Creek Mining Co. (Kennecott)	E	S	F	P	NAP	109.5
Bornite	..do	E	U	F	P	NAP	22.4
Brady Glacier	Newmont Mining Corp.	E	U	F	P	NAP	12.5
Orange Hill, Bond Creek	Bear Creek Mining Co. (Kennecott)	E	S	F	P	NAP	36.7
Arizona:							
Bagdad	Cyprus Minerals Co.	P	S	F, L	P	1940	52.6
Casa Grande	Casa Grande Copper Co.	E	U	F	P	NAP	88.3
Christmas	Inspiration Resources Corp.	T	C	F	P	1962	6.3
Copper Basin	Phelps Dodge Corp.	E	S	F	P	NAP	25.8
Dubacher Canyon	Occidental Minerals Corp.	E	S	L	P	NAP	8.6
Florence (Conoco)	Continental Oil (Min. Div.)	E	S	F, L	P	NAP	23.6
Helvetia East	Anamax Mining Co.	E	S	F, L	P	NAP	38.4
Helvetia West	Inspiration Resources Corp.	E	S	F	P	NAP	5.5
Inspiration	..do	P	S	F, L	P	1915	71.1
Lakeshore	Noranda Mines Ltd.	P	U	L	P	1976	10.9
Miami East	Newmont Mining Corp.	D	U	F	P	1977	9.7
Miami Leach	Cities Services Co.	T	S	L	P	1954	5.3
Mission, San Xavier	ASARCO	T	S	F	P	1961	35.7
Morenci, Metcalf	Phelps Dodge Corp.	P	S	F, L	P	1942	203.9
New Cornelia	..do	T	S	F, L	P	1917	46.3
Oracle Ridge	Continental Copper Co. (subsidiary of Union Oil).	E	U	F	P	NAP	10.2
Ox Hide	Inspiration Resources Corp.	T	S	L	P	1968	4.4
Palo Verde	Anamax	T	S	F	P	1979	39.7
Peacock	Producers Mineral Corp.	E	S	F, L	P	NAP	7.0
Pinto Valley	Newmont Mining Corp.	P	S	F, L	P	1943	71.9
Ray	Kennecott Minerals (SOHIO)	P	S	F	P	1955	62.4
Red Mountain	Kerr-McGee Corp.	E	U	F	P	NAP	37.2
Sacaton	ASARCO	T	S	F	P	1974	25.3
Safford (Kennecott)	Kennecott Minerals (SOHIO)	E	S	L	P	NAP	21.9
Safford Phelps Dodge	Phelps Dodge Corp.	E	U	F	P	NAP	127.9
San Manuel-Kalamazoo	Newmont Mining Corp.	P	U	F	P	1955	108.3
Sanchez	Inspiration Resources Corp.	E	S	F, L	P	NAP	17.1
Sierrita-Esperanza	Cyprus Minerals Co.	P	S	F, L	P	1959	94.8
Silver Bell	ASARCO	T	S	F, L	P	1954	20.5
Twin Buttes	Anamax	T	S	F, L	P	1969	78.7
Van Dyke	Van Dyke Copper, Sho-Me Copper	E	S	L	P	NAP	8.0
Vekol Hills	Newmont Mining Corp.	E	S	F	P	NAP	28.3
California:							
Lights Creek	Placer Amax	E	S	F	P	NAP	27.7
Walker	Calicopia Corp.	E	U	F	P	NAP	3.6
Maine: Bald Mountain	Superior Oil, Louisiana Land	E	S	F	M	NAP	14.3
Michigan:							
Presque Isle Syncline	AMAX	E	U	F	P	NAP	30.9
White Pine	Copper Range Co.	P	U	F	S	1953	51.1
Minnesota:							
Ely Spruce	International Nickel Co.	E	S	F	P	NAP	49.3
Minnamax	Bear Creek Min. Co. (Kennecott)	E	U	F	P	NAP	49.1
Montana:							
Butte Copper	Washington Corp.	P	S	F	P	1952	88.5
Heddleston	ASARCO	E	S	F	P	NAP	16.4
Troy	..do	P	U	F	O	1982	17.9
Neveda:							
New Ruth	Kennecott Minerals (SOHIO)	T	S	F, L	P	1970	27.2
Yerrington	Anaconda Co. (ARCO)	E	S	F, L	P	NAP	11.7
New Mexico							
Chino	Kennecott (SOHIO)/, Mitsubishi	P	S	F, L	P	1912	107.5
Continental Surface	U.V. Industries Inc.	T	S	F	P	1968	11.6
Continental Underground	..do	T	U	F	P	1968	13.0
Copper Flat	Quintana Minerals, Philbro	E	S	F	P	(7)	15.2
Nacimiento	Earth Resources Co.	E	S	L	S	NAP	1.4
Pinos Altos	Exxon Min. Co., Boliden Mining	E	S	F	P	NAP	10.6
Tyrone	Phelps Dodge Corp.	P	S	F, L	P	1970	127.2
Utah:							
Bingham Canyon	Kennecott Minerals (SOHIO)	P	S	F	P	1906	155.0
Carr Fork	Anaconda Co. (ARCO)	D	U	F	P	(8)	51.0
Washington: Sunrise	International Brenmac Dev. Corp.	E	U	F	O	NAP	8.1
Wisconsin:							
Crandon	Exxon Minerals Co.	E	U	F	P	NAP	40.0
Flambeau	Flambeau Min. Corp. (Kennecott)	E	S	F	M	NAP	10.2
Pelican River	Noranda Mines Ltd.	E	U	F	P	NAP	1.3
Wyoming: Kirwin	AMAX Inc.	E	S	F	O	NAP	26.5

See explanatory notes at end of table.

Table 2.—MEC copper properties included in this study—Continued

Country and property name	Ownership	Current status[1]	Mining method[2]	Milling method[3]	Deposit type[4]	Year of initial production[5]	Recoverable copper,[6] 10^3 mt/yr
Zaire:							
Dikuluwe, Mashamba	Gecamines	P	S	F	S	1975	146.1
Kakanda, Diselle	..do	P	U	F	S	1930	22.2
Kambove	..do	P	U	F	S	1926	37.2
Kamoto	..do	P	U	F	S	1972	97.4
Kipushi	..do	P	U	F	O	1926	42.5
Kov	..do	P	S	F	S	1956	139.4
Musoshi, Kinsenda	Sodimiza	P	U	F	S	1972	34.6
Tenke Fungurume	Gecamines	E	S	F	S	NAP	9.7
Zambia:							
Baluba	Zambia Consolidated Copper Mines Ltd.	P	U	F	S	1973	60.7
Chambishi	..do	P	U	F	S	1965	30.5
Chibuluma	..do	P	U	F	S	1965	16.4
Kalulushi East	..do	E	U	F	S	NAP	14.0
Konkola Division	..do	P	U	F	S	1957	42.1
Luanshya	..do	P	U	F	S	1931	46.0
Mufilira	..do	P	U	F	S	1933	102.3
Nchanga Division	..do	P	C	F, L	S	1965	317.3
Nkana Division	..do	P	C	F	S	1919	60.2
Zimbabwe: Mangula (Miriam)	MTD (Mangula) Ltd.	P	U	F	O	1958	11.0

NAP, Not applicable
[1] P, producing; T, temporarily shut down; D, developing; E, explored.
[2] S, surface; U, underground; C, combined surface and underground.
[3] F, flotation; L, leach.
[4] P, porphyry; S, sedimentary; M, massive; O, other.
[5] Initial year of significant production leading up to current operation or expected startup date for properties under development.
[6] Annual recoverable copper including mining and processing losses through refined copper.
[7] Copper Flat mill has been sold and shipped to OK Tedi, Papua New Guinea. Property has been downgraded to explored status.
[8] Carr Fork mill has been sold and shipped to OK Tedi, Papua New Guinea. Deposit has been sold to Kennecott Minerals Co. Development. Status is unknown.

As shown in table 1, Chile maintains the lead in demonstrated copper resources with 29 pct of the recoverable copper, followed by the United States with 17 pct, Australia 8 pct, Mexico 6 pct, Zaire 6 pct, Peru 6 pct, and Canada 5 pct. These seven countries account for nearly 78 pct of all MEC demonstrated copper resources.

Figure 1 shows the relationship of the demonstrated resources included in this study to the reserve base estimate *(6)*. Total land-based copper resources are estimated to be 1,600 million mt. Of the properties evaluated in this study, mines in production as of January 1, 1985, are estimated to contain 194 million mt, 58 pct of potentially recoverable copper, compared with 140 million mt copper potentially recoverable from nonproducing properties. Individual countries vary widely with respect to the proportion of recoverable resource associated with producing mines. Zambia and Zaire have nearly their entire resources from the producing properties while Canada, United States, Peru, and Philippines have 50 pct or less, and Mexico and Chile are approximately 75 pct. Australia, with the discovery of Olympic Dam, has only 15 pct of recoverable copper resource occurring in producing mines.

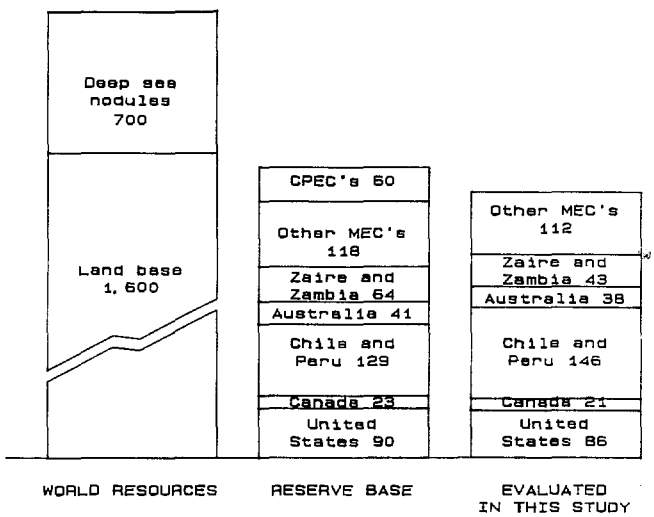


Figure 1.—Estimates of world copper resources (million metric tons of contained copper).

For Copper Production WLK Copy

Table No. II Known World Copper Deposits Awaiting

UNITED STATES

Coastal Mining Company (Getty/Hanna)
West Casa Grande, Arizona. 250,000,000 tons (500,000,000?) averaging 1.0 percent copper before dilution.

Kennecott Copper Corporation
Safford, Arizona. 500,000,000 tons (+) of 0.5 percent copper.
Ladysmith, Wisconsin, 4,000,000 tons of ore averaging 4.8 percent copper.
Spar Lake, Montana. 43,500,000 tons of ore averaging 0.74 percent copper and 1.54 ounces silver per ton (Asarco conducting feasibility study).

Inspiration Consolidated Copper Company
Joe Bush property, Arizona. 90,000,000 tons 0.7 percent copper.

Newmont Mining Corporation
Vekol Hills, Arizona. 100,000,000 tons averaging 0.56 percent copper.

Cities Service Company
Miami East, Arizona. 50,000,000 tons averaging 1.95 percent copper.

Continental Oil Company
Florence, Arizona. 800,000,000 tons averaging 0.4 percent copper.

Kerr McGee Corporation
Red Mountain, Patagonia, Arizona. No ore reserve figures published.

Exxon
Crandon, Wisconsin. Two discoveries of massive sulphide copper/zinc ore. No ore reserve figures published.

Phelps Dodge Corporation
Safford, Arizona. 400,000,000 tons ore averaging 0.72 percent copper.
Copper Basin, Arizona. 159,000,000 tons ore averaging 0.55 percent copper and 0.02 percent molybdenum.

Arco (Anaconda)
Ann Mason property, Nevada. A potential of 495,000,000 tons of copper bearing material with average grade of 0.40 percent total copper.
Bear property, Nevada. Indications of 500,000,000 tons copper bearing material averaging 0.40 percent total copper.

Anamax Mining Company
East Helvetia, Arizona. 211,000,000 tons copper bearing material averaging 0.56 percent total copper plus 22,000,000 tons grading 0.55 percent acid soluble copper and 2 miles away, 24,000,000 tons of 0.75 percent oxide-sulphide.

Ponce Mining Company (Puerto Rico)
Amax/Kennecott Nearby but separate ore bodies totaling 244,000,000 tons averaging 0.73 percent copper.

CANADA

Bethlehem Copper Corporation
J-A Zone: Highland Valley area near Ashcroft, British Columbia. 286,000,000 tons averaging 0.43 percent copper and 0.017 percent molybdenum.
Maggie: 35 miles northwest of J-A Zone. 200,000,000 tons averaging 0.4 percent copper equivalent.

Cominco Limited
Valley Copper Mines (81 percent-owned). Lake Zone; Highland Valley area near Ashcroft, British Columbia, 800,000,000 tons averaging 0.48 percent copper.

Highmont Mining Corporation Limited (Teck 45 percent)
Highmont property: Highland Valley area, British Columbia, 140,000,000 tons averaging 0.40 percent copper equivalent.

Liard Copper Mines Limited
Schaft Creek property, British Columbia, 294,000,000 tons averaging 0.40 percent copper and 0.036 percent molybdenite.

Stikine Copper Limited (Kennecott, Hudson Bay)
Stikine River area, British Columbia, 138,000,000 tons of + 1.0 percent copper.

Equity Mining Corporation
Sam Goosly property near Houston, British Columbia, 43,500,000 tons grading 0.33 percent copper, 2.78 ounces silver, and 0.026 ounces gold per ton.

Granby Mining Company Limited
Huckleberry project near Smithers, British Columbia, 85,000,000 tons averaging 0.401 percent copper.

Noranda Mines Limited
Coldstream River Area, Revelstoke, British Columbia, 3,200,000 tons grading 4.49 percent copper, 3.24 percent zinc, and 0.6 ounce silver per ton before dilution.

Silver Standard Mines Limited
Minto area, near Carmacks, Yukon Territory (Asarco 50 percent). 4,700,000 tons averaging 1.78 percent copper.

Placer Development Limited
Berg prospect, near Houston, British Columbia, 400,000,000 tons averaging 0.40 percent copper and 0.05 percent molybdenum.

Texasgulf Inc.
Izok Lake, Northwest Territory.

MEXICO

Hudson Bay Mining and Smelting Company, Limited.
La Verde deposit, Gabriel Zamara, Michoacan. 81,300,000 tons grading 0.699 percent plus silver and gold values.

Tormex Mining Developers Limited (Penoles)
Santo Tomas prospect, northern Sinaloa. 150,000,000 tons averaging 0.5 percent recoverable copper.

Cobre de Sonora, S. A. de C. V.
Santa Rosa and **Pilares** deposits, Sonora. 143,000,000 tons 0.83 percent copper with silver and molybdenum values.

Industrial Minera Mexico
El Arco. Baja California. 630,000,000 tons 0.6 percent copper.

PANAMA

Texasgulf Inc.
Cerro Colorado. 1,000,000,000 tons (+) of 0.6 percent (+) copper.

Cobre Panama. (Japanese consortium)
Petaquilla prospect. 300,000,000 tons 0.6 percent copper.

ECUADOR

Caucha Direccion General de Geologia Minas (DGGM) is prospecting and reassessing this porphyry copper deposit discovered some years ago. At that time ore reserves were estimated at 55,000,000 tons averaging less than 0.5 percent copper and prospect was considered uneconomical. Work also being done at **San Miguel, San Bartolome,** and **Angas** prospects.

ARGENTINA

Cia Minera Aguilar S.A. (St. Joe)
El Pachon. San Juan Province. 870,000,000 tons grading 0.59 percent copper and 0.015 percent molybdenum.

YMAD (state-owned)
La Alumbrera, Catamarca Province. 220,000,000 tons grading 0.5 percent copper and 0.0225 ounce of gold per ton.

PERU

Centromin
Toromocho Ore reserves estimated at 330,000,000 tons averaging 0.766 percent copper, 0.2 percent molybdenum and 0.28 ounce of silver per ton.

Mineroperu
Santa Rosa. Sulphide ore body underlying and adjacent to Cerro Verde begins production 1977. Santa Rosa ore

reserves estimated at (1,200,000,000 tons?) averaging 0.55 percent copper.
Quellevaco Ore reserves estimated at 450,000,000 tons averaging 0.8 percent copper.
Michiquillay Ore reserves estimated at 460,000,000 tons averaging 0.75 percent copper.
Tintaya Ore reserves estimated at 44,000,000 tons sulphides averaging 2.0 percent copper and 11,000,000 tons of oxides averaging 2.2 percent copper.
Chalcobamba and **Ferrobamba.** Relatively less explored than some other major deposits. Ore reserves to date put at 33,000,000 tons averaging 2.0 to 3.0 percent copper.
Berenguela. Ore reserves estimated at 17,600,000 tons averaging 1.26 percent copper and 4.27 ounces of silver per ton.

Mitsubishi/Homestake
Pashpap Ore reserves estimated at 53,000,000 tons averaging 0.86 percent copper and 0.5 percent (?) molybdenum.

CHILE

Enami (?)-Noranda
Andacolla. 280 miles north of Santiago. 330,000,000 tons 0.7 percent copper.

Codelco.
El Abra 29 miles north of Chuquicamata. 550,000,000 (+) tons of 1.0 percent sulphide and oxide ore.
Quebrada Blanca North of El Abra. 165,000,000 tons of 1 percent.
Pampa Norte. North of Chuquiccamata. 440,000,000 tons averaging 0.8 percent copper (oxide).

Los Pelambris North of Andacollo. 440,000,000 tons averaging 0.8 percent copper.

Cerro Colorado. Near Peruvian border. 110,000,000 tons of 1.2 percent copper.

PAPUA NEW GUINEA

Broken Hill Proprietary Limited (PNG government)
OK Tedi. 250,000,000 tons 0.85 percent copper.

MIM Holdings Limited
Frieda River prospect. 366,000,000 tons averaging 0.45 percent copper.

Triako Mines-Buka Minerals-Kennco Explorations
Yandera prospect. 338,000,000 tons of 0.42 percent copper.

AUSTRALIA

Western Mining Company
Andamooka region (Olympic Dam) South Australia. Significant prospect reported.

AMAX Inc. (Consortium)
Golden Grove, near Yagloo, Western Australia. 11,000,000 tons 3.5 percent copper.

Western Mining Corporation
Teutonic Bore, north of Kalgoorlie, Western Australia. (Western Selcast and Mount Isa 60:40). Significant copper/zinc discovery.

PAKISTAN

Fort Saindak in Chagai district of Baluchistan. Three ore bodies. East body 261,000,000 tons average grade 0.37 percent copper. South body 55,000,000 tons average grade 0.47 percent copper. North body 20,000,000 tons 0.45 percent copper. Marginal values of molybdenum present in East and South deposits. Feasibility study was begun April 1976.

MONGOLIA

Erdenetiyn-Ovoo. Extensive copper/molybdenum deposit reported. Tonnage and grade not given. However, a plant with annual capacity of 16,000,000 tons of ore is reported under construction with a 1978 completion date.

ZAIRE

SMTF
Tenke-Fungurume deposits contain reserves estimated at 56,000,000 tons mixed ores averaging 5.7 percent copper and 0.44 pecent cobalt. Development postponed.

ZAMBIA

Lumwana deposit. 220,000,000 tons of 1 percent copper bearing material indicated.

Kansanshi. 10,000,000 tons/ore averaging 3.06 percent copper. Development postponed.

PHILIPPINES

Lepanto Consolidated
Hinobaan project. Ore reserves 100,000,000 tons averaging 0.50 percent copper

Benguet Consolidated
Tawi-Tawi project, Benguet province. Ore reserves 165,000,000 tons averaging 0.39 percent copper.

In addition to the deposits listed above by George Munroe, the editors of WORLD MINING add the following deposits compiled from records in the WORLD MINING Resource Research Department.

UNITED STATES

Amax, Inc.
Kirwin. Small porphyry, estimated 70,000,000 tons of 0.75 percent.

Arco (Anaconda)
Heddleston. 93,000,000 tons at 0.48 percent.
Deep Continental North, 497,600,000 0.49 percent copper.
Deep Low Grade, 820,000,000 tons of 0.74 percent total copper.
Hall, 54,000,000 tons of 0.46.

Placer Amex Inc.
Lights Creek. 350,000,000 tons of 0.34 percent.

Ownership unknown.
Washington state.
Mazama, 470,000,000 of 0.37 percent.
Sampson, 100,000,000 tons of 0.5 percent.
North Fork, 44,000,000 tons of 0.5 percent copper.

BULGARIA

Elatsite, being developed for production. Reserves reported at 250,000,000 tons of 0.45 percent copper.

BURMA

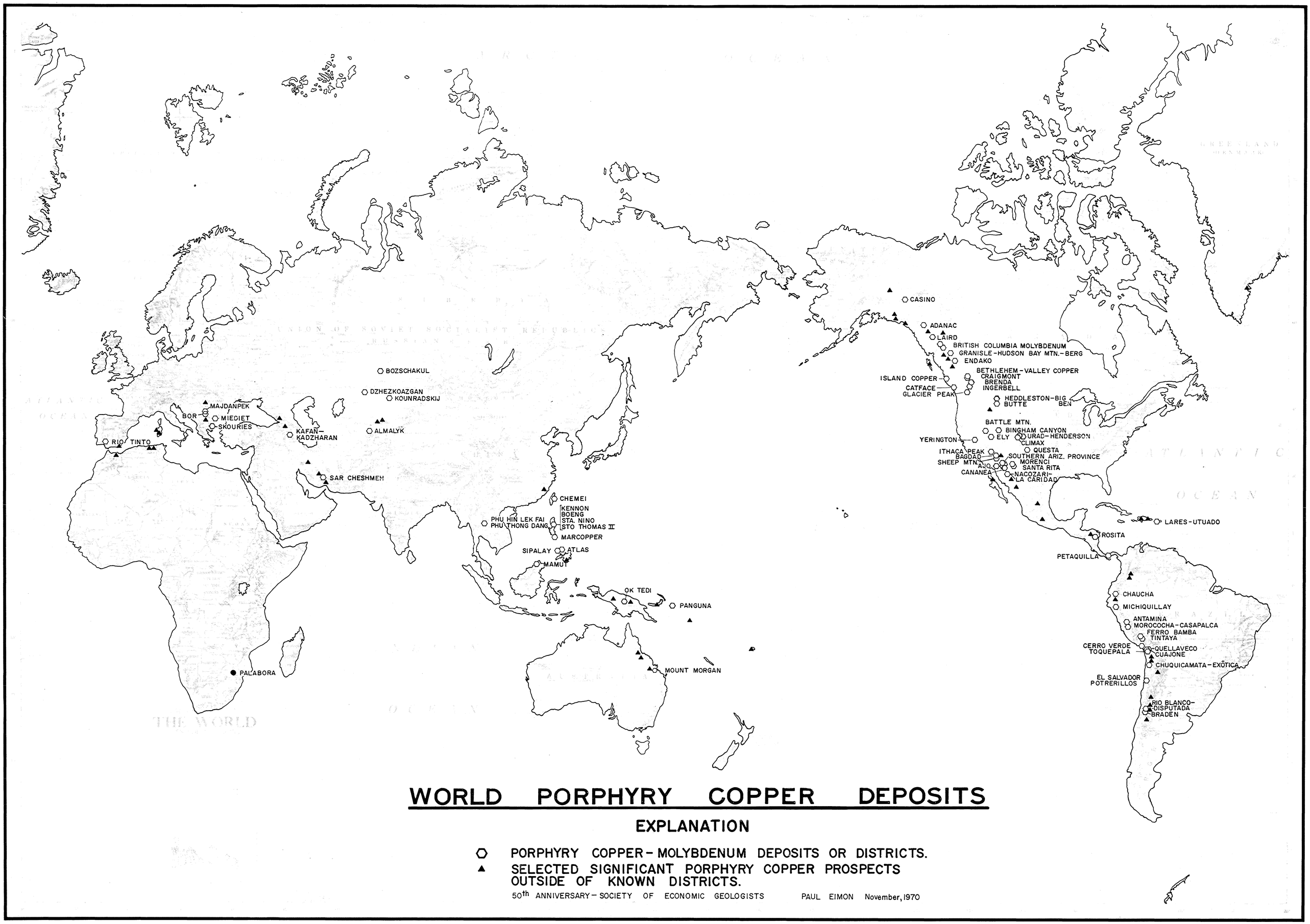
Moniwa, 66,000,000 tons of 0.8 percent.

PHILIPPINES

Marcopper Mining Corporation
Toledo tailing ore body. 200,000,000 tons assaying about 0.57 percent.

C.D.C.P. Mining Corporation
Basay, 220,000,000 tons assaying 0.40 percent. An open pit mine planned.

Benguet Consolidated Inc.
Dizon, 100,000,000 tons assaying 0.42 percent.



WORLD PORPHYRY COPPER DEPOSITS

EXPLANATION

⬡ PORPHYRY COPPER-MOLYBDENUM DEPOSITS OR DISTRICTS.

▲ SELECTED SIGNIFICANT PORPHYRY COPPER PROSPECTS OUTSIDE OF KNOWN DISTRICTS.

50th ANNIVERSARY – SOCIETY OF ECONOMIC GEOLOGISTS PAUL EIMON November, 1970

ASARCO

Northwestern Exploration Division
E. 920 Wolverton Court (N. 2900 Nevada)
Spokane, WA 99207-2784
(509) 489-7870

RECEIVED
AUG 6 1990
EXPLORATION DEPARTMENT

AUGUST 3, 1990

MEMORANDUM TO: W.L. KURTZ

FROM: J.C. BALLA

SUBJECT: DRILL PROVEN COPPER RESERVES, ALASKA

Arctic, Alaska:

12,000,000 tons @ 7.14% Cu, 7.06% Zn, 1.0% Pb, 2.5 opt Ag, 0.002 opt Au. Larger reserves, and lower grade. Property is owned by Kennecott. Property is 225 miles east of Red Dog, 140-180 miles west of the Aleyska pipeline road.

Bornite, Alaska:

A total of over 165 holes have been drilled, but reserves still not known, due to discontinuous nature of mineralization. Guesstimate by Kennecott of 100,000,000 tons @ 0.5% Cu, with credits in cobalt. Would have to be mined in conjunction with Arctic. Owned by Nanana Corporation.

Bond Creek:

Owned by Inspiration. Inside of Mt. St. Elias-Wrangell National Park. Property unavailable for mining.

Orange Hill:

Owned by Steelhead Resources (i.e. Wallace MacGregor). Inside of Mt. St. Elias-Wrangell National Park. Property unavailable for mining.

There is at least one porphyry copper prospect out on the Aleutian Islands but I can't remember the tons and grade figure for the property. I'm unaware of any other drilled copper reserves.

John C. Balla

JCB/dt

2/26/91 New Cornwallis discovery

From "Copper Porphyries" by Alexander Sutulov

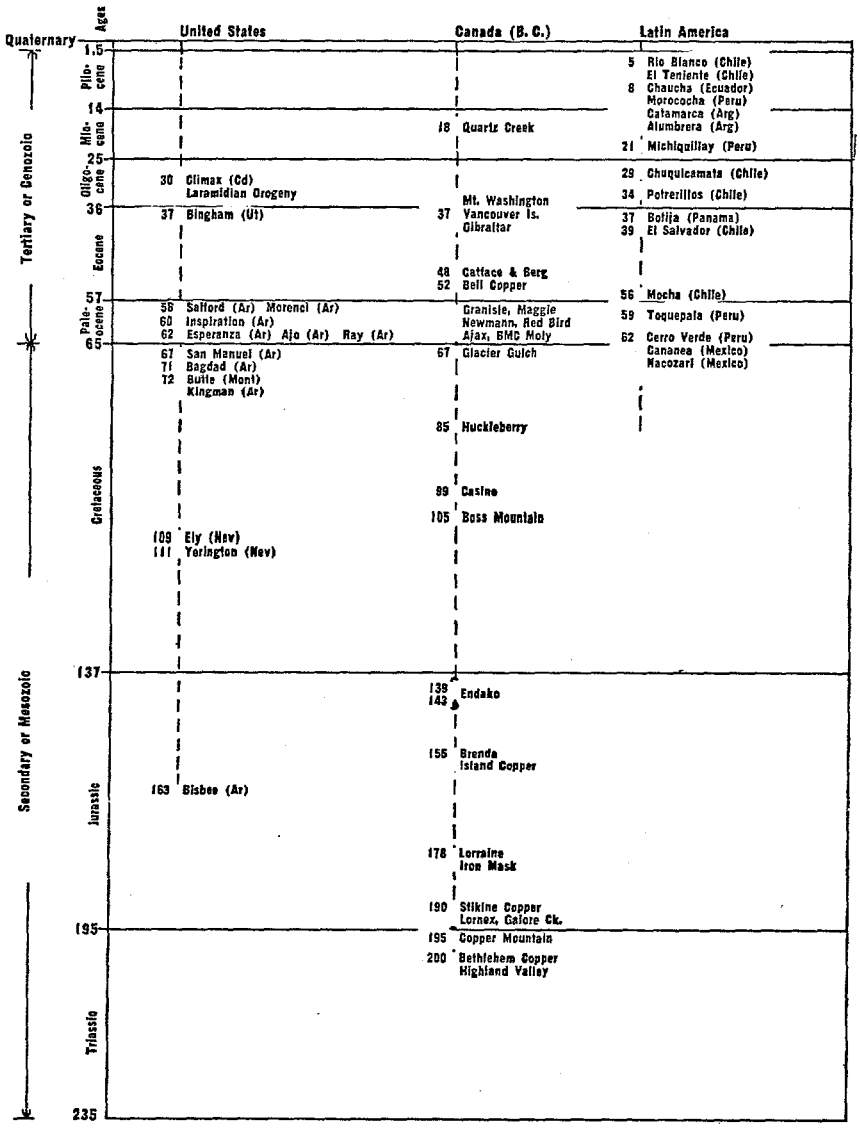


Fig. 2.3 Age of porphyry copper deposits (from World Mining and other sources).

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shows a progressive decre
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of porphyry mineralizatio
bia to Sonora and then sl
Tertiary deposits.

Field et al.[12] report t
oped in a very complex r
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panied by regional metam
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Precambrian through Ce
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tion into six age intervals
at 15 million years. They
orally distinct episodes o
tion happened: one, betw
ed in the deposition of su
as Bethlehem, Lornex an
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fined to the Western Coa
work deposits, such as B.

Hollister, in a recent
copper deposits in the A
Permian time onward, th
not older than Cenozoic.
cause Andean deposits are
in the Cordilleran orogen
porphyries of the Alpide B
to 15 million years, and t
only two million years old.

Wolfe[14] interprets the
through concepts of sea-fl
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plates, subduction of the
ultrabasic diapir, the form
to 500 kms, the rise of mag
the eruption of andesitic
differentiation of the mag

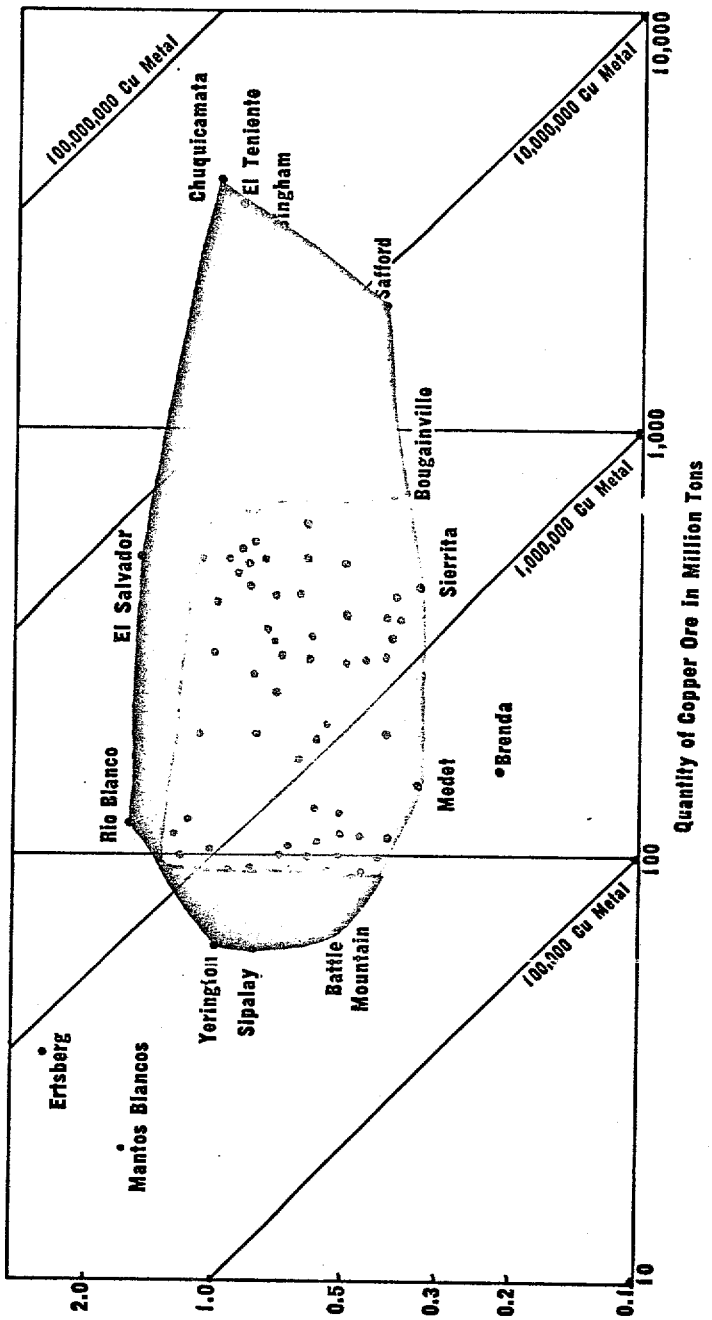

Fig. 2.4 Tonnage-grade relationship in copper porphyries.

trusion of hypabyssal rocks
ing metallic and other ions
bear many similarities to
differences exist as well. M
about 15 million years.

Economic Importance of C

In order to systemize
copper porphyries, Fig. 2.4
content of porphyry coppe
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cent. Cases like Brenda wit
of Ertsberg with more tha
tions. Most copper porph
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With respect to the ore
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Mountain in Arizona, but
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Mines such as Bougainv
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nary cases in their huge pote

It should be stressed th
in Fig. 2.4 are average figu
grade, average and high-gra
ible to exploitation at diffe
However, what makes a po
average grade and potential
range investment.

Bibliogra

1. G. M. Schwartz: The m
tion in porphyry coppers
in Southwestern North A
Hicks; the University of A

n belongs to the St. Joe Co. aining over one million tons . The grade of Argentinian of Chile, and although they anying mineralization, their o far in three large deposits, g roughly 2,000,000 tons of

h those of the southwestern ost important in the world. estimated at over 8.5 billion opper and over 2 million tons ves are somewhat smaller.

Teniente, where one of the ed. When in 1966 a "Chile-Kennecott and the Chilean own copper ore reserves was

Copper content - tons
2,376,200
5,263,200
8,450,100
5,886,100
9,328,000
31,303,600

ever discovered and officially icamata or Bingham ore re- arger, no official information nt.

of El Teniente is a medium- worked by two companies: by the Peñarroya French in- a smaller part of the orebody put at 50 million tons of 1.7 more ore can be found with what lower grade. The other

TABLE 3.1

DIRECTORY OF WORLD PORPHYRY COPPERS

NAME & LOCATION	PROPERTY OF	OPENED	ESTIMATED RESERVES Ore 10^9t.	Cu 10^3t.	Mo tons
Latin America					
1. Chuquicamata, Chile	CODELCO	1915	>2,500	>30,000	800,000
2. El Teniente, Chile	CODELCO	1906	3,500	31,500	1,050,000
3. El Abra, Chile	CODELCO	**	1,500	12,000	
4. El Salvador, Chile	CODELCO	1960	300	5,500	120,000
5. Las Pelambres, Chile*	CODELCO	*	430	3,350	130,000
6. Rio Blanco, Chile	CODELCO	1970	120	1,900	18,000
7. Disputada, Chile	Penarroya	1962	100	1,400	14,000
8. Mantos Blancos, Chile	Hochshild	1961	20	320	—
TOTAL CHILE			8,700	86,000	2,150,000
9. Michiquillay, Peru*	MINEROPERU	*	575	4,000	150,000
10. Cuajone, Peru**	South.Peru	**	500	5,500	150,000
11. Toquepala, Peru	South.Peru	1960	400	4,000	80,000
12. Cerro Verde, Peru**	MINEROPERU	**	250	2,750	—
13. Morococha, Peru*	MINEROPERU	*	360	2,700	72,000
14. Quellaveco, Peru*	MINEROPERU	*	200	2,200	60,000
TOTAL PERU			2,300	21,000	520,000
15. Pachon, Argentina*	St. Joe	*	170	1,100	—
16. Paramillos, Argentina*		*	105	400	21,000
17. La Alumbrera, Argentina*		*	100	400	40,000
18. Chaucha, Ecuador*	Japanese Cons.	*	100	700	30,000
19. Antioquia, Colombia*	Colombia-USGS	*	625	6,250	—
20. Rio Vive-Takama, P. Rico	AMAX-Kennecott	**	240	1,750	—
21. Cerro Colorado, Panama	Canadian Javelin	**	>500	4,000	50,000
22. Pataquilla, Panama*	Japanese Cons.	*	300	1,800	—
23. La Caridad, Mexico**	Mexicana-ASARCO	**	600	4,500	100,000
24. Cananea, Mexico	Mexicana-Anaconda	1963	>500	4,000	—
25. La Verde, Mexico*	Mexicana	*	100	700	—
TOTAL OTHERS			3,400	26,000	250,000
TOTAL LATIN AMERICA			14,500	133,000	3,000,000

* In exploration stage ** In development stage *** Rough estimates

Fig. 3.2 South American Copper Porphyries.

half of the orebody was acqui
1970 inaugurated its 10,000 tp
of the orebody contains 120 mi
and some molybdenite values, w
tionship between the two oreb
date.

It is believed today when
lowered and some additional
complex may grow into a subs
hundred million tons in ore reser

Farther to the north, in th
city of Copiapo are two porp
Potrerillos is an old Anaconda p
to 1960, until its complete exha
operation. Discovered during th
explored only in the fifties, whe
became evident. The original
percent copper reserves still stan
compensated for ore produced s
ore contains molybdenite and is

In northern Chile, in the p
lies what probably will prove t
reserves. Apart from a relative
which, however, proved to be
claimed reserves of 10 million t
orebody of Chuquicamata begi
stretches from Chuquicamata
miles and comprises today ab
coppers and probably as many
and explored this porphyry co
in several billion tons of ore wi

The giant Chuquicamata o
dimensions and so far dug to
1.5 billion tons of 1.3% Cu pro
zation is in the igneous host ro
copper and rather high 0.04 p
assays 1 percent copper or som
reached. The mine has alread

that this region may show addi-

an border lies a cluster of south-
, in the states of Arizona, New
sidered the most important con-
e world, and an almost complete
ocations are given respectively in
lean porphyries exceed in copper
west, but then while the Chilean
,000 miles, southwest American
f 400 miles.
phyries are also the best studied
ago an excellent summary of in-
ties was published by the Uni-
f the Porphyry Copper Deposits
Then, of course, there is the more
published recently.[13]
known copper porphyry deposit
considered the Kennecott Com-
ae state of Utah. Although the
from recent expansion of opera-
pper producer has at least a few
te of 35 million tons of ore per
rt, this means that the orebody
as far as the mineralized area is
10 million tons of metallic copper

areas on which official reports
oth in Arizona. Safford is a very
e reserves are close to two billion
copper. This low-grade is still a
ylans. But the other, San Manuel
r has been in production since
d of technological breakthrough
nly 0.6 percent copper. The San

ecott Copper Corporation ore reserves
r Utah, Ray, Chino and McGill) had
contained 18,000,000 tons of recover-

TABLE 3.2

DIRECTORY OF WORLD PORPHYRY COPPERS (CONTINUED)

NAME & LOCATION	PROPERTY OF	OPENED	ESTIMATED RESERVES Ore 10^6t.	Cu 10^3t.	Mo tons
NORTH AMERICA					
26. Bingham, Utah	Kennecott	1906	>1,000***	10,000,000	750,000
27. San Manuel, Arizona	Magma Copper	1956	1,000	7,500,000	150,000
28. Morenci, Arizona	Phelps Dodge	1942	>500***	4,400,000	35,000
29. Butte, Montana	Anaconda	1964	>500***	4,000,000	—
30. Twin Buttes, Arizona	Anaconda-AMAX	1970	800	5,900,000	135,000
31. Sierrita, Arizona	Duval (Pennzoil)	1970	414	1,500,000	150,000
32. Pima, Arizona	Cyprus Mines	1957	200	1,100,000	26,000
33. New Cornelia, Ariz.	Phelps Dodge	1917	<500	3,750,000	—
34. Ray, Arizona	Kennecott	1955	<500***	4,000,000	50,000
35. Chino, New Mexico	Kennecott	1912	<500***	4,500,000	40,000
36. McGill, Nevada	Kennecott	1908	<500***	4,600,000	30,000
37. Tyron, New Mexico	Phelps Dodge	1969			
38. Inspiration, Arizona	Inspiration	1915	<500	4,000,000	—
39. Mission, Arizona	ASARCO	1961	>500***	3,500,000	100,000
40. Copper Queen, Arizona	Phelps Dodge	1885	<100	500,000	—
41. Mineral Park, Arizona	Duval (Pennzoil)	1964	<100	500,000	40,000
42. Esperanza, Arizona	Duval (Pennzoil)	1958	<100	500,000	28,000
43. Miami, Arizona	Cities Service	1954	<100	600,000	5,000
44. Silver Bell, Arizona	ASARCO	1954	<100	450,000	—
45. Bagdad, Arizona	Cyprus Mines	1940	265	2,120,000	50,000
46. Christmas, Arizona	Inspiration	1962			
47. Battle Mountain, Ariz. NEV	Duval (Pennzoil)	1967	65	325,000	—
48. Yerington, Nevada	Anaconda	1953	55	500,000	—
49. Lakeshore, Arizona	Hecla	**	448	3,200,000	—
50. Pinto Valley, Ariz.	Cities Service	**	350	1,400,000	35,000
51. Safford, Arizona	Kennecott	*	2,000	8,000,000	—
52. Florence, Arizona	Continental Oil	*	500	2,500,000	—
53. Metcalf, Arizona	Phelps Dodge	**	350	2,700,000	—
54. Helvetia, Arizona	Banner-AMAX	*	363	2,360,000	—
55. Palo Verde, Arizona	Banner-AMAX	*	95	700,000	—
TOTAL UNITED STATES			13,000	86,000,000	1,700,000

* In exploration stage ** In development stage *** Rough estimates

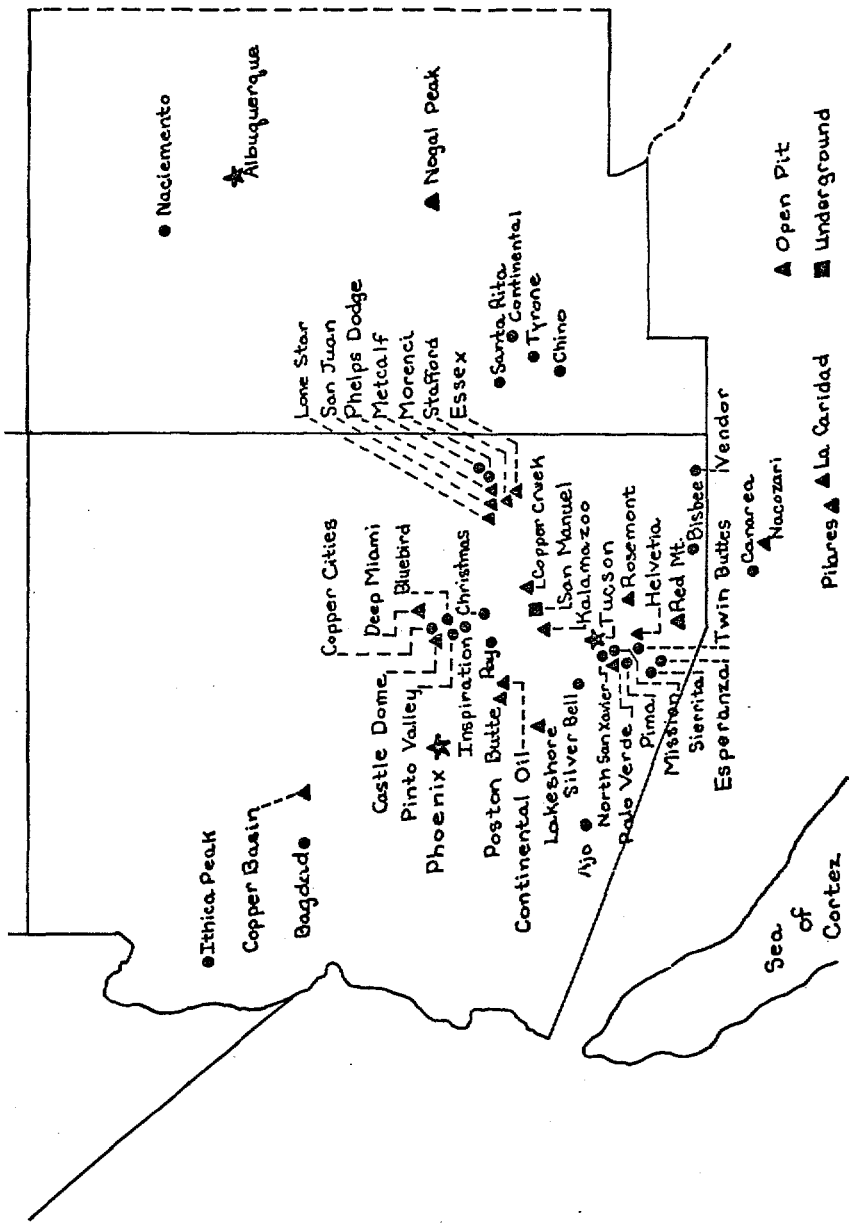

Fig. 3.4 Southwestern Copper Porphyries (reproduced from World Mining).

Manuel copper reserves we
Kalamazoo property (for $
placement segment of the $
gered a new expansion of
and an annual output of
1974 at a cost of $250 mi
become the largest copper p

The Morenci property
of Anaconda in Montana
American deposits although
These old mining districts
mining and milling and s
stantly discovered new rese
few miles north of the Mor
mine[14] where another 350 m
1972 some 46 million tons
30,000 tpd. mining producti

The early seventies were
Arizona, which reflect the
production of the red meta
in the supply of this meta
augurate large new mills a
Sierrita, and Anaconda at
came economically feasible
molybdenum by-product rec
with AMAX (after it acqu
Anamax. Both operations are

Among the properties n
are Pinto Valley, a large
Cities Services, Lakeshore,
already mentioned Metcafe p

The other area of great i
complex belonging to Cypru
interests). This alluvial-cove
one billion tons of 0.5 per
values. Portions of it have a
sion), with the exception o
superficial stripping for oxide

The North American po
Nevada farther to the north
Washington and then to Brit

Fig. 3.5 Pacific Northwest Copper Porphyries.

A survey of the Pacific N
Canadian properties in Br
tion, while the American pr
are still economically inactive

British Columbian Deposits

British Columbia has ab
of which six are in operation
Lowell believes that there i
porphyries in this mineral-ric

As mentioned before, Br
Northwest Pacific metallogen
lera mobile tectonic belt, w
to 500 miles wide.[15] It stret
south, through Idaho and M
Columbia and the southwest
as shown in Fig. 3.5. Mine
British Columbia and almo
part. The most active indu
some geologists claim may be
in importance to Bingham
with its several orebodies, Lo

Only a few years ago B
ducer. However, in 1971 h
million and probably double
and molybdenum output is
copper producers are listed in

The largest deposit disco
per. Most of the ores are ac
of molybdenite, whose recov
of them, particularly in the ca
British Columbian porphyry
copper grade but their molyl
porphyry here will have ab
molybdenite. They have a la
cases surpasses the concentra
ment is less developed, probal
glaciation may have been a fa

Pacific Fire Belt

Another very promising a
explored but under intensive

TABLE 3.3

DIRECTORY OF WORLD PORPHYRY COPPERS (CONTINUED)

NAME & LOCATION	PROPERTY OF	OPENED	ESTIMATED RESERVES Ore 10^6t.	Cu 10^3t.	Mo tons
NORTH AMERICA - Continued					
56. Gibraltar, B. C.	Placer	1973	358	1,325	37,000
57. Bethlehem, B. C.	Bethlehem	1962	376	1,850	65,000
58. Lornex, B. C.	Rio Algom-RTZ	1972	293	1,250	30,000
59. Island Copper, B. C.	Utah Constr.	1972	280	1,450	48,000
60. Brenda, B. C.	Brenda Mines	1970	165	300	54,000
61. Valley Copper, B. C.	Cominco-Beth.	**	750	3,600	—
62. Gaspe, Quebec	Noranda	1968	230	1,000	35,000
63. Liard Copper, B. C.		*	310	1,250	62,000
64. Maggie, B. C.		*	200	800	
65. Galore Creek, B. C.		*	100	1,000	
66. Granisle, B. C.		*	90	400	
67. Copper Mountain, B. C.		*	76	400	
68. Bell Copper, B. C.		*	46	230	
TOTAL CANADA			3,500	15,000	350,000
TOTAL NORTH AMERICA			16,500	101,000	2,000,000
TOTAL WESTERN HEMISPHERE			31,000	234,000	5,000,000

* In exploration stage ** In development stage *** Rough estimates

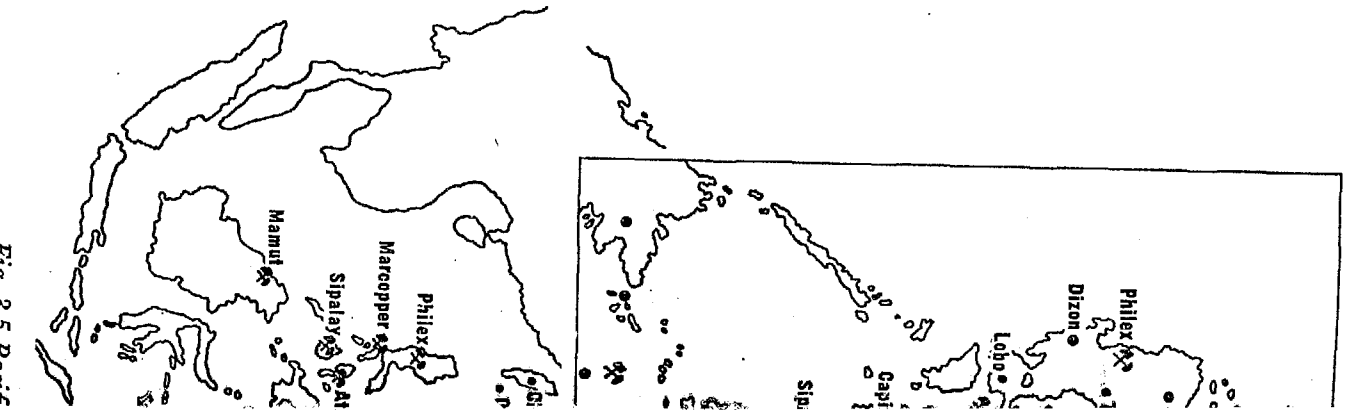

Fig. 3.5 Pacif

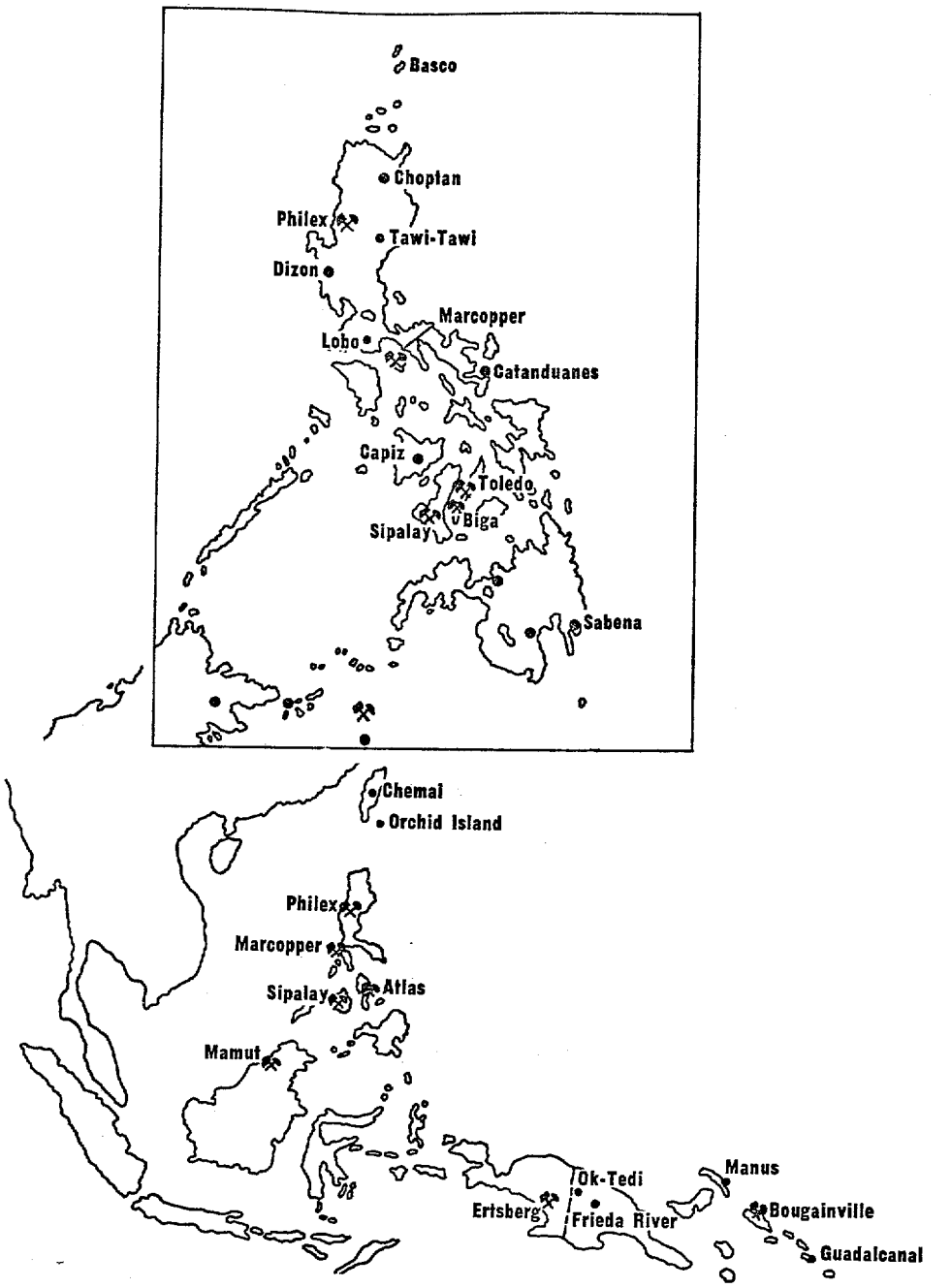

Fig. 3.5 Pacific Belt Copper Porphyries.

TABLE 3.4

DIRECTORY OF WORLD PORPHYRY COPPERS (CONTINUED)

NAME & LOCATION	PROPERTY OF	OPENED	ESTIMATED RESERVES Ore 10^6t.	Cu 10^3t.	Mo tons
ASIA & PACIFIC AREA					
69. Bougainville, N. Guinea	Bougainville	1972	760	3,600	
70. Ertsberg, Indonesia	Freeport	1973	33	825	
71. Mamut, Malasia	Japanese Cons.	**	120	840	
72. Sar Cheshmeh, Iran	Iran	**	300	3,000	80,000
73. Biga, Philippines	Atlas	1971	700	3,500	—
74. Labo, Philippines	Marcopper	1969	200	1,100	—
75. Santo Thomas, Phil.	Philex	1958	125	600	—
76. Sipalay, Philippines	Marinduque	1957	60	500	24,000
77. Toledo, Philippines	Atlas	1954	100	600	—
TOTAL			2,300	14,600	104,000
*SOVIET UNION****					
78. Kounrad, Kazakhstan	USSR	1938	300	1,200	30,000
79. Bozshchakul, Kazakh.	USSR	1970	100	600	20,000
80. Kalmakyr, Uzbeckstan	USSR	1958	300	2,100	30,000
81. Kadzharan & Armenia	USSR	1950	200	2,600	100,000
TOTAL			900	6,500	180,000
EUROPE					
82. Majdanpek, Yugoslavia	Yugoslavia	1962	200	1,600	10,000
83. Krivelj, Yugoslavia	Yugoslavia	*	380	1,300	10,000
84. Medet, Bulgaria	Bulgaria	1965	150	540	15,000
TOTAL			750	3,500	50,000
TOTAL EASTERN HEMISPHERE			4,000	25,000	350,000
WORLD TOTAL			35,000	260,000	5,500,000

* In exploration stage ** In development stage *** Rough estimates

and Mongolia and also in K
coppers are of secondary ir

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TABLE 4.2
PRODUCTION DATA ON OPERATING U.S. COPPER PORPHYRIES

Name & Location	Ore Production – tons		Heads		Annual Output – tons	
	Annual	Daily	% Cu	% Mo	Cu	Mo
1. Magna & Arthur, Utah	35,000,000	108,500	0.69	0.03	320,000*	6,500
2. San Manuel, Arizona	21,500,000	65,000	0.69	0.015	144,000	2,500
3. Butte, Montana	18,000,000	50,000	0.76	–	115,000	–
4. Morenci, Arizona	18,000,000	60,000	0.83	0.015	180,000*	Curtailed
5. Sierrita, Arizona	25,750,000	83,000	0.29	0.03	70,000	5,800
6. Pima, Arizona	18,000,000	54,000	0.56	0.017	82,500	1,000
7. Tyron, New Mexico	14,400,000	48,000	0.89	0.012	100,000	–
8. Twin Buttes, Arizona	10,700,000	32,000	0.6	0.03	75,000*	1,100
9. Ray, Arizona	10,500,000	25,500	0.98	0.015	90,000*	350
10. New Cornelia, Arizona	10,250,000	34,000	0.70	–	62,000	–
11. Yerington, Nevada	10,700,000	30,000	0.86	–	78,500*	–
12. Chino, New Mexico	7,250,000	22,000	0.90	0.008	73,500*	250
13. McGill, Nevada	7,700,000	21,500	0.85	0.016	48,000	250
14. Inspiration, Arizona	6,800,000	22,000	0.71	0.007	54,000*	220
15. Mission, Arizona	8,000,000	22,500	0.7	0.02	45,000	1,100
16. Mineral Park, Arizona	7,650,000	19,000	0.42	0.03	26,500*	1,750
17. Copper Queen, Arizona	5,350,000	16,000	0.83	–	48,000*	–
18. Esperanza, Arizona	5,250,000	15,000	0.37	0.03	20,000	1,250
19. Miami, Arizona	4,500,000	14,000	0.50	0.005	22,300*	110
20. Silver Bell, Arizona	4,200,000	13,000	0.7	0.01	20,000*	350
21. Bagdad, Arizona	2,000,000	6,000	0.7	0.03	20,000	230
22. Christmas, Arizona	1,600,000	5,500	0.80	–	11,500	–
23. Battle Mount., Arizona	1,650,000	4,500	0.84	–	16,500*	–
TOTAL UNITED STATES	256,000,000	775,000	0.74	0.01	1,722,000	23,500

* Part of production obtained either by leaching ore or dumps
1 Contains 0.5% Cu Sulfide which is treated in a flotation plant (14,000 tyd) and 0.35% Cu which is recovered in a 16,000 tpd. leaching plant

108,500 tpd; construction o
copper from leached dump
of copper production to the
leaching and electrowinnin
of oxide ore for recovery of
and modernization of smelte

These changes were co
today in the United States:
increased copper recovery fr
attention to the by-product
gases; emphasis on low-cost
the copper output of the U
most of them porphyry co
output, i.e., 172,000 tons in
leaching[6] and precipitation
is obtained by leaching ores,
another half is electrowon.
of copper is recovered as p
which substantially improves
copper deposits. The major
are as follows:

Utah Copper
Chino Mines D
Ray Mines Divi
Butte, Montana
Yerington, Neva
Inspiration Cop
Copper Queen-
Duval - 3 plants
San Xavier-ASA
Bagdad Copper
Miami-Copper
Others

Total Capacity

San Manuel of Magma
subsidiary of Newmont Mini
in 1956 as a 30,000 tpy op

TABLE 4.3

PRODUCTION DATA ON LATIN AMERICAN AND CANADIAN COPPER PORPHYRIES

Name and Location	*Ore production – tons*		*Heads*		*Annual Output – tons*	
	Annual	*Daily*	*% Cu*	*% Mo*	*Cu*	*Mo*
24. Chuquicamata, Chile	20,000,000	60,000	2.00	0.037	300,000	2,500
25. El Teniente, Chile	20,000,000	62,500	1.85	0.04	280,000	2,400
26. El Salvador, Chile	8,000,000	24,000	1.35	0.024	100,000	1,500
27. Andina, Chile	3,500,000	10,000	1.60	0.015	65,000	–
28. Disputada, Chile	3,500,000	10,000	1.50	0.01	45,000	–
29. Mantos Blancos, Chile	2,200,000	6,000	1.80	–	36,000	–
30 Toquepala, Peru	15,300,000	40,000	1.10	0.018	150,000	750
31. Cananea, Mexico	8,000,000	24,000	0.70	–	45,000	–
TOTAL LATIN AMERICA	80,500,000	236,000	1.50	0.03	1,021,000	7,150
32. Lornex, B.C.	12,500,000	38,000	0.43	0.01	47,500	500
33. Gibraltar, B.C.	11,500,000	36,000	0.37	0.01	37,500	500
34. Bethlehem, B.C.	6,000,000	17,000	0.55	0.018	28,500	–
35. Island Copper, B.C.	11,000,000	33,000	0.52	0.017	50,000	1,250
36. Brenda, B.C.	9,000,000	24,000	0.18	0.03	15,000	3,750
37. Gaspe, Quebec	12,000,000	34,000	0.60	0.015	58,000	850
TOTAL CANADA	62,500,000	182,000	0.44	0.015	236,500	4,850

of this chapter, while the Russi
a 3.5 percent annual rate, and
to 2 percent, Chilean copper in
0.87 percent, and at much lower

While this fact can make
cannot be a positive sign for a
underdevelopment and which
infrastructures. Some 90 million
of molybdenum in the Chilean
of over $100 billion. This is too
$6 billion GNP and finds enorme
annual budget. In other words
ment and general prosperity co
stance, from a 0.87% annual ex
annual exploitation rate, which
could increase Chilean national
than double Chilean exports a
problems and speed up industri
should be clearly realized that m
and unexploited, are dead capit
is equivalent to sitting on a bag o

In these days of inflation a
many people invoke the idea th
as good as money in the bank
undergo the same devaluation
opinions were recently heard a
may be true for rich people, w
into money and keep it in the b
investment and development, su
Everyone knows that wisely in
jobs, reduces imports and offe
doubles its value each seven to
pected from mineral resources i
cannot be expected to double
fact, it has often been obsern
systematically grow slower than
effect means that raw materials
the same quantity of their raw m

In view of this it seems th
resources within the limits of n

TABLE 4.5

PRODUCTION DATA ON PORPHYRY COPPERS FROM THE PACIFIC AREA

	Ore production – tons		*Heads*		*Annual Output – tons*			
	Annual	*Daily*	*% Cu*	*% Mo*	*Cu*	*Mo*	*Au oz.*	*Ag oz.*
38. Bougainville, N. Guin.	32,000,000	90,000	0.74	0.004	200,000	–	500,000	1,300,000
39. Ertsberg, Indonesia	2,500,000	7,000	2.50	–	63,000	–	68,000	750,000
40. Biga, Philippines	11,500,000	31,500	0.38	–	30,900	–	20,000	120,000
41. Toledo – DAS, Philippines	12,800,000	34,500	0.47	–	50,100	–	22,500	137,000
42. Labo, Philippines	6,700,000	18,000	0.79	–	53,000*	–	51,000	213,000
43. Santo Thomas, Philip.	6,700,000	22,000	0.50	–	24,000	–	75,000	118,000
44. Sipalay, Philippines	3,500,000	14,500	0.74	0.01	20,000	100	–	–
TOTAL PACIFIC AREA	75,700,000	217,500	0.67	–	441,000	100	736,500	2,638,000

discovered large reserves of cop
molybdenum, gold and silver. Al
ported to be[29] 900 million tons
0.004% Mo, 0.028 oz/t Au a
200,000 tpy of copper the mine
the mill process 90,000 tpd. Th
32 million tons of ore and some
assaying 28% Cu, 12% Mo, 26
principally to Japan and other co
ville is the property of Conzinc
the total investment for its deve
$160 million, the balance being
banks and from Japanese copper
Mitsui, who contributed $30 mill
Japanese equipment. The contra
of 135,000 tpy for the next ten yea

Another very interesting pr
Indonesian part of New Guinea
orebody was known to exist for
conditions and political uncertai
it has been developed at a cost
Company. It was inaugurated i
produce annually 63,000 tons o
some 750,000 ounces of silver. T
tional difficulties in the initial sta
to be much richer than anticipat
tained from 30 sources and on
delivery of ⅔ of production to a
to Norddeutsche Affinery in Han

The most active part of th
production is concerned, is the
region increased in the last ten
in 1963 to 236,000 tons in 197
in this production was 196,000 to

The most important copper
which from its two porphyries
some 80,000 tons of copper.

For this production it had to
has been immensely successful d
Its revenues in 1972 were close
$31 million. While in 1971 At

TABLE 4.6

PRODUCTION DATA ON OPERATING COPPER PORPHYRIES IN THE COMMUNIST WORLD

Name and Location	*Ore production – tons*		*Heads*		*Annual Output – tons*	
	Annual	*Daily*	*% Cu*	*% Mo*	*Cu*	*Mo*
45. Balkhash, Kazakhstan	13,500,000	37,500	0.4	0.01	42,500	550
46. Bozshchakul, Kazakhstan	5,500,000	15,000	0.6	0.02	26,500	–
47. Almalyk, Uzbeckstan	18,000,000	50,000	0.7	0.01	100,000	720
48. Kadzharan & Armenia	7,000,000	20,000	1.2	0.05	60,000	1,650
49. Majdanpek, Yougoslavia	4,750,000	13,200	0.7	0.005	27,500	–
50. Medet, Bulgaria	8,000,000	26,500	0.35	0.008	27,500	320
Total Communist World	56,750,000	162,200			284,000	3,240

Communist World are gener
oxidized; second, there are sti
mentary deposits and others

So far only six large open
four of them in the Soviet U
in Bulgaria, as indicated in Ta

The oldest and most im
Balkhash. It was put into pro
was the first large-size com
served as a prototype for ma
concentrator and smelter au
operations in Salt Lake City
mine at Kounrad, use Lake B
ing, and recover numerous
rhenium. During World W
to this integrated complex,
development. The original p
Kounrad mine are already n
material, apparently cannot
concentrator. For this reason
the eastern end of Lake Balk
years ago. Balkhash has smelt
100,000 tpy, probably as ma
centration plant supplies onl
per equivalent. Molybdenite
by-product recovery from c
treatment of a molybdenite o
molybdenite, as well as son
rhenium recovery.

The Bozshchakul mine ar
10 years to develop. It is a le
insignificant molybdenite mi
treatment of this ore was lar
struction of the Karaganda
Siberian river, Irtysh. Concen
ped for smelting and refining

Almalyk is a relatively r
part of the Altyn-Topkan co
50,000 tpd size. It impresses
estimate of its capacity is a
mill has been expanded se

TABLE 4.7

PROPHYRY COPPER PROJECTS IN DEVELOPMENT

Property & Location	*Property of*	*Planned Invest. in $ million*	*Milling TPD*	*Annual Cu output tons*	*Expected Date of iniciation*
1. Pinto Valley, Arizona	Cities Service		40,000	62,500	1974
2. Lakeshore, Arizona	Hecla	140	Sulphide 9,000	50,000	1974
			oxide 6,500		1974
3. Miami, Arizona	Cities Service	100	expand to 40,000		1974
4. Black Sea Copper, Turkey		100	40,000		1973
5. Bethlehem	Bethlehem Copper		25,000		1975
6. Bagdad Copper	Cyprus Mines	100	expand to 30,000		1975
7. Mamut, Malasia	Japanese Dev.	80	15,000	30,000	1975
8. Twin Buttes, Arizona	Anaconda-Amax	200	expand to 40,000	100,000	
			& leach 10,000	30,000	
9. Cerro Verde, Peru	MINEROPERU	88		30,000	1976
10. Cuajone, Peru	Southern Peru	355	40,000	130,000	1976
11. Cerro Colorado, Panama	Canadian Javelin	560	175,000	400,000	1980
12. Pachon, Argentina	Aguilar-St. Joe	200			
13. Krivelj, Yugoslavia	Yugoslavia	200	60,000	60,000	
14. Metcalf, Arizona	Phelps Dodge	180	30,000	50,000	1975

changed as well. It tried the
and apart from copper recove
molybdenum.

Kadzharan with its 20,0
plant. This plant, built imm
treats a relatively rich ore co
a nearby mine of the same
Alaguez and Dastakert proce
The most modern of them is
located on the Iranian bordt
Kafan. All concentrates are
Alaverdy.

The Majdanpek mine, ne
its own concentrating plant t
nological standards and with
in molybdenum, so only copp
tion at 27,500 tpy. Now, very
grade porphyry has been disco

Bulgaria's Medet was bu
technology. This mine also p
the fact that it mines and n
Majdanpek. It has been desc
tively unusual fact for mines in

Projects under Development

In Table 4.7, some of the
ment stage are given. It can b
increase in copper demand r
tion of about 400,000 tons in
$1 billion. With the increas
around the world, a greater
placed on domestic copper,
areas where the danger of nat
mate 1,000,000 tons of coppe
a $2.5 billion investment will b

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TABLE 5.3

METALLURGY OF OPERATING COPPER PORPHYRIES

PLANT	HEADS		ROUGHER CON.		% RECOVERY		CLEANER CON.		MOLY CON.		% Mo Rec.	% OVERALL RECOVERY	
	% Cu	% Mo	% Cu	% Mo	Cu	Mo	% Cu	% Mo	% MoS_2	% Cu		% Cu	% Mo
1. Magna & Arthur	0.69	0.03	27	0.9	90	80	30	0.12	90	1.0	70	90	56
2. San Manuel	0.69	0.015	28	0.5	92	80	30	0.06	92	1.0	86	92	70
3. Butte	0.76	–	14	–	–	–	26	–	–	–	–	85	–
4. Morenci	0.83	0.015	14	0.1	–	–	22	0.14	Production curtailed			75	–
5. Sierrita	0.29	0.03	7	0.7	86	75	26	0.15	87	2.5	90	85	67
6. Pima	0.56	0.017	26	0.2	86	64	28	0.15	64	2.1	71	85	45
7. Tyron	0.89	0.013	12	–	–	–	22	0.15	–	–	–	78	–
8. Twin Buttes	0.6	0.03	12	0.6	86	50	29	0.15	73	1.1	70	76	35
9. Ray	0.98	0.015	18	0.2	82	50	18	0.05	86	1.0	75	82	37
10. New Cornelia	0.70	–	14	–	–	–	30	–	–	–	–	85	–
11. Yarington	0.5	–	15	–	–	–	30	–	–	–	–	84	–
12. Chino	0.90	0.008	20	0.23	79	70	22	0.06	85	1.0	57	79	40
13, McGill	0.85	0.016	19	0.2	78	30	20	0.05	60	1.5	50	78	15
14. Inspiration	0.71	0.007	35	1.0	76	50	38	0.17	95	0.4	60	76	30
15. Mission	0.7	0.02	25	1.0	90	75	28	0.1	87	0.3	90	89	67
16. Mineral Park	0.42	0.03	18	1.3	76	65	20	0.04	90	0.3	95	76	62
17. Copper Queen	0.83	–	4	–	–	–	10	–	–	–	–	75	–
18. Esperanza	0.37	0.03	22	1.3	87	84	25	0.12	96	0.2	88	87	74
19. Miami	0.50	0.005	27	0.2	87	60	27	0.08	89	1.0	90	87	54
20. Silver Bell	0.7	0.008	9	0.15	86	50	30	0.18	85	0.8	60	84	30
21. Bagdad	0.7	0.03	32	1.5	88	80	32	0.15	90	1.0	80	88	64
22. Christmas	0.80	–	–			–	20	–	–	–	–	72	–
23. Battle Mountain	0.84	–	–	–	–	–	25	–	–	–	–	69	–
24. Chuquicanata	2.00	0.037	50	0.70	91	50	50	0.2	92	0.3	80	90	40
25. El Teniente	1.85	0.04	20	0.3	83	60	40	0.15	95	0.5	70	83	42
26. El Salvador	1.35	0.024	46	0.8	81	75	48	0.1	97	0.2	86	81	65
27. Andina	1.90	0.015	28	0.2	89	–	28	–	–	–	–	90	–
28. Disputada	1.50	0.01	–	–	–	–	25	–	–	–	–	85	–
29. Mantos Blancos	1.68			–	–	Leaching Operation						90	–
30. Toquepala	1.20	0.018	31	0.3	88	62	32	0.12	87	1.2	60	88	37
31. Cananea	0.70	–	–	–	–	–	30	–	–	–	–	88	–
32. Lornex	0.43	0.01	33	0.3	88	80	34	0.1	84	1.0	80	88	64
33. Gibraltar	0.37	0.01	30	0.7	88	60	30	0.15	85	1.0	75	85	45

23. Battle Mountain	0.84	–	–	–	–	–	25	–	–	–	–	69	–
24. Chuquicanata	2.00	0.037	50	0.70	91	50	50	0.2	92	0.3	80	90	40
25. El Teniente	1.85	0.04	20	0.3	83	60	40	0.15	95	0.5	70	83	42
26. El Salvador	1.35	0.024	46	0.8	81	75	48	0.1	97	0.2	86	81	65
27. Andina	1.90	0.015	28	0.2	89	–	28	–	–	–	–	90	–
28. Disputada	1.50	0.01	–	–	–	–	25	–	–	–	–	85	–
29. Mantos Blancos	1.68			–	–	Leaching Operation						90	–
30. Toquepala	1.20	0.018	31	0.3	88	62	32	0.12	87	1.2	60	88	37
31. Cananea	0.70	–	–	–	–	–	30	–	–	–	–	88	–
32. Lornex	0.43	0.01	33	0.3	88	80	34	0.1	84	1.0	80	88	64
33. Gibraltar	0.37	0.01	30	0.7	88	60	30	0.15	85	1.0	75	85	45
34. Bethlehem	0.55	0.018	12	–	–	–	32	–	–	–	–	87	–
35. Island Copper	0.52	0.017	5	0.13	89	75	24	0.67	90	0.7	90	88	67
36. Brenda	0.18	0.03	22	3.0	90	85	25	0.2	91	0.1	93	88	81
37. Gaspe	0.60	0.015	27	0.3	90	70	30	0.06	90	0.5	80	90	56
38. Bougainville	0.74	0.004	13	–	–	–	24	–	–	–	–	85	–
39. Ertsberg	2.50	–	–	–	–	–	28	–	–	–	–	93	–
40. Biga	0.38	–	9	–	–	–	29	–	–	–	–	79	–
41. Toledo	0.47	–	–	–	–	–	28	–	–	–	–	81	–
42. Labo	0.79	–	–	–	–	–	25	–	–	–	–	85	–
43. Santo Thomas	0.38	–	–	–	–	–	24	–	–	–	–	90	–
44. Sipalay	0.74	0.015	26	0.7	86	50	27	0.1	90	0.8	62	85	30
45. Balkhash	0.4	0.01	12	0.2	85	55	18	0.05	60	NA	75	85	41
46. Bozshchakul	0.6	0.02	–	–	–	–	17	–	–	–	–	75	–
47. Almalyk	0.7	0.01	15	0.2	83	50	17	0.04	50	NA	80	83	40
48. Kadzharan	1.2	0.05	10	1.0	72	60	16	0.2	82	0.7	79	70	47
49. Majdanpek	0.7	0.005	–	–	–	–	25	–	–	–	–	84	–
50. Medet	0.35	0.008	14	0.4	77	60	25	0.1	70	NA	87	76	52

In the case of a $0.75 per pound copper price, domestic copper resources will grow to 115 million tons of metallic copper (a 0.55% Cu grade); and in the case of a $2 per pound copper, domestic resources in copper will grow to some 180 million tons of recoverable metal (average grade 0.46% Cu), plus 4.4 billion pounds of molybdenum, 60 million ounces of gold and 1,130 million ounces of silver.

The same report gives very interesting information on typical investment and operation costs as indicated in Tables 5.5 and 5.6.

TABLE 5.5

ESTIMATED CAPITAL REQUIREMENTS FOR A FLOTATION CONCENTRATOR

(in 000 $ US of 1970)

	40,000 tpd	*72,000 tpd*
Crushing Plant - Primary	$4,152	$12,843
Crushing Plant - Secondary	12,268	17,149
Grinding Plant	29,139	34,920
Flotation Plant	15,004	13,406
Molybdenite By-Product Plant	1,526	12,579
Filter Plant	958	1,229
Lime Preparation Section	1,023	1,365
Tailings Disposal Section	4,909	10,359
Subtotal	68,980	103,851
General Facilities and Utilities	6,898	10,385
Subtotal for Depreciation, Taxes, Insurance	75,000	114,236
Working Capital	3,864	6,446
Total Capital Required	79,742	120,682
Per ton of Installed Daily Capacity	$ 2,000	$ 1,676

It will be observed in general terms that crushing plant and grinding plant installations amount to about 25 to 30 percent of plant costs and from 20 to 25 percent of the total capital investment; similarly, flotation plants are fully 35 to 42 percent of plant costs and 30 to 36 percent of total investment. By increasing plant capacity from 40,000

TABLE 5.6

ESTIMATED ANNUAL OPERATING COST FOR COPPER CONCENTRATORS

	40,000 tpd.			72,000 tpd.		
	Annual Cost	*Total*	*Per ton*	*Annual Cost*	*Total*	*Per ton*
Direct Cost:						
Power 34,700 KWH/hr x 8,568 hr/yr x $0.007/KWH	2,081,000	–	–	2,746,900	–	–
Natural Gas 20 Mscf/hr x 8,568 hr/yr x $0.43/Mgcf	73,700	–	–	257,900	–	–
Rods, balls, grinding & crushing surfaces - $0.149/ton	2,127,700	–	–	4,292,600	–	–
Reagetns	1,116,700			2,270,600		
Other operating supplies (7.5% of power)	156,100	5,555,400	$0.39	206,000	9,774,000	$0.38
Labor 1,243 man hr/day x 357 days x $3.46/man hr.	1,535,400	–	–	2,203,600		
Supervision 15% of labor	230,300	1,765,700	$0.12	350,500	2,534,100	$0.10
Maintenance – supplies and parts	1,088,000	–	–	1,645,800		
Labor 835 man hr/day x 357 days x $3.65/man hr.	1,088,000	–	–	329,200		
Supervision 20% of labor	217,000	2,393,600	$0.17	1,645,800	3,620,800	$0.14
Payroll overhead		767,800	$0.05		1,127,300	$0.04
Total Direct Cost		10,482,500	$0.73		17,056,200	$0.66
Indirect Cost:						
Administrative, technical & clerical labor	364,000			588,000		
Payroll overhead	91,000			147,000		
Facilities maintenance & supplies (5% plant fac.)	362,600			553,400		
General overhead, office charges, research (5% direct cost)	524,000	1,341,700	$0.09	852,800	2,141,200	$0.08
Fixed cost:						
Taxes and insurance – 2% plant cost	1,595.400			2,435,100		
Depreciation – 15 years	5,058,500	6,653,900	$0.47	7,615,700	10,050,800	$0.39
Gross Operating Cost		18,478,100	$1.29		29,248,200	$1.14

tpd, the capital requirements
reduced 16 percent, from $2,0
at this point to observe how i
building of larger plants, the
growing. In the late fifties and
ton of daily capacity, or so
Mission). In the early seventies
to over $2,000 (Tyrone and I
will surpass $2,500.

Details in Table 5.6 indica
1970: production costs can b
to $1.14 per ton of ore treated
The main savings are in labo
average recoverable copper co
per ton, the milling costs sho
pound of copper and in marg
copper these costs can go as high

The same study indicates
leaching and precipitation tan
of cement copper can produc
a solvent extraction and electr
trolytic copper capacity and us
a pound. The obvious advanta
of mining costs and relatively s
gical treatment, i.e., very low ca

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TABLE 6.1

MOLYBDENITE RECOVERY FROM COPPER CONCENTRATES

Plant	Thickening - % Solids	Heat Treatment	Steaming	Pressure Steaming	Kiln Roasting	Cooking	Copper Depression	Sodium Ferrocyanide	Sodium Cyanide	Nokes - P_2S_5 + NaOH	Nokes - As_2O_3 + Na_2S	Sodium Sulfide	Sodium Hydro Sulfide	Others	Molybdenite Flotation	pH	Percent solids	Fuel Oil	Kerosene	Pine Oil	MIBC	Others	Sodium Silicate	Number of flot. steps	Leaching of copper
San Manuel	55		–	–	–	–		X	–	–	–	–	–	X		8.0	30	X	–	–	–	X	–	6	–
Pima	50		–	–	–	–		–	C	–	–	–	X	X		11.0	35	X	–	–	–	X	–	9	–
Twin Buttes	50		–	–	–	–		–	–	–	–	–	X	–		10.5	35	X	–	–	–	X	–	8	–
Ray	60		X	–	–	–		X	C	X	–	–	–	X		8.5	20	X	–	–	X	–	–	9	–
Chino	50		X	–	X	–		–	–	C	–	–	X	–		–	15	X	–	–	X	–	–	12	–
McGill	60		X	–	–	–		X	C	–	–	–	–	–		9.0	30	X	–	–	C	C	–	8	–
Inspiration	60		–	X	–	–		–	–	X	–	–	–	–		9.5	35	X	–	–	X	–	–	7	X
Mission	60		–	–	X	–		–	–	X	–	X	–	X		8.5	30	X	–	X	–	–	X	10	–
Mineral Park	50		–	–	–	–		X	–	–	–	–	–	–		2.7	20	X	–	–	X	–	–	8	–
Esperanza	50		–	X	–	–		X	–	–	–	–	–	–		7.0	20	X	–	–	X	–	–	8	X
Miami	No		–	–	–	–		–	C	X	–	–	–	X		12.0	15	X	–	X	–	X	–	8	–
Bagdad	50		–	–	–	X		–	C	X	–	–	–	–		8.5	20	X	–	–	X	–	X	12	–
Chuquicamata	45		–	–	–	–		–	C	–	X	–	–	–		11.0	35	–	–	–	–	–	–	8	X
El Teniente	No		–	–	–	–		–	C	X	–	–	–	–		8.5	20	–	X	–	–	–	X	9	–
El Salvador	60		–	–	–	–		–	C	–	X	–	–	–		11.0	45	X	–	X	–	–	–	7	X
Toquepala	60		–	–	–	–		X	C	–	–	–	–	X		8.0	30	X	–	X	X	–	–	9	X
Lornex	50		–	–	–	–		–	C	–	X	–	–	–		8.5	35	X	–	X	–	X	–	7	–
Island Copper	65		–	–	–	–		–	C	–	–	–	X	X		10.5	35	X	–	–	–	X	–	8	–
Brenda	65		–	–	–	–		–	C	–	–	–	X	–		8.0	25	X	–	–	X	–	–	12	X
Gaspe	50		X	–	–	–		–	X	–	–	–	–	X		8.0	25	X	–	X	–	–	–	14	–
Balkhash	45		X	–	–	–		–	–	–	–	X	–	–		11.0	45	–	X	–	–	–	X	7	X
Almalyk	60		X	–	–	–		–	–	–	–	X	–	–		11.0	25	X	X	–	–	–	X	6	X
Medet	50		X	–	–	–		–	–	–	–	X	–	–		8.0	20	X	–	–	–	–	X	6	X
Kadzharan	60		X	–	–	–		–	–	–	–	X	–	–		10.5	25	–	X	X	–	–	X	6	X
Agarak	50		X	–	–	–		–	–	–	–	X	–	–		10.5	25	–	X	X	–	–	X	6	X
Sipalay	55		–	–	–	–		X	X	–	–	–	–	X		8.0	35	–	X	–	–	X	X	10	–

C - Cleaner Circuit

efficiency in copper depression
efficient destruction of residual
those of the Kennecott propertic
and in all Communist Bloc pla
sufficient to destroy residual fl
either by live steam introduced ir
heat exchangers. All depends o
and the agitation required. At
is done under pressure because
both cases autoclaves are used.

If steaming does not provide
tion of flotation reagents (or c
required), then skin roasting,
used. This is a low temperature
300°C and which should be c
oxidation of molybdenite surfa
copper sulfide particles. It is bes
At Chino roasting is used as a co
at Mission it is intercalated into
elimination of copper by sodiu
the rougher concentrate is thick
material flotation, then conditi
refloated 8 times to obtain a high

At Bagdad Copper, heat tre
ing concentrates prior to molyb
conditioned with sulfuric acid tc
hour just below the boiling poi
destruction of xanthates used in

In Russian plants it has bee
copper concentrates drastically
sulfide.[3] It is postulated that at
tration in pulp is considerably re
the rate of decomposition of sod
tion of flotation reagents. N. E
Balkhash, by introducing live ste
tion was reduced from 42 to 5.5
maintaining the same recoveries.

In some cases this heating ac
reagents and it is helped by che
hydrogen peroxide and sodium h

TABLE 6.2

RHENIUM CONTENT OF PORPHYRY COPPERS

(expressed in ppm on 100% MoS_2)

North America		*South America*	
McGill	1,600	Chuquicamata	230
San Manuel	1,000	El Teniente	440
Chino	800	El Salvador	570
Cities Service	600	Andina	380
Twin Buttes	600	La Disputada	350
Pima	600	Toquepala	325
Mission	600	Argentinian porph.	170
Bagdad	200	*Communist World*	
Esperanza	200	Kounrad	510
Sierrita	180	Almalyk	290
Mineral Park	60	Kadzharan	300
Island Copper	2,000	Aigedzor	1,000
Brenda	80	Dastakert	80
Cananea	700	Medet	125

However, at the present time only 35,000 tons of molybdenite containing some 37,500 pounds of rhenium are being recovered from porphyry coppers per year. Since the market for rhenium is still very limited — mostly because of the insecurity of supplies — only some molybdenite concentrates, particularly those with a high rhenium content, are being processed for rhenium recovery. The largest rhenium producer in the world is the United States with an estimated output of 6,000 pounds per year, based mainly on Kennecott production in Utah and in Cleveland. The second world producer is considered to be the Soviet Union, which established its production at Balkhash in 1948. The estimated output from primary sources is about 1,400 pounds per year, but this figure may be considerably higher if some other additional sources are considered. The Russians have done very extensive research in rhenium chemistry and metallurgy and apparently possess quite an advanced technology.

Canada will very soon be a very prominent rhenium producer or exporter due to its unique high-grade orebody at Island Copper. Although at this writing no specific arrangements for rhenium recovery from molybdenite are known, they must be coming very soon simply

TABLE 6.3

RHENIUM RESOURCES AND PRODUCTION FROM PORPHYRY COPPERS

	Resources			*Production*		
Areas	*Molybdenite Reserves - tons*	*Average Re Content Percent **	*Rhenium Content - pounds*	*Molybdenite Production - tons*	*Potential Re Production - pounds*	*Actual Production - pounds*

TABLE 6.3

RHENIUM RESOURCES AND PRODUCTION FROM PORPHYRY COPPERS

	Resources			*Production*		
Areas	*Molybdenite Reserves - tons*	*Average Re Content Percent **	*Rhenium Content - pounds*	*Molybdenite Production - tons*	*Potential Re Production – pounds*	*Actual Production - pounds*
United States	1,700,000	0.04	1,360,000	17,000	22,200	5,900
Canada	350,000	0.05	350,000	6,800	6,800	2,000**
Chile	2,150,000	0.04	1,720,000	7,000	5,600	1,500***
Latin America	850,000	0.03	510,000	750	225	–
Soviet Union	180,000	0.04	144,000	3,000	2,400	1,400
Others	270,000	0.03	162,000	450	250	–
	5,500,000	0.038	4,246,000	35,000	37,500	10,800

* Calculated on 100% MoS_2
** Not acutally recovered, but will be very soon
*** Recovered from Chilean molybdenite concentrates, but not necessarily in Chile.

Argentina

Bajo de la Alumbrera

explored
BM 692-87

ARGENTINA
NEUQUEN
CAMPANA MAHUIDA

MJ 8-27-91 ROBT FALCONBRIDGE 2 km
EXP PROGRAM
10-1-91 GRADE 0.2-1.6% Cu

ARGENTINA
SAN JUAN PROV.

pachon deposit may be in production 6/90

4/72 Cu
EL PACHON ARGENTINA
120 mi W of San Juan (San Juan Prov.)
St Joe subsid 20% - Amt 80%
Sociedad Minera Aguilar (St. Joe lead)
St Joe 800 mt .71% Cu .1 oz Ag .016 Mo
80 X 10^6 TONS O.P. @ ±1.0% Cu
M 65 X 10^6 TONS .65% Cu
S/74 550 X 10^6 .65% Cu .015% Mo
mt cost $300 mill
3/78 792 mt .59% Cu .016% Mo $750 mt cappit

Argentina

Paramillos Sur & Norte

explored
BM 692-87

ARGENTINA
SAN JUAN PROV.

San Juan Prov. Argentina
?
Minera Aguilar
100×10^6 @ 1% Cu
or 170×10^6 @ 0.62% Cu
est. invest $200 mil

AUSTRALIA

WOODLAWN

PAH SURVEY.

AUSTRALIA

PARKES/GOONUMBLA.

PAH - POTEN PROP.

AUSTRALIA

NIFTY

PAH POTEN PROP.

Australia

Chesney

explored
BM692-87

Australia

Benambra

explored
BM692-87

AUSTRALIA

BALCOOMA

PAH POREAS PRAN.

Brazil

Pedra Verde

Explored
BM 692-87

Canada

Bell - SEE BABINE LAKE

to close perm 1989

temp. shut down
BM 692-87

Canada

Berg

explored
BM692-87

Canada

Bethlehem

COMINCO - JERSEY BC STOBY PROD PERM

temp. shut down
BM 692-87

CANADA
YUKON TERR.

2/71 Cu

CASINO YUKON

BRAMEDA RESOURCES
CASINO SILVER MINES LTD

179 x10^6 TONS @ 0.37% Cu + 0.039 % MoS_2

$40 mill est. invest
10,000 tpd.

Canada

Catface

Explored
B/11692-87

CANADA
B.C.

CANADIAN COPPER
130 mi NE Ft. NELSON

MJ 10-15-91 750 tpd mine to close / low Cu price.

Canada

Copper & Medicine Mountains

temp. shut down
BM 692-87

Canada

Coppermine River

explored
BM 692-87

Canada

Galore Creek

explored
BM 692-87

CANADA

11/70 Cu

GRANDUC MINES LTD. *

HECLA 35.4%

NEWMONT

ASARCO

? 50X10' TONS @ 1.75% Cu

Canada

Granisle / Goldstream.

NORANDA

GRANISLE STEPBY PROD PERM. 1982

GOLDSTREAM - REDUCED PROD. 1984

Goldstream on indefinite closure 1984
from ARM '89

temp. shut down
BM 692-87

Canada

Great Lakes Nickel

explored
BM 692-87

Canada

High Lake

explored
BM 692-87

CANADA
BRITISH COLUMBIA

25,000 tpd
Cu 0.27% MoS2 .049%
mine under dev.
(IDOM '89)

T (temp. shut down)

HIGHMONT Brit. Columbia

HIGHMONT MINING CORP.
5/72 135 x 10^6 TONS 0.42% Cu equil.
150 x 10^6 TONS @ 0.285-0.27% Cu +
0.045-0.051% MoS2
65 mill invest

CANADA
B.C.

HUCKLEBERRY

KENNCO 30%
GRANBY 70%

42 x 10^6 TONS @ .52% Cu, + Mo Au Ag

Canada

Izok Lake

explored
BM 692-87

CANADA
YUKON

KEEWENAW

MJ 7-9-71
IMPERIAL MINES IN STDBY RES
LOW Cu PRICE - LOCATED NORTH
WHITEHORSE.

CANADA
B.C.

3/73 Cu
LORNEY BC.

LORNEY MINE CORP

293x10^6 TON @ .43% Cu 0.014% Mo.
cut-off .26% Cu w: o: 1.17:1

Canada

Poison Mountain

explored
BM 692-87

Canada

Schaft Creek

explored
BM 692-87

CANADA
B.C.

SUMMER CK, PRINCETON B.C
AMAX
± 50 x 10^6 TONS @ +0.3% Cu

E

CANADA

B.C.

8/73 Cu

SUSTUT PK, BC

FALCONBRIDGE NICKEL MINES

North Deposit 10×10^6 tons @ 0.73% Cu

South " 19.9×10^6 tons @ 1.25% Cu

E

CANADA

ONTARIO

UMEX CO.

INDEF CLOSURE
PROB PERM 1982

4/75 ~~THIERRY PROJ.~~ Cu

PICKLE LAKE, NW ONTARIO

LAKE ST JOSEPH AREA

UNION MINIERE

12.5×10^6 TON @ 1.7% Cu

CHILE

CuMo

161 ANDACOLLO, CHILE

Empresa Nacional de Minería de Chile
ENAMI

183 250mt .62% Cu .015% Mo .25 g/mt Au
230mt .55% Cu
200mt .56% Cu .24 gm Au/t .007% Mo

est cost $ 350-452M

49,000 tpd 15 yr life

73,000 mt refined Cu/yr

PAH POTEN PROD.

CHILE

Phelps Dodge

OJOS DEL SALADO HEM

PAH POTEN PROD.

Fiji

Namosi
(map spells it Namsoi)

explored
BM 692-87

INDIA

At one time Malanjkhand was having serious problems and discussion based on mill shutdown have been taken place at present.
6/90
LCG

4/73 Cu
MALANJKHAND, BALAGHAT DIST, INDIA

HINDUSTAN COPPER LTD.

25 x 10^6 TONS @ 1.0% Cu proven
25 x 10^6 lower grade possible
2/83 60 mt @ 1.37% Cu

India

Ambaji

explored
BM 692-87

Jordan

Wadi Dana

explored
BM 692-87

Maine

Blue Hill
mine temp. inactive, closed '77
proved 552,000, 1.46 Cu, 5.31 Zn
ore grade Cu 1.1%, Zn 5.7%

USA
MONTANA

4-74	TROY		Cu Ag
	BEAR TOOTH, near troy, Lincoln Co		Montana
	ASARCO		
	BEAR CREEK		
	50 x 10^6 TON	.7% Cu	1.5 g Ag
2-79	64 x 10^6	.74	1.54 g

ASARCO IN PRODUCTION

Nevada

McArthur

owned by: Timberline Resources
Tucson
32 million tons of .3
Yerrington, Lyon County, Nevada

Mauritania

Akjoujt

270 km N. of Nouakchott

18 mm T @ 1.5% Cu .16 dwt Au

7 mm T @ 2.9% CuO 1.9 dwt Au

explored MJ 4-3-64

BM 692-87

South Africa

Black Mountain

explored

BM 692-87

AFRICA

ZAIRE

1/73		Cu
Fungurume	Zaire	
Societe Minere de Tenke Fung.		
CHANTIERS CONFEDERATION.		
Amoco Minerals - Standard Oil.		
MITSUI & Co.		
45.7 x 10^6 ton	5.5% Cu	.44% Co
1/74 47.5 x 10^6	5.6% Cu	.45% Co.
1/76 56.1 x 10^6	5.7% Cu	.45% Cu
- 660mm est. invst.	prod est 143,000 t cu/yr. 7100 t Co/yr	

E

BM 692-87

Mexico

Arroyos Azules

Explored
BM 692-87

Mexico

El Arco

Explored
BM 692-87

Mexico

Maria

Pan Poder Pan

NEW GUINEA

OUT OF PRODUCTION
AS RESULT POLITICAL
PROBLEMS 6/'90

8/90 Cu

BOUGAINVILLE - PANGUNA - NEW GUINEA

CONZINC RIO TINTO AUST LTD 2/3 80%
NEW BROKEN HILL CONSOLIDATED LTD 1/3 80%
NEW GUINEA 20%
900 X 10^6 TONS @ 0.48% Cu 0.018 oz Au

P

BM1692-87

NEW GUINEA

Cu

FRIEDA RIVER Papua - New Guinea

MT. ISA MINES

3.6 X 10^6 TON @ .45% Cu

E

BM1692-87

PAKISTAN

BALUCHISTAN PROV.

North
East
& South

Cu

Saindak, CHAGAI DIST. PAKISTAN
BALUCHISTAN PROV. NW of Pakistan

Gov't. Resource Dev. Corp.

3 ore bodies

412 x 10^6 .366% Cu

5/81 412 mt @ .366% Cu + Ag + Au

phase I South 11 mt @ .426% Cu

12,500 tpd ⇒ 15,000 t blister Cu
$200M/400M 80,000 t steel billets
150,000 t H2SO4

E

SAUDI ARABIA

1983 Jabal Sayid Saudi Arabia Cu Zn

Boliden

BRGM

20 mt 1.95% Cu 1.5% Zn.

E

PANAMA

Cerro Colorado Panama Cu

Rio Tinto-Zinc Corp Ltd 49%
Panama Govt 51%

1.3×10^9 mt @ .78% Cu .08% MoS_2 .16g/mt Ag
2×10^9 invent. .0013% Au
120,000 mtpd
prod. 170,000 mtpy Cu

Peru

Antamina

explored
BM 692-87

Peru

Berenguela

explored
BM 692-87

Peru

Coroccohuayco

explored
BM 692-87

PERU

(Granja)

LA GRANJA

PAH POTGEN PROV.

PERU

TORONCHO

PAH BROWN PROV.

explored
BM 692-87

PHILIPPINE ISLANDS
NEGROS Is.

CLOSED INDEF
PROB PERM 1983

T

12/81 BASAY, Negros Is, Phillip Cu

CDCP Mining Corp

15.25 mt	.4% Cu	OP
111.23 mt	.-	UG
126.48 mt	.51% Cu	

15,000 tpd → 25,000 tpd
14 yr life

Philippines

Batong-Buhay

(Katinga?) indefinite production cut back
expected to be permant, 1985
annual cap. 20 (ARM '89)

temp. shut down
BM 692-87

PHILIPPINE ISLANDS

CLOSED 1982
PROB PERM.

T

1/73 Au-Ag

Bonang / Lobo Philippines
N. of Baguio
Western Minolco Corp.

OP. Bonang	5.5×10^6 tons	0.54% Cu	0.01 Au
Lobu	24.5×10^6	0.42	0.01

/

Philippines

Copper Shield Project

indefinite closure
1986, annual cap. 3 (ARM '89)

temp. shutdown
BM 692-87

Philippines

Hinobaan
(map spelling: Hinabaan)

developing
BM 692-87

Philippines

Inayawan

explored
BM 692-87

PHILIPPINE/S

INO-CAPAYANK - SEE MOGPOG

T

PHILIPPINE/S

KALINGA

INDEF PND CUTBANK 1985

SEE BATONG BUHAY

Philippines

Mapula, Masara

explored
BM 692-87

Philippines

Sabena

temp. shut down
BM 692-87

Philippines

San Antonio

explored
BM 692-87

Philippines

Santo Nino(s)

temp. shut down
BM 692-87

Philippines

Sipalay

temp. shutdown
BM 692-87

Philippines

Tawi-Tawi

explored
BM 692-87

Philippines

Taysan

explored
BM 692-87

Philippines

Trident (Sulat)

explored
BM 692-87

Sudan

Hofrat en Nahas

explored
BM692-87

Zambia

Kalulushi East

explored
BM692-87

Uganda

Kilembe

explored
BM692-87

Turkey

Espiye

developing
BM 692-87

Turkey

Siirt

explored
BM 692-87

USA

ALASKA

81	ARTIC Camp ARCTIC ALASKA	Cu
	Kennecott	
	30.8 x 10⁶ t 4% Cu	

E

BM 692-87

USA

ALASKA

81	BORNITE ALASKA	Cu
	Kennecott	
	22 x 10⁶ t @ 5.3% Cu	

E

BM 692-87

Alaska

Brady Glacier

USA

ALASKA

close to Bond Creek

4/71 Cu

ORANGE HILL, ALASKA

CHISANA DIST

AMAX

300 x 10^6 TONS @ 0.4% Cu 0.02% [illegible]

[illegible] Au [illegible]

E

BM692-87

USA

ALASKA

DELIN BUT

NO DEVEL.

Cu

RUBY CK AREA

KENNECOTT

O.P. 30 x 10^6 TONS 4% Cu + 25 x 10^6 addition

U.G. 12-15 x 10^6 TONS 7 1/2 % Cu

USA

ARIZ.

NO RES. LISTED DIMMR '87 - CLOSED '82-DEPC?

9/71 Cu

BLUEBIRD, MIAMI AZ.

RANCHERS EXPLOR & DEVE. CORP.

±75x10⁶ TONS @ 0.52% Cu as Oxide.

ore : waste = 1:1 8,000 tpd.

prod. 30,000 lbs Cu/day.

heap leaching, liquid ion exchange & electrowinning refinery

FIRST SX-EW PLANT

CLOSED PROB PERM. 1982 STILL DOWN '88

ARIZ

PINAL

BUCKEYE EAST

SAME AS ?
COPPER BUTTE ⊙

DIMMR 22 mmt @ 0.65% Cu.

SOC. Cu.

ASARCO Prop.

ARIZONA

GILA

CACTUS

10-mmt @ 0.7% Cu
acid sol

DIMMR-87 Magma Copper Co.

ARIZ
Gila

Carlotta

DMMR '81 10 mmt @ 0.85% Cu

Arizona

Casa Grande

DMMR 80 mmt @ 0.43 JV w/
ASARCO/FREEPORT
USBM IN SITU PROJECT.

explored
BM 692-87

USA
ARIZONA

ASARCO Prop.
'81 DMMR
25 mt @ 5%

CHILTO Az
Dripping Spg Pa
?
10-20 X 10^6 TONS ?
porphyry

Arizona

Christmas
still inactive
when active 6,000 tpd
27-mmt @ 1.35% Cu OP & U.G. DMMR '87

Temp. shut down AS OF 1982 STILL DOWN 1982
BM 692-87

ARIZONA

COCHISE

P.D. COPP-BISBEE N. OF STATE HIGHWAY
BY LAV. PIT. / INCLUDES MUNEIN
PROPERTY
170 mmt @ 0.5% Cu Ox
LEACH STUDIES IN PROG. '90

USA
ARIZ

P.D IN EARLY STAGES
OF DEVEL PROJ. 6/90

6/73 Cu Mo
Copper Basin Ariz
SW of Prescott

P.D.

200 x 10^6 TONS 0.34% Cu 0.17% Moly
1974 175 x 10^6 TONS 0.55% Cu 0.02% MoS_2

ARIZ.
GILA

Copper Butte - ~~ARCO~~

22 mmt @ 1.09% Cu
acid sol

DUNNE '87

USA
ARIZ.

Dee Pearson
Harry Winters Prop
April '89

w/75	Cu/Mo
Copper Ck.	Mammoth Ariz
Newmont	
Exxon	Sptd ?
80x10^6 tons @ +.7% Cu	
@ 2000'-3500'.	

ARIZ
COCHISE CO.

Courtland / Turquoise
AKA Mahoney Hill - Star Hill
10 mmt @ 0.78% Cu.

Gover Henrichs may anom.
Union oil.
Sta Fe 6/90

ARIZ
COCHISE CO.

COURTLAND

HOPE DEPOSIT / GREAT WESTERN
1.8 mmt 1.11% Cu
DISCOV. ASR '50's. SUNSHINE →
Union Oil STATE 6/90

USA
ARIZ

DIMMR 232 mmt c .99% Cu.
SHAFT AND EXPERIM
BLOCK CAVE - SAID TO
CAVE POORLY

6/73
SAFFORD, ARIZONA
DOS POBRES
PD
250 X 10^6 TONS 0.92% Cu

ARIZ
COCHISE

JIM SULLIVAN

DRAGOON -
OLD CF&I DISCOVERY
ON SP LINE @ DRAGOON

25 mmt c 0.5% Cu
very unfavorable strip

USA

Ariz.

DMMR '87

3 mmt @ 0.82% Cu.

8/73 Cu

FOUR METALS, Az.

NORANDA

"20 x 10^6 TONS @ 0.6% Cu" "10c"

"15 x 10^6 @ .58% Cu Bill Lundby"

Arizona

Florence (Conoco)

AKA Poston Butte

DMMR 800 mmt @ 0.4% Cu mix ox-sulf

SEVERE WATER PROBS - GILA RIVER.

explored

BM 692-87

ARIZ.

Pima

Dynamite -

V.A. Amol prop

N. of Ironwood

100 mm @ 0.53% DMMR '87

LCA - RESERVE SEEMS HIGH!

ARIZ

MOHAVE

EMERALD ISLE -

ACQUIRED AKIMECO '89
18.6 mmt @ 0.7% sol.

EXOTIC Cu MINR. poss'l nd
Mineral Park

AZ

GILA

GIBSON

11 mmt @ 0.7% Cu
acid sol.

DMMR '97

ARIZONA

YAVAPAI

HASSAYAMPA.

21 mmt @ 0.5
DICK HENSLEY PROJ.
QUESTIONABLE RESERVE??

Arizona

Helvetia East

DMMR '87 ROSEMONT 337 mmt @ 0.54% Cu
PEACH 22 mmt ACID SOL @ .55% Cu
PUR BY ASARCO 1988.

explored
B/11692-87

ARIZ.
COCHISE

I-10 - Jim Sullivan
100 mmt @ 0.52% Cu
mix ox-sul-limey lost.

USA
ARIZ.

ACQUIRED BY ARIMETCO 1989

LCA FILES
IN PIT 2.6 mmt @ .46%
N. GODDARD ZONE
13 mmt @ .29% 1.5:1
OP SUSP. 1986

STILL ± 25 mm LBS
Cu IN HEAPS
HEAPS ALSO "ZINCY" ¿POSS. TUC LANDFILL

9/73 CuO *
JOHNSON CAMP
~~SUPERIOR~~ AZCO-LEASE??
~~CYPRUS~~
14.7 x 10^6 .8% Tot Cu
2/74 15 x 10^6 TONS @ .5% Cu oxide 1.6-1 SR
~~? 0.85% Cu as oxide~~
11/74 15.0 x 10^6 @ .5% Cu 1.6:1 SR
HEBTA rec'y system. ? cont ? 6mm
prod est. mid '75 ?

1

Arizona

Kornkob
open pit, still inactive
proved: 11 million tons of .48% Cu
probable 20MM t .3oz Ag/T
possible: 30mm

Placer by BUDGE 1989-90

USA
Ariz -

9/72 Cu
SAFFORD, ARIZONA
(LONE STAR)
KENNECOTT Cu CORP.
SOLD TO P.D. CORP
+2,000 x 10^6 TONS @ 0.41% Cu U.G.
Ari 1,065 Mt .58% Cu

Az
Cochise

MAME
1 mmt @ 1.1 % Cu.
DMMR '87

Az.
Mohave

Mineral Park
(Ithica Peak)

35 mmt @ 0.17%
Cyprus — prob inactive.
6/90

Az.
Pinal Co.

Mineral Gate.
Dump 15 mmt @ 0.42% Cu

parsil and Pioneer Area -
Res. Questionable!

USA
Ariz.

also one called
Van Dyke
Kocide Chem. attempt
in situ leach 1989

Miami Underground
Van Dyke?
Occidental
Amax
100x10⁶ @ 0.55 ~~1.0 1.2% Cu~~

USA

Ariz

LEACHED IN PLACE - ARIZ LATE '90's

STILL CONTAINS Cu VALUES	4/72 Cu Old Reliable, Mammoth Az Ranchers 80% Siskon 5% royalty DuPont 20% on prod. 4x10^6 tons @ 0.80% Cu

SOME ENVIRON PROBS.

USA

Ariz

100m '89 shows oracle ridge mining partners - mine temp. inactive proved 4,032,000; 2.30% Cu	CONTROL MINE ARIZONA (ORACLE RIDGE) CONTINENTAL MATERIALS CORP. 35x10^6 TONS @ 2.2% Cu 12/73 N. zone 3x10^6 TONS @ 1.9% Cu .5 oz Ag 12/74 12x10^6 tons @ 2.2% Cu

explored BM 692-87 N. ATLANTIC RES 1989

Arizona

Ox Hide ADJ TO
still shut OLD BLUEBIRD
cement copper PART OF INSPIR.
SEE INSPIR.

temp. shut down
BM 692-87

USA
ARIZ.

6/73 Cu
PINE FLAT ARIZ
SE of PRESCOTT

COMINCO / SUPERIOR

? 0.4% Cu U.G.
30-50 x 10^6

ASARCO PROJECT - JEK

USA
ARIZ.

12/72 POSTON Cu
FLORENCE (POSTMAN BUTTE)
FLORENCE AZ
CONTINENTAL OIL CO.

750 x 10^6 TONS @ ± 0.5 % Cu

ASARCO has 250 x 10^6 TONS @ 0.5% Cu
on opp side of fault U.G.

SEE ALSO FLORENCE

USA
ARIZ.

MAY BE SAME
AS CHILITO??

RATTLER AZ
Dripping Spc Range
?

1-2 x 10^6 TONS 1-1.5% Cu

USA
Ariz.

2/71
6/73 Cu
RED MTN PATAGONIA Az

KERR-McGEE CORP.

200 X 10^6 TONS @ 0.7% Cu U.G.
deep
5/74 mebrle 755' η 1.22%

E
BM692-87

USA
Ariz

3/73
E HELVETIA / Peach-Elgin / ROSEMONT Ariz

ANACONDA / ARMAX.

E Helvetia 320 X 10^6 TONS @ 0.64% Cu Sulf
22 X 10^6 TONS only 0.55% Cu (acid soluble
Peach Elgin 23 X 10^6 TONS 0.75% Cu (mixed Cu

USA
Ariz

O.P. RES DEPLE.
U.G. 15 mm to 1.25%
DOWN FAULT TO END
OF SACATON
SOME U.G. DEVEL. By
ASARCO. T
BM692-87

2/71 Cu
~~OLD GRANITE~~ (SACATON) CMBA Az *
GLOBE Az

ASARCO.

+47 X 10^6 TONS < OP @ 0.56% Cu T ½
UG @ 1.86% Cu (½)

est invest $24,000,000
21,000 tpd Cu

Arizona

Safford (Kennecott)
LONE STAR SOLN + P.D. Conc.
SEE LONE STAR.

explored
BM 692-84

USA
Ariz.

AZCO WORK UNPUB EST '88-'90

DUMAR '87
120 @ .5 SUL
80 @ .3 ACID SOL
123 @ .4 SUL
12 @ .77 ACID SOL

E
BM 692-84

SANCHEZ Safford Az
INSPIRATION AZCO
80 x 10^6 TONS 0.86% Cu oxide
CARPENTER REPT

ARIZONA

SQUAW PEAK

20 mmt @ 0.36% Cu
reserve by DUMAR is questionable
may be mm Laramide porphyry.

ARIZ
COCHISE

STRONG & HARRIS

60 mmt @ 0.6%
Spotty U.G. replacement -
option to ARCO 1988

Arizona

Von Dyke

KOCIPE CHEM
IN SITU '89
100 mmt @ 0.5%

explored
BM 692-87

AVAIL 6/90

USA
ARIZ.

Vekol

WELL PLACED
OX ORE
ABOVE & ADJ TO
SUL.

Cu-Mo
VEKOL HILLS ARIZONA

NEWMOUNT / Superior
RETURNED TO T'HONO O'ODHAM
100 X 10^6 TONS low grade TRIBE

oxide ?

E
BM 692-87

105 mmt @ 0.56%

USA

ARIZ.

DMMR '87

6 mmt @ 0.26 w/ 0.28% MoS2

POSS ADD. 6 mmt t ore.

8/73 Cu Mo

VENTURA PIPE AZ

NORANDA

13.5 x 10^6 TONS @ ±.4% Cu + .1% Mo(-)

Cu grade < w/ depth

@ 2600' DH Cu = .75% Cu

ARIZ

COCONINO CO.

WHITE MESA S. OF PAGE ON NAVAJO RES

2.0 mmt @ 0.75% RED BED copper

Chrysocolla min

Dev DuPont Rept LCA

ARIZ.

YAVAPAI CO.

ZONIA

35 mmt @ 0.31% acid sol.

R. LUNDIN

USA
NEVADA

spelled Yerrington

2/83	Cu
Yerington - NV	
Don H. Tibbals.	
126.9 M t .3437% Cu e .27 oz Ag	
30,000 tpd mill	

Add Ely

New Mexico

Continental Surface

temp. shut down
BM 692-87

New Mexico

Continental Underground

Cosco '82 - Pan Peru

temp. shut down
BM 692-87

USA
N. MEX

9/78 OXIDE Cu
Copper Leach, NM
NW of Tyrone

?

5.9×10^6 @ .57% Cu

USA
NEW MEXICO

9/78 Copper Mtn N.M. Cu
OX.06
Copper Mtn NEW MEX
N of Tyrone

?

14×10^6 @ .43% Cu

USA
N. MEX

3/75 HANOVER Cu
Continental Fierro N. Mex *

UV Ind.

UG 94×10^6 tons @ 0.8% Cu 27% Fe
OP. 100×10^6 ton @ 0.56% Cu

NEW MEXICO
HILLSBORO (COPPER FLAT)

GOLD EXPRESS IS THE NEW OWNER OF THE COPPER FLAT COPPER PROPERTY IN NEW MEXICO. Gold Express, based in Spokane, recently completed its purchase of the project from Rio Gold Mining of Vancouver, British Columbia, and Rio Gold subsidiary Copper Flat Mining of Denver. Gold Express is paying about $670,000 and issuing 2.4 million restricted shares to Rio Gold, plus is assuming debt from Copper Flat Mining, according to reports. The Copper Flat project in Sierra County has 53 million tons of openpit ore averaging 0.45 percent copper, with a waste-to-ore ratio of 1.3:1. Production could commence by late 1991 at an average rate of 15,000 tons of ore daily. Annual output should average approximately 40 million pounds of copper, 12,000 ounces of gold, 800,000 pounds of molybdenum and 300,000 ounces of silver. Copper Flat first came on line in 1982 as a joint venture of Quintana Minerals and Philbro Mineral Enterprises but closed after three months due to depressed copper industry conditions. Also at Gold Express, John R. King is the new president/CEO. He succeeds Robert E. Sterling, who is retiring from those posts but will remain as chairman.

USA
NEW MEXICO

MJ 1-3-70 REFERS TO SIZEABLE Cu Cx DEPOSIT ON PROP.

NACIEMENTO, E of Cuba, N. Mex

EARTH RESOURCES.

11×10^6 TONS @ 0.65% Cu publ.
20.7×10^6 TONS @ 0.70% Cu visit

E
BM692-87

USA
UTAH

temp. inactive
10,000 tpd
Summary: Estimated to exceed 20 yrs. of production
see 100M'89

D
BM692-87

10/74 Cu
Carr Fork Utah *

ANACONDA

1/78 .465 $\times 10^6$ TONS @ 1.56 Cu
UG . 2000-5000 UG.
$135MM prod 1979
2/79 $160MM 10,000 tpd 5000 tons Cu prod/mo
Sys in const. @ 1.85% Cu

Washington

Sunrise

explored
BM 692-87

Wisconsin

Crandon

explored
BM 692-87

USA
WISCONSIN

2/74 Cu
FLAMBEAU WISCONSIN

Kennecott

4×10^6 .48% Cu

E
BM 692-87

Wisconsin

Pelican River

explored
BM692-87

Wyoming

Kirwin

explored
BM692-87

POSSIBLE FIELDS IN MRDS

- Record Number
- Record Type
- Information Source
- Report Date
- Deposit Number
- File Link ID
- Reporter
- Reporter Affiliation
- Updater
- Update Date
- Site Name
- Synonym Name
- District Name
- Country Name
- Country Code
- State Name
- State Code
- Physiographic Province
- Drainage Area
- Land Status
- Quadrangle Name
- Quadrangle Scale
- 2nd Quadrangle Name
- 2nd Quadrangle Scale
- Elevation ASL
- Forest
- Congressional District
- UTM Northing
- Easting
- Zone Number
- Latitude Degree-Min.-Sec.
- Longitude Degree-Min.-Sec.
- Latitude Decimal Degrees
- Longitude Decimal Degrees
- Accuracy
- Township
- Range
- Section
- Section Fraction

Meridian
Position from Nearest Locality
Location Comments
Commodities Present
Ore Minerals
Commod Subtypes
General Analytical Data
Commodity Comments
Major Products (Producer)
Minor Products (Producer)
Main (Non-Producer)
Minor (Non-Producer)
Occurrences
Deposit Type
Deposit Form
✓Depth to Top
Depth to Bottom
Maximum Length
Maximum Width
Maximum Thickness
Deposit Size Strike
Plunge Direction
Dip
Plunge
Comments
Description of Workings (S,U,B)
Depth Below Surface
Length of Workings
Overall Length
Overall Width
Overall Area
Comments
Production
✓Status and Activity
Discoverer
Year of Discovery
Nature of Discovery
First Year of Production
✓Year Last Production
Production Years
✓Owner
Operator
Exploration Comments

Total Invest M$
Exploration M$
Development M$
Mill M$
Expansion M$
Year Applicable
Mill Cap
Economic Comments
Host Rock Age
Host Rock Type
Igneous Rock Age
Igneous Rock Type
Age of Mineralization
Non-Ore Minerals
Ore Controll
Regional Structure
Tectonic Setting
Local Structure
Alteration
Concentration Enrichment
Rock Units
Igneous Rock Units
USGS Model
USGS Model Number
Geology Comments
General Comments
References
Annual Production
Cummulative Production
Source of Information
Comments
✓Reserves & Resources
✓Source of Information
✓Comments
Reserves Only
Source of Information
Comments
Resources Only Source of Information
Comments

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LIST C

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
AF	AFGHANISTAN
AL	ALBANIA
AG	ALGERIA
AQ	AMERICAN SAMOA
AN	ANDORRA
AO	ANGOLA
AY	ANTARCTICA
AC	ANTIGUA
AR	ARGENTINA
AT	ASHMORE AND CARTIER ISLANDS
AS	AUSTRALIA
AU	AUSTRIA
BF	BAHAMAS
BA	BAHRAIN
BB	BARBADOS
BE	BELGIUM
BD	BERMUDA
BT	BHUTAN
BL	BOLIVIA
BC	BOTSWANA
BV	BOUVET ISLAND
BR	BRAZIL
BH	BRITISH HONDURAS
IO	BRITISH INDIAN OCEAN TERR.
BP	BRITISH SOLOMON ISLANDS
VI	BRITISH VIRGIN ISLANDS
BX	BRUNEI
BU	BULGARIA
BM	BURMA
BY	BURUNDI
CB	CAMBODIA
CM	CAMEROON
CA	CANADA
PQ	CANAL ZONE
EQ	CANTON AND ENDERBURY ISLANDS
CV	CAPE VERDE
CJ	CAYMAN ISLANDS
CT	CENTRAL AFRICAN REPUBLIC
CL	CENTRAL AND SOUTHERN LINE ISLANDS
CE	CEYLON
CD	CHAD
CI	CHILE
CH	CHINA,MAINLAND
TW	CHINA,REPUBLIC OF
KT	CHRISTMAS ISLAND
CK	COCOS ISLANDS
CO	COLOMBIA
CN	COMORO ISLANDS
CG	CONGO (KINSHASA)
CF	CONGO REPUBLIC

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
CW	COOK ISLANDS
CS	COSTA RICA
CU	CUBA
CY	CYPRUS
CZ	CZECHOSLOVAKIA
DM	DAHOMEY
DA	DENMARK
DO	DOMINICA
DR	DOMINICAN REPUBLIC
GC	EAST GERMANY
EC	ECUADOR
ES	EL SALVADOR
EK	EQUATORIAL GUINEA
ET	ETHIOPIA
FO	FAEROE ISLANDS
FA	FALKLAND ISLANDS
FJ	FIJI
FI	FINLAND
FR	FRANCE
FG	FRENCH GUIANA
FP	FRENCH POLYNESIA
FS	FRENCH SOUTHERN AND ANTARCTIC LANDS
FT	FRENCH TERRITORY OF AFARS AND ISSAS
GB	GABON
GA	GAMBIA
GZ	GAZA STRIP
GH	GHANA
GI	GIBRALTAR
GN	GILBERT AND ELLICE ISLANDS
GR	GREECE
GL	GREENLAND
GJ	GRENADA
GP	GUADELOUPE
GQ	GUAM
GT	GUATEMALA
GV	GUINEA
GY	GUYANA
HA	HAITI
HM	HEARD AND MCDONALD ISLANDS
HO	HONDURAS
HK	HONG KONG
HU	HUNGARY
IC	ICELAND
IN	INDIA
ID	INDONESIA
IR	IRAN
IZ	IRAQ
IY	IRAQ-SAUDI ARABIA NEUTRAL ZONE
EI	IRELAND
IS	ISRAEL

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
IT	ITALY
IV	IVORY COAST
JM	JAMAICA
JN	JAN MAYEN
JA	JAPAN
JQ	JOHNSTON ATOLL
JO	JORDAN
KE	KENYA
KN	KOREA,NORTH
KS	KOREA,SOUTH
KU	KUWAIT
LA	LAOS
LE	LEBANON
LT	LESOTHO
LI	LIBERIA
LY	LIBYA
LS	LIECHTENSTEIN
LU	LUXEMBOURG
MC	MACAO
MA	MADAGASCAR
MI	MALAWI
MY	MALAYSIA
MV	MALDIVES
ML	MALI
MT	MALTA
MB	MARTINIQUE
MR	MAURITANIA
MP	MAURITIUS
MX	MEXICO
MQ	MIDWAY ISLANDS
MN	MONACO
MG	MONGOLIA
MH	MONTSERRAT
MO	MOROCCO
MZ	MOZAMBIQUE
MU	MUSCAT AND OMAN
NM	NAMIBIA
NR	NAURU
NP	NEPAL
NL	NETHERLANDS
NA	NETHERLANDS ANTILLES
NC	NEW CALEDONIA
NH	NEW HEBRIDES
NZ	NEW ZEALAND
NU	NICARAGUA
NG	NIGER
NI	NIGERIA
NE	NIUE
NF	NORFOLK ISLAND
NY	NORWAY

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
PK	PAKISTAN
PN	PANAMA
PP	PAPUA AND NEW GUINEA
PF	PARACEL ISLANDS
PA	PARAGUAY
PE	PERU
RP	PHILIPPINES
PC	PITCAIRN ISLAND
PL	POLAND
PO	PORTUGAL
PU	PORTUGUESE GUINEA
PT	PORTUGUESE TIMOR
RQ	PUERTO RICO
QA	QATAR
RE	REUNION
RO	ROMANIA
RW	RWANDA
YQ	RYUKYU ISLANDS,SOUTHERN
SM	SAN MARINO
TP	SAO TOME AND PRINCIPE
SA	SAUDI ARABIA
SG	SENEGAL
SE	SEYCHELLES
SL	SIERRA LEONE
SK	SIKKIM
SN	SINGAPORE
SO	SOMALIA
SF	SOUTH AFRICA
WA	SOUTH-WEST AFRICA
RH	SOUTHERN RHODESIA
YS	SOUTHERN YEMEN
UR	SOVIET UNION
SP	SPAIN
SS	SPANISH SAHARA
ME	SPANISH TERR. IN N. MOROCCO
PG	SPRATLY ISLAND
SC	ST. CHRISTOPHER-NEVIS-ANGUILLA
SH	ST. HELENA
ST	ST. LUCIA
SB	ST. PIERRE AND MIQUELON
VC	ST. VINCENT
SU	SUDAN
NS	SURINAM
SV	SVALBARD
SQ	SWAN ISLANDS
WZ	SWAZILAND
SW	SWEDEN
SZ	SWITZERLAND
SY	SYRIA
TZ	TANZANIA

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
TH	THAILAND
TO	TOGO
TL	TOKELAU ISLANDS
TN	TONGA
TD	TRINIDAD AND TOBAGO
TC	TRUCIAL STATES
TS	TUNISIA
TU	TURKEY
TK	TURKS AND CAICOS ISLANDS
UG	UGANDA
EG	UNITED ARAB REPUBLIC
UK	UNITED KINGDOM
US	UNITED STATES
UV	UPPER VOLTA
UY	URUGUAY
BQ	US MISC CARIBBEAN ISLANDS
IQ	US MISC PACIFIC ISLANDS
TQ	US TRUST ISLANDS,PACIFIC
VT	VATICAN CITY
VE	VENEZUELA
VN	VIET-NAM,NORTH
VS	VIET-NAM,SOUTH
VQ	VIRGIN ISLANDS
WQ	WAKE ISLAND
WF	WALLIS AND FUTUNA
WB	WEST BERLIN
GE	WEST GERMANY
WS	WESTERN SAMOA
YE	YEMEN
YO	YUGOSLAVIA
ZR	ZAIRE
ZA	ZAMBIA

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
A012130	(ANDERSON CREEK) OCC	US	AK	67-39-11N	148-36-54W	CU	LODE; VEIN
A012132	(BIG JIM CREEK) OCCU	US	AK	67-51-46N	149-57-06W	CU PB	LODE; COATING(?)
A012140	(GEROE CREEK) PROSPE	US	AK	67-40-33N	148-48-27W	MO CU	LODE; PORPHYRY, DISS
A012124	(HORSE CREEK) OCCURR	US	AK	67-23-47N	148-58-11W	CU	LODE
A012128	(HOWARD CREEK) OCCUR	US	AK	67-22-55N	149-55-09W	CU PB	LODE; CONTACT METASO
A012148	(QUARTZ CREEK) OCCUR	US	AK	67-48-29N	149-09-24W	CU	LODE; VEIN
A012122	(SIWASH CREEK) OCCUR	US	AK	67-07-11N	149-23-54W	CU	INSUFFICIENT DATA TO
A012150	(SNOWDEN CREEK) OCCU	US	AK	67-45-11N	149-42-42W	CU GYP	LODE; VEIN
A012121	(WEST FORK) COPPER O	US	AK	67-11-56N	148-44-23W	CU	LODE; VOLCANOGENIC
A011783	ALTERATION CREEK OCC	US	AK	63-01-15N	144-15-29W	CU AU AG	LODE; VEIN
A011751	AMY CREEK PROSPECT	US	AK	61-42-32N	143-50-59W	CU	LODE; VEIN
A011889	ARCTIC CAMP PROSPECT	US	AK	67-10-53N	156-23-08W	ZN CU PB AG AU	LODE; MASSIVE, DISSE
A011633	BAILEY PROSPECT	US	AK	61-50-05N	149-10-19W	CU MO AU AG	LODE; SHEAR ZONE, DI
A011792	BEE MINING CO. PROSP	US	AK	63-20-25N	145-46-50W	NI CU AU AG	LODE; MASSIVE, DISSE
A012131	BIBBAN PROSPECT	US	AK	67-53-01N	148-43-36W	CU	LODE; VEIN
A011747	BIG HORN PROSPECT	US	AK	61-39-26N	143-36-41W	CU	LODE; VEIN; MASSIVE,
A011704	BINOCULAR PROSPECT	US	AK	61-24-38N	142-22-50W	CU AG	LODE; MASSIVE, VEIN,
A011738	BLACKBURN, PROSPECT	US	AK	61-37-12N	143-47-20W	CU	LODE; DISSEMINATED,
A012174	BLUE LODE CLAIMS	US	AK	62-20-20N	149-04-00W	CU	SHEAR ZONE; REPLACEM
A011724	CALCITE PROSPECT	US	AK	61-32-47N	143-43-20W	CU	LODE; VEIN, DISSEMIN
A011591	CHITINA RIVER PROSPE	US	AK	61-29-50N	144-15-30W	CU MO	LODE; DISSEMINATED,
A011769	COLORADO PROSPECT	US	AK	61-57-56N	141-03-48W	CU AU	LODE; MASSIVE, CONTA
A011715	CONTACT GULCH PROSPE	US	AK	61-29-38N	142-18-36W	CU	LODE; VEIN
A012189	COPPER KING CLAIMS	US	AK	62-19-50N	149-10-40W	CU FE AU AG	SHEAR ZONE
A011758	COPPER KING PROSPECT	US	AK	61-45-50N	142-00-20W	CU	LODE; DISSEMINATED
A012190	COPPER QUEEN CLAIMS	US	AK	62-21-00N	149-03-00W	CU AU	SHEAR ZONE
A011737	COPPER QUEEN PROSPEC	US	AK	61-33-31N	143-45-28W	CU FE	LODE; MASSIVE, VEIN,
A011888	DEAD CREEK PROSPECT	US	AK	67-11-23N	156-31-27W	CU ZN PB	LODE; MASSIVE, DISSE
A011890	DIANE CREEK PROSPECT	US	AK	67-09-12N	156-13-15W	CU ZN	LODE; DISSEMINATED,
A012193	EASTVIEW CLAIMS	US	AK	62-20-00N	149-03-00W	CU FE	VEIN
A011793	EMERICK PROSPECT	US	AK	63-21-25N	145-41-45W	NI CU	LODE; MASSIVE, DISSE
A011702	ERICKSON MINE	US	AK	61-24-20N	142-15-00W	CU AG	LODE; MASSIVE, VEIN,
A012138	EVELYN LEE PROSPECT	US	AK	67-39-33N	149-16-06W	CU AG?	LODE; CONTACT METASO
A012139	GAYLE PROSPECT	US	AK	67-51-27N	148-42-49W	CU PB AG ZN	LODE; CONTACT METASO
A012141	GINGER PROSPECT	US	AK	67-42-19N	149-16-35W	CU	LODE; CONTACT METASO
A011795	GLACIER LAKE PROSPEC	US	AK	63-21-10N	145-39-39W	CU NI AU AG	LODE; MASSIVE, DISSE
A011671	GLOBE OCCURRENCE	US	AK	61-00-59N	147-12-23W	CU	LODE; INSUFFICIENT D
A011764	GOOD ENOUGH PROSPECT	US	AK	61-46-14N	143-56-11W	CU	LODE; VEIN, DISSEMIN
A011739	GREAT NORTHERN DEVEL	US	AK	61-37-42N	143-50-39W	CU AU AG MO	LODE; VEIN, DISSEMIN
A011717	GREEN BUTTE MINE	US	AK	61-29-19N	142-46-10W	CU AG	LODE;MASSIVE, VEIN;O
A011683	HARRAIS PROSPECT	US	AK	61-01-40N	141-37-18W	CU PB ZN AG	LODE; MASSIVE, DISSE
A011598	HEAVENLY RIDGE OCCUR	US	AK	61-52-40N	146-53-35W	MO CU ZN	LODE; VEIN, DISSEMIN
A011766	HIDDEN TREASURE PROS	US	AK	61-48-02N	143-52-48W	CU	LODE; VEIN, DISSEMIN
A011836	HOGAN HILL OCCURRENC	US	AK	62-39-48N	145-28-45W	CU	LODE; VEIN
A011765	HOMESTAKE AND NEW HO	US	AK	61-47-39N	143-56-31W	CU	LODE; VEIN, DISSEMIN
A011886	HORSE CREEK PROSPECT	US	AK	67-17-23N	156-44-22W	CU ZN PB	LODE; MASSIVE, DISSE
A011714	HOUGHTON ALASKA PROS	US	AK	61-29-10N	142-21-14W	CU	LODE; SHEAR ZONE
A012142	HURRICANE-DIANE-LUNA	US	AK	67-44-17N	149-09-35W	CU	LODE; CONTACT METASO
A011646	JIM CREEK PROSPECT	US	AK	61-34-01N	148-48-16W	CU AG ZN	LODE; VEIN, MASSIVE,
A012143	JIM-MONTANA PROSPECT	US	AK	67-49-15N	148-53-36W	CU ZN PB	LODE; CONTACT METASO
A011814	KATHLEEN-MARGARET PR	US	AK	63-16-53N	146-33-30W	CU AG AU	LODE; VEIN, SHEAR ZO
A011906	KAV PROSPECT)	US	AK	67-48-40N	156-45-40W	CU AG SB	LODE; VEIN, MASSIVE?
A011719	KENNECOTT MINES	US	AK	61-31-25N	142-50-59W	CU AG	LODE; MASSIVE, VEIN,
A011723	KINNEY-GOLDEN PROSPE	US	AK	61-30-45N	143-37-51W	CU	LODE; VEIN
A011722	LAKINA PROSPECT	US	AK	61-33-28N	143-23-45W	CU	LODE; VEIN, SHEAR ZO
A012199	LICHEN PROSPECT	US	AK	62-53-40N	147-21-00W	CU AU AG	VEIN, DISSEMINATION
A011754	LIME CREEK PROSPECT	US	AK	61-41-32N	143-55-52W	CU	LODE; VEIN, DISSEMIN
A011735	LONDON AND CAPE PROS	US	AK	61-34-00N	143-43-01W	CU	LODE; VEIN, DISSEMIN
A011761	LOST CABIN EXTENSION	US	AK	61-43-53N	143-59-03W	CU	LODE; DISSEMINATED
A011846	LYONS PROSPECT	US	AK	62-46-53N	144-03-02W	CU	LODE; VEIN, DISSEMIN
A011854	MALFIATTI PROSPECT	US	AK	67-31-56N	158-59-35W	CU	LODE
A011596	MARSHALL MOUNTAIN PR	US	AK	61-41-30N	145-54-10W	CU	LODE; DISSEMINATED;
A011733	MAYFLOWER PROSPECT	US	AK	61-37-48N	143-37-11W	CU	LODE; VEIN, SHEAR ZO
A011763	MINERAL CREEK PROSPE	US	AK	61-45-09N	143-54-10W	CU AU AG	LODE; VEIN
A011669	MINERS RIVER PROSPEC	US	AK	61-06-38N	147-22-48W	CU NI	LODE; DISSEMINATED
A011785	MONETA-PORCUPINE MIN	US	AK	63-19-00N	145-59-18W	CU	LODE; DISSEMINATED,
A011638	MOOSE CREEK PROSPECT	US	AK	61-47-30N	149-02-53W	CU AU AG ZN	LODE; MASSIVE, VEIN,

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
A012147	MOWGLI PROSPECT	US	AK	67-48-43N	148-48-54W	CU ZN AG PB	LODE; CONTACT METASO
A011639	MYERS PROSPECT	US	AK	61-25-24N	149-23-00W	ZN PB CU	LODE; VEIN, DISSEMIN
A011706	NELSON PROSPECT	US	AK	61-27-03N	142-23-00W	CU AG	LODE; MASSIVE, VEIN,
A011841	NEVERSWEAT PROSPECT	US	AK	62-49-19N	144-06-11W	PB CU	LODE; VEIN, SHEAR ZO
A011700	NIKOLAI BUTTE PROSPE	US	AK	61-22-28N	142-27-32W	CU PB ZN	LODE; VEIN, DISSEMIN
A011712	NIKOLAI PROSPECT	US	AK	61-27-50N	142-40-34W	CU	LODE; VEIN, REPLACEM
A011903	NINGYOYAK CREEK PROS	US	AK	67-52-40N	156-18-37W	CU	LODE; VEIN
A011870	PARDNER'S HILL PROSP	US	AK	67-03-36N	157-01-36W	CU PB AU AG	LODE; BRECCIA FILLIN
A011750	PEACOCK CREEK PROSPE	US	AK	61-42-15N	143-45-50W	CU	LODE; VEIN
A011710	PEAVINE MINE	US	AK	61-26-49N	142-29-02W	CU	LODE; VEIN, MASSIVE
A012202	PHOENIX CLAIMS	US	AK	62-19-50N	149-05-20W	CU FE	SHEAR ZONE
A011732	PIERSON PROSPECT	US	AK	61-36-24N	143-40-34W	CU AU	LODE; DISSEMINATED,
A011786	PIONEER PROSPECT	US	AK	63-18-49N	145-58-59W	CU AU AG	LODE; DISSEMINATED,
A011705	RADOVAN GREENSTONE P	US	AK	61-25-29N	142-21-00W	CU AG	LODE; VEIN, SHEAR ZO
A011703	RADOVAN LOW CONTACT	US	AK	61-24-08N	142-22-14W	CU	LODE; VEIN, DISSEMIN
A011635	REED CREEK PROSPECT	US	AK	61-51-05N	149-09-01W	MO CU	LODE; PEGMATITE?
A011720	REGAL MINE	US	AK	61-33-17N	142-58-20W	CU	LODE; VEIN, DISSEMIN
A011660	REITER AND OLSON PRO	US	AK	61-04-09N	148-09-52W	SB CU PB	LODE; VEIN
A011748	ROARING CREEK PROSPE	US	AK	61-40-56N	143-49-55W	CU	LODE; VEIN
A011650	RUSAW CREEK OCCURREN	US	AK	61-44-18N	147-26-21W	CU	LODE; DISSEMINATED
A011711	SCHULTZE PROSPECT	US	AK	61-27-20N	142-38-30W	CU	LODE; MASSIVE, VEIN;
A011752	SHOWER GULCH PROSPEC	US	AK	61-43-38N	143-42-41W	CU	LODE; DISSEMINATED
A011746	SKOLAI MINING CO. PR	US	AK	61-43-00N	141-50-20W	CU	LODE; VEIN
A011749	SKYSCRAPER PROSPECT	US	AK	61-42-13N	143-48-05W	CU	LODE; VEIN, DISSEMIN
A011884	SLEET CREEK PROSPECT	US	AK	67-17-09N	157-11-29W	CU ZN	LODE; VOLCANOGENIC
A011708	SNOW BIRD PROSPECT	US	AK	61-23-42N	142-30-45W	CU AG	LODE; VEIN, SHEAR ZO
A012152	STEPH PROSPECT	US	AK	67-51-41N	148-48-08W	CU AG	LODE; VEIN
A011887	SUNSHINE CREEK PROSP	US	AK	67-13-07N	156-37-56W	CU ZN PB	LODE; VOLCANOGENIC
A011759	SURPRISE CREEK PROSP	US	AK	61-44-28N	143-48-41W	CU	LODE; VEIN, SHEAR ZO
A011697	TAYLOR PROSPECT	US	AK	61-18-42N	142-28-43W	AU CU	LODE; VEIN, MASSIVE,
A011840	THE DOME PROSPECT	US	AK	62-48-35N	144-05-04W	CU PB AG	LODE; VEIN, DISSEMIN
A011718	TJOSEVIG PROSPECT	US	AK	61-29-58N	142-46-24W	CU	LODE; MASSIVE, VEIN
A011891	TOM TOM PROSPECT	US	AK	67-08-09N	156-09-11W	CU	LODE; VOLCANOGENIC,
A011804	TRIPP PROSPECT	US	AK	63-05-30N	145-37-55W	CU AG	LODE; VEIN
A011593	TSINA GLACIER OCCURR	US	AK	61-15-05N	145-48-00W	CU ZN PB AG	LODE; MASSIVE, VEIN,
A012118	UNNAMED COPPER OCCUR	US	AK	67-13-18N	149-44-00W	CU	INSUFFICIENT DATA TO
A012123	UNNAMED COPPER OCCUR	US	AK	67-08-15N	149-38-33W	CU	INSUFFICIENT DATA TO
A012154	UNNAMED COPPER OCCUR	US	AK	67-37-31N	149-58-59W	CU	INSUFFICIENT DATA TO
A012155	UNNAMED COPPER OCCUR	US	AK	67-48-41N	148-58-18W	CU	INSUFFICIENT DATA TO
A012156	UNNAMED COPPER OCCUR	US	AK	67-54-08N	148-41-08W	CU	INSUFFICIENT DATA TO
A011595	UNNAMED OCCURRENCE	US	AK	61-16-35N	144-23-10W	CU ZN?	LODE; DISSEMINATED;
A011648	UNNAMED OCCURRENCE	US	AK	61-35-20N	148-11-50W	AU AG CU	LODE; VEIN, SHEAR ZO
W000011	UNNAMED OCCURRENCE	US	AK	61-37-53N	143-38-03W	CU	LODE; DISSEMINATED
A011689	UNNAMED OCCURRENCE	US	AK	61-16-18N	142-11-09W	CU AG AU	LODE; VEIN
A011693	UNNAMED OCCURRENCE	US	AK	61-20-13N	142-10-30W	CU	LODE; VEIN, SHEAR ZO
A011707	UNNAMED OCCURRENCE	US	AK	61-27-15N	142-16-51W	CU	LODE; VEIN
A011716	UNNAMED OCCURRENCE	US	AK	61-29-52N	142-16-23W	CU	LODE; VEIN
A011726	UNNAMED OCCURRENCE	US	AK	61-38-13N	142-20-48W	CU	LODE; VEIN
A011727	UNNAMED OCCURRENCE	US	AK	61-37-22N	142-25-11W	CU	LODE; VEIN
A011728	UNNAMED OCCURRENCE	US	AK	61-37-50N	142-25-00W	CU	LODE; VEIN
A011731	UNNAMED OCCURRENCE	US	AK	61-33-48N	143-38-35W	FE CU	LODE; CONTACT METASO
A011741	UNNAMED OCCURRENCE	US	AK	61-34-11N	143-53-41W	CU AG	LODE; VEIN
A011744	UNNAMED OCCURRENCE	US	AK	61-38-50N	141-47-32W	CU	LODE; VEIN, DISSEMIN
A011757	UNNAMED OCCURRENCE	US	AK	61-43-08N	143-55-16W	CU	LODE; DISSEMINATED
A011762	UNNAMED OCCURRENCE	US	AK	61-44-31N	143-51-51W	CU	LODE; VEIN, DISSEMIN
A011767	UNNAMED OCCURRENCE	US	AK	61-56-43N	141-02-18W	CU	LODE; DISSEMINATED
A011770	UNNAMED OCCURRENCE	US	AK	61-59-01N	141-05-49W	CU	LODE; DISSEMINATED,
A011771	UNNAMED OCCURRENCE	US	AK	63-10-28N	144-59-51W	CU AG AU	LODE; VEIN
A011772	UNNAMED OCCURRENCE	US	AK	63-11-05N	144-58-15W	CU	LODE; MASSIVE, REPLA
A011781	UNNAMED OCCURRENCE	US	AK	63-04-49N	144-22-09W	CU AU	LODE; MASSIVE, DISSE
A011784	UNNAMED OCCURRENCE	US	AK	63-18-05N	145-59-49W	CU AU AG NI	LODE; MASSIVE, MAGMA
A011787	UNNAMED OCCURRENCE	US	AK	63-18-11N	145-58-41W	CU AU AG	LODE; DISSEMINATED;
A011788	UNNAMED OCCURRENCE	US	AK	63-20-53N	145-56-59W	CU	LODE; DISSEMINATED,
A011790	UNNAMED OCCURRENCE	US	AK	63-16-42N	145-52-18W	CU	LODE; DISSEMINATED,
A011791	UNNAMED OCCURRENCE	US	AK	63-08-43N	145-59-40W	CU	LODE; MASSIVE
A011794	UNNAMED OCCURRENCE	US	AK	63-20-45N	145-42-04W	CU AU	LODE; DISSEMINATED
A011796	UNNAMED OCCURRENCE	US	AK	63-20-54N	145-41-49W	CU AG PB	LODE; VEIN

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A011797	UNNAMED OCCURRENCE	US	AK	63-19-48N	145-43-30W	CU PB	LODE; VEIN
A011798	UNNAMED OCCURRENCE	US	AK	63-19-36N	145-41-25W	CU PB	LODE; VEIN
A011799	UNNAMED OCCURRENCE	US	AK	63-19-00N	145-40-19W	CU AG PB AU	LODE; VEIN
A011800	UNNAMED OCCURRENCE	US	AK	63-17-15N	145-37-41W	CU PB	LODE; VEIN
A011801	UNNAMED OCCURRENCE	US	AK	63-17-10N	145-36-33W	CU PB	LODE; VEIN
A011802	UNNAMED OCCURRENCE	US	AK	63-16-14N	145-35-12W	CU AG PB	LODE; VEIN
A011803	UNNAMED OCCURRENCE	US	AK	63-16-50N	145-34-02W	CU PB	LODE; VEIN
A011805	UNNAMED OCCURRENCE	US	AK	63-05-13N	145-38-30W	CU	LODE; VEIN
A011806	UNNAMED OCCURRENCE	US	AK	63-05-00N	145-37-49W	CU	LODE
A011807	UNNAMED OCCURRENCE	US	AK	63-04-21N	145-38-24W	CU	LODE; VEIN
A011808	UNNAMED OCCURRENCE	US	AK	63-03-18N	145-35-10W	CU	LODE; PODIFORM
A011809	UNNAMED OCCURRENCE	US	AK	63-02-03N	145-33-47W	CU	LODE
A011810	UNNAMED OCCURRENCE	US	AK	63-02-06N	145-32-35W	CU	LODE; VEIN
A011811	UNNAMED OCCURRENCE	US	AK	63-01-56N	145-33-11W	CU	LODE; VEIN
A011812	UNNAMED OCCURRENCE	US	AK	63-00-59N	145-33-03W	CU	LODE; VEIN, PODIFORM
A011815	UNNAMED OCCURRENCE	US	AK	63-14-30N	146-32-20W	CU	LODE; VEIN
A011818	UNNAMED OCCURRENCE	US	AK	63-20-53N	146-03-09W	CU	LODE; MASSIVE
A011821	UNNAMED OCCURRENCE	US	AK	63-19-13N	146-01-51W	CU AU AG	LODE; DISSEMINATED
A011822	UNNAMED OCCURRENCE	US	AK	63-20-08N	146-00-16W	CU FE	LODE; CONTACT METASO
A011835	UNNAMED OCCURRENCE	US	AK	62-41-05N	145-26-20W	CU	LODE; DISSEMINATED
A011839	UNNAMED OCCURRENCE	US	AK	62-48-18N	144-10-00W	CU MO	LODE; VEIN, DISSEMIN
A011851	UNNAMED OCCURRENCE	US	AK	67-38-36N	158-22-02W	CU	LODE; VEIN, DISSEMIN
A011852	UNNAMED OCCURRENCE	US	AK	67-41-16N	158-53-19W	CU	LODE; VEIN
A011853	UNNAMED OCCURRENCE	US	AK	67-36-53N	158-47-13W	CU	LODE; VEIN?
A011861	UNNAMED OCCURRENCE	US	AK	67-14-47N	158-10-35W	CU PB	LODE; VEIN
A011869	UNNAMED OCCURRENCE	US	AK	67-03-59N	157-06-14W	CU	LODE; DISSEMINATED,
A011882	UNNAMED OCCURRENCE	US	AK	67-18-49N	157-11-13W	CU	COATING
A011885	UNNAMED OCCURRENCE	US	AK	67-16-38N	157-01-55W	CU	LODE; VOLCANOGENIC
A011895	UNNAMED OCCURRENCE	US	AK	67-24-48N	156-35-39W	CU	LODE; VEIN
A011899	UNNAMED OCCURRENCE	US	AK	67-35-36N	156-10-40W	CU	LODE; MASSIVE, VEIN?
A011900	UNNAMED OCCURRENCE	US	AK	67-32-02N	156-26-43W	CU	LODE; VEIN
A011901	UNNAMED OCCURRENCE	US	AK	67-35-17N	156-31-36W	CU	LODE; VEIN
A011904	UNNAMED OCCURRENCE	US	AK	67-51-58N	157-02-44W	CU	LODE; VEIN ?
A011905	UNNAMED OCCURRENCE	US	AK	67-50-37N	156-48-20W	ZN PB CU	LODE; VEIN, DISSEMIN
A011908	UNNAMED OCCURRENCE	US	AK	67-37-09N	157-13-14W	CU	LODE; VEIN; OTHER:C
A011909	UNNAMED OCCURRENCE	US	AK	67-25-14N	156-23-07W	CU U	INSUFFICIENT DATA TO
A012157	UNNAMED OCCURRENCE	US	AK	67-54-01N	148-35-35W	CU	LODE; VEIN, DISSEMIN
A012158	UNNAMED OCCURRENCE	US	AK	67-56-26N	148-33-49W	CU	LODE; VEIN, DISSEMIN
A012162	UNNAMED OCCURRENCE	US	AK	62-59-30N	148-02-30W	CU AG	ALTERATION
A012164	UNNAMED OCCURRENCE	US	AK	62-17-00N	149-24-50W	MO CU	DISSEMINATED
A012165	UNNAMED OCCURRENCE	US	AK	62-29-00N	148-28-00W	CU AU AG NI	REPLACEMENT, DISSEMI
A012167	UNNAMED OCCURRENCE	US	AK	62-30-20N	148-43-00W	CU	REPLACEMENT, DISSEMI
A012168	UNNAMED OCCURRENCE	US	AK	62-32-00N	148-31-50W	CU	VEIN, DISSEMINATED
A012169	UNNAMED OCCURRENCE	US	AK	62-57-30N	147-48-00W	CU	VEIN
A012171	UNNAMED OCCURRENCE	US	AK	62-46-40N	147-50-20W	CU	VEIN
A012172	UNNAMED OCCURRENCE	US	AK	62-33-30N	148-55-20W	CU	VEIN
A012177	UNNAMED OCCURRENCE	US	AK	62-30-10N	148-36-40W	CU	VEIN (?)
A012178	UNNAMED OCCURRENCE	US	AK	62-28-20N	148-34-20W	CU	VEIN, REPLACEMENT
A012179	UNNAMED OCCURRENCE	US	AK	62-25-20N	149-05-50W	CU	VEIN
A012180	UNNAMED OCCURRENCE	US	AK	62-22-40N	148-59-00W	CU	LODE; REPLACEMENT
A012181	UNNAMED OCCURRENCE	US	AK	62-21-00N	148-49-20W	CU	VEIN
A012182	UNNAMED OCCURRENCE	US	AK	62-19-50N	148-49-00W	CU	VEIN
A012184	UNNAMED OCCURRENCE	US	AK	62-16-40N	148-54-20W	CU	DISSEMINATED
A012185	UNNAMED OCCURRENCE	US	AK	62-08-20N	149-15-30W	CU	VEIN
A012186	UNNAMED OCCURRENCE	US	AK	62-07-20N	149-05-00W	CU	DISSEMINATED
A012205	UNNAMED OCCURRENCE	US	AK	62-28-30N	148-38-50W	CU	ALTERATION ZONE
A011696	UNNAMED PROSPECT	US	AK	61-22-23N	142-26-07W	CU AG	LODE; VEIN
A011729	UNNAMED PROSPECT	US	AK	61-33-40N	142-58-40W	CU	LODE; VEIN
A011742	UNNAMED PROSPECT	US	AK	61-37-15N	143-58-54W	CU	LODE; DISSEMINATED
A011743	UNNAMED PROSPECT	US	AK	61-40-25N	141-39-50W	CU	LODE; DISSEMINATED
A011745	UNNAMED PROSPECT	US	AK	61-41-40N	141-51-10W	CU	LODE; VEIN
A011756	UNNAMED PROSPECT	US	AK	61-43-03N	143-52-08W	CU	LODE; VEIN
A011813	UNNAMED PROSPECT	US	AK	63-14-28N	146-50-00W	CU	LODE; DISSEMINATED,
A011816	UNNAMED PROSPECT	US	AK	63-19-00N	146-11-47W	CU AG	LODE; DISSEMINATED,
A011849	UNNAMED PROSPECT	US	AK	62-44-18N	144-07-35W	CU AU?	LODE; DISSEMINATED,
A011893	UNNAMED PROSPECT	US	AK	67-26-14N	156-26-56W	CU PB	LODE; VEIN
A011894	UNNAMED PROSPECT	US	AK	67-24-15N	156-29-48W	CU PB	LODE; VEIN

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A011896	UNNAMED PROSPECT	US	AK	67-24-31N	156-39-14W	CU PB	LODE; VEIN
A011897	UNNAMED PROSPECT	US	AK	67-25-25N	156-19-20W	CU PB	LODE; VEIN
A012166	UNNAMED PROSPECT	US	AK	62-59-20N	147-52-50W	CU	DISSEMINATED
A012170	UNNAMED PROSPECT	US	AK	62-51-10N	147-57-00W	CU	ALTERATION
A012183	UNNAMED PROSPECT	US	AK	62-17-00N	148-59-00W	CU	LODE
A011730	UNNAMED PROSPECTS	US	AK	61-33-35N	143-10-39W	CU	LODE; VEIN
A011740	VALDEZ MINE	US	AK	61-38-38N	143-43-06W	CU AG	LODE; VEIN
A012153	VENUS(-VICTOR-EVA) P	US	AK	67-37-45N	149-20-27W	CU MO	LODE; PORPHYRY, DISS
A011736	WAR EAGLE PROSPECT	US	AK	61-33-34N	143-44-28W	CU FE	LODE; MASSIVE, VEIN,
A011755	WARNER PROSPECT	US	AK	61-42-29N	143-57-34W	CU	LODE; VEIN, SHEAR ZO
A011670	WELLS BAY PROSPECT	US	AK	61-00-55N	147-23-42W	CU	LODE; INSUFFICIENT D
A011709	WESTOVER MINE	US	AK	61-23-49N	142-29-49W	CU AG	LODE; MASSIVE, VEIN,
A011721	WOODIN AND HERMAN PR	US	AK	61-31-28N	143-09-20W	CU	LODE; VEIN
A011592	WORTMANNS GLACIER OC	US	AK	61-00-45N	145-45-00W	CU ZN PB AG	LODE; MASSIVE, VEIN,
M045351	COPPER HILL	US	CO	37-24-00N	108-04-00W	AU AG CU PT PD	AU-AG-TE VEINS, MODE
M045416	ROLL CALL MINING CO.	US	CO	38-14-55N	105-58-35W	AU AG PT CU	VEIN
W100451	BELLAMY COPPER VALLE	US	CT	41-29-12N	072-52-04W	CU	STRATABOUND DISCORDA
W100259	BRISTOL COPPER MINE	US	CT	41-43-10N	072-55-28W	CU	STRATABOUND DISCORDA
W100265	SIMSBURY NEWGATE PRI	US	CT	41-57-43N	072-44-44W	CU	STRATABOUND DISCORDA
W100440	STEVENSON BOWERS HIL	US	CT	41-23-36N	073-09-44W	CU	STRATABOUND DISCORDA
W100448	TALLMAN'S CU MINE	US	CT	41-26-36N	072-53-58W	CU S BA	STRATABOUND DISCORDA
W100261	UNNAMED	US	CT	41-50-06N	072-54-57W	CU	STRATABOUND DISCORDA
W100439	UNNAMED CU MINE	US	CT	41-23-03N	072-57-56W	CU	STRATABOUND DISCORDA
W100453	UNNAMED MINE	US	CT	41-31-11N	072-49-27W	CU	UNCERTAIN
D009930	4TH OF JULY LODE	US	ID	45-29-13N	113-55-53W	CU	VEIN
D011328	BOBCAT GULCH PROSPEC	US	ID	45-21-23N	113-59-37W	CU MO	STOCKWORK
D011322	CLEARWATER GROUP	US	ID	45-06-42N	113-38-28W	AU AG PB CU	VEIN
D009786	COPPER BULLION	US	ID	45-14-01N	113-44-25W	CU	VEIN
D009933	COPPER QUEEN	US	ID	45-25-55N	113-59-45W	CU	VEIN
D009911	DAHLONEGA COPPER	US	ID	45-33-18N	113-59-41W	CU	INSUFFICIENT DATA TO
D009899	EAST BOHANNON PROSPE	US	ID	45-11-37N	113-38-05W	CU AU PB	VEIN
D009902	GRIZZLEY PROSPECT	US	ID	45-06-00N	113-34-45W	CU AG PB	VEIN
D009909	JOHNSON GULCH PROSPE	US	ID	45-33-58N	113-58-50W	CU	SHEAR ZONE
D009906	KOPER KYUTE GROUP	US	ID	45-39-50N	113-56-15W	CU	SHEAR ZONE
D009787	LEMHI GROUP	US	ID	45-06-35N	113-59-58W	CU	VEIN
D009901	LONE STAR PROSPECT	US	ID	45-06-52N	113-35-18W	CU AG PB	VEIN
D009913	MAYBE LODE	US	ID	45-30-44N	113-57-45W	CU AG	SHEAR ZONE
D009917	NORTH STAR PROSPECT	US	ID	45-32-17N	113-56-00W	CU AG	SHEAR ZONE
D009910	PAROC CLAIM	US	ID	45-33-18N	113-58-15W	CU	SHEAR ZONE
D009898	SUNDOG PROSPECT	US	ID	45-13-02N	113-38-45W	CU AU PB	VEIN
D009918	UNNAMED CU OCCURRENC	US	ID	45-32-12N	113-56-45W	CU	SHEAR ZONE
D009908	UNNAMED CU PROSPECT	US	ID	45-32-12N	113-59-45W	CU	SHEAR ZONE
D009900	UNNAMED MINE	US	ID	45-16-56N	112-44-05W	CU AU	VEIN
D009927	WHIMPEY CR. CU PROSP	US	ID	45-11-25N	113-37-00W	CU AU	VEIN
W100424	CU PROSPECT	US	MA	42-31-00N	071-21-50W	CU	UNCERTAIN
W101934	DAVIS MINES	US	MA	42-40-58N	072-51-58W	CU S ZN	STRATABOUND CONCORD
W100423	DRACUT NI MINE/NICKE	US	MA	42-40-40N	071-14-50W	NI AU AG CU	IRREGULAR
W101935	HAWKS MINE	US	MA	42-37-12N	072-53-35W	CU ZN	STRATABOUND CONCORD
W100357	MARY LOUISE	US	MA	42-40-10N	072-53-25W	CU	STRATABOUND CONCORD
W100422	SHELDONVILLE MINE	US	MA	42-02-14N	071-23-54W	CU AU AG	VEIN
M242495	ANACONDA CLAIMS	US	NV	38-09-48N	117-40-40W	MO CU AU PB ZN AG	VEIN, SKARN
M242585	BR CLAIMS	US	NV	40-56-14N	117-24-32W	CU AG PB	VEIN/FAULT ZONE
M242494	CHARLEY CLAIMS	US	NV	38-08-45N	117-47-23W	AU? CU	SHEAR ZONE
M242640	CHRISTIORSSON CANYON	US	NV	41-18-41N	118-32-07W	CU AU? AG ZN NI MN	CONTACT METAMORPHIC
M242592	COPPER HEAD PROPERTY	US	NV	40-48-59N	117-25-59W	CU MO AG	VEIN
M242559	COPPER KING #1 PROSP	US	NV	40-50-21N	119-30-13W	CU AG AU BA	CONTACT METAMORPHIC
M242708	DRY HILLS TACTITE PR	US	NV	41-16-51N	117-12-11W	CU MN MO W ZN	INTRUSIVE CONTACT; S
M242498	DYER RANCH SHAFT	US	NV	37-45-30N	118-01-18W	PB AG CU ZN AU?	VEIN
M242594	GOLD RUN NO. 23 CLAI	US	NV	40-49-09N	117-25-19W	AG MN BI CR CU MO W	VEIN?
M242666	GRANITE MOUNTAIN CU-	US	NV	40-17-40N	117-46-01W	CU MO AG MN BA	PORPHYRY
M242667	GRANITE MOUNTAIN DRI	US	NV	40-17-44N	117-46-39W	CU MO MN AG	PORPHYRY
M242584	GREEN NO. 5 CLAIM	US	NV	40-54-18N	117-23-48W	CU	VEIN/FAULT ZONE
M242641	HARRISON GROVE MINE	US	NV	41-19-12N	118-30-12W	CU AG AU?	CONTACT METAMORPHIC
M242580	JULY 4 CLAIM	US	NV	40-58-04N	117-26-05W	CU MN AG FE	VEIN
M242732	MARY CLAIMS	US	NV	40-55-02N	118-29-53W	CU ZN AS	VEIN
M242560	MOUNTAIN VIEW TUNGST	US	NV	40-50-39N	119-30-25W	CU AG W	CONTACT METAMORPHIC
M042794	NBMG SAMPLE SITE 203	US	NV	38-34-33N	116-51-49W	AG PB CU MO AS SB V ZN	VEIN/FAULT CONTACT

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M042795	NBMG SAMPLE SITE 204	US	NV	38-34-59N	116-51-56W	AG PB CU SB AU	VEIN
M042793	NBMG SAMPLE SITE 208	US	NV	38-33-03N	116-52-14W	CU BA AS V AG	VEIN
M242645	NBMG SAMPLE SITE 223	US	NV	41-15-27N	118-32-50W	CU	HYDROTHERMAL
M242644	NBMG SAMPLE SITE 223	US	NV	41-15-26N	118-32-21W	CU BA AS	VEIN
M242651	NBMG SAMPLE SITE 224	US	NV	41-14-17N	118-31-11W	CU PB AG ZN SB AU	SHEAR ZONE
M242650	NBMG SAMPLE SITE 224	US	NV	41-14-47N	118-32-36W	CU BA AG LA AU	CONTACT METAMORPHIC
M242652	NBMG SAMPLE SITE 225	US	NV	40-25-02N	118-30-26W	AG CU ZN MN B	VEIN?
M242588	NBMG SAMPLE SITE 230	US	NV	40-48-20N	117-29-28W	CU AG MN PB ZN	REPLACEMENT; FAULT Z
M242538	NBMG SAMPLE SITE 231	US	NV	40-46-55N	117-15-29W	CU AG MN	FAULT ZONE
M242537	NBMG SAMPLE SITE 231	US	NV	40-43-54N	117-21-16W	CU AG	LODE
M242669	NBMG SAMPLE SITE 232	US	NV	40-56-19N	117-38-28W	CU	VEIN
M242616	NBMG SAMPLE SITE 236	US	NV	40-31-04N	117-40-44W	CU AG BA PB SB	VEIN
M242730	NBMG SAMPLE SITE 241	US	NV	41-03-31N	118-37-04W	CU MN BA	FAULT ZONE
M242729	NBMG SAMPLE SITE 242	US	NV	41-05-60N	118-33-12W	AU CU SB AG AS PB BA CD ZN	VEIN AND STOCKWORK
M042781	NBMG SAMPLE SITE 275	US	NV	38-05-07N	116-43-03W	CU AG PB	VEIN/SHEAR
M042783	NBMG SAMPLE SITE 276	US	NV	38-03-39N	116-43-58W	CU AG PB ZN MN AS BA SB	VEIN
M242846	NBMG SAMPLE SITE 288	US	NV	39-52-28N	119-05-16W	CU PB AU? AG W ZN	VEIN
M242558	NBMG SAMPLE SITE 292	US	NV	40-33-18N	119-30-37W	AG ZN AU CU	BRECCIA
M242611	NBMG SAMPLE SITE 293	US	NV	40-35-25N	118-48-38W	CU AG	VEIN
M242865	NBMG SAMPLE SITE 295	US	NV	41-53-32N	118-35-55W	AG CU BA BI PB SB AU	VEIN
M242866	NBMG SAMPLE SITE 295	US	NV	41-53-53N	118-35-29W	AG CU AU BA BI	VEIN
M242856	NBMG SAMPLE SITE 295	US	NV	41-25-39N	118-52-16W	AG CU AU	VEIN
M242583	NBMG SAMPLE SITE 491	US	NV	40-55-17N	117-30-15W	CU BA SB MN	VEIN/REPLACEMENT/SHE
M242593	NBMG SAMPLE SITE 495	US	NV	40-50-06N	117-25-06W	CU MN AG BA PB ZN	FAULT ZONE
M242511	NEVADA MINE	US	NV	37-39-19N	115-23-00W	AG PB CU ZN SB	LODE
M242512	PENOBSCOT MINE	US	NV	37-39-13N	115-22-56W	AG PB CU ZN SB	LODE
M242520	ROSARIO ARCURIO MINE	US	NV	37-37-57N	115-25-00W	AG PB CU	VEIN
M242586	SILVER HILL CLAIMS	US	NV	40-52-44N	117-26-34W	CU AG PB ZN W	FAULT ZONE
M242859	SKYVIEW COPPER DYKE	US	NV	41-36-11N	118-45-51W	CU AG	VEIN/SHEAR ZONE
M242716	STAR POINT MINE	US	NV	40-27-10N	117-52-45W	CU	SHEAR ZONE
M242581	UNNAMED COPPER PROSP	US	NV	40-53-53N	117-24-05W	CU MN BA AG	VEIN/FAULT ZONE?
M242516	UTAH MINE	US	NV	37-39-10N	115-23-05W	AG PB CU ZN SB	LODE
M058750	ADIT NORTHEAST OF TH	US	UT	37-04-14N	113-49-01W	CU	GOSSAN
M058732	ADITS NORTH OF QUAIL	US	UT	37-13-46N	113-23-06W	CU	BEDDED
M058726	BUCKEYE REEF PROSPEC	US	UT	37-14-33N	113-21-58W	CU AG	REPLACEMENT
M058769	DRY CREEK PROSPECT	US	UT	37-17-20N	113-08-15W	CU	BEDDED
M058877	GLEAVE PROSPECT	US	UT	38-29-39N	113-07-03W	CU	SHEAR ZONE
M058917	GOLD LEAF CLAIM	US	UT	38-21-23N	113-06-19W	CU	SKARN
M058880	HIDDEN TREASURE MINE	US	UT	38-27-18N	113-04-34W	CU FE AG AU	SKARN
M058740	HORSE CANYON PROSPEC	US	UT	37-11-31N	113-53-52W	CU	SHEAR ZONE
M058725	LEEDS CREEK PROSPECT	US	UT	37-14-22N	113-22-46W	CU AG	REPLACEMENT
M058756	MIDDLE SPRING PROSPE	US	UT	37-07-15N	113-55-38W	CU	SHEAR ZONE
M058841	PROSPECT SOUTH OF NE	US	UT	37-38-44N	113-33-11W	CU	SHEAR ZONE
M058764	PROSPECT SOUTH OF PA	US	UT	37-10-42N	113-50-59W	CU	GOSSAN
M058854	PROSPECTS EAST OF BU	US	UT	37-42-51N	113-28-24W	CU	VEIN
M058759	PROSPECTS NORTHWEST	US	UT	37-06-14N	113-54-47W	CU	SHEAR ZONE
M058853	PROSPECTS WEST OF BU	US	UT	37-42-57N	113-28-46W	CU	STOCKWORK
M058729	PROSPECTS WEST OF HA	US	UT	37-11-58N	113-24-32W	CU	BEDDED
M058761	REBER WASH PROSPECTS	US	UT	37-07-06N	113-57-03W	CU	VEIN
M058739	SAM SPRING PROSPECTS	US	UT	37-07-46N	113-56-01W	CU	SHEAR ZONE
M058788	SHAFT NORTH OF CHLOR	US	UT	37-45-38N	113-28-26W	CU	VEIN
M058751	SHAFT NORTHWEST OF T	US	UT	37-04-20N	113-48-33W	CU	GOSSAN
M058763	SHAFT SOUTH OF PAHCO	US	UT	37-10-42N	113-51-16W	CU	GOSSAN
M058728	SHAFT SOUTH OF QUAIL	US	UT	37-12-16N	113-24-21W	CU	BEDDED
M058887	SHENENDOAH PROSPECT	US	UT	38-20-56N	113-08-29W	CU PB AG	VEIN
M058848	SILVER PEAK PROSPECT	US	UT	37-40-46N	113-27-27W	CU	VEIN
M058768	SMITH MESA PROSPECT	US	UT	37-18-22N	113-08-59W	CU GEM	BEDDED
M058878	SOUTH BEAVER PROSPEC	US	UT	38-28-53N	113-07-05W	CU	SHEAR ZONE
M058760	SOUTH FORK WELCOME C	US	UT	37-05-36N	113-53-55W	CU	SHEAR ZONE
M058851	SOUTH LUCKY CHANCE P	US	UT	37-42-28N	113-29-04W	CU	STOCKWORK
M058840	SOUTHERNMOST NEWCAST	US	UT	37-38-02N	113-33-14W	CU	VEIN
M058758	WELCOME SPRING PROSP	US	UT	37-06-05N	113-54-19W	CU	SHEAR ZONE
M058919	WHITE CLIFFS CLAIM	US	UT	38-20-32N	113-07-19W	CU	VEIN
W700069	WINDARRA DISTRICT	AU	WE	28-29- S	122-14- E	NI CU CO	MAGMATIC, ULTRAMAFIC
W002079	CONCORDONQUI CU DEPO	AR		42-10- S	071-03- W	CU	DISSEMINATED
D000720	SUMMARY OF DEPOSITS	AR		35- S	065- W	MO CU	DISSEMINATED, STOCKW
W002076	CAPILLITAS CU DISTRI	AR	CA	27-21- S	066-24- W	CU PB ZN MO MN AG AU	PORPHYRY CU, DISSEMI

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
W002082	LA MEJICANA CU MINE	AR	LA	28-56- S	067-45- W	CU	VEINS
W002083	LAS CHOICAS CU MINE	AR	ME	34-47- S	070-14- W	CU	VEIN AND REPLACEMENT
W002084	LAS CUEVAS CU PROSPE	AR	ME	32-50- S	070-02- W	CU PB ZN	MANTO
W002088	PACHON CU DEPOSIT	AR	SA	31-40- S	070-25- W	CU	PORPHYRY CU, TOURMAL
W700794	CSA (COBAR) MINE	AS				CU ZN PB AG	
W700792	GECKO MINE	AS				CU AU	
W700787	HELLYER MINE	AS				AU AG CU	
W700811	KAMBALDA MINE	AS				NI CU	
W700788	MINERAL HILL MINE	AS				AU CU	
W700791	MT. GUNSON MINE	AS				CU	
W700795	MT. ISA MINE	AS				CU ZN PB AG	
W700793	MT. LYELL MINE	AS				CU AU AG PYR	
W700475	OLYMPIC DAM PROJECT	AS		30-27-00S	136-54-00E	CU U AU AG RAE LA CE	BRECCIA PIPE, DISSEM
W700704	QUE RIVER MINE	AS				AG PB ZN AU CU	
W700831	ROSEBERY/W. COAST MI	AS				ZN PB CU AG AU	
M046830	SALLY MALAY	AS		17-04-00S	128-15-00E	NI CU PT	LODE
W700789	STARRA MINE	AS				AU CU	
W700826	TEUTONIC BORE MINE	AS				ZN CU AG	
W700790	WARREGO MINE	AS				AU CU BI	
W700812	WINDARRA MINE	AS				NI CU	
W700830	WOODLAWN MINE	AS				ZN PB CU AG	
W018852	COBAR	AS	NE	31-32- S	145-51- E	CU ZN PB AG	MASSIVE SULFIDE - MA
M045045	DARLING HILL	AS	NE	31-57-30S	141-28-30E	NI CU PT PD IR AU AG CO RU RH	VEINS
M046654	DORA MINE	AS	NE	32-04-46S	141-28-10E	PT CU	VEINS - LODE
M046653	MULGA SPRINGS PROSPE	AS	NE	31-53-11S	141-28-40E	PT NI CU	VEINS - LODE
W018857	WOODLAWN	AS	NE	33-05- S	149-10- E	ZN CU PB AG	MASSIVE; ALSO DISSEM
W018862	MOUNT ISA MINE	AS	QU	20-42- S	139-18- E	ZN PB CU AG CO	STRATIFORM SYNGENETI
M047008	NAIRNE PYRITE DEPOSI	AS	SO	34- S	139- E	PD NI C PB FE CU MN	SULFIDE VEINS
W700001	MOUNT LYELL	AS	TA	42-07- S	145-33- E	CU AU AG PYR ZN PB SN MO	MASSIVE SULFIDES, DI
W018864	ROSEBERY, READ, HERC	AS	TA	41-49- S	145-30- E	ZN CU PB S	VOLCANOGENIC MASSIVE
M045116	UNNAMED	AS	TA			CU NI PT PD AU	VEINS
M045053	THOMPSON RIVER COPPE	AS	VI	37-56-04S	146-24-03E	PT PD CU NI CO AG AU	MAGMATIC SEGREGATION
M047014	HERON WELLS NICKEL-C	AS	WE	29- S	121-20- E	NI CU PGM	NICKEL-COPPER SULFID
W029640	KAMBALDA - ST. IVES	AS	WE	30-12- S	121-39- E	NI CU CO	MAGMATIC, MASSIVE SU
M046496	LUNNON SHOOT - KAMBA	AS	WE	30-39- S	121-40- E	NI CU PT PD CO AU RU	LODE - MAGMATIC SEGR
M047012	MT. WINDARRA - SOUTH	AS	WE	28-30- S	122-10- E	NI CU PT PD IR CR FE	SULFIDE
W029631	MT.WINDARRA, AUSTRAL	AS	WE	28-30- S	122-10- E	NI CU FE S	MASSIVE, BRECCIATED,
M047017	SCOTIA SECOND NICKEL	AS	WE	30-20- S	121-30- E	NI CU PGM	MASSIVE SULFIDES
W031634	CHAMBILLAYA MINE	BL	DP	17-05- S	067-10- W	W SN CU SB	FERBERITE-CASSITERIT
W031632	SANTA ANA MINE	BL	DP	20-54-36S	066-16-48W	CU AG BI SN PB ZN SB CD	VEINS
W031652	CHACARRILLA DISTRICT	BL	LA	17-34- S	068-12- W	CU	STRATIFORM
W002046	COROCORO DISTRICT	BL	LA	17-10- S	068-28- W	CU AG PB	STRATIFORM
TC00502	LAURANI MINE	BL	LA	17-23- S	067-46- W	CU AG AU PB ZN AS BI SB SN	STOCKWORK, LODE, DIS
W029603	PIKWE	BC	CE	21-55- S	027-50- E	NI CU S CO PT	STRATIFORM, DISSEMIN
W700647	CABACAL I MINE	BR				AU AG CU	
W700095	CAMAGUA	BR		30-49- S	053-29- W	CU AU	
W700648	JAGUARARI MINE	BR				CU	
W002123	CARAIBA COPPER DEPOS	BR	BA	09-52- S	039-52- W	CU NI CO	MAJOR DISSEMINATED,
W700085	CARAIBA DEPOSIT	BR	BA	10-16- S	040-12- W	CU AU AG	STRATIFORM
W002314	BLUMENAU MINE LEAD-Z	BR	CA	27-02- S	049-07- W	PB ZN CU	DISSEMINATED
W033813	AMERICANO DO BRASIL	BR	GO	16-00-00S	050-00-00W	NI CU CO	B3
TC00088	FORTELEZA DE MINAS	BR	MI	20-54- S	046-53- W	NI CU CO PGM AU	MASSIVE SULFIDES
W002275	JANUARIA AND ITACARA	BR	MI	15-34- S	044-39- W	PB ZN CU F	REPLACEMENT AND VEIN
D000724	(SUMMARY OF BULGARIA	BU		42- N	024- E	CU MO AU V	
DE00080	MONYWA MINE	BM				CU	
W700562	EAST KEMPTVILLE MINE	CA				SN CU ZN	
W700546	FRASER MINE	CA				NI CU	
W700566	GALLEN MINE	CA				ZN CU AG AU	
W700569	LITTLE RIVER MINE	CA				ZN PB CU AU AG	
W700547	MC CREEDY WEST MINE	CA				NI CU	
W700548	NAMEW LAKE MINE	CA				NI CU	
W700549	STOBIE MINE	CA				NI CU	
W700567	WESTMIN/BUTTLE LAKE	CA				ZN CU AG PB	
W700035	AFTON	CA	BC	50-39- N	120-31- W	CU AU AG	DISSEMINATED, FRACTU
D000727	BRENDA	CA	BC	55- N	125- W	CU MO AG RE	FRACTURE, VEIN
W002754	GIANT NICKEL MINES-C	CA	BC	49-25- N	121-50- W	NI CU	SULPHIDE
W700019	GOLDSTREAM	CA	BC	51-37-45N	118-25-30W	CU ZN AU AG	STRATABOUND MASSIVE

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W700042	ISLAND COPPER	CA	BC	50-36- N	127-28- W	CU MO PB ZN	BRECCIA, PORPHYRY
W018867	LYNX, MYRA AND PRICE	CA	BC	49-34-30N	125-35-30W	PB ZN CU AG AU CD	VOLCAO - SEDIMENTARY
M046124	MAPLE LEAF	CA	BC	49-34 N	118-21-30W	PT AU AG CU	LODE
M046159	MORESBY ISLAND	CA	BC	52-42-50N	132- - W	AU CU PT PD AG	LODE
M046165	SAPPHO PROPERTY	CA	BC	49-01- N	118-42-03W	AG CU PT	LODE
W700044	VALLEY COPPER	CA	BC	50-29- N	121-02- W	CU MO PB ZN W	PORPHYRY
TC00043	"FL" GROUP	CA	MB	56-50-00N	101-00-30W	ZN CU	
TC00044	"Z"	CA	MB	56-49-45N	101-01-30W	ZN CU	
TC00009	'A' MINE & FARLEY 'E	CA	MB	56-50-10N	101-03-30W	NI CU CO AU AG	
W700011	ANDERSON LAKE	CA	MB	54-51-37N	099-59-35W	CU AU AG ZN	MASSIVE SULFIDE
TC00033	BARRINGTON	CA	MB	56-57-45N	100-17-45W	CU	
W012735	BIRCHTREE	CA	MB	55-42- N	097-55-00W	NI CU CO PGE AU AG SE TE	MAGMATIC, STRATIFORM
TC00040	BOB LAKE	CA	MB	55-09-30N	101-02-30W	CU ZN	
M046947	BOWDEN LAKE	CA	MB	54-55-40N	098-28-30W	CU NI PGM	LODE
M046972	BUCKO DEPOSIT	CA	MB	54-52-40N	098-39-20W	CU NI PGM	LODE
TC00037	CALLINAN	CA	MB	54-45- N	101-53- W	ZN CU	
TC00020	CENTENNIAL MINE	CA	MB	54-42-18N	101-40-01W	CU ZN AU AG	MASSIVE SULFIDE
W018871	CHISEL LAKE	CA	MB	54-49-43N	100-06-54W	ZN CU AU AG PB	VOLCANOGENIC MASSIVE
TC00039	COPPER-MAN	CA	MB	54-38-57N	099-52-24W	ZN CU	
TC00026	CUPRUS MINE	CA	MB	54-43-14N	101-42-39W	CU ZN AU AG	
TC00029	DICKSTONE MINE	CA	MB	54-51-18N	100-29-24W	CU ZN AU AG	
TC00028	DON JON MINE	CA	MB	54-45-43N	101-34-17W	CU ZN	
M046655	DUMBARTON MINES LIMI	CA	MB	50-28-59N	095-29-08W	NI CU CO PT PD	MAGMATIC SEGREGATION
W002760	DUMBARTON NICKEL-COP	CA	MB	50-45- N	094-25- W	NI CU CO PT PD PGM	SULFIDE
W700010	FLIN FLON	CA	MB	54-45-28N	101-53-00W	CU ZN AU AG PB AS SE TE CD	MASSIVE SULFIDES
TC00052	FOX MINE	CA	MB	56-38-05N	101-37-50W	CU ZN AU AG	MASSIVE AND DISSEMIN
W018872	GHOST LAKE	CA	MB	54-50- N	100-06- W	ZN CU PB AG AU	
TC00041	HYERS ISLAND	CA	MB	54-45-49N	096-01-12W	CU	
TC00047	JUNGLE	CA	MB	55-09-18N	100-58-20W	CU ZN	
M046247	LYNN LAKE	CA	MB	56-51 10N	101-03 09W	CU NI PT AU ZN	STOCKWORKS; MASSIVE,
W002757	LYNN LAKE NICKEL DIS	CA	MB	56-47- N	101-20- W	NI CU CO ZN AU	MASSIVE SULFIDES, DI
TC00023	MANDY MINE	CA	MB	54-43-36N	101-49-54W	CU ZN AU AG	SULPHIDE REPLACEMENT
M046656	MANIBRIDGE NICKEL DE	CA	MB	54-37-16N	098-41-14W	NI CU PD PT AU CO	MAGMATIC SEGREGATION
W002774	MANIBRIDGE NICKEL MI	CA	MB	54-48- N	099-20- W	NI CU	NICKEL SULFIDE
M046250	MOAK LAKE	CA	MB	55-58 09N	097-32 14W	NI CU PGM	DISSEMINATED - VEIN
M046248	MYSTERY LAKE	CA	MB	55-52 32N	097-44 26W	NI CU PT	DISSEMINATED VEIN ,
TC00036	NAMEW LAKE	CA	MB	54-13-50N	101-46-43W	NI CU PGM	
TC00027	NORTH STAR MINE	CA	MB	54-45-54N	101-34-42W	CU ZN	
M046924	ORE FAULT	CA	MB	50-28-35N	095-30-30W	NI CU PGM	LODE
TC00022	OSBORNE LAKE MINE	CA	MB	54-57-47N	099-43-40W	CU ZN AU AG	
TC00050	PINEBAY	CA	MB	54-45-56N	101-36-31W	CU	
TC00046	RAIL LAKE	CA	MB	54-44-54N	100-35-30W	CU ZN	
TC00051	REED LAKE	CA	MB	54-38-13N	100-32-56W	CU	
W700008	ROD	CA	MB	54-51-23N	099-55-07W	CU ZN AU AG PB AS CO	MASSIVE SULFIDES
W700007	RUTTAN	CA	MB	56-28-30N	099-38-14W	CU ZN AG AU PB AS	MASSIVE SULFIDES, ST
TC00025	SCHIST LAKE MINE	CA	MB	54-43-11N	101-49-34W	CU ZN AU AG	
TC00042	SHERLYNN	CA	MB	56-53-42N	101-05-27W	CU ZN	
TC00024	SHERRIDON MINE	CA	MB	55-08-16N	101-06-25W	CU ZN AU AG	
M046736	SHERRITT GORDON MINE	CA	MB	56-48-00N	101-05-00W	NI CU ZN PT	LODE
M046242	SOAB NORTH AND SOUTH	CA	MB	55-13- N	098-25- W	NI CU CO PGM AU AG SE TE	DISSEMINATED - VEIN,
W700006	SPRUCE POINT	CA	MB	54-34-24N	100-24-00W	CU ZN AU AG	MASSIVE SULFIDES
W700005	STALL LAKE	CA	MB	54-51-20N	099-56-28W	CU AU AG ZN	MASSIVE SULFIDES
TC00035	SYLVIA ZONE	CA	MB	54-24-25N	100-08-57W	CU ZN	
M046241	THOMPSON MINE	CA	MB	55-37 03N	097-49 30W	NI PD PT CU AU AG	LODE
W002768	THOMPSON NICKEL MINE	CA	MB	55-46- N	097-52- W	NI CU CO PT PD AU AG	MASSIVE SULFIDE
TC00021	TROUT LAKE	CA	MB	54-49-45N	101-49-18W	CU ZN AU AG	
TC00045	VAMP LAKE	CA	MB	54-56-18N	101-10-00W	ZN CU	
W700004	WESTARM	CA	MB	54-38-33N	101-50-14W	CU ZN AU AG	MASSIVE SULFIDES
W700003	WHITE LAKE	CA	MB	54-42-48N	101-43-12W	CU ZN AG AU PB AS	MASSIVE SULFIDES, DI
TC00049	WIM	CA	MB	55-01-31N	100-02-38W	CU	
M046920	CANOE LANDING LAKE	CA	NB	47-24-50N	066-06-00W	CU PB ZN AG AU PGM	LODE
M046901	HEATH STEELE B-1 DEP	CA	NB	47-17-00N	066-05-00W	AU PD ZN PB CU AG NI PGM	LODE
W018875	HEATH STEELE'S LITTL	CA	NB	47-16- N	066-07- W	PB ZN CU AG	VOLCANOGENIC MASSIVE
W018967	NIGADOO RIVER MINE	CA	NB	47-44-00N	065-48-20W	PB ZN CU AG CD	VEIN OR VOLCANO - SE
TC00003	DUCK POND DEPOSIT	CA	NE	48-38- N	056-30- W	CU PB ZN AG AU	
M046818	N. SIDE OF TABLE MOU	CA	NE	49-29-46N	058-02-40E	CU NI AU PD	VEIN (?) - LODE
W018968	BUCHANS PB, ZN, CU,	CA	NF	48-46- N	056-51- W	CU PB ZN AG AU	VOLCANO SEDIMENTARY

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M046817	WINTER HOUSE BROOK	CA	NF	49-28-59N	057-56-20W	CU NI AU PT	MASSIVE SULFIDE - LO
W018971	IZOK LAKE ZN-CU-PB-A	CA	NT	66- - N	114- - W	ZN CU PB AG	STRATABOUND EPIGENET
W002776	RANKIN INLET NICKEL	CA	NT	62-33- N	092-20- W	NI CU CO PT PD	SULFIDE
M045779	AER NICKEL MINE	CA	ON	46-20-00N	081-27-00W	CU NI PT AU AG	VEIN - OFFSET
M046203	ALEXO MINE	CA	ON	48-37 43N	080-49 34W	CU NI PT	DISSEMINATED AND MAS
W002748	ALEXO NICKEL MINE-CA	CA	ON	49- - N	081- - W	NI CU	SULFIDE
M046204	ALMO LAKE	CA	ON	50-29-08N	094-25-24W	NI CU AU PT PD	LODE
M046951	ATIKOKAN	CA	ON	48-47-07N	091-16-30W	CU PGM	LODE
M045792	BLEZARD MINE	CA	ON	46-35-18N	080-59-00W	CU NI PT AU AG	NICKEL-BEARING SULFI
M046212	BOSTON BAY MINES	CA	ON	49-12-04N	089-37- W	CU NI PD PT AU	LODE
M045799	BOUNDARY MINE	CA	ON	46-41-50N	081-19-24W	CU NI PT AU AG	VEIN - MASSIVE
M045801	CHICAGO MINE	CA	ON	46-24-50N	081-28-00W	CU NI PT AU AG	VEIN - MASSIVE
M046798	CLARABELLE	CA	ON	46-30-00N	081-06-00W	CU NI AU PT AG	LODE
M045820	CLARABELLE NO. 2	CA	ON	46-30-00N	081-06-00W	CU NI PT AU AG	VEIN - MASSIVE.
M045819	CLARABELLE NO. 4	CA	ON	46-30-00N	081-06-00W	CU NI AU PT AG	VEIN - MASSIVE
M045776	COLEMAN MINE	CA	ON	46-41- N	081-20- W	CU NI PGM AU AG CO SE TE	VEIN, MASSIVE, MAGMA
M045816	COPPER CLIFF MINE	CA	ON	46-29-00N	081-06-00W	AU PT CU NI	VEINS, DISSEMINATED
M046800	COPPER CLIFF NORTH	CA	ON	46-35-00N	081- -00W	CU NI PT	LODE
M046799	COPPER CLIFF SOUTH	CA	ON	46-20-00N	081-10-00W	NI CU PT PD	LODE, VEIN
M045813	CREAN HILL MINE	CA	ON	46-25-50N	081-21-06W	CU NI PGM AU AG CO SE TE	VEIN, MASSIVE, MAGMA
M045815	CREIGHTON MINE	CA	ON	46-27-39N	081-10-10W	CU NI PGM AU AG CO SE TE	MASSIVE, VEIN, MAGMA
M045777	CRYDERMAN MINE	CA	ON	46-36-51N	080-41-48W	CU NI PT AU AG	VEIN - MASSIVE
M045775	DENISON MINE	CA	ON	46-29-08N	082-35-40W	CU NI PT AU	VEIN
M046208	DOLMAC MINES, LTD.	CA	ON	46-44-34N	080-37-39W	CU NI PT	LODE
M047046	DUNDONALD	CA	ON	49-43-00N	079-58-00W	NI CU	DISSEMINATED AND MAS
M046807	EAST FALCONBRIDGE	CA	ON	46-34-32N	080-47-00W	AU PT CU NI	LODE
M045808	EAST MINE	CA	ON	46-36-58N	080-47-21W	CU NI PT AU	VEIN
M045778	ELSIE MINE	CA	ON	46-20-34N	081-04-55W	NI CU PT AU AG	VEIN - MASSIVE
M046949	EMO PROSPECT	CA	ON	48-39-18N	093-56-45W	NI CU CO PGM	LODE
M045798	ERRINGTON MINE	CA	ON	46-33-29N	081-16-10W	AU CU NI PT AG ZN PB	VEIN
M045818	EVANS MINE	CA	ON	46-26-00N	081-05-51W	CU NI PT AU AG	VEIN - MASSIVE
W012739	FALCONBRIDGE EAST NI	CA	ON	46-35-00N	081-20-00W	NI CU	SULFIDE
M045809	FALCONBRIDGE MINE	CA	ON	46-34-32N	080-48-40W	AU PT CU NI	VEINS, BRECCIAS
W012744	FALCONBRIDGE NICKEL	CA	ON	46-35-00N	080-50-00W	NI CU	SULFIDE
M045807	FECUNIS NORTH MINE	CA	ON	46-39- N	081-21- W	CU NI PGM AU AG CO SE TE	VEIN - MASSIVE, MAGM
M045796	FOY MINE	CA	ON	46-45-00N	081-12-00W	CU NI PT AU	VEIN (OFFSET)
W012743	FROOD - STOBIE NICKE	CA	ON	46-30-00N	080-50-00W	NI CU	SULFIDE, DISSEMINATE
M045814	FROOD MINE	CA	ON	46-32-00N	081-00-00W	AU PT CU NI	DISSEMINATED ORES
M045810	GARSON MINE	CA	ON	46-34-56N	080-52-11W	CU NI PGM AU AG CO SE TE PB	MASSIVE, VEINS
W018978	GECO MINE	CA	ON	49-09- N	085-45- W	CU ZN AG AU PB	VOLCANO - SEDIMENTAR
M045774	GERSDORFFITE MINE	CA	ON			CU NI PT AU AG	VEIN
M045803	GERTRUDE MINE	CA	ON	46-36-30N	081-13-40W	CU NI PT AU AG	VEIN - MASSIVE
M046206	GORDON LAKE	CA	ON	50-29 08N	094-20 48W	CU NI PT CR AU	VEIN (FAULT ZONE)
M046986	GRASSY PORTAGE BAY	CA	ON	48-42-10N	093-03-40W	CU PGM	LODE
M046970	GREAT LAKES NICKEL	CA	ON	48-04-40N	089-37-25W	CU NI PGM	LODE
M046945	JUNEAU LAKE PROSPECT	CA	ON	50-22-00N	087-59-00W	CU NI PGM	LODE
M046955	K 1 - 1	CA	ON	51-30-00N	090-19-00W	CU NI PGM	LODE
M046838	KANICHEE MINING	CA	ON	47-20-00N	079-55-00W	NI CU AU AG PT PGM	LODE
W012733	KANICHEE MINING CO.	CA	ON	47-05-00N	079-50-00W	NI CU	SULFIDE
W018979	KIDD CREEK MINE	CA	ON	48-30- N	081-21- W	AG CU ZN PB CD SN AU	VOLCANOGENIC MASSIVE
M045783	KIRKWOOD MINE	CA	ON	46-34-17N	080-50-25W	PT CU NI AG	VEIN - MASSIVE
W012749	KIRKWOOD NICKEL MINE	CA	ON	46-00-00N	081-00-00W	NI CU	SULFIDE
M046737	LAC DES ILES	CA	ON	49-15-00N	089-35-00W	PT PD NI CU AU	STRATIFORM
M045817	LADY MACDONALD MINE	CA	ON	46-30-00N	081-06-00W	CU NI AU PT AG	VEIN - MASSIVE
M045772	LADY VIOLET MINE	CA	ON			CU NI PT AU AG	VEIN - MASSIVE
M046797	LEVACK EAST	CA	ON	46-30-00N	081-35-00W	PT NI CU AG	LODE
M045811	LEVACK MINE	CA	ON	46-42-00N	081-24-02W	AU PT CU NI	LODE
W012738	LEVACK NICKEL MINE,	CA	ON	46-39- N	081-24- W	NI CU	SULFIDE, DISSEMINATE
M046914	LEVACK WEST NICKEL M	CA	ON	46-39-00N	081-24-00W	NI CU FE PGM S	LODE
M046916	LITTLE STOBIE	CA	ON	46-33- N	081-00- W	NI CU PGM CO AG AU PB ZN SE TE	MAGMATIC, SUDBURY-T\
W002773	LOCKERBY MINE	CA	ON	46-26- N	081-20- W	NI CU PGM AU AG CO SE TE	NICKEL SULFIDE, MAGM
M045791	LONGVACK MINE	CA	ON	46-46-40N	081-19-24W	AU AG CU NI PT	LODE
M046802	LONGVACK SOUTH	CA	ON	46-40-00N	081-20-00W	AU AG CU NI PT	LODE
W012732	LONGVACK SOUTH NICKE	CA	ON	46-40- N	081-30- W	NI CU	SULFIDE
W018981	LYON LAKE	CA	ON	44-53-12N	090-53-22W	CU ZN PB AG AU	VOLCANOGENIC MASSIVE
M046952	MACASSA	CA	ON	44-52-15N	077-43-15W	CU NI CO PGM	LODE
M045786	MACLENNAN MINE	CA	ON	46-40-17N	080-54-41W	CU NI PT AG AU	VEIN

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W018982	MATTABI ZN, CU, AG,	CA	ON	44-30- N	078-45- W	AG ZN CU PB AU	VOLCANIGENIC MASSIVE
W012734	MAYBRUN NICKEL MINE	CA	ON	49-25-00N	093-30-00W	CU NI	SULFIDE
M045806	MEKIM MINE	CA	ON	46-32-07N	081-03-14W	CU NI PT AU	VEIN - MASSIVE SULFI
M046202	MILNET MINE	CA	ON	46-58-20N	080-52-21W	CU NI PT AU	VEIN (OFFSET)
M046922	MONTCALM CU-NI	CA	ON			CU NI PGM	LODE
M045794	MOUNT NICKEL MINE	CA	ON	46-34-32N	080-58-00W	CU NI PT AU AG	VEIN - MASSIVE
M045812	MURRAY MINE	CA	ON	46-31- N	081-04- W	CU NI PGM AU AG CO SE TE	VEINS, MASSIVE, MAGM
M045795	NICKEL RIM MINE	CA	ON	46-45-32N	080-48-15W	NI CU PT AU AG	VEIN - MASSIVE
M045802	NORDUNA MINE	CA	ON	46-38-24N	080-45-40W	CU NI PT AU AG	VEIN - MASSIVE
M046946	NORPAX	CA	ON	50-28-05N	095-01-07W	CU NI PGM	LODE
M045790	NORTH STAR MINE	CA	ON	46-27-30N	081-10-35W	CU NI PT AU AG	VEIN - MASSIVE
M045793	ONAPING - CRAIG MINE	CA	ON	46-38- N	081-23- W	NI CU PGM AU AG CO SE TE	VEIN - MASSIVE, MAGM
M046944	POPULUS LAKE	CA	ON	49-28-59N	093-38-06W	NI CU PGM	LODE
W700132	ROSS MINE	CA	ON	48-30- N	080-17- W	AU AG CU	VEIN
W002750	SHEBANDOWAN MINE	CA	ON	48-36- N	090-15- W	NI CU PT PD	NICKEL SULFIDE, MAGM
M045781	SHEPARD MINE	CA	ON	46-34-17N	080-55-19W	NI CU PT AU AG	VEIN - MASSIVE
M045784	STRATHCONA MINE	CA	ON	46-39-25N	081-22-08W	NI CU PGM AU AG CO SE TE	VEIN - MASSIVE, MAGM
W018983	STURGEON LAKE & MATT	CA	ON	44-30- N	078-45- W	AG ZN CU PB AU	
W002749	SUDBURY DISTRICT NI	CA	ON	46-30- N	081-50- W	NI CU CO SE TE PT AU PD	DISSEMINATED, MASSIV
M045789	SUDBURYCOMPLEX	CA	ON	46-40-00N	081-11-00W	AU PT NI CU AG PD	STRATIFORM
M045800	SULTANA MINE	CA	ON	46-26-27N	081-31-19W	NI PT CU AG AU	VEIN - MASSIVE
M045782	TAM O'SHANTER MINE	CA	ON			AU PT CU NI AG	VEIN - MASSIVE
M046197	TEMAGAMI COPPER DEPO	CA	ON			PD CU	LODE
M046839	TEXMONT	CA	ON	48-10-00N	081-12-00W	NI PGM CU	LODE
W012754	THIERRY	CA	ON	51-30-00N	090-04-00W	CU NI	MASSIVE, GABBROIC
M045780	TOTTEN MINE	CA	ON	46-23- N	081-27- W	NI CU PGM AU AG CO SE TE	VEIN - MASSIVE, MAGM
M046205	TREBOR MINES, LTD.	CA	ON	47-07-15N	079-50-49W	CU NI AU AG PT PD	LODE
M045804	VERMILION MINE	CA	ON	46-31-04N	081-22-07W	AU PT CU NI SN ZN PB	VEIN, BRECCIA
M045788	VICTORIA MINE	CA	ON	46-25-22N	081-23-21W	CU NI PT AG AU	VEIN
W002762	WERNER LAKE NICKEL D	CA	ON	50-15- N	096- - W	NI CO PT CU	DISSEMINATED AND MAS
M045797	WHISTLE MINE	CA	ON	46-46-15N	080-52-45W	CU NI PT AG AU	VEIN - MASSIVE
W018984	WILLROY & WILLECHO C	CA	ON	49-10- N	085-50- W	AG CU ZN PB	VOLCANO - SEDIMENTAR
M045787	WORTHINGTON MINE	CA	ON	46-22-43N	081-25-58W	CU NI PT AU	VEIN - MASSIVE
M046985	BETTY LAKE	CA	PQ	55-15-30N	066-12-00W	CU NI PGM	LODE
W700050	CHIBOUGAMAU	CA	PQ	49-52-06N	074-20-00W	CU AU AG	MASSIVE SULFIDES, SH
W018986	CUPRA - D' ESTRIE -	CA	PQ	45-42- N	071-28- W	CU ZN AG PB CD AU BI	VOLCANOGENIC MASSIVE
W012756	DONALDSON MINE	CA	PQ	61-40- N	073-18- W	NI CU CO PGM	MASSIVE, MAGMATIC, U
M046942	EXPO UNGAVA	CA	PQ	61-33-10N	073-28-20W	CU NI PGM	LODE
M046933	HORDEN	CA	PQ	50-59-00N	077-45-00W	NI CU PGM	LODE
W012755	KATINIQ	CA	PQ	61-41- N	073-40- W	NI CU CO	MASSIVE, MAGMATIC, U
M046950	KELLY LAKE	CA	PQ	47-20-50N	078-52-00W	CU NI PGM	LODE
W002775	LAC EDOUARD NICKEL-C	CA	PQ	47-40- N	072-16- W	NI CU	SULFIDE
W700009	LAKE DUFAULT	CA	PQ	48-18-27N	079-03-45W	CU ZN AG AU PB	MASSIVE SULFIDES, DI
M046234	LORRAINE MINING CO.	CA	PQ	47-24- N	078-40- W	NI CU PT	LODE
W002763	LORRAINE NICKEL MINE	CA	PQ	46-30- N	079- - W	NI CU AG AU	SULFIDE
W018985	MANITOU - BARVUE CU,	CA	PQ	48-08- N	077-37- W	ZN AG CU PB AU	VOLCANOGENIC MASSIVE
W002751	MARBRIDGE NICKEL MIN	CA	PQ	48- - N	078-30- W	NI CU	SULFIDE
M046943	MIDRIM	CA	PQ	47-28-00N	079-14-00W	NI CU PGM	LODE
M046936	PIO LAKE	CA	PQ	58-57-80N	069-36-50W	CU NI PGM	LODE
M046948	RAGLAN NICKEL DEPOSI	CA	PQ	61-35-60N	074-17-50W	CU NI PGM	LODE
M046913	RENZY MINES, LTD.	CA	PQ	46-48-09N	076-41-09W	CU NI AU AG PT PGM	LODE
M046941	ZULAPA	CA	PQ	48-16-00N	077-14-00W	CU NI PGM	LODE
M046974	AXIS LAKE DEPOSIT	CA	SK	59-20-47N	105-59-50W	CU NI PGM CO	LODE
M046979	NEMEIBEN LAKE	CA	SK	55-19-00N	105-10-00W	CU NI PGM	LODE
M046213	CANALASK NICKEL MINE	CA	YK			NI CU PT	LODE
M046825	QUILL CREEK	CA	YK	61-40-00N	138-30-00W	CU NI AU PT PD CO	LODE
M046214	WELLGREEN LODE	CA	YK	61-19 18N	139-11 26W	CU NI PT PD	LODE
W002771	WELLGREEN NICKEL-COP	CA	YK	60-45- N	139-30- W	NI CU	NICKEL SULFIDE
D000515	(CHILIAN DEPOSITS) E	CI				CU MO	PORPHYRY, DISSEMINAT
D000731	(SUMMARY OF CHILIAN	CI		35- S	070- W	MO CU AU AG	PORPHYRY, DISSEMINAT
TC00078	ESCONDIDA	CI		24-15-20S	069-04-40W	CU MO AG AU	PORPHYRY
W700084	LO AGUIRRE	CI		33-27- S	70-56- W	CU	VOLCANIC-HOSTED
W029793	LOS BRONCES, CHILE	CI	1.	32-52- S	070-50- W	CU	MINERALIZED BRECCIA
W029798	CUTTER COVE, CHILE	CI	12	53-20-54S	072-25-42W	CU AG	VEINS
W029811	EL ABRA, CHILE	CI	2.	21-56- S	068-50- W	CU	STOCKWORK (BRECCIA),
W029792	LA EXOTICA, CHILE	CI	2.	22-21- S	068-56- W	CU	SECONDARY ENRICHMENT
W029795	DELIRIO DE PUNITAQUI	CI	4.	30-52- S	071-15- W	CU HG	VEIN

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W029797	LA PATAGUA, CHILE	CI	5.	32-32-12S	071-07-24W	CU	VEIN
W029794	MINA LO AGUIRRE, CHI	CI	5.	33-27- S	070-56- W	CU	STRATABOUND, DISSEMI
W001973	DIABLO AND PIRQUITAS	CI	AC	32-34-30S	070-51-24W	CU AG AU	MANTO, VEINS, DISSEM
W001537	EL SOLADO CU MINE	CI	AC	32-44-24S	070-58-06W	CU	VEINS AND MANTO DEPO
W001975	LOS MANTOS, CATEMU C	CI	AC	32-40-54S	070-55-00W	CU	MANTO
W700088	RIO BLANCO	CI	AC	33-09- S	070-15- W	CU MO	PORPHYRY
W001551	RIO BLANCO CU MINE	CI	AC	33-08-30S	070-16-12W	CU MO	STOCKWORK - PORPHYRY
W700087	SUR SUR MINE	CI	AC	33-10- S	070-15- W	CU MO	PORPHYRY, BRECCIA PI
W001785	BAGUEDANO CU MINE	CI	AN	23-20- S	069-50- W	CU	PORPHYRY
W001969	BUENA ESPERANZA CU M	CI	AN	22-11-06S	070-13-54W	CU	MANTO
W001533	CALAMA CU MINE	CI	AN	22-28- S	068-56- W	CU	PORPHYRY
W001541	EXOTICA CU MINE	CI	AN	22-28-30S	068-52-30W	CU MO	STOCKWORK - PORPHYRY
W001974	HUINQUINTIPA CU MINE	CI	AN	20-58-00S	068-46-30W	CU	MANTO
W001546	MANTOS BLANCOS	CI	AN	23-25-48S	070-03-42W	CU	STOCKWORK, PORPHYRY
W001547	MICHILLA	CI	AN	22-43-54N	070-14-24W	CU	VEINS
W001549	PAPOSO CU MINE	CI	AN	25-01-06S	070-15-00W	CU	VEIN
W001981	SAN JOSE, TUINA CU M	CI	AN	22-31-30S	068-27-00W	CU	MANTO
W001553	SAN MIGUEL, QUETANA	CI	AN	22-26-48S	069-00-36W	CU	PIPE
W001554	SIERRA GORDA CU MINE	CI	AN	22-53- S	069-22- W	CU MO	PORPHYRY & VEINS
W001539	SOLDADO	CI	AN	32-38-48S	071-06-54W	CU	VEINS, MANTO, PORPHY
W001555	TOCOPILLA CU MINE	CI	AN	22-04-48S	070-11-00W	CU NI SB AS CO	VEINS
W001784	AGUSTINAS CU MINE	CI	AT	27-30-12S	070-15-30W	CU	VEINS & TABULAR BRE
W001970	CARRIZALILLO DE LAS	CI	AT	26-01-36S	070-19-00W	CU	BRECCIA PIPE
W001538	EL SALVADOR MINE	CI	AT	26-23-18S	069-34-24W	CU MO	STOCKWORK, PORPHYRY
W001543	LAUTAURO CU MINE	CI	AT	27-13-42S	070-21-24W	CU	VEIN (?)
W001977	MANTO VERDE (PUNTA D	CI	AT	27-29-42S	070-15-24W	CU AU	MANTO, BRECCIA PIPE,
W001976	MANTO VERDE, EL SALA	CI	AT	26-33-30S	070-19-40W	CU AU	CU MINERALIZATION IS
W001548	PAIPOTE CU MINE	CI	AT	27-24- S	070-18- W	CU	PORPHYRY
W001550	POTRERILLOS CU MINE	CI	AT	26-28-36S	069-25-48W	CU MO AU AG	STOCKWORK
W001980	REMOLINOS, CABEZA DE	CI	AT	27-36-30S	070-02-36W	CU AU	PIPES, BOLSON, TOURM
W001982	SAN PEDRO, CACHIYUYO	CI	AT	26-44-30S	069-50-36W	CU	BRECCIA PIPE
W001983	TERESITA CU MINE	CI	AT	27-21-00S	070-14-12W	CU AG AU	STOCKWORK
W001556	VALLENAR CU MINE	CI	AT	28-34- S	070-47- W	CU	VEIN (?)
W001968	ARQUEROS CU DEPOSIT	CI	CO	29-50-06S	070-55-36W	CU AG	MANTO AND DISSEMINAT
W001532	BRILLADOR CU MINE	CI	CO	29-48-42S	071-11-48W	CU	VEINS
W001972	CERRO COLORADO-CHURQ	CI	CO	30-14-48S	071-06-06W	CU MO AU	TABULAR BODY
W001534	COMBARBALA CU MINE	CI	CO	31-11- S	071-01- W	CU	PORPHYRY
W001545	LOS PELAMBRES CU MIN	CI	CO	31-42-30S	070-30- W	CU MO	STOCKWORK - PORPHYRY
W029796	OJANCOS	CI	CO			CU	
W001979	PANULCILLO CU MINE	CI	CO	30-27-18S	071-12-30W	CU	MANTO
W029791	CHUQUICAMATA	CI	EL	22-20- S	068-56- W	CU MO AU	DISSEMINATED, PORPHY
W700018	EL INDIO	CI	EL	29-45- S	070-00- W	AU AG CU AS SB PB ZN	MASSIVE SULFIDE VEIN
W700086	LA CASCADA	CI	IQ	33-09- N	070-14- W	CU MO	PORPHYRY, BRECCIA PI
W001540	EL TENIENTE	CI	O'	34-05-30S	070-20-18W	CU MO AU AG	STOCKWORK, TOURMALIN
W001536	DISPUTADA	CI	SA	33-09-06S	070-17-48W	CU MO	STOCKWORK NNW
W001542	LA AFRICANA CU MINE	CI	SA	33-27-42S	070-49-24W	CU AU	VEIN
W001971	CERRO COLORADO CU MI	CI	TA	20-02-42S	069-16-36W	CU MO	STOCKWORK
W001978	MOCHA CU DEPOSIT	CI	TA	19-49-18S	069-17-06W	CU MO	STOCKWORK
W001552	SAGASCA CU MINE	CI	TA	20-11-36S	069-21-06W	CU	MANTO DEPOSIT
W700669	ANDINA MINE	CI				CU MO	
W700667	MINA SUR MINE	CI				CU	
W700668	TUINA MINE	CI				CU	
CS00222	DIVISION PROSPECT	CS	SA	09-30-55N	083-42-45W	CU PB	POLYMETALLIC VEIN
CS00199	FILA URUCA PROSPECT	CS	SA	09-28-20N	083-42-00W	CU	COPPER VEIN
CS00200	PUEBLO NUEVO PROSPEC	CS	SA	09-27-20N	083-40-20W	CU AG AU	COPPER VEIN
CS00197	SIBERIA MINE	CS	SA	09-33-10N	083-42-30W	CU AG AU	COPPER VEIN
W700068	MATAHAMBRE	CU	PI	22-34- N	083-54- W	CU ZN PB AG	VEINS
DE00082	HELLENIC MINING MINE	CY				CU PYR	
M046394	KUPFERSCHIEFER	GC		51-36- N	011-28- E	PT PD CU OS IR RH	LODE
W018844	ASONGES MINE	EC	CA	02-41- S	078-52- W	PB ZN CU AG AU CD	VEINS
W018843	ASMERA (NIPPON)	ET		15-20- N	038-53- E	CU ZN PB	
W700854	HANNUKAINEN MINE	FI				FE CU	
W700853	KERETTI MINE	FI				CU ZN CO	
M047033	KERETTI	FI		62-46- N	028-28- E	CU ZN CO NI	MASSIVE SULFIDES, HY
M047035	KOTALAHTI MINE	FI		62-12- N	026-36- E	NI CU	SULFIDE
M047032	LUIKONLAHTI MINE	FI		63-36- N	027-24- E	CU S CO ZN	SULFIDE
W029626	LUIKONLAHTI, FINLAND	FI		62-55- N	028-35- E	CU NI CO	SULFIDE

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M047036	PYHASALMI MINE	FI		63-39-30N	025-02-54E	CU ZN S AU AG AS MO	MASSIVE SULFIDES, DI
W700859	PYHASALMI MINE	FI				ZN CU PYR	
M047029	VAMMALA MINE	FI		61-20- N	024-54- E	NI CU PGM	MASSIVE SULFIDE, MAG
M047030	VIHANTI MINE	FI		64-29- N	025-00- E	ZN CU PB	SULFIDE
W700858	VIHANTI MINE	FI				ZN CU PB AG	
M047034	VIRTASALMI MINE	FI		61-48- N	026-36- E	CU	SULFIDE
W002789	VUONOS MINE	FI		62-43- N	028-56- E	NI CU CO	HYDROTHERMAL, VOLCAN
M047028	HAMMASLAHTI MINE	FI	HA	62-48- N	029-48- E	CU ZN	VEIN/SHEAR ZONE, KOM
M046586	HITURA NICKEL DEPOSI	FI	NI	63-56- N	025- E	NI CU PT PD AG CO	LODE - MAGMATIC SEGR
W006866	OUTOKUMPU COPPER-COB	FI	ND	62-45- N	029- - E	CO CU	SULFIDE
W018995	BODENNEC ZN, CU, PB,	FR	BR	48- - N	003- - W	ZN CU PB AG	
W102204	PERIVOLI CU MINE	GR	MA	39-58-00N	021-07-00E	CU CO	C 2A
W102200	TRILOFON	GR	MA	40-35-00N	022-09-00E	CU	C2A
W102202	ERMIONI MINE	GR	PE	37-23-00N	023-15-00E	CU CO	C2C
W102201	TSAGLI	GR	TH	39-18-00N	022-37-00E	CR FE CU NI CO	C 2 A C
M045492		GL		65-08-18N	051-54-34W	NI CU CO PT	MAGMATIC SEGREGATION
M045496	AMITSOQ PLUTON	GL		60-21-40N	044-06- W	PT PD CU NI RH AU AG ASB	MAGMATIC SEGREGATION
M045495	ANGMALORTOQ PLUTON	GL		60-21-30N	044-06-45W	CU NI PT	MAGMATIC SEGREGATION
W700039	OXEC	GT	AL	15-33- N	089-43- W	CU	MASSIVE SULFIDES, DI
W700677	SEDREN MINE	HA				CU AU	
DE00090	CHANDMARI MINE	IN				CU	
DE00091	INGLADHAL MINE	IN				CU	
DE00110	JADUGUDA MINE	IN				U CU MO	
DE00092	KOLIHAN MINE	IN				CU	
DE00093	MOSABONI MINE	IN				CU	
DE00094	PATHATGORA MINE	IN				CU	
DE00095	RAKHA MINE	IN				CU	
DE00096	SURDA MINE	IN				CU	
W018883	AGNIGUNDALA PB - CU	IN	AN	16-13- N	079-40- E	PB CU ZN CO NI AG AS	HYDROTHERMAL VEINS
W018884	AMBAMATA PB - ZN	IN	GU	24-20- N	072-53- E	PB ZN CU	
W700333	MALANJHKHAND MINE	IN	MA	22-01- N	080-43- E	CU	DISSEMINATED, VEIN/S
W032777	KHETRI	IN	RA	27-41- N	075-31- E	CU	REPLACEMENT
DE00114	GUNUNG BIJIH MINE	ID				CU AU AG	
DE00117	MINAKAN MINE	IR				CU	
DE00118	SAR CHESMEH MINE	IR				CU AG AU MO	
DE00121	TIMNA MINE	IS				CU	
W700935	BLEIKVASSLI MINE	IT				ZN CU PB	
W700925	FENICE CAPANNE MINE	IT				ZN PB CU PYR	
W700931	FOSDALEN MINE	IT				FE CU PYR	
W700926	GRONG MINE	IT				CU ZN	
W700937	KILLINGDAL MINE	IT				ZN CU PYR	
W700936	MOFJELLET MINE	IT				ZN CU PB S	
W700924	MONTEVECCHIO/FUNTANA	IT				ZN PB CU	
W700934	SKOROVASS MINE	IT				ZN CU	
W700927	SULITJELMA MINE	IT				CU ZN PYR	
W700928	TVERRFJELLET MINE	IT				CU ZN PYR	
DE00127	KAMAISHI MINE	JA				CU	
DE00126	MATSUMINE MINE	JA				AU AG CU PB ZN	
DE00129	SHAKARAI MINE	JA				CU PB ZN	
W018902	AINAI ZN - CU - PB -	JA	AK	40-23- N	140-43- E	ZN CU PB PYR AG AU	VOLCANOGENIC MASSIVE
W018905	FUKAZAWA PB - ZN MIN	JA	AK	40-17- N	140-40- E	ZN CU PB AG	VOLCANOGENIC MASSIVE
W018904	FURUTOBE CU - ZN - P	JA	AK	40-24- N	140-43- E	ZN PB AG AU CU S CD	VOLCANOGENIC MASSIVE
W018906	HANAOKA PB - ZN MINE	JA	AK	40-18- N	140-34- E	ZN CU PB PYR AG AU	VOLCANOGENIC MASSIVE
W018909	KOSAKA ZN - CU - PB	JA	AK	40-19-48N	140-44-59E	ZN CU PB AG AU PYR CD	VOLCANOGENIC MASSIVE
W018910	MATSUKI ZN-PB-CU MIN	JA	AK	40-17- N	140-34- E	ZN PB CU AG	VOLCANOGENIC MASSIVE
W018913	SHAKANI ZN - PB - CU	JA	AK	40-18- N	140-34- E	ZN CU PB PYR AG AU	VOLCANOGENIC MASSIVE
W018912	OPPU ZN, PB, CU PYRI	JA	AO	40-33- N	140-07- E	ZN PB CU	VEIN
W018903	AKENOBE SN - ZN - PB	JA	HO	35-14- N	134-42- E	SN ZN PB CU IN SE	VEINS - XENOTHERMAL
W018835	KUNITOMI	JA	HO	43-00- N	140-30- E	ZN PB CU AG AU	MASSIVE SULFIDE
W018837	HANAWA ZN - PB - CU	JA	IW	40-10- N	140-50- E	ZN PB CU	
W018836	IWAMI ZN - PB - CU (	JA	SH	35- - N	132-30- E	ZN PB CU	VOLCANOGENIC MASSIVE
W006871	NAGANOBORI COBALT MI	JA	YA	34-20- N	131-20- E	CO CU	CONTACT METAMORPHIS
W007139	BAN NA MO	LA		20-58- N	101-40- E	CU	FRACTURE ZONE
W032788	MAMUT	MY	SA	05- - N	118- - E	CU AU PB ZN	STOCKWORK, PORPHYRY
W700688	CUALE MINE	MX				AU AG PB ZN CU	
W700691	EL MONTE MINE	MX				CU PB ZN AG	
W700690	MACOCOZAC (CONCEPTIO	MX				CU AG AU PB ZN	

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
W700689	SANTA ROSALIA MINE	MX				CU	
W032792	INGUARAN	MX	MI	32-25- N	115-30- W	CU	BRECCIA PIPES, PORPH
MX00575	PUNTA NORTE	MX	NB	28-21-41N	115-14-26W	CU AU	
M046532	AQUASCALIENTES SMELT	MX	AG	21-51- N	102-18- W	AU AG PT PD SE CU NI TE	PLACER
MX02005	Aldama	MX	CH	28-53- N	105-54- W	CU	vein
MX02193	Ascencion	MX	CH	30-55- N	107-35- W	CU AG	vein
MX02223	Barrial	MX	CH	31-18-00N	107-07-30W	CU AG FE	vein
MX02014	Bismark	MX	CH	31-13-57N	107-35-02W	ZN AU AG CU FE MN PB	skarn, replacement
MX02166	Chilicote	MX	CH	29-02- N	104-49- W	AG PB CU MN	vein
MX02042	Coyame	MX	CH	29-25-45N	105-05-00W	CU	replacement
MX02051	El Coyote	MX	CH	28-38- N	104-05- W	FE CU	vein
MX02065	Gioconda	MX	CH	29-20- N	104-32- W	CU	vein
MX02222	Guaynopita	MX	CH	29-24-15N	108-23-30W	CU AG AU PB	contact metasomatic;
MX02070	Huaymopa	MX	CH	29-31- N	108-30- W	CU	vein
MX02074	Juarez	MX	CH	31-25- N	106-15- W	CU	stratabound, dissemi
MX02199	La Boquilla	MX	CH	29-25- N	104-54- W	CU	stockwork, irregular
MX02080	La Cobriza	MX	CH	30-54-13N	107-39-38W	CU AG	vein
MX02086	La Lolita	MX	CH	30-57-02N	107-03-48W	CU	skarn
MX02095	La Reforma	MX	CH	26-58- N	108-09- W	ZN PB CU AG AU	skarn
MX02271	Las Vigas	MX	CH	29-16-15N	104-59-15W	CU PB AG AU	stratabound
MX02274	Los Arados	MX	CH	30-11-15N	106-44-00W	CU AG	replacement
MX02110	Los Arenales	MX	CH	29-48- N	105-11- W	CU	stockwork, irregular
W018925	REFORMA PB, ZN, CU U	MX	CH	26-00- N	100-34- W	PB ZN CU	REPLACEMENT
D000122	SAN ANTONIO MINE	MX	CH	28-40- N	105-50- W	PB ZN CU AG SN V	REPLACEMENT
W700037	SAN FRANCISCO DEL OR	MX	CH	26-52- N	105-51- W	PB ZN CU AG AU W	VEINS, POLYMETALLIC
MX02150	San Juan	MX	CH	31-10- N	105-52- W	CU	vein
MX02156	San Miguel	MX	CH	28-41- N	104-09- W	CU FE	vein
W018927	SANTA BARBARA MINE	MX	CH	26-52- N	105-50- W	ZN PB CU AG AU F	FISSURE VEINS
MX02224	Sierra de los Cantil	MX	CH	31-12- N	107-33- W	CU PB AG	vein
MX02198	Temosachi	MX	CH	29-20- N	108-30- W	CU	vein
MX02275	Terrazas	MX	CH	28-58-09N	106-01-33W	CU PB AG AU	skarn, vein
W700017	AVINO	MX	DU	24-31- N	104-14- W	AG CU AU PB	VEINS, BRECCIA, DISS
W018829	BURRO MINE	MX	GU	17-38- N	101-33- W	PB CU AG	
W018930	TAXCO MINES	MX	GU	19-32- N	098-01- W	ZN PB CU AG AU SN	VEINS
W018818	ZIMAPAN UNIT	MX	HI	20-40- N	099-24- W	PB ZN CU AG AU CD	
W018830	BOLANOS MINE	MX	JA	21-41- N	103-47- W	AG PB ZN CU	
MX00093	Aguajito	MX	NB	30-03- N	115-28- W	CU	vein
MX00094	Alejandra	MX	NB	30-10- N	115-22- W	CU	vein
MX00095	Bonet	MX	NB	28-20- N	113-54- W	CU FE AU AG	vein
MX00096	Cerro Colorado	MX	NB	32-28- N	116-55- W	CU	vein
MX00097	Chapala	MX	NB	29-40- N	114-25- W	CU	skarn
MX00484	Columbia	MX	NB	29-10- N	114-25- W	AU CU	vein
MX00099	El Arco	MX	NB	28-03-20N	113-23-05W	CU AU MO	stockwork(?), irregu
MX00101	El Gato	MX	NB	29-53- N	115-17- W	CU FE	skarn
MX00104	Esmeralda	MX	NB	29-45- N	115-10- W	CU	stockwork, irregular
MX00112	Luciano	MX	NB	29-40- N	115-05- W	CU	stockwork, irregular
MX00116	San Antonio del Mar	MX	NB	31-05- N	116-15- W	AU CU FE	vein
MX00481	San Fernando	MX	NB	29-55- N	115-15- W	CU FE	skarn
MX00118	San Jose	MX	NB	31-05- N	115-35- W	CU	vein
MX00121	Santa Teresa	MX	NB	31-05- N	116-01- W	AU CU FE	vein
MX00123	Vibora	MX	NB	30-10- N	115-46- W	CU	vein
W018827	EL ZAPOTE, LA ESCUAD	MX	OA	17-00- N	096-30- W	PB CU AG AU	
W018920	LA NEGRA MINE	MX	QU	20-50- N	099-50- W	ZN PB CU AG	
MX00125	El Boleo	MX	SB	27-17- N	112-18- W	CU ZN AG MN PB CO	stratabound, massive
MX00487	Morro Hermosa	MX	SB	27-32- N	114-43- W	CU	vein
MX00140	San Roque	MX	SB	27-15- N	114-24- W	CU	vein
MX00143	Todos Santos	MX	SB	23-30- N	110-12- W	CU	vein
MX00205	16 de Septiembre	MX	SO	29-12-25N	109-44-10W	AG PB ZN CU	Epithermal Ag-Pb-Zn-
MX00325	Alma Susana	MX	SO	29-14-35N	110-10-25W	PB ZN CU	hydrothermal, shear
MX00561	America-Bonanza	MX	SO	30-58-00N	110-18-30W	CU	breccia pipe
MX00052	Antonio Rosales	MX	SO	26-56- N	108-56- W	CU PB ZN AU AG	vein, volcanic-hoste
MX00020	Aurora	MX	SO	28-31-35N	109-37-15W	CU MO AU	porphyry copper
MX00022	Bella Esperanza	MX	SO	30-16-10N	109-41-55W	CU	porphyry copper
MX00009	Caborca	MX	SO	30-43- N	112-10- W	AU CU SB BA	vein
MX00262	Cadena del Cobre	MX	SO	29-12- N	109-22- W	W CU	tactite
D000737	CANANEA	MX	SO	30-57- N	110-18- W	CU MO	DISSEMINATED, BRECCI
MX00002	Cananea	MX	SO	30-57-15N	110-19-00W	CU MO AG	disseminated, brecci

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MX00558	Cananea-Duluth	MX	SO	30-57-45N	110-18-00W	CU AG ZN PB	breccia pipe
MX00150	Capote	MX	SO	30-58-45N	110-20-30W	CU	breccia pipe, replac
MX00198	Cerro de Plata	MX	SO	30-47-45N	110-55-30W	CU PB ZN	vein
MX00012	Cieneguita	MX	SO	29-08- N	109-12- W	CU AG	vein
MX00560	Cobre Grande	MX	SO	30-58-30N	110-18-45W	CU	breccia pipe
MX00032	Cuatro Hermanos	MX	SO	28-23-10N	109-39-25W	CU MO	porphyry copper Mo
MX00346	Cumobabi	MX	SO	29-52-20N	109-58-15W	MO CU ZN PB W	porphyry Cu-Mo
MX00559	Democrata	MX	SO	30-58-45N	110-19-30W	CU ZN	breccia pipe; skarn
MX00014	Dolores	MX	SO	29-00- N	109-44- W	CU PB AG	vein, shear zones
MX00024	El Alacran	MX	SO	30-51-10N	110-10-35W	CU MO	porphyry copper
MX00025	El Batamote	MX	SO	30-28-55N	109-45-10W	CU	porphyry copper(?)
MX00367	El Cerrito	MX	SO	28-16-40N	109-43-15W	CU MO	porphyry copper Mo,
MX00153	El Cobre	MX	SO	26-58- N	108-43- W	CU	vein
MX00277	El Cobre	MX	SO	28-43- N	110-02- W	W CU MO AU AG	vein, disseminated
MX00283	El Nacimiento	MX	SO	28-12-25N	109-39-30W	W CU MO	pegmatite; placer
MX00433	El Pilar	MX	SO	31-11-30N	110-38-50W	CU MO	base-metal vein
MX00323	El Tecolote	MX	SO	29-53-35N	111-32-10W	ZN CU AG MO W BI	skarn, contact metas
MX00197	El Tiro	MX	SO	30-17-30N	111-44-30W	AU CU	vein
MX00407	El Triunfo	MX	SO	27-08-40N	109-03-25W	PB ZN CU	skarn
MX00391	El Yeri	MX	SO	30-47-50N	109-50-00W	CU	skarn
MX00556	Elisa	MX	SO	30-59-30N	110-21-15W	CU ZN PB	skarn
MX00565	Esperanza	MX	SO	30-58-35N	110-20-00W	CU	breccia pipe
MX00282	Filadelfia	MX	SO	29-12- N	110-10- W	CU	pegmatite
MX00021	Florida-Barrigon	MX	SO	30-22-50N	109-43-20W	CU MO ZN AG	porphyry copper
MX00265	Fortuna Del Cobre	MX	SO	30-04- N	112-29- W	CU MO	porphyry
MX00289	Gallo De Oro	MX	SO	28-45- N	109-40- W	CU	
MX00402	Gochico	MX	SO	27-22-55N	108-47-40W	PB ZN CU	skarn
MX00324	Guadalupe	MX	SO	29-53-55N	111-28-55W	PB ZN CU	skarn
MX00557	Henrietta	MX	SO	31-00-15N	110-22-00W	CU AG AU ZN	breccia pipe
MX00495	La Candelaria	MX	SO	27-11- N	109-15- W	CU AU	skarn
MX00366	La Cardelena	MX	SO	28-23-15N	109-55-10W	CU MO	porphyry copper Mo,
W032795	LA CARIDAD	MX	SO	30-30- N	109-30- W	CU MO AG	DISSEMINATED PORPHYR
MX00496	La Caridad	MX	SO	30-20-35N	109-31-25W	CU MO AG ZN PB	porphyry copper, hyd
MX00200	La Carolina	MX	SO	30-10-30N	111-43-30W	AU CU	Precambrian epitherm
MX00182	La Chipriona	MX	SO	28-43-30N	108-52-45W	AG PB CU ZN	polymetallic epither
MX00566	La Colorada	MX	SO	30-58-00N	110-19-30W	CU MO AG PB ZN	breccia pipe/stockwo
MX00038	La Guadalupe	MX	SO	27-18- N	108-50- W	CU AG AU	vein
MX00023	La Mariquita	MX	SO	31-03-20N	110-25-15W	CU MO	porphyry copper
MX00353	La Pirinola (and oth	MX	SO	29-01-15N	109-34-35W	CU ZN PB	skarn
MX00040	La Plumosita	MX	SO	29-09- N	109-22- W	CU FE	vein
MX00409	La Reyna (and others	MX	SO	26-50-25N	108-38-10W	PB ZN CU	skarn
MX00179	La Ultima	MX	SO	29-58-25N	110-43-20W	AU CU AG? PB?	hydrothermal vein
MX00408	La Verde	MX	SO	26-54-35N	108-40-05W	AU CU	vein
MX00029	La Verde	MX	SO	29-24-20N	111-17-20W	CU	skarn
MX00382	Las Aguilas	MX	SO	28-58-25N	109-27-35W	CU FE	skarn
MX00057	Las Tablas	MX	SO	26-48-30N	108-40-45W	CU	skarn; 3A14C3A7
MX00058	Los Alisos	MX	SO	30-24-25N	109-27-30W	CU MO AG PB ZN F	porphyry copper
MX00059	Los Bronces	MX	SO	28-37- N	109-29- W	PB AG AU CU	vein
MX00314	Los Locos	MX	SO	29-51-25N	110-18-10W	PB ZN CU	contact metasomatic
MX00034	Los Verdes	MX	SO	28-22-20N	109-09-05W	CU MO W	porphyry copper Mo
MX00033	Lucia	MX	SO	28-24-10N	109-52-20W	CU MO	porphyry copper-Mo
MX00062	Lupita	MX	SO	26-54- N	108-45- W	CU	vein
MX00063	Maria	MX	SO	26-58- N	108-35- W	CU AU FE	vein
MX00411	Maria Bonita	MX	SO	26-47-05N	108-36-05W	PB ZN CU	skarn
MX00370	Monica	MX	SO	28-18-25N	109-28-55W	CU MO	porphyry copper Mo,
MX00065	Mulatos	MX	SO	28-39-00N	108-44-30W	AU CU	vein, shear zones
MX00199	Myriam, El Toro, El	MX	SO	30-49-00N	110-58-30W	CU PB ZN	vein
MX00066	Nacori Chico	MX	SO	29-28- N	108-43- W	CU	vein
MX00067	Nacozari	MX	SO	30-26- N	109-42- W	CU MO	vein, stockwork, irr
MX00563	Oversight	MX	SO	30-58-30N	110-20-15W	CU	breccia pipe
MX00145	Piedras Verdes	MX	SO	27-10-05N	109-01-10W	CU MO	porphyry
MX00027	Pilares	MX	SO	30-20-10N	109-38-00W	CU AG AU W ZN PB	porphyry copper, bre
MX00072	Puebla	MX	SO	28-59- N	109-30- W	CU	skarn
MX00342	Puertecitos	MX	SO	31-00-00N	110-23-15W	CU ZN PB AG FE	skarn
MX00031	San Antonio del Cobr	MX	SO	28-37-40N	109-37-10W	CU MO U	collapse breccia
MX00079	San Cleotilde	MX	SO	29-20- N	111-50- W	CU AU	skarn
MX00313	San Felipe	MX	SO	29-52-49N	110-18-14W	AG PB CU ZN AU MO	mesothermal vein

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MX00328	San Francisco	MX	SO	29-36-00N	110-11-30W	CU PB ZN BA	hydrothermal vein
MX00148	San Francisco	MX	SO	29-14-40N	109-50-45W	PB ZN CU	skarn
MX00365	San Ignacio	MX	SO	28-28-00N	109-47-15W	CU MO	porphyry copper Mo,
MX00178	San Juan	MX	SO	29-13-50N	110-33-55W	AG PB ZN CU	hydrothermal silver
MX00227	San Manuel	MX	SO	27-00-10N	109-01-55W	AG PB ZN CU AU	vein
MX00356	Santa Rosa	MX	SO	29-01-15N	109-29-55W	PB ZN CU	
MX00082	Sierra Cabullona	MX	SO	31-05- N	109-31- W	CU ZN AG	vein
MX00562	Sierra de Cobre	MX	SO	30-59-00N	110-20-30W	ZN CU	skarn
MX00214	Suaqui Verde	MX	SO	28-24-15N	109-48-30W	CU MO	porphyry copper Mo
W700048	TRANSVAAL - SAN JUDA	MX	SO	29-52- N	109-58- W	MO CU	
MX00306	Tres Piedras	MX	SO	28-27-55N	109-07-00W	CU MO W	porphyry copper Mo
MX00564	Veta Grande	MX	SO	30-58-30N	110-19-45W	CU	breccia pipe
MX00474	Viznaga	MX	SO	28-55- N	111-10- W	CU	vein
MX00028	Washington	MX	SO	29-53-55N	110-03-45W	CU MO W AG AU ZN PB	porphyry copper
MX00437	Zona 18	MX	SO	30-20-15N	112-19-50W	CU MO W	skarn
MX00092	Zona Viznaga	MX	SO	28-55- N	111-06- W	CU	vein
W018926	SAN MARTIN MINE	MX	ZA	23- - N	103- - W	ZN CU AG PB	VEIN AND REPLACEMENT
W018820	TOCAYOS MINE	MX	ZA	22-45- N	102-30- W	PB ZN CU AG AU	
M046083	RIVER CHAIDANSUKA	MG		51-30- N		AU PT IR CU	PLACER
DE00018	BLEIDA MINE	MO				CU	
DE00020	OUED EL HEIMER MINE	MO				PB AG CU	
DE00028	MUNDON GUARA MINE	MZ				CU	
DE00029	MATCHLESS MINE	NM				CU	
M046489	OTJIHASE	NM		22-23- S	017-22- E	CU ZN PYR PD	VOLCANOGENIC METAMOF
W032797	KLEIN AUB	NM	RE	24-20- S	017-00- E	CU AG	UNKNOWN
W700064	KOMBAT - ASIS OST	NM	TS	19-47- S	018-01- E	CU PB ZN AG	REPLACEMENT
W018950	TSUMEB MINE	NM	TS	19-15- S	018-01- E	PB ZN CU AG GE CD	REPLACEMENT
W032799	OAMITES	NM	WI	22-57- S	017-05- E	CU AG	STRATIFORM SULFIDE
M045509	TAIPO GORGE REEF	NZ	SO	42-44-34S	171-16-05E	PT AG CU	VEIN
W018936	NEPTUNE PB-ZN MINES	NJ	ZE	13-56- N	084-30- W	ZN PB CU AG AU	FISSURE VEIN
M045541	ERTELIEN GRUBE (=MIN	NY		60-04-08N	010-03-24E	NI CU PT CO AG AU PD	LODE
M045542	FAEO GRUBE	NY		59-23-30N	005-05-54E	NI CU PT PD AU AG	LODE
M045544	HOIAASEN GRUBE	NY		58-37-19N	008-59-07E	NI CU PT PD AU	LODE
M045537	LEIN 2 (SMITH MEYERS	NY		60-34-46N	005-29-25E	NI CU PT	MAGMATIC SEGREGATION
M045538	LIEN1GRUBE(=MINE)	NY		60-34-46N	005-29-30E	NI CU PT PD AU CO	MAGMATIC SEGREGATION
M045536	LILLEFJELDKLUMPEN SK	NY		84-39-12N	013-04-13E	NI CU PT PD	LODE
M045539	LITLAND GRUBE (MINE)	NY		60-34-46N	005-29-34E	NI CU PT PD AU AG CO	MAGMATIC SEGREGATION
W018943	BLEIKVASSLI MINE	NY	KO	65-55- N	013-52- E	ZN CU PB PYR AG SN NI	VOLCANOGENIC MASSIVE
W018944	MOFJELLET MINE	NY	RA	66-18- N	014-12- E	ZN CU PB PYR MO NI	MASSIVE SULFIDE, DIS
W018945	ROROS VERK CU-ZN-PB-	NY	RO	62-34- N	011-27- E	ZN PB V CU	MASSIVE SULFIDE ?
M045543	FLAAT NICKEL MINE	NY	VE	58-36-25N	007-53-09E	NI CU PT PD AU CO P AG	MAGMATIC SEGREGATION
DE00134	BAYDA MINE	OM				CU	
DE00135	LASAIL MINE	OM				CU	
D000742	CERRO PETAQUILLA	PN	CO	10- N	080- W	CU MO	DISSEMINATED, PORPHY
W700846	BOUGAINVILLE MINE	PP				CU AU AG	
W700845	OK TEDI MINE	PP				AU CU	
M047006	SZECHWAN	CH		31- N	104- E	CU NI	LODE
M046576	CU - NI SULFIDE DEPO	CH				CU NI PD AU PT	LODE
M046578	CU - NI SULFIDE DEPO	CH				CU NI PD CO	LODE
M046579	CU - NI SULFIDE DEPO	CH				CU NI AU PD	LODE
M046573	HUNG DISTRICT	CH				CU PT PD	LODE
M046572	MA DISTRICT	CH				CU AU PT PD	LODE
M046571	TAO DISTRICT	CH				CU PT PD CO	LODE
M046574	UNNAMED	CH				CU NI PT PD IR	LODE
W700700	AGUILA MINE	PE				CU MO	
W002015	KATANGA COPPER GOLD	PE		14-27- S	071-45- W	CU AU AG	VEINS - SKARN - REPL
W700699	MONTERROSAS MINE	PE				CU AU AG MO	
W029834	PACOCOCHA, PERU	PE		11-47- S	076-20- W	ZN AG PB CU	VEIN
W002029	QUELLAVECO COPPER DE	PE		17-06- S	070-39-50W	CU MO AG AU	PORPHYRY COPPER
W029836	SAN JUAN DE MILLOTIN	PE		11-47- S	076-20- W	AG CU PB ZN	VEIN
W029825	TURMALINA, PERU	PE		05-18- S	079-36- W	CU MO	PIPE, STOCK
W031400	ANTAMINA MINING DIST	PE	AN	09-32- S	077-08- W	CU PB ZN AG	LODE (FISSURE VEINS)
W031418	COSMOS MINE	PE	AN	09-58-20S	077-12-55W	PB CU ZN	LODE (FISSURE VEIN)
W002186	EL DORADO (COPPER) (	PE	AN	10-33- S	077-22-30W	CU AG	VEINS
W002244	JECANCA LEAD ZINC MI	PE	AN	09-30- S	077-34- W	ZN PB CU	VEINS
W031428	LAURION MINE	PE	AN	09-21-00S	077-36-00W	PB CU AG	LODE (FISSURE VEIN)
W029830	LLIPA, PERU	PE	AN	10-29- S	077-18- W	CU AG AU	

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W031419	PACHAPAQUI, MINING D	PE	AN	09-55- S	077-05- W	PB ZN CU SB	VEINS AND REPLACEMEN
W031414	PACLLON - LLAMAC MIN	PE	AN	10-14- S	076-58- W	ZN PB AG CU SB	VEIN AND REPLACEMENT
W002249	PATARA LEAD ZINC MIN	PE	AN	08-50- S	077-59- W	PB ZN CU	VEINS
W031423	SAN ANTONIO PROSPECT	PE	AN	09-55-00S	077-05-00W	PB AG	LODE (FISSURE VEIN)
W031420	SINCHI ROCA MINE	PE	AN	09-55-00S	077-05-00W	PB ZN CU	LODE (FISSURE VEINS)
W002268	TARICA DISTRICT (TUN	PE	AN	08-35- S	077-44-30W	W AU AG CU PB ZN MO	VEINS
W002001	CHALCOBAMBA COPPER D	PE	AP	14-03- S	072-22- W	CU AG MO	SKARN - TACTITE, DIS
W031443	COPPER-SKARN BELT, S	PE	AP	13-47-00S	071-56-30W	CU MO PB ZN AU	REPLACEMENT LENSES A
W002007	FERROBAMBA COPPER DE	PE	AP	14-06- S	072-21- W	CU AG AU	SKARN-TACTITE - CONT
W002179	ACARI COPPER DEPOSIT	PE	AR	15-15- S	074-38- W	CU	VEINS
W002146	ALPACAY (GOLD-COPPER	PE	AR	15-51- S	072-52- W	AU CU	VEINS
W002149	CALPA AND CORDOVA (G	PE	AR	15-49- S	073-28-30W	AU AG CU	VEINS
W002000	CERRO VERDE	PE	AR	16-32- S	071-36- W	CU MO AG AU	PORPHYRY COPPER, STO
W002021	CHAPI	PE	AR	16-45- S	071-20- W	CU AG	BEDDED - REPLACEMENT
W002017	MADRIGAL	PE	AR	15-35- S	071-22- W	CU ZN PB AG	VEINS
W002194	QUEQUENA (COPPER BEL	PE	AR	16-37- S	071-22-30W	CU AG AU	VEIN
W002195	RESCATE (COPPER BELT	PE	AR	16-34- S	071-30- W	CU AU AG PB ZN	BRECCIA PIPE
W002199	AGUAS VERDES CONTACT	PE	AY	15-17- S	073-54- W	CU PB AU	REPLACEMENT, CONTACT
W002224	ATUNSULLA LEAD-ZINC	PE	AY	13-28- S	074-21- W	PB ZN CU AG	VEINS
W002177	OTOCA (SILVER-COPPER	PE	AY	14-36-30S	075-03- W	PB AG CU ZN AU	VEINS, ALONG CONTACT
W002164	SANTA LUCIA (GOLD) 5	PE	AY	14-57-30S	074-35- W	AU CU PB	VEIN
W002180	ALGAMARCA (COPPER) (	PE	CA	07-37-30S	078-14- W	CU AG AU	VEINS
W002184	CASCABAMBA (COPPER)	PE	CA	07-23- S	078-42- W	AG ZN CU PB AU	VEINS
W002231	COLLOADAR LEAD-ZINC	PE	CA	07-24- S	078-34-30W	ZN CU	VEINS, REPLACEMENT
W031431	HUALGAYOC MINING DIS	PE	CA	06-20- S	078-40- W	AG PB CU ZN AU SB AS	LODE (FISSURE VEINS)
W002020	MICHIQUILLAY COPPER	PE	CA	07-03- S	078-18- W	CU MO ZN PB	PORPHYRY COPPER
W002187	MILO MINE	PE	CA	06-59- S	078-18-30W	CU AG PB	VEINS
W031441	MINES AND PROSPECTS	PE	CA	06-20- S	078-40- W	CU AG PB ZN	LODE (FISSURE VEINS
W031440	MINES OF THE POZOS R	PE	CA	06-20- S	078-40- W	PB ZN CU AG SB	LODE (FISSURE VEINS
W002189	PUNRE (COPPER) (24)	PE	CA	07-00-30S	078-17- W	AG CU ZN PB	VEINS, BEDDED VEINS
W002030	QUIRUVILCA MINE - 6	PE	CA	08-00-30S	078-20- W	CU ZN PB AG AU	FISSURE VEINS
W031432	SAN AGUSTINE MINE	PE	CA	06-20- S	078-40- W	PB ZN CU AG SB AS AU	LODE (FISSURE VEINS)
W002255	SAYAPULLO LEAD ZINC	PE	CA	07-36-30S	078-29-00W	ZN AG PB CU SB AU	VEINS ALONG BEDDING
W031436	SEGUNDA REBELDE MINE	PE	CA	06-20- S	078-40- W	PB CU AG ZN	LODE (FISSURE VEIN)
W031438	SINCHAO DEPOSIT	PE	CA	06-20- S	078-40- W	CU AG PB ZN	PORPHYRY
W031442	TRES MOSQUETEROS MIN	PE	CA	06-20- S	078-40- W	CU SB	LODE (FISSURE VEINS)
W029819	ATALAYA, PERU	PE	CU	14-45- S	071-53- W	CU	SKARN
W002200	CHILLIOROYA REGION (	PE	CU	14-26- S	071-46- W	CU AG AU PB	REPLACEMENTS: SKARN
W029821	COROCCOHUAYCO, PERU	PE	CU	12-59- S	071-17- W	CU	
W002202	HUARCA (CONTACT META	PE	CU	14-59-30S	071-24- W	CU AG AU	REPLACEMENT CONTACT
W002245	KATA LEAD ZINC MINE	PE	CU	15-18- S	071-00-30W	PB ZN CU AG	VEINS
W002191	SANTA ELENA (COPPER)	PE	CU	13-28- S	072-42-15W	CU AG AU ZN PB	VEINS
W002038	TINTAYA	PE	CU	14-52- S	071-25- W	CU AU AG MO ZN PB	VEIN, REPLACEMENT, C
W002264	VILCAMBAMBA LEAD-ZIN	PE	CU	13-07-30S	073-01-00W	PB CU AG ZN NI CO MO	VEINS; SOME REPLACEM
W031445	DONA BASALIA MINE	PE	DE	12-10- S	075-36- W	CU	STRATABOUND SYNGENET
W002239	HUACHOCOLPA DISTRICT	PE	DE	13-02- S	074-56- W	PB ZN CU AG	VEINS
W031446	MALPASO MINE	PE	DE	10-23- S	076-17- W	CU	CONTACT METASOMATIC
W031444	NEGRA HUANUSHA MINE	PE	DE	11-18- S	075-52- W	CU AG	STRATABOUND SYNGENET
W002254	SANTA ROSA LEAD ZINC	PE	DE	12-36- S	074-26-30W	PB ZN AG CU W AU	VEINS
W031406	CARMEN DEL MACIZO MI	PE	HU	09-53-05S	076-59-00W	AG CU	LODE (FISSURE VEIN)
W001995	CAUDALOSA	PE	HU	13-11- S	075-13- W	AG PB ZN CU AU SB	VEIN-FISSURES
W002003	COBRIZA	PE	HU	12-28- S	074-30- W	CU AG ZN PB SB AS	STRATABOUND, SKARN
W031405	HUALLANCA MINING DIS	PE	HU	09-53-05S	076-56-55W	PB ZN CU AG SB	VEIN AND REPLACEMENT
W002010	HUANZALA	PE	HU	09-52-30S	069-59- W	ZN PB CU AG AU	VEIN AND REPLACEMENT
W031407	MERCED, PURISIMA, SA	PE	HU	09-52-35S	076-59-10W	AG CU SB PB	LODE (FISSURE VEIN)
W031413	QUEBRADA AZULMINA DE	PE	HU	09-57-00S	077-02-00W	PB CU ZN AS AG	LODE (FISSURE VEIN)
W029823	RIO SECO, PERU	PE	HU			CU	
W002040	VOLCAN MINES - ZINC	PE	HU	11-36- S	076-12-30W	ZN PB AG CU AU	VEIN
W002181	AZURITA (COPPER) (16	PE	IC	13-56- S	075-38- W	CU	VEINS
W002182	CANZA (COPPER) (17)	PE	IC	14-01-30S	075-38- W	CU PB AG AU	VEIN
W002168	TRIUNFO (GOLD) (47)	PE	IC	14-37- S	074-53- W	AU CU	VEIN
W031449	CALZADA MINE	PE	JU	12-15- S	015-45- W	CU	CONTACT METASOMATIC
W029832	MOROCOCHA	PE	JU	11-33- S	076-08- W	CU ZN PB AG W	STOCKWORK, VEIN, REP
W002250	PICHITA CALUGA LEAD	PE	JU	11-07- S	075-25- W	PB ZN CU AG	REPLACEMENTS IN CALC
W002169	EL TORO (GOLD) (50)	PE	LA	07-50-00S	078-01-30W	AU AG CU	VEINS
W002251	RUNATULLO LEAD ZINC	PE	LA	08-01- S	078-37- W	PB ZN CU	POCKETS ALONG SILICI
W029827	CASAPALCA	PE	LI	11-40-56S	076-14-49W	ZN PB AG CU AU W AS SB	VEIN AND FISSURE SYS

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W002185	CHANAPE (COPPER) (50	PE	LI	11-57- S	076-13- W	CU ZN PB AG SB AU	VEINS
W002201	CHUNGAR (CONTACT MET	PE	LI	11-08- S	076-33- W	CU AU AG PB ZN MO	REPLACEMENT-CONTACT
W002154	HUACHOC (GOLD) (73)	PE	LI	11-31- S	076-48- W	AU CU AG	VEINS
W002242	HUAROCHIRI DISTRICT	PE	LI	10-41- S	077-03- W	PB ZN CU AG	VEINS
W002213	RAPAY (MOLYBDENUM) (	PE	LI	10-32- S	077-07- W	CU MO	VEINS, SOME REPLACEM
W031448	RAUL MINE	PE	LI	12-42- S	076-35- W	CU PB ZN	VOLCANOGENIC, STRATA
W029837	SANTANDER, PERU	PE	LI	11-14- S	076-32- W	ZN PB AG CU	CONTACT METASOMATIC
W002263	VENTUROSA (LEAD-ZINC	PE	LI	11-38- S	076-22- W	PB ZN CU AG	VEINS
W002266	VISO-ARURI DISTRICT	PE	LI	11-51- S	076-14- W	AU ZN PB CU AG	VEINS
W002041	YAURICOCHA	PE	LI	12-19- S	075-44- W	CU PB AG ZN AU	PIPES, FISSURE VEINS
W029822	CUAJONES	PE	MO	17-02-40S	070-42-15W	CU	STOCKWORK, PORPHYRY,
W002196	SAN JOSE (COPPER BEL	PE	MO	16-44- S	071-26- W	CU	PORPHYRY COPPER
W002039	TOQUEPALA	PE	MO	17-16-30S	070-34- W	CU MO AG AU	PORPHYRY COPPER, STO
W700062	CERRO DE PASCO	PE	PA	10-38- S	076-15- W	ZN AG PB CU AU SN AS	REPLACEMENT, VEINS
W002004	COLQUIJIRCA AND MARC	PE	PA	10-45- S	076-15- W	CU PB AG ZN AU	REPLACEMENT MANTOS
W002155	HUACHON (GOLD) (16)	PE	PA	10-40- S	075-58- W	AU PB CU AG	VEINS
W002265	VINCHOS LEAD ZINC MI	PE	PA	10-28-30S	076-18- W	PB AG ZN CU	VEINS
W001994	BERENGUELA COPPER DE	PE	PR	15-37- S	070-31- W	CU AG	REPLACEMENT ?
W002002	CHILETE ZINC-LEAD DE	PE	PR	07-13- S	078-48-30W	ZN PB AG CU	VEIN
W002176	LAMPA (SILVER-COPPER	PE	PR	15-37- S	070-31- W	AG AU CU	REPLACEMENT
W002018	MAGISTRAL COPPER DEP	PE	PR	08-12- S	077-47- W	CU AG AU MO	CONTACT METASOMATIC
W002031	RECUPERADA LEAD-ZINC	PE	PR	09-48- S	077-30- W	PB ZN AG CU	VEIN AND FISSURE
W002034	SAN JUAN DE LUCANAS	PE	PR	14-39-30S	074-10- W	AG AU CU PB	VEINS
W002035	SANTA LUCIA REGION C	PE	PR	15-40- S	070-40- W	CU AG PB ZN	VEIN - STOCKWORK AND
W002162	LA RINCONADA (GOLD)	PE	PU	14-40- S	069-30- W	AU ZN PB CU AG	BEDDED VEINS-MANTOS
W002247	PALCA LEAD ZINC MINE	PE	PU	15-19- S	070-41-30W	PB ZN CU AG	VEINS
W002190	QUENAMARI (COPPER) (	PE	PU	14-13- S	070-21- W	CU ZN PB	VEINS
W029824	SAN RAFAEL, PERU	PE	PU	14-12- S	070-28- W	CU SB	VEIN
W002193	TACAZA (COPPER) (97)	PE	PU	15-36-30S	070-43-30W	CU AG	DISSEMINATIONS IN VO
W002037	TARUGO LEAD-ZINC DEP	PE	RE	09-48- S	077-34- W	PB ZN AG CU	VEIN
W002198	AZULYACO (COPPER BEL	PE	TA	17-20-30S	070-31-30W	CU AG PB AU	VEINS
W002226	CAPLINA-ATASPACA LEA	PE	TA	17-39-00S	069-57-00W	PB AG CU ZN	VEINS-REPLACEMENT MA
W002006	CUATONE COPPER DEPOS	PE	TA	17-02- S	070-44- W	CU MO AG AU	DISSEMINATED
W002197	EL MANTO COPPER BELT	PE	TA	17-17-00S	070-34-00W	CU AG PB AU	VEINS
W002032	RIO PALLANGA LEAD-ZI	PE	YA	11-09- S	076-28- W	PB ZN AG AU CU CD SB	VEINS
DE00140	AMACAN MINE	RP				CU AU AG	
W007279	AYALA	RP		07-12- N	122-05- E	ZN CU PB AU AG	VEINS, STRINGERS, DI
W007251	BAGACAY 1	RP		11-48- N	125-16- E	CU S	STRATABOUND
W007249	BALABAC	RP		07-59- N	117-04- E	CU ZN	MASSIVE SULF
W007214	BARLO	RP		15-59- N	119-52- E	CU	DISSEMINATED
W007196	BICOBIAN	RP		17-16- N	122-24- E	CU MN AU AG	LENS
W007208	BLACK MOUNTAIN	RP		16-22- N	120-36- E	CU AU AG	DISSEMINATED
W007202	BONENG	RP		16-38- N	120-41- E	CU	DISSEMINATED
DE00139	BULLY BUENO MINE	RP				CU	
W007224	CABAPA	RP		15-13- N	120-03- E	CU	VEIN
DE00141	DIZON MINE	RP				CU AU AG	
DE00142	LEPANTO MINE	RP				CU AU AG	
W007278	LIPAWAN-GURIPAN	RP		08-12- N	123-23- E	CU AU	VEIN
W007231	LOBO	RP		13-39- N	121-14- E	CU AU AG BA	VEIN
W007240	MARCOPPER MINING COR	RP		13-25- N	122- - E	CU AU AG	DISSEMINATED
W007250	PILAR	RP		11-26- N	123-00- E	CU	VEIN
W007239	PILI-ISAO	RP		13-30- N	121-52- E	CU	DISSEMINATED
W007264	RAPU-RAPU	RP		13-12- N	124-10- E	CU AU AG	STRATIFORM
W007204	SANTO NINO	RP		16-29- N	120-40- E	CU AU	DISSEMINATED
DE00143	TAPIAN MINE	RP				CU AU AG	
W032809	KENNON MINE	RP	BE	16-30- N	120-45- E	CU AU AG MO	PORPHYRY
W007200	MANKAYAN MINE	RP	BE	16-53- N	120-47- E	CU AU AG	VEIN
W007207	SANTO TOMAS II	RP	BE	16-16- N	120-37- E	CU AU AG FE MO	PORPHYRY, SKARN
W007259	ATLAS	RP	CE	10-20- N	123-44- E	CU AU AG FE MO S	STOCKWORK, PORPHYRY,
W032811	CAMANLANGAN	RP	DA	07- - N	126- - E	CU AU AG	UNKNOWN
M047027	BOTOLAN COPPER MINE	RP	LU	15-18- N	120-01- E	CU FE	GOSSAN
M047026	SAN MAURICIO; TUMBA	RP	LU	14-15- N	122-46- E	AU ZN CU FE PB HG	PLACER
W032812	ISAO-PIU COPPER PROJ	RP	MA	13- - N	122- - E	CU	UNKNOWN
W018816	THANKSGIVING MINE	RP	MO	16-25- N	120-40- E	AU AG CU PB ZN CD AS	SKARN, REPLACEMENT,
W007263	BASAY	RP	NE	09-24- N	122-39- E	CU AU AG MO	DISSEMINATED, PORPHY
D000744	SIPALAY	RP	NE	09-45- N	122-24- E	CU MO AU AG	DISSEMINATED, PORPHY
W700939	ALJUSTREL MINE	PO				CU PYR	

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W700944	BERALT (PANASQUEIRA)	PO				W SN CU	
W700940	LOUSAL MINE	PO				CU PYR	
W700941	NEVES CORVO MINE	PO				CU ZN	
W018939	ALJUSTREL PYRITE, CU	PO	AL	37-54- N	008-15- W	ZN CU PB S	REPLACEMENT
D000746	RIO VIVI	RO		18- N	066- W	CU MO	DISSEMINATED; PORPHY
W007322	CHINKUASHIH	TW		25-10- N	121-50- E	CU AU AG S	VEIN
W007326	TUNGSHAN	TW		24-30- N	121-40- E	CU S AU	LENS
D007053	MIRID OCCURRENCE	SO		10-11- N	043-37- E	BA CU BE KYN	LODE
M046493	ARTONVILLA MINE	SF		22-20- S	030-08- E	CU PD PT RH IR AU	LODE - VEINS
DE00048	BAFOKENG NORTH MINE	SF				PT NI CU	
M046282	BAFOKENG SOUTH MINE	SF		25 30 00	027 15 00	PT CU NI PD	MAGMATIC, GABBROIC,
W031006	BLACK MOUNTAIN MINE	SF		29-14- S	018-50- E	PB ZN CU AG	MASSIVE SULFIDE COMP
W032360	BLACK MOUNTAIN MINE	SF				PB ZN CU AG	
DE00043	CAROLUSBERG MINE	SF				CU	
DE00044	HOITS MINE	SF				CU	
M046251	INSIZWA	SF		30-57- S	029-18- E	PT PD AU AG CU NI	LODE
W027508	MESSINA (TRANSVAAL)	SF				CU	
W028262	MESSINA (TRANSVAAL)	SF				CU	
W028668	MESSINA (TRANSVAAL)	SF				CU	
W028669	MESSINA (TRANSVAAL)	SF				CU	
W015426	MESSINA COPPER GROUP	SF				CU	
W030774	MESSINA COPPER GROUP	SF				CU	
W032246	MESSINA COPPER GROUP	SF				CU	
M046269	NORTHERN TRANSVAAL (	SF		22-26- S	029-51-36E	PT CU	LODE
W015427	O'OKIEP COPPER COMPA	SF				CU AU AG PYR SIL	
W027509	O'OKIEP COPPER COMPA	SF				CU AU AG PYR SIL	
W028264	O'OKIEP COPPER COMPA	SF				CU AU AG PYR SIL	
W028670	O'OKIEP COPPER COMPA	SF				CU AU AG PYR SIL	
W029510	O'OKIEP COPPER COMPA	SF				CU AU AG PYR SIL	
W032247	O'OKIEP COPPER-1981	SF				CU AU AG PYR SIL	
W027510	PALABORA CARBONATITE	SF				CU VRM FE SLF U ZR	
W028265	PALABORA CARBONATITE	SF				CU VRM FE SLF U ZR	
W028664	PALABORA CARBONATITE	SF				CU VRM FE SLF U ZR	
W028665	PALABORA CARBONATITE	SF				CU VRM FE SLF U ZR	
W030775	PALABORA CARBONATITE	SF				CU VRM FE SLF U ZR	
W032249	PALABORA CARBONATITE	SF				CU VRM FE SLF U ZR	
M046564	PALABORA COPPER MINE	SF		24- S	031-08-45E	PD PT CU AU RH RU AG	PIPE - STOCKWORK - L
W007956	PALABORA MINE-1965 P	SF				CU VRM FE SLF	
W007955	PALABORA MINE-1966 P	SF				CU VRM FE SLF	
W007954	PALABORA MINE-1967 P	SF				CU VRM FE SLF	
W007953	PALABORA MINE-1968 P	SF				CU VRM FE SLF	
W007952	PALABORA MINE-1969 P	SF				CU VRM FE SLF	
W007951	PALABORA MINE-1970 P	SF				CU VRM FE SLF	
W007950	PALABORA MINE-1971 P	SF				CU VRM FE SLF	
W007949	PALABORA MINE-1972 P	SF				CU VRM FE SLF	
W007522	PALABORA MINE-1973 P	SF				CU VRM FE SLF	
W007521	PALABORA MINE-1975 P	SF				CU VRM FE SLF	
W027511	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
W027512	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
W027513	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
W027514	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
W028263	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
W028666	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
W028667	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
W030772	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
W032248	PRIESKA COPPER MINES	SF				CU ZN PB PYR	
DE00045	SPEKTAKEL MINE	SF				CU	
M046492	VAALKOP - ZWARTFONTE	SF		24- - S	028-51-16E	PT PD CU NI AU	MAGMATIC - LODE
DE00049	WILDEBEESTFONTEIN NO	SF				PT NI CU	
DE00050	WILDEBEESTFONTEIN SO	SF				PT NI CU	
M046490	ZWARTFONTEIN CENTRAL	SF		24- - S	028-52- E	PT PD CU NI AU	MAGMATIC
W018940	BLACK MOUNTAIN PB -	SF	CA	29-03- S	018-51- E	PB CU ZN AG	
W007948	O'OKIEP COPPER COMPA	SF	CA	29-40- S	017-55- E	CU AU AG PYR SIL	METAMORPHIC; HYDROTI-
W007958	PRIESKA COPPER MINES	SF	CA	30-04- S	022-17- E	CU ZN PB PYR	VOLCANOGENIC MASSIVE
W018947	PRIESKA CU-ZN-PYRITE	SF	CA	29-59- S	022-17- E	CU ZN PYR PB	VOLCANOGENIC MASSIVE
M046500	BUSHVELD COMPLEX	SF	TR	24 30 00	028 30 00	PT PD RH IR AU NI CU	LODE, MAGMATIC
M047000	DORST LAND 768	SF	TR	23-50-00S	028-53-00E	PT CR NI CU AU	LODE

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W007957	MESSINA (TRANSVAAL)	SF	TR	22-20- S	030-05- E	CU PGM	META SEDIMENTS INTRU
M047039	MESSINA COPPER MINE	SF	TR	22-23- S	030-00- E	PT	SULFIDE
W007520	PALABORA CARBONATITE	SF	TR	24-00- S	031-08- E	CU VRM FE U SLF ZR AU AG PGM PT PD RU RH AL2 K TI	ALKALINE IGNEOUS; PE
M047040	PALABORA COPPER MINE	SF	TR			CU PT PD	SULFIDE
W007404	BUYUNG	KS		34-40- N	128- - E	CU AU AG	VEIN
W007418	CHEON-PO	KS		37-12- N	128-37- E	CU S AS	VEIN
W007414	CHOLMA	KS		35-14-40N	129-10- E	AG CU S FE	VEIN/SHEAR ZONE
W007394	DAE-DEOK	KS		34-54- N	128-16- E	CU AG AU PB ZN	VEIN
W007387	DALSUNG	KS		35-47-31N	128-38-08E	W CU BI	VEIN
W007385	DONG JIN	KS		35-43- N	127-19- E	CU AU AG	VEIN
W007415	DONG-SEONG	KS		35-03-30N	128-35-30E	CU AU AG	VEIN
W007400	IL-KWANG	KS		35-18-20N	129-13-40E	CU AG AU ZN	VEIN
W007391	JEIL	KS		35-14-50N	127-27-20E	CU ZN PB AG	VEIN/SHEAR ZONE
W007419	KE PUNG	KS		37-21-00N	128-41- E	CU AU AG PB	VEIN
W007413	KI-CHANG	KS		35-15- N	129-14- E	CU AG	VEIN
W007403	KOHUNG	KS		34-36- N	127-15- E	CU AU AG PB ZN	VEIN
W007417	KOSUNG	KS		35-10- N	128-36- E	CU AU AG	VEIN
W007393	KUN BUK	KS		35-13- N	128-21- E	AU AG CU CO AS W	VEIN
W007397	KURYONG	KS		35-08- N	128-38- E	CU AU AG	VEIN
W007369	KWANG YONG	KS		36-57- N	128-10- E	CU AG AU	REPLACEMENT
W007416	MAJIN	KS		35-10- N	128-36- E	CU AU AG	VEIN/SHEAR ZONE
W007358	SHI-HEUNG	KS		37-25-20N	126-52-20E	PB ZN CU	REPLACEMENT
W007395	SINCHON	KS		35-20-20N	128-36-20E	CU AG AU	VEIN/SHEAR ZONE
W007382	SUBOK	KS		36-12- N	127-27- E	CU ZN AG AU	REPLACEMENT
W007398	UNGNAM	KS		35-11- N	128-37- E	CU AG	VEIN
W007399	YONG HO	KS		35-07- N	129-07- E	CU AG	VEIN
W007380	YOUNG YANG	KS		36-30- N	128-45-04E	CU	DISSEMINATED
W007183	DUC-BO	VS		15-25- N	108-30- E	CU ZN PB SB AS	VEIN
M046662	ARYLAKHSKOE	UR	RU	70-00-00N	089-20-00E	CU NI PT AU	DISSEMINATED SULFIDE
M046732	KOLYUISKII INTRUSION	UR	RU	66-25-00N	090-00-00E	PT PD CU NI	DISSEMINATED
M045574	MONCHEGORSK	UR	RU	67-55-48N	032-57-29E	NI CU PT CO PD	MAGMATIC SEGREGATION
M046659	NORIL'SK I	UR	RU	69-20-58N	088-11-26E	CU NI PT AU CO PB	CU-NI SULFIDES, MAGM
M046613	OKTYABRSKY	UR	RU	69-34-00N	088-26-42E	PD AU AG CU NI	SULFIDE SEGREGATION
M045575	PETSAMO-PECHENGA DIS	UR	RU	67-55-48N	031-12-29E	NI CU PT CO	MAGMATIC SEGREGATION
M045822	TALNAKH DEPOSIT	UR	RU	69-34-05N	088-26-40E	CU NI PT PD CO AU	MAGMATIC SEGREGATION
M045824	UGOL'NYI RUCHEI DEPO	UR	RU	69-18-00N	088-08-00E	CU NI CO PT	MAGMATIC SEGREGATION
M046636	DAL'NEYE	UR	UZ	40-47-20N	068-42-00E	PT PD RH MO CU	SULFIDE SEGREGATION
M046637	KAL'MAKYR	UR	UZ	40-43-12N	068-46-25E	MO PD PT RH CU MO	SULFIDE SEGREGATION
W700968	AZNALCOLLOR MINE	SP				ZN CU PB AG	
W700948	CERRO COLORADO MINE	SP				CU AU AG PYR	
W700950	LA ZARZA MINE	SP				CU PYR	
M046418	RIO VERDE	SP		36-35- N	004-55- W	PT OS IR PD CU NI	PLACER
W700947	SANTIAGO MINE	SP				CU	
W700949	SOTIEL MINE	SP				CU PB ZN PYR	
W700951	THARISIS MINE	SP				CU PYR	
W700315	RIO TINTO MINES	SP	HU	37-42-14N	006-35-51W	CU PYR PB ZN AU AG	MASSIVE, DISSEMINATE
W018959	SOTIEL DEPOSIT	SP	HU	37-35-30N	006-51-30W	ZN CU PB PYR AS	MASSIVE SULFIDE
W018951	AZNALCOLLAR MINE	SP	SE	37-32- N	006-17- W	PB ZN PYR CU AG	MASSIVE SULFIDE, STO
W700975	AITIK MINE	SW				CU AG AU	
W700974	ENASEN MINE	SW				AU AG CU	
W700976	FALUN MINE	SW				CU PB ZN PYR	
W700991	GARPENBERG MINE	SW				ZN PB AG CU	
W700983	HORNTRASK MINE	SW				ZN CU PB AG PYR	
W700984	KRISTINEBERG MINE	SW				ZN CU PB AG PYR	
W700985	LANGDAL MINE	SW				ZN CU PB AG PYR	
W700986	LANGSELE MINE	SW				ZN CU PB AG PYR	
W700987	RENSTROM MINE	SW				ZN CU PB AG PYR	
W700992	SAXBERGET MINE	SW				ZN PB CU AG	
W700065	STEKENJOKK	SW				CU ZN AG PB AU	VOLCANOGENIC MASSIVE
W700988	UDDEN MINE	SW				ZN CU PB AG PYR	
W700977	VISCARIA MINE	SW				CU ZN	
W700079	YXSJOBERG	SW		60-03- N	014-46- E	W CU F MO	SKARN, CONTACT METAS
W700982	YXSJOBERG MINE	SW				W CU	
W018964	LANGDAL MINE	SW	BO	64-50- N	020-16- E	ZN PB PYR CU AG AU	VOLCANOGENIC MASSIVE
W018960	FALUN	SW	FA	60-36- N	015-30- E	ZN PB CU PYR AU AG TALC	CONTACT PYROMETASOM
W018961	GARPENBERG-GARPENBER	SW	GA	60-19- N	016-10- E	ZN PB CU AG AU	CONTACT PYROMETASOM
W700091	VISCARIA	SW	KI	67-51- N	020-00- E	CU ZN	VOLCANOGENIC MASSIVE

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W018811	LJUSNARSBERG MINE	SW	KO	59-52- N	014-59- E	PB ZN CU	
W018809	RAVLIDEN MINE	SW	KR	65-03- N	018-29- E	CU ZN PB AG AU	MASSIVE SULFIDE
W018810	RAVLIDMYRAN MINE	SW	KR	65-04- N	018-28- E	PB ZN CU	MASSIVE SULFIDE, DIS
W700063	AITIK	SW	NO	67-01- N	021-10- E	CU AU AG	DISSEMINATIONS, VEIN
W018965	RENSTROM MINE	SW	RE	64-58- N	019-40- E	ZN CU PB AG AU PYR AS	VOLCANOGENIC MASSIVE
W018807	SVARDSJO MINE	SW	SV	60-45- N	015-55- E	PB ZN CU PYR	
W007018	BAN THUNG KHAM	TH		20-01- N	100-26- E	CU	VEIN
DE00153	ASIKOY MINE	TU				CU PYR	
DE00154	BAKIBABA MINE	TU				CU PYR	
DE00155	CAKMAKKAYA MINE	TU				CU PYR	
DE00156	DAMAR MINE	TU				CU PYR	
DE00157	KURE MINE	TU				CU PYR	
W032836	MURGUL BAKIR ISLETME	TU	AR	41- - N	042- - E	CU SLF	UNKNOWN
W032837	MURGUL OPERATIONS	TU	AR	41- - N	042- - E	CU	UNKNOWN
W032833	ERGANI BAKIR ISLETME	TU	MA	38- - N	040- - E	CU	HYDROTHERMAL; SUPERG
W029101	ABU SWAYEL DEPOSIT	EG		22-48- N	033-38- E	CU NI	LENS
W029103	DARHIB ORE DEPOSIT	EG		23-55- N	034-45- E	CU	
W029106	EL ATAWI	EG		25-38- N	034-11- E	CU	
W029107	HAMATA MINE	EG		24-30- N	035- - E	CU ZN PB	
W029104	HAMMASH COPPER DEPOS	EG		24-40- N	034-07- E	CU	
W029105	SAMRA COPPER DEPOSIT	EG		28-14- N	034-21- E	CU	VEIN/SHEAR ZONE
W029100	UMM SAMIUKI DEPOSIT	EG		24-14- N	034-50- E	CU ZN	MASSIVE SULPHIDES
W700996	WHEAL JANE MINE	UK				SN CU ZN AG	
D007835	TYRONE OPEN PIT MINE	US	NM	32-38-25N	108-22-20W	CU AU AG ZN PB F GEM MO U	PORPHYRY
FS00038		US	AK	55-32- N	132-20- W	FE CU AG AU	VEIN
A012457	"REX" PROSPECT	US	AK	57-16-03N	157-10-30W	CU	LODE; DISSEMINATED,
A013146	(3,850 NUNATAK)	US	AK	58-57-12N	136-59-25W	CU AG ZN	LODE; MASSIVE SULFID
A015101	(ANTON LARSEN BAY) P	US	AK	57-52-08N	152-38-30W	AG CU AU	LODE; VEIN, DISSEMIN
A013258	(BAKER PEAK) GOLD-SI	US	AK	57-49-01N	136-14-17W	AU AG CU	LODE; VEIN, DISSEMIN
A013197	(BALBOA BAY) COPPER	US	AK	55-35-22N	160-35-05W	CU	LODE; SHEAR ZONE
A013096	(BEAR CREEK) COPPER-	US	AK	59-18-15N	136-08-44W	CU ZN	LODE; VEIN
A013251	(BERTHA BAY) COPPER	US	AK	57-48-27N	136-21-13W	CU	LODE; VEIN
A013237	(BOHEMIA BASIN) NICK	US	AK	57-58-35N	136-25-21W	NI CU CO	LODE; STRATIFORM, DI
A013238	(BOHEMIA BASIN) NICK	US	AK	57-59-06N	136-25-56W	NI CU CO	LODE; STRATIFORM, DI
A013008	(BONANZA HILLS) GOLD	US	AK	60-42-15N	154-35-36W	AU AG CU PB SB	LODE; VEIN
A015034	(BOWSER CREEK) CU-ZN	US	AK	62-11-45N	153-43-00W	CU ZN AU	LODE; VEIN.
A013136	(BRADY GLACIER) NICK	US	AK	58-33-15N	136-55-37W	NI CU CO PGM	LODE; CUMULUS LAYERE
A013172	(BRUCE HILLS) COPPER	US	AK	58-58-59N	136-21-03W	CU MO AG PB ZN	LODE; VEIN, DISSEMIN
A013173	(BRUCE HILLS) COPPER	US	AK	58-59-11N	136-20-11W	CU MO AG	LODE; VEIN, DISSEMIN
A011359	(BUTTE CREEK) OCCURR	US	AK	63-01-43N	147-38-03W	CU FE	LODE; DISSEMINATED;
A011389	(CAMP CREEK) OCCURRE	US	AK	62-20-35N	142-43-40W	CU	LODE; VOLCANOGENIC
A015100	(CHALET MTN.) PROSPE	US	AK	57-47-12N	152-38-52W	W CU	LODE; DISSEMINATED
A015652	(CHANDALAR R.) OCCUR	US	AK	68-57-00N	144-04-00W	CU	LODE; DISSEMINATED
A011412	(CHATHENDA CREEK) PR	US	AK	62-04-50N	141-54-44W	AU CU	LODE, VEIN
A013108	(CHILKAT PENINSULA)	US	AK	59-12-03N	135-21-02W	CU	LODE; DISSEMINATED
A013415	(COBALT CREEK) COPPE	US	AK	61-40-11N	159-06-06W	CU AU AG PB ZN SB SN NI?	LODE; VEIN, SHEAR ZO
A015107	(COPPER CREEK) PROSP	US	AK	64-51-08N	143-18-04W	CU AU PB W MON AG	LODE; DISSEMINATED,
A011306	(COSTELLO CREEK) OCC	US	AK	63-15-02N	149-27-57W	CU AU AG	LODE; DISSERNINATED;
A013253	(DAVISON BAY) NICKEL	US	AK	57-47-18N	136-18-42W	NI CU	LODE; MASSIVE SULFID
A013140	(DESOLATION GLACIER)	US	AK	58-46-48N	137-34-14W	NI CU TI AU	LODE; IGNEOUS DIKE,
A013012	(EAST GLADIATOR) COP	US	AK	60-10-41N	153-50-00W	CU ZN PB MO AG	LODE; VEIN, DISSEMIN
A013184	(EAST OF BRADY GLACI	US	AK	58-26-24N	136-36-33W	CU FE AG	LODE; SKARN, DISSEMI
A013254	(EAST OF DAVISON BAY	US	AK	57-47-09N	136-18-27W	NI CU	LODE; DISSEMINATED
A013190	(EAST OF DUNDAS BAY)	US	AK	58-21-23N	136-17-47W	CU	LODE; VEIN
A013162	(EAST OF REID GLACIE	US	AK	58-48-40N	136-45-41W	CU	LODE; VEIN
A013163	(EAST OF REID GLACIE	US	AK	58-47-05N	136-45-50W	CU AG AU FE MN	LODE; SKARN, MASSIVE
A013189	(EAST SIDE OF DUNDAS	US	AK	58-22-26N	136-17-18W	CU AG	LODE; DISSEMINATED,
A013014	(EAST TAKOKA CREEK)	US	AK	60-09-50N	154-06-06W	CU AU	LODE; VEIN, DISSEMIN
A015635	(ESETUK GLACIER) OCC	US	AK	69-18-00N	144-22-00W	CU PB ZN	LODE; SKARN
A013179	(FRANCIS ISLAND) COP	US	AK	58-37-32N	136-10-37W	CU AG ZN	LODE; SKARN, FAULT Z
A013118	(GABLE MTN.) COPPER-	US	AK	59-03-58N	136-01-46W	CU AG MO	LODE; VEIN, SHEAR ZO
A013316	(GAMBIER BAY) GOLD-C	US	AK	57-31-32N	134-03-22W	AU CU	LODE; VEIN (?), DISS
A013317	(GAMBIER BAY) GOLD-C	US	AK	57-29-29N	134-07-14W	AU CU	LODE; VEIN (?), DISS
A013168	(GILBERT ISLAND) COP	US	AK	58-46-32N	136-34-00W	CU MO AG	LODE; VEIN, STOCKWOR
A013023	(GLACIER FORK) COPPE	US	AK	60-51-13N	153-12-11W	CU ZN	LODE; SKARN, MASSIVE
A013384	(GOLDEN GATE FALLS)	US	AK	60-30-19N	160-10-38W	CU	LODE; SHEAR ZONE
A011420	(GRAVEL CREEK) PROSP	US	AK	62-04-58N	141-15-00W	CU	LODE, PORPHYRY

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A015596	(HAWK RIVER) OCCURRE	US	AK	66-15-40N	157-30-30W	AG PB CU	LODE; VEIN, DISSEMIN
A015578	(HOCHANDOCHTLA MTN)	US	AK	65-31-00N	154-53-00W	CU	LODE; DISSEMINATED
A013472	(ILLINOIS CREEK) CU,	US	AK	64-02-14N	157-54-30W	CU AG AU PB ZN	LODE; GOSSAN, VEIN,
A015677	(INACCESSIBLE RIDGE)	US	AK	68-28-00N	161-51-00W	CU BA	LODE
A013039	(INISKIN RIVER) COPP	US	AK	59-48-10N	153-26-40W	CU	LODE
A013092	(JARVIS GLACIER) COP	US	AK	59-25-09N	136-27-13W	ZN CU PB AG BA AU	LODE; MASSIVE SULFID
A013142	(JOHNS HOPKINS INLET	US	AK	58-54-00N	136-59-15W	CU MO AG AU	LODE; VEIN, DISSEMIN
A013143	(JOHNS HOPKINS INLET	US	AK	58-52-30N	137-02-00W	CU	LODE; DISSEMINATED
A013144	(JOHNS HOPKINS INLET	US	AK	58-53-48N	137-00-39W	CU AG AU	LODE; DISSEMINATED
A011415	(JOHNSON CREEK) PROS	US	AK	62-06-43N	141-37-31W	CU MO	LODE, PORPHYRY
A013001	(KASNA CREEK) PROSPE	US	AK	60-09-39N	154-02-45W	CU FE ZN	LODE; DISSEMINATED,
A013308	(KELP BAY, MIDDLE AR	US	AK	57-19-58N	134-59-33W	CU	LODE; VEIN
A013306	(KELP BAY, PORTAGE A	US	AK	57-20-50N	134-55-41W	CU	LODE; VEIN
A013307	(KELP BAY, PORTAGE A	US	AK	57-20-37N	134-54-08W	CU	LODE; VEIN
A013309	(KELP BAY, SOUTH ARM	US	AK	57-16-27N	135-00-55W	CU ZN	LODE; DISSEMINATED,
A013310	(KELP BAY, THE BASIN	US	AK	57-16-20N	134-53-57W	CU NI	LODE; DISSEMINATED
A013029	(KIJIK RIVER) COPPER	US	AK	60-21-11N	154-18-54W	CU AG ZN MO PB	LODE; VEIN, DISSEMIN
A013095	(KLUKWAN FAN) IRON-C	US	AK	59-24-46N	135-54-13W	FE CU TI AU PT PD V	PLACER; ALLUVIAL FAN
A013094	(KLUKWAN) IRON-COPPE	US	AK	59-25-22N	135-52-52W	FE CU TI AU PT PD V	LODE; DISSEMINATED,
A015651	(KONESS RIVER) OCCUK	US	AK	68-25-00N	144-36-00W	CU	LODE; DISSEMINATED
A013047	(LAKE FORK AREA) GOL	US	AK	59-14-45N	154-28-55W	AU AG CU	LODE; VEIN, REPLACEM
A015579	(LAKE SELBY) OCCURRE	US	AK	66-53-08N	155-47-00W	CU	LODE; VEIN
A010628	(LATOUCHE) BEATSON C	US	AK	60-02-42N	147-53-03W	CU AG AU ZN PB	DISSEMINATED; MASSIV
A013193	(LEMESURIER ISLAND)	US	AK	58-15-48N	136-04-37W	CU MO	LODE; VEIN
A015117	(LILLIWIG CREEK) PRO	US	AK	64-05-58N	142-02-02W	AU AG CU	LODE; VEIN
A013255	(LITTLE BAY) COPPER-	US	AK	57-46-56N	136-17-30W	AU AG CU NI	LODE; DISSEMINATED
A013019	(LITTLE TAZIMINA) CO	US	AK	60-04-12N	153-57-54W	CU AG PB ZN MO	LODE; DISSEMINATED,
A013123	(LITUYA BAY) COPPER	US	AK	58-39-28N	137-29-01W	CU NI AG	LODE; IGNEOUS DIKE,
A013297	(MAGOUN) MOLYBDENUM-	US	AK	57-09-37N	135-34-36W	MO CU	LODE; VEIN, DISSEMIN
A013040	(MARSH CREEK) COPPER	US	AK	59-49-10N	153-22-22W	CU FE	LODE; SKARN; VEIN
A013122	(MCBRIDE GLACIER) GO	US	AK	59-05-32N	136-04-09W	AU CU	LODE; SKARN, DISSEMI
A013249	(MINE MTN.) COPPER-Z	US	AK	57-50-49N	136-11-23W	CU ZN PB	LODE; VEIN
A013119	(MINNESOTA RIDGE) CO	US	AK	59-00-38N	136-16-13W	CU AU	LODE, VEIN, DISSEMIN
A013252	(MIRROR HARBOR) COPP	US	AK	57-47-41N	136-19-08W	NI CU	LODE; MASSIVE SULFID
A013414	(MISSION CREEK) GOLD	US	AK	61-39-16N	159-06-54W	AU AG CU PB W U SB?	LODE; VEIN, SHEAR ZO
A013116	(MT. BARNARD NUNATAK	US	AK	59-05-15N	136-53-51W	CU AU AG	LODE; DISSEMINATED,
A013120	(MT. BRACK) ZINC-COP	US	AK	59-06-43N	136-16-51W	ZN CU PB SB AG AU	LODE; VEIN, DISSEMIN
A012525	(MT. BRUNDAGE) OCCUR	US	AK	58-16-00N	133-19-50W	CU	LODE; DISSEMINATED
A013093	(MT. HENRY CLAY) ZIN	US	AK	59-23-37N	136-27-47W	ZN CU BA PB AG AU	LODE; MASSIVE SULFID
A013133	(MT. MARCHAINVILLE)	US	AK	58-29-02N	137-05-18W	TI CU PB	LODE; DISSEMINATED,
A012524	(MT. OGDEN) PROSPECT	US	AK	58-26-15N	133-23-50W	MO CU W PB ZN AU	LODE; DISSEMINATED,
A012559	(N. FORK, E. FORK, C	US	AK	67-40-42N	147-03-30W	CU ZN	LODE; STRATABOUND (?
A013076	(NECONS AND STONY RI	US	AK	61-18-20N	153-36-14W	CU	LODE; CONTACT METASO
A013024	(NEOCOLA RIVER) COPP	US	AK	60-57-36N	153-03-09W	CU MO PB	LODE; VEIN, DISSEMIN
A013017	(NORTH CURRANT CREEK	US	AK	60-18-51N	153-54-36W	CU	LODE; VEIN, DISSEMIN
A013141	(ORANGE POINT) ZINC-	US	AK	58-55-20N	136-59-58W	ZN CU AG AU PB	LODE; VOLCANOGENIC,
A013027	(OTTER LAKE) COPPER	US	AK	60-28-51N	153-47-24W	CU	LODE; DISSEMINATED,
A013049	(PAINT RIVER) COPPER	US	AK	59-08-12N	154-39-22W	CU FE	LODE; SKARN, CONTACT
A015659	(POOVOOKPUK MTN.) OC	US	AK	63-27-00N	171-31-00W	CU MO	LODE; DISSEMINATED
A013360	(PORT HOUGHTON) COPP	US	AK	57-18-39N	133-06-00W	CU	LODE; VEIN, SHEAR ZO
A015041	(POST RIVER, W. FORK	US	AK	62-00-55N	153-53-05W	CU ZN	LODE; STOCK
A015662	(POWOOILIAK POINT) O	US	AK	63-22-00N	171-17-00W	PB CU	LODE; VEIN
A012459	(PUALE BAY) LODE	US	AK	57-46-40N	155-42-00W	CU AU AG	LODE; MASSIVE
A013224	(PYRAMID MOUNTAIN) C	US	AK	55-37-44N	160-40-13W	CU MO	LODE; STOCKWORK, POR
A013170	(QUEEN INLET) COPPER	US	AK	58-54-07N	136-30-42W	CU FE	LODE; SKARN, DISSEMI
A013117	(RENDU GLACIER) COPP	US	AK	59-01-53N	136-47-58W	CU AU AG W ZN	LODE; MASSIVE SULFID
A013167	(RENDU INLET) COPPER	US	AK	58-54-48N	136-37-40W	CU NI CO	LODE; SKARN, DISSEMI
A013473	(ROUND TOP) PORPHYRY	US	AK	64-10-28N	157-33-20W	AG PB CU ZN MO W	LODE; PORPHYRY, GOSS
A013296	(SEALION COVE) COPPE	US	AK	57-17-08N	135-50-20W	CU MO	LODE; VEIN
A013311	(SEYMOUR CANAL) COPP	US	AK	57-56-39N	134-18-23W	CU AU	LODE; VEIN
A013178	(SHAG COVER) COPPER	US	AK	58-38-39N	136-20-27W	CU AG	LODE; VEIN, DISSEMIN
A015028	(SHEEP CR., RAT FK.)	US	AK	62-19-05N	153-52-15W	CU ZN	LODE; SKARN
A015029	(SHEEP CREEK) ZN, PB	US	AK	62-20-15N	153-48-40W	ZN PB CU	LODE
A013298	(SIGINAKA ISLANDS) C	US	AK	57-10-07N	135-26-50W	CU	LODE; DISSEMINATED
A013373	(SNIPE BAY) NICKEL-C	US	AK	56-25-27N	134-57-20W	NI CU AG	LODE; DISSEMINATED,
A013125	(SOUTH CRILLON GLACI	US	AK	58-38-12N	137-18-45W	CU	LODE; DISSEMINATED
A013129	(SOUTH CRILLON GLACI	US	AK	58-38-20N	137-18-14W	CU WI CO AU	LODE; DESSEMINATED,

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A013015	(SOUTH CURRANT CREEK	US	AK	60-14-29N	153-41-06W	CU ZN AU	LODE; SKARN, DISSEMI
A013174	(SOUTH OF TIDAL INLE	US	AK	58-47-30N	136-20-30W	CU	LODE; VEIN
A012645	(SPRUCE CREEK) OCCUR	US	AK	64-52-05N	164-12-00W	AU CU	LODE; VEIN, REPLACEM
A013243	(STAG BAY) IRON-COPP	US	AK	57-54-46N	136-20-50W	FE CU	LODE; DISSEMINATED
A013325	(SWEETHEART RIDGE) G	US	AK	57-55-26N	133-37-20W	AU CU AG PB ZN	LODE; STRATIFORM, MA
A013115	(TARR INLET) COPPER	US	AK	59-01-00N	137-00-30W	CU ZN PB AG AU	LODE; VEIN, SHEAR ZO
A013020	(TAZIMINA) COPPER PR	US	AK	60-04-40N	153-54-30W	CU PB ZN AG	LODE; DISSEMINATED,
A012733	(TIMBER CREEK) PROSP	US	AK	65-16-37N	162-16-35W	CU AG AU	LODE; INSUFFICIENT D
A015026	(TIN CREEK) COPPER,	US	AK	62-28-40N	153-40-10W	CU	LODE; VEIN, SHEAR ZO
A013326	(TRACY ARM) ZINC-COP	US	AK	57-54-18N	133-34-18W	ZN CU AG AU PB	LODE; STRATIFORM, DI
A013099	(TSIRKU GLACIER) GOL	US	AK	59-19-00N	136-27-00W	AU AG ZN CU PB	LODE; MASSIVE SULFID
A013016	(UPPER SOUTH CURRANT	US	AK	60-16-16N	153-34-15W	CU MO	LODE; PORPHYRY, DISS
A013018	(UPPER TAZIMINA) COP	US	AK	60-06-31N	153-54-45W	CU ZN AG PB	LODE; VEIN, DISSEMIN
A013045	(URSUS COVE) COPPER	US	AK	59-31-22N	153-46-17W	CU	LODE
A013171	(WACHUSETT INLET)	US	AK	58-57-15N	136-21-12W	CU MO AG	LODE; VEIN
A013187	(WEST ARM OF DUNDAS	US	AK	58-21-23N	136-30-01W	CU AG	LODE; DISSEMINATED
A013077	(WEST CHILLIGAN) COP	US	AK	61-28-00N	153-13-40W	CU MO AG PB ZN	LODE; PORPHYRY, VEIN
A013011	(WEST GLADIATOR) COP	US	AK	60-11-15N	153-55-33W	CU AG ZN	LODE; VEIN, DISSEMIN
A013145	(WEST OF TARR INLET)	US	AK	58-58-45N	137-00-05W	CU AG ZN	LODE; DISSEMINATED,
A013013	(WEST OSPOOK) COPPER	US	AK	60-08-36N	153-54-39W	CU PB MO	LODE; VEIN, DISSEMIN
A013147	(WEST SIDE OF TARR I	US	AK	58-57-21N	136-55-57W	CU	LODE; VEIN
A013181	(WILLOUGHBY ISLAND)	US	AK	58-36-03N	136-07-34W	CU	LODE; SKARN (?), MAS
A011360	(WINDY CREEK) OCCURR	US	AK	63-06-32N	147-18-06W	CU	LODE, VOLCANOGENIC,
A013294	3 J COPPER-MOLYBDENU	US	AK	57-46-53N	135-03-10W	CU MO	LODE; DISSEMINATED
A012112	ADAMS INLET OCCURREN	US	AK	58-51-55N	135-58-50W	CU CO	LODE; DISSEMINATED
A011482	ADDISON POWELL PROSP	US	AK	61-00-33N	146-06-02W	CU AG AU ZN	LODE; MASSIVE, DISSE
A012299	ALAMO PROSPECT	US	AK	55-45-08N	130-45-40W	CU AG	LODE; VEIN, DISSEMIN
A010064	ALARM	US	AK	55-35-00N	132-28-10W	CU	CONTACT METASOMATIC
A013191	ALASKA CHIEF COPPER	US	AK	58-26-41N	136-06-13W	CU AU AG ZN	LODE; SKARN, MASSIVE
A010062	ALASKA TIDEWATER CO.	US	AK	55-05-00N	132-37-55W	CU	INSUFFICIENT DATA TO
A011503	ALBERT JOHNSON PROSP	US	AK	61-39-30N	144-07-07W	CU	LODE; VEIN, STRATABO
A010347	ALHAMBRA GROUP	US	AK	60-18-29N	147-42-37W	CU	INSUFFICIENT DATA TO
A010255	ALICE PROSPECT	US	AK	54-43-10N	132-06-40W	CU	DISSEMINATED
A010044	ALPHA PROSPECT	US	AK	55-08-53N	132-02-27W	CU AU	LODE
A011517	AMMANN PROSPECT	US	AK	61-40-33N	144-03-58W	CU	LODE; VEIN, DISSEMIN
A010059	ANDERSON CLAIM	US	AK	55-15-55N	132-14-40W	CU	LODE
A010079	ANDERSON PROSPECT	US	AK	55-20-30N	132-22-40W	CU	INSUFFICIENT DATA TO
A010662	ARCTIC PROSPECT	US	AK	67-10-50N	156-23-10W	CU ZN PB AG AU	STRATABOUND, VOLCANC
A012541	ASARCO PROSPECTS	US	AK	63-22-04N	142-30-15W	CU MO	LODE; PORPHYRY, DISS
A013292	BALDY LODE COPPER PR	US	AK	57-47-58N	135-02-13W	CU	LODE; SKARN, CONTACT
A010206	BANDED MOUNTAIN	US	AK	56-02-30N	130-23-55W	AU AG PB	INSUFFICIENT DATA TO
A010246	BARTHOLF OCCURRENCE	US	AK	56-05-15N	130-04-10W	CU PB	VEIN
A011423	BAULTOFF PROSPECT	US	AK	62-06-38N	141-12-44W	CU	LODE, DISSEMINATED,
A012364	BAY VIEW PROSPECT	US	AK	55-11-21N	131-43-48W	CU ZN	LODE; VEIN
A012447	BEARSKIN GULCH PROSP	US	AK	56-15-15N	158-57-30W	CU	LODE; PORPHYRY, VEIN
A010673	BEATSON MINE	US	AK	60-02-42N	147-53-03W	CU AG AU ZN PB	DISSEMINATED; MASSIV
A012514	BEAUCOUP GROUP	US	AK	68-13-25N	147-44-35W	CU	LODE; VEIN
A010122	BEAVER CLAIM	US	AK	55-17-40N	132-36-00W	CU AU	UNKNOWN
A010659	BEE CREEK PROSPECT	US	AK	56-30-45N	158-24-10W	CU MO	PORPHYRY COPPER
A012444	BEE CREEK PROSPECT	US	AK	56-30-40N	158-24-05W	CU MO	LODE; PORPHYRY, STOC
A010070	BERTHA CLAIM	US	AK	55-17-30N	132-23-25W	CU	LODE
A011411	BIG ELDORADO PROSPEC	US	AK	62-06-27N	141-56-12W	CU AU	LODE, VEIN
A010090	BIG FIVE	US	AK	55-39-10N	132-24-45W	CU FE	REPLACEMENT; CONTACT
A010014	BIG HARBOR MINE	US	AK	55-22-20N	132-58-10W	CU AU AG ZN	MASSIVE SULFIDES
A012361	BIG JOE PROSPECT	US	AK	55-11-32N	131-44-13W	CU	LODE; VEIN
A013295	BIG LEDGE NICKEL-COP	US	AK	57-48-11N	134-59-33W	NI CU ZN	LODE; VEIN, DISSEMIN
A010354	BIG PASSAGE COPPER M	US	AK	60-26-01N	147-39-21W	CU ZN	SHEAR ZONES
A010081	BIG SIX PROSPECT	US	AK	55-27-40N	132-10-45W	CU	REPLACEMENT
A011498	BLACKNEY PROSPECT	US	AK	61-27-07N	144-19-49W	CU	LODE; VEIN, SHEAR ZO
A011518	BLUEBIRD PROSPECT	US	AK	61-39-45N	144-01-51W	CU AU	LODE; VEIN, DISSEMIN
A012534	BLUFF PROSPECT	US	AK	63-38-00N	141-29-18W	CU MO	LODE; PORPHYRY, DISS
A010689	BOHEMIA BASIN PROSPE	US	AK	57-58-30N	136-25-20W	NI CU CO	OTHER MAGMATIC SEGRE
A010705	BOND CREEK PROSPECT	US	AK	62-12-00N	142-42-20W	CU MO AU AG	PORPHYRY; VEIN; DISS
A011403	BOND CREEK PROSPECT	US	AK	62-12-01N	142-42-18W	CU MO AU AG	LODE, PORPHYRY
M046921	BRADY GLACIER DEPOSI	US	AK			NI CU PGM CO	LODE
A010022	BROWN AND METZDORF P	US	AK	55-35-20N	132-28-40W	CU AU AG MO	REPLACEMENT; DISSEMI
A010119	BRUCE PROSPECT	US	AK	55-14-15N	132-36-00W	CU	INSUFFICIENT DATA TO

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A011435	BRYAN CREEK PLACER	US	AK	62-02-11N	141-56-33W	CU AU	PLACER, STREAM
A011914	BT MASSIVE SULFIDE H	US	AK	67-06-15N	155-54-29W	CU ZN PB AG	LODE; STRATIFORM, MA
A012363	BUCK PROSPECT	US	AK	55-11-30N	131-43-47W	CU AU	LODE; VEIN
A011521	BUNKER HILL (COPPER)	US	AK	61-40-05N	144-00-30W	CU	LODE; VEIN, REPLACEM
A010356	BYERS PROSPECT	US	AK	60-52-41N	147-26-25W	CU	INSUFFICIENT DATA TO
A010117	CACHELOT OCCURRENCE	US	AK	55-28-05N	132-09-20W	CU AU AG	LODE
A010164	CAMPBELL PROSPECT	US	AK	55-15-50N	132-38-35W	CU ZN AG AU PB	SKARN
A012442	CAPE KUMLIK OCCURREN	US	AK	56-38-05N	157-28-58W	CU	LODE; PORPHYRY (?)
A012368	CARITA PROSPECT	US	AK	55-08-46N	131-46-23W	CU	LODE; VEIN, SHEAR ZO
A011416	CARL CREEK PROSPECTS	US	AK	62-02-56N	141-35-09W	CU	LODE, STOCKWORK, POR
A011206	CARLSON AND AVERIL P	US	AK	63-20-30N	150-27-00W	CU PB AG	LODE
A010360	CATHEAD BAY	US	AK	60-16-42N	147-50-08W	CU	SHEAR ZONE
A012443	CATHEDRAL CREEK PROS	US	AK	56-31-30N	158-34-05W	ZN PB CU	LODE; VEIN; OTHER:
A011515	CAVE PROSPECT	US	AK	61-40-19N	144-04-05W	CU	LODE; VEIN, DISSEMIN
A011303	CENTER STAR PROSPECT	US	AK	63-15-43N	149-32-14W	CU	LODE; DISSEMINATED S
A010362	CHAMBERLAIN BAY	US	AK	60-52-15N	147-11-46W	CU	VEIN
A010035	CHARLES PROSPECT	US	AK	55-36-15N	132-28-20W	CU AU AG	REPLACEMENT
A015615	CHEVRON PROSPECT	US	AK	67-52-00N	159-46-00W	CU	LODE; VEIN
A013073	CHILL GROUP COPPER O	US	AK	61-29-05N	153-02-52W	CU AG PB ZN AU	LODE; PORPHYRY, VEIN
A010432	CHISNA CONSOLIDATED	US	AK	60-51-02N	146-32-04W	CU AU AG	SHEAR ZONE
A010029	COLEMAN	US	AK	55-33-40N	132-25-40W	CU	UNKNOWN
A012366	CONCORD PROSPECT	US	AK	55-10-42N	131-44-51W	CU ZN AU AG	LODE; VEIN, BRECCIA
A013262	CONGRESS COPPER PROS	US	AK	57-43-53N	136-16-52W	CU	LODE; VEIN
A010373	COPPER BAY	US	AK	60-16-03N	147-50-20W	CU ZN	SHEAR ZONE; VEIN; DI
A010374	COPPER BULLION PROSP	US	AK	60-20-54N	147-37-56W	CU AU AG ZN	SHEAR ZONE; MASSIVE
A010092	COPPER CENTER PROSPE	US	AK	55-37-05N	132-30-10W	CU FE AU AG	LODE
A010375	COPPER CHEIF	US	AK	60-01-06N	149-14-52W	CU	SHEAR ZONE; VEIN; DI
A010075	COPPER CITY MINE	US	AK	55-08-05N	132-36-50W	CU AU AG ZN	MASSIVE SULFIDES
A010376	COPPER COIN	US	AK	60-18-03N	147-46-29W	CU	SHEAR ZONE
A012795	COPPER CREEK PROSPEC	US	AK	64-52-55N	165-10-37W	CU	LODE; REPLACEMENT
A010114	COPPER HILL CLAIM	US	AK	55-29-45N	132-41-00W	CU AU	LODE; SHEAR ZONE
A012793	COPPER KING PROSPECT	US	AK	64-52-51N	165-12-50W	CU PB	LODE; REPLACEMENT
A010023	COPPER KING PROSPECT	US	AK	55-33-25N	132-26-15W	CU AU FE	DISSEMINATED
A011305	COPPER KING PROSPECT	US	AK	63-11-53N	149-38-40W	CU AU AG	LODE; MASSIVE SKARN;
A011511	COPPER KING PROSPECT	US	AK	61-38-13N	144-02-16W	CU	LODE; VEIN, STRATABO
A013037	COPPER KING PROSPECT	US	AK	59-40-24N	153-39-51W	CU FE	LODE; SKARN; VEIN, D
A011208	COPPER LODE PROSPECT	US	AK	63-16-45N	150-52-10W	CU	LODE; SHEAR ZONE
A010091	COPPER MOUNTAIN MINE	US	AK	55-13-55N	132-36-40W	CU AU AG	SKARN
A012792	COPPER MOUNTAIN PROS	US	AK	64-52-23N	165-12-34W	CU PB AG AU	LODE; VEIN, DISSEMIN
A010086	COPPER QUEEN PROSPEC	US	AK	55-32-00N	132-22-25W	CU FE	CONTACT METAMORPHIC
A010071	CORBIN MINE	US	AK	55-13-45N	132-39-00W	CU AU AG ZN	INSUFFICIENT DATA TO
A010428	CORDOVA COPPER CO. P	US	AK	60-34-00N	145-43-20W	CU	REPLACEMENT; VEIN; M
A010076	CRACKERJACK MINE	US	AK	55-29-20N	132-42-45W	CU AU AG PB ZN	LODE
A010216	CRAIG OCCURRENCE	US	AK	56-27-55N	131-16-00W	CU	DISSEMINATED
A010093	CROESUS PROSPECT	US	AK	55-08-58N	132-10-42W	CU AU	LODE
A010377	CROWN COPPER CO.	US	AK	60-25-28N	147-42-11W	CU	INSUFFICIENT DATA TO
A010378	CROWN COPPER CO.	US	AK	60-25-24N	147-42-52W	CU ZN	VEIN
A010089	CYMRU MINE	US	AK	55-08-12N	132-11-53W	CU AG AU	LODE
A015598	DAKLI OCCURRENCES	US	AK	66-21-30N	156-14-00W	CU AG AU	LODE; VEINS
A012371	DALL PROSPECT	US	AK	55-10-00N	131-43-38W	CU AU AG	LODE; VEIN, DISSEMIN
A010036	DAMA PROSPECTS	US	AK	55-03-18N	132-07-15W	CU AU	MASSIVE SULFIDE
A010736	DAN & CHITITU CREEKS	US	AK	61-22-30N	141-33-00W	AU AG CU PB SB	PLACER STRATABOUND:
A010379	DAY HARBOR	US	AK	60-01-40N	149-07-37W	CU	SHEAR ZONE; PEGMATIT
A011307	DENALI PROSPECT	US	AK	63-08-27N	147-08-44W	CU	LODE; STRATIFORM; RE
A010344	DEVILFISH BAY PROSPE	US	AK	56-04-50N	133-22-35W	CU MO U	DISSEMINATED
A010426	DICKEY COPPER CO. CL	US	AK	60-45-50N	146-25-00W	CU AU ZN	SHEAR ZONE
A010382	DISK I.	US	AK	60-29-15N	147-39-06W	CU	SHEAR ZONE
A011500	DIVIDE CREEK PROSPEC	US	AK	61-21-44N	144-16-45W	CU	LODE; VEIN, DISSEMIN
A012358	DOE PROSPECT	US	AK	55-11-48N	131-44-30W	CU	LODE; VEIN
A012549	DOUBLE MOUNTAIN OCCU	US	AK	68-44-50N	143-50-00W	CU PB	VEIN
M046997	DOUGLAS ISLAND DEPOS	US	AK	58-16-42N	134-23-36W	PGM CO CU NI V CR SC	
A013034	DURAND COPPER PROSPE	US	AK	59-42-30N	154-00-48W	CU FE	LODE; VEIN, DISSEMIN
A013035	DUTTON COPPER PROSPE	US	AK	59-40-42N	153-55-30W	CU MO FE	LODE; SKARN; MASSIVE
A011310	ELDRIDGE GLACIER OCC	US	AK	63-00-44N	149-58-41W	CU	LODE; MASSIVE; EPIGE
A011508	ELIZABETH PROSPECT	US	AK	61-39-05N	144-06-26W	CU	LODE; VEIN, STRATABO
A010674	ELLAMAR MINE	US	AK	60-53-55N	146-42-00W	CU AU AG ZN	MASSIVE SULFIDE
A010589	ELRINGTON ISLAND OCC	US	AK	59-56-52N	148-06-51W	CU	INSUFFICIENT DATA TO

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A015616	ESKIMO OCCURRENCE	US	AK	67-30-00N	161-41-00W	CU	LODE; DISSEMINATED
A011211	EUREKA CLAIM	US	AK	63-32-50N	150-51-00W	CU PB	LODE
A013367	EUREKA GOLD(?)-COPPE	US	AK	56-58-52N	135-09-03W	CU AU	LODE; VEIN
A012110	EXRAY, PIT NO. 6 PRO	US	AK	58-26-15N	135-32-10W	CU	LODE; VEIN
A012531	FAIRPLAY PROSPECT	US	AK	63-41-05N	142-13-33W	CU MO PB ZN	LODE; DISSEMINATED,
A010590	FAIRVIEW PROSPECT	US	AK	59-53-32N	149-15-30W	CU	VEIN
A010422	FALCK PROPERTY	US	AK	60-52-20N	146-33-00W	CU ZN	SHEAR ZONE; LODE(?)
A011501	FALLS CREEK PROSPECT	US	AK	61-21-18N	144-15-32W	CU	LODE; DISSEMINATED;
A010591	FEATHER BED	US	AK	59-58-50N	149-15-32W	CU	SHEAR ZONE; MASSIVE
A010256	FEICKERT	US	AK	54-44-30N	132-08-40W	CU	VEIN
A010423	FIELDER & HEMPLE PRO	US	AK	60-53-00N	146-37-00W	CU	SHEAR ZONE
A012533	FISHHOOK PROSPECT	US	AK	63-48-27N	141-19-45W	CU MO	LODE; DISSEMINATED,
A012453	FOOT BAY OCCURRENCE	US	AK	56-03-02N	158-45-49W	CU	LODE; PORPHYRY (?),
A011520	FORGET-ME-NOT PROSPE	US	AK	61-39-43N	144-02-06W	CU	LODE; DISSEMINATED;
A010110	FOWLKES PROSPECT	US	AK	55-16-20N	132-18-05W	CU	INSUFFICIENT DATA TO
A012367	FRIDAY PROSPECT	US	AK	55-09-16N	131-47-00W	CU	LODE; VEINS, BRECCIA
A010109	FRIENDSHIP LODE	US	AK	55-13-03N	132-18-50W	CU AU	SHEAR ZONE
A015618	FROST PROSPECT	US	AK	67-28-45N	160-39-45W	BA CU ZN PB	LODE; DISSEMINATED,
M046847	FUNTER BAY NICKEL DE	US	AK	58-30-00N	136-20-00W	NI CU PGM	SYNOROGENIC-SYNVOLCA
W002851	FUNTER BAY, ADMIRALT	US	AK	58-30- N	136-20- W	NI CU	DISSEMINATED MASSIVE
A012547	GALENA CREEK - EAST	US	AK	68-22-50N	141-59-30W	PB AG CU BA	VEIN, DISSEMINATED
A010209	GLACIER PROSPECT	US	AK	56-02-30N	130-23-55W	AG CU AU PB MO	VEIN
A010026	GLADSTONE PROSPECT	US	AK	55-12-41N	132-03-30W	CU AU AG	LODE
A012298	GNAT PROSPECT	US	AK	55-49-49N	130-54-35W	CU MO PB	LODE; VEIN
A010210	GOAT PROSPECT	US	AK	56-01-00N	130-25-00W	CU AU AG	VEIN
A010697	GOLDEN ZONE MINE	US	AK	63-13-10N	149-38-20W	AU AG CU PB ZN SB SN	VEIN; BRECCIA PIPE;
A011313	GOLDEN ZONE MINE	US	AK	63-12-49N	149-38-56W	AU AG CU PB ZN SB SN	LODE; DISSEMINATED;
A010165	GONNANSON OCCURRENCE	US	AK	55-15-10N	132-37-40W	CU FE	SKARN
A010258	GOODHOPE PROSPECT	US	AK	54-52-10N	132-17-10W	CU	VEIN
A011506	GOODYEAR PROSPECT	US	AK	61-38-56N	144-06-11W	CU	LODE; VEIN, STRATABO
A010025	GOULD PROSPECT	US	AK	55-12-50N	132-36-10W	CU	CONTACT METASOMATIC
A010088	GOULD PROSPECT	US	AK	55-00-05N	132-46-05W	CU	INSUFFICIENT DATA TO
A010397	GRAHAM AND HARRISON	US	AK	60-15-56N	147-43-57W	CU	DISSEMINATED
A011361	GREATHOUSE PROPERTY	US	AK	63-05-34N	147-23-33W	CU	LODE; SHEAR ZONE
A010085	GREEN MONSTER PROSPE	US	AK	55-14-45N	132-32-30W	CU FE AU PB MO	SKARN
A011221	GREENBACK PROSPECT	US	AK	63-12-15N	151-06-40W	CU PB ZN	LODE; CONTACT METAMO
A010096	GRINDALL MINING AND	US	AK	55-31-25N	132-19-25W	CU MO	SKARN
A012357	GROTTO PROSPECT	US	AK	55-11-50N	131-44-13W	CU	LODE; VEIN, SHEAR ZO
A011504	GUTHRIE PROSPECT	US	AK	61-39-35N	144-07-14W	CU	LODE; VEIN, STRATABO
A010056	HAIDA COPPER CO.	US	AK	55-36-20N	132-29-25W	CU FE AU AG MO	SHARN
A013304	HALEY AND HANLON COP	US	AK	57-02-32N	135-11-24W	CU NI CO	LODE; MASSIVE SULFID
A010401	HAPPY JACK (COPPER)	US	AK	60-11-03N	147-44-02W	CU ZN	SHEAR ZONE; VEIN
A010402	HARVEY	US	AK	60-14-49N	147-46-58W	CU	MASSIVE SULFIDE; DIS
A010577	HATCHER PROPERTY	US	AK	59-34-10N	150-30-30W	AU AG CU ZN PB	VEIN
A013109	HAYES COPPER-IRON PR	US	AK	59-02-02N	135-25-35W	CU FE	LODE; SKARN, DISSEMI
A010427	HEAD-OF-THE-BAY MINE	US	AK	60-39-00N	145-34-00W	CU	SHEAR ZONE
A011507	HENRY PRATHER PROSPE	US	AK	61-39-00N	144-06-11W	CU	LODE; VEIN, STRATABO
A010027	HETTA MOUNTAIN PROSP	US	AK	55-12-00N	132-34-00W	CU ZN AG AU MO CO	SHEAR ZONE; MASSIVE;
A011223	HILLSIDE PROSPECT	US	AK	63-32-25N	150-58-25W	PB CU	LODE
A012359	HOBO PROSPECT	US	AK	55-11-31N	131-44-39W	CU	LODE; VEIN
A010406	HOGAN, HAMPLE AND EG	US	AK	60-12-01N	147-44-38W	CU	MASSIVE SULFIDE
A010407	HOGG BAY	US	AK	60-05-40N	148-11-20W	CU	INSUFFICIENT DATA TO
A010021	HOLE IN THE WALL PRO	US	AK	55-31-50N	132-18-35W	CU	SKAIN
A012808	HOLMASON AND HELDE	US	AK	64-43-32N	165-21-35W	CU	LODE; INSUFFICIENT D
A010408	HOME CAMP	US	AK	60-14-06N	147-46-38W	CU ZN	SHEAR ZONE; MASSIVE
A010435	HOODOO CLAIM	US	AK	60-50-30N	146-32-20W	CU AU ZN	SHEAR ZONE
A011422	HORSFELD PROSPECT	US	AK	62-02-53N	141-12-50W	CU	LODE, PORPHYRY
A010112	HOUGHTON PROSPECT	US	AK	55-15-45N	132-37-25W	CU FE	CONTACT METASOMATIC
A010054	HOUSE OCCURRENCE	US	AK	55-08-41N	132-03-21W	CU	LODE
A015619	HUB PROSPECT	US	AK	67-46-00N	159-36-00W	CU	LODE; VEINS, DISSEMI
A010640	HUBBARD AND ELLIOTT	US	AK	60-17-04N	147-47-15W	CU	INSUFFICIENT DATA TO
A012516	HUNGRY GROUP	US	AK	68-09-35N	147-26-15W	CU	LODE; VEIN
A010235	HYDER SKOOKUM PROPEC	US	AK	56-00-40N	130-02-10W	CU	MASSIVE SULFIDE
A010321	HYDROPIT OCCURRENCE	US	AK	56-22-29N	132-54-53W	PB CU ZN	SHEAR ZONE, VEIN
A010424	IBACH CLAIM	US	AK	60-39-00N	145-24-20W	CU AU PB	VEIN
A016008	IDAHO PROSPECT	US	AK	65-26-58N	167-10-33W	CU F	LODE; REPLACEMENT BR
A012063	INDIANA PROSPECT	US	AK	58-50-39N	135-02-52W	AU? CU	LODE; VEIN, SHEAR ZO

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
A010413	IRON CAP	US	AK	60-00-40N	149-14-55W	CU FE	INSUFFICIENT DATA TO
A010105	IRON CAP PROSPECT	US	AK	55-38-55N	132-23-25W	CU FE AU AG	REPLACEMENT
A010595	IRON MASK PROSPECT	US	AK	59-54-01N	149-16-31W	CU ZN	VEIN
A010159	IT MINING CO.	US	AK	55-34-40N	132-27-55W	CU AU AG MO	CONTACT METASOMATIC
A010416	JENSEN PROSPECT	US	AK	60-53-17N	147-05-57W	CU AU AG	SHEAR ZONE
A011915	JERRI CREEK SULFIDE	US	AK	67-07-44N	155-56-59W	ZN CU AG PB	LODE; DISSEMINATED,
A012362	JEWEL PROSPECT	US	AK	55-11-42N	131-43-33W	CU	LODE; VEIN
A013068	JIMMY LAKE COPPER OC	US	AK	61-44-19N	153-11-45W	CU PB AG MO ZN	LODE; VEIN, DISSEMIN
A010420	JONESY MINE	US	AK	60-20-20N	147-44-06W	CU	SHEAR ZONE; MASSIVE
A010160	JUMBO MINE	US	AK	55-15-10N	132-37-10W	CU AU AG FE ZN MO	CONTACT METASOMATIC
A010683	JUMBO MINE	US	AK	55-15-10N	132-37-10W	CU AU AG FE ZN MO	SKARN
A011314	JUMBO PROSPECT	US	AK	63-14-24N	149-36-19W	CU	LODE; DISSEMINATED S
A010239	JUNEAU OCCURRENCE	US	AK	56-01-30N	130-12-50W	CU PB	VEIN
A010336	KANE PEAK OCCURRENCE	US	AK	56-58-40N	133-07-00W	NI CU	DISSEMINATED
A010656	KASNA CREEK PROSPECT	US	AK	60-09-40N	154-03-00W	CU ZN FE	SKARN OR STRATIFORM
A010301	KEMUK RIVER	US	AK	59-39-30N	159-49-30W	CU	SHEAR ZONE
W002710	KENNECOTT MINE	US	AK	61-31-30N	142-51-30W	CU AG	REPLACEMENT
A010706	KENNECOTT MINES	US	AK	61-31-40N	142-50-40W	CU AG ZN PB	OTHER; KENNECOTT-TYP
A012008	KEYSTONE CLAIMS	US	AK	58-28-48N	134-29-30W	CU PB ZN	LODE; VEIN
A010045	KEYSTONE PROSPECT	US	AK	55-37-05N	132-02-30W	AU AG	STOCKWORK
A010158	KHAYYAM PROSPECT	US	AK	55-17-55N	132-23-15W	CU AG AU ZN	MASSIVE SULFIDE
A010094	KIO CLAIMS	US	AK	55-10-00N	132-08-17W	CU AU PB ZN	LODE
A013033	KNUTSON COPPER PROSP	US	AK	59-50-27N	154-16-49W	CU AG AU	LODE; VEIN; DISSEMIN
A010259	LAKESIDE PROSPECT	US	AK	54-59-40N	132-45-00W	CU	SHEAR ZONE
A010596	LATOUCHE CONSOLIDATE	US	AK	59-56-35N	148-01-04W	CU	INSUFFICIENT DATA TO
A010047	LEIBRANT PROSPECT	US	AK	55-37-50N	132-34-05W	CU	SHEAR ZONE
A011505	LELAND AND LAWTON CL	US	AK	61-39-50N	144-07-35W	CU	LODE; DISSEMINATED,
A010597	LIETZKE PROSPECT	US	AK	59-52-10N	149-16-13W	CU	VEIN
A011232	LLOYD PROSPECT	US	AK	63-33-40N	150-44-25W	CU AU ZN	LODE; STRATABOUND, D
A010000	LOOKOUT PROSPECT	US	AK	55-03-23N	132-08-30W	CU AU AG	MASSIVE SULFIDES; LO
A011509	LOUISE PROSPECT	US	AK	61-38-56N	144-06-00W	CU	LODE; VEIN, STRATABO
A015120	LOWRY'S LEDGE OCCURR	US	AK	64-04-10N	141-01-20W	AU CU	LODE; VEIN
A010001	LUCKY FIND PROSPECT	US	AK	55-31-40N	132-41-00W	CU AU	LODE
A012316	LUCKY FOUR PROSPECT	US	AK	55-31-23N	131-45-24W	CU	LODE; DISSEMINATED
A012096	LUCKY SIX CLAIMS	US	AK	58-45-35N	135-15-10W	CU PB RAM RAE	LODE; VEIN, DISSEMIN
A010260	LUCKY STRIKE OCCURRE	US	AK	54-53-30N	132-57-10W	CU	SHEAR ZONE
A010127	MAGNETITE ORE BODY,	US	AK	55-37-30N	132-35-10W	CU AU AG FE	REPLACEMENT
A010425	MAGUL CLAIM	US	AK	60-53-40N	146-35-40W	CU ZN	SHEAR ZONE
A012449	MALLARD DUCK PROSPEC	US	AK	56-13-45N	158-30-25W	CU MO	LODE; PORPHYRY, VEIN
A010042	MAMIE MINE	US	AK	55-31-20N	132-16-50W	CU AU AG FE	CONTACT METASOMATIC
A010682	MAMIE MINE	US	AK	55-31-10N	132-17-00W	CU AU AG FE	SKARN; CONTACT METAS
A012077	MANSFIELD GOLD MININ	US	AK	58-15-45N	134-51-20W	AU? CU	LODE; VEIN
A012301	MARBLE COPPER PROSPE	US	AK	55-43-22N	130-52-11W	CU AG AU	LODE; SKARN, DISSEMI
A013114	MARGERIE COPPER-GOLD	US	AK	59-00-45N	137-05-14W	CU AU AG W ZN MO	LODE; PORPHYRY, DISS
A010005	MARION PROSPECT	US	AK	55-08-50N	132-29-00W	CU PB	LODE
A011510	MARY ELLEN PROSPECT	US	AK	61-38-46N	144-06-22W	CU AU	LODE; STRATABOUND, S
A011323	MAYFLOWER PROSPECT	US	AK	63-13-04N	149-38-43W	AU AG CU	LODE; DISSEMINATED;
A010002	MCCULLOUGH PROSPECT	US	AK	55-58-40N	132-59-50W	CU ZN AU	LODE
A013050	MCNEIL COPPER CLAIMS	US	AK	59-08-03N	154-38-43W	CU AU AG FE	LODE; SKARN, CONTACT
A012087	MERTIE LODE PROSPECT	US	AK	58-13-54N	134-51-21W	NI CU CO	LODE; STRATIFORM, MA
A011481	MIDAS MINE	US	AK	61-00-46N	146-16-27W	CU AG AU ZN	LODE; REPLACEMENT, S
A012003	MIDDLE PEAK OCCURREN	US	AK	58-15-35N	134-15-12W	CU PB	LODE; VEIN
A010009	MILLER BROTHERS CLAI	US	AK	55-13-25N	132-38-00W	CU AU	INSUFFICIENT DATA TO
A010166	MILLER CLAIM	US	AK	55-03-15N	133-04-10W	CU	LODE
A012106	MILLER PEAK OCCURREN	US	AK	58-43-40N	135-54-15W	CU AG	LODE; VEIN
A013032	MILLET COPPER DEPOSI	US	AK	59-46-58N	154-30-40W	CU AU AG	LODE; SKARN; MASSIVE
A010647	MILLS & TRIMBLE PROS	US	AK	59-15-50N	151-33-10W	CU AU AG NI	VEIN
A011512	MINERAL KING PROSPEC	US	AK	61-38-13N	144-02-05W	CU	LODE; VEIN, STRATABO
A015115	MITCHELL PROSPECT	US	AK	64-05-32N	143-01-15W	CU AG AU	LODE; VEIN, SKARN
A010421	MONTEZUMA CLAIM	US	AK	60-52-00N	146-33-00W	CU AU AG	SHEAR ZONE; LENSES
A012529	MOSQUITO PROSPECT	US	AK	63-53-08N	143-28-15W	CU MO	LODE; DISSEMINATED,
A012336	MOTH BAY ZINC-COPPER	US	AK	55-17-48N	131-20-33W	ZN CU PB AU AG	LODE; DISSEMINATED,
A015410	MOTHER LODE PROSPECT	US	AK	65-02-20N	147-36-40W	CU	LODE; DISSEMINATED
A010103	MOUNT ANDREW MINE	US	AK	55-30-55N	132-18-10W	CU FE AU AG	CONTACT METASOMATIC
A011519	MOUNTAIN BOY PROSPEC	US	AK	61-39-38N	144-01-31W	CU AU?	LODE; VEIN; OTHER: S
A011514	MOUNTAIN SHEEP PROSP	US	AK	61-40-04N	144-03-05W	CU	LODE; DISSEMINATED;
A010136	MT. JUMBO PROSPECT	US	AK	55-15-40N	132-37-55W	CU AG ZN	SKARN

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A012104	MT. YOUNG NO. 2 OCCU	US	AK	58-53-18N	135-34-35W	CU MO AU AG	LODE; DISSEMINATED
A012078	MT. YOUNG NO. 3 OCCU	US	AK	58-51-32N	135-35-10W	CU	LODE; DISSEMINATED
A011513	MULLEN PROSPECT	US	AK	61-40-33N	144-03-52W	CU AG AU	LODE; VEIN, SHEAR ZO
A011240	MYSTERY PROSPECT	US	AK	63-34-55N	150-42-35W	PB SB CU	LODE
A011400	NABESNA GLACIER PROS	US	AK	62-06-45N	142-50-00W	CU ZN AU	LODE; STOCKWORK
A011391	NABESNA RIVER PROSPE	US	AK	62-11-27N	142-55-05W	CU	LODE, STOCKWORK
A012446	NAKCHAMIK ISLAND OCC	US	AK	56-20-05N	157-52-50W	CU	LODE; PORPHYRY
A010102	NANCY CLAIM	US	AK	55-21-05N	132-49-55W	CU	SHEAR ZONE
A010135	NIBLACK COPPER CO.	US	AK	55-04-01N	132-08-48W	CU AU AG ZN	REPLACEMENT
A011325	NIM PROSPECT	US	AK	63-16-22N	149-26-08W	CU MO AG AU	LODE;DISSEMINATED;PO
A012542	NOAH PROSPECT	US	AK	63-09-45N	143-24-45W	CU	LODE; INSUFFICIENT D
A010574	NUKALASKA CO. PROPER	US	AK	59-30-30N	150-39-40W	AU CU PB	VEIN
A010099	O.K. OCCURRENCE	US	AK	55-11-57N	132-02-52W	CU ZN AU AG PB	LODE
A012517	OCCAISIONAL GROUP	US	AK	68-18-15N	147-31-50W	CU PB ZN	LODE; VEIN
A015093	OLD HARBOR PROSPECT	US	AK	57-08-12N	153-20-10W	CU	LODE; SHEAR ZONE, DI
A011243	OLD SOURDOUGH PROSPE	US	AK	63-12-37N	151-05-43W	CU PB ZN	LODE; CONTACT METAMO
A015621	OMAR PROSPECT	US	AK	67-29-40N	160-53-15W	CU	LODE; SHEAR ZONE, GO
D000306	ORANGE HILL	US	AK	62-12- N	142-50- W	MO CU AU AG	DISSEMINATED COPPER;
A010707	ORANGE HILL PROSPECT	US	AK	62-12-15N	142-50-20W	CU MO AU AG	PORPHYRY; VEIN; DISS
A011395	ORANGE HILL PROSPECT	US	AK	62-12-21N	142-50-31W	CU MO AU AG	LODE, PORPHYRY, STOC
A011396	ORANGE HILL-LEMON CL	US	AK	62-11-50N	142-49-00W	CU AU AG ZN FE	LODE, CONTACT METASO
A010098	OREGON CLAIM	US	AK	55-10-07N	132-08-44W	CU AU ZN AG	LODE
A011330	PARTIN CREEK PROSPEC	US	AK	63-04-12N	149-57-29W	AU CU	LODE; REPLACEMENT; S
A013010	PASS PROSPECT	US	AK	60-22-32N	154-28-36W	CU MO AG PB ZN	LODE; VEIN, DISSEMIN
A011516	PEACOCK PROSPECT	US	AK	61-40-16N	144-03-40W	CU	LODE; VEIN, DISSEMIN
A012530	PETERNIE PROSPECT	US	AK	63-36-42N	142-45-55W	MO CU ZN	LODE; PORPHYRY, DISS
A010599	PETERSON PROSPECT	US	AK	59-57-45N	149-16-43W	ZN CU	VEIN
A012532	PIKA CANYON PROSPECT	US	AK	63-49-33N	141-23-35W	CU	LODE; DISSEMINATED,
A010265	POLSON AND ICKIS GRO	US	AK	54-57-00N	132-01-20W	CU AU RAE	SHEAR ZONE; VEIN; DI
A013334	PORTLAND ZINC-LEAD-C	US	AK	57-41-28N	133-22-32W	ZN PB CU AG AU	LODE; VEIN, DISSEMIN
A013312	PRESIDENT GOLD-COPPE	US	AK	57-47-38N	134-41-48W	AU CU PB ZN	LODE; DISSEMINATED
A012536	PUSHBUSH PROSPECT	US	AK	63-31-32N	141-19-20W	CU MO	LODE; DISSEMINATED,
A010658	PYRAMID PROSPECT	US	AK	55-37-40N	160-40-30W	CU MO	PORPHYRY
A011247	QUESTION MARK PROSPE	US	AK	63-12-05N	151-09-30W	CU	LODE; DISSEMINATED
A011362	RAFT CREEK OCCURRENC	US	AK	63-04-02N	147-16-06W	CU	LODE; VEIN; SHEAR ZO
A010264	RANGER PROSPECT	US	AK	54-50-00N	132-18-50W	CU FE	DISSEMINATED
A011331	READY CASH PROSPECT	US	AK	63-08-50N	149-51-51W	AG CU SN AU PB ZN	LODE; DISSEMINATED;
A012356	RED RIVER PROSPECT	US	AK	55-04-10N	130-31-00W	CU MO	LODE; DISSEMINATED
A010131	REED OCCURRENCE	US	AK	55-34-50N	132-28-40W	CU	INSUFFICIENT DATA TO
A012354	RELIANCE PROSPECT	US	AK	55-16-35N	130-56-53W	AU AG CU ZN	LODE; REPLACEMENT(?)
A010130	REX CLAIM	US	AK	55-14-20N	132-32-05W	CU FE	SHARN
A011418	REYNOLDS PROSPECT	US	AK	62-10-44N	141-25-34W	CU	LODE, VOLCANOGENIC
A010438	REYNOLDS-ALASKA DEVE	US	AK	60-53-00N	146-37-00W	CU	VEIN
A010600	REYNOLDS-ALASKA DEVE	US	AK	59-59-14N	149-15-03W	CU	SHEAR ZONE
A010129	RICH HILL MINE	US	AK	55-31-10N	132-20-15W	CU FE MO	MASSIVE SULFIDE
A010650	ROCK PROSPECTS	US	AK	59-13-25N	151-38-25W	CU ZN	VEINS
A010440	RUA PROPERTY	US	AK	60-53-00N	146-38-35W	CU	SHEAR ZONE (?)
A012822	RUBY AND GOLCONDA CL	US	AK	64-40-25N	165-28-36W	CU	LODE; VEIN
A010661	RUBY CREEK PROSPECT	US	AK	67-03-50N	156-56-50W	CU ZN PB AG AU CO	BRECCIA, STRATABOUND
A010126	RUSSIAN BEAR PROSPEC	US	AK	55-13-40N	132-35-40W	CU	CONTACT METASOMATIC
A010125	SACO PROSPECT	US	AK	55-13-33N	132-03-30W	CU AU AG	LODE
M045359	SALT CHUCK	US	AK	55-38- N	132-33-30W	CU AU FE PT AG PD	EPIGENETIC DEPOSIT,
A012365	SANFORD PROSPECT	US	AK	55-11-54N	131-43-39W	CU	LODE; VEIN, SHEAR ZO
A010409	SCHULTZ	US	AK	60-13-39N	147-45-45W	CU	DISSEMINATED
A010601	SEATTLE ALASKA COPPE	US	AK	59-57-15N	147-58-56W	CU ZN	SHEAR ZONE
A010526	SHAW, DEBRUEL & BOUC	US	AK	60-06-23N	149-15-33W	CU AU	MASSIVE SULFIDE
A010128	SHEAR ZONE ORE BODY,	US	AK	55-37-30N	132-35-10W	CU AU AG	SHEAR ZONE
A011558	SHELLABARGER PASS PR	US	AK	62-33-38N	152-47-21W	CU ZN AG PB AU	LODE, MASSIVE SULFID
A010151	SHELLHOUSE PROSPECT	US	AK	55-03-25N	133-04-20W	CU	LODE
A010123	SHELTON PROSPECT	US	AK	55-25-50N	132-39-15W	CU AU AG	LODE
A010247	SILVER BAR OCCURRENC	US	AK	56-03-40N	130-08-40W	CU PB	VEIN
A011334	SILVER KING PROSPECT	US	AK	63-15-31N	149-32-57W	AU SB CU	LODE; VEIN; DISSEMIN
A010530	SIWASH BAY	US	AK	60-58-11N	147-38-09W	CU	INSUFFICIENT DATA TO
A012322	SIX POINT PROSPECT	US	AK	55-22-48N	131-51-10W	CU	LODE; VEIN
A010660	SMUCKER PROSPECT	US	AK	67-17-50N	157-10-40W	ZN PB AG CU SB	STRATABOUND, VOLCANC
A013257	SNOW SLIDE COPPER PR	US	AK	57-47-38N	136-15-25W	CU	LODE; DISSEMINATED
A010535	SNUG HARBOR	US	AK	60-15-25N	147-41-55W	CU ZN	SHEAR ZONE, MASSIVE

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A010648	SONNY FOX MINING CO.	US	AK	59-32-30N	150-27-30W	AU CU AG ZN PB	VEIN
A010537	SOUTH ARM OCCURRENCE	US	AK	60-22-12N	147-41-41W	CU	DISSEMINATED
A010548	SOUTH MARSHA BAY	US	AK	60-19-15N	147-39-49W	CU ZN	SHEAR ZONE
A010266	SPIK PROSPECT	US	AK	54-46-20N	132-03-40W	CU	MASSIVE SULFIDE
A011502	SPIRIT MOUNTAIN PROS	US	AK	61-18-34N	144-15-38W	NI CU	LODE; MASSIVE, DISSE
A010146	STEVENS OCCURRENCE	US	AK	55-38-10N	132-34-20W	CU	INSUFFICIENT DATA TO
A010147	STEVENS OCCURRENCE	US	AK	55-37-10N	132-32-35W	CU	MASSIVE SULFIDE
A010145	STEVENSTOWN MINE	US	AK	55-30-50N	132-17-25W	CU AU AG FE	CONTACT METASOMATIC
A010144	SULTANA PROSPECT	US	AK	55-17-10N	132-33-50W	CU NI CO	DISSEMINATED
A011417	SULZER PROSPECT	US	AK	62-12-02N	141-27-39W	CU	LODE, VOLCANOGENIC
A013330	SUMDUM (NORTH) COPPE	US	AK	57-47-32N	133-27-26W	CU ZN PB AG AU	LODE; MASSIVE SULFID
A013331	SUMDUM (SOUTH) COPPE	US	AK	57-46-26N	133-26-14W	CU ZN PB AG AU	LODE; MASSIVE SULFID
A010667	SUMDUM PROSPECT	US	AK	57-46-40N	133-26-30W	CU ZN AG PB	METAMORPHIC STRATIFO
A010669	SUN PROSPECT	US	AK	67-04-30N	155-01-00W	CU ZN PB AG	STRATA FORM, VOLCANO
A011912	SUN PROSPECT	US	AK	67-04-32N	155-01-42W	ZN PB CU AG	LODE; MASSIVE, STRAT
A010142	SUNNY DAY PROSPECT	US	AK	55-33-15N	132-23-20W	CU AU AG	LODE
A011499	SURPRISE CREEK PROSP	US	AK	61-24-04N	144-15-13W	CU	LODE; VEIN, DISSEMIN
A012535	TAURUS PROSPECT	US	AK	63-31-15N	141-19-25W	CU MO	LODE; PORPHYRY, DISS
A011256	TERMINUS PROSPECT	US	AK	63-11-56N	151-07-00W	CU ZN	LODE; CONTACT METASO
A010141	TOLSTOI OCCURRENCE	US	AK	55-38-25N	132-22-20W	CU FE	INSUFFICIENT DATA TO
A010558	TWENTIETH CENTURY KN	US	AK	60-18-55N	147-43-51W	CU	SHEAR ZONE; MASSIVE
D002580	TWIN MOUNTAIN CREEK	US	AK	64-39- N	165-30- W	W CU AU	QUARTZ VEINS AND PLA
A010139	UNCLE SAM MINE	US	AK	55-31-50N	132-21-30W	CU AU	MASSIVE SULFIDES
A013066	UNNAMED COPPER AND G	US	AK	61-44-25N	153-29-16W	AU CU ZN MO	LODE; VEIN, DISSEMIN
A013497	UNNAMED COPPER OCCUR	US	AK	65-36-53N	165-08-04W	CU AU	LODE; VEIN (?), SKAR
A013062	UNNAMED COPPER OCCUR	US	AK	61-35-46N	153-34-57W	CU	LODE; VEIN, DISSEMIN
A013063	UNNAMED COPPER OCCUR	US	AK	61-35-46N	153-34-00W	CU ZN	LODE; VEIN, DISSEMIN
A013065	UNNAMED COPPER OCCUR	US	AK	61-31-05N	153-29-10W	CU	LODE; VEIN, DISSEMIN
A013067	UNNAMED COPPER OCCUR	US	AK	61-34-20N	153-18-52W	CU AG AU	LODE; VEIN, DISSEMIN
A013069	UNNAMED COPPER OCCUR	US	AK	61-41-02N	158-02-47W	CU	LODE; SHEAR ZONE, DI
A013070	UNNAMED COPPER OCCUR	US	AK	61-39-43N	153-02-21W	CU AG PB ZN MN AU	LODE; DISSEMINATED
A013104	UNNAMED COPPER OCCUR	US	AK	59-17-19N	135-40-40W	CU AG	LODE; VEIN
A013286	UNNAMED COPPER OCCUR	US	AK	57-37-18N	135-52-27W	CU	LODE; DISSEMINATED
A013288	UNNAMED COPPER OCCUR	US	AK	57-31-47N	135-48-35W	CU	LODE; DISSEMINATED
A013290	UNNAMED COPPER OCCUR	US	AK	57-25-44N	135-45-41W	CU	LODE; DISSEMINATED
A013293	UNNAMED COPPER OCCUR	US	AK	57-47-53N	135-06-16W	CU	LODE; VEIN
A013315	UNNAMED COPPER OCCUR	US	AK	57-44-08N	134-21-14W	CU	LODE; DISSEMINATED
A012664	UNNAMED COPPER PROSP	US	AK	64-54-55N	164-38-25W	CU AU AG	LODE; DISSEMINATED,
A012666	UNNAMED COPPER PROSP	US	AK	64-53-41N	164-37-09W	CU	LODE; VEIN(?)
A012676	UNNAMED COPPER PROSP	US	AK	64-56-52N	164-40-21W	CU	LODE; DISSEMINATED,
A012665	UNNAMED COPPER PROSP	US	AK	64-54-25N	164-37-30W	CU	LODE; INSUFFICIENT D
A013457	UNNAMED COPPER-SILVE	US	AK	60-30-05N	158-44-39W	CU AG	LODE; VEIN
A013103	UNNAMED COPPER-SILVE	US	AK	59-19-18N	135-40-01W	CU AG AU	LODE; VEIN
A013105	UNNAMED COPPER-SILVE	US	AK	59-28-47N	135-28-04W	AG CU	LODE; VEIN, SHEAR ZO
A013106	UNNAMED COPPER-SILVE	US	AK	59-25-06N	135-25-40W	AG CU	LODE; MASSIVE SULFID
A013362	UNNAMED COPPER-SILVE	US	AK	57-19-45N	132-45-13W	CU AG	LODE; VEIN, DISSEMIN
A013313	UNNAMED GOLD-SILVER-	US	AK	57-39-42N	134-14-40W	AU AG CU	LODE; VEIN
A010018	UNNAMED OCCURRANCE	US	AK	55-30-45N	132-31-45W	CU	SKUR; DISSEMINATED
A011366	UNNAMED OCCURRANCE	US	AK	63-05-56N	147-45-05W	CU	INSUFFICIENT DATA TO
A012776	UNNAMED OCCURRENCE	US	AK	65-30-30N	162-30-00W	CU	LODE; VEIN, MASSIVE
A012755	UNNAMED OCCURRENCE	US	AK	65-10-00N	163-47-35W	CU AU?	LODE; DISSEMINATED
A012817	UNNAMED OCCURRENCE	US	AK	64-40-26N	165-21-01W	CU	LODE; INSUFFICIENT D
A015638	UNNAMED OCCURRENCE	US	AK	69-01-22N	144-40-00W	CU	LODE; DISSEMINATED
A015641	UNNAMED OCCURRENCE	US	AK	69-17-00N	143-36-00W	CU	LODE; DISSEMINATED,
A015643	UNNAMED OCCURRENCE	US	AK	69-28-00N	142-49-00W	CU	LODE; VEIN
A015689	UNNAMED OCCURRENCE	US	AK	68-38-00N	156-51-00W	CU	LODE; DISSEMINATED
A015648	UNNAMED OCCURRENCE	US	AK	68-58-00N	146-13-00W	CU	LODE, DISSEMINATED
A015649	UNNAMED OCCURRENCE	US	AK	68-16-00N	146-44-00W	CU	LODE; DISSEMINATED
A015650	UNNAMED OCCURRENCE	US	AK	68-05-00N	146-21-00W	CU	LODE; DISSEMINATED
A015657	UNNAMED OCCURRENCE	US	AK	63-28-00N	171-44-00W	CU	LODE; DISSEMINATED
A015661	UNNAMED OCCURRENCE	US	AK	63-20-00N	171-23-00W	PB CU ZN	LODE; VEIN
A010017	UNNAMED OCCURRENCE	US	AK	55-18-00N	132-41-55W	CU	INSUFFICIENT DATA TO
A010024	UNNAMED OCCURRENCE	US	AK	55-29-05N	132-31-35W	CU	DISSEMINATED
A010028	UNNAMED OCCURRENCE	US	AK	55-34-40N	132-38-25W	CU PB W	DISSEMINATED; LODE
A010032	UNNAMED OCCURRENCE	US	AK	55-31-40N	133-36-05W	CU NI MO	LODE, DISSEMINATED
A010067	UNNAMED OCCURRENCE	US	AK	55-05-20N	132-29-25W	CU	SHEAR ZONE
A010068	UNNAMED OCCURRENCE	US	AK	55-38-20N	132-35-50W	CU AU	LODE; DISSEMIRATED

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A010069	UNNAMED OCCURRENCE	US	AK	55-36-40N	132-36-35W	CU	LODE; DISSEMINATED
A010173	UNNAMED OCCURRENCE	US	AK	55-27-25N	133-48-50W	CU	INSUFFICIENT DATA TO
A010174	UNNAMED OCCURRENCE	US	AK	55-27-50N	132-48-35W	CU	INSUFFICIENT DATA TO
A010176	UNNAMED OCCURRENCE	US	AK	55-22-40N	132-52-10W	CU	INSUFFICIENT DATA TO
A010177	UNNAMED OCCURRENCE	US	AK	55-24-20N	133-18-00W	CU	INSUFFICIENT DATA TO
A010178	UNNAMED OCCURRENCE	US	AK	55-22-20N	132-48-20W	CU	INSUFFICIENT DATA TO
A010180	UNNAMED OCCURRENCE	US	AK	55-18-35N	132-41-20W	CU	LODE
A010182	UNNAMED OCCURRENCE	US	AK	55-18-50N	132-46-50W	CU	INSUFFICIENT DATA TO
A010184	UNNAMED OCCURRENCE	US	AK	55-30-55N	132-44-05W	CU PB	LODE
A010205	UNNAMED OCCURRENCE	US	AK	56-02-50N	130-23-35W	CU AU AG	VEIN
A010285	UNNAMED OCCURRENCE	US	AK	56-15-45N	131-36-15W	CU	INSUFFICIENT DATA TO
A010363	UNNAMED OCCURRENCE	US	AK	60-52-43N	147-11-14W	CU	SHEAR ZONE, MASSIVE
A010431	UNNAMED OCCURRENCE	US	AK	61-00-00N	146-16-00W	CU	OTHER: MINERALIZED Z
A010433	UNNAMED OCCURRENCE	US	AK	60-51-10N	146-32-50W	CU AU AG PB ZN	SHEAR ZONE
A010562	UNNAMED OCCURRENCE	US	AK	60-01-01N	147-50-49W	CU	GOSSAN
A010563	UNNAMED OCCURRENCE	US	AK	60-13-00N	147-48-32W	CU	INSUFFICIENT DATA TO
A010564	UNNAMED OCCURRENCE	US	AK	60-20-47N	147-46-26W	CU	SHEAR ZONE
A010603	UNNAMED OCCURRENCE	US	AK	59-52-50N	149-15-38W	CU PB AG ZN	SHEAR ZONE
A011285	UNNAMED OCCURRENCE	US	AK	63-57-20N	150-22-10W	CU AG PB	LODE
A011292	UNNAMED OCCURRENCE	US	AK	63-37-31N	150-36-17W	CU	LODE; DISSEMINATED
A011293	UNNAMED OCCURRENCE	US	AK	63-43-53N	150-23-26W	CU	LODE; DISSEMINATED
A011363	UNNAMED OCCURRENCE	US	AK	63-41-11N	147-39-32W	CU	LODE
A011367	UNNAMED OCCURRENCE	US	AK	63-06-41N	147-42-07W	CU	INSUFFICIENT DATA TO
A011369	UNNAMED OCCURRENCE	US	AK	63-30-30N	148-47-00W	CU	LODE, DISSEMINATED S
A011375	UNNAMED OCCURRENCE	US	AK	63-27-54N	149-08-42W	CU	LODE; SKARN
A011379	UNNAMED OCCURRENCE	US	AK	62-53-11N	143-39-22W	CU AU AG	LODE, VOLCANOGENIC
A011380	UNNAMED OCCURRENCE	US	AK	62-52-00N	143-31-30W	CU	LODE, VOLCANOGENIC
A011385	UNNAMED OCCURRENCE	US	AK	62-29-00N	143-04-00W	CU	LODE, VOLCANOGENIC,
A011392	UNNAMED OCCURRENCE	US	AK	62-09-05N	142-55-07W	FE CU	LODE, CONTACT METASO
A011394	UNNAMED OCCURRENCE	US	AK	62-07-49N	142-55-53W	CU;	LODE, CONTACT METASO
A011399	UNNAMED OCCURRENCE	US	AK	62-06-57N	142-49-11W	CU ZN	LODE, VEIN
A011401	UNNAMED OCCURRENCE	US	AK	62-02-07N	142-50-26W	CU	LODE, VOLCANOGENIC
A011402	UNNAMED OCCURRENCE	US	AK	62-10-55N	142-45-56W	CU PB	LODE, BRECCIA PIPE ?
A011405	UNNAMED OCCURRENCE	US	AK	62-10-17N	142-37-09W	CU	LODE, BRECCIA PIPE?
A011406	UNNAMED OCCURRENCE	US	AK	62-06-45N	142-00-41W	CU PB ZN	LODE, VEIN
A011408	UNNAMED OCCURRENCE	US	AK	62-04-18N	142-34-34W	CU PB ZN	LODE, VEIN, DISSEMIN
A011409	UNNAMED OCCURRENCE	US	AK	62-25-37N	142-18-43W	CU	LODE,VEIN
A011410	UNNAMED OCCURRENCE	US	AK	62-24-59N	142-18-06W	CU	LODE, VEIN?
A011414	UNNAMED OCCURRENCE	US	AK	62-06-45N	141-49-00W	ZN PB CU AG	LODE, VEIN
A011419	UNNAMED OCCURRENCE	US	AK	62-09-02N	141-18-21W	CU	LODE, VEIN
A011424	UNNAMED OCCURRENCE	US	AK	62-03-37N	141-10-50W	CU MO AU	LODE, PORPHYRY
A011426	UNNAMED OCCURRENCE	US	AK	62-04-42N	141-04-02W	CU AG	LODE, VEIN
A011437	UNNAMED OCCURRENCE	US	AK	62-11-56N	142-26-23W	CU	LODE, CONTACT METAMO
A011441	UNNAMED OCCURRENCE	US	AK	62-31-59N	142-53-20W	CU	LODE, VOLCANOGENIC
A011540	UNNAMED OCCURRENCE	US	AK	62-42-45N	151-49-25W	CU NI CR	LODE; MASSIVE SULFID
A011541	UNNAMED OCCURRENCE	US	AK	62-18-30N	152-37-45W	CU	LODE; DISSEMINATED,
A011542	UNNAMED OCCURRENCE	US	AK	62-56-10N	151-17-15W	CU AU	LODE; DISSEMINATED,
A011543	UNNAMED OCCURRENCE	US	AK	62-32-10N	152-24-43W	CU NI	LODE; TACTITE, CONTA
A011566	UNNAMED OCCURRENCE	US	AK	62-33-22N	152-11-54W	CU AG AU	LODE; MASSIVE SULFID
A011569	UNNAMED OCCURRENCE	US	AK	62-44-30N	152-13-00W	CU	LODE; MASSIVE SULFID
A012292	UNNAMED OCCURRENCE	US	AK	55-50-00N	130-25-00W	CU	LODE; DISSEMINATED(?
A012293	UNNAMED OCCURRENCE	US	AK	55-58-40N	130-51-00W	CU MO	
A012294	UNNAMED OCCURRENCE	US	AK	55-55-40N	130-48-53W	CU	LODE; DISSEMINATED(?
A012295	UNNAMED OCCURRENCE	US	AK	55-55-15N	130-42-42W	CU	LODE; DISSEMINATED(?
A012296	UNNAMED OCCURRENCE	US	AK	55-53-53N	130-42-17W	CU	LODE; DISSEMINATED(?
A012297	UNNAMED OCCURRENCE	US	AK	55-50-30N	130-00-30W	CU	LODE; VEIN, DISSEMIN
A012300	UNNAMED OCCURRENCE	US	AK	55-43-42N	130-51-25W	CU MO	LODE; VEIN
A012302	UNNAMED OCCURRENCE	US	AK	55-42-48N	130-52-09W	CU	LODE; DISSEMINATED(?
A012374	UNNAMED OCCURRENCE	US	AK	55-12-47N	131-32-30W	CU	INSUFFICIENT DATA TO
A012377	UNNAMED OCCURRENCE	US	AK	55-10-15N	131-35-39W	CU PB	LODE; VEIN, SHEAR ZO
A012379	UNNAMED OCCURRENCE	US	AK	55-10-30N	131-33-24W	CU	LODE; VEIN
A012380	UNNAMED OCCURRENCE	US	AK	55-10-36N	131-32-52W	CU	LODE; VEIN, DISSEMIN
A012381	UNNAMED OCCURRENCE	US	AK	55-12-17N	131-24-57W	CU	LODE; DISSEMINATED
A012383	UNNAMED OCCURRENCE	US	AK	55-09-12N	131-21-43W	PB ZN CU	LODE; VEIN, DISSEMIN
A012388	UNNAMED OCCURRENCE	US	AK	55-06-35N	131-23-40W	CU PB	LODE; VEIN, DISSEMIN
A012389	UNNAMED OCCURRENCE	US	AK	55-06-35N	131-26-27W	CU	LODE; DISSEMINATED
A012390	UNNAMED OCCURRENCE	US	AK	55-07-34N	131-34-00W	CU	LODE; DISSEMINATED

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A012392	UNNAMED OCCURRENCE	US	AK	55-04-51N	131-32-30W	CU	LODE; DISSEMINATED
A012393	UNNAMED OCCURRENCE	US	AK	55-02-10N	131-38-51W	CU	LODE; DISSEMINATED (
A012394	UNNAMED OCCURRENCE	US	AK	55-03-31N	131-21-11W	CU	LODE; DISSEMINATED
A012475	UNNAMED OCCURRENCE	US	AK	57-21-30N	154-35-40W	CU CR	LODE; STRATIFORM, DI
A012476	UNNAMED OCCURRENCE	US	AK	57-21-32N	154-35-39W	CU	LODE; DISSEMINATED
A012491	UNNAMED OCCURRENCE	US	AK	64-45-59N	144-52-51W	CU AG SB	LODE; INSUFFICIENT D
A012501	UNNAMED OCCURRENCE	US	AK	64-49-50N	146-00-59W	CU	LODE; VEIN
A012507	UNNAMED OCCURRENCE	US	AK	64-50-12N	144-56-59W	CU ZN SB	LODE; SKARN
A012513	UNNAMED OCCURRENCE	US	AK	68-06-55N	147-58-45W	CU	LODE; VEIN, STRATABO
A012515	UNNAMED OCCURRENCE	US	AK	68-10-50N	147-39-20W	CU	LODE; VEIN
A012519	UNNAMED OCCURRENCE	US	AK	68-13-55N	147-39-30W	CU	LODE; VEIN (?)
A012566	UNNAMED OCCURRENCE	US	AK	67-56-28N	148-22-02W	CU	LODE; VEIN, DISSEMIN
A015231	UNNAMED OCCURRENCE	US	AK	65-03-08N	142-39-38W	CU	LODE; VEIN
A015600	UNNAMED OCCURRENCE	US	AK	66-06-40N	156-01-10W	CU RE TH U	LODE; VEIN
A012669	UNNAMED OCCURRENCE	US	AK	64-56-49N	164-37-05W	CU PB	LODE; DISSEMINATED,
A012601	UNNAMED OCCURRENCE	US	AK	64-44-30N	164-19-30W	CU	LODE; DISSEMINATED,
A012605	UNNAMED OCCURRENCE	US	AK	64-40-36N	164-23-10W	CU AU	LODE; DISSEMINATED,
A011919	UNNAMED OCCURRENCE	US	AK	67-15-37N	154-28-27W	CU	LODE; DISSEMINATED,
A011920	UNNAMED OCCURRENCE	US	AK	67-21-43N	154-33-34W	CU	LODE; VEIN
A011922	UNNAMED OCCURRENCE	US	AK	67-25-33N	154-06-21W	CU ZN W	LODE; SKARN, MASSIVE
A011923	UNNAMED OCCURRENCE	US	AK	67-28-33N	154-40-53W	CU AG ZN PB	LODE; MASSIVE, CONTA
A011928	UNNAMED OCCURRENCE	US	AK	67-27-42N	154-59-37W	CU AG	LODE; VEIN, GOSSAN,
A011931	UNNAMED OCCURRENCE	US	AK	67-49-25N	155-15-36W	CU PB AG	LODE; VEIN
A011932	UNNAMED OCCURRENCE	US	AK	67-50-16N	155-15-46W	CU ZN PB AG	LODE; MASSIVE, DISSE
A011933	UNNAMED OCCURRENCE	US	AK	67-34-59N	151-55-17W	CU	LODE; MASSIVE, DISSE
A011934	UNNAMED OCCURRENCE	US	AK	67-32-15N	151-29-30W	CU	LODE; VEIN
A011935	UNNAMED OCCURRENCE	US	AK	67-31-51N	151-35-15W	CU PB	LODE; STOCKWORK
A011936	UNNAMED OCCURRENCE	US	AK	67-28-24N	151-28-45W	CU	LODE; VEIN
A011937	UNNAMED OCCURRENCE	US	AK	67-29-46N	151-30-28W	CU SB AG	LODE; VEIN
A011942	UNNAMED OCCURRENCE	US	AK	67-22-56N	150-09-37W	CU	LODE; VEIN
A011951	UNNAMED OCCURRENCE	US	AK	67-32-55N	152-33-24W	CU	LODE; INSUFFICIENT D
A011955	UNNAMED OCCURRENCE	US	AK	67-24-43N	150-07-24W	CU	LODE; VEIN
A011962	UNNAMED OCCURRENCE	US	AK	67-31-06N	151-57-30W	CU PB	LODE; STOCKWORK, DIS
A011969	UNNAMED OCCURRENCE	US	AK	67-06-22N	152-18-06W	CU	LODE; DISSEMINATED
A011970	UNNAMED OCCURRENCE	US	AK	67-16-44N	152-28-15W	CU PB	LODE; STOCKWORK
A011972	UNNAMED OCCURRENCE	US	AK	67-32-30N	152-03-42W	CU AG	LODE; DISSEMINATED (
A011977	UNNAMED OCCURRENCE	US	AK	67-24-21N	152-45-54W	CU ZN AG SN	LODE; DISSEMINATED,
A011978	UNNAMED OCCURRENCE	US	AK	67-23-57N	152-45-18W	CU ZN	LODE; CONTACT METASO
A011979	UNNAMED OCCURRENCE	US	AK	67-21-34N	152-39-18W	CU AG	LODE; INSUFFICIENT D
A011981	UNNAMED OCCURRENCE	US	AK	67-22-54N	151-59-48W	CU ZN	LODE; DISSEMINATED (
A011982	UNNAMED OCCURRENCE	US	AK	67-35-31N	151-53-42W	CU ZN PB AG	LODE; DISSEMINATED
A011983	UNNAMED OCCURRENCE	US	AK	67-21-25N	151-49-18W	CU	LODE; DISSEMINATED
A011984	UNNAMED OCCURRENCE	US	AK	67-21-07N	152-26-48W	CU	LODE; DISSEMINATED
A011985	UNNAMED OCCURRENCE	US	AK	67-32-50N	152-02-42W	CU	LODE; VEIN, DISSEMIN
A011987	UNNAMED OCCURRENCE	US	AK	67-33-38N	152-00-00W	CU	LODE; VEIN DISSEMINA
A011988	UNNAMED OCCURRENCE	US	AK	67-36-31N	151-54-06W	CU ZN	LODE; STRATIFORM, MA
A011991	UNNAMED OCCURRENCE	US	AK	67-18-24N	151-14-12W	CU SN	LODE; MASSIVE SULFID
A011992	UNNAMED OCCURRENCE	US	AK	67-18-30N	151-14-18W	CU ZN AU AG	LODE; MASSIVE SULFID
A011993	UNNAMED OCCURRENCE	US	AK	67-18-18N	151-14-34W	MO? CU	LODE; INSUFFICIENT D
A011994	UNNAMED OCCURRENCE	US	AK	67-25-36N	151-16-54W	CU	LODE; DISSEMINATED
A011997	UNNAMED OCCURRENCE	US	AK	67-28-36N	151-28-48W	CU AG	UNKNOWN
A011998	UNNAMED OCCURRENCE	US	AK	67-30-54N	152-18-33W	CU	LODE; VEIN
A012079	UNNAMED OCCURRENCE	US	AK	58-56-05N	135-57-00W	CU	LODE; DISSEMINATED
A012093	UNNAMED OCCURRENCE	US	AK	58-11-55N	134-49-55W	CU PB	LODE; DISSEMINATED
A012105	UNNAMED OCCURRENCE	US	AK	58-57-53N	135-33-13W	CU	LODE; DISSEMINATED
A012109	UNNAMED OCCURRENCE	US	AK	58-50-39N	135-40-21W	CU	INSUFFICIENT DATA TO
A012827	UNNAMED OCCURRENCE	US	AK	64-40-26N	165-21-01W	CU	LODE; INSUFFICIENT D
A010175	UNNAMED OCCURRENCES	US	AK	55-25-35N	133-15-20W	CU	INSUFFICIENT DATA TO
A010179	UNNAMED OCCURRENCES	US	AK	55-16-00N	133-38-00W	CU	INSUFFICIENT DATA TO
A010183	UNNAMED OCCURRENCES	US	AK	55-15-25N	132-37-10W	CU FE	SKARN
A012372	UNNAMED OCCURRENCES	US	AK	55-14-46N	131-31-24W	CU SB	INSUFFICIENT DATA TO
A012773	UNNAMED PROSPECT	US	AK	65-12-15N	163-49-00W	PB CU	LODE; VEIN, SHEAR ZO
A012768	UNNAMED PROSPECT	US	AK	65-11-56N	163-52-11W	CU PB	LODE; INSUFFICIENT D
A012767	UNNAMED PROSPECT	US	AK	65-11-57N	163-52-35W	CU PB	LODE; BRECCIA, GOSSA
A012838	UNNAMED PROSPECT	US	AK	64-34-48N	165-19-56W	AU CU	LODE; VEIN
A010084	UNNAMED PROSPECT	US	AK	55-37-40N	132-23-00W	CU AU	INSUFICIENT DATA TO
A010352	UNNAMED PROSPECT	US	AK	60-24-39N	147-38-55W	CU	DISSEMINATED

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A010430	UNNAMED PROSPECT	US	AK	60-49-10N	146-33-00W	AU CU PB ZN	VEIN
A010565	UNNAMED PROSPECT	US	AK	60-51-58N	147-10-21W	CU	SHEAR ZONE
A010566	UNNAMED PROSPECT	US	AK	60-16-39N	147-41-06W	CU ZN	INSUFFICIENT DATA TO
A010584	UNNAMED PROSPECT	US	AK	61-57-40N	152-57-40W	CU PB AU AG	VEIN
A010587	UNNAMED PROSPECT	US	AK	61-50-50N	152-53-40W	AU CU PB	VEIN
A010651	UNNAMED PROSPECT	US	AK	59-18-00N	151-19-00W	AU AG CU ZN	VEINS
A011397	UNNAMED PROSPECT	US	AK	62-09-20N	142-49-39W	CU	LODE, VEIN, DISSEMIN
A011398	UNNAMED PROSPECT	US	AK	62-08-46N	142-49-18W	CU	LODE, STOCKWORK
A011421	UNNAMED PROSPECT	US	AK	62-03-22N	141-15-21W	CU	LODE, VEIN
A011478	UNNAMED PROSPECT	US	AK	61-02-46N	146-35-08W	CU ZN PB	LODE; DISSEMINATED,
A011479	UNNAMED PROSPECT	US	AK	61-01-54N	146-33-27W	CU ZN	LODE; DISSEMINATED;
A012320	UNNAMED PROSPECT	US	AK	55-15-48N	131-50-00W	CU	LODE; MASSIVE(?)
A012411	UNNAMED PROSPECT	US	AK	54-53-00N	131-14-27W	CU NI	INSUFFICIENT DATA TO
A011916	UNNAMED PROSPECT	US	AK	67-12-14N	155-46-46W	CU	LODE; VOLCANOGENIC(?
A013064	UNNAMED SILVER OCCUR	US	AK	61-27-45N	153-42-20W	AG CU PB ZN SB MN	LODE; MASSIVE SULFID
A010217	UNUK RIVER OCCURRENC	US	AK	56-20-00N	130-46-10W	CU	VEIN
A011938	VERMONT DOME OCCURRE	US	AK	67-31-11N	150-13-48W	CU	LODE; VEIN?
A010441	WAGNER MINE	US	AK	60-53-25N	140-38-35W	CU	SHEAR ZONE; VEIN?
A010138	WAKEFIELD CLAIMS	US	AK	55-04-21N	132-10-58W	CU AU AG	MASSIVE SULFIDE
A010137	WALLACE CLAIM	US	AK	55-38-45N	132-22-15W	CU	LODE
A016025	WARD MINE	US	AK	65-44-28N	165-13-10W	CU	LODE; REPLACEMENT, J
A012370	WASHINGTON PROSPECT	US	AK	55-09-22N	131-45-13W	CU	LODE; VEIN, BRECCIA
A012445	WEASEL MOUNTAIN PROS	US	AK	56-30-00N	158-10-55W	CU MO	LODE; PORPHYRY, DISS
A010171	WESTCOTT CLAIM	US	AK	55-04-13N	132-09-00W	CU	MASSIVE SULFIDE
A010602	WHALE OCCURRENCE	US	AK	59-58-39N	148-00-34W	CU	SHEAR ZONE
A012668	WHEELER PROSPECT	US	AK	64-55-30N	164-38-50W	CU AU AG	LODE; DISSEMINATED,
A012113	WHITE GLACIER, AREA	US	AK	58-49-03N	135-55-10W	ZN CU AG BA SR	LODE; STRATABOUND (?
A012319	WHITE KNIGHT PROSPEC	US	AK	55-20-20N	131-51-30W	CU	LODE; VEIN?
A010559	WILCOX PROSPECT	US	AK	60-12-24N	147-44-00W	CU	MASSIVE SULFIDE; DIS
A011495	WILLOW MOUNTAIN OCCU	US	AK	61-46-25N	145-10-58W	ZN CU	LODE; DISSEMINATED;
A010560	WILSON	US	AK	60-14-57N	148-09-24W	CU	VEIN
A012450	WINDY BAY OCCURRENCE	US	AK	56-08-38N	158-45-40W	CU	LODE; CONTACT METASO
A013496	WPRCESTER COPPER-LEA	US	AK	65-37-43N	165-08-03W	CU PB	LODE; SKARN (?)
A012095	YORK CREEK OCCURRENC	US	AK	58-38-54N	135-55-15W	CU CO NI	LODE; VEIN, DISSEMIN
W028553	CHULAFINNEE COPPER A	US	AL	33-33-20N	085-39-15W	CU	STRATABOUND
W028558	HATCHET CREEK PROSPE	US	AL	33-12-00N	085-57-20W	CU S FE	DISSEMINATED
W028557	HATCHET CREEK PROSPE	US	AL	33-15-00N	086-01-30W	CU S FE	DISSEMINATED
W029030	JOHNSON PROSPECT	US	AL	33-30-07N	085-28-15W	CU	STRATAFORM; MASSIVE
W028562	ODENVILLE COPPER PRO	US	AL	33-40-15N	086-24-00W	CU LST	VEIN
W028554	OLD WOODS COPPER MIN	US	AL	33-30-45N	085-32-20W	CU FE S ZN	MASSIVE SULFIDE; ST
W101810	OLD WOODS CU MINE	US	AL	33-30-45N	085-32-20W	CU S ZN	STRATABOUND CONCORD
W029031	SMITH PROSPECT	US	AL	33-30-13N	085-27-00W	CU	STRATAFORM; MASSIVE
W101809	STONE HILL CU MINE E	US	AL	33-29-40N	085-27-20W	CU FE S ZN	STRATABOUND CONCORD
W028550	TRICKEM COPPER ANOMO	US	AL	33-33-45N	085-26-00W	CU	STRATABOUND
W101732	UNNAMED, NEAR HATCHE	US	AL	33-13-42N	086-00-25W	CU	VEIN OR STRATABOUND
M050718	8	US	AZ	32-48-54N	110-06-32W	CU PB AU AG	SMALL VEINS
M050719	9	US	AZ	32-48-48N	110-08-39W	CU PB AU AG	SMALL VEINS
M800305	ABE LINCOLN MINE M	US	AZ	31-54-20N	111-11-52W	MO U CU	VEIN
M003408	ABE LINCOLN MINE	US	AZ	34-02-44N	112-32-29W	CU AG AU U	VEIN; SHEAR ZONE
M001415	ABRIL MINE	US	AZ	31-54-30N	109-59-28W	ZN CU PB MO AG AU W BI BE LI CD GA	REPLACEMENT
M001680	AJAX MINE	US	AZ	32-00-47N	109-12-42W	CU PB AG ZN AU	VEINS AND DISSEMINAT
W002658	AJO MINE	US	AZ	32-21- N	112-52- W	CU	PORPHYRY INTRUSION
W002113	AJO MINE	US	AZ	32-30- N	112-50- W	CU AU AG TI NB	IGNEOUS-PORPHYRY
M002276	AJO CONSOLIDATED MIN	US	AZ	32-21-21N	112-51-40W	CU AG AU	VEIN/DISSEMINATED
M002272	AJO CORNELIA MINE	US	AZ	32-20-42N	112-50-47W	CU AG AU	REPLACEMENT
M002358	AJO EXTENSION PROSPE	US	AZ	32-18-32N	112-51-13W	CU	PORPHYRY COPPER
M002277	AJO PEAK MINE	US	AZ	32-20-20N	112-53-50W	CU	REPLACEMENT
M241218	AL AND HAL MINE	US	AZ	33-23-01N	110-59-15W	CU AG AU	UNKNOWN
M003870	ALAMO PROSPECT	US	AZ	33-26-03N	113-54-15W	CU	VEINS
M003717	ALASKAN MINE	US	AZ	33-45-27N	113-20-47W	AU CU AG	VEIN
M899916	ALFONSO VILLEY MINE	US	AZ	31-20-08N	110-42-39W	CU	VEIN
M899899	ALICE MINE	US	AZ	33-07-56N	110-55-23W	CU AU AG	VEIN/SHEAR ZONE
M241082	ALKIE MINE	US	AZ	31-37-52N	110-09-04W	PB CU AG	REPLACEMENT
M003869	ALONAH PROSPECT	US	AZ	33-25-03N	113-52-43W	CU FE	REPLACEMENT
M050374	ALPHA MINE	US	AZ	31-56-52N	111-06-01W	AG AU CU PB ZN	VEINS/SHEAR ZONE
M004073	ALPHA MINE	US	AZ	35-20-15N	114-07-26W	PB AG ZN AU CU	VEIN, SHEAR ZONE
M004174	ALTATA EXTENSION MIN	US	AZ	35-24-09N	114-10-48W	AU AG CU PB ZN MO AS	VEIN

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
M004166	ALTATA MINE	US	AZ	35-24-10N	114-10-60W	CU AG AU PB MO AS	VEIN
M241007	ALTO MINE	US	AZ	31-21-55N	110-16-33W	CU PB ZN AG AU	REPLACEMENT
M800195	ALTURAS MINE	US	AZ	34-26-16N	112-22-52W	AU AG PB CU	VEIN
M241322	AMERICAN BOY MINE	US	AZ	31-37-28N	110-49-19W	PB AG CU ZN AU	VEINS
M050121	AMERICAN EAGLE MINE	US	AZ	32-44-58N	110-29-44W	CU MO PB ZN	VEIN, BRECCIA PIPE,
M241187	AMERICAN FLAG MINE	US	AZ	32-34-30N	110-44-00W	CU AG AU PB	VEIN/SHEAR ZONE
M241055	AMERICAN GROUP MINE	US	AZ	31-54-04N	109-58-46W	PB ZN AG CU AU	SHEAR ZONE
M241193	AMERICAN MINE	US	AZ	33-19-52N	110-58-59W	CU U PB AU AG	VEIN/SHEAR ZONE
M050668	AMERICAN MINE	US	AZ	32-12-53N	110-14-53W	PB CU AG AU F BA	VEIN/SHEAR ZONE
M030374	AMERICAN MOLYBDENUM	US	AZ	34-49-37N	113-47-18W	CU MO	VEIN
M800388	ANCHOR MINE	US	AZ	34-45-26N	112-06-44W	CU AU AG	MASSIVE SULFIDE
M002913	ANITA COPPER DEPOSIT	US	AZ	35-52-23N	112-15-14W	CU U FE AG	DISSEMINATED REPLACE
M004191	ANNIE PROSPECT	US	AZ	35-22-55N	114-08-53W	AG AU CU	VEIN, LEDGE
M241241	ANTELOPE MINE	US	AZ	32-53-34N	110-50-31W	CU AG AU	VEIN/SHEAR ZONE
M001269	ANTIETAM MINE	US	AZ	33-07-59N	109-20-49W	CU AU AG	VEIN; CONTACT METASO
M000454	APACHE MANGANESE MIN	US	AZ	33-47-37N	110-41-42W	MN CU AG CO	VEINS
M051152	APACHE MINES	US	AZ	32-35-17N	111-07-56W	CU	DISSEMINATED, FRACTU
M051154	APACHE MINES # 20	US	AZ	32-35-04N	111-07-55W	CU AU	VEIN
M051155	APACHE MINES # 6	US	AZ	32-34-32N	111-07-53W	CU	VEINS
M051150	APACHE MINES #2	US	AZ	32-35-41N	111-07-52W	CU AU AG	UNKNOWN
M051159	APACHE MINES 8	US	AZ	32-34-47N	111-06-46W	PB AU AG CU	VEINS
M241072	APACHE PASS MINES	US	AZ	32-08-55N	109-28-04W	AU AG PB CU ZN	VEIN
M000326	APEX (BUNKER HILL) M	US	AZ	33-11-19N	111-00-39W	CU	SHEAR ZONE
M241152	APRIL FOOL MINE	US	AZ	31-46-25N	109-48-28W	CU AG	REPLACEMENT
M800064	AQUA VERDE MINE	US	AZ	32-02-32N	111-38-08W	CU AG	METAMORPHIC OR SHEAR
M241079	ARGENTA MINE	US	AZ	31-41-47N	110-06-32W	CU PB AG AU	SHEAR ZONE
M004217	ARGYLE MINE	US	AZ	35-25-35N	114-11-10W	AU AG PB ZN CU AS	VEIN
M800414	ARIZONA CENTRAL MINE	US	AZ	33-04-36N	109-22-05W	CU ZN	VEIN; PORPHYRY DIKE;
M241222	ARIZONA COMMERCIAL M	US	AZ	33-25-56N	110-45-29W	CU AU AG SIL	VEIN/SHEAR ZONE
M001018	ARIZONA CONSOLIDATED	US	AZ	32-18-48N	111-08-55W	CU AG AU	SHEAR ZONE
M899877	ARIZONA GOLD MINE	US	AZ	33-06-45N	111-02-27W	CU AU AG	VEIN
M800063	ARIZONA MINE	US	AZ	31-38-51N	111-16-24W	CU AG PB	VEIN
M030505	ARIZONA PORTLAND MIN	US	AZ	34-29-27N	112-35-40W	CU MO AU AG	UNKNOWN
M003873	ARIZONA SILVER-COPPE	US	AZ	33-39-03N	113-51-58W	AG CU	VEIN
M800065	ARIZONA-TONOPAH MINE	US	AZ	32-08-48N	111-02-51W	CU PB AG AU	SHEAR ZONE/DISSEMINA
M002663	ARKANSAS & ARIZONA P	US	AZ	34-45-55N	112-07-23W	CU	VEIN OR SULPHIDE
M241080	ARLINGTON MINE	US	AZ	31-38-44N	110-06-57W	PB CU AG AU	VEIN/SHEAR ZONE
M241006	ARMISTICE MINE	US	AZ	31-24-20N	110-16-08W	PB AG CU AU	REPLACEMENT
M241153	ARMSTRONG MINE	US	AZ	31-46-31N	109-49-11W	CU AG PB AU	REPLACEMENT
M050647	ATLAS MINE	US	AZ	32-25-47N	111-32-48W	ZN CU AG AU PB	PYROMETASOMATIC REPL
M800389	AUGUSTUS MINE	US	AZ	34-03-36N	113-15-36W	CU AG AU	VEIN
M003570	AZTEC MINE	US	AZ	34-29-37N	112-34-59W	CU	CHEMICAL SEDIMENT
M899945	AZTEC MINE GROUP	US	AZ	31-30-36N	110-44-57W	CU AG AU	REPLACEMENT
M004067	AZTEC PROSPECT	US	AZ	35-21-00N	114-07-55W	GEM CU MO	VEIN
M004231	AZURITE PROSPECT	US	AZ	35-23-07N	114-10-09W	AU AG ZN PB CU	VEIN
D000347	BAGDAD COPPER	US	AZ	34-35- N	113-12- W	MO CU	DISSEMINATED, PORPHY
M003467	BAGDAD MINE	US	AZ	34-35-01N	113-12-23W	CU PB ZN AU AG MO	PORPHYRY; DISSEMINA
W002659	BAGDAD MINE	US	AZ	34-35-01N	113-13-30W	CU MO AG	PORPHYRY UNKNOWN
W002114	BAGDAD MINE	US	AZ	34-15- N	113-15- W	CU ZN AU AG PB W TI	IGNEOUS-PORPHYRY
M004356	BANNIE MINE	US	AZ	34-29-41N	112-20-42W	CU AU AG PB	SHEAR ZONE
M899944	BASIN MINE GROUP	US	AZ	31-28-51N	110-42-57W	CU AU AG PB	VEIN/SHEAR ZONE
M001440	BAUMKIRSCHER MINE	US	AZ	31-24-02N	110-14-49W	PB ZN CU AU AG	REPLACEMENT
M051201	BEE GROUP	US	AZ	32-54-03N	110-57-22W	CU	VEIN
M051209	BEE GROUP	US	AZ	32-54-08N	110-56-43W	CU PB AG	VEIN
M002306	BEE HIVE MINE	US	AZ	32-08-48N	111-02-56W	CU PB AG AU	DISSEMINATED/SHEAR Z
M800390	BELCHER MINE	US	AZ	34-26-44N	112-19-44W	AU AG CU ZN	VEIN
M899889	BELMONT MINE	US	AZ	33-16-21N	111-04-31W	CU AG AU PB ZN MN V	SHEAR ZONE/REPLACEME
D011413	BEN HUR	US	AZ	32-57-35N	109-37-50W	CU	VEIN
M899914	BENNETT MINE	US	AZ	31-22-58N	110-46-43W	CU AG AU	VEIN/SHEAR ZONE
M001447	BENTON MINE	US	AZ	31-20-26N	110-41-40W	CU MO AU	DISSEMINATED
M000926	BERKLEY MINE	US	AZ	31-40-40N	111-37-34W	CU AG AU PB ZN	SHEAR ZONE/VEIN
M241038	BERNOUDY MINE	US	AZ	31-57-14N	109-12-41W	PB CU AG ZN AU	REPLACEMENT
M030306	BETTY LEE MINE	US	AZ	32-30-28N	113-59-41W	CU FE AG MO V U AU	VEIN
M002516	BETTYLEE MINE	US	AZ	32-30-29N	113-59-39W	AU CU AG FE	VEIN/SHEAR ZONE
M800001	BIG BUG MINE	US	AZ	34-24-59N	112-11-59W	CU AG AU	STRATIFORM MASSIVE S
M003797	BIG DYKE COPPER PRO	US	AZ	33-46-39N	113-44-11W	CU AG AU	NOT REPORTED
M051166	BIG FLO MINE MINE	US	AZ	32-32-00N	111-07-46W	CU AG	VEIN, DISSEMINATED F

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M003106	BIG JOHNNIE MINE	US	AZ	33-26-15N	110-46-11W	CU FE	VEIN
M899913	BIG LEAD MINE	US	AZ	31-23-36N	110-47-19W	PB CU AG AU	VEIN/SHEAR ZONE
M050594	BIG MINE	US	AZ	32-37-30N	111-04-05W	CU BA AG PB	FISSURE VEINS
M001220	BIG STICK MINE MIN	US	AZ	31-27-60N	110-47-03W	CU	CONTACT ZONE
M800013	BILL ARP MINE	US	AZ	34-13-32N	112-13-14W	AG PB CU AU	VEIN
M004246	BILLY MACK MINE	US	AZ	34-11-19N	114-11-27W	CU AU AG	VEIN
M002606	BINGHAMPTON MINE	US	AZ	34-27-22N	112-11-36W	CU AG AU	VEIN, DISSEMINATED
M241093	BISBEE COALITION MIN	US	AZ	31-29-19N	109-59-11W	CU AU AG	VEINS
W002705	BISBEE LAVENDER MINE	US	AZ	31-26- N	109-54- W	CU	PORPHYRY INTRUSION A
M002896	BISHOP'S KNOLL MINE	US	AZ	34-09-44N	111-17-35W	AU CU	VEINLETS
M001766	BITTER SPRING PROSPE	US	AZ	33-05-16N	110-18-42W	AU AG CU FE	REPLACEMENT
M002286	BLACK BESS MINE GROU	US	AZ	32-08-03N	112-38-36W	AU AG CU W MO	VEIN, SHEAR ZONE
M241237	BLACK COPPER MINE	US	AZ	33-24-45N	110-53-35W	CU AG MN	VEIN/SHEAR ZONE
M000920	BLACK DIAMOND MINE	US	AZ	31-50-37N	109-55-44W	CU AG FE PB AU TI	PYROMETASOMATIC REP
M899888	BLACK DIAMOND MINE	US	AZ	33-15-21N	111-05-22W	CU AG AU	DISSEMINATED
M050276	BLACK DIKE MINE	US	AZ	31-55-42N	111-16-53W	U CU MN F W PB AG AU	CONTACT METAMORPHIC
M050034	BLACK HORSE MINE	US	AZ	31-51-45N	110-45-56W	CU	PYROMETASOMATIC?
M004123	BLACK METAL COPPER M	US	AZ	34-15-22N	114-08-53W	AU CU	FISSURES
M050009	BLACK PRINCE WORKING	US	AZ	32-06-50N	110-04-04W	CU AG ZN	REPLACEMENT IN FAVOR
M000216	BLOW OUT MINE	US	AZ			CU AG	SHEAR ZONE
M003906	BLUE BELL GROUP	US	AZ	35-03-27N	113-50-10W	W MO BI PB CU AG AU	VEIN, DISSEMINATED
M004325	BLUE BELL MINE	US	AZ	34-20-24N	112-14-31W	CU AG AU PB ZN AS	STRATIFORM; MASSIVE
M002565	BLUE BUTTE PROSPECT	US	AZ	32-32-20N	114-16-43W	CU	VEIN
M241486	BLUE COPPER MINE	US	AZ	32-43-27N	111-08-26W	CU AG AU	DISSEMINATED/FRACTUR
M899898	BLUE COPPER MINE	US	AZ	32-43-51N	111-07-56W	CU AG AU	VEIN/SHEAR ZONE
M899941	BLUE EAGLE MINE	US	AZ	31-29-32N	110-45-22W	CU AU ZN AG PB	VEIN/SHEAR ZONE
M000181	BLUE LEAD MINE	US	AZ	31-33-44N	110-48-52W	PB AG CU AU	FISSURE VEIN
M004052	BLUE MARTIN MINE	US	AZ	35-23-08N	114-08-16W	CU	VEIN
M899897	BLUE STAR MINE	US	AZ	32-41-29N	111-07-09W	CU	VEIN/SHEAR ZONE
M241238	BLUEBIRD MINE	US	AZ	33-23-29N	110-54-12W	CU	DISSEMINATED
M050123	BLUEBIRD MINE.	US	AZ	32-45-47N	110-28-14W	PB CU AG AU V ZN W MO	VEIN/FISSURE ZONE
M800315	BOBTAIL MINE	US	AZ	35-20-17N	108-08-02W	ZN PB CU U	VEIN
M000370	BOBTAIL MINE	US	AZ	33-16-22N	110-51-48W	AU AG CU PB W ZN	LENSES
M241190	BOMBOY MINE	US	AZ	33-19-09N	111-12-48W	CU AG AU V	VEIN
M000118	BONANZA MINE	US	AZ	32-00-22N	111-31-09W	CU MO ZN AG AU	PYROMETASOMATIC
M030399	BONANZA MINE	US	AZ	31-22-23N	110-41-11W	ZN CU PB AG AU MN MO	SKARN, REPLACEMENT
M001739	BONANZA MINE GROUP	US	AZ	31-41-58N	110-06-26W	AG PB CU AU	CONTACT METAMORPHIS
M241110	BORAS MINE	US	AZ	31-24-46N	109-54-46W	CU AG AU MN	REPLACEMENT
M004106	BOUSE GOLD-COPPER PR	US	AZ	33-56-04N	114-04-43W	AU CU FE	REPLACEMENT
M000182	BOWLING GREEN MINE	US	AZ	31-35-38N	110-50-27W	PB AG CU AU U	SHEAR ZONE
M241111	BRIGGS MINE	US	AZ	31-25-16N	109-53-51W	CU PB ZN AG AU	REPLACEMENT
M050524	BROAD TOP MINE MIN	US	AZ	31-51-05N	110-45-27W	AG AU CU MO W	SHEAR-BRECCIA ZONE,
D000790	BROAD TOP MINE	US	AZ	31-53- N	110-45- W	CU AG AU W MO	BRECCIA ZONE, DISSEM
M050325	BROOKS PROSPECT	US	AZ	31-21-27N	110-42-21W	CU	SHEAR ZONE
M000023	BROWNELL MINE	US	AZ	32-14-53N	112-08-19W	AG CU AU	SHEAR ZONE
M800223	BRUCE MINE	US	AZ	34-32-42N	113-13-49W	CU ZN PB AG AU AS	STRATIFORM, MASSIVE
W002662	BRUCE OLD DICK MINE	US	AZ	34-32-45N	113-13-36W	CU ZN	MASSIVE SULFIDE
M001699	BRUNSWICK MINE	US	AZ	33-07-59N	109-21-54W	CU	VEIN; CONTACT METASO
M001821	BRYAN MOUNTAIN PROSP	US	AZ	32-20-34N	113-23-21W	CU FE	VEIN
M003135	BUCKEYE MINE MINE	US	AZ	33-25-26N	110-45-49W	CU AG	VEIN
M241371	BUCKEYE MINE	US	AZ	33-13-36N	112-52-20W	CU AU U	VEIN
M899870	BUCKEYE MINE GROUP	US	AZ	33-08-14N	110-54-40W	CU AG AU	VEIN/SHEAR ZONE
M050176	BUCKHORN MINE	US	AZ	31-47-01N	110-46-27W	AG AU CU PB	VEIN
M051158	BUCKHORN MINE MINE	US	AZ	32-34-30N	111-07-28W	AU AG CU PB	VEINS
M002696	BUCKHORN-BOULDER CLA	US	AZ	33-27- N	111-28- W	AU CU	UNKNOWN
M241045	BUENA VISTA MINE	US	AZ	31-58-01N	110-01-27W	PB AG CU	REPLACEMENT
M001429	BUENA VISTA MINE	US	AZ	31-22-51N	110-46-05W	CU AG AU PB MO	FISSURE VEINS
M003081	BUFFALO MINE MINE	US	AZ	33-25-01N	110-47-02W	CU AG	REPLACEMENT
M800394	BULLARD MINE	US	AZ	34-03-19N	113-16-28W	CU AG AU	VEIN
M050031	BULLDOZER MINE	US	AZ	31-52-24N	110-47-52W	AG AU CU	PYROMETASOMATIC , RE
M899873	BUNKER HILL MINE	US	AZ	32-44-14N	110-28-43W	CU PB AG AU	VEIN/SHEAR ZONE
M003987	BUNKER HILL PROSPECT	US	AZ	35-19-47N	114-07-06W	AU AG CU	VEIN
M800002	BURLINGTON-IOWA MINE	US	AZ	34-22-33N	112-11-50W	CU AG AU	STRATIFORM MASSIVE S
M899872	BURNEY MINES	US	AZ	32-33-08N	110-47-52W	PB ZN AG CU AU MN MN	VEIN/SHEAR ZONE
M241050	BURRITO DE FIERRO MI	US	AZ	31-56-39N	110-03-30W	PB ZN CU AG	REPLACEMENT
M050636	BUSTERVILLE MINE M	US	AZ	32-19-43N	111-10-47W	CU	MESOTHERMAL (?) /SHE
M050491	C & H MINE GROUP	US	AZ	31-56-12N	110-42-49W	AG AU CU W MO	PYROMETASOMATIC

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D000090	C AND B GROUP (BYWAT	US	AZ	33-07- N	110-54- W	PB ZN CU V	VANADATE
M002008	CACTUS MINE	US	AZ	33-23-03N	110-58-54W	CU MO PB ZN AU AG	DISSEMINATED
M051160	CACTUSTAIL MINE	US	AZ	32-34-58N	111-06-05W	CU AG	VEIN
M003793	CALCITE PROSPECT	US	AZ	33-47-16N	113-41-48W	CU	VEIN
M000224	CALIFORNIA - GRASSHO	US	AZ	31-22-36N	110-42-02W	PB ZN CU AG AU	LENSE
M002995	CALIFORNIA CLAIM	US	AZ	36-38-10N	111-27-03W	CU AG	REPLACEMENT, PIPES,
M050392	CALIFORNIA MINE	US	AZ	31-56-21N	110-38-46W	CU AU PB AG MBL MO	METAMORPHIC
M030472	CALUMET MINE	US	AZ	33-11-07N	110-58-53W	CU MO	BRECCIA PIPE
M002685	CALUMET-JEROME PROSP	US	AZ	34-44-28N	112-06-36W	CU	REPLACEMENT
M800207	CAMP B MINE	US	AZ	34-01-38N	112-35-14W	CU AG AU MO	VEINS
M002309	CAMP CREEK PROSPECT	US	AZ	33-17-04N	113-20-52W	AU CU FE	VEIN
M241089	CAMPBELL MINE	US	AZ	31-25-28N	109-53-41W	CU AG PB MN ZN AU MO	REPLACEMENT
M004242	CAPILANO MINE	US	AZ	34-11-01N	114-12-04W	AU CU AG	VEIN/SHEAR ZONE
M002275	CARDIGAN MINE	US	AZ	32-20-58N	112-53-29W	CU AG AU	VEINS
M000143	CARLO & ECLIPSE MINE	US	AZ	32-19-37N	111-29-35W	CU AG	REPLACEMENT/SHEAR ZO
M003091	CARLOTA MINE	US	AZ	33-23-06N	110-59-20W	CU AG	VEINLETS
M004111	CARNATION MINE	US	AZ	34-11-56N	114-08-45W	CU AU AG	VEIN
M030416	CARRIE NATION MINE	US	AZ	31-41-53N	110-52-32W	CU PB ZN MO	VEIN
D011801	CASEY COPPER PROSPEC	US	AZ	32-13-15N	109-38-40W	CU	REPLACEMENT
M800130	CASEY MINE	US	AZ	31-46-36N	109-48-56W	CU AU AG PB	THRUST BRECCIA
M004068	CASHIER MINE	US	AZ	35-20-14N	114-07-41W	AU AG PB ZN CU	VEIN
W002706	CASTLE DOME MINE	US	AZ	33-25- N	110-58- W	CU	PORPHYRY INTRUSION
M002863	CASTLE DOME MINE	US	AZ	33-24-43N	110-57-18W	CU MO ZN PB AG AU U	DISSEMINATED COPPER,
M000541	CATALINA GROUP	US	AZ	32-28-49N	110-45-19W	CU AG AU W	UNKNOWN
M241047	CAVE CREEK CANYON MI	US	AZ	31-23-10N	110-19-05W	ZN PB CU AG	REPLACEMENT
M800417	CAYUGA MINE	US	AZ	33-05-05N	109-23-47W	CU ZN	VEIN; SHEAR ZONE; CO
M002857	CEDAR TREE MINE	US	AZ	33-26-15N	110-52-50W	PB CU AG AU ZN	REPLACEMENT
M241028	CENTURION AREA SMALL	US	AZ	32-03-06N	110-02-48W	W CU AG	CONTACT BRECCIA AND
M050015	CENTURION MINE	US	AZ	32-03-09N	110-02-60W	CU AG AU	VEINS, FISSURE FILLI
M030356	CENTURY MINE	US	AZ	35-07-48N	113-49-32W	CU MO ZN	VEIN
M800200	CHAMPIE MINE	US	AZ	33-59-03N	116-00-41W	CU PB AG AU	VEIN
M003465	CHANCE PROSPECT	US	AZ	34-34-36N	113-14-01W	CU	BRECCIA PIPE
M241217	CHARLES MINE	US	AZ	33-18-00N	110-45-08W	CU AG AU PB	VEIN/SHEAR ZONE
M800022	CHERRY KING MINE	US	AZ	34-36-15N	112-02-18W	CU AU AG	VEIN
M004012	CHICAGO MINE	US	AZ	35-18-48N	114-07-22W	PB CU ZN AG	VEIN
M001815	CHICAGO PROSPECT	US	AZ	34-03-13N	113-47-03W	CU AG AU BA FE	VEIN
M241022	CHICORA MINE	US	AZ	32-05-48N	110-03-44W	CU AG	REPLACEMENT
M050522	CHIEF MINE	US	AZ	31-52-17N	110-38-24W	PB ZN AG CU AU	SUPERGENE; REPLACEM
M899936	CHIEF MINE	US	AZ	31-28-27N	110-44-41W	CU AG AU PB MN ZN	VEIN/SHEAR ZONE
M050120	CHILDS-ALDWINKLE MIN	US	AZ	32-45-11N	110-28-54W	CU MO PB ZN AU AG AS SB BI	BRECCIA PIPE
M000503	CHILITO MINE	US	AZ	33-03-58N	110-47-50W	CU AG AU MO	VEIN, STOCKWORK, DIS
M001273	CHIMNEY PROSPECT	US	AZ	31-45-51N	110-25-38W	CU AG AU	UNKNOWN
M241034	CHIRICAHUA MINE	US	AZ	31-57-22N	109-14-11W	CU PB AG ZN W	VEIN/SHEAR ZONE
D000315	CHRISTMAS	US	AZ	33-04- N	110-45- W	CU MO	PORPHYRY, PYROMETASC
M000635	CHRISTMAS MINE	US	AZ	33-03-28N	110-44-45W	CU AG AU MO BI FE PB ZN BE W FE PB ZN BE W	SKARN OR GREISEN REP
M241056	CHRISTMAS MINE	US	AZ	31-52-11N	109-56-53W	CU AG AU PB	REPLACEMENT
M000083	CIMARRON MINE GROUP	US	AZ	31-58-09N	112-53-22W	CU AG AU	SHEAR ZONE
M241018	CLAIR GROUP MINES	US	AZ	32-04-53N	109-20-24W	PB CU AG AU	VEIN/SHEAR ZONE
M050279	CLARK GROUP	US	AZ	31-54-21N	111-16-41W	AG CU	REPLACEMENT /SHEAR Z
M241186	CLARK MINE	US	AZ	32-45-24N	110-29-08W	CU AG AU PB	VEIN/BRECCIA PIPE
M003817	CLEOPATRA MINE	US	AZ	34-19-11N	113-43-30W	CU AU AG	DISSEMINATED COPPER
M800329	CLEOPATRA MINE	US	AZ	34-44-39N	112-06-60W	CU AG AU	MASSIVE SULFIDE
M002652	CLIFF MINE	US	AZ	34-42-45N	112-05-04W	CU AG	MASSIVE SULFIDES
M800419	CLIFTON COPPER MINES	US	AZ	33-06-12N	109-20-58W	CU	VEIN; CONTACT METASO
M004145	CLYDE PROSPECT	US	AZ	35-24-36N	114-09-53W	AU AG PB ZN CU	VEIN
M003800	COBRALLA PROSPECT	US	AZ	33-53-14N	113-43-21W	CU FE	VEIN
M050093	COBRE GRANDE MINE.	US	AZ	32-58-35N	110-17-30W	CU PB FE AG	VEIN/REPLACEMENT
M241057	COBRE LOMA MINE	US	AZ	31-53-23N	109-57-45W	CU ZN AG	CONTACT METAMORPHIC
M001762	COLD SPRING PROSPECT	US	AZ	33-01-54N	110-19-12W	ZN CU SB	REPLACEMENT
M241216	COLE AND GOODWIN MIN	US	AZ	33-17-56N	110-55-39W	CU AG AU PB	VEIN/SHEAR ZONE
M241113	COLE MINE	US	AZ	31-25-05N	109-54-24W	CU AG BI	REPLACEMENT
M000226	COLLICELLO AND LURAY	US	AZ	31-27-55N	110-46-06W	CU AG AU	STRINGERS/VEINLETS
M002307	COLLINS PROSPECT	US	AZ	33-19-07N	113-25-26W	CU AU FE	VEIN
M000383	COLUMBIA MINE	US	AZ	33-08-36N	110-51-46W	CU AG AU	VEIN
M241033	COLUMBIA MINE	US	AZ	31-56-42N	109-13-37W	PB AG CU ZN W BI	CONTACT METAMORPHIC
M050934	COLUMBIA MINE	US	AZ	32-16-11N	111-08-53W	CU AG	REPLACEMENT/SHEAR ZO
M000688	COLUMBIA MINE GROUP	US	AZ	32-03-30N	111-47-15W	CU AG AU	VEIN/SHEAR ZONE

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
M800029	COMMERCIAL MINE	US	AZ	34-29-32N	112-35-18W	CU AG AU PB MO	MINERALIZED PIPE
M241066	COMMONWEALTH EXTENSI	US	AZ	31-54-11N	109-48-27W	AG AU CU	REPLACEMENT
M000684	COMOBABI AND CRUSADE	US	AZ	32-00-49N	111-53-16W	CU AG AU PB	VEINS/SHEAR ZONE
D002425	CONFIDENCE CLAIMS 1	US	AZ	32-45- N	111-55- W	CU	FRACTURE FILLING BOX
M004202	CONGRESS PROSPECT	US	AZ	35-22-26N	114-09-38W	CU AG AU	FISSURE ZONE
M241260	CONNECTICUT MINE	US	AZ	31-39-37N	110-52-05W	CU PB ZN AG AU	SHEAR ZONE
M241239	CONTINENTAL MINE	US	AZ	33-25-08N	110-56-49W	CU AG ZN AU	VEIN/SHEAR ZONE
M050075	COPPER BAR PROSPECT.	US	AZ	32-57-12N	110-19-09W	CU AG AU FE	BRECCIA ZONE
D000348	COPPER BASIN	US	AZ	34-29- N	112-35- W	CU MO	DISSEMINATED, BRECCI
W016056	COPPER BASIN PROSPEC	US	AZ	34-29- N	112-35- W	CU MO	PORPHYRY COPPER
M800131	COPPER BELLE MINE	US	AZ	31-44-13N	109-49-19W	CU AG AU PB ZN	REPLACEMENT
M003713	COPPER BELT (TRI-MET	US	AZ	33-48-17N	113-19-21W	CU AU AG	VEIN
M800420	COPPER BLUFF MINE	US	AZ	33-05-31N	109-21-10W	CU AG AU MO	VEIN; CONTACT METASO
M800023	COPPER BULLION MINE	US	AZ	34-35-57N	112-03-20W	CU AU AG	VEIN
M000091	COPPER BUTTE MINE	US	AZ	31-53-42N	111-03-56W	CU AG	SHEAR ZONE/CONTACT M
M899855	COPPER BUTTE MINE	US	AZ	33-08-55N	111-03-44W	CU AG AU	STRATABOUND
M002408	COPPER CANYON MINE	US	AZ	36-14-09N	112-22-27W	CU AG PB	VEIN/SHEAR ZONE
M030376	COPPER CANYON MINES	US	AZ	34-50-20N	113-47-40W	CU MO PB ZN	VEIN
M050011	COPPER CHIEF MINE	US	AZ	32-06-26N	110-04-12W	CU AG ZN	TABULAR BEDDED REPLA
W002707	COPPER CITIES MINE	US	AZ	33-26-40N	110-52-28W	CU	PORPHYRY INTRUSION
M003145	COPPER CITIES MINE	US	AZ	33-26-30N	110-52-30W	CU MO AU AG PB ZN U	DISSEMINATED, VEINLE
M800421	COPPER CLIFF MINE	US	AZ	33-06-26N	109-23-24W	CU	VEIN; CONTACT METASO
M800332	COPPER CROWN MINE	US	AZ	34-19-54N	112-36-05W	CU PB AG AU	VEIN
M002153	COPPER DIKE GROUP	US	AZ	33-00-20N	110-21-22W	CU	SHEAR ZONE
M800003	COPPER DOME MINE	US	AZ	34-23-26N	112-11-40W	CU AG	MASSIVE SULFIDE (?)
M050032	COPPER DUKE MINE	US	AZ	31-52-11N	110-47-48W	CU AG	SHEAR ZONE
M050122	COPPER GIANT MINE.	US	AZ	32-45-32N	110-29-08W	CU W	BRECCIA PIPE.
M002279	COPPER GIANT PROSPEC	US	AZ	32-17-56N	112-52-15W	CU FE	CLASTIC, REPLACEMENT
M003668	COPPER GIANT PROSPEC	US	AZ	35-20-27N	113-37-06W	CU AU AG	VEIN
M050379	COPPER GLANCE MINE	US	AZ	31-53-47N	111-03-14W	AG AU CU PB ZN	PYROMETASOMATIC REPL
M050504	COPPER GLANCE MINE	US	AZ	31-25-14N	110-21-30W	CU AU AG	VEIN
M001814	COPPER GLANCE MINE	US	AZ	34-03-10N	113-45-28W	CU AU AG BA FE	VEIN
M050576	COPPER GRANTZ MINE	US	AZ	31-56-06N	111-18-19W	CU	VEINS
M003750	COPPER HILL MINE	US	AZ	34-29-27N	112-35-40W	CU PB ZN AG AU MO	BRECCIA PIPE
M800070	COPPER HILL MINE	US	AZ	32-20-33N	110-31-57W	CU AG	VEINS & VEINLETS
M030480	COPPER HILL PROSPECT	US	AZ	32-56-55N	110-51-47W	CU MO	PORPHYRY COPPER
M004059	COPPER KETTLE PROSPE	US	AZ	35-21-51N	114-07-19W	CU AU AG	VEIN
M800296	COPPER KID NOS. 1, 2	US	AZ	33-52-58N	111-55-52W	CU PB AG U	INSUFFICIENT INFORMA
M000089	COPPER KING MINE	US	AZ	31-53-55N	111-03-35W	ZN PB AG CU AU	VEINS/SHEAR ZONE
M800158	COPPER KING MINE	US	AZ	33-06-52N	109-19-46W	CU AG AU	VEIN; CONTACT METAS
M050638	COPPER KING MINE	US	AZ	32-15-48N	111-09-20W	CU AG AU	REPLACEMENT/SKARN
M241021	COPPER KING MINE	US	AZ	32-06-07N	110-04-07W	CU ZN AG	VEIN/SHEAR ZONE
M000458	COPPER KING OR WYLOM	US	AZ	33-11-22N	110-36-57W	CU FE	VEIN
M000003	COPPER LEDGE MINE	US	AZ	32-21-12N	112-50-18W	CU	VEIN/SHEAR ZONE
M800424	COPPER MOUNTAIN MINE	US	AZ	33-04-33N	109-22-04W	CU ZN	COPPER PORPHYRY; FIS
M003740	COPPER MTN. MINE	US	AZ	36-10-08N	113-20-05W	CU U AG AU PB ZN	BRECCIA PIPE
M000178	COPPER MTN. MINE	US	AZ	31-26-42N	111-15-18W	CU AG	DIKE
M002915	COPPER NO. 1 CLAIM C	US	AZ	35-45-54N	112-15-00W	CU U FE	VEINS, FISSURES AND
M241120	COPPER OX MINE	US	AZ	31-47-13N	109-51-41W	CU AG MN AU	CONTACT METASOMATIC
M000168	COPPER PLATE MINE	US	AZ	31-46-04N	110-27-46W	CU AG	REPLACEMENT
M050395	COPPER POINT PROSPEC	US	AZ	31-53-38N	110-36-56W	CU AG AU	VEIN
M050127	COPPER PRINCE MINE	US	AZ	32-45-44N	110-29-07W	CU MO W	BRECCIA PIPE
M050378	COPPER QUEEN MINE	US	AZ	31-53-55N	111-03-27W	CU AG PB ZN AU MO W	PYROMETAMORPHOSED, F
D000793	COPPER QUEEN MINE	US	AZ	31-53- N	111-00- W	CU AG PB ZN AU MO W	ALONG BEDDING PLANES
M002607	COPPER QUEEN MINE	US	AZ	34-27-23N	112-11-22W	CU AG AU ZN AS	MASSIVE COPPER SULFI
M003476	COPPER QUEEN MINE	US	AZ	34-32-18N	113-13-46W	CU ZN AG AU PB AS	MASSIVE SULPHIDE
M241115	COPPER QUEEN MINE	US	AZ	31-26-27N	109-54-52W	CU AG AU PB ZN	REPLACEMENT
M050405	COPPER QUEEN MINE.	US	AZ	31-42-16N	110-51-40W	CU	SHEAR ZONE
M001787	COPPER REEF MINE	US	AZ	33-03-22N	110-24-52W	PB CU AG AU BA MN FE	REPLACEMENT
M000026	COPPER SQUAW MINE	US	AZ	32-09-50N	112-06-14W	CU AG U	SHEAR ZONE
M241167	COPPER STANDARD MINE	US	AZ	32-42-29N	111-47-42W	CU AG AU	VEIN/SHEAR ZONE
M050573	COPPER TOP PROSPECT	US	AZ	31-52-20N	110-37-40W	PB AG CU ZN	LS REPLACEMENT ALONG
D000794	COPPER WORLD MINE	US	AZ	31-53- N	110-45- W	CU AG AU W	TACTITE
M050038	COPPER WORLD MINE	US	AZ	31-51-38N	110-46-02W	CU AG AU W MO	PYROMETASOMATIC
M002933	COPPER WORLD MINE M	US	AZ	36-37-38N	111-26-59W	CU AG AU	REPLACEMENT
M003266	COPPEROPOLIS MINE	US	AZ	34-04-46N	112-27-47W	CU PB AG	VEIN
M001685	COPPEROPOLIS MINE M	US	AZ	31-57-48N	109-15-41W	CU AG AU	UNKNOWN

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M241170	COPPEROSITY MINE	US	AZ	32-33-31N	112-07-43W	CU AG	REPLACEMENT/SHEAR ZO
M004333	CORNUCOPIA MINE	US	AZ	34-15-30N	112-22-15W	AU CU AG MO	VEIN
M800425	CORONADO MINE	US	AZ	33-06-42N	109-23-52W	CU ZN PB MN	VEIN; SHEAR ZONE; RE
M000097	COWBOY MINE	US	AZ	31-52-20N	111-09-21W	CU AG MO PB ZN	SHEAR ZONE, DISSEMIN
M241075	COWBOY MINE	US	AZ	32-16-41N	109-43-02W	AU AG CU PB	VEIN/SHEAR ZONE
M050340	COX GULCH PROSPECTS	US	AZ	31-27-59N	110-46-54W	CU	VEINS
M241215	CRACKER JACK MINE	US	AZ	34-17-04N	111-25-15W	CU AG AU	VEIN
M003640	CRITIC MINE	US	AZ	33-57-26N	113-34-32W	CU AU FE AG BA	SECONDARY ENRICHMENT
M051208	CROW CLAIMS	US	AZ	32-57-38N	110-57-42W	CU	VEIN?
M000103	CROWN KING & TIGER M	US	AZ	31-51-45N	111-06-21W	PB CU AG ZN AU MO	VEINS/SHEAR ZONE
M002957	CROWN POINT CLAIM	US	AZ	33-23-32N	110-59-09W	PB MO V CU	VEIN, REPLACEMENT
M800427	CUPRITE GROUP	US	AZ	33-07-58N	109-23-31W	CU AG AU	VEIN; REPLACEMENT
M050490	CUPRITE MINE	US	AZ	31-55-41N	110-42-32W	CU MO AG AU PB ZN	PYROMETASOMATIC REPL
M241116	CZAR SHAFT	US	AZ	31-26-32N	109-54-35W	CU AG AU PB ZN	REPLACEMENT
M050641	DAILY GROUP	US	AZ	32-28-22N	110-43-45W	CU W AG AU	TACTITE / PYROMETASO
D000798	DAILY MINE	US	AZ	32-30- N	110-40- W	CU AG AU W	SKARN ZONES, TACTITE
M002745	DAISY MINE MINE	US	AZ	33-53-35N	112-05-35W	CU	NOT REPORTED
M050385	DAISY MINE	US	AZ	31-59-10N	111-04-38W	CU AG ZN PB AU W MO	TACTITE
D000799	DAISY MINE	US	AZ	32-00- N	111-00- W	CU AG ZN PB AU W MO	TACTITE
M241117	DALLAS MINE	US	AZ	31-25-17N	109-54-10W	CU AG AU V	REPLACEMENT
M004219	DARDANELLES PROSPECT	US	AZ	35-25-42N	114-10-57W	AU AG ZN PB CU AS	VEIN
M000229	DAVE ALLEN MINE MIN	US	AZ	31-22-30N	110-42-17W	ZN PB CU AG AU	DISSEMINATED, LENSES
M050535	DAYLIGHT MINE	US	AZ	31-50-42N	110-45-19W	AG AU CU PB ZN	PYROMETASOMATIC REPL
M002371	DE SOTO MINE	US	AZ	34-17-28N	112-17-27W	CU AU AG PB ZN AS FE	STRATIFORM; MASSIVE
M241196	DEEN MINE	US	AZ	33-02-11N	111-01-41W	CU AG	SHEAR ZONE
M002139	DEFIANCE MINE	US	AZ	31-44-35N	109-49-21W	PB ZN AG CU AU MO	REPLACEMENT
M800314	DEMOCRAT MINE	US	AZ	35-02-38N	113-49-09W	AS AU AG CU U	VEIN
M241118	DENN MINE	US	AZ	31-25-50N	109-53-14W	CU PB ZN AU AG BI	REPLACEMENT
M003794	DESERT MINE	US	AZ	33-45-48N	113-43-25W	AU CU AG PB MO FE	VEIN
M800428	DETROIT MINE	US	AZ	33-04-36N	109-21-53W	CU AG MN ZN	COPPER PORPHYRY; CON
M030347	DEVILS CANYON PROSPE	US	AZ	34-38-18N	113-41-10W	CU MO	VEIN, DISSEMINATED
W002708	DIAMOND H MINE	US	AZ	33-26- N	110-55- W	CU	PORPHYRY UNKNOWN
M800302	DIAMOND HEAD GROUP	US	AZ	31-54-05N	111-12-33W	U CU	VEIN
M002181	DIVES MINE (BEAR CAV	US	AZ	32-12-05N	109-35-46W	AU PB AG CU ZN GRF	VEIN, DISSEMINATED
M002536	DONALDSON PROSPECT	US	AZ	32-34-04N	114-04-55W	CU	VEIN
M241016	DOS CABEZAS QUEEN MI	US	AZ	32-12-29N	109-37-37W	AU PB ZN CU AG GRF	VEIN
M002542	DOUBLE EAGLE MINE	US	AZ	32-32-40N	114-06-16W	AU AG CU	VEIN
M000230	DOUBLE STANDARD MINE	US	AZ	31-22-30N	110-42-17W	ZN CU PB AG AU	DISSEMINATED
M003150	DOUGHBOY MINE	US	AZ	33-26-21N	110-47-43W	CU ZN V MO AG MN	VEIN
M800413	DOVER COPPER GROUP	US	AZ	33-06-21N	109-24-17W	CU AG AU PB	SHEAR ZONE VEIN; CON
M800155	DRAGOON COPPER MINE	US	AZ	32-05-03N	110-03-38W	CU AG	REPLACEMENT, PYROMET
M241245	DRIPPING SPRINGS MIN	US	AZ	33-08-36N	110-51-44W	AU CU AG ZN	VEIN/SHEAR ZONE
M002667	DUNDEE - ARIZONA MIN	US	AZ	34-45-06N	112-06-03W	CU AU AG	REPLACEMENT
M899876	DUNHAM MINE	US	AZ	33-06-52N	110-58-41W	CU AG AU	VEIN
M000231	DURHAM COPPER CLAIMS	US	AZ	31-31-09N	110-39-09W	CU AG AU	FRACTURES
M002736	DUTCHMAN CLAIM	US	AZ	36-36-33N	111-25-38W	CU	REPLACEMENT
M000917	EAST HELVETIA DEPOSI	US	AZ	31-49-59N	110-45-33W	CU MO	PYROMETASOMATIC
M051182	EASTER #3 CLAIM	US	AZ	32-36-06N	111-03-11W	CU AG PB	VEIN
D000800	EASTER MINE	US	AZ	31-30- N	111-40- W	AG AU W CU PB ZN	FISSURE VEIN
M002679	EASTERN STAR MINE M	US	AZ	35-57-37N	112-11-44W	CU	VEIN
M050040	ECLIPSE GROUP	US	AZ	31-51-14N	110-45-40W	CU AG AU MO ZN PB	VEIN/GOSSAN/DISSEMIN
M002333	EIGHTY-FIVE GROUP	US	AZ	32-20-59N	112-55-20W	CU	PORPHYRY COPPER
M003594	EL CENTINILLO MINE	US	AZ	33-52-13N	112-43-16W	CU AU AG PB	VEIN
M003596	EL MILAGRO MINE	US	AZ	33-51-55N	112-43-00W	AU CU	VEIN
M800032	EL PERO BONITO MINE	US	AZ	34-03-15N	112-18-28W	CU AG AU	VEIN
M001683	EL TIGRE MINE	US	AZ	31-56-08N	109-17-01W	AG AU PB CU	VEIN
M003595	EL TIGRE MINE	US	AZ	33-51-55N	112-42-59W	AU CU	VEIN
M050650	EL TIRO OPEN PIT MIN	US	AZ	32-24-58N	111-32-13W	CU AG PB AU MO	PORPHYRY COPPER
M899934	ELEVATION MINE GROUP	US	AZ	31-31-15N	110-43-23W	CU PB AG	SHEAR ZONE; DISSEMIN
M800412	ELEVEN AND CELTIC GR	US	AZ	33-07-53N	109-19-46W	CU AG AU	VEIN; CONTACT METASO
M050039	ELGIN MINE	US	AZ	31-51-38N	110-47-16W	CU AG AU ZN PB MO	PYROMETASOMATIC REPL
M050442	ELLEN DELLA MINE M	US	AZ	31-33-46N	110-47-40W	CU FE	VEIN
M002125	ELMA MINE	US	AZ	32-13-53N	109-35-44W	CU AG AU MO FE	VEIN/SHEAR ZONE
M050352	EMERALD MINE	US	AZ	31-41-20N	110-04-08W	AG PB ZN CU AU MO	REPLACEMENT / SHEAR
M004201	EMERALD ISLE MINE	US	AZ	35-21-45N	114-11-28W	CU AG AU	STRATABOUND
M004171	EMERSON MINE	US	AZ	35-24-04N	114-10-40W	AU AG PB ZN CU AS	VEIN
M800190	EMMA MINE	US	AZ	34-26-40N	112-23-20W	AU AG PB CU	VEIN

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M800338	EMPIRE MINE	US	AZ	34-28-02N	112-25-18W	CU PB AG AU	VEIN
M002173	EMPIRE MINE	US	AZ	31-42-27N	110-03-40W	AG PB CU ZN MO F	REPLACEMENT
M050016	EMPIRE NO. 2 SHAFT.	US	AZ	32-01-05N	110-03-21W	CU AG PB W	CONTACT METAMORPHIS
M899933	ENDLESS CHAIN MINE	US	AZ	31-26-02N	110-43-34W	CU	REPLACEMENT
M002477	ENGLES, ADAMS MINE	US	AZ	32-59-49N	113-36-40W	CU	REPLACEMENT
M003854	ENTERPRISE MINE	US	AZ	35-08-40N	113-49-22W	PB AU AG CU ZN MO	VEINS
M800303	ESCONDIDA CLAIMS	US	AZ	31-54-23N	111-12-22W	CU U	INSUFFIENT INFORMATI
D000327	ESPERANZA	US	AZ	31-53- N	111-08- W	CU MO	DISSEMINATED
M050391	ESPERANZA MINE	US	AZ	31-52-11N	111-07-29W	CU MO AG AU PB ZN U W	PORPHYRY COPPER
W002672	ESPERANZA SIERRITA M	US	AZ	31-52-07N	111-07-29W	CU MO	PORPHYRY INTRUSION
M001757	EUREKA MINE	US	AZ	31-25-43N	110-22-46W	PB AG CU AU	VEIN
M000269	EUROPEAN MINE GROUP	US	AZ	31-27-55N	110-45-47W	CU AG AU PB ZN	SHEAR ZONE, DISSEMIN
M004055	EVAHOM PROSPECT	US	AZ	35-22-06N	114-07-49W	AU AG PB ZN CU	VEIN
M001885	EVENING STAR & SILVE	US	AZ	33-42-03N	113-12-51W	PB CU AU AG	VEIN
M899932	EXPOSED REEF MINES	US	AZ	31-29-40N	110-44-53W	CU AG PB ZN FE AU	DISSEMINATIONS; VEIN
M800073	FAIR PLAY MINE	US	AZ	31-31-43N	111-21-18W	AG CU PB AG ZN	VEIN
M000172	FALLS CLAIM	US	AZ	31-50-20N	110-45-46W	CU AG	PYROMETASOMATIC/SHE
M000446	FARMER MINE MINE	US	AZ	31-23-43N	110-55-36W	AU PB CU	VEIN/SHEAR ZONE
M002045	FISHER PROSPECT	US	AZ	32-56-09N	110-13-47W	CU	DISSEMINATED
W002694	FLORENCE PROSPECT	US	AZ	33-05- N	111-30- W	CU MO	PORPHYRY UNKNOWN
M800342	FLORENTIA MINE	US	AZ	34-45-00N	112-06-44W	CU AG AU	MASSIVE SULFIDE
M000313	FLORIDA MINE	US	AZ	31-36-45N	110-51-47W	CU PB AG AU	VEIN
M241229	FOUR BAGGER MINE	US	AZ	33-28-22N	110-44-44W	CU AG	VEINS
M030400	FOUR METALS MINE	US	AZ	31-23-54N	110-44-14W	CU AG AU PB ZN MO	DISSEMINATED, BRECCI
M030493	FRANCISCO GRANDE PRO	US	AZ	32-53-00N	111-52-30W	CU MO	PORPHYRY COPPER
M051099	FRANCO RIQUEZA CLAIM	US	AZ	32-27-04N	111-30-07W	CU PB ZN	DISSEMINATED - FISSU
M800208	FRANKLIN D MINE	US	AZ	34-02-33N	112-35-09W	CU AG AU	VEIN
M001229	FRANKLIN DEPOSIT	US	AZ	31-23-37N	111-14-27	AU AG PB CU	VEIN, SHEAR ZONE, OR
M002158	FRIEND MINE	US	AZ	33-02-11N	110-23-20W	CU	VEIN/SHEAR ZONE
M002670	GADSEN PROSPECT	US	AZ	34-44-33N	112-05-49W	CU AU AG	(UNKNOWN)
M241032	GALEYVILLE MINES	US	AZ	31-56-57N	109-13-12W	PB AG CU W	CONTACT METAMORPHIC
M241143	GALVEZ MINE	US	AZ	31-40-27N	110-05-26W	PB CU AG AU	VEIN/SHEAR ZONE
M241109	GARDNER SHAFT	US	AZ	31-25-56N	109-54-22W	CU PB ZN AU AG	CONTACT METAMORPHIC
M050640	GEESMAN GROUP	US	AZ	32-28-32N	110-43-56W	CU W AG AU	TACTITE /PYROMETASOM
D000601	GEESMAN MINE	US	AZ	32-30- N	110-40- W	CU AG AU W	SKARN ZONES, TACTITE
M241221	GEM MINE	US	AZ	33-25-29N	110-46-41W	CU AU AG PB ZN MN	VEINS
M800132	GERMANIA MINE	US	AZ	31-46-26N	109-48-24W	CU AG AU	REPLACEMENT, BRECCIA
M002041	GERONIMO PROSPECT	US	AZ	33-06-03N	110-09-16W	AU CU	SHEAR ZONE
M051185	GERONIMO STRIKE MIN	US	AZ	32-36-05N	111-03-50W	AU AG CU PB	VEINLETS
D000602	GIANT MINE	US	AZ	31-40- N	111-35- W	W CU AG MO	LENSES
M241234	GIBSON MINE	US	AZ	33-20-03N	110-56-30W	CU AG AU	VEIN
M800301	GISMO CLAIMS	US	AZ	31-38-03N	111-20-11W	AU AG CU U	VEIN
M899912	GLADSTONE MINE GROUP	US	AZ	31-23-53N	110-45-03W	CU AG AU PB ZN	VEIN/SHEAR ZONE
M241164	GLEESON MINE	US	AZ	31-44-15N	109-49-17W	CU AG AU	REPLACEMENT
M051220	GOLD BELL MINE	US	AZ	32-43-08N	111-22-18W	CU	QTZ VEIN
M800410	GOLD BELT MINES	US	AZ	33-05-00N	109-25-24W	CU AG AU PB MN ZN	VEIN; CONTACT METASO
M050708	GOLD BUG TUNNEL (22)	US	AZ	32-44-34N	110-00-17W	CU AU	VEIN
M241165	GOLD CAMP MINES AREA	US	AZ	31-41-26N	109-53-17W	CU PB AU AG MO	VEINS
M030357	GOLD METAL MINE	US	AZ	35-06-13N	113-49-35W	CU AU AG MO	DISSEMINATED, VEIN
M001704	GOLD PRINCE MINE	US	AZ	32-11-47N	109-34-20W	AU PB AG CU ZN GRF	SHEAR ZONE, METAMORP
M002135	GOLD RIDGE (CASEY) (	US	AZ	31-55-49N	109-35-25W	AU PB AG CU GRF	VEIN/DISSEMINATED
M000505	GOLD-COPPER MINES CO	US	AZ	33-04-23N	110-47-02W	AU CU	VEIN
M800035	GOLDEN CENTRAL MINE	US	AZ	34-03-11N	112-18-21W	CU PB AG AU	VEIN
M030346	GOLDEN COMSTOCK MINE	US	AZ	34-49-27N	113-46-36W	PB AG AU CU ZN MO	VEIN
M800297	GOLDEN DUCK 1-8 CLA	US	AZ	33-56-04N	112-29-52W	U CU	INSUFFICIENT INFORMA
M241220	GOLDEN EAGLE MINE	US	AZ	33-25-52N	110-51-48W	CU AG AU	VEIN/SHEAR ZONE
M241076	GOLDEN EAGLE MINE	US	AZ	32-17-40N	109-43-07W	PB CU AG AU	VEINS/SHEAR ZONE
D002855	GOLDEN EAGLE MINE	US	AZ	33-27-03N	112-35-38W	AG AU CU	VEIN/SHEAR ZONE
M001698	GOLDEN EAGLE PROSPEC	US	AZ	33-08-06N	109-18-28W	CU AU AG PB	VEIN; CONTACT METASO
M001445	GOLDEN ROSE MINE	US	AZ	31-23-21N	110-46-34W	CU MO PB AG AU SB	VEIN/SHEAR ZONE
M002902	GOLDEN WONDER MINE	US	AZ	07-06-23N	111-18-36W	AU AG CU	VEIN
D000803	GOOD ENOUGH MINE GRP	US	AZ	31-50- N	111-20- W	W AU AG CU PB	LENSE
M000031	GOSSAN NO. 4 PROSPEC	US	AZ	32-19-04N	112-06-33W	CU RAM	SHEAR ZONE
M050637	GOULD MINE	US	AZ	32-15-29N	111-09-55W	CU AG PB	CONTACT METAMORPHIC
M241204	GOWAN MINE	US	AZ	34-15-38N	111-25-32W	CU AG AU	VEIN
D003003	GRACE MINE	US	AZ	31-52- N	109-07- W	ZN PB CU AG	FAULTS AND FRACTURE
M050475	GRAND CENTRAL MINE	US	AZ	31-42-09N	110-03-44W	AG AU PB CU ZN	REPLACEMENT

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
M003839	GRAND GULCH MINE	US	AZ	36-19-34N	113-47-28W	CU V PB ZN AU AG	BRECCIA PIPE
M002653	GRAND ISLAND MINE	US	AZ	34-41-50N	112-05-39W	CU AU	VEIN; SHEAR ZONE
M002730	GRAND PACIFIC CLAIM	US	AZ	36-37-47N	111-26-43W	CU AG	REPLACEMENT
M899887	GRAND PACIFIC MINE	US	AZ	33-16-11N	111-04-13W	CU AG AU MN	SHEAR ZONE
M241203	GRAND PRIZE MINE	US	AZ	34-21-03N	111-22-11W	CU AG AU	VEIN
M241199	GRAND PRIZE MINE	US	AZ	34-53-09N	110-57-11W	CU AG AU	VEIN
M050152	GRAND REEF MINE	US	AZ	32-53-27N	110-19-23W	PB CU AG ZN AU MO	FISSURE VEIN
M002801	GRANDVIEW MINE	US	AZ	36-01-03N	111-58-33W	CU U	BRECCIA PIPE
M000282	GRAVEYARD MINE	US	AZ	31-52-56N	110-36-37W	PB CU ZN AG AU	REPLACEMENT
M800038	GREAT REPUBLIC MINE	US	AZ	34-16-57N	112-11-56W	CU AG AU	STRATIFORM MASSIVE S
M000123	GREEN MONSTER MINE	US	AZ	32-37-58N	111-23-42W	AU AG CU	UNKNOWN
M002774	GREEN MONSTER MINE	US	AZ	34-42-49N	112-04-31W	CU AU AG	SULPHIDE; GOSSAN
M800210	GROOM MINE	US	AZ	34-03-48N	112-32-31W	CU AG AU	VEIN
M004206	GROSS COPPER PROSPEC	US	AZ	35-21-22N	114-09-10W	CU AU AG MO	DISSEMINATED, STOCKW
M899911	GROSS COPPER PROSPEC	US	AZ	31-23-08N	110-46-17W	CU MO	DISSEMINATED
M002296	GROWLER MINE	US	AZ	32-10-03N	112-58-10W	CU PB AG AU	GOSSAN
M899910	GUAJOLOTE MINE	US	AZ	31-24-33N	110-44-13W	CU AG AU	VEIN/SHEAR ZONE
M002415	HACKBERRY MINE	US	AZ	34-25-01N	112-16-19W	CU AU AG PB ZN	STRATIFORM MASSIVE S
M050312	HAIST MINE MINE	US	AZ	31-25-09N	110-43-09W	CU AG AU	VEIN
M050296	HALE PROSPECT #3	US	AZ	31-30-60N	110-35-00W	CU	VEIN
M002630	HALFMOON PROSPECT	US	AZ	34-26-01N	112-11-56W	CU FE	VEIN
M241004	HAMBURG MINE	US	AZ	31-25-28N	110-19-23W	CU PB ZN AG AU	CONTACT METAMORPHIC
M899930	HAMPSON PROSPECT	US	AZ	31-29-23N	110-44-18W	CU FE	SHEAR ZONE
M030387	HARDSHELL MINE	US	AZ	31-27-34N	110-42-59W	PB AG MN CU ZN AU MO	VEIN/SHEAR ZONE
M050354	HARPER MINE	US	AZ	31-23-53N	110-21-08W	AU AG CU W PB	VEINS
M241053	HARRIS MOUNTAIN GROU	US	AZ	32-00-14N	109-11-12W	PB ZN CU AG	REPLACEMENT
M051051	HARTMAN HOMESTAKE M	US	AZ	32-28-37N	110-45-02W	PB ZN CU AG	REPLACEMENT
M899859	HATCH MINE	US	AZ	32-42-04N	110-44-21W	CU AG AU MN	VEIN
M050095	HEAD CENTER MINE.	US	AZ	32-58-37N	110-20-19W	PB ZN CU AG AU MN	VEIN
M050676	HEARST GROUP	US	AZ	32-14-55N	110-01-14W	CU AG	REPLACEMENT
M050042	HEAVY WEIGHT MINE M	US	AZ	31-51-51N	110-46-47W	CU AG AU BE	SHEAR ZONE/PYROMETAS
D000804	HELVETIA DISTRICT	US	AZ	31-52- N	110-47- W	CU W	TACTITE
M241108	HENDRICKS MINE	US	AZ	31-26-24N	109-55-19W	PB AU MN CU AG	REPLACEMENT
M050029	HENRIETTA PROSPECT	US	AZ	31-53-08N	110-47-35W	AU AG CU	QUARTZ LODE
M002146	HERRON MINE	US	AZ	31-46-26N	109-49-05W	CU AG AU	REPLACEMENT
M001734	HERSCHEL MINE	US	AZ	31-42-17N	110-04-21W	AG PB AU CU MN	REPLACEMENT
M000919	HIGGINS MINE	US	AZ	31-26-17N	109-55-12W	CU PB MN AG AU	REPLACEMENT
M000104	HIGH HILL MINE	US	AZ	31-50-56N	111-08-49W	PB ZN CU AG AU	VEINS/SHEAR ZONE
M241150	HIGHLAND MINE	US	AZ	31-45-50N	109-48-51W	CU AG AU	REPLACEMENT
M001995	HIGHLINE MINE MINE	US	AZ	33-26-25N	110-48-20W	CU MN AG AU	VEIN
M241042	HILLTOP EXTENSION MI	US	AZ	31-59-27N	109-15-46W	PB AG ZN CU AU MO	VEINS
M002167	HILLTOP MINE	US	AZ	31-59-08N	109-17-20W	PB ZN CU MO AG AU W CD AS AS	FISSURE VEIN, REPLAC
M241105	HOATSON MINE	US	AZ	31-25-38N	109-54-02W	CU PB ZN AU AG	REPLACEMENT
M000529	HOGVALL MINE	US	AZ	33-03-24N	110-48-05W	AU AG CU PB	GOSSAN
M241106	HOLBROOK SHAFT	US	AZ	31-26-04N	109-54-34W	CU PB ZN AU AG	REPLACEMENT
M030397	HOLLAND MINE	US	AZ	31-22-14N	110-41-44W	ZN PB CU AG AU MO W	SKARN, REPLACEMENT
M241031	HOMESTAKE MINE	US	AZ	31-54-03N	109-08-58W	CU AG	PORPHYRY
M000336	HONEY BEE NO. 4 CLAI	US	AZ	33-04-59N	111-01-25W	U CU	DIKE WALLS
M241013	HONEY DEW GROUP	US	AZ	32-12-09N	109-36-24W	AU PB AG CU	VEIN
M051142	HONEY POT 1 & 2 CLA	US	AZ	32-41-40N	111-07-09W	CU	VEIN
M241054	HORACE MINE	US	AZ	32-00-02N	109-11-04W	PB CU AG	REPLACEMENT
M002123	HORSESHOE MINE	US	AZ	32-54-53N	109-36-31W	CU AU AG	VEIN
M050599	HOT SPOT CLAIM	US	AZ	32-50-57N	110-34-21W	CU U	UNKNOWN
M800039	HOWARD COPPER MINE	US	AZ	34-12-40N	112-11-30W	CU AU AG	STRATIFORM MASSIVE S
M241012	HOWARD MINE GROUP	US	AZ	32-11-55N	109-33-54W	AU PB AG CU MN	VEIN, SHEAR ZONE
M000320	HUGHES AND BALES PRO	US	AZ	33-14- N	111-00- W	PB ZN CU	UNKNOWN
M800409	HUMBOLDT MINE	US	AZ	33-04-43N	109-21-58W	CU ZN	PORPHYRY COPPER; VEI
M241024	HUMBOLDT MINE	US	AZ	31-57-13N	109-09-58W	AG CU PB MN	VEIN/SHEAR ZONE
M241149	HUMBOT MINE	US	AZ	31-46-00N	109-48-52W	CU AG AU	DISSEMINATED
M899866	HUNCH MINE	US	AZ	33-11-25N	110-58-56W	CU AG AU	VEIN
M800299	HUNT'S MESA	US	AZ	36-53- N	110-03-30W	U CU	REPLACEMENT
M800008	HURON MINE	US	AZ	34-28-25N	112-15-33W	CU AG AU	STRATIFORM MASSIVE S
M241343	ILLINOIS MINE	US	AZ	31-22-14N	110-41-14W	PB CU ZN AU AG	REPLACEMENT; SHEAR Z
D002901	IMPACT NO. 1 AND R.S	US	AZ	33-06- N	110-59- W	AU AG CU	PLACER ALONG MINERAL
M899856	INDIAN SPRINGS MINE	US	AZ	33-10-17N	110-58-21W	CU AG AU	VEIN
M000409	INDIANAPOLIS MINE	US	AZ	31-22-30N	110-42-20W	PB CU AG	LENSE
D000316	INSPIRATION	US	AZ	33-25- N	110-53- W	CU MO AG AU	DISSEMINATED, STOCKW

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M899928	INVINCIBLE PROSPECT	US	AZ	31-30-14N	110-45-22W	CU AU	DISSEMINATIONS; VEIN
M001701	IOLANTHE PROSPECT	US	AZ	33-08-10N	109-20-31W	CU	CONTACT METAMORPHIC
M800300	IRIS CLAIMS	US	AZ	31-33-56N	111-11-50W	U CU AU AG	VEIN
M800316	IRISH MAG SHAFT	US	AZ	31-25-53N	109-54-34W	CU PB ZN AG AU	REPLACEMANET
M241224	IRON CAP MINE	US	AZ	33-25-36N	110-46-04W	CU AU AG U	VEIN, SHEAR ZONE
M002374	IRON QUEEN MINE	US	AZ	34-26-40N	112-15-20W	CU ZN PB FE AU AG	STRATIFORM MASSIVE S
M050044	ISLE ROYAL MINE	US	AZ	31-51-28N	110-46-02W	CU MO AG AU W	PYROMETASOMATIC
D000322	ITHACA PEAK	US	AZ	35-22- N	114-09- W	MO CU	DISSEMINATED CU-MO,
M004058	ITHACA PEAK ORE BODY	US	AZ	35-21-59N	114-08-26W	CU MO PB ZN AU AG	DISSEMINATED, STOCKW
M050441	IVANHOE MINE	US	AZ	31-33-42N	110-48-03W	AG CU PB AU MO SB ZN	VEIN
M050628	IVY MAY MINE	US	AZ	32-08-23N	111-02-59W	CU PB AG AU	VEIN
M004077	J.F.T. MINE	US	AZ	35-20-15N	114-06-22W	CU AG AU	VEIN
M050172	JACKSON MINE	US	AZ	31-46-07N	110-51-55W	CU AG AU MO	FISSURE VEIN OR STOC
M050512	JAMES GROUP	US	AZ	31-27-16N	110-19-54W	W CU PB AG ZN AU	VEINS / SHEAR ZONE.
M051156	JEFFORD'S MINE - APA	US	AZ	32-34-60N	111-07-36W	CU	DISSEMINATED, VEINLE
M002673	JEROME - GRANDE PROS	US	AZ	34-44-32N	112-07-56W	CU	MASSIVE SULPHIDE
M002661	JEROME SUPERIOR PROS	US	AZ	34-46-36N	112-06-09W	CU	UNKNOWN
M002669	JEROME VERDE MINE	US	AZ	34-45-04N	112-06-35W	CU AU AG PB ZN	MASSIVE SULPHIDE
M051184	JESSE BENTAN MINE M	US	AZ	32-35-55N	111-03-23W	CU AG AU PB ZN	VEINLET
M000413	JESUIT MINE	US	AZ	31-36-35N	110-52-06W	AG PB CU AU	QUARTZ-FISSURE VEIN
M051162	JOE'S ELBOW MINE M	US	AZ	32-32-29N	111-02-35W	CU	VEIN
M800004	JOHN HENRY MINE	US	AZ	34-19-30N	112-08-12W	CU AU AG	MASSIVE SULFIDE (?)
M004155	JOHNNY BULL PROSPECT	US	AZ	35-24-40N	114-11-03W	PB ZN CU AU AG	VEIN
W002690	JOHNSON DISTRICT	US	AZ	32-07- N	110-04- W	CU	PORPHYRY UNKNOWN
M050007	JOHNSON CAMP MINE M	US	AZ	32-06-37N	110-03-47W	CU AG BE MO ZN PB AU	REPLACEMENT, SECONDA
M003137	JOSH BILLINGS CLAIM	US	AZ	33-25-13N	110-47-01W	CU	VEIN
M002152	JUNCTION MINE	US	AZ	31-25-51N	109-53-35W	CU PB ZN MN AG AU BI CO IN SN	REPLACEMENT
M241092	JUNIPER FLATS AREA M	US	AZ	31-29-44N	109-57-38W	CU PB AU AG	VEIN/SHEAR ZONE
M241483	KAIBAB GROUP	US	AZ	36-43-08N	112-13-46W	CU AG AU	STRATA BOUND, DISSEM
M800040	KAY COPPER MINE	US	AZ	34-03-37N	112-09-35W	CU PB ZN AU AG	STRATIFORM MASSIVE S
M899878	KELVIN-SULTANA MINE	US	AZ	33-05-54N	110-57-40W	CU AG PB AU	VEIN/DISSEMINATED
M004190	KEYSTONE MINE	US	AZ	35-22-35N	114-09-07W	AU AG CU PB ZN MO AS	VEIN
M050006	KEYSTONE MINE	US	AZ	32-05-34N	110-03-28W	CU ZN MO PB W AU AG	REPLACEMENT
M241030	KING AINSWORTH GROUP	US	AZ	31-58-36N	109-11-04W	ZN PB CU AG AU W MO	SHEAR ZONE/DISSEMINA
M800289	KING NO 1, 2, 3 CLA	US	AZ	33-21-35N	110-52-05W	CU MN FE U	VEIN
D002875	KING OF LEAD	US	AZ	32-02-30N	109-18-45W	PB AG ZN CU AU	VEIN, DISSEMINATED
M241148	KING PLOMO MINE	US	AZ	31-46-28N	109-48-24W	CU AG	REPLACEMENT
D000808	KING-EXILE MINE	US	AZ	31-53- N	110-45- W	CU AG ZN PB AU MO W U	FRACTURE FILLINGS, T
M050049	KING-EXILE MINE GROU	US	AZ	31-51-18N	110-45-27W	CU MO ZN AG W PB AU U BE	PYROMETASOMATIC
M000134	KORN KOB MINE MINE	US	AZ	32-23-14N	110-34-37W	CU FE ZN MO AG AU W	PYROMETASOMATIC, VEI
M050155	LA CLEDE MINE	US	AZ	32-50-29N	110-17-22W	CU AG	VEINS
M800081	LA FORTUNA MINE	US	AZ	32-21-10N	111-54-01W	CU AG PB	SHEAR ZONE
M800082	LA LIBRE MINE	US	AZ	31-56-29N	110-42-52W	CU AG	METASOMATIC
M050295	LA PLATA MINE MINE	US	AZ	31-31-28N	110-35-34W	AG CU PB ZN MN	FRACTURE ZONE
M000244	LAKE SUPERIOR AND AR	US	AZ	33-18-08N	111-05-48W	AU CU AG MN	VEIN
D000752	LAKESHORE MINE	US	AZ	32-31-25N	111-54-09W	CU MO AU AG PB ZN	PORPHYRY COPPER, TAC
M800407	LAS TRAJAS MINE	US	AZ	33-06-02N	109-23-40W	CU AU AG	VEIN; SHEAR ZONE
M899896	LAST CHANCE MINE	US	AZ	32-41-25N	111-04-11W	CU AG	SHEAR ZONE/DISSEMINA
M241147	LAST CHANCE MINE	US	AZ	31-46-24N	109-48-48W	PB ZN CU AG AU	REPLACEMENT
M241102	LAVENDER PIT	US	AZ	31-25-57N	109-53-54W	CU AU AG ZN	DISSEMINATED
M050394	LAVERY MINE	US	AZ	31-54-20N	110-38-23W	CU AG	CONTACT METAMORPHIC
M001794	LAXTON PROPERTY	US	AZ	35-04-52N	113-51-15W	W CU MO PB ZN	VEIN, DISSEMINATED
M003339	LEAD DIKE MINE	US	AZ	33-46-23N	113-02-49W	PB ZN CU AU AG	BRECCIA ZONE
M241494	LEAD QUEEN MINE MIN	US	AZ	31-29-01N	110-43-09W	PB CU ZN AG AU	VEIN
M050045	LEADER MINE	US	AZ	31-51-34N	110-46-08W	CU MO AG W ZN AU	PYROMETASOMATIC
M001676	LEADVILLE GROUP	US	AZ	31-56-14N	109-13-48W	PB AG CU W	VEIN/SHEAR ZONE
M001470	LEADVILLE GROUP	US	AZ	31-54-22N	111-12-26W	CU U	SHEAR ZONE
M800133	LEADVILLE MINE	US	AZ	31-46-16N	109-48-54W	CU AG AU PB ZN	REPLACEMENTS
M050644	LEATHERWOOD GROUP	US	AZ	32-27-52N	110-44-12W	CU AG PB AU	TACTITE /VEINS
M050506	LEDGE PROSPECT	US	AZ			CU	FRACTURE/SHEAR PLANE
M000417	LEE MINE	US	AZ	31-36-19N	110-50-33W	CU PB AG AU	QUARTZ-FISSURE VEINS
M050017	LEGAL TENDER PROSPEC	US	AZ	32-04-39N	110-02-01W	CU	TACTITE
M002755	LEGHORN MINE	US	AZ	34-37-21N	112-03-45W	AU CU	VEIN
M002136	LEROY MINE GROUP	US	AZ	32-10-50N	109-34-53W	PB ZN AG CU AU	VEIN, DISSEMINATED,
M003826	LEVIATHAN MINE	US	AZ	34-49-51N	113-47-35W	MO CU AG AU	VEIN
M001446	LINE BOY MINE	US	AZ	31-20-07N	110-41-27W	CU AG FE MO AU LI	VEIN ?
M050335	LION MINE MINE	US	AZ	31-23-57N	110-54-31W	AU AG CU PB	VEIN / SHEAR ZONE.

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M002932	LITTLE DICK CLAIM	US	AZ	36-37-57N	111-26-43W	CU AG AU	REPLACEMENT
M000176	LITTLE DOE MINE MIN	US	AZ	31-30-01N	111-20-23W	PB AG U CU	UNKNOWN
M800005	LITTLE EGYPT MINE	US	AZ	34-23-53N	112-13-12W	CU AG	STRATIFORM MASSIVE S
M030486	LITTLE HILL MINE	US	AZ	32-35-12N	110-49-53W	CU MO AG PB	DISSEMINATED, VEINS
M800037	LITTLE JOSEPH MINE	US	AZ	34-03-05N	112-17-58W	AU AG CU PB AS	VEIN
M050622	LITTLE MARY MINE	US	AZ	32-00-58N	111-54-45W	AU AG CU MO PB RE ZN BA	VEIN/SHEAR ZONE
M241070	LITTLE MARY MINE	US	AZ	31-54-38N	109-46-08W	CU AG AU	UNKNOWN
M002862	LIVE OAK AND KEYSTON	US	AZ	33-24-14N	110-54-24W	CU	VEINS
M050244	LOMA DE MANGANESE M	US	AZ	31-26-58N	111-16-08W	MN CU AG	LENS / SHEARED ZONE
M800320	LOMA LINDA MINE	US	AZ	31-53-12N	109-57-36W	CU AG AU ZN	REPLACEMENT, PYROMET
M003742	LOMA PRIETA PROSPECT	US	AZ	34-29-24N	112-34-60W	ZN PB AG AU CU MO	BRECCIA PIPE
M002098	LONDON-ARIZONA MINE	US	AZ	33-03-35N	110-47-38W	AU AG CU PB ZN BI MO	VEIN, REPLACEMENT
M800009	LONE PINE MINE	US	AZ	34-27-57N	112-14-57W	CU AG AU PB ZN	STRATIFORM MASSIVE S
M800406	LONGFELLOW MINE	US	AZ	33-05-04N	109-21-29W	CU AG AU MN ZN	CONTACT METAMORPHIC
M241194	LORRAINE MINE	US	AZ	33-19-17N	110-58-28W	CU AG AU	VEIN
M001628	LOS PABRES MINE MIN	US	AZ	32-57-41N	109-40-26W	CU MO AG AU	PORPHYRY COPPER
M030519	LOST HORSE GROUP	US	AZ	31-50-57N	111-34-56W	CU AG AU PB MO ZN	SHEAR ZONE ?
M003335	LOST SPANIARD MINE	US	AZ	33-41-16N	112-55-33W	PB ZN CU AU AG	VEIN
M800048	LOTTIE MINE	US	AZ	34-26-35N	112-18-51W	CU AU AG PB	VEIN
M001717	LOWELL MINE	US	AZ	31-25-39N	109-54-11W	CU PB ZN AG AU	REPLACEMENT
M241049	LUCY BELL MINE	US	AZ	31-22-35N	110-14-27W	CU PB AG AU	REPLACEMENT
M241003	LUTZ TUNNEL	US	AZ	31-23-04N	110-17-09W	CU AG AU	DISSEMINATED
M004305	M & M PROSPECT	US	AZ	34-11-24N	112-21-07W	AG AU PB ZN CU	VEIN
M002410	MACKIN GROUP	US	AZ	36-41-45N	112-15-15W	CU AU AG	STRATABOUND DISSEMIN
M000365	MADERA PROSPECT	US	AZ	33-19-58N	110-53-35W	CU MO	PORPHYRY COPPER
M003162	MAGGIE VEIN	US	AZ	33-25-13N	110-47-05W	CU	VEIN
M899885	MAGMA MINE	US	AZ	33-18-21N	111-05-36W	CU AG AU PB ZN MN AS BI CD	VEIN/REPLACEMENT (BE
W002674	MAGMA SUPERIOR MINE	US	AZ	33-18- N	111-06- W	CU ZN AG AU	REPLACEMENT AND VEIN
M899875	MAGNA MINE	US	AZ	32-43-37N	110-28-41W	CU PB MO	BRECCIA PIPE/DISSEMI
M051113	MAGONIGAL MINE MIN	US	AZ	32-25-32N	111-37-35W	CU AG PB MO MN	SHEAR ZONE
M800134	MAID OF SUNSHINE MIN	US	AZ	31-46-26N	109-48-32W	CU AG AU	REPLACEMENT, BRECCIA
M051176	MAIN SAN JUAN CLAIM	US	AZ	32-38-52N	111-05-11W	CU	FRACTURE/DISSEMINATE
M241346	MAINE MINE	US	AZ	31-23-03N	110-42-02W	CU PB AU AG ZN	SHEAR ZONE; REPLACEM
M800135	MAME MINE	US	AZ	31-46-16N	109-48-54W	CU AG AU PB ZN	REPLACEMENTS
M004122	MAMMON MINE GROUP	US	AZ	34-09-38N	114-07-10W	CU FE AU AG	VEIN/REPLACEMENT
M899874	MAMMOTH BUTTE MINE	US	AZ	32-43-29N	110-28-45W	CU AG	VEIN/BRECCIA PIPE
M001702	MAMMOTH MINE	US	AZ	33-08-19N	109-21-31W	CU	VEIN
M001118	MAMMOTH MINE	US	AZ	34-33-59N	113-14-41W	CU AG AU U TH MO	BRECCIA PIPEVEINS, S
M050012	MAMMOTH MINE	US	AZ	32-06-35N	110-04-35W	CU ZN PB AG BA BI MO	REPLACEMENT
M050652	MAMMOTH MINE	US	AZ	32-24-52N	111-31-45W	CU AG PB ZN MO AU F BA	PYROMETASOMATIC
M001949	MAMMOTH PROSPECT	US	AZ	34-03-38N	113-46-13W	CU FE AG AU BA F	VEIN/REPLACEMENT
M000019	MAN'S DREAM MINE	US	AZ	32-13-12N	112-10-33W	CU AG	SHEAR ZONE
H800423	MANGANESE BLUE MINE	US	AZ	33-04-28N	109-21-55W	CU FE GYP	CONTACT METAMORPHIC
M800423	MANGANESE BLUE MINE	US	AZ	33-04-28N	109-21-55W	CU FE	CONTACT METAMORPHIC
M241137	MANGANESE SILVER MIN	US	AZ	31-41-11N	110-04-14W	CU AG AU MN	REPLACEMENT
M241043	MANHATTAN MINE GROUP	US	AZ	31-58-17N	109-15-47W	CU PB ZN AG AU	DISSEMINATED
M002160	MANILA MINE MINE	US	AZ	31-38-43N	110-08-50W	PB AU CU V MO AG	VEIN
M001271	MANSFIELD CLAIM	US	AZ	33-07-34N	109-19-48W	CU AU AG	VEIN
M241330	MANSFIELD MINE GROUP	US	AZ	31-37-01N	110-47-57W	CU PB AU AG ZN MN	VEIN/SHEAR ZONE
M000419	MANZANITA MINE	US	AZ	31-22-30N	110-42-58W	ZN PB CU AG AU	LENSES
M800084	MAR GARITA MINE	US	AZ	31-54-42N	111-18-09W	CU AG AU	REPLACMENT
M050606	MARCOTTE GROUP	US	AZ	32-44-34N	110-09-32W	BA CU AG AU F	VEIN/FAULT ZONE
M004238	MARIQUITA PROSPECT	US	AZ	33-39-55N	114-18-18W	AU CU AG PB ZN	VEIN
D002870	MARTIN PEAK, ATLAS C	US	AZ	33-40- N	113-35- W	AG PB CU	VEINS
M000397	MARY & JAMES CLAIMS	US	AZ	32-44-47N	110-54-14W	CU AU	UNKNOWN
M800010	MARY COPPER MINE	US	AZ	34-25-60N	112-16-12W	CU PB AU AG	MASSIVE SULFIDE (?)
M800136	MARY MINE	US	AZ	31-46-19N	109-48-24W	CU AU AG	REPLACEMENT, BRECCIA
M800325	MASCOT MINE	US	AZ	32-12-28N	109-35-25W	CU AG PB AU FE BI BE	VEIN, REPLACEMENT, D
M241160	MAUD HILL MINE GROUP	US	AZ	31-44-23N	109-48-40W	CU PB AG AU	REPLACEMENT
M241023	MAYFLOWER MINE	US	AZ	32-05-56N	110-03-50W	CU AG	REPLACEMENT
M800156	MCKAY MINE	US	AZ	32-06-48N	110-03-29W	CU AG PB ZN	REPLACEMENT, PYROMET
M030552	MCLEARY PROSPECTS	US	AZ	31-43-37N	110-52-47W	CU MO	VEINS, STOCKWORKS
M002497	MCMILLAN PROSPECT	US	AZ	32-23-19N	113-54-33W	CU U	VEIN
M800363	MCNULTY AND MCBRIDE	US	AZ	34-26-38N	112-31-29W	CU AG	DISSEMINATED, VEINS
M002579	MCPHALL PROSPECT	US	AZ	32-44-24N	114-23-01W	CU AU	VEIN
M000638	MELLOR PROSPECT	US	AZ	33-03-27N	110-43-08W	CU	HYDROTHERMAL
M800422	METCALF MINES	US	AZ	33-06-49N	109-21-38W	CU AG AU MO ZN	COPPER PORPHYRY; BRE

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
M001904	MEX HILL MINE	US	AZ	33-51-52N	111-53-24W	AU CU AG	VEIN
M003084	MIAMI MINE	US	AZ	33-24-17N	110-52-18W	CU MO AU AG PB ZN RH PGM	PORPHYRY CU-MO, MODE
M899886	MICHIGAN AND HANCOCK	US	AZ	33-16-56N	111-05-25W	CU AG AU	SHEAR ZONE
M030567	MIDDLEMARCH MINE	US	AZ	31-52-41N	109-56-54W	ZN CU AG AU PB MO W	CONTACT METAMORPHIC
M004168	MIDNIGHT MINE	US	AZ	35-23-32N	114-11-04W	AU AG PB CU ZN MO	LODE OR VEIN
M800405	MIDNIGHT MINE	US	AZ	33-04-20N	109-18-26W	CU AU PB AG MN	REPLACEMENT
M050568	MILLER CANYON PROSPE	US	AZ	31-24-09N	110-17-26W	PB CU ZN	VEIN IN LS.
M051227	MINE SHAFT WINDMILL	US	AZ	31-25- N	110-47- W	CU	QTZ VEIN
U504079	MINERAL BUTTE PROSPE	US	AZ	33-06-50N	111-34-45W	CU MO AU	PORPHYRY COPPER
M003167	MINERAL FARM MINE	US	AZ	33-26-47N	110-46-12W	MN CU AG PB ZN	REPLACEMENT
M050359	MINERAL HILL MINE	US	AZ	31-59-11N	111-05-13W	CU AG AU ZN PB MO W	PYROMETASOMATIC REPL
D000814	MINERAL HILL MINE	US	AZ	32-00- N	111-05- W	CU AG AU PB ZN MO W	TACTITE, REPLACEMENT
M003958	MINERAL HILL MINE	US	AZ	34-13-56N	114-00-45W	CU FE AG AU BE	HYDROTHERMAL REPLACE
W002675	MINERAL PARK MINE	US	AZ	35-22- N	114-09- W	CU MO	PORPHYRY INTRUSION A
M241011	MINERAL PARK MINES	US	AZ	32-13-60N	109-37-30W	AU CU AG	VEIN
M002657	MINGUS MOUNTAIN COPP	US	AZ	34-38-12N	112-08-17W	CU AG AU	VEIN
M899906	MINNESOTA MINE	US	AZ	31-23-19N	110-45-19W	CU AG	VEIN/SHESAR ZONE
M050376	MINNIE MINE	US	AZ	31-53-58N	111-04-10W	CU AG AU	PYROMETASOMATIC REPL
M800006	MINOR MINE	US	AZ	34-24-59N	112-11-59W	CU AU AG PB	STRATIFORM MASSIVE S
D000330	MISSION	US	AZ	31-59- N	111-03- W	CU MO	DISSEMINATED CU AND
M050387	MISSION MINE	US	AZ	31-59-36N	111-03-30W	CU MO ZN PB SN W AG AU CD	PORPHYRY COPPER/REPL
D000815	MISSION MINE	US	AZ	32-00- N	111-05- W	CU AG ZN MO PB AU SN W F	SEAMS, DISSEMINATED,
M050264	MISSOURI MINE MINE	US	AZ	31-27-08N	111-17-38W	CU AU AG	QUARTZ - SULFIDE VEI
M800298	MITCHELL MESA PROSP	US	AZ	36-58- N	110-07- W	U V CU MO	REPLACEMENT
M003882	MOHAVE CHIEF & NORMA	US	AZ	34-13-48N	114-00-37W	CU	REPLACEMENT
M050047	MOHAWK MINE	US	AZ	31-51-33N	110-46-56W	CU AG AU PB ZN BE	PYROMETASOMATIC
M050500	MOHAWK MINE MINE	US	AZ	31-34-34N	110-50-14W	AU AG CU PB ZN	QTZ VEINS
M899857	MOHAWK-NEW YEAR MINE	US	AZ	32-42-14N	110-40-53W	CU AG AU PB MO V ZN	VEIN/SHEAR ZONE
M800404	MOLINAR ALASKA MINE	US	AZ	33-08-06N	109-21-53W	CU AG AU	VEIN; CONTACT METASO
M241126	MONA MINE	US	AZ	31-46-29N	109-49-02W	CU PB AG	REPLACEMENT
M800364	MONARCH MINE	US	AZ	33-59-12N	112-35-36W	CU AG AU F	VEIN
M899867	MONITOR MINE	US	AZ	33-13-06N	110-57-13W	CU AG AU PB ZN	VEIN
M004000	MONROE DOCTRINE PROS	US	AZ	35-18-39N	114-07-57W	AU AG CU PB ZN FE	VEIN
M050393	MONTANA MINE	US	AZ	31-54-59N	110-39-16W	CU AG MO	SHEAR ZONE
M002280	MONTE CRISTO MINE	US	AZ	32-23-54N	112-06-34W	AU AG CU	VEIN/SHEAR ZONE
M800403	MONTE CRISTO MINE	US	AZ	33-07-39N	109-22-36W	CU	VEIN
M050549	MONTEZUMA MINE	US	AZ	31-53-57N	111-17-04W	CU	UNKNOWN
M002274	MONTIZONA MINE	US	AZ	32-26-50N	112-06-29W	CU PB AG AU	VEIN/SHEAR ZONE
M003314	MOONLIGHT 1 AND 2 P	US	AZ	33-52-02N	112-55-43W	CU	UNKNOWN
M001049	MOORE MINE	US	AZ	31-36-57N	111-25-18W	CU AG AU	SHEAR ZONE
M050014	MOORE MINE	US	AZ	32-06-37N	110-04-27W	CU ZN BI AG AU W MO	REPLACEMENT
D000320	MORENCI	US	AZ	33-07- N	109-22- W	CU MO RE	DISSEMINATED
W002681	MORENCI METCALF MIN	US	AZ	33-05- N	109-22- W	CU MO	PORPHYRY INTRUSION
M002216	MORENCI MINE	US	AZ	33-05-24N	109-21-55W	CU MO PB ZN AU AG U RE	PORPHYRY COPPER
M899924	MORNING GLORY MINE	US	AZ	31-25-45N	110-43-37W	CU AG ZN PB AU	REPLACEMENT
M241136	MORNING STAR MINE	US	AZ	31-41-36N	110-03-09W	PB AG AU CU	REPLACEMENT
M241039	MORNING STAR MINE GR	US	AZ	31-58-48N	109-11-40W	CU PB AU AG	PYROMETASOMATIC
M003774	MORO MINE GROUP	US	AZ	34-09-02N	113-49-00W	CU AU AG FE PB	REPLACEMENT
M241094	MOUNTAIN VIEW MINE	US	AZ	31-28-25N	109-57-39W	CU PB AG AU	VEIN/SHEAR ZONE
M050716	MT. JACKSON MINE	US	AZ	32-56-13N	110-07-38W	CU PB AG F	VEINS
M001809	MUDERSBACH COPPER CA	US	AZ	33-48-19N	114-03-33W	FE CU AG AU	REPLACEMENT
M001430	MUHEIM - GRAFEN MINE	US	AZ	31-49-49N	110-44-58W	CU AG AU ZN	PYROMETASOMATIC/CON
M800138	MUSO MINE	US	AZ	31-46-16N	109-48-54W	CU AG AU	REPLACEMENT
D011799	NAME UNKNOWN	US	AZ	32-27-40N	109-49-10W	CU	VEIN
D011810	NAME UNKNOWN	US	AZ	32-04-35N	109-21-55W	CU	VEIN
M002944	NANNIE E CLAIM	US	AZ	36-38-13N	111-27-19W	CU AG	REPLACEMENT/PIPES
M050046	NARRAGANSETT MINE	US	AZ	31-50-45N	110-45-33W	CU AG PB ZN AU	PYROMETASOMATIC
M050546	NEAR "SKY LINE" PRO	US	AZ	31-28-36N	111-16-50W	CU AG AU PB	QTZ.- SULFIDE VEIN
M050578	NEAR AUSTERLITZ PRO	US	AZ	31-27-56N	111-16-03W	CU	SILICIFIED ZONE
M050511	NEVADA AND MASCOT MI	US	AZ	31-46-23N	110-25-43W	CU AG AU W U	VEINLETS, DISSEMINAT
M000283	NEW COLORADO MINE	US	AZ	31-41-21N	111-20-16W	AG AU PB CU ZN HG	VEIN/SHEAR ZONE
M002273	NEW CORNELIA MINE	US	AZ	32-21-14N	112-51-54W	CU AU AG FE MO TI NB ZN	PORPHYRY COPPER
M051200	NEW DAWN CLAIMS	US	AZ	32-58-57N	110-59-57W	CU	VEIN
M050569	NEW DEAL2 PROSPECT	US	AZ	31-27-19N	111-25-50W	CU	VEIN/SHEAR ZONE
M241226	NEW DOMINION MINE	US	AZ	33-25-33N	110-47-18W	CU PB AG AU MN V	VEIN/REPLACEMENT
M800090	NEW HOPE MINE	US	AZ	32-18-16N	111-32-34W	CU AG	METASOMATIC
M000422	NEW HOPE MINE GROUP	US	AZ	31-28-44N	110-47-03W	CU AG ZN PB AU	DISSEMINATED

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M004153	NEW TENNESSEE MINE	US	AZ	35-24-46N	114-10-54W	PB ZN CU AU AG MO AS	VEIN
M050489	NEW YORK MINE	US	AZ	31-55-59N	110-43-26W	PB CU AG ZN MO SB F	PYROMETASOMATIC REPL
M000584	NEWMAN MINE	US	AZ	31-51-51N	110-46-33W	CU AG AU	PYROMETASOMATIC REPL
M001126	NIAGARA MINE	US	AZ	34-35-36N	113-13-40W	CU	BRECCIA PIPE
M004099	NIGHT HAWK AND WHITE	US	AZ	33-33-11N	114-05-08W	W AU CU	VEINS
M241096	NIGHT HAWK MINE	US	AZ	31-24-57N	109-54-50W	CU AG AU	REPLACEMENT
M051069	NORTH SILVER BELL MI	US	AZ	32-26-27N	111-31-57W	CU MO PB ZN	DISSEMINATED, STOCKW
M241192	NORTH STAR MINE	US	AZ	32-49-31N	111-20-33W	CU AG AU SIL	VEIN
M002532	NORTHERN PROSPECT	US	AZ	32-34-56N	114-07-58W	CU	VEIN
M030406	O'CONNOR PROSPECT	US	AZ	31-22-08N	110-42-10W	CU MO PB	UNKNOWN
M050005	O. K. MINE	US	AZ	32-05-47N	110-03-39W	CU ZN	REPLACEMENT & FISSUR
M800367	OBLONG MINE	US	AZ	34-33-05N	112-23-52W	CU AU AG	VEIN
M030557	OLD BALDY COPPER MIN	US	AZ	31-42-58N	110-45-35W	CU MO AG AU FE PB	VEIN
M051179	OLD CHIEF MINE	US	AZ	32-37-19N	111-03-48W	CU AG	VEIN, GOSSAN
W000354	OLD DICK	US	AZ	34-32-50N	113-13-47W	ZN CU CO	MASSIVE SULFIDES
M003474	OLD DICK MINE	US	AZ	34-32-49N	113-13-45W	ZN CU PB AG AU AS CO CD	MASSIVE SULPHIDE
M050052	OLD DICK MINE MINE	US	AZ	31-51-29N	110-46-54W	CU AG PB ZN AU	REPLACEMENT.PYROMETA
W002713	OLD DOMINION 2 MINE	US	AZ	33-25- N	110-47- W	CU	PORPHYRY UNKNOWN
M241482	OLD DOMINION MINE	US	AZ	33-24-57N	110-46-54W	CU AG AU PB ZN	VEIN/REPLACEMENT
M241168	OLD JONAH MINE	US	AZ	32-42-51N	111-47-53W	CU AG AU	VEIN/SHEAR ZONE
M050630	OLD MISSION MINE	US	AZ	32-10-03N	111-01-20W	AU AG PB AU BA MN FE MN FE	EPITHERMAL VEIN
M050050	OLD PAP CLAIM	US	AZ	31-50-09N	110-45-26W	CU AG	SHEAR ZONE
M050634	OLD PUEBLO MINE MIN	US	AZ	32-12-18N	111-02-45W	CU AU AG	VEIN
M050126	OLD RELIABLE MINE	US	AZ	32-45-07N	110-29-21W	CU MO BA AG	BRECCIA PIPE
M241191	OLD RIPSEY MINE	US	AZ	33-00-12N	110-58-27W	CU AG AU PB	VEIN
M241198	OLD SAMPLE MINE	US	AZ	32-55-19N	116-50-48W	CU AG	VEIN
M800053	OLD TIGER MINE	US	AZ	34-11-29N	112-20-56W	AG CU PB AU ZN	VEIN
M051157	OLD VICTOR MINE - NO	US	AZ	32-34-29N	111-07-45W	CU AG PB	VEIN, DISSEMINATED
M050625	OLD YUMA MINE	US	AZ	32-18-53N	111-07-16W	PB MO V CU AU AG ZN	FISSURE VEIN, CONTAC
M241098	OLIVER MINE	US	AZ	31-25-44N	109-54-27W	CU PB ZN AU AG	VEIN/SHEAR ZONE
M050179	OMEGA MINE	US	AZ	31-51-14N	110-46-07W	CU MN AG PB ZN AU MO W	VEIN/SHEAR ZONE
M241123	ONTARIO MINE	US	AZ	31-46-08N	109-48-55W	CU AG AU	REPLACEMENT
M050036	OREGON COPPER MINES	US	AZ	31-49-43N	110-46-19W	CU AG PB ZN AU	PYROMETASOMATIC
M050089	OREJANA MINE	US	AZ	32-58-09N	110-22-21W	CU PB	VEIN
M002748	ORIZABA MINE	US	AZ	34-00-30N	112-04-50W	CU AU AG	SHEAR ZONE
M050273	ORO FINO MINE MINE	US	AZ	31-24-27N	111-15-03W	AU AG PB CU ZN	QUARTZ - SULFIDE VEI
M002271	ORO GRANDE MINE	US	AZ	32-23-41N	112-06-44W	CU AG AU	VEIN/SHEAR ZONE
M001823	ORPHAN LODE MINE	US	AZ	36-04-17N	112-09-00W	U SB CO CU AU FE PB MG MN MO NI	BRECCIA PIPE
M051151	OWL CLAIMS	US	AZ	32-35-29N	111-07-50W	CU	UNKNOWN
M000262	OWL HEAD MINE MINE	US	AZ	32-45-52N	111-08-48W	CU	UNKNOWN
M241207	OX BOW MINE	US	AZ	34-10-08N	111-21-11W	CU AU AG MO PB F	VEIN/SHEAR ZONE
M241219	OX-HIDE AND UPPER OX	US	AZ	33-23-09N	110-55-26W	CU AG	VEIN/ DISSEMINATED
M001201	OXBOW MINE MINE	US	AZ	31-58- N	109-13- W	CU PB AG	SHEAR ZONE
M050651	OXIDE MINE	US	AZ	32-23-49N	111-30-07W	CU MO AU AG PB	PYROMETASOMATIC, VEI
M800371	PACIFIC MINE	US	AZ	34-07-54N	112-22-34W	CU AU AG PB	VEIN
D000089	PALMER PROPERTY	US	AZ	33-08- N	111-00- W	V PB ZN CU	VANADATE
M050384	PALO VERDE MINE	US	AZ	31-59-52N	111-04-00W	CU AG ZN PB AU MO	TACTITE, PYROMETASOM
M800092	PANDORA MINE	US	AZ	31-52-50N	111-04-15W	CU AG	SHEAR AND FAULT ZONE
M050288	PAPAGO CHIEF MINE	US	AZ	31-40-33N	111-37-42W	CU AG AU PB ZN U	VEINS
M001956	PATRICK & WELLS PRO	US	AZ	33-10-14N	111-09-30W	CU AG AU	UNKNOWN
M050492	PAULINE MINE	US	AZ	31-55-29N	110-41-47W	AU AG CU PB ZN MO SB	PYROMETASOMATIC REPL
M899904	PAYMASTER MINE	US	AZ	31-24-49N	110-44-29W	CU AG AU PB ZN AS	VEIN/SHEAR ZONE
M800093	PAYOFF MINE	US	AZ	31-32-11N	111-33-49W	CU AG	VEIN
M050010	PEABODY MINE	US	AZ	32-06-58N	110-03-54W	CU AG ZN PB	TABULAR BEDDED REPLA
M050164	PEACH PROSPECT	US	AZ	31-52-00N	110-47-42W	CU AG AU ZN PB MO	SECONDARY ENRICHMENT
M000479	PEACOCK CLAIMS	US	AZ	33-19-00N	110-32-47W	CU	VEIN
M800154	PEACOCK MINE	US	AZ	32-06-01N	110-02-57W	CU AG PB ZN	REPLACEMENT
M899860	PEARL MINE	US	AZ	32-44-02N	110-44-15W	CU AG PB AU MO	VEIN/SHEAR ZONE
M241178	PEG LEG MINE	US	AZ	33-02-48N	111-03-51W	CU AG AU	SHEAR ZONE
M800094	PENNY AND PENNY MINE	US	AZ	32-18-47N	111-26-33W	CU AG	VEIN
M241002	PETERSON MINE	US	AZ	31-27-17N	110-24-00W	CU AG AU	CONTACT METAMORPHIC
M002409	PETOSKEY GROUP	US	AZ	36-42-35N	112-14-25W	CU AU AG	STRATABOUND DISSEMIN
M241010	PHILADELPHIA MINE	US	AZ	32-12-00N	109-35-14W	AU PB AG CU	VEIN
M050574	PHILIMENA MINE	US	AZ	31-55-08N	111-18-39W	CU	UNKNOWN
M002456	PICACHO COPPER MINE	US	AZ	33-02-11N	114-35-33W	CU AG AU	VEIN
M050162	PICKWICK PROSPECT	US	AZ	31-49-51N	110-45-32W	CU AG	REPLACEMENT?
M800054	PILGRIM MINE	US	AZ	34-10-34N	112-20-30W	AU AG CU ZN	VEIN

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
D000332	PIMA	US	AZ	31-59- N	111-04- W	CU MO AG	DISSEMINATED CU-MO;
M050388	PIMA OPEN PIT MINE	US	AZ	31-59-11N	111-04-21W	CU MO AG ZN PB AU	PORPHYRY COPPER/REPL
M800224	PINAFORE MINE	US	AZ	34-29-25N	113-16-35W	CU ZN PB AG AU	STRATIFORM MASSIVE S
M030504	PINE FLAT MINE	US	AZ	34-21-50N	112-20-00W	CU MO AU AG	PORPHYRY COPPER, FIS
M004181	PINKHAM MINE	US	AZ	35-23-24N	114-10-50W	CU AU AG PB ZN	VEIN
D000352	PINTO VALLEY	US	AZ			CU MO AU AG	PORPHYRY CU-MO
M002675	PITTSBURGH - JEROME	US	AZ	34-43-23N	112-07-01W	CU	VEIN
M003887	PLANET MINE	US	AZ	34-14-44N	113-57-27W	CU FE AU AG CAR	REPLACEMENT/VEINS
M050360	PLUMED KNIGHT MINE	US	AZ	31-59-06N	111-05-04W	CU AG ZN PB AU	REPLACEMENT/SHEAR ZO
M800031	PLYMOUTH MINE	US	AZ	34-30-48N	112-35-37W	CU AU AG	VEIN
M050656	PONTATOC MINE	US	AZ	32-19-55N	110-53-50W	CU AG AU MO	FAULT ZONE
M002952	PONTIAC MINE	US	AZ	33-26-06N	110-45-33W	MN CU AG AU	SEAMS, VEINLETS
M000647	POOL'S MINE	US	AZ	33-01-46N	110-42-39W	CU AU	VEIN/SHEAR ZONE
M800184	PORPHYRY MINE	US	AZ	34-26-27N	112-23-53W	CU PB ZN AG AU	VEIN
M030478	POSTON BUTTE PROSPEC	US	AZ	33-02-48N	111-25-45W	CU MO	PORPHYRY COPPER
M241001	POWER MINE (ANOZIRA)	US	AZ	31-24-43N	110-16-53W	MN AG PB CU ZN AU	VEIN/SHEAR ZONE
M003991	PRIMROSE PROSPECT	US	AZ	35-19-49N	114-08-01W	AU AG CU	VEIN
M050102	PRINCESS PAT MINE.	US	AZ	32-59-50N	110-21-26W	CU ZN PB	VEIN
M050555	PROSPECT SE OF PHIL	US	AZ	31-54-52N	111-18-11W	CU	VEINS
M050554	PROSPECT K-10	US	AZ	31-54-50N	111-19-02W	CU	UNKNOWN
M003825	PROSPECT NEAR OLD MI	US	AZ	34-49-25N	113-46-20W	CU MO AU AG PB	SHEAR ZONE
M050550	PROSPECT NNW OF BANN	US	AZ	31-53-37N	111-17-15W	CU MN	VEINS
M050551	PROSPECT W OF STEVEN	US	AZ	31-54-23N	111-17-27W	CU	QTZ VEINS
M050553	PROSPECTS E OF PHILI	US	AZ	31-55-06N	111-18-12W	CU	UNKNOWN
M050369	PROSPERITY MINE GROU	US	AZ	31-57-31N	111-05-56W	PB ZN AG CU AU	REPLACEMENT.
M899915	PROTO MINE GROUP	US	AZ	31-24-00N	110-44-58W	CU AG AU PB	VEIN/SHEAR ZONE
M050505	PROVIDENCE MINE	US	AZ	31-55-06N	111-17-51W	PB AG ZN CU AU BA	REPLACEMENT
M030403	PROVIDENCIA CLAIM	US	AZ	31-23-17N	110-45-52W	CU MO	DISSEMINATED
M899882	QUEEN CREEK MINE	US	AZ	33-17-21N	111-05-29W	CU AG AU MN	STRATABOUND/SHEAR ZC
M241019	RABBIT CLAIM GROUP	US	AZ	32-07-33N	109-16-05W	CU AG	VEIN/SHEAR ZONE
M241210	RADIUM MINE	US	AZ	33-28-37N	110-48-03W	CU PB AG AU V MN	VEIN/SHEAR ZONE
M002373	RAINBOW MINE	US	AZ	34-16-46N	112-14-19W	CU FE AU AG	VEIN
D002518	RAINBOW SILVER MINE	US	AZ	33-08-31N	111-12-25W	AG CU PB	VEIN
M241209	RAMBOZ MINE	US	AZ	33-27-21N	110-46-19W	AG CU AU MN PB ZN	VEIN/SHEAR ZONE
M051129	RAMERO RANCH	US	AZ	32-19-39N	111-30-19W	CU BA AU	SHEAR ZONE
M000334	RARE METALS MINE	US	AZ	33-05-30N	111-02-01W	CU MO	FISSURE VEIN
M899871	RATTLER MINE	US	AZ	33-08-31N	110-53-07W	CU AG AU	VEIN/SHEAR ZONE
M030385	RAWHIDE MINE	US	AZ	34-17-56N	113-39-35W	PB AG MO CU ZN AU	UNKNOWN
W002682	RAY MINE	US	AZ	33-10-26N	110-59-31W	CU	PORPHYRY INTRUSION A
M000327	RAY MINE	US	AZ	33-10-28N	110-59-40W	CU MO PB ZN AG AU	DISSEMINATED, VEINS
D000340	RAY MINE	US	AZ	33-10- N	111- W	MO CU AU AG	DISSEMINATED
M000424	RED BERRY AND HIDDEN	US	AZ	31-43-13N	110-47-39W	CU AG AU	FAULT ZONE
M800225	RED CLOUD MINE	US	AZ	34-31-20N	113-13-53W	CU AG AU PB ZN	MASSIVE SULFIDE - ST
D002155	RED MOUNTAIN DEPOSIT	US	AZ	31-30-45N	110-43-30W	AL3 K CU AL ZN CLY3	REPLACEMENT AND POR
M002818	RED MOUNTAIN MINE	US	AZ	33-39-17N	111-47-11W	CU	VEIN
M899921	RED MOUNTAIN MINE	US	AZ	31-30-13N	110-43-07W	CU MO PB ZN AL3 K AU	REPLACEMENT (ALUNITE
M800095	RED STREAK MINE	US	AZ	31-51-23N	111-18-20W	CU AG	REPLACEMENT
M004147	REDEMPTION MINE	US	AZ	35-24-43N	114-10-02W	CU AG AU MO	VEIN
D000816	REDINGTON DISTRICT	US	AZ	32-20- N	110-30- W	CU AG W U	FRACTURE ZONES, CONT
M241244	RENFRO GROUP	US	AZ	33-08-51N	110-52-39W	CU AG AU	REPLACEMENT/SHEAR ZO
D000310	REPUBLIC COPPER	US	AZ	32-07- N	110-05- W	MO CU AG ZN	PYROMETASOMATIC
D000757	REPUBLIC COPPER MINE	US	AZ	32-07- N	110-05- W	W CU AG MO GAR	TACTITE
M050513	REPUBLIC MINE	US	AZ	32-05-24N	110-03-35W	CU ZN AG PB AU BI BE MO W	REPLACEMENT
M241175	REPUBLIC MINE	US	AZ	32-35-37N	112-02-56W	CU AG AU	REPLACEMENT/VEIN
M241208	RESCUE MINE	US	AZ	33-27-20N	110-46-30W	AG CU PB AU	VEIN/SHEAR ZONE
M241176	REWARD MINE	US	AZ	32-36-02N	112-02-45W	CU AG AU PB ZN	REPLACEMENT
M003444	RIDENOUR MINE	US	AZ	36-05-59N	113-10-23W	CU V U	COLLAPSED BRECCIA PI
M050161	RIDLEY MINE	US	AZ	31-51-08N	110-48-35W	CU PB MO ZN AU AG	FISSURE VEIN
M000649	RIEDER AND BAILEY P	US	AZ	33-00-49N	110-43-09W	AU CU	SHEAR ZONES
M004250	RIO VISTA MINE	US	AZ	34-10-39N	114-11-59W	CU AU AG	VEIN/SHEAR ZONE
M050591	ROADSIDE MINE	US	AZ	32-02-43N	111-30-33W	CU AG AU HG	DISSEMINATED/SHEAR Z
M002787	ROCK LEDGE MINE MIN	US	AZ	33-59-23N	111-55-52W	CU AU AG	MASSIVE SULPHIDES
M241121	ROCKY BAR MINE	US	AZ	31-41-15N	110-05-23W	MN AG CU AU PB	REPLACEMENT
D000321	ROWLEY MINE	US	AZ	33-02-56N	113-01-27W	AU AG	VEIN
M800097	ROXANNE 1-6 MINE	US	AZ	32-17-02N	111-26-07W	CU AG	SHEAR ZONE
M000425	ROY MINE	US	AZ	31-25-04N	110-44-13W	CU AG AU PB	VEIN
D002375	ROYAL AND DEER HORN	US	AZ	31-18- N	110-40- W	AG PB CU ZN	REPLACEMENT PODS AND

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M002555	RUBY PROSPECT	US	AZ	32-44-22N	113-45-43W	CU	VEIN
M050669	SACATON/CASA GRANDE	US	AZ	32-57-37N	111-48-47W	CU MO AU AG	PORPHYRY COPPER, ENR
M241099	SACRAMENTO MINE	US	AZ	31-26-13N	109-54-04W	CU AU AG V BI CD	CONTACT METAMORPHIC
M241159	SADIE, NEW YEAR GIFT	US	AZ	31-44-12N	109-49-04W	CU AG AU	REPLACEMENT
M001755	SAFFORD DEPOSIT	US	AZ	32-56-30N	109-36-18W	CU MO AG AU PB ZN	PORPHYRY COPPER
M050631	SAGINAW MINE	US	AZ	32-08-44N	111-04-43W	CU AG AU MO PB ZN	DISSEMINATED/FISSURE
M050074	SAM JONES PROSPECT.	US	AZ	32-57-08N	110-19-08W	CU AG AU	REPLACEMENT
M050541	SAMPSON, BOSTON, AND	US	AZ	31-22-12N	110-17-40W	CU ZN AG AU	UNKNOWN
M000426	SAN ANTONIO MINE	US	AZ	31-22-29N	110-41-31W	ZN PB CU AG AU	LENSES
M050366	SAN CARLOS GROUP	US	AZ	31-58-11N	111-05-26W	CU PB	VEIN/STRINGER
M800160	SAN JOSE MINE	US	AZ	33-06-14N	109-21-22W	CU AG	VEIN; METAMORPHIC
M050665	SAN JOSE PROSPECTS	US	AZ	32-08-35N	110-14-38W	CU PB ZN AG AU	VEIN/ SHEAR ZONE
M051177	SAN JUAN CLAIMS	US	AZ	32-38-36N	111-04-50W	CU	FRACTURE, DISSEMINAT
M001705	SAN JUAN MINE	US	AZ	32-56-45N	109-39-08W	CU AG AU MO	PORPHYRY COPPER, FRA
D000341	SAN MANUEL	US	AZ	32-42- N	110-41- W	CU MO AU AG RE	DISSEMINATED, CU-MO
W002683	SAN MANUEL KALAMAZOO	US	AZ	32-41- N	110-42- W	CU	PORPHYRY INTRUSION
W002105	SAN MANUEL MINE	US	AZ	32-40- N	110-40- W	CU MO AU TI	IGNEOUS-PORPHYRY
M050188	SAN MANUEL-KALAMAZOO	US	AZ	32-41-45N	110-41-20W	CU AG AU MO V PB ZN TI	PORPHYRY COPPER, STO
M001412	SAN PEDRO MINE	US	AZ	31-42-13N	110-06-49W	AG AU MN CU	VEIN
M050365	SAN XAVIER EXTENSION	US	AZ	31-58-26N	111-05-45W	ZN PB AG CU AU BI CO MN MO NI CD	PYROMETASOMATIC REPL
M050619	SAN XAVIER MINE	US	AZ	32-01-39N	111-04-51W	CU AG MO	SUPERGENE OXIDE ORE
M000791	SANCHEZ DEPOSIT	US	AZ	32-52-33N	109-33-00W	CU MO AG AU	PORPHYRY COPPER
M800399	SANTA LUCIA MINE	US	AZ	33-07-44N	109-22-36W	CU AG AU	VEIN
M000982	SANTO NINO MINE	US	AZ	31-21-39N	110-43-05W	CU MO AG AU PB ZN	DISSEMINATED/SHEAR Z
M800055	SARATOGA MINE	US	AZ	34-13-15N	112-20-47W	AU AG PB CU ZN	VEIN
M241036	SAVAGE MINE	US	AZ	31-55-06N	109-08-42W	CU PB AG AU	REPLACEMENT
M051181	SAVANAH & EASTER 4 P	US	AZ	32-36-17N	111-03-23W	CU BA PB AG	VEINS
M003835	SAVANIC MINE	US	AZ	36-16-17N	113-48-01W	CU AG AU U	SHEAR ZONE, BEDDED
M800056	SAVOY MINE	US	AZ	34-10-44N	112-20-19W	AG PB CU AU ZN	VEIN
M241058	SCANLON MINE	US	AZ	31-59-17N	109-12-06W	PB CU ZN AG	CONTACT METAMORPHIC
M004220	SCHENECTADY PROSPECT	US	AZ	35-25-20N	114-10-57W	AU AG ZN CU PB AS	VEIN
D000819	SENATOR MORGAN	US	AZ	31-54- N	111-04- W	CU AG W	QUARTZ VEINS, TACTIT
M050383	SENATOR MORGAN MINE	US	AZ	31-53-12N	111-04-32W	CU AG ZN PB W AU MO	PYROMETASOMATIC/VEIN
M000500	SEVENTY-NINE MINE	US	AZ	33-03-54N	110-48-50W	CU PB ZN AG MO SB AU V FE	REPLACEMENT, VEINS
M800161	SHANNON MINE	US	AZ	33-07-10N	109-21-36W	CU AG AU FE ZN MN	REPLACEMENT, DISSEMI
D000117	SHATTUCK (DENN) MINE	US	AZ	31-26- N	109-55- W	CU PB ZN AU AG V MN	REPLACEMENT
M001656	SHELDON MINE	US	AZ	34-26-55N	112-23-46W	CU PB AU AG ZN	VEIN; SHEAR ZONE
M800170	SHELDON SUPERIOR MIN	US	AZ	34-25-53N	112-25-05W	CU AG AU PB	VEIN
M001017	SHERWOOD MINE	US	AZ	31-59-49N	111-51-49W	CU AG AU	VEINS/SHEAR ZONE
M002548	SHIRLEY MAE PROSPECT	US	AZ	32-33-01N	114-06-45W	CU	VEIN
M002641	SHYLOCK MINE	US	AZ	34-37-19N	112-11-03W	AG ZN PB CU AU	VEIN
M800099	SIBLEY MINE	US	AZ	32-17-35N	110-09-57W	CU AG	REPLACEMENT
M050531	SIERRITA MINE	US	AZ	31-52-17N	111-08-53W	CU MO AG AU PB ZN	PORPHYRY COPPER
D000333	SILVER BELL	US	AZ	32-24- N	111-30- W	CU MO AG	DISSEMINATED, CU-MO
D002948	SILVER BELL PROPERTY	US	AZ	32-25-13N	111-32-25W	CU AG MO AU PB ZN	SUPERGENE ENRICHED P
M030564	SILVER BELL PROSPECT	US	AZ	32-11-20N	109-25-20W	W CU MO ZN MN PB	VEIN
M051217	SILVER BONANZA MINE	US	AZ	32-48-01N	110-56-34W	CU PB AG	VEIN
M000025	SILVER BULLION MINE	US	AZ	32-11-43N	112-07-07W	AG PB CU AU ZN MO U	VEINS, SHEAR ZONE
M002718	SILVER BUTTE COPPER	US	AZ	34-10-15N	111-26-41W	CU PB AG AU	VEIN
M241009	SILVER CAMP MINE	US	AZ	32-14-15N	109-38-45W	CU AG AU	VEIN/SHEAR ZONE , RE
M800101	SILVER FLOWER MINE	US	AZ	32-11-26N	111-07-22W	CU AG	VEIN
M000164	SILVER HILL MINE GRO	US	AZ	32-20-52N	111-28-19W	CU AG PB AU	REPLACEMENT/VEINS/SH
M241037	SILVER HILL MINE GRO	US	AZ	31-57-05N	109-13-30W	CU PB AG AU W	CONTACT METAMORPHIS
M000395	SILVER KING MINE M	US	AZ	32-58-06N	110-52-14W	CU	FRACTURE PLANES
D002517	SILVER KING CLAIMS	US	AZ	34-45-57N	113-46-39W	AG PB CU	FISSURE, VEIN, PODS
M241206	SILVER KING MINE	US	AZ	34-13-36N	111-21-41W	CU AG AU PB MO	VEIN
M800398	SILVER KING MINE	US	AZ	33-03-52N	109-21-02W	CU AG AU	VEIN; SHEAR ZONE
M000142	SILVER LEAD MINE GRO	US	AZ	32-26-16N	111-32-18W	PB ZN CU AG	PYROMETASOMATIC
M050635	SILVER PASS MINE M	US	AZ	32-11-58N	111-03-24W	CU AG	SILICIFIED ZONES
M241044	SILVER PRINCE MINE	US	AZ	31-58-17N	109-17-50W	PB CU AG	VEIN/SHEAR ZONE
M000284	SILVER QUEEN MINE	US	AZ	32-03-59N	111-56-12W	AG CU AU PB	VEIN
M001754	SILVER SPAR PROSPECT	US	AZ	33-01-01N	110-21-56W	PB AG SB CU	SHEAR ZONE
M241156	SILVERTON MINE	US	AZ	31-46-19N	109-48-09W	CU AU	REPLACEMENT
M030398	SIMPLOT MINE	US	AZ	31-23-09N	110-41-55W	ZN CU PB AG MO	SKARN
W002685	SIVER BELL MINE	US	AZ	32-25- N	111-32- W	CU MO AG	PORPHYRY INTRUSION A
M001978	SIXTY-FOUR GROUP	US	AZ	33-22-51N	110-59-14W	CU	VEINLETS
M002550	SMITH MINE	US	AZ	32-28-52N	114-00-09W	AU CU AG FE MO	VEIN/SHEAR ZONE

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D011412	SOL MINE	US	AZ	32-48-10N	109-32-40W	CU	SULFIDE SYSTEM
M001764	SOLDIER PROSPECT	US	AZ	33-02-15N	110-20-32W	CU	REPLACEMENT
M241130	SOLTICE MINE	US	AZ			AG PB CU AU	REPLACEMENT
M800102	SOUTH END MINE	US	AZ	31-51-54N	110-42-38W	CU AG	METASOMATIC REPLACEM
M050363	SOUTH SAN XAVIER MIN	US	AZ	31-58-14N	111-06-12W	CU PB AG ZN AU	PYROMETASOMATIC REPL
M241025	SOUTHERN MINE	US	AZ	32-05-45N	110-03-15W	CU AG	REPLACEMENT
M002680	SOUTHERN STAR MINE	US	AZ	35-57-37N	112-11-44W	CU	VEIN
M241100	SOUTHWEST MINE	US	AZ	31-26-24N	109-54-57W	CU PB ZN AU AG	REPLACEMENT
M241008	SPEAKS MINE	US	AZ	32-16-03N	109-42-45W	PB AG CU AG	VEINS/SHEAR ZONE
D011813	SPIKE-E HILLS PROSPE	US	AZ	32-18-30N	109-49-15W	CU	PORPHYRY
M241101	SPRAY SHAFT	US	AZ	31-26-01N	109-54-39W	CU PB ZN AU AG	REPLACEMENT
M004298	SPRINGFIELD MINE	US	AZ	34-12-28N	112-22-18W	CU PB AG AU	PORPHYRY, BRECCIA PI
M001101	SQUAW PEAK MINE	US	AZ	34-28-57N	111-51-23W	MO CU PB ZN AG	PORPHYRY, STOCKWORK
M050004	ST. GEORGE CLAIM	US	AZ	32-05-28N	110-03-30W	CU ZN MO W	REPLACEMENT IN BEDS
M000022	ST. PATRICK MINE	US	AZ	32-09-53N	112-10-05W	CU AG AU	SHEAR ZONE
M800162	STANDARD COPPER MINE	US	AZ	33-06-12N	109-21-14W	CU AG	VEIN; METAMORPHIC
M050018	STANDARD PROSPECT	US	AZ	32-03-56N	110-02-26W	ZN CU W BE MO	REPLACEMENT
M050178	STAR POINTER MINE.	US	AZ	31-46-20N	110-51-16W	CU	REPLACEMENT. (FISSUR
M002128	STARLIGHT MINE	US	AZ	33-05-34N	110-21-49W	CU AG AU PB	REPLACEMENT
M002219	STATE OF MAINE MINE	US	AZ	31-41-57N	110-06-54W	AG AU MN CU PB	REPLACEMENT
M800397	STEVENS GROUP MINES	US	AZ	33-08-05N	109-22-22W	CU AG AU	CONTACT METAMORPHIC
M002632	STODDARD MINE	US	AZ	34-25-10N	112-10-51W	CU AU AG PB ZN	MASSIVE SULPHIDE
M241227	STONEWALL MINE	US	AZ	33-25-04N	110-45-57W	CU AG PB AU MN V	VEIN/SHEAR ZONE
M003372	STORM CLOUD MINE	US	AZ	34-25-00N	112-25-07W	AU AG CU PB	VEIN; SHEAR ZONE
M800149	STOUT MINE	US	AZ	31-30-24N	110-00-44W	CU AG	VEIN
M050643	STRATTON MINE	US	AZ	32-27-57N	110-44-37W	CU MO AG AU	TACTITE, VEINLETS
M004243	SUE MANGANESE MINE	US	AZ	34-11-36N	114-12-42W	MN CU AU AG	VEIN/SHEAR ZONE
M241041	SULLIVAN MINE GROUP,	US	AZ	31-59-17N	109-15-48W	CU PB ZN AG AU	REPLACEMENT
M000407	SUN LODE CLAIM	US	AZ	31-43-30N	110-52-50W	MO CU	VEIN
M899919	SUNNYSIDE MINE GROUP	US	AZ	31-27-04N	110-44-46W	CU AG AU PB ZN	SHEAR ZONE/VEINLETS
M051114	SUNSET CLAIMS	US	AZ	32-25-43N	111-38-00W	CU MN	NOT REPORTED
M241131	SUNSET MINE	US	AZ	31-41-15N	110-05-10W	AG PB MN CU AU	REPLACEMENT
M241051	SUNSET MINE GROUP	US	AZ	31-59-38N	109-11-05W	PB ZN AG CU AU	VEIN/SHEAR ZONE
M050282	SUNSHINE - SUNRISE G	US	AZ	31-52-31N	111-16-03W	PB AG AU ZN CU BA	REPLACEMENT /SHEAR Z
M899880	SUPERIOR AND ARIZONA	US	AZ	33-17-51N	111-05-38W	CU AU AG MN	REPLACEMENT/SHEAR ZO
M241205	SUPERIOR AND BOSTON	US	AZ	33-26-06N	110-45-17W	CU AG AU MN	VEIN-SHEAR ZONE
M800203	SWALLOW MINE	US	AZ	34-03-26N	112-30-30W	CU AG AU	VEIN
M003777	SWANSEA MINE	US	AZ	34-10-03N	113-50-34W	CU FE AG AU	REPLACEMENT
M050160	SWEET BYE AND BYE CL	US	AZ	31-49-40N	110-45-33W	CU AG AU	SHEAR ZONE; CARBONAT
M000428	SWEETWATER MINE MIN	US	AZ	31-43-04N	110-47-24W	CU AG	FAULT ZONE
M800378	SWINDLER MINE	US	AZ	34-27-43N	112-15-44W	CU AU AG	STRATIFORM; MASSIVE
M050053	TABLE MOUNTAIN MINE	US	AZ	32-49-01N	110-29-07W	CU AG AU V PB MO ZN	VEIN
M800141	TEJON MINE	US	AZ	31-44-17N	109-49-32W	PB CU AU AG ZN	REPLACEMENT
M050151	TENSTRIKE MINE	US	AZ	32-54-26N	110-19-33W	PB ZN CU	FAULT VEIN
M051244	TEPAYOC CLAIM	US	AZ	32-45-33N	111-24-50W	CU	VEIN
M241035	TEXAS MINE GROUP	US	AZ	31-56-40N	109-07-56W	CU PB AG W	CONTACT METAMORPHIC
M241185	THREE C RANCH MINE	US	AZ	32-32-00N	110-44-29W	CU AG AU PB	VEIN
M241337	THREE R MINE GROUP	US	AZ	31-28-30N	110-45-43W	CU PB AG AU ZN AL3	SHEAR ZONE
M030390	THUNDER AND STANDARD	US	AZ	31-26-41N	110-44-55W	CU AG AU MO	DISSEMINATED/SHEAR Z
M004314	TIGER MINE	US	AZ	34-11-07N	112-21-19W	AG AU ZN PB CU	VEIN
M003146	TIN HORN WASH DEPOSI	US	AZ	33-26-30N	110-51-41W	CU	REPLACEMENT
M050666	TIP TOP #1 PROSPECT	US	AZ	32-06-49N	110-12-45W	CU	VEINLETS/BRECCIA ZON
M050159	TIP TOP MINE	US	AZ	31-52-10N	110-47-36W	CU AG AU PB ZN MO	PYROMETASOMATIC
M002177	TOLMAN-BABCOCK GROUP	US	AZ	32-58-10N	110-21-19W	PB AG AU CU	VEIN/SHEAR ZONE
M800142	TOM SCOTT MINE	US	AZ	31-44-16N	109-49-15W	CU AG AU PB ZN MO	REPLACEMENT
M030338	TOPAZ CLAIMS	US	AZ	33-40-10N	114-18-30W	AU W MO CU U	VEIN
M050351	TOUGHNUT MINE	US	AZ	31-42- N	110-04- W	AG CU PB ZN AU V	REPLACEMENT
M800167	TREADWELL MINE	US	AZ	34-25-13N	112-25-46W	CU AG AU	VEIN
M002605	TRI-METALS PROSPECT	US	AZ	34-27-22N	112-09-16W	CU AG AU	VEIN
M001735	TRIBUTE MINE	US	AZ	31-42-09N	110-04-09W	PB AG AU CU MO	REPLACEMENT
M241104	TRISH MAG MINE	US	AZ	31-25-53N	109-54-34W	CU PB ZN AU AG	REPLACEMENT
M030475	TROY RANCH PROSPECT	US	AZ	33-08-53N	110-53-03W	CU MO	PORPHYRY COPPER
M050446	TUBUTANA MINE	US	AZ	31-31-27N	110-58-04W	CU AG	QUARTZ - CALCITE VIN
M002858	TUNGSTEN NO. 1 MINE	US	AZ	33-25-55N	110-53-20W	W PB MO AG CU	SHEAR ZONE
M241154	TURQUOISE GROUP MINE	US	AZ	31-47-10N	109-49-28W	CU AG	REPLACEMENT
M800042	TUSCUMBIA MINE	US	AZ	34-16-41N	112-22-10W	AG CU PB ZN	VEIN
D000336	TWIN BUTTES	US	AZ	31-53- N	111-02- W	CU MO AG	DISSEMINATED, PORPHY

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W002686	TWIN BUTTES MINE	US	AZ	31-55- N	111-02- W	CU MO	PORPHYRY WALLROCK
M050530	TWIN BUTTES MINE	US	AZ	31-53-22N	111-02-32W	CU MO AU AG ZN PB U	PORPHYRY COPPER
M003374	TWIN LEDGE PROSPECT	US	AZ	34-20-36N	112-27-44W	MO CU AG AU	VEIN
M241158	TWO PEAKS MINE	US	AZ	31-46-15N	110-25-28W	CU PB AG AU	REPLACEMENT
M899903	TWO QUEENS MINE	US	AZ	33-01-27N	110-41-54W	CU AG AU PB	VEIN/METASOMATIC
M002176	UNCLE SAM MINE (COPP	US	AZ	31-26-02N	109-55-10W	CU PB ZN AU AG	REPLACEMENT
M800212	UNIDA MINE	US	AZ	34-03-19N	112-35-41W	CU PB AG AU	VEIN
M800057	UNION MINE	US	AZ	34-12-54N	112-20-52W	AG CU AU PB ZN	VEIN
M003334	UNITED STATES COPPER	US	AZ	33-43-20N	113-01-29W	CU AU AG	VEIN
M002668	UNITED VERDE EXTENSI	US	AZ	34-45-13N	112-06-44W	CU AU AG ZN	MASSIVE SULFIDE
M002664	UNITED VERDE MINE	US	AZ	34-45-07N	112-07-23W	CU AU AG ZN PB AS	MASSIVE SULFIDE
M051140	UNNAMED COPPER AND L	US	AZ	32-42-45N	111-08-40W	CU PB	VEIN
M051132	UNNAMED COPPER AND L	US	AZ	32-43-16N	111-05-02W	CU PB MO	VEIN, BOXWORK
M051145	UNNAMED COPPER DEPOS	US	AZ	32-30-03N	111-01-12W	CU	VEIN
M051148	UNNAMED COPPER DEPOS	US	AZ	32-37-30N	111-04-39W	CU	VEIN
M051149	UNNAMED COPPER DEPOS	US	AZ	32-43-46N	111-08-60W	CU	VEIN
M051163	UNNAMED COPPER DEPOS	US	AZ	32-34-07N	111-07-47W	CU	DISCEMINATED - FRACT
M051164	UNNAMED COPPER DEPOS	US	AZ	32-33-09N	111-07-52W	CU	UNKNOWN
M051165	UNNAMED COPPER DEPOS	US	AZ	32-32-28N	111-08-02W	CU	UNKNOWN
M051167	UNNAMED COPPER DEPOS	US	AZ	32-31-30N	111-08-52W	CU	UNKNOWN
M051168	UNNAMED COPPER DEPOS	US	AZ	32-32-11N	111-08-18W	CU	UNKNOWN
M051170	UNNAMED COPPER DEPOS	US	AZ	32-34-10N	111-07-34W	CU	UNKNOWN
M051174	UNNAMED COPPER DEPOS	US	AZ	32-39-05N	111-05-08W	CU	UNKNOWN
M051180	UNNAMED COPPER DEPOS	US	AZ	32-37-04N	111-03-33W	CU	UNKNOWN
M051186	UNNAMED COPPER DEPOS	US	AZ	32-34-59N	111-02-39W	CU	VEIN
M051187	UNNAMED COPPER DEPOS	US	AZ	32-35-05N	111-03-53W	CU	VEIN
M051188	UNNAMED COPPER DEPOS	US	AZ	32-34-51N	111-00-00W	CU	FRACTURE DISCEMINATE
M051189	UNNAMED COPPER DEPOS	US	AZ	32-34-35N	111-01-08W	CU	SHEAR ZONE
M051139	UNNAMED COPPER DEPOS	US	AZ	32-41-57N	111-09-13W	CU	UNKNOWN
M051143	UNNAMED COPPER PROSP	US	AZ	32-32-30N	111-01-11W	CU	FRACTURE VEINLETS
M051131	UNNAMED COPPER PROSP	US	AZ	32-41-26N	111-05-28W	CU	UNKNOWN
M051133	UNNAMED COPPER PROSP	US	AZ	32-41-15N	111-04-33W	CU	UNKNOWN
M051134	UNNAMED COPPER PROSP	US	AZ	32-40-52N	111-04-12W	CU	UNKNOWN
M051135	UNNAMED COPPER PROSP	US	AZ	32-41-37N	111-04-03W	CU	UNKNOWN
M051136	UNNAMED COPPER PROSP	US	AZ	32-41-19N	111-06-13W	CU	UNKNOWN
M051137	UNNAMED COPPER PROSP	US	AZ	32-41-29N	111-06-04W	CU	UNKNOWN
M051138	UNNAMED COPPER PROSP	US	AZ	32-41-30N	111-06-18W	CU	UNKNOWN
M051141	UNNAMED CU DEPOSIT	US	AZ	32-39-12N	111-07-44W	CU	UNKNOWN
M051146	UNNAMED CU DEPOSIT	US	AZ	32-31-04N	111-01-23W	CU	VEIN (OPEN SPACE FIL
M051173	UNNAMED IRON DEPOSIT	US	AZ	32-44-43N	111-00-03W	FE	UNKNOWN
M051203	UNNAMED PROSPECT	US	AZ	32-53-22N	110-56-36W	CU PB AG	VEIN
M051204	UNNAMED PROSPECT	US	AZ	32-53-07N	110-55-54W	AG	VEIN
M051206	UNNAMED PROSPECT	US	AZ	32-59-40N	110-59-19W	CU	VEIN
M051214	UNNAMED PROSPECT	US	AZ	32-47-40N	110-53-48W	CU PB AG	VEIN
M051215	UNNAMED PROSPECT	US	AZ	32-45-06N	110-55-47W	CU	VEIN
M051218	UNNAMED PROSPECT	US	AZ	32-42-50N	111-24-54W	CU	VEIN
M051219	UNNAMED PROSPECT	US	AZ	32-42-45N	111-22-58W	CU	QTZ VEIN
M051221	UNNAMED PROSPECT	US	AZ	32-41-20N	111-24-03W	CU	QTZ VEIN
M051222	UNNAMED PROSPECT	US	AZ	32-42-07N	111-25-32W	CU	QTZ VEIN
M051223	UNNAMED PROSPECT	US	AZ	32-54-04N	111-03-57W	CU	FRACTURE FILLING
M051226	UNNAMED PROSPECT	US	AZ	32-57-49N	111-14-23W	CU	VEIN
M051228	UNNAMED PROSPECT	US	AZ	32-34-30N	111-07-28W	CU	QTZ VEIN.
M051229	UNNAMED PROSPECT	US	AZ	32-58-35N	111-08-44W	CU	QTZ VEIN
M051231	UNNAMED PROSPECT	US	AZ	32-50-24N	111-20-15W	CU FE	? FAULT ?
M051232	UNNAMED PROSPECT	US	AZ	32-50-22N	111-20-54W	CU	FAULT ZONE
M051233	UNNAMED PROSPECT	US	AZ	32-50-06N	111-20-16W	CU	FRACTURE FILLINGS
M051234	UNNAMED PROSPECT	US	AZ	32-51-06N	111-20-40W	CU	QTZ VEIN
M051235	UNNAMED PROSPECT	US	AZ	32-51-54N	111-20-11W	CU	QTZ VEIN
M051236	UNNAMED PROSPECT	US	AZ	32-50-11N	111-19-22W	CU FE	FAULT (?)
M051237	UNNAMED PROSPECT	US	AZ	32-50-38N	111-19-33W	CU	QTZ VEIN
M051238	UNNAMED PROSPECT	US	AZ	32-50-30N	111-19-02W	CU	QTZ VEIN
M051239	UNNAMED PROSPECT	US	AZ	32-49-36N	111-21-35W	CU	FAULT
M051240	UNNAMED PROSPECT	US	AZ	32-49-03N	111-21-05W	CU	FAULT CONTROL
M051241	UNNAMED PROSPECT	US	AZ	32-48-21N	111-21-21W	CU	FAULT CONTROL ?
M051242	UNNAMED PROSPECT	US	AZ	32-45-58N	111-22-56W	CU	VEIN
M051243	UNNAMED PROSPECT	US	AZ	32-45-32N	111-23-56W	CU	QTZ VEIN (POD)
M050558	UNNAMED PROSPECT	US	AZ	31-37-24N	111-08-55W	CU	UNKNOWN

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M050598	UNNAMED PROSPECT	US	AZ	32-38-32N	111-25-05W	CU	UNKNOWN
M050673	UNNAMED PROSPECT	US	AZ	32-14-58N	110-15-24W	CU	UNKNOWN
M050674	UNNAMED PROSPECT	US	AZ	32-22-33N	110-17-44W	CU	VEIN/SHEAR ZONE
M050677	UNNAMED PROSPECT	US	AZ	32-15-56N	110-02-00W	CU	FAULT/SHEAR
M050107	UNNAMED PROSPECT	US	AZ	32-45-04N	110-27-24W	CU	FAULT VEIN.
M050108	UNNAMED PROSPECT	US	AZ	32-45-03N	110-27-54W	CU	FRACTURE ZONE.
M050109	UNNAMED PROSPECT	US	AZ	32-45-02N	110-29-33W	CU	UNKNOWN
M050111	UNNAMED PROSPECT	US	AZ	32-45-21N	110-27-54W	CU	FRACTURE ZONE.
M050114	UNNAMED PROSPECT	US	AZ	32-45-25N	110-28-42W	CU	FRACTURE.
M050117	UNNAMED PROSPECT	US	AZ	32-45-36N	110-28-45W	CU	FRACTURE.
M050184	UNNAMED PROSPECT	US	AZ	32-42-39N	110-44-11W	CU	FAULT ZONE
M050187	UNNAMED PROSPECT	US	AZ	32-40-12N	110-42-22W	CU	SHEAR ZONES
M050210	UNNAMED PROSPECT	US	AZ	32-54-31N	110-50-02W	CU ZN PB V	SHEAR ZONE MINERALIZ
M030361	UNNAMED PROSPECT	US	AZ	35-05-30N	113-49-50W	CU MO	DISSEMINATED, VEIN
M003032	UNNAMED PROSPECT	US	AZ	33-24-27N	110-27-13W	CU	SHEAR ZONE
M051116	UNNAMED PROSPECT	US	AZ	32-31-09N	111-40-46W	CU	FISSURE
M050999	UNNAMED PROSPECT 119	US	AZ	32-17-00N	111-08-36W	CU	SKARN
M050548	UNNAMED PROSPECT K-1	US	AZ	31-54-34N	111-17-39W	CU	UNKNOWN
M050105	UNNAMED PROSPECT.	US	AZ	32-44-58N	110-27-09W	CU	FAULT VEIN.
M050106	UNNAMED PROSPECT.	US	AZ	32-45-15N	110-27-09W	CU	DIKE.
M050112	UNNAMED PROSPECT.	US	AZ	32-45-24N	110-27-50W	CU	UNKNOWN
M050115	UNNAMED PROSPECT.	US	AZ	32-45-26N	110-28-46W	CU	FRACTURE
M050116	UNNAMED PROSPECT.	US	AZ	32-45-31N	110-28-26W	CU PB	FRACTURE ZONE, VEIN.
M050118	UNNAMED PROSPECT.	US	AZ	32-45-59N	110-29-11W	CU	BRECCIA PIPE.
M050667	UNNAMED PROSPECTS	US	AZ	32-06-48N	110-11-10W	CU	VEINLETS
M050207	UNNAMED PROSPECTS	US	AZ	32-01-45N	110-03-02W	CU AG W	VEINS
M030359	UNNAMED PROSPECTS	US	AZ	35-06-35N	113-49-10W	CU MO	DISSEMINATED, VEINS
M030360	UNNAMED PROSPECTS	US	AZ	35-06-06N	113-49-48W	CU MO	DISSEMINATED, VEINS
M050556	UNNAMED SHAFT (FE DE	US	AZ	31-41-54N	111-07-24W	FE	VEIN, DISSEMINATED
M800011	UPSHOT MINE	US	AZ	34-25-23N	112-15-57W	CU ZN PB AU AG	STRATIFORM MASSIVE S
M004589	VALENZUELLA MINE	US	AZ	33-48-41N	114-20-57W	CU AU	VEIN
M003083	VAN DYKE SHAFT	US	AZ	33-24-07N	110-52-21W	CU AG	VEIN
M241177	VEKOL HILLS	US	AZ	32-35-21N	112-03-14W	CU MO ZN	DISSEMINATED
M002483	VENEGAS PROSPECT	US	AZ	32-11-00N	113-46-32W	CU	VEIN
M000692	VENTANA MINE GROUP	US	AZ	31-46-51N	111-39-44W	CU AG AU PB ZN MN	VEINS/SHEAR ZONE
M030395	VENTURA MINE GROUP	US	AZ	31-27-27N	110-45-53W	CU AG PB AU ZN MN MO	BRECCIA PIPE, VEINS/
M002674	VERDE CENTRAL MINE	US	AZ	34-44-23N	112-07-16W	CU AG AU	VEIN
M002671	VERDE COMBINATION PR	US	AZ	34-44-10N	112-06-02W	CU	VEIN
M051171	VICTOR CLAIMS	US	AZ	32-37-35N	111-06-12W	CU	DISSEMINATED - FRACT
M800381	VICTORY COPPER MINE	US	AZ	34-17-25N	112-38-53W	CU AG	STRATIFORM MASSIVE S
M241071	VISION POINT PROSPEC	US	AZ	31-53-45N	109-45-05W	CU AG	UNKNOWN
M800028	VOLCANO MINE	US	AZ	34-36-15N	112-02-18W	CU AU AG	VEIN
M050361	VULCAN MINE	US	AZ	31-58-55N	111-05-39W	CU AG AU PB ZN	PYROMETASOMATIC REPL
M241095	WADE HAMPTON MINE	US	AZ	31-24-36N	109-54-56W	CU PB ZN AG AU	REPLACEMENT
M800287	WALNUT NO. 2 CLAIM C	US	AZ	34-00-26N	110-52-18W	U CU FE	FRACTURE COATINGS, P
M002527	WANAMAKER PROSPECT	US	AZ	32-34-39N	114-07-32W	CU	VEIN
M241230	WARRIOR MINE	US	AZ	33-24-50N	110-53-02W	CU AG MN	VEIN/SHEAR ZONE
M002547	WELLTONIA PROSPECT	US	AZ	32-34-29N	114-07-42W	CU	VEIN
M050364	WEST SAN XAVIER PROS	US	AZ	31-58-15N	111-05-55W	CU	PYROMETASOMATIC REPL
M050355	WESTERN TUNGSTEN	US	AZ	31-24-03N	110-19-28W	PB AG W CU	DISSEMINATED
M003253	WHIPSHAW MINE	US	AZ	34-02-49N	112-28-49W	CU AG AU	VEIN
M000120	WHITCOMB MINE	US	AZ	31-57-57N	111-05-30W	PB AG CU ZN AU	REPLACEMENT/SHEAR ZO
M002193	WHITETAIL MINE	US	AZ	31-25-02N	109-55-05W	CU AG AU	REPLACEMENT
M030373	WIKIEUP PROSPECT	US	AZ	34-37-43N	113-36-58W	CU MO AU	VEIN, STOCKWORK
M002914	WILLAHA GROUP	US	AZ	35-45-54N	112-15-00W	U CU FE	VEINS, VUGS AND FISS
M003376	WILLIAMS MINE	US	AZ	34-29-27N	112-27-01W	CU AU MO	UNKNOWN
M241020	WILLIE ROSE MINE	US	AZ	32-05-47N	109-15-24W	CU AG AU ZN	CONTACT METAMORPHIC
M800204	WILLIS MINE	US	AZ	34-00-37N	112-27-59W	CU AG AU	VEIN
M800286	WILSON CREEK AREA	US	AZ	33-59-33N	110-57-36W	U CU	FRACTURE COATINGS, P
M050149	WINDSOR MINE	US	AZ	32-56-21N	110-20-12W	PB CU AG	FAULT VEIN
M000841	WOLVERINE MINE	US	AZ	31-25-17N	109-55-19W	CU PB ZN AG AU	REPLACEMENT
M241179	WOOLEY MINE	US	AZ	33-02-42N	111-01-26W	CU AG U	STOCKWORK/SHEAR ZONE
M800395	XIV GROUP	US	AZ	33-07-24N	109-22-01W	CU AG	VEIN; PORPHYRY COPPE
M002650	YAEGER CANYON MINE	US	AZ	34-39-56N	112-11-07W	CU AU AG	VEIN
M800396	YAVAPAI MINE	US	AZ	33-05-08N	109-21-38W	CU ZN	COPPER PORPHYRY; REP
M001668	YEAKLEY MINE MINE	US	AZ		109-39- W	PB CU AG	VEIN
M003845	YUMA MINE	US	AZ	33-51-04N	113-46-06W	CU AU AG PB	VEIN

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M800384	ZONIA MCMAHON MINE	US	AZ	34-18-12N	112-37-56W	CU AG PB AU	STRATIFORM, MASSIVE
M004613	ZONIA MINE	US	AZ	34-18-02N	112-37-58W	CU AG AU	DISSEMINATED/VEINS
M241202	ZULU MINE	US	AZ	34-09-23N	111-23-45W	AU AG CU PB V	VEIN
M004786		US	CA	38-23-31N	120-56-58W	CU	
M025017		US	CA	36-01-23N	117-31-54W	CU AG FE	LODE
M025025		US	CA	35-55-16N	117-35-16W	CU AU AG FE	SHEAR ZONE-VEIN
M009624	A. C. SMITH	US	CA	37-20-50N	120-05-15W	CU	
W025215	AFTERTHOUGHT	US	CA	40-44-10N	122-04-56W	CU ZN AG AU PB	MASSIVE SULFIDES
W025248	AKERS GROUP	US	CA	40-44-34N	122-28-01W	CU AU AG	MASSIVE SULFIDE
M007308	ALABASTER CAVE	US	CA	38-48-43N	121-04-32W	CU AU AG	
C010649	ALEXANDER	US	CA	37-44-59N	118-13-50W	PB AG CU ZN AU	LODE
M012121	ALGOL MINE (ARGALL?)	US	CA	38-59-37N	121-11-55W	CU AU	VEIN
M020673	ALLURED	US	CA	35-22-20N	115-28-34W	CU AG AU	VEIN
M024332	ALMA	US	CA	37-48-14N	122-10-16W	CU S	MASSIVE SULFIDE
M004730	ALPINE FAIRVIEW	US	CA	38-50-39N	119-47-59W	CU AU	VEIN
M007289	ALTA	US	CA	41-54-19N	124-01-57W	CU	VEIN
M020674	AMAZON	US	CA	34-37-20N	117-16-02W	CU	VEIN
W023730	AMERICAN	US	CA	35-52-16N	116-25-32W	CU AU AG	VEIN
M020675	AMERICAN EAGLE	US	CA	34-18-22N	114-29-24W	CU AU	VEIN
M009407	AMERICAN EAGLE	US	CA	00-00-00N	000-00-00W	CU ZN AU AG PB	REPLACEMENT
W024682	ANTELOPE	US	CA	36-39-09N	120-59-51W	CU	VEIN
W023731	ANTHONY	US	CA	36-01-19N	117-09-33W	CU AU AG PB	
M020614	ANTON AND PABST	US	CA	36-34-39N	117-37-45W	CU	
M021089	ARCHER	US	CA	38-30-29N	122-53-48W	CU	VEIN
W023732	ARCTURUS	US	CA	35-48-30N	116-27-14W	CU PB AG ZN	
M010814	ARKASAS TRAVELER	US	CA	39-09-11N	121-15-39W	CU ZN AU	REPLACEMENT
W025219	ARPS GROUP	US	CA	40-46-52N	122-13-20W	CU ZN AG AU	MASSIVE SULFIDE
W024710	B AND B	US	CA	35-04-19N	117-00-16W	CU	
M020799	BACH	US	CA	37-10-04N	120-01-16W	CU AG AU	
M020447	BACKBONE	US	CA	40-46-13N	122-26-30W	CU AG AU PB	MASSIVE SULFIDE
M020680	BAGDAD - CHASE	US	CA	34-37-37N	116-10-07W	AU CU AG PB	VEIN
W025289	BALAKLALA	US	CA	40-43-31N	122-29-53W	CU AG AU FE	MASSIVE SULPHIDES
M020449	BAXTER WINTHROPE	US	CA	40-47-01N	122-13-07W	CU AG AU	MASSIVE SULFIDE
W024538	BEARDSLEY MINE	US	CA	40-06-58N	120-42-34W	CU AU AG	VEIN
M010593	BENTON	US	CA	37-46-40N	118-29-15W	PB CU AG AU	
M004715	BERKELEY HILLS	US	CA	37-53-09N	122-15-41W	PB	
M011097	BERKELEY PROSPECT	US	CA	39-16-10N	121-07-20W	CU ZN AU AG PB S SB AS	COMPLEX SULPHIDE ZON
M005462	BIG BEND	US	CA	39-41-30N	121-25-53W	CU ZN PB AU AG	REPLACEMENT
M020681	BIG BUTTE	US	CA	34-50-30N	114-40-57W	CU AU AG	VEIN
M007949	BIG BUZZARD	US	CA	38-46-23N	121-06-07W	CU ZN AU PB AG	VEIN
M020801	BILADEAU	US	CA	37-30-17N	119-33-30W	CU ZN PB	VEINS
M010815	BITNER GROUP	US	CA	39-09-05N	121-15-36W	CU AU AL MG	VEINS
W025226	BLACK DIAMOND GROUP	US	CA	40-44-44N	122-18-02W	CU AG AU	REPLACEMENT
M020685	BLACK METAL	US	CA	34-19-38N	114-13-11W	CU AG	VEINS
M020686	BLACK MOUNTAIN	US	CA	34-35-35N	117-38-44W	CU W	VEIN
M020559	BLOOMFIELD	US	CA	41-57-56N	123-07-47W	CU	
C008075	BLUE CAT	US	CA	38-37-45N	120-48-09W	CU AU	LODE
M008075	BLUE CAT	US	CA	38-37-58N	120-48-19W	CU AU	
M020690	BLUE CLOUD	US	CA	34-14-27N	114-19-25W	CU	
W023720	BLUE JAY	US	CA	36-38-19N	117-36-35W	CU	
W017560	BLUE LEDGE	US	CA	41-57-00N	123-06-00W	CU ZN AG AU PB	MASSIVE SULFIDE
M009395	BLUE MOON	US	CA	37-33-58N	120-15-20W	CU ZN PB AG AU	REPLACEMENT
M020691	BLUE MOON	US	CA	35-28-04N	115-30-48W	PB CU AG AU	
M006214	BONANZA	US	CA	38-15-04N	120-44-59W	CU	VEIN
M020828	BONANZA AND BOBTAIL	US	CA	40-11-07N	120-45-55W	CU AG	VEIN
M021003	BONANZA KING	US	CA	40-01-30N	121-25-05W	CU ZN PB AU AG AS SB	VEIN
M007377	BOSTON	US	CA	38-48-15N	121-07-22W	CU	
M021079	BRADY RANCH	US	CA	39-10-54N	121-22-16W	CU	
M020695	BREAK OF DAY	US	CA	35-22-24N	116-14-35W	CU	
M007342	BREALA	US	CA	38-34-24N	120-57-39W	CU AU AG	
M007343	BRYANT RANCH	US	CA	38-34-38N	120-57-20W	CU	VEIN
W000369	BUCHANAN	US	CA	37-11-13N	119-59-11W	CU PB AG ZN	VEIN
W024128	BULL DOG	US	CA	37-40-03N	120-12-06W	CU	
M004853	BULL RUN	US	CA	38-17-41N	120-51-22W	CU	VEINS
W025217	BULLY HILL	US	CA	40-47-57N	122-12-10W	CU ZN AG AU	MASSIVE SULFIDE
W025294	BUSY BEE	US	CA	40-40-40N	122-31-03W	CU	
W024523	BUTTE	US	CA	40-12-58N	120-48-14W	CU AU AG	

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
W023721	BUTTE GROUP	US	CA	36-38-10N	117-31-13W	CU PB AU AG	
M020700	CALARIVADA	US	CA	35-41-06N	115-31-49W	CU AG AU	VEIN
M010811	CALIFORNIA GOLD AND	US	CA	39-09-32N	121-15-25W	CU AU AG	VEIN
M007438	CAMBRIAN	US	CA	38-47-25N	120-56-25W	CU AU	VEIN
M007309	CAMEL BACK	US	CA	38-49-07N	121-03-12W	CU AU AG	VEIN
W017650	CAMPO SECO	US	CA	38-14-00N	120-52-00W	AU AG CU ZN	
M011977	CARLISLE	US	CA	39-21-34N	120-31-17W	CU ZN AU AG	VEIN
W024318	CAUTIER RANCH	US	CA	39-02-04N	121-05-57W	CU	
W025689	CHALCO COPPER CO	US	CA	41-22-14N	122-37-24W	CU	VEIN
M020457	CHANCE	US	CA	40-47-01N	122-13-06W	CU AG AU	
M020604	CHINESE CAMP	US	CA	37-52-03N	120-26-24W	CU	
M007509	CLEOPATRA	US	CA	41-59-16N	123-56-25W	CU	VEINS
M005717	COLLIER MINE (BLOOD)	US	CA	37-55-19N	120-42-57W	CU ZN AU AG PB	REPLACEMENT
M020460	COLMA GROUP	US	CA	40-45-06N	122-28-27W	CU	VEIN
M020708	CONFIDENCE	US	CA	35-03-52N	115-30-31W	CU W AU	VEINS
M020829	CONSOLIDATED GOLD AN	US	CA	39-58-11N	120-41-17W	CU AU AG	
M005645	CONSTELLATION (BORGE	US	CA	38-13-35N	120-52-30W	CU AU AG	VEIN
M007987	CONTRABAND	US	CA	38-52-31N	120-48-46W	CU ASB	VEIN
W024534	COPPER	US	CA	40-01-52N	120-42-38W	CU AU	VEINS
M020709	COPPER BASIN	US	CA	34-17-39N	114-15-18W	CU AG	VEINS
M020710	COPPER BELL GROUP	US	CA	34-16-41N	114-20-19W	CU AU AG	VEINS
M020711	COPPER CHIEF	US	CA	34-57-18N	115-06-09W	CU AU AG	
M020881	COPPER CHIEF GROUP	US	CA	35-25-22N	117-50-33W	CU	VEIN
M005724	COPPER CRESCENT	US	CA	37-54-42N	120-44-08W	CU AU AG	
M020622	COPPER GRAND	US	CA	36-17-02N	117-35-33W	CU	
W024536	COPPER GROUP	US	CA	40-02-16N	120-42-37W	CU AU AG	VEIN
M009458	COPPER HILL	US	CA	37-24-40N	120-11-12W	CU	
M020441	COPPER HILL	US	CA	38-30-07N	120-58-00W	CU AG AU ZN	MASSIVE SULFIDE
W017793	COPPER HILL	US	CA	40-15-41N	120-51-23W	CU	
M020713	COPPER KING	US	CA	35-21-07N	115-32-36W	CU AG AU	SKARN
W023602	COPPER KING	US	CA	36-54-40N	119-26-41W	CU ZN AU PB AG	VEIN
M021053	COPPER KING	US	CA	34-38-47N	125-54-43W	CU	VEIN
W025678	COPPER KING CLAIM	US	CA	41-18-57N	122-42-09W	CU	VEIN
W024679	COPPER MOUNTAIN	US	CA	36-29-37N	121-12-15W	CU MO AU AG	
M008939	COPPER PRINCE	US	CA	38-47-27N	122-40-19W	CU AG AU	VEIN
M020804	COPPER QUEEN	US	CA	37-09-00N	119-59-14W	CU AS	
M055581	COPPER QUEEN	US	CA	41-03-58N	122-40-43W	HG CU	
W023746	COPPER QUEEN	US	CA	35-48-03N	117-16-40W	CU AU PB AG ZN	REPLACEMENT
M020884	COPPER QUEEN CLAIMS	US	CA	35-22-36N	117-53-60W	CU AU	VEIN
M020924	COPPER QUEEN GROUP	US	CA	41-04-00N	122-40-43W	CU AU HG	
M009922	COPPER QUEEN I	US	CA	37-29-23N	119-55-25W	CU AU AG	VEIN
M020717	COPPER STRAND	US	CA	43-38-18N	116-37-23W	CU AG	VEIN
M020718	COPPER WORLD	US	CA	35-30-18N	115-36-09W	CU AG AU PB	VEIN
M020883	COPPEROLA PROSPECT	US	CA	35-25-01N	117-50-37W	CU	VEIN
M009618	CORNETT	US	CA	37-22-50N	120-09-10W	CU AU	VEIN
W023723	COSO	US	CA	36-16-09N	117-35-16W	CU PB AG AU	VEIN
M007311	COSTA RANCH	US	CA	38-49-08N	121-01-49W	CU	VEIN
M007379	COTHAIN	US	CA	38-36-24N	121-00-41W	CU	
W017576	COW CREEK-INGOT	US	CA	40-43-00N	122-04-00W	AG CU PB ZN	
W024546	CRESCENT COPPER GROU	US	CA	33-52-08N	114-45-30W	CU AG AU	VEIN
M023538	CRYSTAL	US	CA	34-24-60N	116-20-58W	AU CU	LODE
M020720	D. AND W.	US	CA	34-17-41N	114-29-01W	CU AG AU	VEIN
M012051	DAIRY FARM (TRENT, V	US	CA	39-01-51N	121-17-17W	CU AU AG	REPLACEMENT
W024761	DALEY	US	CA	33-04-16N	116-49-43W	CU AG	
W000371	DAULTON GROUP	US	CA	37-06-24N	119-57-34W	CU AG AU CO	REPLACEMENT
M020721	DESERT BUTTE GROUP	US	CA	34-20-38N	115-18-05W	CU ZN PB	
M023475	DIXIE EXT. NO. 1	US	CA	34-47-06N	117-03-23W	AG CU AU	LODE
W025957	DONAHUE RANCH	US	CA	37-44-58N	120-24-03W	CU	
W025216	DONKEY	US	CA	40-43-43N	122-03-17W	CU ZN PB AG AU	EPITHERMAL
M008076	E. E. COPPER	US	CA	38-38-01N	120-48-12W	CU AG AU	VEIN
W017584	EARLY BIRD	US	CA	40-43-00N	122-31-00W	CU AG AU	MASSIVE SULFIDE
M035925	EAST SECTION 11 PROS	US	CA	38-49-59N	119-48-29W	CU	
M005666	EDNA	US	CA	38-13-05N	120-51-03W	AU	LODE
M020798	EL DORADO	US	CA	38-50-38N	120-50-58W	CU ZN NI AU	REPLACEMENT
M020833	EL DORADO	US	CA	39-54-04N	120-08-24W	CU PB AG	VEIN
M021023	EMMA GROUP	US	CA	34-25-38N	118-13-28W	CU AG AU	VEIN
M020723	EMPEROR	US	CA	35-30-59N	115-36-58W	CU PB AG AU	VEIN

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
M005967	EMPIRE	US	CA	37-58-39N	120-38-05W	CU	REPLACEMENT
M021076	ENCINITAS	US	CA	33-04-49N	117-12-17W	CU PB	VEIN
M020834	ENGELS	US	CA	40-12-12N	120-46-25W	CU AU AG ZN	REPLACEMENT
M011994	ENGLISH MOUNTAIN	US	CA	39-27-46N	120-33-54W	CU AU	VEIN
M023694	ETHEL LEONA	US	CA	34-12-52N	114-23-52W	AU CU	LODE
M005929	EUREKA	US	CA	38-14-45N	120-45-33W	CU	
M011713	FAIRVIEW	US	CA	39-21-59N	120-49-14W	CU AU AG	VEIN
W025006	FIRST CHANCE MINE	US	CA	35-27-51N	120-46-34W	CU	
W024711	FRANCIS	US	CA	35-03-02N	115-29-32W	CU PB ZN AG	VEIN
M021024	FREE CUBA	US	CA	34-27-36N	118-11-28W	CU	VEIN
M007495	FRENCH HILL	US	CA	41-44-18N	123-59-53W	CU	
W023577	FRESNO	US	CA	36-59-12N	119-39-26W	CU AU AG PB ZN	VEIN
M020477	FRIDAY-LOWDEN GROUP	US	CA	40-45-12N	122-27-32W	CU BA AU	MASSIVE SULFIDE
M020478	GALVIN	US	CA	40-41-08N	122-30-29W	CU	MASSIVE SULFIDE
M004749	GLOBE	US	CA	38-40-14N	119-42-54W	CU AG AU	VEIN
M012165	GLOBE CONSOLIDATED	US	CA	38-54-23N	121-06-17W	CU	
M020727	GLORY	US	CA	35-33-48N	115-46-55W	CU AU AG	VEIN
M020728	GOLD BANNER	US	CA	34-42-21N	116-49-51W	CU AU	VEINS
M020729	GOLD COIN	US	CA	34-41-13N	115-47-06W	CU AU AG	VEIN
M020731	GOLD HILL COPPER	US	CA	34-19-02N	114-33-07W	CU AU AG	VEIN
M020732	GOLD STANTARD	US	CA	34-17-52N	114-31-22W	CU	VEINS
M020733	GOLD TRAILS	US	CA	34-17-48N	114-11-10W	CU AU	VEINS
W024540	GOLDEN HORSESHOE	US	CA	40-04-56N	120-17-29W	CU	VEIN
M006780	GOLDEN STORM	US	CA	38-22-20N	120-31-29W	AU CU AG	LODE
C010313	GOLETA CONSOLIDATED	US	CA	38-03-03N	119-10-57W	AU AG CU ZN	LODE
W025254	GOLINSKY	US	CA	40-46-13N	122-26-31W	CU ZN AU AG	MASSIVE SULFIDE
M005707	GOPHER HILL MINE	US	CA	37-57-16N	120-44-39W	AU CU AG PB ZN	LODE
M020483	GRAVES GROUP	US	CA	40-46-56N	122-28-15W	CU	MASSIVE SULFIDE
W017559	GRAY EAGLE-HAPPY CAM	US	CA	41-53-00N	123-22-00W	CU	
M009623	GREAT NORTHERN	US	CA	37-20-53N	120-05-17W	CU	VEIN
M020735	GREEN GOLD	US	CA	35-31-48N	115-36-57W	PB ZN CU AU AG	VEIN
M010809	GREEN LEAD	US	CA	39-10-23N	121-15-03W	CU	VEIN
M009826	GREEN MONSTER	US	CA	37-15-17N	119-59-16W	CU	REPLACEMENTS
W023724	GREEN MONSTER	US	CA	36-49-47N	118-07-13W	CU	
W000368	GREEN MOUNTAIN	US	CA	37-16-21N	119-59-47W	CU CO	
M020893	GREENBACK	US	CA	35-41-51N	118-49-57W	CU AG	VEINS
W025304	GREENHORN	US	CA	40-39-51N	122-41-42W	CU AU AG	REPLACEMENT
M020637	GREENWATER	US	CA	36-11-17N	116-27-46W	CU	
M020736	GREY COPPER	US	CA	35-33-08N	115-48-21W	CU PB AG	
W025641	GREY EAGLE	US	CA	41-51-48N	123-22-16W	CU ZN	MASSIVE SULFIDE
M020967	GRIDER	US	CA	36-14-36N	118-39-14W	CU	
W024537	GRUSS	US	CA	40-01-53N	120-43-12W	CU AU AG	VEIN
W023650	HANCE PROPERTY	US	CA	40-11-36N	123-47-20W	CU	
M020487	HARD TACK	US	CA	40-41-11N	122-30-27W	CU	
M004879	HAYWARD	US	CA	38-20-40N	120-53-03W	CU AU AG ZN	MASSIVE SULFIDE
M009923	HEISER	US	CA	37-28-32N	119-56-25W	CU	
M020738	HERCULES	US	CA	34-41-54N	115-51-27W	CU AU	VEIN
W024533	HINCHMAN	US	CA	40-03-26N	120-47-24W	CU AU	VEIN
M020741	HOOSIER AND MISSOURI	US	CA	34-55-45N	117-11-49W	AU AG PB CU	VEIN
M020742	HORN	US	CA	34-12-29N	114-47-32W	CU AU	REPLACEMENT/VEIN
M008752	HORSE MOUNTAIN	US	CA	40-51-42N	123-43-15W	CU AU CR	VEIN
M009456	HOTALING	US	CA	37-25-27N	120-10-09W	CU	
M020576	HUMMER	US	CA	41-19-49N	122-43-20W	CU NI	
M010825	IMPERIAL PAINT & COP	US	CA	39-06-56N	121-16-25W	CU	
M004785	IONE	US	CA	38-23-30N	120-56-59W	CU AU AG ZN SB	
M004842	IONE CITY	US	CA	38-18-37N	120-52-28W	CU	
M007754	IRLAND	US	CA	38-43-19N	120-51-38W	CU AU AG	VEIN
W024520	IRON DIKE	US	CA	40-03-53N	120-50-36W	CU	VEIN
W025295	IRON MOUNTAIN MINE	US	CA	40-40-24N	122-31-27W	CU AU ZN FE AG	MASSIVE SULFIDE
W025690	ISABELLA	US	CA	41-21-30N	122-38-33W	CU AG AU	VEIN
W017588	ISLAND MOUNTAIN CONS	US	CA	40-01-60N	123-29-03W	CU FE AU AG	REPLACEMENT
M009820	JOHNNIE GREEN	US	CA	37-17-01N	120-02-15W	CU AG	REPLACEMENT
M021056	JOSE	US	CA	36-50-04N	120-59-32W	CU AU	
M004638	JOSEPHINE	US	CA	37-57-15N	120-34-22W	CU	
M020751	JUANITA GROUP	US	CA	35-21-59N	117-08-07W	CU AU	VEINS
M020641	JUMBO	US	CA	36-26-27N	117-45-21W	CU PB AG AU	
M007526	KEYSTONE	US	CA	41-59-35N	123-57-46W	CU FE	COPPER GLANCE, RED &

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
W025291	KEYSTONE	US	CA	40-43-16N	122-30-14W	CU ZN AG AU	MASSIVE SULFIDE
M020642	KEYSTONE GROUP	US	CA	36-15-39N	117-33-52W	CU PB AS AU	VEIN
M006028	KEYSTONE-UNION	US	CA	37-58-35N	120-38-34W	CU AG AU	REPLACEMENT
M009819	KLONDIKE AND LAST CH	US	CA	37-19-41N	120-00-49W	CU AU	
M009381	LA VICTORIA	US	CA	37-36-19N	120-11-59W	CU ZN	POCKETS AND KIDNEYS
W023639	LABORN	US	CA	39-26-35N	122-34-27W	CU	
M012271	LAKEVIEW	US	CA	38-56-05N	120-59-33W	CU AU	VEIN
M010812	LAST CHANCE	US	CA	39-09-33N	121-15-09W	CU	VEIN
M004762	LEONA HEIGHTS	US	CA	37-47-29N	122-10-27W	CU AU ZN	MASSIVE SULFIDE
M004744	LEVIATHAN	US	CA	38-42-44N	119-39-24W	CU S AG AU	REPLACEMENT
M020756	LIBERTY COPPER LEDGE	US	CA	34-37-59N	117-15-56W	CU	
M006236	LIGHTNER	US	CA	37-56-49N	120-35-49W	CU AU	
W017598	LIGHTS CANYON-ENGELS	US	CA	40-13-00N	120-45-00W	AG CU	
M007134	LION	US	CA	39-19-34N	122-32-41W	CU	VEIN
M004998	LITTLE ILLINOIS	US	CA	38-26-48N	120-50-52W	AU	LODE
M020757	LITTLE MIKE	US	CA	35-15-45N	116-11-31W	CU AG	
M005716	LITTLE QUAIL HILL MI	US	CA	37-55-19N	120-42-57W	CU	
W024188	LONE TREE	US	CA	37-15-40N	120-00-22W	CU	
M025022	LONE WOLF COMPLEX	US	CA	35-43-22N	117-28-16W	CU AG AU FE	LODE - SHEAR ZONE
W024186	LOOKOUT	US	CA	37-16-45N	120-01-00W	CU	
M020509	LORAINE	US	CA	40-43-28N	122-28-24W	CU	
W000374	LOS OSOS	US	CA	35-16-51N	120-46-52W	CU AU AG	VEIN
W025011	LOS OSOS MINE	US	CA	35-17-06N	120-46-59W	CU AU SDG	SEDIMENTARY
M020758	LUCKY JIM	US	CA	35-37-21N	116-05-50W	CU AG PB AU	
M020759	LUCKY JIM	US	CA	34-34-46N	115-08-09W	AG CU PB AU	VEIN
M020901	MALTBY	US	CA	35-41-09N	118-51-08W	CU	VEIN
W025257	MAMMOTH	US	CA	40-45-47N	122-27-16W	CU ZN AG AU	MASSIVE SULFIDE
W025978	MANN	US	CA	37-54-45N	120-25-53W	CU AU	
M011016	MCDONALD RANCH	US	CA	39-11-11N	121-04-60W	CU AG AU	
W025218	MICHIGAN GROUP	US	CA	40-47-51N	122-12-49W	CU	
M010813	MINERAL HILL GROUP	US	CA	39-09-00N	121-15-31W	CU AU	VEINS
M020837	MOHAWK	US	CA	39-53-55N	120-08-35W	CU AG MO AU	VEIN
W023770	MORNING GLORY	US	CA	36-18-38N	117-04-17W	PB CU AG AU	VEIN
M007203	MOUNT ZION	US	CA	37-49-55N	121-56-35W	CU AU AG	
M009077	MOUNTAIN MEADOWS	US	CA	40-15-18N	120-52-46W	CU AU AG	VEINS
W025285	MOUNTAIN MONARCH	US	CA	40-35-39N	122-33-36W	CU	
W024548	MOUNTAINER MINE	US	CA	34-02-10N	114-30-29W	CU AU AG	
C011474	MURCHIE	US	CA	39-15-57N	120-59-09W	AU CU ZN AG PB	LODE AND PLACER
M020938	MURPHY	US	CA	40-25-21N	123-20-18W	CU AG	
M005714	NAPOLEON	US	CA	37-55-39N	120-43-44W	CU AG AU ZN	REPLACEMENT
M005993	NASSAU	US	CA	38-02-40N	120-38-53W	CU ZN AG AU	
W023601	NEIPER	US	CA	36-56-24N	119-26-52W	CU AU	VEIN
M020765	NELLIE MAY GROUP	US	CA	34-43-46N	117-35-14W	CU AG AU	VEINS
W025128	NEW ALMADEN	US	CA	37-09-45N	121-49-22W	CU	
W024712	NEW TRAIL	US	CA	35-23-30N	115-29-02W	CU AU AG	VEIN
M004880	NEWTON	US	CA	38-20-30N	120-53-10W	CU AG AU PB ZN	MASSIVE SULFIDE
W023463	NEWTON MINE	US	CA	38-20-30N	120-53-10W	CU	
M008077	NOONDAY	US	CA	38-38-26N	120-47-51W	CU AU AG	VEIN
M006029	NORTH KEYSTONE	US	CA	37-59-14N	120-38-48W	CU	REPLACEMENTS
W025958	OAK HILL	US	CA	37-43-17N	120-27-14W	CU AG AU	MASSIVE SULFIDE
W026018	OAK MESA	US	CA	37-39-18N	120-18-40W	CU AS	
M012213	OEST MINE	US	CA	39-00-13N	121-05-30W	CU	
W025972	OHIO DIGGINGS	US	CA	37-55-07N	120-26-25W	CU	MASSIVE SULFIDE
M020766	ORD MOUNTAIN	US	CA	34-41-10N	116-49-39W	CU AU AG PB	VEINS
M012012	ORO GRANDE	US	CA	39-24-11N	120-30-28W	CU AU AG	VEIN
M021071	OWENS	US	CA	33-05-03N	116-36-03W	CU AU AG	VEIN
M009457	OWL COPPER	US	CA	37-25-03N	120-09-58W	CU AU	VEIN
W024153	OWL COPPER	US	CA	37-25-03N	120-09-58W	CU	
M007131	PACIFIC	US	CA	39-13-12N	122-31-54W	CU AU	
M023546	PAINSVILLE	US	CA	34-41-15N	116-49-35W	AU CU	LODE
M021045	PAINTER	US	CA	36-55-55N	119-41-00W	CU	VEIN
M020651	PANAMINT MINES	US	CA	36-06-57N	117-05-50W	CU AG	VEINS
M020443	PENN	US	CA	38-13-49N	120-52-26W	CU ZN AG AU PB	REPLACEMENT
M012215	PETER OEST CLAIM	US	CA	38-59-15N	121-06-23W	CU AU AG	
M021016	PICACHO	US	CA	32-58-34N	114-36-11W	CU	VEIN
M020840	PILOT	US	CA	40-01-42N	120-43-06W	CU AU AG	VEINS
M007430	PIONEER - LILYAMA	US	CA	38-50-07N	120-58-02W	CU AU AG FE W	METASOMATIC REPLACEM

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
W025221	PIT RIVER	US	CA	40-46-23N	122-09-22W	CU	
M009622	POCOHONTAS	US	CA	37-20-39N	120-03-48W	CU AU AG	MASSIVE SULFIDE
W025714	POLAR BEAR MINE	US	CA	41-20-09N	122-43-49W	CU ZN	
W023616	POST OAK	US	CA	36-51-30N	119-22-29W	CU AU	VEIN
M010524	POWELL	US	CA	37-46-25N	118-29-60W	PB AG CU	
M020978	POWELL	US	CA	36-13-51N	118-38-55W	CU ZN PB AS AU	REPLACEMENT
W025750	PRESTON PEAK	US	CA	41-51-45N	123-37-20W	CU AU	VEIN
M005704	QUAIL HILL	US	CA	37-57-40N	120-44-57W	CU ZN AG AU PB	REPLACEMENT
M020810	QUESTO	US	CA	37-05-46N	119-58-09W	CU	
M020940	RAINBOW NO. 1 , 2 ,	US	CA	41-03-54N	122-40-34W	CU	
M009992	RED MOUNTAIN	US	CA	39-04-07N	123-05-33W	CU	VEINS
M010056	REDWOOD COPPER QUEEN	US	CA	38-52-42N	123-26-59W	CU AU AG	
W024713	REVENUE COPPER	US	CA	35-24-21N	115-29-19W	CU AU AG	VEIN
W024518	REWARD	US	CA	40-04-11N	120-43-52W	CU AU AG	REPLACEMENT
W024121	RIBN RANCH	US	CA	37-40-42N	120-15-51W	CU	
M024326	RILEY	US	CA	35-21-39N	115-32-30W	W CU AU AG	METASOMATIC REPLACEM
W023788	RIO TINTO CONSOLIDAT	US	CA	36-15-52N	117-35-24W	PB ZN AG	
M007344	RIP AND TEAR	US	CA	38-34-43N	120-58-30W	CU AU AG	
W025220	RISING STAR	US	CA	40-47-45N	122-12-29W	CU ZN AU AG PB	EPITHERMAL
M020775	ROOSEVELT	US	CA	34-37-13N	117-10-03W	CU AU AG	VEIN
M007135	RUBY KING	US	CA	39-17-22N	122-33-13W	CU AU HG FE	
W024524	RUBY MINE	US	CA	40-11-07N	120-47-57W	CU AU AG	VEINS
W026016	SALAMBO	US	CA	37-43-33N	120-15-11W	CU	
M007293	SALT LAKE - CALIFORN	US	CA	41-54-36N	124-01-49W	CU AU	VEIN
M020658	SAN LUCAS	US	CA	36-32-46N	117-46-43W	PB CU AG AU	VEIN
M020997	SAN RAMON	US	CA	35-25-55N	120-47-05W	CU AU AG	VEIN
M020869	SANBORN	US	CA	34-02-40N	114-30-57W	CU AU AG	
W023780	SANTA ROSA	US	CA	36-25-05N	117-43-20W	PB CU AG ZN AU	VEINS
M010222	SEITZ	US	CA	41-45-45N	120-11-43W	CU	VEIN
W025290	SHASTA KING	US	CA	40-43-59N	122-29-46W	CU AG AU ZN	MASSIVE SULFIDE
M020591	SHINER	US	CA	41-50-45N	123-16-59W	CU	
M005720	SHUMATE	US	CA	37-54-25N	120-43-10W	CU	VEIN
M021001	SILVER MINE	US	CA	37-55-20N	121-57-24W	CU MN AG	
W025005	SILVER SWAN	US	CA	35-22-39N	120-45-55W	CU	
M020910	SILVERADO PROSPECT	US	CA	35-36-56N	118-25-04W	CU	VEIN
C011917	SPANISH QTZ.	US	CA	39-22-51N	120-43-28W	AU PB CU ZN AG	LODE
W023782	SPECULATOR	US	CA	36-10-11N	116-37-43W	CU	
M010821	SPENCEVILLE	US	CA	39-06-56N	121-16-14W	CU AU AG	VEIN
C011203	SPRING HILL	US	CA	39-13-34N	121-02-32W	AU CU AG	LODE
M020863	ST. JOHN	US	CA	33-46-56N	114-53-29W	CU	VEIN
M020784	STANDARD NO. 2	US	CA	35-21-44N	115-32-00W	CU PB AG AU	
M004751	STELLA	US	CA	38-40-30N	119-42-48W	CU	
W017578	STOWELL	US	CA	40-42-45N	122-30-52W	CU AU AG	MASSIVE SULFIDE
W025256	SUMMIT	US	CA	40-46-56N	122-28-06W	CU	
M007199	SUMMIT OF ZION	US	CA	37-55-23N	121-57-16W	CU	
M007283	SUPERIOR	US	CA	41-55-32N	124-01-30W	CU AU AG	VEIN
M020836	SUPERIOR	US	CA	40-12-12N	120-46-25W	CU AG PB ZN AU	VEINS
W024714	SURPRISE	US	CA	34-50-36N	117-11-49W	CU	
W025255	SUTRO	US	CA	40-46-53N	122-27-48W	CU AG AU	MASSIVE SULFIDE
M008751	SWEET HOME	US	CA	40-51-31N	123-43-19W	CU	
M006240	TABLE MOUNTAIN	US	CA	37-55-33N	120-34-24W	CU	MASSIVE SULFIDE
M005710	TECUMSEH	US	CA	37-56-57N	120-43-08W	AU CU	LODE
M005723	TELEGRAPH	US	CA	37-54-41N	120-43-42W	CU	VEIN
M004856	THAYER	US	CA	38-15-17N	120-53-03W	CU PB ZN	DISSEMINATED SULFIDE
M025023	THIN DIME PROSPECT	US	CA	35-55-43N	117-35-19W	CU	VEIN OR SHEAR ZONE
M020786	TIP TOP	US	CA	34-39-11N	116-30-13W	CU AG	REPLACEMENT
M009821	TOAD	US	CA	37-17-09N	120-01-54W	CU	
M020847	TRASK AND COPPER	US	CA	40-10-41N	120-47-44W	CU AU AG	VEIN
M020788	TRIO GROUP	US	CA	35-16-47N	115-15-20W	CU	
M025015	UN-NAMED PROSPECT	US	CA	35-44-03N	117-27-37W	CU	VEIN
M025021	UN-NAMED PROSPECT	US	CA	35-46-19N	117-27-23W	CU AG AU	UNKNOWN-PIT CAVED&CC
M025019	UN-NAMED PROSPECT PI	US	CA	35-46-31N	117-27-53W	CU AG AU	LODE (VEIN)
M025024	UN-NAMED SHAFT	US	CA	35-59-21N	117-30-15W	CU	LODE (VEIN)-SHEAR ZO
M025031	UN-NAMED SHAFT	US	CA	35-41-44N	117-34-25W	CU AG AU	LODE - SHEAR ZONE
M021511	UNCLE BILLY ROGERS	US	CA	38-42-60N	125-55-54W	CU AU AG	
M022014	UNCLE BILLY ROGERS M	US	CA	38-42-50N	125-56-02W	CU AU AG	VEIN/DISSEMINATED
M021048	UNCLE SAM	US	CA	36-52-03N	118-48-43W	CU	VEIN

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
M009226	UNION GULCH	US	CA	37-58-18N	122-43-53W	CU AG AU	VEINS
M020541	UNITED COPPER	US	CA	40-42-08N	122-30-39W	CU	
W024693	UNNAMED LOCATION	US	CA	36-17-38N	120-52-54W	CU	
M012042	VALLEY VIEW	US	CA	38-58-38N	121-15-25W	CU AG AU PB ZN	VEIN
M021061	VENTURA MINE	US	CA	34-12-05N	118-47-07W	CU NI	
M021055	VICTOR BANANZA GROUP	US	CA	36-47-13N	120-57-17W	CU	VEINS
M020817	VIGNOLA	US	CA	37-10-42N	119-57-44W	CU AG	VEIN
W023728	VLIDA	US	CA	36-38-22N	117-32-09W	CU AG AU	VEIN
M021020	VOLUNTEER GROUP	US	CA	33-06-46N	114-56-23W	CU AU AG	VEIN (?)
M020791	VONTRIGGER	US	CA	35-02-39N	115-07-45W	CU AU AG	VEIN
M021289	WALKER	US	CA	40-39-09N	122-25-18W	AU CU AG	LODE
W024539	WALKER	US	CA	39-57-37N	120-40-03W	CU AU PB ZN AG	VEIN
M009627	WHITE ROCK	US	CA	37-19-51N	120-05-01W	CU AU AG	VEIN
M020794	WINIFRED GROUP	US	CA	34-40-01N	115-51-54W	CU AU	
W025212	WOODROW WILSON	US	CA	40-44-51N	122-05-36W	CU ZN PB	MASSIVE SULFIDE
W024131	WOODS	US	CA	37-40-08N	120-12-03W	CU	
M020918	ZUMA CLAIMS	US	CA	35-25-44N	117-50-54W	CU MN	VEIN
D010349	ACE HIGH-JACKPOT PRO	US	CO	38-37-57N	106-00-15W	CU FE	LODE (VEIN)
D009458	ACME PROPERTY	US	CO	38-31-50N	105-41-57W	CU AG V	STRATIFORM, CLASTIC
D009613	ADAMIC COW CAMP WORK	US	CO	38-24-09N	105-28-22W	CU AG	LODE
D008961	ADELAIDE CLAIM	US	CO	38-05-57N	106-45-14W	AU AG PB CU	UNKNOWN
D010542	AKNEY MINE	US	CO	40-56-46N	105-36-55W	CU AU AG	VEIN
D009289	ALASKA MINE	US	CO	38-23-52N	106-44-57W	CU AG ZN AU PB	FISSURE VEIN
D010798	ALLARD TUNNEL	US	CO	37-24-23N	108-05-18W	CU AG PGM PB	DISSEMINATION; VEIN
D006658	ALLEN JONES PROPERTY	US	CO	37-39-05N	103-16-07W	CU U	CLASTIC SEDIMENTARY
D011161	ANACONDA MINE	US	CO	38-20-32N	107-06-04W	AU AG CU ZN	STRATABOUND; MASSIVE
D009178	ANTORO MINE	US	CO	38-19-36N	106-07-28W	PB ZN AG CU AU	FISSURE VEIN
D010758	ARGONAUT MINE	US	CO	37-41-04N	108-02-19W	AG PB ZN CU	FISSURE VEIN
D008991	ATLANTIC MINE	US	CO	38-18-59N	106-07-32W	AU AG CU	FISSURE VEIN
D010219	AUGUSTA LODE MINE	US	CO	39-37-03N	105-19-02W	CU AG ZN F STN1 PB AU CO	VEIN
D006668	BACA COUNTY NO. 1 PR	US	CO	37-00-35N	102-59-32W	CU AG TI	POD OR CLASTIC PLUG
D006665	BACA COUNTY NO. 2 PR	US	CO	37-00-25N	102-58-04W	CU TI	POD OR CLASTIC PLUG
D006667	BACA COUNTY NO. 3 PR	US	CO	37-00-30N	102-59-25W	CU	POD OR CLASTIC PLUG
D006666	BACA COUNTY NO. 4 PR	US	CO	37-00-09N	102-58-55W	CU	POD OR CLASTIC PLUG
D009709	BAKER GULCH PROSPECT	US	CO	38-27-30N	105-27-10W	CU	PEGMATITE; SKARN
D008197	BALTIMORE MINE	US	CO	38-18-41N	106-09-03W	PB AG CU AU ZN	FISSURE VEIN
D010155	BANKERS LODE CLAIM	US	CO	39-53-34N	105-20-32W	U CU	VEIN(?)
D010220	BAT CLAIM NO. 1	US	CO	40-13-53N	105-18-31W	CU U	VEIN(?)
D010873	BATTLE ROCK MINE	US	CO	37-20-07N	108-49-23W	CU AG AU	VEIN
D010802	BAY CITY MINE	US	CO	37-21-52N	108-04-43W	AU AG CU PB	REPLACEMENT
D009282	BELL HAMILTON MINE	US	CO	37-29-27N	108-03-31W	CU AG	LODE; CHALCOCITE VEI
D010588	BERGHOF LODE	US	CO	40-42-51N	105-35-53W	AU AG CU	VEIN
DC00344	BETTY MINE	US	CO	38-44-18N	105-33-50W	ZN CU AG PB AU CO	STRATIFIED PRECAMBRI
D004847	BIG HORN MINE	US	CO	38-14-08N	105-43-53W	CU AU	LODE (VEIN)?
D010218	BILLIKEN AND BLACK K	US	CO	39-28-00N	105-13-06W	U CU	FISSURE VEIN
D010925	BINKLEY-SAWPIT PROJE	US	CO	38-00-38N	108-00-55W	AU AG PB CU ZN	VEIN
D006677	BLACK BEAR CLAIM	US	CO	37-03-48N	103-02-33W	CU	VEIN FILLING IN JOIN
D010700	BLACK GIANT MINE	US	CO	37-36-20N	107-35-49W	AU AG CU PB ZN MN	VEIN
D010926	BLACK KING MINE	US	CO	38-01-52N	108-03-53W	CU AG AU U V PB ZN MO CO CR TI	VEIN; DISSEMINATION
D009447	BLAIR ATHOL MINE	US	CO	38-54-52N	104-53-01W	CU U MN	DISSEMINATION; "REDB
D008965	BLAKE DISTRICT	US	CO	38-07-54N	104-47-15W	AU AG CU FE PB	VEINS
D008980	BLANCA MUTUAL MINING	US	CO	37-51-13N	105-33-50W	AU AG PB CU	VEIN
D006682	BLUE BIRD CLAIM	US	CO	37-03-49N	103-02-30W	CU	VEIN FILLING IN JOIN
D006737	BLUE BIRD MINE	US	CO	37-34-11N	105-16-50W	CU AG	FAULT ZONE
D010927	BLUE BIRD MINE	US	CO	37-57-36N	107-55-24W	AG AU PB CU	VEIN; REPLACEMENT
D009185	BLUE MOUNTAIN MINE	US	CO	38-56-26N	105-21-07W	CU ZN	LODE
D011651	BON HOMME TUNNEL	US	CO	37-55-57N	107-30-26W	CU AG PB ZN BI	VEIN
D009181	BONANZA DISTRICT	US	CO	38-17-41N	106-08-31W	AG AU PB ZN CU MN TE SB BI TI	FISSURE VEIN
D008246	BONANZA MINE	US	CO	38-18-46N	106-08-56W	PB CU AG ZN AU MN TI	FISSURE VEIN
D010209	BONZO NO. 1 CLAIM	US	CO	39-28-47N	105-07-28W	U CU	VEIN (?)
D008951	BOWEN CLAIMS	US	CO	37-55-07N	106-40-22W	AU AG PB ZN CU BI V SN	VEIN
D008045	BROADBURY GROUP	US	CO	38-20-10N	106-08-18W	PB ZN CU AG	
D009935	BROMIDE MINE	US	CO	40-33-57N	108-45-03W	CU AG AU PB	VEIN
D009281	BROWN BEAR MINE	US	CO	37-33-03N	108-09-39W	CU	LODE (HYDROTHERMAL);
D010156	BUCKMAN PROPERTY	US	CO	39-46-06N	105-16-36W	U CU MO PB ZN AG	VEIN
D010807	CALIFORNIA DISTRICT	US	CO	37-23-58N	108-03-49W	AU AG PB CU ZN U V HG FE TE PGM	VEIN; DISSEMINATION;
D010861	CALIFORNIA DISTRICT	US	CO	37-23-58N	108-03-49W	AU AG PB CU ZN U V HG FE TE PGM	

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D011603	CAPITOL CITY MINE	US	CO	38-01-03N	107-28-11W	AG PB ZN CU AU	VEIN
D011580	CARSON DISTRICT	US	CO	37-52-08N	107-21-40W	AG AU CU PB ZN FE SB AL3	VEIN; DISSEMINATION;
D009485	CARSON MINING COMPAN	US	CO	38-24-58N	105-40-22W	CU ZN	METAMORPHIC STRATIFO
D010589	CASH MINE	US	CO	40-42-18N	105-36-40W	AU AG CU PB ZN	VEIN
D010953	CASHIN MINE	US	CO	38-18-40N	108-56-56W	CU AG AU PB ZN U SB AS	VEIN; REPLACEMENT
D010867	CASTLE ROCK SPRINGS	US	CO	37-35-50N	107-48-58W	CU AU	VEIN
D011380	CEBOLLA DISTRICT	US	CO	38-11-18N	107-03-31W	AU AG CU PB ZN	VEIN
D011652	CHAMPION SHAFT	US	CO	37-56-46N	107-28-47W	CU AG PB AU GEM ZN MN	VEIN
D008218	CHICAGO MINE	US	CO	38-19-23N	106-05-20W	PB CU ZN	
D008035	CHLORIDE MINE	US	CO	38-15-46N	108-07-24W	PB ZN CU	FISSURE VEIN
D010241	CLEORA DISTRICT	US	CO	38-30-48N	105-57-50W	CU W AU	LODE (VEIN); PEGMATI
D011653	CLEVELAND GROUP	US	CO	37-56-43N	107-30-02W	AG PB CU AU ZN	VEIN
D008211	CLIFF MINE	US	CO	38-18-07N	106-07-27W	ZN AG PB CU AU	FISSURE VEIN
D010954	CLIFFDWELLER MINE	US	CO	38-18-58N	108-57-06W	CU AG AU PB ZN SB AS	VEIN; REPLACEMENT
D010370	COBALT CLAIMS	US	CO	38-41-15N	104-53-35W	CU	VEIN (?)
D011378	COCHETOPA DISTRICT	US	CO	38-22-36N	106-46-03W	AU AG CU ZN U V PB HG TA W MN	VEIN; MASSIVE SULFID
D008996	COCOMONGO MINE	US	CO	38-18-49N	106-09-03W	PB CU AG ZN AU MN TI	FISSURE VEIN
D008044	COLORADO BELLE MINE	US	CO	38-20-45N	106-06-52W	PB CU ZN	FISSURE VEIN
D009460	COLORADO COPPER COMP	US	CO	38-29-33N	105-42-17W	CU AG V	STRATIFORM, CLASTIC
D010958	COLORADO NO. 3 CLAIM	US	CO	38-32-28N	109-03-02W	CU	VEIN
D009632	COLUMBINE MINE	US	CO	38-23-26N	105-21-16W	CU FE ZN PB	LODE
D008970	CONCORDIA CLAIM	US	CO	37-59-42N	105-40-10W	AU AG CU	VEIN
D010212	COOK PROPERTY	US	CO	39-27-22N	105-12-47W	CU PB ZN	VEIN(?)
D009633	COPPER GIRL	US	CO	38-23-37N	105-24-47W	CU AG MO	LODE
D009619	COPPER GULCH DEPOSIT	US	CO	38-27-00N	105-23-30W	U CU W	LODE
D010578	COPPER HEAD CLAIM	US	CO	38-07-07N	105-47-06W	CU AU AG	VEIN (?)
D010812	COPPER HILL MINE	US	CO	37-24-00N	108-04-22W	CU AG AU PGM	DISSEMINATION
D009635	COPPER KING MINE	US	CO	38-23-26N	105-18-07W	CU AU AG	LODE
D009204	COPPER KING MINE	US	CO	38-44-12N	105-34-45W	W AU CU ZN FLD MIC2	VEIN, PEGMATITE
D010351	COPPER KING MINE	US	CO	38-38-25N	105-59-28W	CU AU ZN FE	LODE (VEIN)
D011163	COPPER KING MINE	US	CO	38-20-44N	107-04-57W	AU AG CU	STRATABOUND; DISSEMI
D009459	COPPER PRINCE MINE	US	CO	38-29-35N	105-42-10W	CU AG V	STRATIFORM, CLASTIC
D006736	COPPER QUEEN MINE	US	CO	37-33-58N	105-16-30W	CU AG	FAULT ZONE
D010959	COPPER RIVET MINE	US	CO	38-32-02N	108-58-34W	CU AG CR	VEIN
D001086	COPPERHEAD MINE	US	CO	38-36-49N	105-48-55W	W CU	LODE?
D008990	CORA SHAFT	US	CO	38-19-31N	106-07-39W	PB ZN CU AU	FISSURE VEIN
D010569	CORONADO GROUP	US	CO	37-34-38N	105-29-07W	CU AU AG TE	VEIN
D009484	COTOPAXI DISTRICT	US	CO	38-25-14N	105-40-21W	CU ZN PB AU AG	LODE; METAMORPHIC ST
D009464	COTOPAXI MINE	US	CO	38-23-05N	105-41-59W	CU ZN PB AU AG MO FE W	LODE; METAMORPHIC ST
D009461	COTOPAXI PROSPECT	US	CO	38-25-14N	105-40-21W	CU ZN	METAMORPHIC STRATIFO
D010529	CRESCENT MINE	US	CO	38-43-10N	105-32-50W	W CU ZN MO PB AU AG	LODE (VEIN) SKARN
D008979	CRESTONE DISTRICT	US	CO	37-59-43N	105-41-55W	AU AG CU PB	VEIN
D008973	CRESTONE MINERAL CO.	US	CO	37-59-49N	105-41-03W	AU AG CU PB	VEIN
D010540	CRIST MINE	US	CO	40-54-35N	105-14-23W	CU AU AG	VEIN
D008212	CRONJE TUNNEL	US	CO	38-18-13N	106-07-31W	ZN AG PB CU AU	FISSURE VEIN
D006700	DALLAS DOTTIE PROSP	US	CO	37-24-19N	105-06-06W	U V CU	CLASTIC SEDIMENTARY
D008974	DANDY-COPPER TUNNEL	US	CO	37-59-24N	105-40-10W	AU AG CU PB	VEIN
D009634	DAWSON MOUNTAIN-SURP	US	CO	38-23-22N	105-17-40W	CU AG AU	LODE
D010570	DEADWOOD MINING CO.	US	CO	37-41-38N	105-28-50W	PB CU AU AG	VEIN
D010630	DECATUR NE DISTRICT	US	CO	37-25-04N	106-27-43W	AU AG PB CU ZN AL3 ASB	VEIN
D009270	DENVER CITY MINE	US	CO	38-25-02N	106-49-41W	ZN CU AG AU PB SE TE	STRATABOUND; STRATIF
D009703	DIFFICULT CREEK DIST	US	CO	39-02-45N	106-44-20W	AU CU MN AG	VEIN
D009621	DIRTY GULCH MINE	US	CO	38-27-42N	105-42-20W	CU AG	LODE
D009283	DIXIE QUEEN DEPOSIT	US	CO	37-34-27N	108-10-32W	CU	LODE; CHALCOCITE VEI
D009431	DUBUQUE TUNNEL	US	CO	39-09-13N	106-50-02W	PB CU	VEIN
D008967	EASTERN STAR MINE	US	CO	37-55-53N	105-38-58W	AU AG CU	VEIN; GOSSAN; BOXWOR
D009629	EL PLOMO MINE	US	CO	38-23-20N	105-20-37W	CU ZN FE	LODE
D010717	ELDORADO CLAIM	US	CO	37-44-20N	107-34-03W	CU PB ZN	VEIN
D007967	EMPERIUS MINE	US	CO	37-53-06N	106-56-14W	AG PB ZN CU AU CD AS SB	FISSURE VEIN; DISSE
D008984	ERIE MINE	US	CO	38-18-59N	106-07-39W	PB AG CU AU ZN	FISSURE VEIN
D011607	EXCELSIOR MINE	US	CO	38-00-44N	107-27-58W	AG CU PB ZN SB	VEIN
D008199	EXCHEQUER MINE	US	CO	38-18-41N	106-08-53W	AG CU AU	
D010766	EXPECTATION MINE	US	CO	37-41-31N	108-03-25W	CU AU	FISSURE VEIN; REPLAC
D010213	F. M. D. MINE	US	CO	39-40-50N	105-17-16W	CU ZN	MAGMATIC SEGREGATION
D011608	FRANK HOUGH MINE	US	CO	37-58-22N	107-35-00W	AG AU CU PB ZN SB TE	VEIN; REPLACEMENT
D011609	GALENA DISTRICT	US	CO	38-00-27N	107-27-57W	AG AU PB CU ZN SB MN TE U BI AS	VEIN; REPLACEMENT; D
D011557	GLADIATOR MINE	US	CO	37-59-18N	107-17-40W	AG AU PB CU ZN SB MN	VEIN

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D008210	GLENNBROOK MINE	US	CO	38-17-50N	106-08-11W	PB ZN AG CU AU	FISSURE VEIN
D011654	GNOME MINE	US	CO	37-55-24N	107-31-26W	AG CU PB AU ZN SB	VEIN
D010769	GOLD ANCHOR MINE	US	CO	37-42-55N	108-05-15W	AG CU AU ZN PB MO	FISSURE VEIN; REPLAC
D010825	GOLD KING-SWAMP ANGE	US	CO	37-26-38N	107-57-45W	AU CU HG	VEIN
D011558	GOLD QUARTZ MINE	US	CO	38-00-09N	107-17-16W	AG AU PB CU ZN TE SB	VEIN
D011559	GOLDEN FLEECE MINE	US	CO	37-58-50N	107-18-00W	AG AU PB CU ZN TE U SB MN SR BI	VEIN
D009623	GOOD NEWS NO. 1 PROP	US	CO	38-24-18N	105-23-39W	CU AG	LODE
D009622	GOOD NEWS NO.2 CLAIM	US	CO	38-24-30N	105-23-44W	CU AG	LODE
D011165	GOOSE CREEK DISTRICT	US	CO	38-21-02N	107-10-42W	AU AG CU AS ZN PB TH RAE MN TI V	STRATABOUND; MASSIVE
D007877	GORMAX MINE	US	CO	37-54-17N	106-55-08W	AG PB ZN CU	FISSURE VEIN
D010134	GRAND VIEW MINE	US	CO	38-31-02N	105-56-19W	CU W AU	LODE (VEIN)
D009878	GRAPE CREEK AREA	US	CO	38-23-30N	105-19-50W	TH BA ZN CU PB AU AG	LODE, VEIN
D009171	GREAT MOGUL TUNNEL	US	CO	38-19-27N	106-07-03W	PB ZN CU AG AU	FISSURE VEIN
D009628	GREEN MOUNTAIN MINE	US	CO	38-22-09N	105-23-35W	CU AG AU ZN MO PB	LODE
D010631	GUADALOUPE MINE	US	CO	37-24-59N	106-28-20W	AU AG PB CU ZN	VEIN
D011166	GUNNISON MINE	US	CO	38-21-08N	107-06-08W	AU AG CU PB TE SE	STRATABOUND; DISSEMI
D004891	GYPSE QUEEN MINE	US	CO	38-30-02N	105-58-00W	CU AU AG	LODE (VEIN); PEGMATI
D008238	GYPSY QUEEN MINE	US	CO	38-19-49N	106-07-52W	PB CU ZN	
D011167	HEADLIGHT MINE	US	CO	38-21-03N	107-06-52W	CU AG AU ZN	MASSIVE SULFIDE; DIS
D011612	HIDDEN TREASURE MINE	US	CO	38-01-32N	107-22-05W	AG AU PB CU ZN SB MN	VEIN
D009627	HORSESHOE MINE	US	CO	38-23-26N	105-19-42W	CU ZN PB AU AG FE U	LODE
D008205	HORTENSE MINE	US	CO	38-17-59N	106-07-59W	PB AG ZN CU AU TE AS	FISSURE VEIN
D010215	HOSA LODGE MINE	US	CO	39-43-20N	105-19-50W	CU PB ZN	REPLACEMENT
D010557	HOWES GULCH DISTRICT	US	CO	40-35-28N	105-13-30W	CU AU AG	VEIN
D006735	HUB HALL CLAIM	US	CO	37-34-29N	105-17-29W	CU	VEIN
D010136	HUB TUNNELS	US	CO	35-31-32N	105-56-23W	W CU	LODE (VEIN)
W700637	IDARADO MINE	US	CO			ZN PB CU AU AG	
D011655	ILLINOIS BOY MINE	US	CO	37-57-07N	107-29-41W	CU AU	VEIN
D010411	INDEPENDENCE DISTRIC	US	CO	39-06-19N	106-36-15W	AU AG CU PB	VEIN
D008966	INDEPENDENCE MINE	US	CO	37-56-45N	105-38-58W	AU CU	VEIN; GOSSAN; BOXWOR
D008886	INDEPENDENCE MINE	US	CO	37-04-32N	103-02-45W	CU AG AU	VEIN FILLING IN JOIN
D010354	INDEPENDENCE MINE	US	CO	38-38-32N	105-59-46W	CU AU MO ZN FE	LODE (VEIN)
D010412	INDEPENDENCE MINE	US	CO	39-06-32N	106-36-43W	AU AG CU	VEIN
D010562	INDEPENDENCE MINE	US	CO	37-04-32N	103-02-45W	CU AG AU	VEIN
D006698	INDEPENDENT CLAIM	US	CO	37-27-02N	105-06-35W	U CU	FRACTURE FILLINGS
D007664	INVINCIBLE SHAFT	US	CO	38-06-25N	105-20-57W	AG CU PB FE	LODE
D010770	IRON CLAD MINE	US	CO	37-41-12N	108-02-06W	AG PB ZN CU AU CD GE	FISSURE VEIN; REPLAC
D010534	IRON KING MINE	US	CO	40-51-04N	105-29-43W	CU ZN MO FE	VEIN; PEGMATITE
D010771	IRON MINE	US	CO	37-42-02N	108-00-51W	AG CU ZN PB	REPLACEMENT; FISSURE
DC02864	JACKPOT MINE	US	CO	37-03-45N	103-02-43W	CU AG AU	VEIN FILLING IN JOIN
D008037	JOE WHEELER MINE	US	CO	38-21-07N	106-06-05W	AG PB CU ZN AU BI	FISSURE VEIN
D010772	JOHNNY BULL MINE	US	CO	37-43-01N	108-05-25W	AG CU AU TE BI	FISSURE VEIN; REPLAC
D009625	JOKER MINE	US	CO	38-23-26N	105-19-15W	CU AG	LODE
D008229	KISMUTH MINES	US	CO	38-21-46N	106-10-53W	AG AU PB CU ZN	FISSURE VEIN
D010955	LA SAL DISTRICT	US	CO	38-18-40N	106-56-56W	CU AG AU PB ZN U SB AS MN	VEIN; REPLACEMENT
D010556	LANGFORD COPPER MINE	US	CO	40-55-28N	105-28-00W	CU	VEIN (?)
D011578	LARSON VOLCANO	US	CO	38-04-43N	107-18-35W	AG AU CU PB ZN MO	VEIN; DISSEMINATION
D009710	LEEKS LODE	US	CO	38-25-00N	105-26-58W	CU	PEGMATITE; SKARN
D008048	LEGAL TENDER MINE	US	CO	38-20-11N	106-07-17W	PB CU AG AU	FISSURE VEIN
D011615	LELLIE MINE	US	CO	38-01-08N	107-25-52W	AG AU PB CU ZN SB MN	VEIN
D008209	LIBERTY MINE	US	CO	38-17-47N	106-08-13W	PB AG ZN CU AU	FISSURE VEIN
D009624	LITTLE GIANT CLAIMS	US	CO	38-22-59N	105-27-02W	CU AG	LODE
D008234	LITTLE JENNY MINE	US	CO	38-19-46N	106-07-47W	PB CU AG ZN AU	FISSURE VEIN
D008988	LITTLE MANITOU MINE	US	CO	38-19-54N	106-06-45W	CU AG AU	FISSURE VEIN
D010877	LITTLE MAUDE MINE	US	CO	37-17-38N	108-47-54W	CU	VEIN
D006701	LOCO ALICE PROSPECT	US	CO	37-26-05N	105-12-20W	U CU AG V	SHEAR ZONE
D010908	LONE CONE DISTRICT	US	CO	37-46-22N	108-05-39W	AG AU CU PB COA ZN SB MN S TE?	VEIN; DISSEMINATION
DC02751	LONE STAR OF THE WES	US	CO	37-35-37N	105-17-51W	CU AG AU	FAULT ZONE
D010414	M & J CLAIM	US	CO	39-14-37N	107-12-43W	CU AG PB	REPLACEMENT(?)
D010573	MAES CREEK PROSPECTS	US	CO	37-51-46N	105-03-43W	CU	VEIN
D010891	MAGPIE MINE	US	CO	37-51-55N	107-57-32W	AU AG PB CU ZN	FISSURE VEIN
D010208	MALACHITE MINE	US	CO	39-40-40N	105-15-50W	CU ZN AG AU PB NI	MAGMATIC SEGREGATION
DC02489	MALACHITE MINE	US	CO	37-4 - N	105-1 - W	CU AG	DISSEMINATED
D008207	MARIPOSA ADIT	US	CO	38-17-52N	106-08-12W	PB ZN CU	
D008242	MAY BELLE TUNNEL	US	CO	38-20-20N	106-07-36W	PB CU	FISSURE VEIN
D011174	MAY QUEEN MINE	US	CO	38-19-45N	107-09-18W	PB CU TH	STRATABOUND(?); MASS
D008239	MAY QUEEN PROSPECT	US	CO	38-19-47N	106-07-56W	PB CU	

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DC01662	MCGUIRE PROSPECT	US	CO	37-33-33N	105-08-28W	U V CU	CLASTIC SEDIMENTARY
D008198	MEMPHIS MINE	US	CO	38-18-37N	106-08-57W	PB AG CU ZN AU	FISSURE VEIN
D009176	MICHIGAN MINE	US	CO	38-19-34N	106-07-10W	PB AG ZN CU AU	FISSURE VEIN
D004913	MILL GULCH MINE	US	CO	38-42-23N	105-34-06W	CU ZN AG	PRECAMBRIAN SULFIDE
D010342	MILL GULCH MINE	US	CO	38-42-26N	105-33-45W	CU AG	LODE (VEIN)
D009165	MINNIE LYNCH MINE	US	CO	38-18-39N	106-07-51W	PB AG ZN CU AU MN	FISSURE VEIN
D010632	MISER MINE	US	CO	37-25-04N	106-28-38W	AU AG PB CU ZN	VEIN
D009280	MISSOURI GIRL DEPOSI	US	CO	37-34-44N	108-10-44W	CU	LODE; CHALCOCITE VEI
D001074	MONTE CRISTO GULCH D	US	CO	39-23- N	106-06- W	W CU ZN PB MO	QUARTZ VEINS
D011657	MONTICELLO MINE	US	CO	37-56-43N	107-29-55W	CU AU	VEIN
D010956	MORNING GLORY MINES	US	CO	38-23-48N	108-55-11W	CU AG MN	VEIN; REPLACEMENT
D010892	MOUNT WILSON DISTRIC	US	CO	37-51-37N	107-59-03W	AU AG PB CU ZN SB MO	FISSURE VEIN; DISSEM
D010415	MT. HOPE MINE	US	CO	39-06-38N	106-37-40W	AU AG CU	VEIN
D011658	NAPOLEON MINE	US	CO	37-56-35N	107-28-36W	CU AG SB	VEIN
D010580	NO NAME LEAD MINE	US	CO	38-15-58N	105-51-21W	PB CU AG AU	VEIN
D010160	NORTH STAR MINE	US	CO	39-51-13N	105-18-05W	CU U PB ZN AG	VEIN
D008208	NOW WHAT MINE	US	CO	38-17-53N	106-08-06W	PB ZN AG CU AU	FISSURE VEIN
D011659	OHIO MINE	US	CO	37-56-24N	107-27-35W	AG AU CU PB ZN SB MO	VEIN
D010746	OLD DOMINION GROUP	US	CO	37-30-42N	107-31-48W	AU CU W	VEIN
D009166	PADDY DOYLE MINE	US	CO	38-18-41N	106-07-50W	PB AG CU ZN AU MN	FISSURE VEIN
D009179	PARAGON MINE	US	CO	38-19-21N	106-07-20W	PB AG CU ZN AU	FISSURE VEIN
D011660	PARK DISTRICT	US	CO	37-56-35N	107-29-53W	AG PB CU AU GEM ZN SB MN MO BI	VEIN; REPLACEMENT
D011661	PARK VIEW MINE	US	CO	37-56-27N	107-30-30W	AU AG PB CU SB	VEIN
D006697	PARKS LODE CLAIM	US	CO	37-28-43N	105-10-08W	U CU V	CLASTIC SEDIMENTARY
D008976	PELICAN CLAIM	US	CO	37-59-29N	105-40-12W	AU AG CU PB	VEIN
D010797	PIONEER DISTRICT	US	CO	37-41-34N	108-01-48W	AG PB ZN CU AU PYR SLF CD FE AL3 MN	
D010960	PYRAMID GROUP	US	CO	38-31-33N	109-01-53W	CU CR	VEIN
D010206	QUALLA AND YOUNG SAM	US	CO	39-39-59N	105-11-10W	CU PB ZN AG AU	VEIN (?)
D009456	QUEEN PRINCESS PROPE	US	CO	38-31-50N	105-41-50W	CU AG V	STRATIFORM, CLASTIC
D009174	RADCLIFF MINE	US	CO	38-20-03N	106-07-31W	PB CU AG	FISSURE VEIN
D009180	RAWLEY MINE	US	CO	38-18-52N	106-08-34W	PB ZN CU AG AU MN U	FISSURE VEIN
D009479	RED GULCH DISTRICT	US	CO	38-29-06N	105-42-00W	CU AG V	STRATIFORM, CLASTIC
D009457	RED GULCH MINE	US	CO	38-30-57N	105-41-48W	CU AG V	STRATIFORM, CLASTIC
D006733	RICO CLAIMS	US	CO	37-34-32N	105-17-53W	CU AG	FAULT ZONE
D008046	RICO MINE	US	CO	38-20-36N	106-07-34W	AG PB CU AU ZN	FISSURE VEIN
D010582	RIO ORO MINE	US	CO	38-07-16N	105-46-52W	AU AG CU	VEIN (?)
D004931	RITA ALTA MINE MIN	US	CO	38-14-01N	105-40-46W	CU	LODE (VEIN)
D010894	ROCK OF AGES MINE	US	CO	37-51-20N	107-59-32W	AU AG PB CU ZN	FISSURE VEIN
D008214	ROSALIE MINE	US	CO	38-18-33N	106-07-10W	PB ZN CU AG AU	FISSURE VEIN
D010909	ROSEBUD MINE	US	CO	37-43-03N	108-07-20W	AG CU PB ZN MN S	VEIN; DISSEMINATION
D010416	RUBY MINE	US	CO	39-01-12N	106-36-23W	CU ZN PB AG MN	VEIN
D008959	SAN ISABEL MINING AN	US	CO	38-02-45N	105-43-02W	AU AG CU PB	VEIN
D004934	SANGRE DE CRISTO MIN	US	CO	38-14-10N	105-39-46W	CU	LODE
D010868	SARAH G. CLAIM	US	CO	37-37-34N	107-48-32W	AG AU CU PB ZN	FISSURE VEIN
D010356	SEDALIA MINE	US	CO	38-35-24N	106-01-09W	CU ZN AU AG PB	LODE (VEIN); STRATAB
D009167	SENATOR MINE	US	CO	38-18-42N	106-07-34W	PB AG CU ZN AU	FISSURE VEIN
D011662	SEWARD COUNTY MINE	US	CO	37-56-50N	107-29-12W	CU AU SB	VEIN
D010714	SHERIDAN MINE	US	CO	37-36-08N	107-37-38W	AU AG CU PB ZN	VEIN
D011621	SILVER CHORD MINE	US	CO	38-00-53N	107-28-00W	AG CU PB ZN	VEIN
D010741	SILVER REEF GROUP	US	CO	37-28-52N	107-28-37W	AG CU PB AU ZN	REPLACEMENT
D011663	SILVER STAR MINE	US	CO	37-56-44N	107-29-03W	CU AG SB	VEIN
D006734	SILVER TIP MINE	US	CO	37-35-57N	105-17-50W	CU AG	FAULT ZONE
D010961	SINBAD DISTRICT	US	CO	38-30-58N	109-00-12W	CU AG CR	VEIN; DISSEMINATION
D010962	SINBAD GROUP	US	CO	38-28-53N	108-58-29W	CU	VEIN; DISSEMINATION
D004939	SKEK CITY MINE	US	CO	38-02-53N	105-22-45W	CU NI AU AG	FISSURE VEIN
D009702	SNOWMASS CREEK MINE	US	CO	39-13-16N	106-58-37W	CU AG ZN MO FE	REPLACEMENT; DISSEMI
D009600	SOUTH FREMONT COUNTY	US	CO	38-16-19N	105-20-19W	BA FE CU	LODE
D010417	SPHALERITE MINE	US	CO	39-01-55N	106-36-53W	ZN PB CU	VEIN
D011582	ST. JACOB MINE	US	CO	37-50-41N	107-21-48W	AG AU CU PB ZN	VEIN
D008247	ST. LOUIS MINE	US	CO	38-18-07N	106-07-44W	AG PB CU AU ZN MN	FISSURE VEIN
D011568	ST. MARY'S MINING CO	US	CO	37-59-12N	107-21-24W	AG PB CU ZN SB	VEIN
D008960	STEELE CANYON MINING	US	CO	38-14-57N	105-48-48W	AU AG PB CU	UNKNOWN
D011574	STERLING GROUP	US	CO	37-53-04N	107-29-53W	AG PB CU ZN BI	VEIN
D010238	STOCKTON MINE	US	CO	38-30-48N	105-57-50W	CU W AU	LODE (VEIN); PEGMATI
D004945	STRIP MINE	US	CO	38-04-32N	105-22-38W	CU	LODE (?)
D010641	SUMMIT DISTRICT	US	CO	37-25-48N	106-35-34W	AU AG CU PB ZN MO AL3	VEIN: DISSEMINATION;
D010660	SUMMITVILLE MINE	US	CO	37-25-33N	106-35-32W	AU AG CU PB ZN	VEIN; DISSEMINATION

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D010957	SUNRISE MINE	US	CO	38-24-07N	108-55-30W	CU AG MN	VEIN; REPLACEMENT
D009603	SUNSET MINE	US	CO	38-19-40N	105-24-00W	CU	LODE
D008985	SUPERIOR MINE	US	CO	38-19-01N	106-07-34W	PB AG CU AU ZN	FISSURE VEIN
D010857	SWAMP COPPER DEPOSIT	US	CO	37-23-49N	108-03-55W	CU FE	WEATHERING RESIDUAL
D001076	SWEET HOME MINE	US	CO	39-18- N	106-07- W	W CU PB MN F	SULFIDE QUARTZ VEINS
D010898	SYNOPSIS MINE	US	CO	37-51-32N	107-59-25W	AU AG PB CU ZN	FISSURE VEIN
D010858	TEXAS CHIEF MINE	US	CO	37-21-58N	108-01-13W	AG CU AU PB ZN SB	VEIN
D009606	TEXAS CREEK PROSPECT	US	CO	38-27-10N	105-36-12W	CU AG	LODE
D009607	TITUSVILLE AND WESTF	US	CO	38-17-05N	105-23-18W	CU	LODE
D010574	TOM BRANCH PROSPECTS	US	CO	37-49-33N	104-57-03W	CU AG V	VEIN (?)
D010623	TREASURE COMSTOCK GR	US	CO	37-25-42N	106-41-43W	PB CU AU	VEIN; DISSEMINATION
D011622	TREASURE HILL SPAR C	US	CO	38-02-13N	107-23-40W	AG AU PB CU SB	VEIN
D010263	UNCLE ANDY PROSPECT	US	CO	38-30-42N	105-57-42W	W CU	LODE (VEIN)
D010151	UNION PACIFIC SHAFT	US	CO	39-46-15N	105-15-57W	U CU ZN BI PB AG	VEIN
DC02862	UNNAMED COPPER MINE	US	CO	37-05-32N	103-01-43W	CU	VEIN FILLING IN NARR
D006671	UNNAMED COPPER OCCUR	US	CO	37-04-46N	103-03-20W	CU	VEIN FILLING IN NARR
D009708	UNNAMED COPPER PEGMA	US	CO	38-27-10N	105-28-30W	CU	PEGMATITE; SKARN
D009342	UNNAMED COPPER PROSP	US	CO	38-35-50N	105-31-37W	CU	LODE
D009341	UNNAMED COPPER PROSP	US	CO	38-34-38N	105-31-05W	CU	LODE
D006691	UNNAMED COPPER PROSP	US	CO	37-03-46N	103-02-12W	CU	VEIN FILLING IN JOIN
D006690	UNNAMED COPPER PROSP	US	CO	37-03-46N	103-02-15W	CU	VEIN FILLING IN JOIN
D006689	UNNAMED COPPER PROSP	US	CO	37-03-45N	103-02-19W	CU	VEIN FILLING IN JOIN
D006688	UNNAMED COPPER PROSP	US	CO	37-03-43N	103-02-27W	CU	VEIN FILLING IN JOIN
D006687	UNNAMED COPPER PROSP	US	CO	37-03-42N	103-02-33W	CU	VEIN FILLING IN JOIN
D006686	UNNAMED COPPER PROSP	US	CO	37-03-40N	103-02-40W	CU AG AU	VEIN FILLING IN JOIN
D006685	UNNAMED COPPER PROSP	US	CO	37-03-52N	103-02-23W	CU	VEIN FILLING IN JOIN
D006684	UNNAMED COPPER PROSP	US	CO	37-03-56N	103-02-15W	CU	VEIN FILLING IN JOIN
D006683	UNNAMED COPPER PROSP	US	CO	37-03-58N	103-02-12W	CU	VEIN FILLING IN JOIN
D006676	UNNAMED COPPER PROSP	US	CO	37-03-45N	103-02-05W	CU	VEIN FILLING IN JOIN
D006675	UNNAMED COPPER PROSP	US	CO	37-03-52N	103-01-54W	CU	VEIN FILLING IN JOIN
D006674	UNNAMED COPPER PROSP	US	CO	37-03-49N	103-01-43W	CU	VEIN FILLING IN JOIN
D006673	UNNAMED COPPER PROSP	US	CO	37-03-51N	103-01-47W	CU	VEIN FILLING IN JOIN
D006672	UNNAMED COPPER PROSP	US	CO	37-04-46N	103-03-23W	CU	VEIN FILLING IN JOIN
D006670	UNNAMED COPPER PROSP	US	CO	37-04-47N	103-03-04W	CU	VEIN FILLING IN NARR
D006669	UNNAMED COPPER PROSP	US	CO	37-04-42N	103-03-04W	CU	VEIN FILLING IN NARR
D006664	UNNAMED COPPER PROSP	US	CO	37-05-34N	103-01-22W	CU	VEIN FILLING IN NARR
D009859	UNNAMED COPPER PROSP	US	CO	40-34-56N	108-50-01W	CU	DISSEMINATION (?); V
D009860	UNNAMED COPPER PROSP	US	CO	40-29-16N	108-20-45W	CU	VEIN (?)
D009861	UNNAMED COPPER PROSP	US	CO	40-27-04N	108-20-18W	CU	
D009862	UNNAMED COPPER PROSP	US	CO	40-33-47N	108-46-30W	CU	DISSEMINATION (?); V
D010366	UNNAMED COPPER PROSP	US	CO	39-26-44N	105-06-53W	CU	VEIN
D010367	UNNAMED COPPER PROSP	US	CO	39-25-21N	105-06-23W	CU U NI CO	VEIN
DC02863	UNNAMED COPPER PROSP	US	CO	37-04-44N	103-02-29W	CU AG	VEIN FILLING IN JOIN
D010149	UNNAMED CU PROSPECT	US	CO	39-45-35N	105-19-33W	CU	VEIN
D010150	UNNAMED CU PROSPECT	US	CO	39-52-25N	105-21-56W	CU	VEIN (?)
D008969	UNNAMED MINE	US	CO	37-58-37N	105-38-00W	CU AU AG	VEIN (?)
D008224	UNNAMED MINE	US	CO	38-21-56N	106-02-55W	PB ZN CU	
D008220	UNNAMED MINE	US	CO	38-21-35N	106-04-03W	PB ZN CU	FISSURE VEIN
D008219	UNNAMED MINE	US	CO	38-21-25N	106-04-13W	PB ZN CU	FISSURE VEIN
DC00849	UNNAMED MINE	US	CO	38-20-38N	105-56-27W	PB ZN CU AU AG	VEIN(?)
D008978	UNNAMED MINES	US	CO	37-53-20N	105-37-16W	CU AU	VEIN
D009146	UNNAMED PROSPECT	US	CO	38-00-14N	106-58-33W	AG AU ZN PB CU	VEIN
D008934	UNNAMED PROSPECT	US	CO	37-57-05N	106-17-48W	ZN CU MO AG	CONCORDANT VOLCANIC;
D008221	UNNAMED PROSPECT	US	CO	38-19-07N	106-05-19W	PB CU ZN	
D006758	UNNAMED PROSPECT	US	CO	37-15-32N	105-19-28W	AU AG PB CU	REPLACEMENT AND FRAC
D006757	UNNAMED PROSPECT	US	CO	37-15-47N	105-19-57W	AU AG PB CU	REPLACEMENT AND FRAC
D006756	UNNAMED PROSPECT	US	CO	37-15-45N	105-19-50W	AU AG PB CU	REPLACEMENT AND FRAC
D010394	UNNAMED PROSPECT	US	CO	40-39-02N	105-48-41W	PB ZN CU BI AU YT	SHEAR ZONE; VEIN
D010401	UNNAMED PROSPECT	US	CO	40-41-12N	105-36-15W	AG AU CU LAT	VEIN(?)
D010537	UNNAMED PROSPECT	US	CO	40-32-17N	105-54-00W	CU	FISSURE VEIN
D010624	UNNAMED PROSPECT	US	CO	37-24-07N	106-42-08W	AG PB CU	VEIN; DISSEMINATION
D010625	UNNAMED PROSPECT	US	CO	37-23-15N	106-41-45W	AG PB CU	VEIN
D008968	UNNAMED PROSPECTS	US	CO	37-54-48N	105-37-03W	CU AU	VEIN
D010538	UNNAMED PROSPECTS	US	CO	40-51-40N	105-59-18W	CU AG AU	FISSURE VEIN
D010889	UNNAMED PROSPECTS	US	CO	37-42-06N	107-45-48W	AG CU PB	VEIN
D010890	UNNAMED PROSPECTS	US	CO	37-42-55N	107-42-36W	CU PB AG	VEIN
D011225	UNNAMED THORIUM PROS	US	CO	38-21-01N	107-08-35W	TH CU PB ZN	VEIN

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
D009609	UPPER COPPER GULCH C	US	CO	38-26-08N	105-23-34W	CU AG	LODE
D010880	UTE CREEK DIKE PROSP	US	CO	37-19-24N	108-46-29W	CU MN	VEIN
D009380	UTE TRAIL MINE	US	CO	38-20-38N	107-02-50W	AU AG CU ZN PB	VEIN
D008047	VIENNA MINE	US	CO	38-20-29N	106-07-37W	PB CU AG AU	FISSURE VEIN
D006699	WASHOUT CLAIM	US	CO	37-26-14N	105-06-43W	U CU	CLASTIC SEDIMENTARY
D010715	WATERFALL MINE	US	CO	37-36-32N	107-41-00W	AU AG CU	REPLACEMENT; STOCKWC
D009611	WEST MCCOY GULCH PRO	US	CO	38-21-17N	105-39-30W	CU	LODE
D008986	WHALE MINE	US	CO	38-19-09N	106-07-26W	AG CU PB AU ZN U	FISSURE VEIN
D008244	WHEEL FO FORTUNE MIN	US	CO	38-17-59N	106-08-34W	PB AG CU ZN	FISSURE VEIN
D010948	WHITE SPAR MINE	US	CO	38-01-07N	108-02-44W	U CU V	VEIN; DISSEMINATION
D008206	WIDE AWAKE MINE	US	CO	38-17-58N	106-08-32W	PB CU AU AG ZN	FISSURE VEIN
D011130	WILLOW CREEK DISTRIC	US	CO	38-19-15N	107-02-14W	AU AG CU ZN PB	VEIN; STRATABOUND; M
D008233	WISCONSIN ADIT	US	CO	38-19-57N	106-07-43W	ZN PB CU	FISSURE VEIN
D011624	WOODSTOCK PROSPECT	US	CO	38-00-47N	107-28-19W	AU CU PB AG	VEIN
DC02752	XTC CLAIM	US	CO	37-34-54N	105-17-10W	CU AG	FAULT ZONE
D011625	YELLOW MEDICINE MINE	US	CO	38-01-12N	107-28-08W	AG CU PB ZN	VEIN
D009599	YORKVILLE AREA PROSP	US	CO	38-16-45N	105-19-07W	CU BA AG	LODE
D009290	YUKON MINE	US	CO	38-23-44N	106-45-01W	CU ZN AG AU PB	FISSURE VEIN
D010900	ZERO MINE	US	CO	37-51-12N	107-59-58W	CU AG AU PB ZN MO	FISSURE VEIN; DISSEM
W000167	BELLAMY COPPER VALLE	US	CT	41-29-12N	072-52-04W	CU S BA	VOID FILLING AND REP
W000306	BRISTOL COPPER MINE	US	CT	41-43-10N	072-55-28W	CU AG PB ZN S FE AU BA	PALEOZOIC REPLACEMEN
W000998	COPPER MINE NO. DI-0	US	CT	41-50-06N	072-54-57W	CU S	METAMORPHOSED SEDIME
W000944	COPPER MINE NO. DJ-0	US	CT	41-31-11N	072-49-27W	CU	UNKNOWN
W001160	COPPER OCCURRENCES N	US	CT	41-24-45N	073-04-15W	CU FE S	DISSEMINATIONS IN ME
W000164	COPPER PROSPECT NO.	US	CT	41-23-03N	072-57-56W	CU S	VOID FILL AND REPLAC
W000254	COPPER PROSPECT NO.	US	CT	41-26-17N	072-54-03W	CU S	VOID FILL AND REPLAC
W001161	COPPER PROSPECT NO.	US	CT	41-25-45N	073-04-18W	CU FE S	DISSEMINATIONS IN ME
W000165	CROSS-ROCK COPPER MI	US	CT	41-28-11N	072-52-43W	CU S BA	VOID FILLING AND REP
W000166	GAYLORD COPPER PROSP	US	CT	41-28-22N	072-52-39W	CU S	VOID FILLING AND REP
W000257	HIGLEY COPPER MINE	US	CT	41-56-18N	072-44-57W	CU S	BRECCIA FILLING AND
W001117	HODGES NICKEL AND SU	US	CT	41-49-57N	073-09-58W	NI CU FE S	SYNTECTONIC MAFIC IN
W000259	SIMSBURY COPPER MINE	US	CT	41-58-13N	072-44-39W	CU S	VOID FILLING AND REP
W000258	SIMSBURY NEWGATE PRI	US	CT	41-57-43N	072-44-44W	CU U S	VOID SPACE FILLING A
W001159	STEVENSON BOWERS HIL	US	CT	41-23-36N	073-09-44W	CU FE S	METAMORPHOSED VOLCA
W000253	TALLMAN'S COPPER MIN	US	CT	41-26-36N	072-53-58W	CU S BA	VOID FILL AND REPLAC
W000284	DICKENS PROSPECT	US	GA			CU PYR	VEIN
W000541	LITTLE BOB MINE	US	GA	33-54- N	084-49- W	CU PYR CO NI	MASSIVE SULPHIDE, RE
W101733	LITTLE BOB MINE	US	GA	33-54-00N	084-49-00W	CU	STRATABOUND CONCORD
W100625	MAGRUDER MINE (SEMIN	US	GA	33-46-45N	082-33-52W	AU CU PB AG	VEIN
W000734	TALLAPOOSA MINE	US	GA	33-51- N	085-05- W	CU CO NI	REPLACEMENT; MASSIVE
W101734	TALLAPOOSA MINE (OLD	US	GA	33-51-00N	085-05-00W	CU	STRATABOUND CONCORD
W101735	VILLA RICA MINE	US	GA	33-46-08N	084-53-00W	CU	STRATABOUND CONCORD
W012799	1905 MINE	US	ID	45-05-31N	116-42-00W	CU	REPLACEMENT, SHEAR Z
W012789	ALASKA MINE	US	ID	45-07-57N	116-38-47W	W CU MO	TACTITE, REPLACEMENT
W026743	ALICE PROSPECT	US	ID	47-22-04N	115-36-46W	CU	VEIN
W026614	ALICE PROSPECT	US	ID	47-14-10N	115-37-42W	AU CU	SHEAR/REPLACEMENT
W013828	ALLEN MINE	US	ID	43-40-33N	114-27-12W	AU AG PB CU	VEIN
D006590	ANKLE PROSPECT	US	ID	48-13-15N	116-07-52W	CU AG PB	VEIN
W014893	ANTIMONY RAINBOW GRO	US	ID	45-08-13N	115-24-00W	W CU SB AU HG AG F	VEIN, STOCKWORK, TAC
W013709	ARIZONA GROUP MINE	US	ID	43-29-27N	114-23-35W	AG PB CU	VEIN
W012790	ARKANSAS MINE	US	ID	44-45-56N	116-51-31W	CU	CONTACT METAMORPHIC
W007746	AUXER PROPERTY MINE	US	ID	48-16-33N	116-14- W	PB CU AU AG ZN	VEIN, REPLACEMENT AL
W012791	AZURITE MINE	US	ID	45-03-15N	116-47-30W	CU PB ZN	VEIN
W012957	BADGER MINE	US	ID	45-06-49N	116-39-56W	CU AG AU	VEIN, REPLACEMENT, S
W026702	BEACON LIGHT MINE	US	ID	47-27-53N	115-41-24W	AG CU PB ZN	VEIN
W014294	BEARDSLEY MINE	US	ID	44-24-12N	114-18-00W	AG PB CU	VEIN - FISSURE FILLI
W013271	BELL MARSH QUEEN MIN	US	ID	42-41-12N	112-17-07W	AG CU	VEIN/SHEAR ZONE
W012758	BELL MINE	US	ID	44-34-45N	117-03-33W	CU PB ZN AG	VEIN; REPLACEMENT
D006594	BIG COPPER NOS. 1, 2	US	ID	44-17-50N	114-40-29W	CU AU AG	REPLACEMENT
W026606	BIG ELK MINE	US	ID	47-21-39N	115-38-42W	CU PB AU AG	VEIN, REPLACEMENT
W012759	BLACK HAWK MINE	US	ID	44-33-55N	117-04-10W	CU AG AU PB ZN	VEIN, FILLINGS AND R
M060825	BLACKBIRD MINE	US	ID	45-07-15N	114-20-20W	CU CO AU AG NI ZN PB	VEIN/SHEAR ZONE , RE
W000723	BLACKPINE MINE	US	ID	45-02-42N	114-12-37W	CO NI CU AU AG	VEIN/SHEAR ZONE , RE
W015774	BLUE BIRD MINE	US	ID	44-58-21N	113-27-34W	CU AG AU	VEIN
W012960	BLUE JACKET MINE	US	ID	45-07-40N	116-38-31W	CU AG AU	VEIN, REPLACEMENT, C
W012961	BLUE JACKET MINE	US	ID	45-33-20N	116-26-35W	CU ZN PB AU AG	CONTACT METAMORPHIC
W026617	BLUFF CREEK COPPER C	US	ID	47-11-00N	115-29-53W	CU AU AG	VEIN

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W015165	BONANZA MINE	US	ID	45-32-47N	115-28-21W	AU CU PB ZN	VEIN, SHEAR ZONE, RE
W026125	BONNEVILLE GROUP	US	ID	42-16-04N	111-10-46W	CU	REPLACEMENT
W013606	BOULDER MINES	US	ID	43-50-56N	114-30-11W	AU AG PB CU ZN	SHEAR ZONES; FISSURE
W013519	BOWMAN MINE	US	ID	45-07-52N	114-01-23W	CU AU	REPLACEMENT VEINS ,
W014106	BROKEN HILL MINE	US	ID	44-58-33N	114-32-28W	CU AU AG PB	VEIN
W013914	BRYAN MINE	US	ID	44-58-35N	114-32-16W	CU AG AU PB	STOCKWORK
W015729	BUFFALO MINE	US	ID	44-58-50N	113-28-38W	CU TH MON TI U RAE AG	VEIN, REPLACEMENT
W026600	BULLION MINE	US	ID	47-24-03N	115-42-04W	CU AU	VEIN
W015134	BUTTE & OROGRANDE MI	US	ID	45-42-28N	115-32-35W	AU AG CU	DISSEMINATED, STOCKW
D004082	CALADAY MINE	US	ID	47-27-50N	115-56-43W	PB ZN AG CU	
W013294	CARMEN CREEK MINE	US	ID	45-17-09N	113-44-12W	AU AG CU	REPLACEMENT, SHEAR Z
W015688	CHAMPION MINE	US	ID	43-51-37N	113-40-20W	PB ZN CU AU AG	SHEAR ZONE
W013563	CHICAGO MINE	US	ID	43-27-08N	114-17-49W	CU AG	VEIN
W002475	CLARK FORK DISTRICT	US	ID	48-10- N	116-10- W	AU AG PB ZN CU	VEIN/SHEAR ZONE, REP
W013124	CLEARWATER GOLD AND	US	ID	46-58-11N	115-08-30W	CU AU	FISSURE VEIN; REPLAC
W013662	CLIMAX MINE	US	ID	43-29-52N	114-20-48W	PB AG ZN AU CU	VEIN
FS00611	COBALT NOS. 1 , 2 ,	US	ID	45-04-00N	114-10-00W	CU CO	VEIN/SHEAR ZONE
W019384	COEUR D'ALENE MINES	US	ID	47-29-49N	116-00-54W	CU AG CO U PB AU	VEIN
W013911	COLUMBIA MINE	US	ID	44-59-00N	114-33-07W	CU AU PB AG	FRACTURE BRECCIA ZON
W019442	COMMONWEALTH MINE	US	ID	47-49-27N	116-39-38W	CU BA ZN PB AU AG	VEIN
W026620	CONRAD'S CROSSING PR	US	ID	47-09-51N	115-24-51W	CU AU	VEIN/SHEAR ZONE
W018796	CONSOLIDATED SILVER	US	ID	47-30- N	116-00- W	PB CU AG AU SB	VEINS
W013696	CONSOLIDATED WAR DAN	US	ID	43-33-54N	114-26-57W	AG PB CU ZN AU	VEIN
W013907	CONTINENTAL MINE	US	ID	44-58-41N	114-32-19W	AU CU AG PB	FRACTURE - BRECCIA S
W007575	COON DOG MINE	US	ID	44-02-12N	115-48-50W	AU AG PB ZN CU	VEIN
W015689	COPPER BASIN MINE	US	ID	43-48-09N	113-49-23W	CU PB AU AG	CONTACT METASOMATIC
D006600	COPPER BELT MINE	US	ID	45-01-20N	116-50-29W	CU PB	VEIN/SHEAR ZONE
D004127	COPPER CHIEF MINE	US	ID	47-24-27N	115-42-11W	CU	
W015997	COPPER CHIEF MINE	US	ID	46-43-48N	116-38-15W	CU CO KYN	VEIN, CONTACT METAMO
W012887	COPPER CLIFF MINE	US	ID	45-06-20N	116-40-42W	CU AG	DISSEMINATED, VEIN,
D003813	COPPER EDGE PROPERTY	US	ID	47-20-54N	115-33-11W	CU	SHEAR ZONE/VEIN
W013469	COPPER GLANCE MINE	US	ID	45-58-20N	114-30-03W	AU AG PB CU	VEIN; FRACTURE FILLI
W015737	COPPER KING MINE	US	ID	44-53-52N	113-37-07W	CU	VEIN
W015902	COPPER KING MINE	US	ID	46-59-48N	116-29-51W	CU	DISSEMINATED
W013301	COPPER MOUNTAIN MINE	US	ID	45-06-22N	113-59-50W	CU	VEIN
W015809	COPPER MOUNTAIN MINE	US	ID	44-02-19N	113-01-32W	CU PB	VEIN, REPLACEMENT
W019302	COPPER QUEEN MINE	US	ID	43-05-45N	111-19-57W	CU AU AG	VEIN, DISSEMINATED
W015650	COPPER QUEEN MINE	US	ID	43-53-03N	113-43-36W	W CU	VEIN, CONTACT METAMO
M060189	COPPER QUEEN MINE	US	ID	44-58-06N	113-28-24W	AU CU AG MO TH U	VEIN, REPLACEMENT
W026610	COUGAR PROSPECT	US	ID	47-14-58N	115-59-40W	CU AU	VEIN/SHEARING
W019536	CRESCENT MINE	US	ID	47-30-20N	116-04-23W	U CU AG PB ZN	VEIN
W012870	CUDDY MINE	US	ID	44-46-44N	116-46-57W	AU CU	VEIN
W015977	DEER CREEK MINE	US	ID	46-03-25N	116-42-28W	CU AU AG MO	FISSURE VEIN
W015411	DEWEY MINE	US	ID	45-56-16N	116-00-38W	AU CU	VEIN, REPLACEMENT
W014373	DRYDEN MINE	US	ID	44-14-59N	114-26-01W	PB CU ZN	SHEAR ZONES
W026110	DUKE MINE	US	ID	42-13-14N	111-10-50W	CU	REPLACEMENT; VEIN
W012965	DUNCAN MINE	US	ID	45-31-35N	116-31-05W	CU	DISSEMINATED, VEIN F
W012765	EAGAN MINE	US	ID	44-34-06N	117-04-27W	AG CU ZN PB SB	REPLACEMENT; VEIN
M060181	EAGLEBIRD MINE	US	ID	43-38-27N	113-55-06W	AG PB W ZN CU SB AU	REPLACEMENT, VEIN/SH
W019471	EMPIRE COPPER MINE	US	ID	47-37-16N	116-19-17W	CU AU	VEIN; DISSEMINATED
W015690	EMPIRE MINE	US	ID	43-53-13N	113-40-40W	W AU AG CU MO PB ZN	SKARN, VEIN/SHEAR ZO
W012767	ENTERPRISE MINE	US	ID	44-34-03N	117-04-12W	CU PB ZN	VEIN, REPLACEMENT
W012865	EUREKA CLAIM	US	ID	48-37-15N	116-03-49W	PB CU	VEIN
W013605	EUREKA MINE	US	ID	43-30-06N	114-24-09W	AU AG CU PB ZN	VEIN; REPLACEMENT
W014332	FOREST ROSE MINE	US	ID	44-24-40N	114-19-45W	AU AG PB CU	REPLACEMENT
W013270	FORT HALL MINE	US	ID	42-46-59N	112-20-41W	CU PB	REPLACEMENT
W012966	FRENCHY'S MINE	US	ID	45-05-47N	116-37-37W	CU AU MO	VEIN
W026630	GALENA MINE	US	ID	47-28-37N	115-57-55W	PB AG CU U ZN SB	VEIN, REPLACEMENT, D
D006781	GAMEBET CLAIM GROUP	US	ID	43-42-48N	113-55-55W	CU AG	VEIN
D004128	GIANT MINE	US	ID	47-27-08N	115-46-43W	PB CU AG	
W007797	GOLD COIN MINE	US	ID	48-11- N	116-27- W	AG PB CU	(FISSURE) VEIN
D006776	GRANITE QUEEN PROPER	US	ID	44-43-41N	116-16-03W	CU	SKARN
W013371	HARMONY MINE	US	ID	45-00-52N	113-49-36W	CU AG AU	VEIN, SHEAR ZONE
D006789	HATCH PROSPECT	US	ID	42-17-20N	112-04-42W	CU	VEIN
W013650	HEINE MINE	US	ID	43-28-01N	114-19-25W	AU CU AG	VEIN
W012795	HELENA MINE	US	ID	45-07-40N	116-38-25W	CU AU AG MO W	CONTACT METAMORPHIC
W013618	HIDDEN TREASURE CLAI	US	ID	43-53-24N	114-37-20W	AG PB CU ZN AU	VEIN

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M060177	HOPE MINE	US	ID	48-10-20N	116-09-05W	PB AG ZN CU AS AU SB SB	VEINS (FISSURE AND B
W015671	HORNSILVER MINE	US	ID	43-35-49N	113-34-14W	AG PB ZN SB CU AU BI	VEIN
W026671	HORNSILVER MINE	US	ID	47-26-29N	115-55-43W	PB AG CU AU ZN	VEIN, DISSEMINATED
W015691	HORSESHOE MINE	US	ID	43-53-50N	113-41-22W	AU AG CU PB ZN	SKARN, REPLACEMENT;
D004197	HORST-POWELL	US	ID	47-22-38N	115-46-45W	CU	
W028016	HUMMING BIRD GROUP	US	ID	42-14-18N	111-29-60W	PB CU AU AG	VEIN
W026573	HUMMING BIRD GROUP	US	ID	42-14-18N	111-29-60W	PB CU AU AG	VEIN
W013361	HUNGRY HILL MINE	US	ID	45-12-20N	113-40-30W	CU AU AG	SHEAR ZONE, REPLACEM
W017953	HUNTER-SNOWSTORM LOD	US	ID	47-28-00N	115-44-00W	CU	
W013614	IDAHOAN AND OLD BIBL	US	ID	43-59-42N	114-38-35W	PB AG ZN AU CU SB	VEIN/SHEAR ZONE; REP
W013596	INDEPENDENCE MINE	US	ID	43-40-02N	114-16-32W	PB ZN CU AG AU SB	VEIN
W013355	IRON DIKE PROSPECT	US	ID	45-15-48N	113-45-37W	PB ZN CU AU AG U	VEIN, REPLACEMENT, D
W012772	IXL MINE	US	ID	44-44-41N	116-47-07W	CU MO ZN PB AU AG	DISSEMINATED, REPLAC
W013358	JACKSON MINE	US	ID	45-13-05N	113-43-15W	CU	SHEAR ZONE
D006766	JUNE BUG CLAIMS	US	ID	44-55-01N	113-45-06W	CU AG	VEIN
D006587	JUNE MINE	US	ID	47-37-09N	116-16-05W	CU	VEIN
W014287	KEYSTONE MINE	US	ID	44-26-40N	114-19-35W	PB CU F	VEINS
W014342	LAST CHANCE MINE	US	ID	44-21-00N	114-19-58W	PB AU AG CU	VEINS, REPLACEMENT
W014082	LEAD - METALS MINE	US	ID	44-36-10N	115-02-26W	PB CU ZN AG AU	VEIN, PARTIAL REPLAC
W013468	LEAD STAR MINE	US	ID	44-54-10N	114-30-01W	AU AG CU PB	VEIN
W012777	LIBERTY MINE	US	ID	44-34-10N	117-04-27W	AG CU ZN PB	VEIN, REPLACEMENT
W013916	LIBERTY MINE	US	ID	44-58-55N	114-32-49W	AU AG CU PB	VEIN; FRACTURE BRECC
W013909	LINCOLN MINE	US	ID	44-58-43N	114-32-36W	CU PB AU	FRACTURE - BRECCIA S
D004188	LINTZ AND STAFFORD P	US	ID	47-11-36N	115-29-12W	CU SN	
W015300	LITTLE GREEN GEM NO.	US	ID	45-11-50N	116-15-01W	AU AG CU PB ZN MO	VEIN
W012797	LOCKWOOD MINE	US	ID	45-08-19N	116-39-10W	CU AG W MO	VEIN, CONTACT METAMO
W013926	LOST PACKER MINE	US	ID	44-36-31N	114-52-54W	AU CU AG	FISSURE VEIN
W026748	LUCKY CALUMET PROSPE	US	ID	47-29-19N	115-44-36W	CU PB ZN AG	VEIN, DISSEMINATED
W012778	MARIAH MINE	US	ID	44-33-44N	117-04-23W	CU PB ZN AG AU	VEIN
W012798	MC CARTY PROSPECT	US	ID	45-00-54N	116-50-20W	ZN CU PB AU AG	VEIN
W012995	MC CURKLE - SHANE MI	US	ID	44-33-57N	117-03-51W	AG CU	REPLACEMENT FISSURE
D004190	MILITARY MINE	US	ID	47-30-32N	115-45-45W	CU AG AU	
W002478	MINERAL DISTRICT	US	ID	44-33-45N	117-03-53W	AG PB CU ZN AU	VEIN/SHEAR ZONE
W002482	MINNIE MOORE MINE	US	ID	43-27-35N	114-17-42W	AG PB CU AU ZN	VEINS IN THRUST SHEA
W015888	MIZPAH MINE	US	ID	46-59-51N	116-30-01W	CU ZN	DISSEMINATED; REPLAC
W026609	MONITOR MINE	US	ID	47-21-07N	115-34-24W	CU AU AG	VEIN, GOSSAN
D004130	MONTANA-IDAHO MINE	US	ID	47-20-55N	115-35-08W	CU	
W013266	MOONLIGHT MINE	US	ID	41-59-56N	112-15-34W	CU PB AG AU	REPLACEMENT
W013827	MOONLIGHT MINE	US	ID	43-41-15N	114-27-37W	AU AG PB CU	VEIN
W026725	NATIONAL MINE	US	ID	47-29-25N	115-45-44W	CU AG AU PB ZN	VEIN, REPLACEMENT, D
W015772	NO PAY MINE	US	ID	44-59-43N	113-27-58W	CU	VEIN/FAULT ZONE
W000725	NORTHFIELD PROSPECT	US	ID	45-07-30N	114-20-00W	CO NI CU	GOSSAN, DISSEMINATED
W013648	OVERLAND MINE	US	ID	43-27-58N	114-18-23W	CU ZN PB AG AU	VEIN
W014336	PACIFIC MINE	US	ID	44-24-35N	114-19-02W	PB AG CU AU ZN F	REPLACEMENT, VEIN
D004129	PEACOCK COPPER	US	ID	47-24-29N	115-44-15W	CU	
W015793	PEACOCK MINE	US	ID	44-42-17N	113-17-46W	CU	GOSSAN
W012972	PEACOCK MINE	US	ID	45-10-03N	116-39-05W	CU AG AU ZN PB	CONTACT METAMORPHIC
D006561	PITTSBURG GROUP	US	ID	46-17-47N	116-06-38W	CU	VEIN
D006761	POCAHONTAS CLAIMS	US	ID	44-13-27N	112-53-30W	CU	SHEAR ZONE
M060838	POPE-SHENON MINE	US	ID	45-04-31N	113-51-20W	CU AG AU ZN	VEIN, SHEAR ZONE, RE
W012973	QUEEN MINE	US	ID	45-07-47N	116-38-43W	CU AG AU	CONTACT METAMORPHIC
D001113	QUEEN MTN. DEPOSITS	US	ID	48-54- N	116-17- W	W PB CU	QUARTZ VEIN
W013003	RAILROAD MINE	US	ID	44-45-52N	116-47-32W	CU AG AU	CONTACT METASOMATIC
W014288	RAMSHORN MINE	US	ID	44-24-30N	114-21-32W	PB ZN CU AG AU	VEIN - FISSURE FILLI
W014112	RAMSHORN MINE	US	ID	44-37-17N	115-07-28W	AU AG CU PB	VEIN, FISSURE, REPLA
W013595	RED CLOUD MINE	US	ID	43-30-49N	114-27-10W	PB AG AU CU ZN	VEIN, DISPLACEMENT
W013672	RED ELEPHANT MINE	US	ID	43-29-56N	114-25-47W	PB AG ZN AU CU	VEIN, REPLACEMENT
W012803	RED LEDGE PROSPECT	US	ID	45-13-34N	116-39-49W	CU PB ZN AG AU	DISSEMINATED, REPLAC
W026729	REINDEER QUEEN MINE	US	ID	47-26-48N	115-45-42W	CU AG PB ZN	VEIN
W014090	REPUBLICAN GROUP MIN	US	ID	44-35-38N	115-08-53W	PB ZN CU AU AG	VEIN/SHEAR ZONE
W026607	RICHMOND MINE	US	ID	47-21-19N	115-34-20W	CU AU	VEIN, REPLACEMENT, G
D008296	RILEY PROSPECT	US	ID	47-00-15N	115-08-54	CU	VEIN
W012804	RIVER QUEEN MINE	US	ID	45-03-10N	116-48-00W	CU AG AU	VEIN, REPLACEMENT, D
W007673	SAW PIT PROSPECT	US	ID	42-59-33N	116-44-33W	CU	VEIN
D004131	SHIRLEY JEAN MINE	US	ID	47-14-49N	115-34-29W	CU	
W014126	SHORTY GROUP	US	ID	44-16-38N	115-04-29W	PB CU AG GRF ZN AU	VEIN
W014340	SILVER BELL MINE	US	ID	44-19-01N	114-21-10W	AG PB AU CU	VEIN

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
W019395	SILVER DOLLAR MINE	US	ID	47-30-42N	116-01-47W	ZN PB AG CU SB	VEIN
W013010	SILVER STILL MINE	US	ID	44-33-41N	117-03-47W	AG AU CU PB ZN SN SB	VEIN/FRACTURE ZONE,
W014290	SKYLARK MINE	US	ID	44-24-44N	114-21-45W	CU AG	VEIN - FISSURE FILLI
W026635	SNOWSHOE MINE	US	ID	47-29-17N	115-44-22W	CU AG	DISSEMINATED
US16010	SNOWSTORM MINE	US	ID	47-28-47N	115-44-02W	CU AG AU	STRATABOUND, DISSEMI
W014368	SOUTH BUTTE MINE	US	ID	44-17-15N	114-27-01W	PB AG AU CU	SHEAR ZONE; GOSSAN
W012805	SOUTH PEACOCK MINE	US	ID	45-09-53N	116-39-00W	CU	CONTACT METASOMATIC
W026619	ST. JOE QUARTZ PROSP	US	ID	47-11-25N	115-29-31W	CU PB ZN	SHEAR ZONE
W013659	STAR MINE	US	ID	43-28-51N	114-19-03W	PB CU ZN AG	VEIN
W026633	STERLING PROSPECT	US	ID	47-28-11N	115-58-18W	PB AG CU	VEIN
D004189	TAYLOR COPPER MINE	US	ID	47-24-52N	115-41-55W	CU	
W015711	TIGER GROUP MINE	US	ID	43-53-29N	113-40-52W	CU	CONTACT METAMORPHIC
D004050	TILICUM PROSPECT	US	ID	47-26-00N	115-55-00W	NI CU	
W013912	TIN CUP MINE	US	ID	44-58-01N	114-31-56W	AU AG CU PB	VEIN
W013362	TORMEY MINE	US	ID	45-06-20N	113-58-55W	CU AU AG	SHEAR ZONE, REPLACEM
W014341	TURTLE MINE	US	ID	44-22-05N	114-18-20W	AU AG CU PB	FISSURE FILLING, VEI
W012806	TUSSEL MINE	US	ID	45-09-25N	116-39-40W	CU AU AG MO W	VEIN, CONTACT, METAS
W013494	TWIN PEAKS MINE	US	ID	44-57-15N	114-00-20W	CU AU PB AG	VEIN; REPLACEMENT; D
W013560	UTAH - BELLEVUE MINE	US	ID	43-26-34N	114-18-38W	PB ZN AG AU CU	VEIN/SHEAR ZONE; REP
W013900	VENABLE MINE	US	ID	44-57-54N	115-07-36W	AU AG CU PB	VEIN
W026634	VENDETTA CHIEF MINE	US	ID	47-35-25N	115-48-45W	PB AG CU AU	VEIN
W013368	VIRGINIA MINE	US	ID	45-06-05N	113-34-50W	AU PB CU	VEIN
W015170	WAR EAGLE MINE	US	ID	45-29-00N	115-36-45W	PB CU ZN AU AG	VEIN
W026616	WARD PROSPECT	US	ID	47-16-05N	115-22-13W	CU AU	VEIN/SHEAR ZONE
W015805	WEIMER MINE	US	ID	44-11-29N	112-51-52W	CU PB AU AG	VEIN/SHEAR ZONE
W013356	WHITE HORSE MINE	US	ID	45-15-23N	113-41-25W	AU AG CU PB	VEIN
W012974	WHITE MONUMENT MINE	US	ID	45-08-40N	116-38-35W	CU AG AU	CONTACT METAMORPHIC
W014279	WHY NOT GROUP MINE	US	ID	44-26-41N	114-42-21W	CU PB AU AG	VEIN
W013710	WOLFTONE MINE	US	ID	43-30-06N	114-28-45W	AU AG PB CU ZN	VEIN
W015732	WONDER MINE	US	ID	44-57-29N	113-28-11W	TH CU MON RAE ZN AG	VEIN, SHEAR ZONE, RE
W019377	YAKIMA - SHOSHONE MI	US	ID	47-30-07N	116-01-39W	AG CU	VEIN
W013905	YELLOWJACKET MINE	US	ID	44-58-55N	114-31-38W	AU AG CU PB	VEIN
W006820	HAWKS MINE	US	MA	42-37-12N	072-53-35W	CU	METAMORPHIC, REPLACE
W000714	BARE HILLS COPPER MI	US	MD	39-22-30N	076-39-50W	CU NI CO	VEINS
W100762	BARE HILLS CU MINE	US	MD	39-22-30N	076-39-50W	CU	VEIN
W100755	COX (MT. VIEW MINE)/	US	MD	39-32-45N	077-12-15W	CU PB	STRATABOUND DISCORDA
W100756	DOLLY HYDE MINE	US	MD	39-28-45N	077-13-40W	CU PB AG	STRATABOUND DISCORDA
W100754	LIBERTY MINE	US	MD	39-30-45N	077-15-15W	CU AG	STRATABOUND DISCORDA
W000712	MINERAL HILL	US	MD	39-26-15N	076-55-55W	CO NI CU	VEIN
W100758	MINERAL HILL	US	MD	39-26-15N	076-55-55W	CU FE	VEIN
W100757	NEW LONDON MINE (LIN	US	MD	39-25-15N	077-15-30W	CU AG AU	VEIN (CROSS-CUTTING
W000713	PATAPSCO	US	MD	39-29-10N	076-52-45W	CO NI CU	VEINS
W100759	PATAPSCO	US	MD	39-29-10N	076-52-45W	CU	VEIN
W100761	ROOP MINE	US	MD	39-31-12N	077-07-10W	CU ZN	STRATABOUND DISCORDA
W000710	SPRINGFIELD	US	MD	39-23-00N	076-58-40W	CO NI CU	VEIN
W100763	SPRINGFIELD/CARROLL(	US	MD	39-23-00N	076-58-40W	CU FE	VEIN
W101742	APPLETON	US	ME	44-15-30N	069-13-50W	CU	STRATABOUND CONCORD
W101740	AREA 5 PROSPECT, WAR	US	ME	44-10-36N	069-15-15W	NI CU CO	LAYERED IGNEOUS
W102003	BALD MT.	US	ME	46-44-00N	068-47-00W	ZN CU AU AG	STRATABOUND CONCORD
W102008	BIG HILL & BARRETT M	US	ME	44-57-55N	067-12-45W	ZN CU PB AG	STRATABOUND DISCORDA
W019044	BLACK HAWK - BLUE HI	US	ME	44-22- N	068-41- W	ZN CU PB AG	REPLACEMENT
W101703	BLACK HILL (BLUE HIL	US	ME	44-24-00N	068-37-20W	CU	STRATABOUND CONCORD
W016556	BLUE HILL	US	ME	44-24-00N	068-37-00W	CU ZN AG PB	PORPHYRY
W101739	CALAHAN MINING CO. (	US	ME	44-20-57N	068-48-32W	ZN CU	STRATABOUND CONCORD
W101892	CATHEART MT.	US	ME	45-32-00N	070-12-00W	MO CU	STOCKWORK/PIPE
W101931	CHASE STREAM (SQUIRT	US	ME	45-31-10N	069-55-50W	CU ZN	STRATABOUND CONCORD
W101749	COPPEROPOLIS (CUSTER	US	ME	44-34-10N	068-18-10W	CU PB	VEIN
W101700	EGGEMOGGIN MINE	US	ME	44-18-10N	068-41-25W	PB AG CU	STRATABOUND DISCORDA
W102080	FROST PROSPECT	US	ME	45-05-23N	067-29-00W	CU NI CO	LAYERED IGNEOUS
W101737	HERCULES (DUNBAR) MI	US	ME	44-26-10N	068-44-55W	CU ZN	STRATABOUND CONCORD
W000718	KATAHDIN IRON WORKS	US	ME	45-53- N	068-50- W	FE CU S CO	MASSIVE SULFIDES
W101930	KATAHDIN IRON WORKS	US	ME	45-26-15N	069-11-30W	FE S CU NI	LAYERED IGNEOUS
W101891	LEDGE RIDGE	US	ME	45-15-00N	071-03-00W	CU ZN PB	STRATABOUND CONCORD
W101929	MOXIE POND (BLACK NA	US	ME	45-18-00N	069-52-00W	CU NI	LAYERED IGNEOUS
M234127	PACIFIC CONSOLIDATED	US	ME	41-05-43N	115-57-44W	CU AU AG PB FE	INSUFFICENT DATA TO
W019045	PARMACHENEE ZN - CU	US	ME	45- - N	068- - W	CU ZN PB	VOLCANOGENIC MASSIVE
W101738	TAPLEY MINE ET AL.	US	ME	44-22-30N	068-44-40W	CU	STRATABOUND DISCORDA

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W101704	TRIO	US	ME	44-22-20N	068-34-10W	CU AG	STRATABOUND CONCORD
W101741	UNION PYRRTOTITE	US	ME	44-12-15N	069-14-10W	CU NI	LAYERED IGNEOUS
W101933	VINEGAR HILL	US	ME	45-13-50N	068-32-30W	AU CU	UNCERTAIN
W031520	ADVENTURE CONSOLIDAT	US	MI	46-46-24N	089-04-22W	CU AG	SECONDARY ENRICHMENT
W031532	ALGOMAH MINE	US	MI	46-45-41N	089-02-24W	CU	SECONDARY ENRICHMENT
W031530	BELT MINE (PISCATAUQ	US	MI	46-47-00N	089-04-02W	CU	SECONDARY ENRICHMENT
W031529	CALEDONIA MINE (NEBR	US	MI	46-45-05N	089-07-09W	CU AG	SECONDARY ENRICHMENT
W031531	CARP LAKE MINE	US	MI	46-48-53N	089-42-58W	CU	SECONDARY ENRICHMENT
W031535	CHEROKEE MINE	US	MI	46-50-36N	088-58-00W	CU	SECONDARY ENRICHMENT
W031534	CLEVELAND MINE	US	MI	46-47-44N	089-34-24W	CU	SECONDARY ENRICHMENT
W031536	COLLINS MINE	US	MI	46-47-35N	089-34-30W	CU	SECONDARY ENRICHMENT
W031537	CUYAHOGA MINE	US	MI	46-48-58N	089-41-57W	CU	SECONDARY ENRICHMENT
W031538	ELM RIVER MINE	US	MI	46-55-24N	088-49-47W	CU	SECONDARY ENRICHMENT
W031519	FLINT STEEL RIVER MI	US	MI	46-44-20N	089-07-52W	CU AG	SECONDARY ENRICHMENT
W031521	INDIANA MINE	US	MI	46-47-58N	088-59-48W	CU	SECONDARY ENRICHMENT
W031522	KING PHILIP MINE	US	MI	46-52-15N	088-55-08W	CU	SECONDARY ENRICHMENT
W031523	LAFAYETTE MINE	US	MI	46-46-40N	089-49-15W	CU	SECONDARY ENRICHMENT
W031524	LAKE MINE	US	MI	46-46-04N	089-02-12W	CU	SECONDARY ENRICHMENT
W031525	LAKE SUPERIOR MINE	US	MI	46-44-22N	089-08-49W	CU	SECONDARY ENRICHMENT
W031526	MASS CONSOLIDATED MI	US	MI	46-45-55N		CU AG	SECONDARY ENRICHMENT
W031528	MICHIGAN MINE	US	MI	46-43-51N	089-09-28W	CU AG	SECONDARY ENRICHMENT
W031503	MINNESOTA MINE	US	MI	46-43-49N	089-10-32W	CU AG	SECONDARY ENRICHMENT
W031504	NASSAU MINE	US	MI	46-44-28N	089-08-41W	CU	SECONDARY ENRICHMENT
W031505	NATIONAL MINE	US	MI	46-43-38N	089-11-12W	CU AG	SECONDARY ENRICHMENT
W031506	NONESUCH MINE	US	MI	46-45-16N	089-37-07W	CU	SECONDARY ENRICHMENT
W031507	NORTH LAKE MINE	US	MI	46-47-05N	089-01-24W	CU	SECONDARY ENRICHMENT
W031508	NORWICH MINE	US	MI	46-39-40N	089-23-09W	CU	SECONDARY ENRICHMENT
W031527	OLD MASS MINE	US	MI	46-45-21N	089-06-46W	CU	SECONDARY ENRICHMENT
W031509	ONTONAGON MINE	US	MI	46-48-29N	089-34-07W	CU	SECONDARY ENRICHMENT
W031510	ROCKLAND MINE	US	MI	46-44-02N	089-09-51W	CU AG	SECONDARY ENRICHMENT
W031511	SCRANTON MINE	US	MI	46-48-51N	089-35-05W	CU	SECONDARY ENRICHMENT
W031533	SHAWMUT MINE	US	MI	46-55-07N	088-51-07W	CU	SECONDARY ENRICHMENT
W031512	SOUTH LAKE MINE (AZT	US	MI	46-46-32N	089-03-13W	CU	SECONDARY ENRICHMENT
W031513	TOLTEC MINE	US	MI	46-46-46N	089-02-34W	CU	SECONDARY ENRICHMENT
W031514	VICTORIA MINE (CUSHI	US	MI	46-41-59N	089-13-55W	CU	SECONDARY ENRICHMENT
W031516	WHITE PINE EXTENSION	US	MI	46-44-38N	089-43-27W	CU	SECONDARY ENRICHMENT
W031515	WHITE PINE MINE	US	MI	46-44-37N	089-32-02W	CU AG	SECONDARY ENRICHMENT
W002687	WHITE PINE MINE	US	MI	46-45-48N	089-27-45W	CU AG	DISSEMINATED, CLASTI
W031517	WINONA MINE	US	MI	46-52-31N	088-54-25W	CU	SECONDARY ENRICHMENT
W031518	WYANDOTTE MINE	US	MI	46-53-27N	088-52-35W	CU	SECONDARY ENRICHMENT
M046566	MINNAMAX CU-NI PROSP	US	MN	47-41-00N	091-54-00W	CU NI PT PD PGM	DULUTH CU-NI-PGE, MO
M046425	SPRUCE OPEN PIT (INC	US	MN	47-50-09N	091-40-13W	NI CU PT CO AU AG PD	DULUTH CU-NI-PGE, MO
W700612	BIXBY MINE	US	MO			PB ZN CU	
W016773	BOSS-BIXBY	US	MO	37-39-25N	091-09-23W	AG FE CU TI CO NI MO PB ZN AS S	REPLACEMENT, DISSEMI
D003555	CASEY MINE	US	MO	37-10-37N	091-21-21W	CU	REPLACEMENT, BEDDED,
D003570	CORNWALL COPPER MINE	US	MO	37-54-08N	090-08-55W	CU	
D003565	DR. ROBB AND PERRING	US	MO	37-31-18N	090-18-48W	PB CO CU	
D003557	FOX MINE	US	MO	37-33-55N	090-19-49W	PB CU NI CO	DISSEMINATED, MISSIS
W700613	FRANK R. MILLIKEN MI	US	MO			PB ZN CU AG	
D003563	HICKORY NUT (NO. 1	US	MO	37-34-14N	090-20-14W	PB CO CU	
D003564	HILL PROSPECT	US	MO	37-30-33N	090-20-13W	PB CO CU	
W700614	INDIANA CREEK MINE	US	MO			PB ZN CU AG	
D003554	JERKTAIL PROSPECT	US	MO	37-13-24N	091-17-38W	CU	REPLACEMENT (OF CALC
D003756	KELLY MINE NO. 3	US	MO	37-52-03N	091-37-42W	FE CU	
D003562	MADISON MINE	US	MO	37-33-03N	090-16-44W	PB CU CO NI FE AG	MISSISSIPPI VALLEY,
D003568	MARSHALL	US	MO	37-33-17N	090-14-11W	PB CO CU FE	MISSISSIPPI VALLEY
D003559	OLD COPPER MINES	US	MO	37-35-43N	090-19-57W	PB CU CO NI FE	
D003567	RUTH	US	MO	37-31-36N	090-17-45W	PB CO CU	MISSISSIPPI VALLEY
W016772	SAINTE GENEVIEVE	US	MO	37-54-00N	090-09-00W	AG FE CU	
D003566	SCHULTE	US	MO	37-31-03N	090-17-05W	PB CO CU	MISSISSIPPI VALLEY
D003531	SLATER MINE	US	MO	37-08-41N	091-19-56W	CU	DISSEMINATED; REPLA
D003530	STE. GENEVIEVE MINES	US	MO	37-54- N	090-09- W	CU PB	BEDDED, CHIMNEYS, RE
D003556	SUTTON MINE	US	MO	37-05-54N	091-18-58W	CU	REPLACEMENT, BEDDED,
D003572	SWANSEA COPPER MINE	US	MO	37-58-14N	090-11-49W	CU	
DC08567	ADALINE MINE	US	MT	46-49-05N	113-35-37W	CU PB AU AG	VEIN, SHEAR ZONE
D011270	ADAMS MINE	US	MT	46-00-44N	112-31-00W	CU AG AU	VEIN FILLING
DC08409	AGNES PROPERTY	US	MT	47-22-56N	115-31-52W	CU PB	VEIN

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DC08573	ALADDIN MINE	US	MT	46-47-28N	113-39-12W	CU AG AU	VEIN, SHEAR ZONE
D004118	ALLEN PROPERTY MINE	US	MT	47-18-17N	114-35-10W	CU	
D011278	ALTONA MINE	US	MT	46-00-15N	112-28-35W	CU AG MO	VEIN, SHEAR ZONE
W026557	AMADOR MINE	US	MT	47-06-52N	115-00-30W	AG CU AU	VEIN
DC11660	AMAZON MINE	US	MT	45-12-41N	112-21-46W	CU	INSUFFICIENT DATA TO
D011308	ANACONDA RANGE AREA	US	MT	45-50-00N	113-35-00W	AG PB CU AU ZN W MO	VEIN, REPLACEMENT, C
D011292	ANACONDA, ST. LAWERE	US	MT	46-01-00N	112-31-25W	CU AG AU ZN AS	VEIN, FILLING SHEAR
DC10629	ANDERSON PROSPECT	US	MT	46-02-17N	113-40-37W	AG CU PB AS SB	FISSURE VEIN, SHEAR
DC09955	ANNIE MARONY MINE	US	MT	46-19-30N	113-15-35W	AG MN PB	FISSURE VEIN, REPLAC
DC12056	ANYTHING MINE	US	MT	45-36-50N	112-28-55W	AU AG PB CU	VEIN
D010485	APEX NO. 2 CLAIM	US	MT	45-43-20N	112-35-36W	CU AG	VEIN
D008843	ARGENTA DISTRICT	US	MT	45-17-12N	112-51-53W	PB AG AU CU ZN	CONTACT METASOMATIC
D010493	ATLAS MINE	US	MT	45-40-06N	113-01-24W	CU	VEIN, SHEAR ZONE
D004828	AURORA MINE	US	MT	45-43-24N	112-54-10W	AG CU AU	VEIN
W002875	AUSTIN DISTRICT	US	MT	46-38-20N	112-14-30W	AU AG CU PB FE AS SB	PLACER, CONTACT META
DC12042	BACCHARAT MINE	US	MT	45-39-32N	112-19-57W	AU PB CU	VEIN
DC08950	BADGER GOLD GROUP	US	MT	45-16-42N	112-54-30W	AU AG CU	REPLACEMENT
DC10999	BAKAMA MINE	US	MT	46-22-78N	112-10-48W	AG CU	UNKNOWN
D003836	BALD MOUNTAIN PROSPE	US	MT	47-22-23N	115-35-13W	CU AU AG	SHEAR ZONE/VEIN
D008844	BALDY MOUNTAIN DISTR	US	MT	45-18-10N	113-02-25W	AU AG PB CU ZN W V	CONTACT METASOMATIC
D003905	BALTIC	US	MT	44-59-58N	113-20-00W	CU AU AG	QUARTZ VEIN
W006771	BANNACK DISTRICT	US	MT	45-09-30N	112-59-00W	AU AG CU PB ZN BI	PLACER, REPLACEMENT,
DC09395	BARNES MINE	US	MT	46-27-25N	113-09-13W	CU P	STRATABOUND, CHEMICA
DC12051	BEACON LIGHT MINE	US	MT	45-36-45N	112-30-38W	CU	VEIN, FAULT ZONE
DC10735	BEAR CAT PROSPECT	US	MT	45-48-04N	112-27-30W	AU AG CU	VEIN, CONTACT METASO
D010477	BEAR PAW LODE	US	MT	45-35-10N	113-14-32W	CU MO	VEIN
DC09877	BEAVERTON RANCH	US	MT	46-20-47N	112-03-27W	U CU	VEIN, SHEAR ZONE
DC11721	BELLA MINE	US	MT	45-16-47N	112-51-23W	AG PB CU	VEIN, SHEAR ZONE
DC08572	BELLEVIEW MINE	US	MT	46-47-52N	113-38-47W	CU AG AU	VEIN, SHEAR ZONE
DC10817	BELMONT MINE	US	MT	46-00-40N	112-31-20W	CU AG PB ZN AU AS	FISSURE VEIN, SHEAR
W013414	BERKELEY PIT	US	MT	46-00-57N	112-30-32W	CU ZN PB AU AG	VEIN & SECONDARY ENR
DB02151	BERTHA MINE	US	MT	46-22-49N	112-05-14W	CU AG PB AU ZN BI SB	FISSURE VEIN, SHEAR
D011280	BERTHA MINE	US	MT	46-00-30N	112-28-50W	CU AG	FAULT VEIN, SHEAR ZO
D010009	BILLIE GOAT MINE	US	MT	46-19-28N	113-08-57W	CU AG ZN SB	VEIN
DC11835	BISMARK MINE	US	MT	45-36-45N	112-02-46W	AU CU MO PB ZN	VEIN
DB02207	BISSONETTE MINE	US	MT	46-59-53N	112-06-04W	AG CU PB ZN BA AS	VEIN, SHEAR ZONE
W014642	BLACK BULL MINE	US	MT	47-09-38N	109-14-03W	AU AG CU PB ZN	CONTACT AND REPLACEM
D004728	BLACK BUTTE CLAIM	US	MT	45-56-50N	112-04-20W	AU AG CU	VEIN
D009540	BLACK PINE DISTRICT	US	MT	46-26-55N	113-22-30W	AG CU PB AU W ZN AS SB	FISSURE VEIN
D003841	BLACK TRAVELER AND B	US	MT	47-26-11N	115-26-23W	AG CU	VEIN
DB02162	BLUE BELL MINE	US	MT	46-37-28N	112-18-15W	CU AG AU MO	CONTACT METASOMATIC
W007441	BLUE BELL MINE	US	MT	45-57-58N	112-19-06W	PB CU ZN AU AG	VEIN, REPLACEMENT
DC11197	BLUE BELL MINE	US	MT	46-48-16N	113-27-12W	CU AU AG AS	FISSURE VEIN, SHEAR
DC09360	BLUE BIRD	US	MT	46-25-08N	113-05-02W	AU AG CU PB	FISSURE VEIN
DB02164	BLUE JAY MINE	US	MT	46-40-55N	112-14-35W	CU AG PB FE SB	CONTACT METASOMATIC
DC11292	BLUE OX MINE	US	MT	47-16-46N	114-23-26W	CU AU AG	SHEAR ZONE/VEIN
W013411	BOAZ MINE	US	MT	45-33-37N	111-39-16W	AU AG CU PB	FISSURE VEIN
W013406	BOSS TWEED MINE	US	MT	45-39-50N	111-57-23W	AU AG CU	FRACTURE & FAULT FIL
D003838	BOSTON COLBY PROPERT	US	MT	47-24-46N	115-31-17W	CU AG AU	SHEAR ZONE/VEIN
DC11182	BOSTON MINE	US	MT	46-49-33N	113-15-52W	CU AU	REPLACEMENT VEIN
DC11343	BRYZANT MINE	US	MT	45-32-21N	112-13-02W	AG PB CU AU ZN	VEIN
DC08395	BUFFALO MINE	US	MT	47-17-13N	115-28-41W	PB CU AU	VEIN
D010455	BULL FROG MINE	US	MT	45-12-50N	112-00-53W	CU	SHEAR ZONE
W014709	BULLION MINE	US	MT	46-21-22N	112-17-40W	AG CU PB AU ZN U SB AS	VEIN, SHEAR ZONE
M060814	BULWER MINE	US	MT	46-15-30N	111-56-30W	AU AG CU PB ZN	CONTACT METAMORPHIC
DB02103	BUNKER HILL TUNNEL	US	MT	46-20-45N	112-05-40W	CU AG PB ZN	FISSURE VEIN, SHEAR
DC11812	BURGIEROSA GROUP	US	MT	45-42-25N	112-56-15W	AG PB CU	VEIN
W002663	BUTTE DISTRICT	US	MT	46-01-30N	112-31-45W	CU ZN MN PB AG AU CA BI S SE TE MO AS	FISSURE VEIN, SHEAR
W019031	BUTTE DISTRICT	US	MT			ZN PB AG MN CU AU CD	VEINS, PIPES, REPLAC
D007813	BUTTERFLY	US	MT	46-40-19N	112-32-04W	AU CU AG SB	VEIN, SHEAR ZONE
FS00291	BUTTERFLY QUARTZ LOD	US	MT	46-52-46N	112-34-48W	AU AG PB ZN CU	FISSURE VEIN, SHEAR
W007423	CABLE MINE	US	MT	46-12-00N	113-12-59W	AU AG W CU PB FE MN ZN HS SB	FISSURE VEIN, REPLAC
W014729	CAPE NOME MINE	US	MT	46-47-22N	113-39-11W	CU AG AU PB BA AS SB	VEIN, SHEAR ZONE
DC11699	CAPITAL MINE	US	MT	45-20-53N	112-51-06W	PB AG CU ZN AU	VEIN
DC11052	CARBONATE MINE	US	MT	45-55-05N	112-02-24W	AU AG PB CU ZN	VEIN
D004151	CARMI LODE	US	MT	47-49-45N	115-29-45W	CU	
DC11608	CARP MINE	US	MT	46-02-21N	113-26-10W	CU	SHEAR ZONE

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
D004995	CAYUGA CLAIM	US	MT	45-46-50N	112-46-18W	CU	VEIN, CONTACT METASO
D011269	CHAMBERS MINE	US	MT	46-00-40N	112-31-20W	CU AG ZN	VEIN FILLING, SHEAR
DC12052	CHAMPION MINE	US	MT	45-37-00N	112-30-30W	AU AG CU PB AS	VEIN
DC09076	CHARTER OAK MINE	US	MT	45-10-05N	112-57-25W	AG PB CU AU ZN	VEIN, REPLACEMENT
D004203	CHERRY CREEK MINE	US	MT	47-29-07N	115-13-31W	CU	
D003874	CHICKAMAN MINE	US	MT	46-45-07N	114-11-37W	CU	VEIN
DC08200	CHRISTAINSEN GROUP	US	MT	45-41-32N	112-39-34W	AG CU	VEIN
D009660	CLANCY MINE	US	MT	45-42-45N	112-20-35W	CU	CONTACT METASOMATIC
DC09350	CLAREMONT MINE	US	MT	46-29-01N	113-54-32W	CU	UNKNOWN
DB02220	CLARK MINE	US	MT	46-30-44N	112-24-17W	PB ZN CU SB	VEIN, SHEAR ZONE
D009544	CLINTON DISTRICT	US	MT	46-48-10N	113-37-32W	CU AG PB AU ZN BA BI	VEIN, SHEAR ZONE
D011325	CLIPPER LODE	US	MT	45-56-55N	113-34-10W	AG CU AU	VEIN
DC08215	CLIPPER-COLUMBIA GRO	US	MT	45-43-27N	112-33-15W	CU	VEIN, FAULT ZONE
D011297	COLUMBIA CLAIM	US	MT	45-55-02N	112-01-42W	AU AG CU BA	VEIN
DC10804	COLUSA MINE	US	MT	46-01-27N	112-30-25W	CU AG	FISSURE VEIN, SHEAR
M060829	COMET GROUP	US	MT	45-27-30N	113-02-47W	AG AU CU PB ZN	VEIN, SHEAR ZONE
W013425	CONTINENTAL EAST PIT	US	MT	46-00-57N	112-27-43W	CU ZN AG PB MO	FISSURE VEIN, SHEAR
D007812	COON'S TUNGSTEN	US	MT	46-41-18N	112-31-50W	W	TACTITE
DC08574	COPPER BELL MINE	US	MT	46-47-20N	113-39-45W	CU AU	VEIN, SHEAR ZONE
DC08219	COPPER BELL MINE	US	MT	45-17-08N	112-51-38W	PB CU AG AU	VEIN, CONTACT METASO
DC09235	COPPER CITY MINE	US	MT	45-58-55N	111-32-30W	CU AU AG	
DC09455	COPPER CLIFF	US	MT	46-24-12N	112-34-52W	CU	DISSEMINATED
D009546	COPPER CLIFF DISTRIC	US	MT	46-48-18N	113-27-30W	CU AU AG AS SB	FISSURE VEIN, SHEAR
W014719	COPPER CLIFF MINE	US	MT	46-48-32N	113-27-14W	CU AU AG SB AS	FISSURE VEIN, SHEAR
DC10814	COPPER CZAR MINE	US	MT	46-00-40N	112-27-22W	CU AG AU	FISSURE VEIN, SHEAR
DC12059	COPPER HILL MINE	US	MT	45-43-15N	112-40-12W	CU AG	VEIN
DC09944	COPPER JACK MINE	US	MT	46-21-14N	113-16-58W	CU	CONTACT METASOMATIC
M045434	COPPER KING MINE	US	MT	45-07-23N	109-54-23W	PT PD RH CU AG	SYENITE ASSOCIATED B
DC11284	COPPER KING MINE	US	MT	47-37-07N	115-11-23W	CU AG AU PB ZN SB BI	SHEAR ZONE/VEIN
DC09362	COPPER LODE	US	MT	46-24-11N	113-09-06W	CU AU AG	VEIN, SHEAR ZONE
D010025	COPPER LODE PROSPECT	US	MT	46-18-53N	112-56-52W	CU AG PB ZN	VEIN, SHEAR ZONE
D010424	COPPER MOUNTAIN LODE	US	MT	45-59-17N	113-32-55W	AG CU PB ZN	VEIN
W026548	COPPER MTN MINE	US	MT	45-25-37N	112-02-35W	FE CU	VEIN, DISSEMINATED,
DC10988	COPPER NUGGET PLACER	US	MT	46-20-35N	112-03-15W	CU	CHEMICAL SEDIMENT, S
D003860	COPPER QUEEN	US	MT	45-32-30N	114-19-00W	CU	IRREGULAR MASSES
DC08998	COPPER QUEEN CLAIMS	US	MT	45-12-57N	113-36-40W	CU PB	VEIN, FAULT ZONE
D003873	COPPER SMITH	US	MT	46-54-17N	114-29-09W	CU	VEIN
DC09370	COPPER STATE MINE	US	MT	46-29-30N	113-15-20W	CU AU AG	VEIN, SHEAR ZONE
D008176	CORRA MINE	US	MT	46-01-40N	112-31-28W	CU AG ZN	FISSURE VEIN, SHEAR
W002867	COTTONTAIL MINE	US	MT	45-11-25N	112-57-08W	AG AU PB ZN CU MN	VEIN, REPLACEMENT
D011315	CRAIG PROPERTY	US	MT	45-36-29N	112-06-13W	AU AG CU PB ZN	VEIN
W026538	CRYSTAL MINE	US	MT	46-21-00N	112-15-38W	AU AG CU PB ZN QTZ SB AS	VEIN, SHEAR ZONE
D011317	CURLY BILL NO. 3 PRO	US	MT	45-35-36N	112-04-56W	AU AG CU	VEIN
DB02219	CYCLONE MINE	US	MT	46-41-55N	112-29-45W	W AG AU	TACTITE
M060811	DAILY	US	MT	46-21-05N	112-06-10W	AG CU PB AU ZN AS SB	FISSURE VEIN, SHEAR
W013304	DARK HORSE MINE	US	MT	45-10-02N	113-35-18W	AU AG CU PB ZN	VEIN
DC11789	DAY AND HARVEY MINE	US	MT	45-44-59N	112-34-25W	AU AG CU	VEIN
D004309	DEER CREEK PROSPECT	US	MT	45-18-00N	111-12-45W	CU NI	VEIN/SHEAR ZONE
D010015	DEERLODGE BASIN PROS	US	MT	46-23-43N	113-04-48W	AG PB W ZN CU	VEIN, SHEAR ZONE
DC11394	DEL MONTE MINE	US	MT	45-11-42N	112-57-27W	AG AU CU PB SB	VEIN, FAULT ZONE
DC11853	DIADEM GROUP	US	MT	45-35-06N	113-22-15W	AU AG CU PB ZN	VEIN
D011291	DIAMOND MINE	US	MT	46-01-32N	112-31-26W	CU AG AU AS	VEIN FILLING, QUARTZ
DB02218	DOW CROSSCUT	US	MT	46-22-06N	112-09-04W	AG PB CU	FISSURE VEIN, SHEAR
W026566	DRAKE MINE	US	MT	47-16-02N	114-24-17W	AU AG CU PT PD PB	REVAIS CREEK
D004223	DRY CREEK MINE	US	MT	47-12-27N	115-02-22W	CU	
D009926	DURHAM BULL	US	MT	45-17-00N	113-00-45W	CU AG AU ZN	VEIN
D004170	DUSTON COPPER GROUP	US	MT	47-27-49N	114-23-41W	CU AG AU	VEIN ALONG CONTACT B
DC11432	EAGLE CLAIM	US	MT	46-28-18N	113-15-12W	CU	VEIN, SHEAR ZONE
D003843	EAST COEUR D'ALENE M	US	MT	47-25-38N	115-23-59W	PB AG CU ZN	VEIN
D008077	EAST GREY ROCK MINE	US	MT	46-01-30N	112-31-24W	CU AG ZN AS	FISSURE VEIN, SHEAR
D004717	ECHO LODE	US	MT	45-19-20N	113-02-12W	W CU	CONTACT METASOMATIC
DC11837	EDGERTON MINE	US	MT	45-41-45N	112-19-37W	AU AG CU PB	VEIN
DC10979	ELKADOR	US	MT	46-21-42N	112-08-20W	CU AG PB AU ZN SB	FISSURE VEIN; REPLAC
W002871	ELKHORN	US	MT	46-17- N	111-57- W	AG AU PB CU BI	REPLACEMENT AND CONT
W013444	ELKHORN MINE	US	MT	45-29-24N	113-02-20W	AG CU PB MO	VEIN
D004721	ELSE CLAIM	US	MT	45-18-52N	113-03-22W	AU AG CU	VEIN
W026526	ERMONT MINES	US	MT	45-15-58N	112-54-51W	AU AG CU SB	DISSEMINATED, FRACTU

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DB02186	EVA MAY MINE	US	MT	46-20-56N	112-13-20W	AG PB CU AU ZN SB AS	VEIN, SHEAR ZONE
DC10759	EXAMINER MINE	US	MT	45-55-36N	112-02-45W	PB ZN CU MN AU AG	VEIN
W026527	EXCELSIOR MINE	US	MT	45-08-58N	112-58-42W	AG AU CU BI MN TE	VEIN, CONTACT METASO
D004173	EXCHANGE MINE	US	MT	47-26-16N	114-36-03W	CU AG AU	
DC11381	FAITHFUL GROUP	US	MT	45-18-05N	113-01-23W	PG ZN CU AG AU V	VEIN, CONTACT METASO
DC12075	FAITHFUL MINE	US	MT	45-41-25N	112-56-45W	AG PB AU CU	VEIN
DC11722	FERDINAND MINE	US	MT	45-16-52N	112-51-19W	AG CU PB ZN AU	CONTACT METASOMATIC
DC09697	FLAGSTAFF MINE	US	MT	46-40-47N	112-28-13W	AG CU AG W	TACTITE
DC10760	FLORENCE GROUP	US	MT	45-55-15N	112-01-46W	AU AG CU PB ZN	VEIN
DC11784	FLORENCE MINE	US	MT	45-45-52N	112-05-40W	AU AG CU PB ZN FE CR	VEIN
D004010	FOUR UP GROUP	US	MT	47-49-30N	115-41-06W	CU	
DC10042	FOX PROSPECT	US	MT	46-14-18N	113-06-40W	AG PB CU W	VEIN, SHEAR ZONE
DC08424	FRANCES COPPER PROSP	US	MT	47-15-11N	114-41-14W	CU AG AU PB ZN SB	SHEAR ZONE/VEIN
D010024	G. M. PROSPECT	US	MT	46-24-35N	112-57-02W	CU PB AG W	VEIN, CONTACT METASO
DC10859	GAGNON PIT	US	MT	46-01-01N	112-32-30W	CU AG AU ZN AS	FISSURE VEIN, SHEAR
DC11057	GEM MINE	US	MT	45-55-23N	112-02-33W	AG AU CU PB ZN	VEIN
D004030	GILDERSLEEVE MINE	US	MT	47-02-09N	115-02-07W	AU CU AG PB	
DC11299	GLAUCUS MINE	US	MT	47-23-36N	114-25-35W	AG CU PB AU	SHEAR ZONE/VEIN
DC10900	GLENBEG MINE	US	MT	46-22-08N	112-08-50W	AG CU AU PB	FISSURE VEIN, SHEAR
DC10828	GLENGARRY MINE	US	MT	46-00-39N	112-30-55W	CU AG ZN	FISSURE VEIN, SHEAR
D004711	GLOWWORM AND GREENHO	US	MT	45-25-17N	112-48-05W	CU W MO	CONTACT METASOMATIC
D004149	GOLD HILL	US	MT	47-57-19N	115-28-39W	PB CU	
DC11790	GOLD HILL GROUP MINE	US	MT	45-45-48N	112-32-15W	AU AG CU	VEIN, CONTACT METASO
DC11356	GOLD KING MINE	US	MT	45-41-17N	112-38-57W	AU AG CU PB	VEIN, FAULT ZONE
DC08376	GOLD KING PROSPECT	US	MT	47-51-36N	115-27-39W	PB ZN CU	SHEAR ZONE/VEIN
FS00336	GOLDEN DOLLAR #5 LOD	US	MT	46-54-22N	112-38-05W	PB CU AU	VEIN
W007445	GOLDEN LEAF GROUP	US	MT	45-09-19N	112-59-05W	AU AG CU PB ZN	CONTACT METASOMATIC
DB02232	GOLDEN POINT	US	MT	46-17-07N	112-08-04W	AG CU PB AU	VEIN, SHEAR ZONE
DC11360	GOLDEN ROD MINE	US	MT	45-39-17N	112-19-10W	AU AG CU PB	VEIN
W013430	GOLDFINCH GROUP	US	MT	45-18-28N	112-53-59W	AG PB AU CU ZN	VEIN, SHEAR ZONE
D010457	GRASSHOPPER PROSPECT	US	MT	45-09-20N	112-55-00W	CU MO AU AG ZN	PORPHYRY, DISSEMINAT
W014710	GRAY EAGLE MINE	US	MT	46-18-48N	112-11-56W	AG PB CU ZN AU U MO SB AS	VEIN, SHEAR ZONE
W013439	GRAY JOCKEY MINE	US	MT	45-41-40N	112-55-55W	AG AU CU PB	VEIN
D011290	GREEN COPPER	US	MT	46-00-30N	112-31-00W	CU AG AU ZN AS	VEIN FILLING, SHEAR
D008078	GREEN MOUNTAIN MINE	US	MT	46-01-26N	112-31-35W	CU AG AS	FISSURE VEIN, SHEAR
DC11917	GREENSTONE MINE	US	MT	45-24-47N	112-48-09W	CU AG AU W	CONTACT METASOMATIC
D004718	GRIZZLY BEAR	US	MT	45-18-15N	113-03-30W	AG CU AU PB ZN	INSUFFICIENT DATA TO
D011293	GROUND SQUIRREL MINE	US	MT	46-00-30N	112-30-45W	CU AG AU AS	VEIN FILLING, SHEAR
D004823	GUY MINE	US	MT	45-27-30N	113-04-10W	AG CU ZN AU PB MO	VEIN
W002860	HAND (MAULDIN) GROUP	US	MT	45-17-12N	112-51-53W	AG AU PB CU ZN	VEIN
DC08417	HAUTILLA PROSPECT	US	MT	47-08-59N	114-26-36W	CU AG AU ZN	SHEAR ZONE/VEIN
W006769	HECLA DISTRICT	US	MT	45-36-20N	112-55-10W	AG AU PB CU ZN MN	VEIN, REPLACEMENT
DC09378	HEILMAN CLAIM	US	MT	46-27-18N		CU AU AG	VEIN
D010999	HEILMAN CLAIM	US	MT	46-27-18N	173-14-35W	CU AU AG	VEIN
D004007	HEMLOCK MINE	US	MT	47-25-57N	115-30-53W	CU AG PB AU	
DC10781	HIDDEN LAKE PROSPECT	US	MT	45-56-05N	113-31-07W	W AU CU	REPLACEMENT
W007437	HIDDEN TREASURE	US	MT	46-46-49N	113-39-52W	CU AG AU PB ZN AS	VEIN, SHEAR ZONE, RE
W013453	HIGH RIDGE MINE	US	MT	45-32-32N	112-11-53W	AU AG CU PB ZN	VEIN
DC09071	HILLSIDE PLACER MINE	US	MT	45-09-07N	112-59-07W	AU AG CU ZN	CONTACT ZONE
W014659	HOMESTAKE MINE	US	MT	45-03-22N	109-56-41W	AU CU MN	CONTACT METAMORPHIC
DC09601	HOMESTEAD PROPERTY	US	MT	46-36-25N	112-25-07W	CU AU AG	VEIN
D008088	HONEYCOMB	US	MT	46-59-32N	112-06-23W	CU AG AU	VEIN, SHEAR ZONE
W014670	HOPE GROUP	US	MT	46-20-25N	113-16-28W	AG CU PB AU MN BA SB AS F	VEIN, STRATABOUND, R
D010435	HORSE CREEK TALC PRO	US	MT	45-25-50N	112-07-36W	TLC CU	REPLACEMENT, VEIN
DB02230	HUDSON MINE	US	MT	46-59-23N	112-07-20W	CU	VEIN, SHEAR ZONE
D004163	HUGO MINE	US	MT	47-24-20N	115-29-55W	CU AG AU	VEIN
DC10794	HUMBOLT	US	MT	46-01-35N	112-21-20W	AU AG CU	UNKNOWN
D010027	HUNGRY HILL MINE	US	MT	45-55-50N	112-55-40W	PB CU	VEIN
D011277	IDA MINE	US	MT	46-00-10N	112-28-30W	CU AG ZN MO SB	VEIN FILLING, SHEAR
D011289	IDUNA MINE	US	MT	46-00-35N	112-31-00W	CU AG AU ZN AS	VEIN FILLING, SHEAR
D010473	INDIAN GIRL CLAIM	US	MT	45-38-50N	113-12-00W	CU	SHEAR ZONE, VEIN
W026528	INDIAN QUEEN MINE	US	MT	45-23-52N	112-49-10W	AG CU AU PB W	CONTACT METASOMATIC
DC09077	INGERSOLL GROUP	US	MT	45-10-24N	112-57-20W	AG PB CU AU ZN	VEIN, REPLACEMENT
D004168	INLAND MINE	US	MT	47-24-34N	115-36-14W	CU PB	VEIN
DC11061	INSPIRATION MINE	US	MT	45-55-00N	112-01-30W	AU AG CU PB ZN	FISSURE FILLED VEINS
D003876	INVERNESS GROUP	US	MT	46-55-44N	114-26-30W	CU	VEIN
W014698	IRON MASK MINE	US	MT	46-20-32N	111-39-53W	AG AU PB ZN CU MN	FRACTURE FILLING AND

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DC09253	IRON MASK MINE	US	MT	45-11-20N	112-56-48W	AG PB CU ZN	VEIN
W026558	IRON MOUNTAIN MINE	US	MT	47-14-27N	114-51-18W	PB ZN AG SB CU AU	VEIN
D011302	IRONSIDE MINE	US	MT	45-55-20N	112-02-50W	AG PB CU ZN AU	VEIN
D011295	J.I.C.	US	MT	46-00-30N	112-30-55W	CU AG AU AS	VEIN FILLING, SHEAR
DC08578	JACK POT MINE	US	MT	46-47-00N	113-40-01W	CU AG AU	VEIN, SHEAR ZONE
DC11378	JACK RABBIT MINE	US	MT	45-17-10N	112-51-32W	AG CU PB AU	VEIN, CONTACT METASO
D004813	JACKSON MINE	US	MT	45-16-50N	113-40-10W	AU AG CU PB ZN	VEIN, CONTACT METASO
D008836	JACOBSON MEADOWS	US	MT	45-31-25N	113-02-35W	MO AG ZN CU PB SN	STOCKWORK
W013403	JAHNKE MINE	US	MT	45-11-21N	113-35-13W	PB CU AG AU W	VEIN
D004726	JEANETTE CLAIM	US	MT	45-10-48N	112-57-25W	AG PB CU ZN AU	VEIN, CONTACT METASO
D004154	JEFF GROUP	US	MT	47-47-40N	115-23-04W	CU AG	
DC10919	JEFFERSON MINE	US	MT	46-22-46N	113-08-45W	CU PB	FISSURE VEIN
W014645	JIB GROUP	US	MT	46-16-15N	112-16-06W	AU AG CU PB ZN TE SB	FISSURE VEIN, SHEAR
W007456	JO DANDY MINE	US	MT	46-09-11N	111-43-52W	AG PB ZN CU	REPLACEMENT VEIN
D010459	JODIE PROPERTY	US	MT	45-17-53N	113-03-57W	CU PB	REPLACEMENT
D010494	JOE MAURICE MINE	US	MT	45-36-20N	113-01-20W	CU	CONTACT METASOMATIC
DC09372	JOHNSON CLAIM	US	MT	46-28-00N	113-15-13W	AU CU	VEIN, SHEAR ZONE
D011324	JOHNSON CLAIM	US	MT	45-57-17N	113-32-53W	AG CU PB AU	VEIN
W026551	JOHNSTON - MOFFET CO	US	MT	45-36-11N	112-11-15W	CU AG AU	CONTACT METASOMATIC
D004816	JUNG FRAU	US	MT	45-00-15N	113-20-35W	CU AG BA	VEIN, SHEAR ZONE
W014665	KEATING GROUP	US	MT	46-11-17N	111-39-39W	AU CU AG	FRACTURE FILLING AND
W013416	KELLEY MINE	US	MT	46-01-13N	112-31-35W	CU AU AG	FISSURE VEIN, SHEAR
D004822	KEOKIRK-ELM ORLU GRO	US	MT	45-35-30N	112-56-10W	AG CU AU	REPLACEMENT
DC11348	KREUGER PROPERTY	US	MT	45-34-35N	112-13-02W	AU AG CU PB ZN	VEIN
DC12024	LAKESHORE MINE	US	MT	45-35-04N	112-07-05W	AU AG PB CU AS	VEIN
D004150	LARCH-RECCO GROUPS	US	MT	47-34-20N	115-26-25W	CU	
DC09348	LAST CHANCE CLAIM	US	MT	46-24-00N	113-17-48W	CU SIL AG AU SB	FISSURE VEIN, SHEAR
DC11107	LAST CHANCE MINE	US	MT	46-15-57N	112-15-35W	AG CU AU	UNKNOWN
DC09374	LAST CHANCE MINE	US	MT	46-28-30N	113-16-10W	CU AG AU	VEIN
DC15774	LAURA APEX GROUP	US	MT	47-51-32N	115-17-47W	CU	
D004218	LAURA APEX GROUP	US	MT	47-51-06N	115-16-42W	CU	
D003872	LAWYERS COMBINATION	US	MT	46-46-32N	114-15-57W	CU AG	VEIN
W013415	LEONARD MINE	US	MT	46-01-15N	112-30-15W	CU AG W	FISSURE VEIN, SHEAR
DC12062	LITTLE GROUP	US	MT	45-41-20N	112-38-46W	CU	VEIN
D004713	LITTLE HAWK MINE	US	MT	45-19-10N	113-03-12W	W CU	CONTACT METASOMATIC
DB02147	LITTLE NELL MINE	US	MT	46-28-48N	112-01-35W	AG AU PB ZN CU	VEIN, SHEAR ZONE
W026559	LITTLE PITTSBURG MIN	US	MT	47-16-11N	114-59-06W	AG CU PB SB AU	VEIN/SHEAR ZONE
D011288	LIZZIE MINE	US	MT	46-01-00N	112-31-00W	CU AG PB ZN AU AS	VEIN FILLING, SHEAR
DC09001	LOGAN MINE	US	MT	45-10-37N	112-57-07W	AG PB CU ZN	VEIN, REPLACEMENT
D004800	LONE PINE MINE	US	MT	45-42-54N	112-53-55W	AG AU CU PB ZN	VEIN
DC09079	LOOKOUT MINE	US	MT	45-09-38N	112-58-35W	AU AG CU TE	CONTACT METASOMATIC
DC11062	LUCKY HIT MINE	US	MT	45-55-18N	112-02-17W	AU AG CU PB ZN	VEIN, FAULT ZONE
DC11286	LUCKY LUKE MINE	US	MT	47-39-34N	115-28-55W	CU AG AU PB	SHEAR ZONE/VEIN
DC11293	LUCKY STRIKE MINE	US	MT	47-16-15N	114-23-44W	CU AG AU	SHEAR ZONE/VEIN
DC10034	LUCKY SUNDAY MINE	US	MT	46-13-44N	112-50-25W	AG CU PB	UNKNOWN
D003935	MAIDEN CREEK COPPER	US	MT	44-51-48N	113-09-07W	CU	
DC11934	MAIN STREET PROSPECT	US	MT	45-32-19N	112-11-20W	AU AG CU PB ZN	VEIN, REPLACEMENT
DC09682	MAMMOTH CLAIM	US	MT	46-44-18N	112-22-07W	AU CU	FISSURE VEIN, SHEAR
DC08594	MAMMOTH MINE	US	MT	46-54-46N	112-31-25W	CU AG AU	VEIN, SHEAR ZONE
W013407	MAMMOTH MINE	US	MT	45-40-02N	112-00-47W	AU AG CU	VEIN
DC10829	MARGET ANN MINE	US	MT	46-02-15N	112-31-50W	AU AG CU PB ZN MN	FISSURE VEIN, SHEAR
W026535	MARTIN AND BATTLE BU	US	MT	47-54-36N	114-35-41W	ZN CU PB AG	SILICIFIED BRECCIA Z
DC11371	MARY INGABER MINE	US	MT	45-47-06N	112-05-55W	AU AG CU	VEIN
D004729	MARY LUCILLE MINE	US	MT	45-55-00N	112-01-37W	AU AG CU PB	VEIN
D011284	MAT MINE	US	MT	46-01-35N	112-30-25W	AG CU ZN PB MN AU SB	VEIN FILLING, SHEAR
D004158	MAX 1 & 2 PROSPECTS	US	MT	47-50-42N	115-06-07W	CU	STRATABOUND
DC11701	MAY DAY MINE	US	MT	45-19-10N	112-52-27W	AU AG CU PB ZN	VEIN, SHEAR ZONE
D010423	MAYFLOWER LODE	US	MT	45-59-20N	113-32-15W	AG CU PB ZN	VEIN
DC10920	MAYFLOWER VEIN	US	MT	46-22-38N	113-08-47W	CU PB	FISSURE VEIN
W014716	MCLAREN MINE	US	MT	45-03-51N	109-57-35W	CU AU AG	CONTACT METAMORPHIC
DC11067	MIDNIGHT MINE	US	MT	45-55-48N	112-01-45W	AG AU PB CU ZN	VEIN
DC08362	MILLER PROSPECT	US	MT	47-58-33N	115-48-59N	CU	SHEAR ZONE/VEIN
D007977	MINERAL HILL MINE	US	MT	46-26-45N	112-03-43W	CU AG ZN PB	VEIN, SHEAR ZONE
DC11082	MINERVA MINE	US	MT	45-55-28N	112-02-35W	AG AU CU PB ZN	VEIN
D009668	MINNEAPOLIS MINE	US	MT	46-17-53N	112-14-02W	AG PB ZN CU AU SB	VEIN, SHEAR ZONE
W013389	MINNIE LEE PROSPECT	US	MT	46-07-42N	113-17-17W	AG CU W CR	METAMORPHIC, VEIN
D011286	MODOC MINE	US	MT	46-01-30N	112-30-30W	CU AG AU	VEIN FILLING, SHEAR

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
DC11894	MONAGHAN MOLYBDENUM	US	MT	45-26-19N	112-59-27W	MO CU	VEIN, DISSEMINATED
DB02138	MONARCH MINE	US	MT	46-24-25N	112-24-10W	AG AU CU PB ZN AS SB	VEIN, SHEAR ZONE
DC08571	MONGAR MINE	US	MT	46-48-35N	113-34-32W	AG CU PB	VEIN, SHEAR ZONE
D004066	MONTANA-UTAH COPPER	US	MT	47-16-14N	114-24-14W	CU	
DC11809	MONTE CRISTO MINE	US	MT	45-43-52N	112-54-09W	AG CU PB AU	VEIN
DB02110	MONTE CRISTO MINE	US	MT	46-27-00N	112-15-52W	AG AU CU PB ZN	FISSURE VEIN, SHEAR
D011279	MONTGOMERY MINE	US	MT	46-00-30N	112-28-45W	CU	FAULT VEIN, SHEAR ZO
DC09928	MONTPARK MINE	US	MT	46-22-56N	113-03-15W	W CU AU AG	TACTITE, DISSEMINATE
D008089	MONTREAL CLAIM	US	MT	46-59-48N	112-06-14W	CU AG AS	VEIN, SHEAR ZONE
D004217	MONTRO GOLD MINES	US	MT	47-25-50N	114-54-37W	PB AG CU AU	
D007121	MONUMENT MINE	US	MT	44-59-19N	113-19-21W	AG CU	QUARTZ VEINS
D007146	MONUMENT MINE	US	MT	44-59-19N	113-19-19W	CU AU	
W013445	MONUMENT MINE	US	MT	45-00-01N	113-19-18W	CU AG AU	VEIN
D011276	MOOSE MINE	US	MT	46-01-50N	112-31-30W	AG CU PB ZN	VEIN FILLING FAULT F
D004814	MOOSEHORN MINE	US	MT	45-33-35N	113-43-54W	AG CU FE	VEIN
DC08623	MORSE AND KENNEDY MI	US	MT	46-52-58N	113-21-05W	CU	CONTACT METASOMATIC
DC08327	MOSHER PROSPECT	US	MT	47-54-59N	114-18-05W	CU AG	SHEAR ZONE/VEIN
W014678	MOUNT WASHINGTON MIN	US	MT	46-21-23N	112-08-37W	AG AU PB CU ZN BI SB AS	FISSURE VEIN, SHEAR
DC11045	MOUNTAIN CHEIF MINE	US	MT	45-57-28N	112-25-00W	AG AU CU	VEIN
DC10855	MOUNTAIN CON MINE	US	MT	46-01-24N	112-31-58W	CU AG AU ZN AS	FISSURE VEIN, SHEAR
DC11184	MOUNTAIN MINE	US	MT	46-49-00N	113-16-47W	CU AU AG	CONTACT METASOMATIC
D011287	MOUNTAIN VIEW MINE	US	MT	46-01-10N	112-31-00W	CU AG AU AS	VEIN FILLING, FISSUR
DC10525	MURPHY MINE	US	MT	46-21-13N	113-15-10W	AG CU W	REPLACEMENT VEIN, DI
W026560	NANCY LEE MINE	US	MT	47-16-13N	114-57-11W	AG PB CU ZN AU	VEIN/SHEAR ZONE
DC08542	NELSON AND DAN 1 AND	US	MT	46-49-02N	113-16-17W	AG CU FE	UNKNOWN
D004792	NEVADA MINE	US	MT	45-02-04N	112-35-13W	AG AU CU	VEIN, FAULT ZONE, BO
DC11294	NEW DEAL MINE	US	MT	47-18-32N	114-35-02W	CU	VEIN
W007439	NEW DEPARTURE MINE	US	MT	45-11-52N	112-55-15W	AG AU PB CU ZN SB MN	VEIN, REPLACEMENT
D004171	NEW YORK MINE	US	MT	47-24-08N	115-30-25W	CU	VEIN
DC08935	NICK PREEN MINE	US	MT	45-18-55N	113-01-54W	AG PB CU ZN AU	VEIN
DC10700	NICKELODEON	US	MT	46-11-46N	112-09-17W	CU AU MO W U	VEIN, SHEAR ZONE
DC12030	NOBLE MINE	US	MT	45-32-12N	112-06-30W	AU AG CU ZN	VEIN, REPLACEMENT
DC11568	NORTH STAR	US	MT	46-20-12N	113-17-05W	CU AG W	FISSURE VEIN, SHEAR
DB02122	NORTH STAR CLAIM	US	MT	46-40-55N	112-04-25W	AU AG CU	VEIN, SHEAR ZONE, CO
DC10747	NORTH STAR MINE	US	MT	45-50-57N	113-05-47W	AU AG CU	VEIN
DC11417	NORTH STAR MINE	US	MT	46-26-15N	113-14-14W	CU SIL	FISSURE VEIN, SHEAR
DC08157	NORTH STAR PROSPECT	US	MT	46-20-13N	113-17-10W	CU AG W MO	VEIN, SHEAR ZONE, DI
D011282	NORTHWEST MINE	US	MT	46-00-55N	112-29-00W	CU AG	VEIN FILLING, SHEAR
D003827	NUGGET MINE	US	MT	47-08-48N	114-26-24W	PB ZN CU AG	VEIN
D011294	NUMBER THREE MINE	US	MT	46-00-42N	112-30-45W	CU AG AU AS	VEIN
DC12034	OCCIDENTAL MINE	US	MT	45-31-22N	112-02-40W	AU AG CU PB ZN	VEIN, REPLACEMENT
DC08353	OLD DOMINION PROSPEC	US	MT	47-59-04N	114-23-28N	AG CU	SHEAR ZONE/VEIN
DB02127	OPHIR MINE	US	MT	46-40-27N	112-32-23W	CU AU	VEIN, SHEAR ZONE
D008084	ORIGINAL MINE	US	MT	46-01-01N	112-32-17W	CU AG ZN F AS	FISSURE VEIN, SHEAR
DB02109	OSAGE CHIEF MINE	US	MT	46-39-02N	112-14-39W	AU CU FE	CONTACT METASOMATIC
D004723	OSTERLY PROSPECT	US	MT	45-18-55N	113-02-11W	CU PB	INSUFFICIENT DATA TO
D009654	PACMAN CLAIMS	US	MT	45-26-40N	113-22-00W	CU AG	DISSEMINATED
DC08400	PALIN MINE	US	MT	47-21-48N	114-37-27W	CU	VEIN
D004803	PARK MINE	US	MT	45-29-00N	113-02-51W	AG AU CU ZN PB W	VEIN
DC11066	PARROT MINE	US	MT	45-55-40N	112-02-15W	AG AU PB CU ZN MN	VEIN, REPLACEMENT
D008082	PARROTT MINE	US	MT	46-01-01N	112-31-44W	CU AG AS	FISSURE VEIN, SHEAR
D004734	PAYDAY CLAIM	US	MT	45-19-30N	112-52-27W	AU AG PB CU ZN	VEIN, SHEAR ZONE
DC11170	PEARL MINE	US	MT	46-49-18N	113-15-22W	AU CU	REPLACEMENT VEIN
DC09243	PENNSYLVANIA MINE	US	MT	45-58-55N	111-32-31W	CU AG	FRACTURE VEINS
DC11065	PERHAPS MINE	US	MT	45-55-37N	112-02-03W	AU AG PB CU ZN MN	VEIN
DC08349	PILGRIM PROSPECT	US	MT	47-55-56N	115-52-53W	CU PB BI	SHEAR ZONE/VEIN
DB02203	PILOT MINES	US	MT	46-18-22N	112-06-15W	PB AG CU AU ZN U	VEIN, SHEAR ZONE
D011298	PINE TREE CLAIM	US	MT	45-55-44N	112-02-15W	AU AG PB CU ZN	VEIN
W026529	POLARIS MINE	US	MT	45-22-01N	113-05-06W	AG CU AU PB ZN	VEIN, FAULT ZONE
DC09007	POMEROY MINE	US	MT	45-11-56N	112-57-58W	AU AG PB CU ZN	VEIN
DC09358	POTOSI	US	MT	46-26-07N	113-03-51W	AG CU AU	REPLACEMENT VEINS
DC08158	POTRATZ PROSPECT	US	MT	46-42-40N	112-29-00W	AU AG CU W MO	TACTITE
D008094	POULIN, STELLA, AND	US	MT	46-01-22N	112-32-07W	CU AG AU ZN AS	FISSURE VEIN, SHEAR
D004079	PROSPERITY GROUP	US	MT	47-17-04N	114-53-46W	CU PB	VEIN
DC08576	QUEEN MARY COPPER PR	US	MT	46-47-27N	113-39-04W	CU AG AU BA	VEIN, SHEAR ZONE
W007457	QUEEN OF THE HILLS M	US	MT	45-40-26N	112-57-12W	AU AG CU PB ZN BA	VEIN
D003852	RAVEN MINE	US	MT	47-37-03N	115-11-37W	CU AG AU PB ZN SB BI	SHEAR ZONE/VEIN

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DC10734	READY CASH	US	MT	45-48-55N	112-27-20W	AU AG CU PB ZN	CONTACT METASOMATIC
W013450	RED PINE MINE	US	MT	45-31-18N	112-05-01W	AU AG CU PB	VEIN
D011334	RED ROCK MINE	US	MT	45-27-30N	113-04-54W	AG CU AU	VEIN
D003833	REDEMPTION #1 AND #2	US	MT	47-04-20N	115-03-23W	AU AG CU PB	VEIN
D011285	REINS COPPER CO MINE	US	MT	46-01-20N	112-30-20W	CU AG ZN AU	FISSURE VEIN, SHEAR
DC11101	RELIANCE MINE	US	MT	46-16-50N	112-12-00W	AG CU PB AU	UNKNOWN
DC11347	RICHMOND GROUP	US	MT	45-34-55N	112-11-42W	AU AG CU PB ZN	VEIN
D010426	RIPPLE LAKE PROSPECT	US	MT	45-56-00N	113-33-32W	AG CU	VEIN
DB02099	ROBERT EMMET MINE	US	MT	46-19-37N	112-05-45W	AG CU ZN PB AU	VEIN, SHEAR ZONE
DC11300	ROCK ISLAND MINE	US	MT	47-26-01N	115-18-19W	CU PB ZN	SHEAR ZONE/VEIN
DC11702	ROSEMONT MINE	US	MT	45-19-10N	112-51-02W	AG AU PB CU	VEIN, SHEAR ZONE
D003844	RUSSELL GROUP PROSPE	US	MT	47-28-54N	115-06-52W	CU ZN AS AG CO AU PB	SHEAR ZONE/VEIN
DB02117	SADIE MINE	US	MT	46-29-55N	112-24-05W	AG PB CU AU ZN AS SB	VEIN, SHEAR ZONE
D008860	SAGINAW MINE	US	MT	45-13-48N	113-26-45W	CU AG	VEIN
D004818	SAGINAW MINE	US	MT			CU AG	VEIN
DC08337	SALES MINE	US	MT	47-57-17N	115-08-43W	CU AG AU ZN PB	VEIN/SHEAR ZONE
DB02190	SALVAIL MINE	US	MT	46-21-02N	112-08-38W	AG AU CU ZN PB AS SB	FISSURE VEIN, SHEAR
D011281	SCARFIELD MINE	US	MT	46-00-28N	112-28-50W	CU AG MO	FAULT VEIN, SHEAR ZO
DC11926	SCHMIDT PROSPECT	US	MT	45-34-05N	112-09-41W	AU AG PB CU ZN MO	VEIN
DC08579	SENATE MINE	US	MT	46-46-48N	113-39-45W	CU	VEIN, SHEAR ZONE
DC10627	SENATE MINE	US	MT	45-59-32N	113-33-00W	CU AG PB	VEIN
D004081	SHAMROCK CLAIMS	US	MT	47-23-35N	114-57-00W	CU	VEIN REPLACEMENT
DC10021	SHAMROCK COPPER PROS	US	MT	46-15-20N	112-29-40W	CU	VEIN
DC11788	SHAMROCK MINE	US	MT	45-42-38N	112-19-45W	AU AG CU	VEIN
DC08638	SHEEP CREEK GROUP	US	MT	46-58-06N	112-03-55W	CU	VEIN, SHEAR ZONE
D009657	SHORTFELLOW MINE	US	MT	45-36-05N	112-30-48W	GOLD, SILVER, CERUSSITE, COPPER, ZINC	VEIN
DC15776	SID CLAIM	US	MT	47-49-32N	115-38-34W	CU	VEIN
DC11227	SIERRA MINE	US	MT	46-49-46N	113-20-20W	CU AU AG SB	FISSURE VEIN, SHEAR
D010454	SILVER BELL CLAIM	US	MT	45-08-45N	112-02-20W	CU	SHEAR ZONE
D003857	SILVER BELL PROPERTY	US	MT	47-14-04N	115-13-00W	CU PB ZN	SHEAR ZONE/VEIN
D008076	SILVER BOW MINE	US	MT	46-00-50N	112-30-50W	CU AG AS	FISSURE VEIN, SHEAR
DC08479	SILVER CHAIN MINE	US	MT	46-12-20N	113-05-52W	AG CU PB ZN W SB AS CD	REPLACEMENT VEIN
DC15771	SILVER CREEK MINE	US	MT	47-24-17N	115-30-27W	CU	VEIN
W014671	SILVER DYKE MINE	US	MT	46-59-01N	110-41-40W	CU PB AG ZN AU	BRECCIA PIPE, FISSUR
W007432	SILVER HILL MINE	US	MT	46-08-20N	113-13-57W	CU	STRATABOUND REPLACEM
D004809	SILVER KING MINE	US	MT	45-21-48N	113-05-00W	AG AU CU PB ZN	VEIN
D005576	SILVER KING MINE	US	MT	46-14-07N	113-02-43W	AG CU PB SB	REPLACEMENT
W013435	SILVER KING MINE	US	MT			AG AU CU PB	CONTACT
DC08411	SILVER STRAND PROPER	US	MT	47-25-19N	115-37-51W	CU PB	VEIN
D003842	SIMS PROSPECT	US	MT	47-55-18N	115-25-13W	CU AG AU AS	SHEAR ZONE/VEIN
DC11725	SIR WALTER SCOTT GRO	US	MT	45-16-50N	112-52-35W	AU AG CU PB BI	VEIN, CONTACT METASO
DC09931	SIXTEEN-TO-ONE CLAIM	US	MT	46-23-18N	113-05-22W	CU AU	FISSURE VEIN
DC08384	SLOW POKE PROSPECT	US	MT	47-16-29N	114-23-41W	AU AG CU	SHEAR ZONE/VEIN
DC08345	SNOWFALL PROSPECT	US	MT	47-55-21N	115-28-46W	CU AG AU	SHEAR ZONE/VEIN
M060193	SNOWSHOE GULCH TUNGS	US	MT	46-40-40N	112-28-02W	W CU AG PB AU	VEIN, SHEAR ZONE, TA
D011326	SOUTH CLIPPER PROSPE	US	MT	45-56-42N	113-34-15W	AG CU AU	VEIN
DC11053	SOUTH VIEW MINE	US	MT	45-54-35N	112-02-10W	AU AG PB CU ZN	VEIN, CONTACT METASO
W002692	SPAR LAKE PROSPECT	US	MT	48-14- N	115-53- W	CU	SEDIMENTARY
W014706	SPAR LAKE DEPOSIT	US	MT	48-13-46N	115-53-55W	CU AG	STRATABOUND
DC08402	SPITFIRE MINE	US	MT	47-21-24N	115-00-20W	CU AU AG	VEIN
DC08394	ST. LAWRENCE MINE	US	MT	47-21-23N	115-34-00W	CU	SHEAR ZONE/VEIN
D004794	STAR MINE	US	MT	45-47-22N	113-01-38W	AU AG CU PB ZN	VEIN
D003814	STATE GROUP MINE	US	MT	47-29-06N	115-10-03W	PB AG AU CU	VEIN
W013417	STEWARD MINE	US	MT	46-01-08N	112-32-08W	CU AG AU ZN BA AS F	FISSURE VEIN, SHEAR
M045489	STILLWATER COMPLEX	US	MT	45-25-00N	110-00-00W	PT CR CU NI CO AL2 PGM AU AG PD	STILLWATER NI-CU, BU
D007985	SUMPTER	US	MT	46-48-47N	113-37-57W	CU AG	VEIN, SHEAR ZONE
DC11054	SUNNY CORNER MINE	US	MT	45-54-49N	112-02-40W	AU AG CU PB ZN	REPLACEMENT, VEIN, C
DC11060	SUNNYSIDE MINE	US	MT	45-55-25N	112-01-37W	AU AG PB CU ZN	VEIN
W007438	SUNRISE MINE	US	MT	46-29-05N	113-19-42W	AU AG CU PB W	REPLACEMENT VEIN
D009925	SUNRISE MINE	US	MT	45-17-53N	113-01-17W	AU AG CU PB	CONTACT METASOMATIC
D004140	SUNRISE MINE	US	MT	47-57-19N	115-28-21W	CU	VEIN
D004815	SUNSHINE CLAIM	US	MT	45-00-05N	113-20-24W	CU AG PB AU	VEIN
D007147	SUNSHINE MINE	US	MT			CU PB AU AG	
DC11064	SURPRISE MINE	US	MT	45-55-08N	112-02-01W	AU AG PB CU ZN	VEIN
D003837	SWITCHBACK PROSPECT	US	MT	47-23-12N	115-32-13W	AU CU	SHEAR ZONE/VEIN
DC08954	SYLVIA MINE	US	MT	45-18-19N	112-53-28W	AG AU PB ZN CU	VEIN
D003835	SYNIDICATE PROSPECT	US	MT	47-27-56N	115-33-38W	PB CU AG	SHEAR ZONE/VEIN

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DC09506	THIRD TERM MINE	US	MT	46-30-10N	112-21-08W	AG CU PB ZN AU NI SB AS	VEIN, SHEAR ZONE
D008845	TIDAL WAVE DISTRICT	US	MT	45-35-30N	112-09-50W	AU AG PB CU ZN	VEIN, CONTACT METASO
W013384	TIP TOP MINE	RE	MT	46-12-33N	113-08-46W	AG CU PB W SB	FISSURE VEIN, REPLAC
DC09990	TOLEDO MINE	US	MT	45-29-09N	112-07-27W	AU AG PB CU ZN	VEIN, REPLACEMENT
D004808	TRAPPER MINE	US	MT	45-35-46N	112-54-50W	PB AG AU CU ZN	VEIN
DC11199	TRIANGLE AND GRASS W	US	MT	46-47-26N	113-40-03W	CU AG AU	VEIN, SHEAR ZONE
D003870	TRIANTLER	US	MT	46-46-26N	114-21-36W	CU	
W013418	TUSCARORA GROUP	US	MT	45-18-47N	112-52-19W	AU AG CU PB ZN	REPLACEMENT
D010997	TWIN BUTTES CLAIM	US	MT	46-27-29N	113-14-27W	CU PB	FISSURE VEIN, SHEAR
DC09379	TWIN BUTTES CLAIM	US	MT	46-27-29N		CU PB	FISSURE VEIN
D004308	UNIDENTIFIED COPPER	US	MT	45-14-55N	111-13-30W	CU	VEIN
D004281	UNIDENTIFIED OCCURAN	US	MT	45-16-45N	111-13-42W	CU	VEIN/SHEAR ZONE
D009382	UNIDENTIFIED OCCURRE	US	MT	46-29-58N	113-05-52W	AG ZN CU CD	VEIN
D009390	UNIDENTIFIED OCCURRE	US	MT	46-04-02N	113-24-57W	AG CU PB SB ZN BA AS BI	VEIN
D009407	UNKNOWN CU OCCURENCE	US	MT	46-12-52N	112-39-35W	CU AG	VEIN
D009404	UNKNOWN CU-PB MINE W	US	MT	46-14-23N	112-36-50W	CU PB BI	UNKNOWN
DC09029	UNNAMED COPPER OCCUR	US	MT	45-11-10N	112-25-01W	CU	DISSEMINATED
DC09031	UNNAMED COPPER OCCUR	US	MT	45-10-43N	112-24-55W	CU	DISSEMINATED
DC09037	UNNAMED COPPER OCCUR	US	MT	45-02-11N	112-25-30W	CU	DISSEMINATED REPLACE
DC09054	UNNAMED COPPER OCCUR	US	MT	45-04-00N	112-24-58W	CU	DISSEMINATED, REPLAC
DC09055	UNNAMED COPPER OCCUR	US	MT	45-04-08N	112-25-03W	CU	DISSEMINATED, REPLAC
DC09056	UNNAMED COPPER OCCUR	US	MT	45-03-43N	112-24-40W	CU	DISSEMINATED, REPLAC
DC09057	UNNAMED COPPER OCCUR	US	MT	45-03-08N	112-25-00W	CU	DISSEMINATED, REPLAC
DC09067	UNNAMED COPPER OCCUR	US	MT	45-02-25N	112-23-25W	CU	DISSEMINATED, REPLAC
DC09098	UNNAMED COPPER OCCUR	US	MT	45-08-10N	112-31-49W	CU	INSUFFICIENT DATA TO
DC09108	UNNAMED COPPER OCCUR	US	MT	45-08-47N	112-31-22W	CU	INSUFFICIENT DATA TO
D003889	UNNAMED COPPER OCCUR	US	MT	44-58-59N	113-22-56W	CU	
DC08960	UNNAMED CU OCC	US	MT	45-10-19N	112-25-01W	CU	DISSEMINATED
DC11666	UNNAMED CU OCC	US	MT	45-11-47N	112-24-35W	CU	DISSEMINATED
DC11668	UNNAMED CU OCC	US	MT	45-12-05N	112-24-59W	CU	DISSEMINATED
D010453	UNNAMED PROSPECT	US	MT	45-15-08N	112-06-48W	CU	SHEAR ZONE
D010456	UNNAMED PROSPECT	US	MT	45-07-10N	112-02-12W	CU	SHEAR ZONE
D004986	URBANE PROSPECT	US	MT	45-33-57N	112-11-55W	AU AG CU PB ZN	VEIN, FAULT ZONE
DC11791	VAN DORSTAN CLAIMS	US	MT	45-46-10N	112-32-40W	AG AU CU	VEIN, REPLACEMENT
D004086	VAN NESS MINE	US	MT	47-06-01N	114-54-05W	CU AU	
D004167	WABASH MINE	US	MT	47-26-52N	115-29-49W	PB AG CU ZN	VEIN
D011268	WAKE UP JIM MINE	US	MT	46-01-25N	112-31-25W	CU AG AU	VEIN FILLING, SHEAR
D004156	WALOVEN PROJECT	US	MT	47-55-14N	115-25-44W	CU	STRATABOUND
D008075	WEST GREY ROCK MINE	US	MT	46-01-35N	112-31-30W	AG CU ZN AS	FISSURE VEIN, SHEAR
DC10489	WHALEY MINING CLAIMS	US	MT	46-41-13N	113-59-12W	CU BA AU PB AG	VEIN, SHEAR ZONE
DC08348	WHITE STAR PROSPECT	US	MT	47-57-09N	115-51-31W	CU	SHEAR ZONE/VEIN
DC10758	WHITEHALL MINE	US	MT	45-56-12N	112-02-47W	AG CU PB ZN AU MN	VEIN
D004724	WILD BAT PROSPECT	US	MT	45-18-40N	113-02-25W	CU AG AU	VEIN, CONTACT METASO
D009575	WOLF CREEK DISTRICT	US	MT	46-59-40N	112-05-55W	CU AG PB AU AS SB	VEIN, PLACER
D004080	WOLF PROSPECT	US	MT	47-20-29N	115-09-04W	AG AU CU	
D003861	WOODS CREEK COPPER M	US	MT	45-34-05N	114-19-35W	CU AG AU	STRINGERS AND IRREGU
W002863	YELLOW BAND (SHAFER)	US	MT	45-20-06N	112-54-15W	AU AG CU PB ZN	REPLACEMENT
D008839	YELLOW BIRD	US	MT	45-16-10N	112-54-30W	AG PB AU CU SB	VEIN
W028092	BARNHARDT GOLD SULFI	US	NC	35-22-19N	080-27-57W	AU PB CU S FE QTZ	AURIFEROUS SULFIDE Q
K005042	BEAR CREEK COPPER MI	US	NC	35-31-49N	079-29-15W	CU PYR	MINERALIZED ZONE
W101369	BEAR CREEK CU MINE	US	NC	35-31-49N	079-29-15W	CU	STRATABOUND CONCORD
K005074	BEARD MINE	US	NC	35-59-09N	079-50-42W	AU CU PYR	VEIN
W101489	BLUE WING	US	NC	36-31-30N	078-46-48W	CU	VEIN
W014625	BUTTERFIELD GOLD - C	US	NC	35-04-47N	080-36-04W	AU CU	AURIFEROUS QUARTZ VE
W101454	CAP CREEK AU-CU MINE	US	NC	36-16-37N	081-29-44W	CU AU	VEIN
W101416	CAPP'S AU MINE/MEANS	US	NC	35-17-40N	080-52-42W	AU CU	VEIN
W101504	CATHEY AU-CU MINE	US	NC	35-08-18N	080-55-05W	AU CU	VEIN
W028162	CATHEY GOLD AND COPP	US	NC	35-08-18N	080-55-05W	AU CU FE S QTZ	AURIFEROUS QUARTZ VE
W101389	CID MINE	US	NC	35-43-24N	080-11-42W	AU CU	VEIN
W014604	CLINE OR CRUSE GOLD,	US	NC	35-27-03N	080-26-35W	AU CU W PYR	QUARTZ VEIN IN FAULT
W014541	CONRAD HILL - DODGE	US	NC	35-47-05N	080-09-56W	AU CU	AURIFEROUS QUARTZ VE
W101288	CONRAD HILL-DODGE HI	US	NC	35-47-05N	080-09-56W	AU CU	VEIN
W026484	CROWDER'S MOUNTAIN G	US	NC	35-11-40N	081-17-00W	AU CU FE S AG	SCHISTS, IN PLACES S
K003527	CULLOWHEE COPPER MIN	US	NC	35-15-47N	083-09-19W	PYR CU ZN PYR1	MASSIVE SULFIDE, REP
W101729	CULLOWHEE COPPER MIN	US	NC	35-15-47N	083-09-19W	CU	STRATABOUND CONCORD
K005075	DEEP RIVER GOLD MINE	US	NC	35-57-20N	079-55-56W	AU CU PYR FE	VEIN/SHEAR
W028083	DUFFIE GOLD AND SULF	US	NC	35-13-24N	081-04-50W	AU AG FE S CU QTZ	AURIFEROUS QUARTZ VE

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W101492	DUKE MINE	US	NC	36-20-10N	078-52-14W	CU AU AG	VEIN
W101491	DURGY/COPPER WORLD/C	US	NC	36-26-28N	078-49-57W	CU AG AU	VEIN
W014587	DUTCH CREEK GOLD - C	US	NC	35-35-20N	080-20-48W	AU CU FE	QUARTZ VEINS IN FAUL
W101264	ELK KNOB	US	NC	36-20-15N	081-40-40W	CU	STRATABOUND CONCORD
W014539	EMMONS OR DAVIDSON C	US	NC	35-41-37N	080-06-22W	CU AG AU ZN PB	SULFIDE BEARING SHEA
K005076	FENTRESS MINE	US	NC	35-56-20N	079-48-34W	AU CU PYR	VEIN / SHEAR
W101208	FENTRESS MINE	US	NC	35-56-20N	079-48-34W	CU AU AG	VEIN
K005073	FISHER HILL MINE	US	NC	35-59-56N	079-49-30W	AU CU FE	VEIN / SHEAR
K001693	FONTANA COPPER MINE	US	NC	35-28-41N	083-46-08W	CU ZN PB AG FE AU	MASSIVE SULFIDE ; RE
W100640	FONTANA COPPER MINE	US	NC	35-28-41N	083-46-08W	CU ZN AG AU	STRATABOUND CONCORD
K005087	FOUST COPPER MINE	US	NC	35-56-07N	079-23-13W	CU ZN PB AG	VEIN/SHEAR ZONE
W101370	FOUST CU MINE	US	NC	35-56-07N	079-23-13W	CU ZN PB AG	STRATABOUND CONCORD
K003525	GAP CREEK COPPER AND	US	NC	36-16-37N	081-29-44W	CU FE AU PYR	VEIN
K005072	GARDNER HILL MINE	US	NC	35-59-15N	079-53-29W	AU CU PYR	VEIN/SHEAR
W101207	GARDNER HILL MINE	US	NC	35-59-15N	079-53-29W	AU CU AG	VEIN
W101373	GILMORE-HART MINE	US	NC	35-39-40N	079-22-30W	CU	STRATABOUND CONCORD
W101302	GOLD KNOB AU-CU/DUTC	US	NC	35-34-57N	080-22-02W	AU CU	VEIN
W028063	GRAHAM GOLD AND COPP	US	NC	35-27-55N	081-07-20W	AU CU QTZ	GOLD - AND COPPER -
W028140	GREEN C. CATHEY GOLD	US	NC	35-18-48N	080-56-02W	AU CU FE S QTZ AG	AURIFEROUS SULFIDE Q
W101730	HAZEL CREEK MINE (AD	US	NC	35-30-29N	083-42-32W	CU ZN AG	STRATABOUND CONCORD
W101490	HOLLOWAY/COPPER KING	US	NC	36-29-30N	078-47-38W	CU	VEIN
W101374	HOPEWELL AU & CU MIN	US	NC	35-22-04N	080-54-08W	AU CU	VEIN
W028137	HOPEWELL GOLD AND CO	US	NC	35-22-04N	080-54-08W	AU CU FE S QTZ AG	AURIFEROUS SULFIDE Q
W101214	JACKS HILL MINE AREA	US	NC	35-57-50N	079-56-05W	AU CU AG	VEIN
W016664	KINGS MOUNTAIN-CATAW	US	NC	35-13-00N	081-20-00W	CU	
K005164	LINDSAY MINE	US	NC	079-58-50	080-20-03W	AU CU AS	VEIN/SHEAR
W028142	MC GINN GOLD AND COP	US	NC	35-17-56N	080-52-29W	AU CU FE S AG QTZ	AURIFEROUS SULFIDE Q
W028144	MEANS GOLD AND COPPE	US	NC	35-17-28N	080-52-54W	AU CU FE S AG QTZ	AURIFEROUS SULFIDE Q
K005071	MILLIS HILL MINE	US	NC	35-59-41N	079-49-35W	AU CU	VEIN/SHEAR
W101398	NEWELL (DIXIE QUEEN)	US	NC	35-16-44N	080-33-08W	CU	VEIN
K005095	NEWELL MINE	US	NC	35-16-43N	080-33-22W	CU FE PYR	SULFIDE-BEARING QUAR
K005163	NORTH STATE MINE	US	NC	35-56-45N	079-58-30W	CU AU	VEIN/SHEAR
W101464	ORE KNOB	US	NC	36-24-15N	081-20-30W	CU AU AG	STRATABOUND DISCORD/
W026354	PATTERSON N. C. GOLD	US	NC	35-11-45N	081-15-42W	AU CU FE S AG	SCHISTS, IN PLACES S
W101465	PEACHBOTTOM CU-PB MI	US	NC	36-31-01N	081-13-03W	CU PB AG	STRATABOUND CONCORD
K005039	PHILLIPS MINE	US	NC	35-32-48N	079-26-04W	CU FE PYR	VEIN
W101372	PHILLIPS MINE	US	NC	35-32-48N	079-26-04W	CU	STRATABOUND CONCORD
K005078	PHOENIX MINE	US	NC	35-20-59N	080-29-57W	AU CU W PB PYR BA FE	VEIN/SHEAR QUARTZ VE
W101350	PIONEER MILL CU-AU M	US	NC	35-15-40N	080-34-59W	AU CU	VEIN
W014532	PIONEER MILLS GOLD -	US	NC	35-15-40N	080-34-59W	AU CU FE	AURIFEROUS QUARTZ VE
W014533	PIONEER MILLS GOLD -	US	NC	35-15-39N	080-35-18W	AU CU FE	AURIFEROUS QUARTZ VE
K005077	PUCKET MINE	US	NC	35-59-35N	079-49-32W	AU CU FE	VEIN/SHEAR
W014586	RANDOLPH SHAFT GOLD	US	NC	35-30-47N	080-20-44W	AU AG CU PB	QUARTZ VEINS IN FAUL
K005089	REED OR REID GOLD CO	US	NC	35-17-05N	080-27-52W	AU CU PB	AURIFEROUS QUARTZ VE
W028045	RUDISIL GOLD MINE	US	NC	35-12-09N	080-52-07W	AU FE CU S AG QTZ	AURIFEROUS QUARTZ VE
K003529	SAVANNAH COPPER MINE	US	NC	35-16-53N	083-18-13W	PYR1 PYR CU ZN PB	MASSIVE SULFIDES, VE
W101728	SAVANNAH COPPER MINE	US	NC	35-16-53N	083-18-13W	CU	STRATABOUND CONCORD
K005184	SCARLETT MINE	US	NC	35-44-30N	079-48-45W	AU CU ZN PYR	VEIN/SHEAR
W101223	SCARLETT MINE	US	NC	35-44-30N	079-48-45W	AU CU AG ZN	VEIN
W014615	SECREST GALENA - CHA	US	NC	35-05-28N	080-39-22W	PB CU	QUARTZ VEIN
W101371	SLOAN MINE	US	NC	35-37-05N	079-11-05W	CU	STRATABOUND CONCORD
W014585	SOUTHERN COPPER COMP	US	NC	35-30-39N	080-20-56W	AU CU PB ZN	QUARTZ VEINS IN FAUL
W028076	STEEL GOLD SULFIDE M	US	NC	35-26-32N	080-00-23W	AU PB ZN AG CU FE S QTZ	GOLD AND SULFIDE - B
W028047	TREDINICK GOLD MINE	US	NC	35-09-08N	080-45-50W	AU QTZ CU S	AURIFEROUS QUARTZ VE
W014582	UNION COPPER MINE -	US	NC	35-30-11N	080-21-12W	CU AU PB ZN	QUARTZ VEINS IN FAUL
W028072	UNNAMED COPPER PROSP	US	NC	35-20-50N	080-29-29W	CU FE S QTZ	PROBABLY SULFIDE - B
W028483	UNNAMED ZN-PB-CU-PYR	US	NC	35-42-08N	080-07-30W	ZN PB CU FE S	VOLCANIC
K003543	WATAUGA CREEK COPPER	US	NC	35-14-39N	083-18-49W	CU PYR PYR1	DISSEMINATED
W102178	CLEAVELAND MINE?	US	NH	43-39-40N	072-09-05W	CU S	UNCERTAIN
W102190	CROYDON PYRITE MINES	US	NH	43-26-05N	072-14-50W	CU ZN	STRATABOUND CONCORD
W033805	CROYDON-CORBIN PARK	US	NH	43-25-54N	072-14-53W	ZN CU PB	MASSIVE SULFIDE
W102038	DALTON AU MINE	US	NH	44-22-10N	071-43-10W	CU	VEIN
W033869	FARNUM HILL COPPER P	US	NH	43-37-11N	072-16-21W	CU PYR1	DISSEMINATED
W102020	FORSYTH MINE	US	NH	44-13-50N	071-59-20W	CU	STRATABOUND CONCORD
W102184	FRANHAM HILL CU PROS	US	NH	43-37-05N	072-16-05W	CU	UNCERTAIN
W102018	GARDNER MT. MINE/GRE	US	NH	44-18-55N	071-55-40W	CU	STRATABOUND CONCORD
W102019	GRANITE STATE (PADDO	US	NH	44-16-45N	071-57-48W	CU	STRATABOUND CONCORD

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W102099	HAVILAND MINE	US	NH	44-14-20N	072-00-02W	CU AU	STRATABOUND CONCORD
W102177	HUBBARD-NEAL MINE	US	NH	43-18-20N	072-18-40W	CU S	STRATABOUND CONCORD
W102179	KING MINE	US	NH	43-41-50N	072-11-10W	CU S	UNCERTAIN
W033803	LEBANON I89 ROADCUT	US	NH	43-38-11N	072-17-03W	PYR PYR1 MO CU PB ZN AU	MASSIVE SULFIDE/VEIN
W102017	MILAN MINE	US	NH	44-33-55N	071-15-15W	CU AU AG	STRATABOUND CONCORD
W102015	NAY MINE	US	NH	44-34-10N	071-17-50W	CU	STRATABOUND CONCORD
W033870	NEAL MINE	US	NH	43-16-54N	072-20-06W	PYR CU	DISSEMINATED
W033808	OLD COPPER MINE	US	NH	43-40-42N	072-10-45W	CU	
W033806	ORE HILL	US	NH	43-56-15N	071-56-54W	ZN PB CU	MASSIVE SULFIDE
W102098	STEVENS MINE/LANG MI	US	NH	44-13-15N	072-00-10W	CU PB AG	STRATABOUND CONCORD
W102037	UNNAMED	US	NH	44-10-20N	071-45-20W	CU	UNCERTAIN
W102096	UNNAMED	US	NH	44-15-40N	072-02-35W	CU	STRATABOUND CONCORD
W100418	AMERICAN (BRIDGEWATE	US	NJ	40-37-00N	074-37-00W	CU	VEIN
W044251	AMERICAN MINE	US	NJ	40-36-53N	074-36-56W	CU	CHECK
W044254	CHIMNEY ROCK MINE	US	NJ	40-34-50N	074-33-30W	CU	UNKNOWN
W100419	CHIMNEY ROCK MINES	US	NJ	40-34-55N	074-33-50W	CU	VEIN
W044252	DOD MINE	US	NJ	40-46-51N	074-13-00W	CU	INSUFFICIENT DATA TO
W100180	DOD MINE	US	NJ	40-46-00N	074-12-05W	CU	VEIN
W100174	FELTVILLE MINE	US	NJ	40-38-08N	074-26-45W	CU	VEIN
W044259	FLEMINGTON MINES-1	US	NJ	40-30-22N	074-52-11W	CU	UNKNOWN
W100176	FLEMINGTON MINES/NES	US	NJ	40-30-52N	074-51-30W	CU	VEIN
W044258	GLEN RIDGE MINE	US	NJ	40-47-58N	074-12-09W	CU	INSUFFICIENT DATA TO
W100179	GLEN RIDGE MINE	US	NJ	40-49-29N	074-12-50W	CU	VEIN
W100178	GRIGGSTOWN (FRANKLIN	US	NJ	40-25-40N	074-36-48W	CU	VEIN
W044261	GRIGGSTOWN MINE	US	NJ	40-25-34N	074-36-45W	CU	UNKNOWN
W044255	HOFFMAN PROSPECT	US	NJ	40-38-23N	074-37-37W	CU	SHEAR ZONE
W044257	MENLO PARK MINE	US	NJ	40-33-52N	074-20-01W	CU	SHEAR ZONE
W100421	MENLO PARK MINE	US	NJ	40-34-12N	074-19-15W	CU	VEIN
W100175	NEW BRUNSWICK (FRENC	US	NJ	40-30-05N	074-27-30W	CU	VEIN
W044256	NEW BRUNSWICK MINES	US	NJ	40-30-44N	074-27-28W	CU	LODE
W044249	PAHAQUARRY MINE	US	NJ	41-01-53N	075-01-56W	CU	DISSEMINATED
W055222	PAHAQUARRY MINE	US	NJ	41-01-53N	075-01-56W	CU	DISSEMINATED
W100366	PAHAQUARRY MINE	US	NJ	41-01-50N	075-02-10W	CU	STRATABOUND DISCORDA
W100173	RARITAN MINE	US	NJ	40-27-30N	074-29-20W	CU	VEIN
W044260	SCHUYLER MINE	US	NJ	40-46-43N	074-07-45W	CU AG	DISSEMINATED
W100182	SCHUYLER MINE	US	NJ	40-48-10N	074-06-20W	CU	VEIN
W044253	STONY BROOK MINES	US	NJ	40-37-57N	074-26-38W	CU	UNKNOWN
W100420	STONY BROOK MINES	US	NJ	40-36-00N	074-22-00W	CU	VEIN
W100177	TOTOWA MINE	US	NJ	40-54-00N	074-13-12W	CU	VEIN
W044250	WIGWAM BROOK MINE	US	NJ	40-46-52N	074-13-49W	CU	UNKNOWN
W100181	WIGWAM BROOK MINE	US	NJ	40-46-00N	074-14-00W	CU	VEIN
W055221	WOOSAMONSA PROSPECT	US	NJ	40-70-17N	074-50-10W	CU	CONTACT METASOMATIC
D006622	"85" MINE (1880'S)	US	NM	32-57-21N	107-32-47W	AU AG CU	LODE (VEIN)
D003352	ADA ETTA CLAIM	US	NM	32-19-22N	108-46-38W	PB AG CU AU	LODE (VEIN)
D002800	ALASKA GROUP	US	NM	33-45- N	107-55- W	AU AG CU	VEIN
D007083	AMERICAN FLAG AND FL	US	NM	33-09-06N	107-43-14W	AG PB CU	LODE (VEIN AND REPLA
D008898	AMIZETTE PROSPECTS	US	NM	36-35-48N	105-28-53W	CU PB ZN AU	SHEAR ZONE
D003348	ANITA MINE	US	NM	32-19-09N	108-45-44W	PB CU AG AU ZN	LODE (VEIN)
D001327	APACHE MINE	US	NM	31-50-43N	108-18-18W	CU AG PB ZN AU BI W	CONTACT METASOMATIC
D001963	APACHE TRAIL MINE	US	NM	32-36-02N	108-21-22W	CU AG AU BI U PB	SHEAR ZONE
D011745	ARIZONA MINE	US	NM	32-50-55N	108-14-30W	ZN CU PB AU AG	VEIN
D003349	ATWOOD MINE	US	NM	32-19-06N	108-44-22W	CU PB ZN AG AU	LODE (VEIN)
D009522	AUSTIN-AMAZON MINES	US	NM	32-36-49N	108-27-34W	CU AG AU MO U	SHEAR ZONE
D009773	AZTEC MINE	US	NM	32-51-24N	108-51-48W	AU AG CU ZN PB	LODE (VEIN)
W016619	AZURE-RISING SUN	US	NM	35-48-11N	105-27-48W	CU MO AU	VEIN
D006613	BARITE HILL NO. 1 PR	US	NM	32-59-58N	107-42-56W	AG CU PB ZN	LODE (VEIN)
D003357	BATTLESHIP GROUP	US	NM	32-19-01N	108-45-08W	CU AG AU PB ZN	LODE (VEIN)
D011756	BEAR CREEK AREA	US	NM	32-54-45N	108-20-40W	CU	INSUFFICIENT DATA TO
D006612	BEARDOG MINE	US	NM	32-50-55N	107-44-47W	AG CU PB ZN	LODE (VEIN)
D011441	BEASELEY (NATIONAL	US	NM	32-34-30N	108-25-45W	CU MO	SULFIDE VEINS - IMPR
D006799	BI-METALLIC MINE (19	US	NM	32-50-28N	107-40-05W	AG PB CU AU ZN	LODE (REPLACEMENT)
D006798	BIG JAP MINE	US	NM	32-51-45N	107-44-50W	AG CU PB ZN	LODE (VEIN)
D006849	BIGELOW MINE	US	NM	32-57-10N	107-34-05W	AU AG CU PB ZN	LODE (VEINS)
D011478	BISBEE	US	NM	32-32-00N	108-23-00W	AU CU	VEIN, QTZ-PYRITE (AU
D006611	BLACK COLT MINE (188	US	NM	32-56-09N	107-43-07W	AG CU PB ZN MN	LODE (VEIN)
D006820	BLACK KNIFE GROUP (1	US	NM	33-21-10N	107-35-47W	PB ZN CU AG AU	LODE (REPLACEMENT)
D006610	BLACK PEAK MINE (PRE	US	NM	32-57-33N	107-31-47W	AU CU	LODE (VEIN)

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D011793	BLAKE MINE	US	NM	35-23-00N	105-18-29W	CU	BEDDED
D006614	BLUE BELL NO. 2 PROS	US	NM	32-45-27N	107-38-34W	CU	LODE (VEIN)
D011249	BLUE SKY PROSPECT	US	NM	35-14-05N	106-22-57W	CU PB F	LODE
D011446	BOLTON	US	NM	37-38-45N	108-26-45W	CU MO	VEIN; FRACTURE FILLI
M054742	BONANZA MINE	US	NM	32-56-59N	107-33-19W	AU AG CU PB ZN	LODE (FISSURE VEIN)
D011792	BONANZA MINE	US	NM	35-26-33N	105-20-40W	CU	BEDDED
D003347	BONNEY MINE	US	NM	32-17-53N	108-45-39W	CU AU AG PB ZN	LODE (VEIN)
D011449	BOONE	US	NM	32-37-15N	108-22-45W	CU	VEIN
W016614	BROMIDE MINE	US	NM	36-38-22N	106-09-39W	AG CU AU PB	LODE (VEIN)
D002927	BUCKEYE MINE	US	NM	34-01-07N	107-08-06W	CU AG AU BA	LODE(VEIN)
D010462	BUCKHORN MINE	US	NM	31-50-39N	108-27-46W	AU AG CU PB ZN BI TE	LODE (VEIN)
D010063	BUCKHORN PROSPECT	US	NM	34-12-40N	105-43-55W	CU F	VEIN
D003066	BULLFROG MINE	US	NM	32-46-54N	108-07-00W	ZN PB CU AG AU MO	VEIN, REPLACEMENT
D012101	BURRO MOUNTAINS DIST	US	NM	32-38-25N	108-22-20W	CU AG AU MO MN F FE ZN PB BI	PRECAMBRIAN PEGMATIT
D010602	BY CHANCE MINE	US	NM	32-25-38N	106-06-27W	CU AU AG	SKARN
D007088	CABALLO MOUNTAINS MI	US	NM	32-53-37N	107-16-17W	CU PB AG	LODE (VEIN)
D011482	CALAMITY	US	NM	32-32-45N	108-21-30W	CU AU	VEIN; QTZ-PYRITE (AU
D012096	CENTRAL DISTRICT: BA	US	NM	32-08-01N	108-06-21W	PB ZN CU AG AU V W	VEIN AND VEIN REPLAC
D011254	CHALCOCITE PROSPECT	US	NM	36-00-18N	106-53-49W	CU	DISSEMINATED-METAMOF
D003054	CHAMPION MINE	US	NM	36-13-09N	105-47-44W	CU AG AU SB	LODE (VEIN)
D006618	CHANCE MINE (1880)	US	NM	32-57-53N	107-30-55W	AU AG CU	LODE (VEIN)
D010463	CHAPO MINE	US	NM	31-49-42N	108-16-17W	CU PB AG AU	CONTACT METASOMATIC
D003413	CHARLES	US	NM	32-12-25N	109-00-10W	CU PB AG	VEIN
D008148	CHUPADERO MINES	US	NM	34-06-36N	106-48-23W	CU	STRATIFORM
D001969	CIMARRONCITO DISTRIC	US	NM	36-29-05N	105-06-55W	AU AG CU PB BI	CONTACT METASOMATIC
D003371	CLEMENTINE CLAIM	US	NM	32-19-04N	108-46-19W	PB AG CU	LODE (VEIN)
D003358	COBRA NEGRA GROUP	US	NM	32-18-16N	108-45-47W	CU AG AU PB	LODE (VEIN)
D006823	COLOSSAL MINE (1880'	US	NM	33-18-21N	107-43-08W	AG CU AU PB	LODE (VEIN)
D011481	COMBINATION AND COPP	US	NM	32-33-30N	108-21-30W	AU AG CU	VEIN
D009712	COMBINATION-HOBO MIN	US	NM	32-47-48N	108-06-12W	ZN PB CU AG	REPLACEMENT
D010753	COMMERCIAL MINE	US	NM	33-33-13N	105-49-32W	CU PB AG AU ZN	LODE (VEIN)
D006824	CONFIDENCE MINE (189	US	NM	33-20-13N	107-36-13W	CU FE	LODE (REPLACEMENT)
D010055	CONQUEROR MINE	US	NM	34-11-35N	105-44-20W	F PB CU BA RAE MO	BRECCIA VEINS, SHEAR
W700603	CONTINENTAL MINE	US	NM			CU AU AG ZN	
D008011	COONEY MINE	US	NM	33-25-08N	108-47-53W	AG AU CU	LODE (VEIN)
D008800	COPPER BELLE GROUP (	US	NM	33-16-33N	107-40-20W	CU	LODE
D008149	COPPER BELT GROUP	US	NM	34-07-44N	107-17-04W	CU AG	LODE (VEIN)
D010464	COPPER DICK MINE	US	NM	31-51-26N	108-27-38W	CU AG AU PB	SKARN
D000585	COPPER FLAT	US	NM	32-58- N	107-32- W	MO CU	DISSEMINATED
D011716	COPPER GLANCE MINE	US	NM	32-47-15N	108-06-00W	PB CU ZN AG AU	VEIN, REPLACEMENT
D011445	COPPER KING	US	NM	32-39-15N	108-23-15W	CU	VEIN, FRACTURE ZONE
D008281	COPPER KING MINE	US	NM	36-42-08N	105-24-22W	CU MO AG	SHEAR ZONE
D003373	COPPER REEF GROUP	US	NM	32-18-23N	108-44-43W	CU AG AU	LODE (VEIN)
D010603	COURTNEY MINE	US	NM	32-54-52N	105-49-58W	CU PB AG	STRATIFORM
D006825	COVINGTON GROUP (188	US	NM	33-20-12N	107-35-23W	PB ZN AG CU MN	LODE (REPLACEMENT)
D006619	CRESENT LODE MINE	US	NM	32-56-13N	107-32-43W	CU PB ZN	LODE (VEIN)
D006620	CRUISE SHAFT	US	NM	32-55-49N	107-42-47W	AG CU PB ZN MN	LODE (VEIN AND REPLA
D008152	CUPRITE MINE	US	NM	34-01-04N	107-12-03W	CU AG AU	LODE (VEIN)
D010062	DEADWOOD PROSPECT	US	NM	34-11-40N	105-44-35W	CU F	VEIN
D006826	DICTATOR MINE (1880'	US	NM	33-20-18N	107-34-40W	PB ZN CU AG	LODE (REPLACEMENT)
D006621	DOVE GROUP (1948)	US	NM	32-56-08N	107-42-52W	AG CU PB ZN MN	LODE (VEIN AND REPLA
D006827	DREADNAUGHT MINE (18	US	NM	33-21-46N	107-44-50W	AG AU CU	LODE (VEIN)
D003346	EIGHTY-FIVE MINE	US	NM	32-18-52N	108-45-04W	CU AU AG PB ZN	LODE (VEIN)
D006801	EL ORO MINE (1880'S)	US	NM	32-58-55N	107-31-00W	AU AG CU	LODE (VEIN)
D008153	ELLIS CANYON PROSPEC	US	NM	34-05-11N	107-10-59W	PB CU AG	REPLACEMENT
D011450	EMMA AND SURPRISE	US	NM	32-37-00N	108-21-00W	CU	VEIN
D011691	EMMA MINE	US	NM	32-51-15N	108-04-30W	CU FE	REPLACEMENT
D007095	EMPORIA MINE (1880)	US	NM	33-25-32N	107-44-57W	AG CU AU	LODE (VEIN)
D006624	ENTERPRISE MINE (188	US	NM	32-54-30N	107-43-35W	AG CU PB ZN	LODE (VEIN AND REPLA
D010618	ESTEY CITY COPPER MI	US	NM	33-34-28N	106-16-02W	CU AG	STRATIFORM
D011483	EUGENE	US	NM	32-32-30N	108-21-30W	CU AU	VEIN, FRACTURE FILL
D010912	EUREKA MINE	US	NM	36-00-26N	106-51-21W	CU AG	STRATIFORM
D003218	EVELYN MINE	US	NM	35-30-36N	106-07-29W	AU AG CU	VEINS AND SHEAR ZONE
D009042	EXCELSIOR MINE	US	NM	32-27-08N	106-35-08W	CU AG ZN PB BI TE	REPLACEMENT
D011693	EXXON PROSPECT	US	NM	32-53-15N	108-14-10W	ZN PB CU AG FE AS SB	REPLACEMENT, CONTACT
D006625	FABIAN MINE	US	NM	32-57-42N	107-42-38W	AG CU PB ZN	LODE (VEIN)
D011788	FAIRVIEW LODE MINE	US	NM	35-36-50N	105-44-40W	CU AG	BEDDED

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
D003361	FRANCIS KAY MINE (AB	US	NM	32-17-31N	108-45-13W	PB AG CU AU ZN	LODE (VEIN)
D008901	FRAZER MINE	US	NM	36-35-43N	105-26-22W	CU AU AG MO	SHEAR ZONE
D006803	GARFIELD-BUTLER GROU	US	NM	32-57-10N	107-33-55W	AU AG CU PB ZN	LODE (VEIN)
D010604	GARNET MINE	US	NM	32-25-38N	106-06-47W	CU AU AG	SKARN
D003354	GENERAL JERRY BOYLE	US	NM	32-19-12N	108-44-07W	CU AG AU PB	LODE (VEIN)
D011746	GILA MINES	US	NM	32-53-00N	108-13-10W	AU AG CU PB ZN	VEIN
D009026	GOLD BAR GROUP	US	NM	33-14-49N	108-43-34W	AG CU PB ZN F AU MO	LODE (VEIN)
D003353	GOODSIGHT MINE	US	NM	32-19-23N	108-45-09W	CU AG AU PB	LODE (VEIN)
D006830	GOVERNOR GROUP	US	NM	33-02-55N	107-14-10W	F CU	LODE (FISSURE VEINS)
D007899	GRAPHIC MINE	US	NM	34-05-47N	107-12-11W	ZN PB CU AG AU	REPLACEMENT
D009065	GREAT COMBINATION MI	US	NM	35-01-28N	106-26-52W	AU AG CU	SHEAR ZONE
D006854	GREAT REPUBLIC MINE	US	NM	33-28-32N	107-44-43W	AU AG CU PB	LODE (VEINS)
D003366	GREEN KING MINE	US	NM	32-16-54N	108-44-23W	PB AG CU AU	LODE (VEIN)
D008284	GREEN MOUNTAIN GROUP	US	NM	36-14-18N	105-44-34W	CU W AU	LODE (VEIN)
W016596	GREENBACK MINE	US	NM	32-58-30N	106-35-20W	CU BI W	VEIN
D006855	GREY EAGLE MINE (188	US	NM	32-53-40N	107-44-38W	AG PB ZN CU AU	LODE (VEINS AND REPL
W019036	GROUNDHOG MINE	US	NM	32-46-15N	108-06-21W	ZN PB CU AG AU V MO	VEIN, REPLACEMENT, O
D006628	GYPSY IV GROUP	US	NM	32-56-21N	107-41-34W	AG CU PB ZN	LODE (VEIN)
D011794	HAMMOND MINE	US	NM	35-28-25N	105-22-22W	CU	BEDDED
D011551	HANOVER MOUNTAIN MIN	US	NM	32-51-15N	108-04-45W	CU	PORPHYRY, REPLACEMEN
D009526	HARD PAN MINE	US	NM	32-44-44N	108-35-27W	PB ZN CU	LODE (VEIN)
D007901	HARDSCRABBLE MINE	US	NM	34-06-48N	107-11-47W	ZN PB CU AG AU	REPLACEMENT
D009777	HAZARD MINE	US	NM	32-52-26N	108-11-18W	AU AG PB CU	LODE (VEIN)
D003350	HENRY CLAY MINE	US	NM	32-19-03N	108-44-47W	CU AG PB ZN AU	LODE (VEIN)
D008902	HIGHLINE PROSPECT	US	NM	36-36-08N	105-25-23W	CU AG PB	SHEAR ZONE
W006774	HILLSBORO DISTRICT	US	NM	32-56- N	107-32- W	CU AG AU PB MN FE	VEIN/SHEAR ZONE; PLA
D003356	HOBSON CLAIM	US	NM	32-19-06N	108-45-12W	CU	LODE (VEIN)
D011476	HOGBACK LODE	US	NM	32-20-45N	108-25-35W	CU	VEIN, AU,AG,BASE MET
D010754	HOMESTAKE GROUP	US	NM	33-33-28N	105-49-22W	CU PB ZN AG AU	LODE (VEIN)
D011751	HONEY COMB CLAIM	US	NM	32-50-30N	108-04-30W	CU ZN AU AG MO	VEIN, PEGMATITE, REP
D008156	HOP CANYON MINING CO	US	NM	34-02-08N	107-11-45W	AU CU	SHEAR ZONE
D011474	HOP WILLIAMS SHAFT	US	NM	32-33-30N	108-25-30W	CU PB	VEIN, AU,AG,BASE MET
D006629	ILLINOIS MINE (1880'	US	NM	32-55-03N	107-43-22W	AG CU PB ZN AU	LODE (VEIN AND REPLA
D011452	INDIAN HILL AND UNNA	US	NM	32-35-30N	108-24-15W	CU	VEIN
D006630	INGERSOLL MINE	US	NM	32-59-57N	107-43-13W	AG CU PB ZN	LODE (VEIN)
D008157	IRON CAP PROSPECT	US	NM	34-00-48N	107-11-20W	CU	SHEAR ZONE
D006858	IRON KING MINE	US	NM	32-55-55N	107-43-32W	AG ZN PB CU AU MN	LODE (VEINS AND REPL
W017012	IRON MOUNTAIN DEPOSI	US	NM	33-28-07N	107-38-13W	FE W BE F AG PB CU AU ZN MO	CONTACT METASOMATIC
D009018	IRON MOUNTAINS PROSP	US	NM	36-36-07N	105-15-18W	FE AU CU	CONTACT METASOMATIC
D011714	IVANHOE MINE	US	NM	32-47-00N	108-05-45W	PB CU ZN AG AU	VEIN, REPLACEMENT, O
D007101	IVANHOE MINE (1880)	US	NM	33-25-21N	107-45-03W	AG CU AU	LODE (VEIN)
D006631	JACKPOT MINE (1963)	US	NM	32-57-18N	107-33-42W	AU AG CU PB	LODE (VEIN)
D006632	JAP MINE	US	NM	32-51-31N	107-44-53W	AG CU PB ZN	LODE (VEIN)
D010917	JAW BONE MINE	US	NM	36-43-40N	106-14-19W	AU CU	LODE (VEIN)
D006633	JAYHAWK GROUP	US	NM	32-49-55N	107-40-12W	CU AG PB ZN	LODE (VEIN AND REPLA
D009525	JENNIE MINES	US	NM	32-43-42N	108-38-55W	CU	SHEAR ZONE
D011900	JOHN HAYS MINE	US	NM	36-08-20N	105-12-53W	CU AG U	BEDDED
D003408	JOHNNY BULL MINE	US	NM	32-09-36N	108-59-52W	CU AG PB	SKARN , REPLACEMENT
D011781	JONES MINE	US	NM	35-43-58N	105-43-24W	CU PB ZN AU AG	VEIN
D011451	JOY GROUP	US	NM	32-35-30N	108-24-15W	CU BI W AU AG	CU VEIN, AU AG BASE
D006634	KANGAROO MINE (1880'	US	NM	32-56-13N	107-42-58W	AG PB CU	LODE (VEIN AND REPLA
D008158	KERY PROSPECT	US	NM	34-02-17N	107-12-13W	CU	SHEAR ZONE
D007102	KEYSTONE GROUP (1880	US	NM	33-27-56N	107-44-34W	AG CU AU	LODE (VEIN)
W006775	KINGSTON DISTRICT	US	NM	32-56- N	107-43- W	AU AG PB ZN CU MN	REPLACEMENT
D009019	KLONDIKE MINE	US	NM	36-33-28N	105-19-12W	CU AU AG	LODE (VEIN)
D000584	LA BAJADA MINE	US	NM	35-32-58N	106-12-27W	CU U MO CO GE NI TH S AS AG	VEIN
D006859	LADY FRANKLIN MINE	US	NM	32-56-05N	107-43-10W	AG AU PB CU ZN MN	LODE (VEINS AND REPL
D011692	LADY KATHERINE MINE	US	NM	32-52-40N	108-15-05W	CU ZN AG BI	REPLACEMENT, CONTACT
D009778	LANGSTON MINE	US	NM	32-50-51N	108-52-04W	ZN PB CU AU AG	LODE (VEIN)
D011744	LANGSTON MINE	US	NM	32-50-55N	108-14-35W	ZN CU AU AG	VEIN
D010913	LAS MINAS DE PEDRO P	US	NM	36-17-54N	106-20-11W	CU AG	STRATIFORM
D010914	LAS MINAS JIMMIE PRO	US	NM	36-16-36N	106-20-19W	CU AG	STRATIFORM
D003369	LAST CHANCE VEIN (PA	US	NM	32-17-55N	108-45-15W	CU AG AU	VEIN
D011899	LE DEOUX RANCH LEASE	US	NM	36-05-15N	105-13-35W	U V CU	BEDDED
D009527	LIBERTY BELL MINE	US	NM	32-37-54N	108-23-48W	CU AG	SHEAR ZONE
D006636	LILLIPUT GROUP (1910	US	NM	32-56-49N	107-32-59W	AU CU AG PB	LODE (VEIN)
D007908	LINCHBURG MINE	US	NM	34-04-21N	107-11-14W	ZN PB CU AG AU	REPLACEMENT

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D008159	LITTLE BALDY TUNNEL	US	NM	34-02-50N	107-10-39W	PB ZN CU AG	REPLACEMENT
D006637	LITTLE JEWESS MINE (	US	NM	32-58-36N	107-31-18W	AU CU PB ZN	LODE (VEIN)
D011734	LITTLE KEY MINE	US	NM	32-52-10N	108-14-00W	PB ZN CU AU AG	VEIN
D003415	LIZZIE PAUL PROSPECT	US	NM	32-11-50N	109-01-30W	CU AU	VEIN
D006806	LOG CABIN MINE (PRE	US	NM	32-51-18N	107-40-40W	AG AU CU PB ZN	LODE (VEINS)
D003046	LOOKOUT MINE	US	NM	32-52- N	107-44-30W	PB ZN CU AU AG	PODS, FRACTURING, RE
D003345	LORDSBURG DISTRICT	US	NM	32-18-50N	108-45-05W	CU AU AG PB ZN F MN MO V BI	LODE (VEIN)
D010609	LUCKY MINE	US	NM	32-24-45N	106-06-30W	CU AU AG	SKARN
D006860	MARION MINE (1920)	US	NM	33-01-40N	107-14-10W	CU AG AU F	LODE (FISSURE VEINS)
D009067	MARY M MINE	US	NM	35-01-38N	106-26-02W	AU CU	SHEAR ZONE
D006807	MARY RICHMOND MINE (	US	NM	32-57-28N	107-33-04W	AU AG CU PB ZN	LODE (VEIN)
D006638	MCKINLEY MINE (1880'	US	NM	32-56-36N	107-32-38W	AU CU AG	LODE (VEIN)
D011257	MEDIO DIA CANYON PRO	US	NM	35-43-07N	106-24-38W	CU AG AU	LODE (VEIN)
D006837	MIDNIGHT MINE (1880'	US	NM	33-17-43N	107-43-24W	AG CU AU PB	LODE (VEIN)
D011736	MINA GRANDE MINE	US	NM	32-51-20N	108-13-40W	CU ZN AU AG PB	VEIN
D008162	MINERVA GROUP	US	NM	34-01-27N	107-08-51W	PB ZN CU AG	REPLACEMENT
D003351	MISERS CHEST MINE	US	NM	32-17-33N	108-45-51W	CU AG AU PB ZN	LODE (VEIN)
D006838	MOCKINGBIRD GAP MINE	US	NM	33-28-42N	106-26-30W	CU F	LODE (VEIN)
D011737	MOGUL MINE	US	NM	32-51-25N	108-13-40W	CU ZN PB AU AG	VEIN
D011448	MONEZUMA	US	NM	32-38-45N	108-19-45W	CU	VEIN
D011248	MONTEZUMA MINES	US	NM	35-18-34N	106-24-15W	PB CU AG	LODE
D009529	MOODY PROSPECT	US	NM	32-35-12N	108-31-09W	CU	LODE (VEIN)
D006639	MORNING GLORY MINE (	US	NM	32-56-53N	107-32-02W	AU CU AG	LODE (VEIN)
D011253	MORNINGSTAR PROSPECT	US	NM	36-03-46N	106-53-20W	AU CU	VEIN
D011697	MOUNTAIN HOME GROUP	US	NM	32-49-30N	108-06-15W	ZN PB CU AG W	REPLACEMENT
D009721	MOUNTAIN HOME MINE	US	NM	32-49-26N	108-06-06W	ZN PB CU AG AU	REPLACEMENT
D011733	MOUNTAIN KEY MINES	US	NM	32-51-50N	108-14-00W	PB ZN CU AG AU	VEIN
D011588	MT. CHALCHIHUITL MIN	US	NM	35-28-25N	106-06-52W	CU	VEINS
D009022	MYSTIC MINE	US	NM	36-37-48N	105-12-46W	CU AU AG MO	LODE (VEIN)
D006641	N.Y. GROUP (1900'S)	US	NM	32-55-12N	107-43-44W	AG CU PB ZN	LODE (VEIN)
W002700	NACIMIENTO MINE	US	NM	36-00- N	106-53- W	CU	SEDIMENTARY
D012095	NACIMIENTO MOUNTAINS	US	NM	35-59-38N	106-53-50W	CU AG	1. DISSEMINATED RED-
D003310	NAME UNKNOWN	US	NM	32-11-15N	108-05-50W	PB CU	VEIN
D003296	NAME UNKNOWN	US	NM	32-05-05N	108-58-05W	CU PB ZN	VEIN
D011459	NAME UNKNOWN	US	NM	32-37-40N	108-44-10W	CU	VEIN
D008839	NANA MINE (1880'S)	US	NM	33-20-18N	107-42-24W	AG AU CU	LODE (VEIN)
D010605	NANNIE BAIRD MINE	US	NM	32-24-20N	106-06-01W	CU AU AG PB	SKARN
D011442	NATIONAL COPPER COMP	US	NM	32-39-15N	108-25-15W	CU	VEIN
D009531	NEGLECTED MINE	US	NM	32-32-42N	108-26-32W	CU AU PB ZN BI	SHEAR ZONE
D003379	NELLIE BLY MINE	US	NM	32-15-02N	108-45-36W	CU AG AU PB ZN	LODE (VEIN)
D003359	NELLIE GRAY MINE	US	NM	32-17-59N	108-46-03W	CU	LODE (VEIN)
D006808	NEW ERA MINE (1880'S	US	NM	33-20-08N	107-48-17W	AG CU AU	LODE (VEIN)
D011715	NINETY MINE	US	NM	32-47-15N	108-05-30W	PB CU ZN AG AU	VEIN, REPLACEMENT, O
D007913	NITT MINE	US	NM	34-05-45N	107-12-22W	ZN CU PB AG AU	REPLACEMENT
D011532	NORTH OF SURPRISE SH	US	NM	32-37-20N	108-20-55W	CU	REPLACEMENT
D011443	OHIO AND LITTLE ROCK	US	NM	32-39-15N	108-24-30W	CU F	VEIN
D011735	OHIO MINE	US	NM	32-51-45N	108-14-20W	ZN PB CU AU AG	VEIN
D007107	OOHOO MINE	US	NM	33-02-02N	107-14-01W	CU AG AU	LODE (VEIN)
W006773	ORGAN DISTRICT	US	NM	32-24- N	106-36- W	AG CU PB AU ZN MO	1) VEIN, 2) REPLACEM
D009780	PACIFIC MINE	US	NM	32-51-03N	108-14-31W	AU AG CU ZN PB	LODE (VEIN)
D009513	PADDY FORD SHAFT	US	NM	32-33-07N	108-21-33W	CU AU AG U	SHEAR ZONE
D008163	PAPA MINE	US	NM	34-04-44N	107-11-02W	AU AG CU PB	REPLACEMENT
D010916	PAYROLL MINE	US	NM	36-39-27N	106-10-03W	AU CU	MASSIVE SULFIDE
D011787	PAYTIAMO DEPOSIT	US	NM	35-34-23N	105-48-04W	CU	VEIN
D006864	PELICAN MINE	US	NM	33-10-02N	107-42-14W	AG PB CU ZN AU	LODE (VEINS)
D006643	PETROGLYPH MINE	US	NM	32-56-03N	107-32-37W	CU PB ZN	LODE (VEIN)
D001303	PICURIS DISTRICT	US	NM	36-13-09N	105-47-08W	BE LI TA CU AG AU W BI CA KYN NB	LODE (VEIN)
D009781	PINOS ALTOS DEPOSIT	US	NM	32-53-08N	108-14-16W	CU ZN AG PB AU MO BI	SKARN
D011903	PINTADA MINE	US	NM	34-55-18N	104-53-15W	CU	BEDDED
D011747	PORTLAND MINE	US	NM	32-51-40N	108-13-55W	ZN PB CU MO	VEIN
D006809	READY PAY MINE (1880	US	NM	32-56-40N	107-32-28W	AU AG CU	LODE (VEIN)
D010691	RED CLOUD MINE	US	NM	34-11-48N	105-44-24W	PB AG CU ZN F RAE	SHEAR ZONE
D006645	REPUBLIC AND WISCONS	US	NM	32-58-45N	107-31-05W	AU CU AG	LODE (VEIN)
D010693	RIALTO MOLYBDENUM PR	US	NM	33-29-43N	105-46-58W	MO CU AU	DISSEMINATED, STOCKW
D003380	ROBERT E. LEE MINE	US	NM	32-15-10N	108-45-32W	CU AG AU PB	LODE (VEIN)
D008164	RULE PROSPECT	US	NM	34-23-53N	107-31-26W	CU	LODE
W016624	SALINAS MINE	US	NM	33-18-26N	106-34-00W	PB CU AG AU F BA MO BI	LODE (FAULT CONTACT

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
D006646	SALLY B. NO. 1 MINE	US	NM	32-55-46N	107-43-53W	AG CU PB ZN MN	LODE (VEIN)
D006647	SAMOA 992-B MINE	US	NM	32-54-54N	107-43-09W	CU MN AG PB ZN	LODE (VEIN)
D011634	SAN FRANCISCO MINE	US	NM	35-15-10N	106-06-00W	CU W AU AG	VEIN
D000582	SAN MIGUEL MINE	US	NM	35-51-58N	106-53-15W	CU AG MO U V	STRATIFORM
D001306	SAN PEDRO MINE	US	NM	35-14-34N	106-12-16W	CU W AU AG	CONTACT METASOMATIC
W006783	SAN SIMON DISTRICT	US	NM	32-04-30N	108-08-45W	AG AU PB CU ZN AS	REPLACEMENT OF LIMES
D012103	SANTA RITA DISTRICT	US	NM	32-47-38N	108-03-57W	CU AU AG MO PB	PORPHYRY
D011550	SANTA RITA MINE	US	NM	32-47-30N	108-04-00W	CU MO AU AG	PORPHYRY, REPLACEMEN
D011904	SCHOLLE DISTRICT	US	NM	34-25-26N	106-24-15W	CU AG PB AU U	BEDDED
D006812	SHERMAN MINE (1880'S	US	NM	32-56-38N	107-32-38W	AU AG CU	LODE (VEIN)
W016590	SIERRA CABALLOS DIST	US	NM	32-55-00N	107-13-00W	PB F MN CU V AG AU W FE BA MO	LODE (VEINS)
D006813	SILVER MONUMENT MINE	US	NM	33-20-08N	107-48-37W	AG CU AU PB ZN	LODE (VEIN)
D009035	SILVER TIP GROUP	US	NM	33-13-28N	108-40-18W	AG CU	LODE (VEIN)
D003241	SIXTY COPPER GROUP	US	NM	34-04-32N	107-24-15W	CU	SHEAR ZONE
D008165	SLIDE ROCK GROUP	US	NM	34-02-28N	107-12-04W	AG CU	LODE (VEIN)
D006648	SO MINE NO. 1	US	NM	32-54-55N	107-44-28W	AG CU PB ZN MN	LODE
D008907	SOUTH FORK MINE	US	NM	36-34-31N	105-30-31W	CU AG AU	SHEAR ZONE
D011531	SOUTHERN STAR	US	NM	32-39-30N	108-24-15W	CU	REPLACEMENT
D011255	SPANISH QUEEN MINE	US	NM	35-43-54N	106-42-40W	CU AU AG	STRATIFORM
D009518	SPROUSE-COPELAND MIN	US	NM	32-34-38N	108-24-58W	CU PB ZN MO BI AU AG	SHEAR ZONE
D006843	ST. CLOUD MINES (188	US	NM	33-19-16N	107-42-12W	AG AU CU	LODE (VEIN)
D011902	STAUBER MINE	US	NM	34-51-21N	104-51-34W	CU	BEDDED
W006779	STEEPLE ROCK DISTRIC	US	NM	32-51- N	108-58- W	AU AG PB ZN CU	REPLACEMENT AND VEIN
W006784	STEINS PASS	US	NM	32-12-30N	109-02- W	AG PB AU ZN CU	CONTACT METAMORPHIS
D003409	STELLA MARIS #1 (COP	US	NM	32-09-25N	108-59-55W	CU PB AG	CONTACT METAMORPHIC
D010509	STENSON MINE	US	NM	32-07-48N	107-38-33W	CU AG	LODE (VEIN)
D007112	SULPHUR CANYON MINE	US	NM	33-01-28N	106-35-59W	CU	SHEAR ZONE
D011473	SUMMIT	US	NM	32-33-15N	108-27-45W	AU CU PB AG	VEIN, AU,AG,BASE MET
D010755	SUPRISE GROUP	US	NM	33-30-33N	105-49-49W	CU AG AU PB ZN MO	LODE (VEIN)
D006649	SWEETWATER CLAIM (19	US	NM	32-58-35N	107-30-37W	AU CU PB ZN	LODE (VEIN)
M045545	TAMPA MINE	US	NM	36-39-18N	106-08-35W	AU AG CU MO PT PGM	VEIN
D002788	THE TUNGSTEN MINE	US	NM	36-13-32N	105-46-16W	CU W	LODE (VEIN)
D010608	THREE BEARS MINE	US	NM	32-23-41N	106-06-11W	CU AU AG	LODE (VEIN)
D009051	TORPEDO MINE	US	NM	32-25-28N	106-35-35W	CU AG PB ZN	REPLACEMENT
D011752	TOURMALINE CLAIM	US	NM	32-50-35N	108-04-30W	CU	VEIN
D011694	TREASURE VAULT SHAFT	US	NM	32-47-45N	108-04-45W	CU FE ZN	REPLACEMENT
D003425	TRIMMER MINE	US	NM	32-28-06N	108-17-18W	PB AG CU	LODE (VEIN)
D011447	TULLOCK AND BOSTONIA	US	NM	32-39-45N	108-20-30W	CU	VEIN
D009520	TULLOCK SHAFT	US	NM	32-32-13N	108-21-10W	CU AG AU U	SHEAR ZONE
D011444	TWO-BEST-IN-THREE	US	NM	32-39-30N	108-24-00W	CU	VEIN
D011690	U. V. INDUSTRIES # 3	US	NM	32-51-15N	108-05-00W	CU FE ZN MO AU AG	REPLACEMENT, CONTACT
W002668	U. V. INDUSTRIES CON	US	NM	32-50-31N	108-05-09W	CU FE AG AU ZN PB MO	REPLACEMENT, CONTACT
D006834	U.S. TREASURY MINE (	US	NM	33-19-37N	107-42-51W	AG AU CU	LODE (VEIN)
D009730	UNION HILL-REPUBLIC	US	NM	32-50-02N	108-04-56W	FE CU ZN PB AG AU	REPLACEMENT
D006650	UNITED STATES MINE (	US	NM	32-55-02N	107-43-23W	AG CU PB ZN AU	LODE (VEIN AND REPLA
D006833	VINDICATOR-WEST CONT	US	NM	33-21-43N	107-36-08W	PB ZN CU	LODE (REPLACEMENT)
D010606	VIRGINIA MINE	US	NM	33-09-23N	105-50-36W	CU AG	STRATIFORM
D006816	VIRGINIA MINE (1880'	US	NM	32-58-40N	107-44-35W	AG PB CU AU	LODE (VEIN)
D008169	WAGON WHEEL GROUP	US	NM	34-03-46N	107-07-53W	PB ZN CU AG	REPLACEMENT
D007917	WALDO TUNNEL	US	NM	34-05-35N	107-12-28W	ZN PB CU AG AU	REPLACEMENT
D007115	WHITE MOUNTAIN MINE	US	NM	33-20-11N	107-41-59W	AG CU AU PB	LODE (VEIN)
D011440	WHITE SIGNAL	US	NM	32-32-50N	108-21-15W	CU MO	PORPHYRY
D006817	WICKS MINE (1877)	US	NM	32-56-30N	107-31-58W	AU AG CU	LODE (VEIN)
D008295	WILSON PROSPECT	US	NM	36-13-07N	105-47-20W	CU AU	LODE (VEIN)
D003338	YANKEY GIRL PROSPECT	US	NM	32-28-02N	108-30-24W	CU PB ZN	LODE (VEIN)
D009071	YORK MINE	US	NM	35-02-16N	106-26-24W	CU ZN AU	STRATIFORM (VOLCANOG
M234137		US	NV	00-00-00N	000-00-00W	CU AU AG MO PB ZN AS	CONTACT METASOMATIC
M030033		US	NV	41-36-19N	118-43-24W	CU MO FE AG	VEIN
M231234		US	NV	39-18-55N	119-38-38W	AG AU PB CU ZN FE	VEIN
M233011		US	NV	38-15-57N	118-11-50W	AG PB CU AU	SHEAR ZONE
M234134		US	NV	41-46-33N	114-46-44W	CU AU AG	INTRUSIVE CONTACT
M233998	"GRAVE" AREA	US	NV	41-44-32N	114-49-43W	CU	SHEAR ZONE
M233733	"RC"	US	NV	39-37-13N	114-53-14W	CU AU	QTZ VEIN, INTRUSIVE
M032097	100 FOOT INCLINED SH	US	NV	37-30-46N	114-47-10W	CU AU AG	SHEAR ZONE/VEIN, REP
M060315	56 COPPER MINE	US	NV	40-41-48N	118-14-38W	AU CU MO	SHEAR ZONE
M232850	A.J.C. NO. 5 CLAIM	US	NV	39-46-27N	117-16-06W	AG CU PB AU	VEIN
D011109	ADELAIDE MINE	US	NV	40-48- N	117-29- W	AU AG CU PB ZN W	REPLACEMENT-TYPE BOD

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M233382	ALADDIN GROUP	US	NV	40-30-60N	116-00-35W	CU AG AU ZN PB W	REPLACEMENT-VEINS
M233910	ALICE MINE	US	NV	41-46-55N	114-48-11W	CU AU AG MO FE	INTRUSIVE CONTACT
M241946	ALL CANADIAN COPPER	US	NV	37-29-04N	117-23-45W	CU FE	PORPHYRY COPPER ?
M233906	ALLEN NO. 2	US	NV	41-46-59N	114-46-49W	CU AU AG	INTRUSIVE CONTACT, V
M031290	ALPHA MINE	US	NV	39-15-29N	115-01-50W	CU	REPLACEMENT
W016438	AMAZON, FISHERMAN, K	US	NV	38-01-00N	116-09-00W	AG AS BA CD CU MO PB SB SN	PODIFORM
M231121	ANTELOPE	US	NV	39-44-05N	119-59-52W	CU AG AU	VEIN
M233911	ANTELOPE MINE	US	NV	41-46-47N	114-46-02W	CU AU AG	VEIN
M241733	ARCH CANYON PROSPECT	US	NV	38-50-40N	114-11-35W	CU PB AG ZN	VEIN
M233992	ARCHIE CLAIM (1920)	US	NV	41-44-51N	114-47-19W	CU	APLITE DIKE
M233886	ARIZONA MINE	US	NV	41-40-58N	114-42-23W	AU CU AG	VEINS, INTRUSIVE CON
M233885	ARKANSAS CLAIM	US	NV	41-46-41N	114-46-57W	CU AU AG MO FE PB	VEIN WITH INTRUSIVE
M060494	ARROWHEAD	US	NV	37-06-45N	115-35-07W	CU PB AG	FAULT ZONE
M241617	AZTEC (DEW, CHARLIE)	US	NV	37-38-23N	114-19-31W	CU AG PB ZN BI	IGNEOUS CONTACT
M032023	AZTEC AND OTHER PROS	US	NV	37-38-23N	114-19-31W	CU AG PB ZN BI	PLUTONIC/VOLCANIC CO
M031094	AZURITE MINE	US	NV	35-49-21N	115-34-09W	PB ZN CU AG AU PT	EPITHERMAL VEIN
M233958	BADGER	US	NV	40-34-15N	114-49-45W	CU PB AG	REPLACEMENT
M233888	BADGER & BADGER EXT.	US	NV	41-46-49N	114-49-41W	CU	INSUFFICENT DATA TO
D011054	BADGER MINE	US	NV	41-02- N	117-55- W	CU PB W	QUARTZ VEINS
M233383	BALD MOUNTAIN CHIEF	US	NV	40-31-37N	116-00-20W	CU AG AU	REPLACEMENT
M241659	BALLYORAN CLAIMS	US	NV	37-35-34N	114-45-35W	CU PB? BA? AG? AS? FE ZN	VEIN/SHEAR
D001276	BATAAN, MABEL, AND M	US	NV	38-26-53N	118-19-35W	CU W	TACTITE, GOSSAN
M231290	BATTLE MOUNTAIN DIST	US	NV	40-30-31N	117-08-30W	CU AU AG PB ZN SB AS MO FE	REPLACEMENT, VEIN, D
W002904	BATTLE MOUNTAIN DIST	US	NV	40-37-00N	117-03-12W	AG PB CU AU SB	FISSURES, WIDE SHEAR
M035046	BEACH MINE	US	NV	38-57-11N	118-54-38W	CU AG AU	VEIN / FAULT - FISSU
M035986	BEELER PROSPECT	US	NV	38-35-01N	118-09-34W	CU SB AG AU FE	VEIN
D000032	BELLE CLAIM	US	NV	35-49-37N	115-29-30W	CU V	SHEAR ZONE
M233889	BELLEVUE	US	NV	41-46-43N	114-47-12W	CU	VEIN
M231836	BERLIN MINE	US	NV	38-52-54N	117-36-21W	CU PB ZN AU SB AG	VEIN
M234002	BETTY CLAIMS	US	NV	41-45-23N	114-47-41W	CU	FAULT ZONE, INTRUSIV
M031001	BIG CASINO MINE	US	NV	35-27-53N	114-51-32W	CU PB AU AG ZN	VEIN
M060499	BIG MIKE COPPER MINE	US	NV	40-32-33N	117-33-35W	CU	MASSIVE SULFIDE
M231269	BIG PAY MINE	US	NV	40-40-18N	117-04-27W	CU AG AU	VEINS/SHEAR ZONES
M241998	BIG THREE MINE	US	NV	37-32-56N	117-30-54W	CU ZN PB AU? AG?	VEINS
M233956	BINGLE	US	NV	40-33-53N	114-49-40W	CU	REPLACEMENT
M031050	BLACK JACK MINE	US	NV	36-17-39N	114-12-06W	CU	BRECCIA ZONE
M035853	BLACK ROCK MINE	US	NV	38-58-21N	119-04-11W	CU	METASOMATIC VEIN
M233890	BLANCHARD MINE	US	NV	41-41-04N	114-39-03W	CU AU AG MO	INTRUSIVE CONTACT
M242247	BLUE BELL	US	NV	36-37-47N	114-09-24W	CU	PEGMATITE DIKE
M232737	BLUE BELL MINE	US	NV	41-07-13N	117-16-14W	CU	VEIN
M233364	BLUE BELLE MINE	US	NV			CU	REPLACEMENT-VEIN
M233855	BLUE BIRD	US	NV	41-47-03N	114-46-11W	CU AU AG	VEIN
M029075	BLUE JACK PROPERTY	US	NV	41-28-25N	118-52-30W	CU U FE	VEIN/SHEAR ZONE
M035857	BLUE JAY MINE	US	NV	38-58-59N	119-05-23W	CU	PORPHYRY CU
M241520	BLUE NOSE GROUP	US	NV	37-13-53N	114-19-10W	HG PB CU SB? BA AG?	FAULT, VEIN, JASPERO
M035220	BLUE RIBBON MINE	US	NV	38-28-34N	118-12-50W	CU	
M231078	BLUEBIRD	US	NV	39-51-44N	119-36-06W	CU AG AU PB ZN	VEIN
M035864	BLUESTONE MINE	US	NV	38-57-36N	119-13-47W	CU AU AG GYP	SEDIMENTARY
M233856	BONANZA GROUP	US	NV	41-46-39N	114-50-59W	CU AU AG MO	VEIN
M233891	BONANZA MINE	US	NV	41-46-39N	114-50-59W	CU AU AG MO	
M045353	BOSS MINE	US	NV	35-48-48N	115-34-20W	CU AU PT PD AG PB TI	ORE SHOOT WITH VEINS
M031003	BOSTON MINE	US	NV	35-28-41N	114-54-01W	CU AU	VEIN
M233892	BOSTON MINE	US	NV	41-48-15N	114-36-23W	CU AU AG	INTRUSIVE CONTACT, V
M233551	BOYD AND ANTELOPE CA	US	NV			CU AG SB	FAULT ZONE
M233073	BOYER COPPER DEPOSIT	US	NV	39-58-40N	117-56-34W	CU	OTHER; FRACTURE-FILL
M035855	BRADLEY MINE	US	NV	38-58-55N	119-04-14W	CU	METASOMATIC VEIN
M242423	BRISTOL SILVER MINE	US	NV			AG PB CU ZN AU MN	REPLACEMENT; FISSURE
M233871	BROOKLYN MINE	US	NV	41-46-48N	114-47-10W	CU AU AG	INTRUSIVE CONTACT (&
M233768	BRUNO #1	US	NV	39-32-14N	114-56-55W	PB CU	SHEAR ZONE, CALCITE
M233872	BRYAN MINE	US	NV	41-46-56N	114-46-04W	CU AG AU	INTRUSIVE CONTACT
M035885	BUCKSKIN MINE	US	NV	38-59-37N	119-20-59W	AU CU	REPLACEMENT/VEIN
M231308	BUFFALO VALLEY MINE	US	NV	40-36-17N	117-14-56W	AU AG CU	VEIN/REPLACEMENT
M233362	BULLION CLAIM	US	NV	40-30-50N	116-00-39W	PB AG CU	VEIN-REPLACEMENT
M232252	BULLION HILL GROUP	US	NV	40-10-51N	116-34-02W	AG PB CU AU	VEIN
M242119	BUNKER-STONE NO 1 CL	US	NV	36-28-49N	115-56-31W	U CU	FRACTURE
M232375	BURNING MOSCOW MINE	US	NV	39-26-14N	115-59-30W	AG CU PB ZN	REPLACEMENT (STRATBA
M231079	BURRIS	US	NV	39-51-34N	119-36-42W	CU AG AU	VEIN

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M035621	CALAVADA MINE	US	NV	38-35-16N	118-05-19W	CU	CONTACT METASOMATIC
M232804	CALIFORNIA	US	NV	41-41-08N	116-09-19W	AG AU AU PB	REPLACEMENT VEIN
M232376	CALIFORNIA TUNNEL	US	NV	39-28-03N	115-58-48W	AG AU PB CU	REPLACEMENT (STRATAE
M031215	CARBONATE GROUP	US	NV	39-55-32N	115-32-52W	CU	FISSURE
M233264	CARLETON TUNNEL	US	NV	41-45-12N	115-32-02W	CU	VEIN
M035872	CASTING COPPER MINE	US	NV	38-56-50N	119-16-36W	CU AG AU GYP	SEDIMENTARY
M233428	CASTLE PARK	US	NV	41-07-32N	114-13-48W	CU AU AG	VEIN
M233813	CAVE VALLEY MINE	US	NV	38-38-37N	114-47-43W	PB AG CU V AU ZN AS CLY	REPLACEMENT; LODE; V
M035573	CHAMPION - ANDERSON	US	NV	38-30-42N	118-06-08W	CU FE	CONTACT METASOMATIC
M233218	CHAMPION-ANDERSON GR	US	NV	38-30-44N	118-06-05W	CU	CONTACT METAMORPHIC
M231312	CHASE MINE	US	NV	40-36-42N	117-02-12W	CU AU	VEIN
M030088	CHEROKEE MINE MINE	US	NV	37-15-57N	114-23-05W	AG CU PB ZN BA	VEIN
M233935	CHINAMAN MINE	US	NV	41-42-25N	114-45-24W	CU	VEIN
M231070	CINCH MINE	US	NV	39-51-27N	119-37-07W	CU AG AU	VEIN
M233873	CLARK GROUP	US	NV	41-47-60N	114-36-47W	CU AU AG	INTRUSIVE CONTACT (&
M241814	CLEVE CREEK PROSPECT	US	NV	39-13-50N	114-34-60W	CU FE MN? W?	VEIN
M232508	CLIPPER	US	NV	40-16-16N	116-48-37W	PB AG CU AU	
M031100	COLUMBIA MINE	US	NV	35-49-13N	115-28-31W	CU AG ZN AU	BRECCIA ZONE
M231315	CONTENTION MINE	US	NV	40-36-47N	117-02-23W	CU AU AG	VEIN, DISSEM., SECON
M232970	COON CREEK PROSPECTS	US	NV	41-49-02N	115-28-37W	CU W MO	VEIN, IGNEOUS CONTAC
M031217	COPPER BASIN GROUP	US	NV	39-56-20N	115-32-19W	CU AU	REPLACEMENT OF BRECC
W002666	COPPER BASIN OPEN PI	US	NV	40-36-44N	117-02-08W	CU MO AG PB ZN AU	REPLACEMENT, FRACTUR
M232035	COPPER BELL SHAFT	US	NV	37-30-44N	117-13-15W	CU AG AU	VEIN
M242319	COPPER BELLE CLAIMS	US	NV	37-30-28N	117-13-42W	CU	INSUFFICIENT DATA TO
M233360	COPPER BELLE MINE	US	NV	40-31-34N	116-00-09W	AG AU PB AU	REPLACEMENT
M231593	COPPER BLOSSOM GROUP	US	NV	38-51-23N	117-52-06W	CU AG	UNKNOWN
M035576	COPPER BUTTE CLAIM	US	NV	38-30-29N	118-05-46W	CU	CONTACT METASOMATIC
M233836	COPPER BUTTON	US	NV	41-48-29N	114-36-53W	CU AU AG	FRACTURES
D011062	COPPER CANYON MINE	US	NV	40-32- N	117-07- W	CU AU PB ZN W	SCHEELITE OCCURS ALO
M231317	COPPER CANYON MINE (	US	NV	40-31-58N	117-07-39W	CU	
M234145	COPPER CANYON OPEN P	US	NV	40-33-20N	117-07-00W	CU AU AG MO PB ZN	CONTACT METASOMATIC
M046569	COPPER CANYON PORPHR	US	NV	40-33-00N	117-08-00W	CU AG AU PD PGM ZN	PORPHYRY CU, MODEL 1
W000010	COPPER CANYON PORPHY	US	NV	40-32-30N	117-07-00W	CU AU AG PB ZN MO	DISSEMINATED, STOCKW
M232174	COPPER CHIEF MINE	US	NV	38-28-21N	117-59-01W	CU W	CONTACT METASOMATIC
M234118	COPPER CREEK	US	NV	40-18-40N	115-59-29W	CU AG	INSUFFICENT DATA TO
M234032	COPPER DEPOSITS OF C	US	NV	39-55-15N	118-10-08W	CU AG	INTRUSIVE CONTACT
M031101	COPPER GLANCE MINE	US	NV	35-51-04N	115-29-06W	CU	HYDROTHERMAL
M231319	COPPER GLANCE MINE	US	NV	40-38-20N	117-01-59W	CU FE	FRACTURE ZONE
M242240	COPPER HILL CLAIMS	US	NV	35-38-30N	115-24-56W	CU	FAULT-SHEAR ZONE
M233106	COPPER KETTLE PROSPE	US	NV	39-55-34N	118-09-52W	CU AG AU MO	
M233876	COPPER KING 1	US	NV	41-46-50N	114-46-35W	CU AU AG	QUARTZ VEIN
M233001	COPPER KING 1 TO 12	US	NV	38-05-25N	118-19-43W	CU	LODE
M233426	COPPER KING 2	US	NV	41-46-43N	114-47-12W	CU AU AG	VEIN
M233359	COPPER KING CLAIM	US	NV	40-31-32N	116-00-18W	CU	REPLACEMENT
M031222	COPPER KING GROUP	US	NV	39-57-10N	115-35-44W	CU AU	BRECCIA/VEIN
M231838	COPPER KING GROUP	US	NV	38-55-01N	117-34-59W	CU AG AU	VEIN
M231320	COPPER KING MINE	US	NV	40-37-01N	117-01-38W	CU AU AG	REPLACEMENT
M232286	COPPER KING MINE	US	NV	40-48-04N	116-14-18W	U AG PB AU ZN	VEIN (FAULT ZONE)
M233443	COPPER KING MINE	US	NV	40-30-23N	115-22-59W	CU AG AU	CONTACT-LENSES
M232716	COPPER MINE	US	NV	41-08-18N	118-33-15W	CU	VEIN
M233184	COPPER MOUNTAIN PROP	US	NV	38-51-38N	118-26-60W	CU	CONTACT METAMORPHIS
M035747	COPPER MTN. PROPERTY	US	NV	38-51-38N	118-27-02W	CU AU AG MO	CONTACT METASOMATIC
M231321	COPPER PRIZE MINE	US	NV	40-36-12N	117-01-11W	CU AU AG	FAULT ZONES; MASSIVE
M231819	COPPER PROSPECT	US	NV	38-17-27N	116-24-59W	AG CU PB ZN MO SB CD	PODS
M035617	COPPER QUEEN	US	NV	38-34-48N	118-05-42W	CU	CONTACT METASOMATIC
M231322	COPPER QUEEN #1 MINE	US	NV	40-37-12N	117-03-26W	CU AU AG PB	FAULT ZONE/SECONDARY
M231323	COPPER QUEEN #4 MINE	US	NV	40-37-18N	117-03-12W	CU AG AU PB	FAULT ZONE/SECONDARY
M241841	COPPER QUEEN CLAIM G	US	NV	38-14-10N	117-32-24W	CU PB AG U	VEIN
M231020	COPPER QUEEN MINE	US	NV	39-59-42N	118-49-43W	CU	TACTITE
M031208	COPPER QUEEN MINE	US	NV	39-42-10N	114-36-22W	CU AU AG	REPLACEMENT
M233212	COPPER QUEEN MINE	US	NV	38-34-52N	118-05-43W	CU	CONTACT METAMORPHIC
M233950	COPPER QUEEN MINE	US	NV	40-34-05N	114-48-53W	CU PB	BRECCIA FILL
M035858	COPPER RIDGE MINE	US	NV	38-58-45N	119-05-28W	CU	PORPHYRY CU
M233874	COPPER SHIELD	US	NV	41-46-04N	114-47-22W	CU MO FE PB AG AU	VEIN (MINERALS OCCUR
M242012	COPPER STACK CLAIMS	US	NV	37-33-27N	117-48-32W	CU AG W	CONTACT METAMORPHIC
M231038	COPPEREID	US	NV	39-50-49N	118-11-30W	CU FE SN AG AU	CONTACT METAMORPHIC
M231325	COPPEROPOLIS ADIT	US	NV	40-36-56N	117-02-22W	CU FE	VEIN

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M031102	COPPERSIDE MINE	US	NV	35-49-28N	115-32-49W	CU AG AU	LENSE
M031103	COSMOPOLITAN CLAIM	US	NV	35-49-33N	115-29-22W	CU	SHEAR ZONE
M232689	COVE MEADOW DEPOSIT	US	NV	41-33-51N	118-48-25W	CU AU AG FE	VEIN/SHEAR ZONE
M231326	CROWN POINT EXTENSIO	US	NV	40-37-04N	117-02-00W	CU	SECONDARY ENRICHMENT
M231083	CROWN PRINCE	US	NV	39-51-01N	119-35-50W	CU AG AU	VEIN
M241646	CULVERWELL ADIT	US	NV	37-24-27N	114-28-10W	CU AG W AU FE	CONTACT METASOMATIC
M242025	CUPRITE COPPER DEPOS	US	NV	37-30-27N	117-13-35W	CU AG PB AU FE	REPLACEMENT/VEIN
M232366	CYANIDE SHAFT	US	NV	39-30-55N	115-55-45W	AG AU PB CU	REPLACEMENT (STRATA
M233429	DEAD CEDAR MINE	US	NV	40-25-34N	114-11-56W	CU AG	REPLACEMENT
D011082	DEFIANCE MINE	US	NV	39-33- N	114-37- W	CU W	TACTITE
M031203	DEFIANCE MINE	US	NV	39-36-23N	114-34-01W	CU PB AU AG W	REPLACEMENT /FAULT Z
M233877	DELANO GROUP	US	NV	41-46-50N	114-46-35W	CU AU AG	VEIN
M233878	DELANO NO. 1 CLAIM	US	NV	41-46-50N	114-46-35W	CU AU AG	VEIN
M233879	DELANO NO. 2 CLAIM	US	NV	41-46-50N	114-46-35W	CU AU AG	VEINS
M233928	DELKER MINE	US	NV	40-23-49N	115-00-60W	CU	CONTACT METAMORPHIC
M233358	DELMAS MINE	US	NV	40-30-53N	116-01-04W	PB AU AG CU ZN	CONTACT METAMORPHIC
M242424	DETROIT MINE	US	NV			AG CU PB ZN AU	LODE, FISSURE, REPLA
M241619	DIG A LITTLE CLAIMS	US	NV	37-38-19N	114-19-31W	CU FE	VEIN, TACTITE
M241620	DIG MORE CLAIMS	US	NV	37-38-10N	114-18-17W	CU AG FE MN BA ZN	FRACTURE OR SHEAR ZO
M242474	DIPPER CLAIMS (SOUTH	US	NV			CU AU? AG?	SHEAR ZONE
M232363	DISTINCTION TUNNEL	US	NV	39-28-21N	115-58-27W	AG AU PB CU	REPLACEMENT (STRATAE
M241655	DON DALE MINE	US	NV	37-33-02N	115-46-20W	PB AG CU AU	VEIN
M032024	DON DALEMINEMINE	US	NV	37-32-13N	115-43-56W	PB AG CUAUAU	VEIN/FRACTURE ZONE/D
M233789	DONJEK #1	US	NV	39-46-10N	117-14-20W	CU	QUARTZ, BARITE VEINS
M031106	DOUBLEUP MINE	US	NV	35-56-40N	115-29-10W	CU ZN PB AG AU	HYDROTHERMAL
M035873	DOUGLAS HILL MINE	US	NV	38-57-04N	119-16-11W	CU AG AU GYP	SEDIMENTARY
M233053	DUNLAP MINE	US	NV	38-20-51N	117-58-01W	CU	SHEAR ZONE
D011108	DURFEE PROSPECT	US	NV	41-07-15N	117-16- W	CU W	SCHEELITE IS DISSEMI
M242475	DUTCHESS PROSPECT	US	NV			AG AU CU F MO?	VEINS
M233817	EAGLE ROCK MINE	US	NV	38-36-53N	114-45-13W	W CU FE AG AU PB SB	LODE (VEIN)
M035854	EAST SECTION 21 PROS	US	NV	38-58-37N	119-04-22W	CU	METASOMATIC VEIN
M233880	EFFIE FAY GROUP	US	NV	41-46-04N	114-47-22W	CU MO FE PB AG AU	VEIN (MINERALS OCCUR
M242476	ELECTRIC, LEVY AND F	US	NV			CU W?	INTRUSIVE CONTACT
W002893	ELY DISTRICT (ROBINS	US	NV	39-15-25N	114-59-42W	AU AG CU PB ZN MO	GOSSAN, BEDDED DEPOS
M035610	EMMA - DANDY CLAIM	US	NV	38-34-32N	118-06-16W	CU W	CONTACT METASOMATIC
M031292	EMMA MINE (PIT)	US	NV	39-15-18N	115-00-13W	AG CU	DISSEMINATED?
M231333	EMPIRE MINE	US	NV	40-36-22N	117-01-44W	CU	
M233881	EMPIRE MINE	US	NV	41-46-40N	114-47-15W	CU	VEIN
M035867	EMPIRE NEVADA M & S	US	NV	38-56-49N	119-12-14W	CU	CU PORPHYRY
M231721	ENRIQUEZ PROSPECT	US	NV	39-09-30N	116-52-53W	CU AU AG	
M035623	ESMERALDA	US	NV	38-32-32N	118-08-15W	CU	REPLACEMENT
M233995	FAITH CLAIMS	US	NV	41-43-04N	114-43-46W	CU	VEIN/INTRUSIVE CONTA
M031107	FITZHUGH LEE MINE	US	NV	35-49-03N	115-32-20W	CU AG	
M233882	FLORENCE GROUP	US	NV	41-45-25N	114-48-54W	CU FE MO	VEINS (MIBERALS OCCU
M231756	FLORENCE MINE	US	NV	38-19-50N	117-16-23W	AG PB CU AU ZN	VEIN
M241627	FORLORN HOPE MINE	US	NV	37-55-01N	114-35-55W	PB CU ZN AG	REPLACEMENT VEIN
W700601	FORTITUDE MINE	US	NV			AU AG CU	
M231089	FRANCO-AMERICAN	US	NV	39-51-46N	119-37-14W	CU AG AU PB ZN	VEIN
M242116	FSW CLAIMS	US	NV	40-26-38N	114-13-31W	CU AG BA	REPLACEMENT/FAULT ZO
M035607	GEORGE GIROUX JR.	US	NV	38-33-59N	118-04-34W	CU	CONTACT METASOMATIC
M232717	GILBERT AND STROUD M	US	NV	41-02-60N	118-31-53W	AU CU	
M233220	GIROUX GROUP	US	NV	38-35-15N	118-05-22W	CU	CONTACT METAMORPHIC
M233750	GOAT SPRING PROSPECT	US	NV	39-22-29N	114-52-21W	CU	REPLACEMENT ALONG SH
M233208	GOLD BUG MINE	US	NV	38-29-06N	118-25-54W	CU	TACTITE
M232100	GOLD EAGLE MINE	US	NV	37-57-12N	117-29-10W	ZN PB CU AG SB AS	REPLACEMENT /INTRUSI
M232511	GOLD PAN	US	NV	40-18-60N	116-41-25W	AU AG CU PB	VEIN (FAULT ZONE)
M231265	GOLDEN ERA GROUP	US	NV	40-38-37N	117-03-32W	AG AU PB CU	SHEAR ZONE
M242028	GOLDFIELD-MIDWAY-BUL	US	NV	37-30-24N	117-13-43W	CU AG AU	VEIN/REPLACEMENT
M231093	GOODHOPE	US	NV	39-50-58N	119-35-15W	CU AG AU	VEIN
M243098	GOOD HOPE PROSPECT	US	NV			AU AG CU	VEIN/REPLACEMENT
M242477	GOSSAN	US	NV			PB ZN CU AG	REPLACEMENT
M242023	GRACE CLAIMS	US	NV	37-28-42N	117-19-46W	CU AU AG	FAULT, SECONDARY ALT
M231268	GRACIE MINE	US	NV	40-39-45N	117-05-39W	CU AG AU FE	
M233263	GRAHAM	US	NV	41-42-05N	115-29-54W	CU AU SB AG	VEIN
M031204	GRAND DEPOSIT MINE	US	NV	39-36-55N	114-33-38W	PB CU ZN AG AU	SOLUTION CAVITIES /R
M232513	GRAND PRISE	US	NV	40-21-18N	116-43-24W	AU AG PB CU	VEIN
M241816	GRAND VIEW	US	NV	38-58-22N	117-44-31W	CU AG W	QTZ VEINS ASSOCIATED

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M231843	GRANTSVILLE MINE	US	NV	38-50-44N	117-34-30W	AG PB ZN CU W F	REPLACEMENT
M045354	GREAT EASTERN	US	NV	36-37-02N	114-08-55W	PT CU NI CO	UNKNOWN LODE ASSOCIA
M031108	GREEN COPPER MINE	US	NV	35-51-04N	115-29-06W	CU	SHEAR ZONE
M233883	GREEN MONSTER CLAIM	US	NV	41-46-33N	114-46-44W	CU AU AG	INTRUSIVE CONTACT, V
M241917	GREENS CAMP	US	NV	37-19-48N	117-23-27W	U? CU PB ZN AU AG	VEIN
M232514	GREY EAGLE MINE	US	NV	40-22-45N	116-45-06W	AG AU CU PB ZN MO W	VEIN
M233657	GROUNDHOG NO. 1 AND	US	NV	38-57-04N	117-19-07W	CU AU AG BA SB MN	VEIN
M031053	GUDICE CLAIMS	US	NV	36-20-12N	114-10-36W	CU	
M233884	HANKS-MILLER-LEACH G	US	NV	41-41-36N	114-43-59W	CU AU AG	INTRUSIVE CONTACT, V
M241958	HARDHAT WORKINGS	US	NV	37-13-25N	116-03-30W	MO CU	VEIN, JOINTS
M231278	HARMONY MINE	US	NV	40-57-06N	117-39-13W	CU AU AG	VEIN
M233357	HECLA	US	NV	40-31-04N	116-00-59W	CU AG AU	REPLACEMENT
M242402	HELPMEET CLAIM	US	NV	37-31-38N	117-37-00W	CU BA	VEIN
M031253	HENDRIX	US	NV	38-54-29N	114-55-43W	CU AG AU PB ZN	VEIN
M242173	HENDRYS CREEK PROSPE	US	NV	39-12-04N	114-03-31W	PB AG BA CU	REPLACEMENT/FAULT ZO
M231342	HENRIETTA MINE	US	NV	40-36-31N	117-01-32W	CU FE AU AG	SECONDARY ENRICHMENT
M233858	HIGH ORE MINE	US	NV	41-42-38N	114-43-35W	CU AG	VEIN ALONG FISSURE I
M031110	HIGHLINE AND RED STR	US	NV	35-49-52N	115-33-02W	CU AU AG CO	SHEAR ZONE
M242426	HILLSIDE MINE	US	NV			AG AU PB CU ZN FE MN	VEIN/REPLACEMENT
M242427	HOME RUN MINE	US	NV			CU AG PB MN	LODE-FISSURE
M035871	HOMESTAKE MINE	US	NV	38-55-05N	119-15-22W	CU AG AU	REPLACEMENT ?
M241843	HOMESTAKE PROSPECT	US	NV	38-14-44N	117-33-15W	CU	DISSEMINATED
M233997	HOPE CLAIMS	US	NV	41-43-53N	114-43-49W	CU	FRACTURE-FILLING/REP
M242296	HUNTLEY-DANIEL PROPE	US	NV	38-14-28N	117-33-05W	CU GEM MO	PORPHYRY
M233225	IDAHO GROUP	US	NV	38-35-03N	118-06-29W	CU AU	VEINS
M035567	IDEAL MINE	US	NV	38-30-30N	118-07-45W	CU U	CONTACT METASOMATIC
M233862	ILO TUNNEL	US	NV	41-46-48N	114-46-13W	CU AG AU	VEIN ? (INTRUSIVE CO
M232086	INDIAN SPRING COPPER	US	NV	37-25-10N	117-37-38W	CU AU AG	VEIN
M242428	INMAN MINE	US	NV			CU PB ZN AG FE	INTERSECTING VEINS
M031114	IRELAND MINE	US	NV	35-45-43N	115-25-02W	PB CU ZN	REPLACEMENT
M231544	IRON RAIL GROUP	US	NV	38-42-33N	117-34-25W	PB ZN CU MN AG CD SB AS BA	FISSURE VEIN
M031115	IRONSIDE MINE	US	NV	35-49-53N	115-33-39W	CU	SHEAR ZONE
M231488	JAMESONITE PROSPECT	US	NV	40-15-36N	118-08-57W	CU AG AU	VEINS
M233818	JERRY CLAIMS	US	NV	38-36-46N	114-44-13W	CU ZN W F	REPLACEMENT
M234019	JIM CLAIMS	US	NV	41-52-55N	115-04-13W	CU	REPLACEMENT
M241692	JOHNSON CLAIMS	US	NV	37-36-18N	115-38-36W	AG PB CU BA ZN	VEIN
M233860	JOHNSON MINE & GROUP	US	NV	41-41-14N	114-37-52W	CU AG AU MO	INTRUSIVE CONTACT (&
M231096	JONES-KINCAID MINE	US	NV	39-51-15N	119-36-05W	CU AG AU	VEIN
M241996	JOSHUA CLAIMS	US	NV	37-33-22N	117-24-19W	PB AG? CU AU?	VEIN
M233861	JULES VERNE CLAIM	US	NV	41-46-47N	114-46-18W	CU AG AU	VEIN
M231097	JUMBO	US	NV	39-51-02N	119-37-31W	CU AG AU PB ZN	VEIN
M233863	JUNCTION GROUP	US	NV	41-48-41N	114-49-35W	CU	VEIN (& INTRUSIVE CO
M233108	K.D. GROUP	US	NV	39-56-07N	118-08-49W	U FE CU	VEIN/FAULT ZONE
M031202	KANSAS MINE	US	NV	39-36-07N	114-33-57W	CU FE S AG AU PB	TACTITE
M233729	KENO #3 (DRILL RD &	US	NV	39-18-07N	114-45-42W	CU	VEIN
M233508	KEY FLOWER MINE	US	NV	38-54-43N	117-47-08W	AU AG CU PB	VEIN
M045355	KEY WEST	US	NV	36-37-02N	114-08-55W	PT NI CU CO AG PD	UNKNOWN LODE ASSOCIA
M031116	KEYSTONE MINE	US	NV	35-50-11N	115-31-19W	AU CU AG	DIKE/DISSEMINATED
M231406	KIMBERLY CONSOLIDATE	US	NV	40-24-56N	116-48-20W	AU AG CU PB AS ZN	VEIN, VEINLET
M241693	KINSEY CLAIMS	US	NV	00-00-00N	000-00-00W	AG PB CU ZN MN FE	VEIN/FAULT ZONE
M031060	LAKEVIEW MINE	US	NV	36-09-30N	114-17-34W	CU AU AG	FAULT ZONE
M232515	LANDER MINE	US	NV	40-19-56N	116-42-33W	PB AG AU CU	FAULT ZONE
M242166	LEAD KING MINE	US	NV	39-29-37N	114-17-37W	PB AG CU ZN AU	UNKNOWN
M233344	LEE	US	NV	40-30-23N	116-01-09W	AG AU CU PB	REPLACEMENT-VEIN
M233864	LENA SHAFT	US	NV	41-46-29N	114-47-54W	CU	VEIN, REPLACEMENT
M233938	LEWIS	US	NV	41-46-40N	114-45-43W	CU AG	INTRUSIVE VEIN
M031297	LIBERTY PIT	US	NV	39-15-28N	114-59-52W	CU MO AG AU ZN PB PT	PORPHYRY CU, MODEL 1
M241942	LIDA MILLSITE	US	NV	37-29-01N	117-24-01W	CU AG AU? MO?	VEINS, HYDROTHERMAL
M031061	LINCOLN MINE	US	NV	36-19-52N	114-10-59W	CU	POROUS BEDDING PLANE
M031118	LINCOLN MINE	US	NV	35-46-40N	115-25-14W	CU AG AU	LENSE
M232516	LITTLE GEM	US	NV	40-19-01N	116-41-56W	AG CU AS AU PB	VEIN
M234018	LOCATION 220	US	NV	41-44-08N	114-48-52W	CU	VEINS
M233866	LONDON CLAIM	US	NV	41-46-45N	114-45-54W	CU AG AU	VEIN
M241927	LOOK OUT MINE	US	NV	37-35-51N	117-55-44W	CU AU	VEIN (?)
M241774	LUCKY CLAIM	US	NV	36-38-38N	116-20-48W	CU	HYDROTHERMAL
M031207	LUCKY DEPOSIT	US	NV	39-41-51N	114-35-17W	FE PB AG MN CU AU	LENSES, FISSURE
M231985	LUCKY GROUP	US	NV	36-38-39N	116-20-49W	CU	VEIN

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M032058	LUCKY PROSPECT	US	NV	37-15-15N	114-22-10W	PB ZN CU	VEIN
M035874	LUDWIG MINE	US	NV	38-57-25N	119-16-25W	CU AG AU GYP NI	SEDIMENTARY
M035626	LUNING GOLD CONSOLID	US	NV	38-35-09N	118-09-28W	AU AG PB CU FE	FISSURE VEIN (LODE)
M060272	MAJUBA HILL MINE	US	NV	40-41-00N	118-32-00W	CU SN AU AG PB MO AS U	FAULT; VEIN
M035868	MALACHITE MINE	US	NV	38-56-42N	119-13-14W	CU AU AG GYP	SEDIMENTARY
M233867	MAMMOTH "MINE"	US	NV	41-46-51N	114-48-10W	CU AG AU	INTRUSIVE CONTACT &
M233868	MARSHALL GROUP	US	NV	41-46-50N	114-46-35W	CU AU AG	VEIN
M035865	MASON VALLEY MINE	US	NV	38-56-56N	119-13-15W	CU AU AG GYP FE	SEDIMENTARY
M035581	MASTODON MINE	US	NV	38-30-20N	118-04-53W	CU	CONTACT METASOMATIC
M035580	MAYFLOWER MINE	US	NV	38-30-25N	118-05-06W	CU	CONTACT METASOMATIC
M233224	MAYFLOWER PROPERTY	US	NV	38-30-31N	118-04-37W	CU	CONTACT METAMORPHIC
M035869	MCCONNELL MINE	US	NV	38-56-33N	119-13-45W	CU AU AG GYP	SEDIMENTARY
M233346	MENDOTA	US	NV	40-31-11N	116-00-25W	CU AG	VEIN
M232345	METAMORAS SHAFT	US	NV	39-28-36N	115-59-29W	AG AU PB CU	REPLACEMENT (STRATAE
M243041	MIDDAY PROSPECTS	US	NV			CU MO AG	VEIN
M035618	MILDRED CLAIM	US	NV	38-34-51N	118-05-40W	CU AG MO PB ZN	CONTACT METASOMATIC
M233996	MINERAL HILL CLAIM	US	NV	41-43-51N	114-49-43W	CU	FISSURE
M231356	MISS NEVADA CLAIM	US	NV	40-37-05N	117-04-36W	MO CU AU AG FE PB ZN	FAULT ZONE/VEIN
M233451	MIZPAH CONSOLIDATED	US	NV	40-23-41N	114-33-29W	CU AU	VEIN
M233752	MOBILE & EQUALITY PA	US	NV	39-13-47N	115-31-04W	AG PB CU	FAULT ZONE
M231358	MODOC MINE	US	NV	40-31-52N	117-10-52W	CU AU AG PB MO MN	VEIN/SHEAR ZONE
M242480	MOLY PROSPECT	US	NV			MO CU	VEIN? DISSEMINATED?
M241940	MONACO CLAIMS	US	NV	37-26-53N	117-28-02W	AU AG PB ZN CO	FAULT, HYDROTHERMAL,
M032082	MONARCH MINE	US	NV	38-03-09N	114-35-45W	PB CU AG	VEIN/BEDDED
M232089	MONARCH CLAIM GROUP	US	NV	37-27-26N	117-30-42W	CU AG AU	VEIN
M233479	MONARCH RANCH	US	NV	38-31-46N	116-53-48W	NI CR CO CU	SHEAR ZONE
M241667	MONKEY WRENCH WASH D	US	NV	37-29-25N	114-47-40W	AU? CU FE	VEIN?/REPLACEMENT/FA
M035861	MONTANA - YERINGTON	US	NV	38-59-11N	119-13-33W	CU AG AU FE	REPLACEMENT
M231270	MORNINGSTAR MINE	US	NV	40-41-21N	117-04-41W	CU AU AG	VEIN
M031296	MORRIS-BROOKS SHAFT	US	NV	39-15-36N	115-01-11W	CU	DISSEMINATED PORPHYR
M031265	MOUNT WHEELER	US	NV	38-54-04N	114-20-21W	W BE PB ZN AG CU F LI Y	VEINS OF QUARTZ & CA
W002712	MOUNTAIN CITY MINE	US	NV	41-48-60N	115-58-00W	CU AG AU	MASSIVE SULFIDE AND
M031216	MOUNTAIN VIEW GROUP	US	NV	39-56-04N	115-32-30W	CU	BRECCIA ZONE
M031201	MUNCY CREEK MINE	US	NV	39-34-51N	114-35-02W	CU PB ZN AG	REPLACEMENT /FISSURE
M241581	MURPHY PROSPECT	US	NV	37-53-34N	114-36-45W	CU W MN FE	VEIN
M233674	MURRAY GOLD PROSPECT	US	NV	38-51-05N	117-34-24W	AU AG CU	VEIN
M035863	NATIVE COPPER	US	NV	38-58-18N	119-12-38W	CU	REPLACEMENT
M241621	NBMG SAMPLE LOCATION	US	NV	37-36-60N	114-19-11W	CU AG FE PB? MO	SHEAR ZONE
M241622	NBMG SAMPLE LOCATION	US	NV	37-38-27N	114-19-53W	CU PB AG	FRACTURE ZONE, DIKE,
M241669	NBMG SAMPLE LOCATION	US	NV	37-31-02N	114-47-30W	CU PB? AG? AU? MO	SHEAR ZONE/VEIN/REPL
M241672	NBMG SAMPLE LOCATION	US	NV	37-27-34N	114-45-52W	AU AG CU PB SB	VEIN/FAULT ZONE
M241699	NBMG SAMPLE LOCATION	US	NV	37-55-55N	115-35-12W	PB AG? ZN? CU BA	CONTACT METASOMATIC
M242121	NBMG SAMPLE SITE	US	NV	37-53-18N	118-19-21W	AG PB AU CU	VEIN
M242354	NBMG SAMPLE SITE 112	US	NV	37-33-48N	117-29-47W	PB AG CU AU	VEIN/CONTACT METASOM
M242044	NBMG SAMPLE SITE 137	US	NV	37-57-55N	117-25-41W	CU	FAULT-SECONDARY ALTE
M242045	NBMG SAMPLE SITE 137	US	NV	37-57-42N	117-25-54W	AU AG CU	REPLACEMENT
M241657	NBMG SAMPLE SITE 147	US	NV	37-33-20N	115-46-18W	AU? AG CU MN	VEIN
M241538	NBMG SAMPLE SITE 173	US	NV	37-15-25N	114-22-23W	CU PB AG ZN BA V	VEIN
M243052	NBMG SAMPLE SITE 383	US	NV			AG BA CU PB	VEIN
M243053	NBMG SAMPLE SITE 383	US	NV			CU AG ZN	CONTACT METAMORPHIC
M243055	NBMG SAMPLE SITE 383	US	NV			AG CU PB ZN	CONTACT METAMORPHIC
M243106	NBMG SAMPLE SITE 385	US	NV			AG CU MO	VEIN
M243008	NBMG SAMPLE SITE 387	US	NV			CU AG SN	GOSSAN?
M243013	NBMG SAMPLE SITE 387	US	NV			PB ZN AG CU	VEIN
M243014	NBMG SAMPLE SITE 387	US	NV			ZN PB CU	VEIN
M243003	NBMG SAMPLE SITE 388	US	NV			CU AG ZN	GOSSAN/CONTACT ZONE
M243075	NBMG SAMPLE SITE 393	US	NV			AG CU MO PB	VEINS
M243076	NBMG SAMPLE SITE 393	US	NV			AG CU PB	VEIN
M243077	NBMG SAMPLE SITE 393	US	NV			AG CU MO PB AU SB	VEIN
M243078	NBMG SAMPLE SITE 393	US	NV			AG? CU PB SB BI	VEIN
M243085	NBMG SAMPLE SITE 394	US	NV			AG CU PB	VEIN
M243088	NBMG SAMPLE SITE 394	US	NV			AG CU MO PB BI AU	VEIN
M243089	NBMG SAMPLE SITE 394	US	NV			AG CU BI SB ZN AU	VEIN
M243091	NBMG SAMPLE SITE 394	US	NV			AG CU MO BI PB SB ZN	VEIN/IGNEOUS CONTACT
M243092	NBMG SAMPLE SITE 394	US	NV			AG CU MO W MN PB ZN	CONTACT METAMORPHIC
M243093	NBMG SAMPLE SITE 394	US	NV			AG CU MO PB BI	VEIN/SHEAR ZONE
M243095	NBMG SAMPLE SITE 395	US	NV			AG CU PB BI MO SB	QUARTZ VEIN

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M241507	NBMG SAMPLE SITE 787	US	NV	37-27-47N	114-05-33W	PB ZN CU MO BA	SHEAR ZONE?
M241698	NBMG SAMPLE SITES 17	US	NV	37-55-29N	115-35-13W	PB ZN? AG? CU BA	SILICIFIED FAULT ZON
M243109	NBMG SAMPLE SITES 38	US	NV			AG CU PB ZN FE MN	VEINS/SHEAR ZONES
M035852	NE SECTION 13 PROSPE	US	NV	38-59-37N	119-01-10W	CU	
M035849	NE SECTION 25 PROSPE	US	NV	38-57-53N	119-00-59W	CU	
M233773	NEUTRON #2	US	NV	39-44-45N	115-50-54W	CU	
M035877	NEVADA - DENVER MINE	US	NV	38-58-47N	119-16-04W	CU AG AU GYP	SEDIMENTARY
M231164	NEVADA CENTRAL MINE	US	NV	39-33-38N	119-54-48W	CU	STOCKWORKS
M233869	NEVADA MINE	US	NV	41-44-03N	114-49-58W	CU FE PB	INTRUSIVE CONTACT
M233870	NEVADA-BELLEVIEW MIN	US	NV	41-46-50N	114-46-35W	CU AU AG	4 VEINS + INTRUSIVE
M233944	NEVER SWEAT	US	NV	40-34-12N	114-49-05W	CU	SHEAR ZONE
M233837	NEW YORK GROUP	US	NV	41-46-38N	114-49-52W	CU	VEIN (& INTRUSIVE CO
M233230	NEW YORK MINE	US	NV	38-30-27N	118-04-12W	CU	CONTACT METAMORPHIC
D000026	NINETY-NINE MINE	US	NV	35-57-07N	115-27-54W	PB CU AG AU V	REPLACEMENT
M035894	NO. SECTION 14 PROSP	US	NV	38-51-58N	119-15-55W	CU	
M032031	NON PAREILMINEMINE	US	NV	37-52-48N	114-36-38W	AU AG CU FE MN	VEIN
M231365	NORTH BUTTE MINE	US	NV	40-34-00N	117-06-18W	CU AG PB ZN AU AS SB	VEIN, SHEAR ZONE
M231084	NORTH CARSON	US	NV	39-12-29N	119-45-56W	CU PB AG	INTRUSIVE CONTACT
M035850	NORTH SECTION 25 PRO	US	NV	38-57-58N	119-01-28W	CU	
M231366	NORTHERN LIGHT CLAIM	US	NV	40-36-59N	117-01-39W	CU	VEIN?
M035059	NORTHERN LIGHTS	US	NV	38-54-30N	118-53-37W	CU	
M035851	NW SECTION 19 PROSPE	US	NV	38-58-55N	119-00-35W	CU	
M035856	NW SECTION 21 PROSPE	US	NV	38-58-54N	119-05-02W	CU	
M035847	NW SECTION 30 PROSPE	US	NV	38-57-54N	119-00-20W	CU	
M241583	NYLON SHAFT	US	NV	37-53-08N	114-36-14W	PB CU AG MN FE ZN	SHEAR (FISSURE?) VEI
M242434	O.S.L. MINE	US	NV			AG CU FE PB	REPLACEMENT/LODE
M030026	ODDIE TUNNEL (BALD M	US	NV	39-56-22N	115-33-46W	MO CU	DISSEMINATED, PORPHY
M232210	OLD WHALEN MINE	US	NV	40-00-15N	116-06-05W	CU AG PB	REPLACEMENT (STRATAE
M242315	OLDT CLAIM	US	NV	37-30-17N	117-13-39W	HG SIL S	VEIN
M234013	OPAL HILL CLAIMS	US	NV	41-42-59N	114-35-23W	CU	SHEAR ZONE
M241647	OPEN PIT PENNSYLVANI	US	NV	37-24-49N	114-28-29W	CU AG CU BA?	VEIN, FAULT/BRECCIA
M242383	ORIENTAL WASH PROSPE	US	NV	37-13-06N	117-27-44W	CU AU? FE	VEIN/ REPLACEMENT/CO
M045356	ORO AMIGO MINE	US	NV	35-50-41N	115-32-58W	AG AU CU PT	EPITHERMAL VEIN
M231100	OWL LODE	US	NV	39-50-54N	119-36-57W	CU AG AU PB ZN	VEIN
M233852	PALO ALTO MINE	US	NV	41-46-59N	114-46-49W	CU AU AG	VEIN (INGRANODIORITE
M242440	PATIENCE CLAIMS	US	NV			AG AU CU BA HG MN AS SR	LODE
M233839	PAUL CLAIM	US	NV	41-46-56N	114-48-58W	CU	INSUFFICENT DATA TO
M231368	PEDRO (GOFF) MINE	US	NV	40-36-55N	117-02-00W	CU AU AG	SECONDARY ENRICHMENT
M032086	PENNSYLVANIA MINE (N	US	NV	37-25-04N	114-28-28W	CU AG AU	VEIN/FAULT BRECCIA F
M241648	PENNSYLVANIA MINE (S	US	NV	37-25-00N	114-28-28W	CU AG? AU?	VEIN/FAULT ZONE
M233347	PHILLIPINE NO. 2 CLA	US	NV	40-31-32N	116-00-18W	CU	REPLACEMENT
M035613	PILOT RANGE GROUP	US	NV	36-34-43N	118-06-53W	CU AU AG	CONTACT METASOMATIC
M232851	PINE CLAIM	US	NV	39-46-45N	117-15-34W	AG CU PB	VEIN
M035121	PINE TREE MINE	US	NV	38-42-07N	118-00-59W	CU	VEIN / FRACTURE ZONE
M233055	PINE TREE MINE	US	NV	38-22-40N	118-00-41W	CU	SHEAR ZONE
M032059	PITTSBURG MINE MIN	US	NV	37-13-33N	114-18-49W	AG CU PB? AS? CL? BA MO	VEIN/FAULT ZONE /FAU
M233735	PIXIE CLAIM	US	NV	39-47-15N	115-51-32W	AG CU ZN	HYDROTHERMAL VEIN.
M035915	PREACHERS MINE	US	NV	38-52-13N	119-37-26W	CU AU	VEIN
M231174	PREMIER MINE	US	NV	39-09-33N	119-48-50W	CU AG AU SB BI PB CO	VEIN (?)
M242371	PRESIDENT MINE	US	NV	37-27-03N	117-29-19W	AU AG CU PB?	VEIN
M241961	PRINCE CLAIMS	US	NV	37-11-24N	116-00-23W	CU FE	VEIN/REPLACEMENT
M232208	PRINCE OF WALES MINE	US	NV	39-55-43N	116-06-59W	AG PB CU AU	REPLACEMENT (STRATAE
M241960	PROSPECTS NE OF MICH	US	NV	37-11-01N	116-00-31W	CU AG? FE MN	VEIN
M035327	QUAILEY MINE	US	NV	38-19-03N	118-30-04W	AG CU AU W	METAMORPHIC
M030081	QUARTETTE MINE	US	NV	35-27-09N	114-55-13W	AU CU AG PB MO	VEIN
M242124	QUEEN MINE	US	NV	37-53-23N	118-19-01W	AG PB AU CU	VEIN
M232849	QUEEN PROSPECT	US	NV	39-46-53N	117-16-23W	AG CU PB	VEIN
M233844	R.O.C. MINE	US	NV	41-41-57N	114-41-01W	CU AG	DIKE-VEIN
M233783	RAND CLAIMS PROSPECT	US	NV	39-40-13N	114-59-15W	ZN CU	JSP BRX SHEAR ZONE (
M233843	RATTLER MINE	US	NV	41-46-50N	114-47-51W	CU AG AU	INTRUSIVE CONTACT
M231372	RAVEN ADIT	US	NV	40-36-39N	117-02-21W	CU GEM	
M233748	RAY DAR (#2)	US	NV	39-25-47N	114-51-32W	CU PB AG	REPLACEMENT ALONG SH
M242366	REA COPPER GROUP	US	NV	37-28-16N	117-22-23W	CU	VEIN/LODE
M232848	RED BIRD PROSPECT	US	NV	39-45-37N	117-16-49W	AG CU	VEIN
M232714	RED BUTTE DISTRICT	US	NV	41-06-21N	118-35-02W	CU PB ZN AG SB AU	VEINS AND DISSEMINAT
M232720	RED BUTTE MINE	US	NV	41-06-29N	118-34-52W	CU PB ZN AG BA	VEINS AND DISSEMINAT
M035896	RED CANYON CLAIMS	US	NV	38-50-59N	119-25-40W	CU S	CONTACT METASOMATIC

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M231170	RED METALS MINE	US	NV	39-36-42N	119-56-53W	CU AU	VEIN-SHEAR
M031224	REDBIRD GROUP	US	NV	39-56-34N	115-34-56W	CU	
M231169	REDELIUS CLAIMS	US	NV	39-38-09N	119-55-18W	CU AU AG	VEIN
M031249	REES	US	NV	39-45-12N	114-17-02W	W AG CU	VEIN, LENSE
M231380	RENTON COPPER PROSPE	US	NV	40-37-58N	117-11-20W	CU FE	UNKNOWN
M231846	RICHMOND MINE	US	NV	38-52-29N	117-34-47W	PB CU SB AG AU FE	VEIN
M234151	RIDGE MINE	US	NV	40-40-05N	117-04-51W	CU AG AU PB	SHEAR ZONE
M233620	RIFLE CLAIMS	US	NV	38-10-48N	116-53-38W	CU GEM AU AG	VEIN
M233366	RIO TINTE MINE	US	NV	41-48-43N	115-58-50W	AG PB CU AU ZN	MASSIVE SULFIDE
M046657	ROBINSON DISTRICT	US	NV	39-15-00N	115-00-00W	PT PD AU AG CU MO RE	PORPHYRY COPPER, MOD
M031127	ROSE MINE	US	NV	35-49-07N	115-31-02W	CU AG AU PB	
M231745	ROYSTON COALITION MI	US	NV	38-19-20N	117-30-60W	PB AG CU AU GEM	VEIN
M232319	RUBY CLAIM	US	NV	40-34-02N	116-15-25W	CU BA	VEIN
M242352	RUBY CLAIMS	US	NV	37-31-16N	117-30-43W	PB AG AU? CU	VEIN
M035914	RUBY HILL MINE	US	NV	38-50-46N	119-34-37W	CU AU AG	VEIN
W031574	RUTH MINE	US	NV	39-15-28N	114-58-16W	CU MO RE AU AG	DISSEMINATED, REPLAC
M231619	SAILOR BOY MINE	US	NV	38-42-55N	116-58-30W	CU MN	VEIN
M035614	SAINT PATRICK	US	NV	38-35-03N	118-06-29W	CU	CONTACT METASOMATIC
M233845	SALT LAKE GROUP	US	NV	40-51-42N	114-48-37W	CU FE MO	VEIN (AND IN MINERAL
M233701	SAM LOC. 715	US	NV	39-21-05N	115-04-05W	CU	SHEAR?
M233704	SAM LOC. 720	US	NV	39-16-28N	115-01-25W	ZN CU	VEIN, FRACTURE FILLI
M233708	SAM LOC. 951&952	US	NV	39-16-00N	114-55-01W	CU	REPLACEMENT (ALONG B
M233703	SAM. LOC. 718	US	NV	39-18-34N	115-01-03W	CU	VEIN?
M233700	SAM. LOC. 944&945	US	NV	39-16-44N	114-54-15W	CU PB	REPLACEMENT/QTZ VEIN
M241626	SAMPLE SITE 1393	US	NV	37-57-57N	114-35-33W	PB CU BA AG SB? ZN	VEIN
W016420	SANTA FE-LUNING	US	NV	38-32-00N	118-06-00W	CU AG AU W FE PB	VEIN/REPLACEMENT
M233811	SCHWARTZ TUNNEL	US	NV	38-37-29N	114-43-43W	F CU ZN W AG MO	REPLACEMENT; VEIN ST
M035844	SE SECTION 2 PROSPEC	US	NV	38-55-42N	119-02-08W	CU	
M035895	SECTION 14 PROSPECTS	US	NV	38-54-10N	119-15-60W	CU	
M035840	SECTION 15 PROSPECTS	US	NV	38-54-18N	119-03-47W	CU	
M035838	SECTION 17 PROSPECTS	US	NV	38-54-11N	119-12-47W	CU	
M035837	SECTION 18 PROSPECTS	US	NV	38-54-06N	119-13-26W	CU	
M035927	SECTION 21 PROSPECT	US	NV	38-58-46N	119-51-05W	CU	VEIN
M035891	SECTION 23 AND 26 PR	US	NV	38-58-09N	119-16-09W	CU	
M035890	SECTION 23 PROSPECTS	US	NV	38-58-29N	119-15-35W	CU	
M035862	SECTION 24/19 PROSPE	US	NV	38-58-49N	119-14-02W	CU	
M035835	SECTION 30 PROSPECTS	US	NV	38-52-37N	119-13-36W	CU	
M231160	SECTION 34 MINE	US	NV	39-38-48N	119-57-05W	CU	VEIN
M035893	SECTION 35 PROSPECTS	US	NV	38-56-45N	119-16-17W	CU	REPLACEMENT
M035839	SECTION 8 PROSPECTS	US	NV	38-54-55N	119-12-50W	CU	
M035836	SECTIONS 20 , 21 , 2	US	NV	38-52-51N	119-11-59W	CU	
M035845	SECTIONS 36 , 31 PRO	US	NV	38-56-32N	119-00-50W	CU GYP	SEDIMENTARY
M232310	SEPTEMBER MORN	US	NV	39-47-60N	116-07-03W	CU AG AU	
M241641	SHALLOW PROSPECT SHA	US	NV	37-56-37N	114-36-20W	PB CU	VEIN
M242227	SHOSHONE CONS. LODE	US	NV	35-27-57N	114-51-29W	AU AG PB CU ZN	VEINS
M232161	SIB PROSPECT	US	NV	37-31-45N	117-46-02W	PB CU SB AG AU	VEIN
M233840	SILVER CIRCLE	US	NV	41-46-50N	114-47-48W	CU AG PB AU	INTRUSIVE CONTACT ZO
M035588	SILVER GUARDIAN MINE	US	NV	38-30-42N	118-04-33W	AG CU	FISSURE VEIN
M233814	SILVER LODE	US	NV	38-35-46N	114-43-19W	AG CU PB SB	SHEAR; REPLACEMENT;
M231288	SILVER LODE CLAIMS	US	NV	40-59-27N	117-23-58W	AU AG CU W	VEIN
M060378	SILVER REEF MINE	US	NV	40-32-33N	118-08-49W	AG PB SB CU AU ZN	VEIN
M233056	SILVER-TUNGSTEN KING	US	NV	38-23-34N	117-53-14W	W CU	CONTACT METASOMATIC
M242235	SINGER MINE	US	NV	35-46-37N	115-31-31W	AG PB CU ZN AU U	BRECCIA ZONE
M241585	SMALL PROSPECT PIT	US	NV	37-53-11N	114-36-37W	CU FE MN	VEIN
M031129	SNOWSTORM MINE	US	NV	35-52-32N	115-29-09W	CU	HYDROTHERMAL
M035900	SOUTH CAMP MINES	US	NV	38-47-12N	119-28-16W	CU	VEIN
M233940	SPENCE CLAIMS	US	NV	40-33-60N	114-48-06W	CU	CONTACT
M035866	SPRAGG MINE	US	NV	38-57-07N	119-13-42W	CU	REPLACEMENT
M231476	SPRING PROSPECT	US	NV	40-17-53N	118-07-13W	CU AG AU	VEIN
M233731	STEPTOE DRILL ROAD.	US	NV	39-18-36N	114-46-20W	CU	SHEAR IN QUARTZITE
M233846	SUE GROUP	US	NV	41-44-03N	114-50-06W	CU	INTRUSIVE CONTACT
M231110	SUREFIRE	US	NV	39-50-56N	119-36-42W	CU AG AU PB ZN	VEIN
M231376	SURPRISE MINE	US	NV	40-37-13N	117-01-25W	CU AU AG	SECONDARY ENRICHMENT
M242485	SWANSON CLAIMS	US	NV			AU AG PB ZN CU BA	VEIN/REPLACEMENT
M231377	SWEET MARIE MINE	US	NV	40-36-33N	117-02-04W	CU AU AG PB	SECONDARY ENRICHMENT
M233352	SYLVANIA MINE	US	NV	40-31-01N	116-00-51W	AU AG CU PB	VEIN-PIPES
M241588	TB CLAIMS	US	NV	37-53-32N	114-36-06W	PB ZN CU AG FE MN SB	REPLACEMENT (BEDDING

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M242436	TEMPEST MINE	US	NV			AG CU AU BI PB FE	VEIN/REPLACEMENT
M233450	TENDERFOOT	US	NV	40-23-41N	114-33-29W	CU BI	VEIN/FRACTURES
M035878	THANKSGIVING MINE	US	NV	38-58-47N	119-16-04W	CU	REPLACEMENT
M242245	THANKSGIVING PROSPEC	US	NV	36-36-20N	114-11-08W	CU NI	FISSURE-VEIN-DIKE?
M241959	THE CLIMAX STOCK	US	NV	37-14-40N	116-04-30W	CU AU AG GEM PB W MO	VEINS/REPLACEMENT
M242486	THREE METALS PROSPEC	US	NV			AG PB CU	REPLACEMENT/INTRUSIV
M242177	TRAIL CANYON PROSPEC	US	NV	39-15-52N	114-15-32W	CU AG	FAULT ZONE/BEDDING P
M031068	TRAMP MINE	US	NV	36-22-46N	114-10-03W	CU	FRACTURE ZONE
M233941	TRAMP SHAFT	US	NV	40-33-48N	114-50-48W	CU	BRECCIA FILL-VEIN
M231381	TRENTON MINE	US	NV	40-36-60N	117-11-59W	CU AG ZN PB FE	VEIN
M232038	TRI-METALLIC MINING	US	NV	37-30-29N	117-13-41W	CU AG AU	REPLACEMENT
M242026	TRI-METALLIC MINING	US	NV	37-30-43N	117-13-14W	CU AU AG	REPLACEMENT
M031295	TRIPP PIT	US	NV	39-15-41N	115-01-25W	CU	REPLACEMENT, DISSEMI
M233776	TSS CLAIMS.	US	NV	39-46-23N	117-15-58W	CU BA	VEIN
M234006	UN NAMED	US	NV	41-42-35N	114-37-43W	CU	SHEAR ZONE
M231385	UNCLE TOM CLAIM	US	NV	40-36-40N	117-01-24W	CU AU AG	SECONDARY ENRICHMENT
M231044	UNITED MINING CO. MI	US	NV	39-04-14N	119-35-44W	CU	VEIN (FAULT)
M234000	UNKNOWN	US	NV	41-44-05N	114-48-36W	CU	SHEAR ZONE
M234007	UNKNOWN	US	NV	41-43-32N	114-49-20W	CU	SHEARZONE (?)
M234008	UNKNOWN	US	NV	41-45-04N	114-50-37W	CU	VEIN
M234024	UNKNOWN (SAMPLE LOCA	US	NV	40-24-36N	115-00-14W	CU	INTRUSIVE CONTACT, S
M032060	UNNAMED	US	NV	37-15-15N	114-22-10W	PB ZN CU AG SB MO CD	VEIN
M242351	UNNAMED ADITS AND SH	US	NV	37-32-45N	117-24-59W	CU AU? AG?	HYDROTHERMAL/VEIN
M233810	UNNAMED AG	US	NV	38-35-52N	114-43-51W	AG CU	SHEAR; VEIN
M231072	UNNAMED COPPER	US	NV	39-42-09N	119-41-39W	CU W	INTRUSIVE CONTACT
M231073	UNNAMED COPPER	US	NV	39-42-07N	119-43-03W	CU PB AG SB	VEIN
M231074	UNNAMED COPPER	US	NV	39-47-43N	119-50-53W	CU	DISSEMINATED
M232227	UNNAMED COPPER	US	NV	40-26-08N	116-28-33W	CU	
M233971	UNNAMED COPPER	US	NV	40-18-03N	114-16-51W	CU PB	VEIN
M231260	UNNAMED COPPER MINE	US	NV	40-54-32N	117-23-38W	CU	FAULT ZONE
M232206	UNNAMED COPPER OCCUR	US	NV	40-34-50N	117-10-59W	CU AU AG BA	VEIN
M231386	UNNAMED COPPER PROSP	US	NV	40-41-00N	117-04-09W	CU FE	
M231387	UNNAMED COPPER PROSP	US	NV	40-41-33N	117-05-11W	CU	VEIN
M232203	UNNAMED COPPER PROSP	US	NV	40-38-09N	117-03-11W	CU	VEIN
M232204	UNNAMED COPPER PROSP	US	NV	40-37-33N	117-01-32W	CU	VEIN/FAULT ZONE
M242488	UNNAMED COPPER PROSP	US	NV			CU	REPLACEMENT
M242489	UNNAMED COPPER PROSP	US	NV			CU	REPLACEMENT/FAULT ZO
M242487	UNNAMED COPPER-SILVE	US	NV			CU AG	VEIN/CONTACT METAMOF
D011061	UNNAMED PROSPECT	US	NV	40-38- N	117-11- W	CU W	TACTITE
M233678	UNNAMED PROSPECT	US	NV	39-19-06N	114-57-28W	CU ZN	SHEAR? FRACTURE FILL
M233788	UNNAMED PROSPECT	US	NV	39-38-26N	114-58-40W	CU	SHEAR (?)
M234005	UNNAMED PROSPECT	US	NV	41-43-51N	114-49-11W	CU	REPLACEMENT
M234009	UNNAMED PROSPECT	US	NV	41-41-38N	114-43-59W	CU	INTRUSIVE CONTACT/VE
M234010	UNNAMED PROSPECT	US	NV	41-45-57N	114-51-02W	CU	SHEAR ZONE / VEINS
M234011	UNNAMED PROSPECT	US	NV	41-43-38N	114-49-30W	CU	REPLACEMENT
M234012	UNNAMED PROSPECT	US	NV	41-45-23N	114-47-41W	CU	INTRUSIVE CONTACT, F
M234014	UNNAMED PROSPECT	US	NV	41-04-47N	114-48-06W	FE CU	SHEARZONE
M234016	UNNAMED PROSPECT	US	NV	40-07-33N	114-20-18W	CU	INTRUSIVE CONTACT
M234017	UNNAMED PROSPECT	US	NV	40-07-46N	114-20-51W	CU AG	CONTACT/VEIN
M233528	UNNAMED PROSPECT #3	US	NV	39-07-21N	117-32-02W	AU AG CU	FISSURE VEIN
M233786	UNNAMED PROSPECT (86	US	NV	39-38-37N	114-58-30W	CU	SHEAR
M233485	UNNAMED PROSPECTS	US	NV	38-30-24N	117-25-28W	CU AG	VEIN/SHEAR ZONE
M241809	UNNAMED PROSPECTS NE	US	NV	39-02-30N	114-35-39W	CU	VEIN
M241963	UNNAMED SHAFT AND PR	US	NV	37-13-08N	116-03-38W	CU AU?	VEIN
M233728	UNNAMED WORKINGS	US	NV	39-26-18N	114-44-34W	PB CU ZN	BEDDING (?) REPLACEM
M233815	UNNAMED WORKINGS	US	NV	38-36-03N	114-42-36W	CU AG PB SB ZN	SHEAR; REPLACEMENT
M233780	UNNAMED WORKINGS E.	US	NV	40-00-58N	115-49-54W	CU	CONTACT METASOMATIC
M242154	USBM SAMPLE LOCALITY	US	NV	38-57-39N	114-20-52W	W CU PB	UNKNOWN
M242156	USBM SAMPLE LOCALITY	US	NV	38-57-31N	114-21-16W	AG CU PB	UNKNOWN
M242189	USBM SAMPLE LOCALITY	US	NV	39-02-24N	114-19-50W	CU PB	UNKNOWN
M242194	USBM SAMPLE LOCALITY	US	NV	39-03-01N	114-23-35W	CU PB	UNKNOWN
M242195	USBM SAMPLE LOCALITY	US	NV	39-03-60N	114-23-23W	CU YT	VEIN?
M233851	VALLEY VIEW CLAIM	US	NV	41-46-33N	114-46-44W	CU AU AG	INTRUSIVE CONTACT
M242437	VESUVIUS MINE	US	NV			CU AG PB ZN AU	BEDDED REPLACEMENT
M031298	VETERAN PIT	US	NV	39-15-47N	115-01-48W	CU	REPLACEMENT, DISSEMI
W002693	VICTORIA MINE	US	NV	40-21-60N	114-30-00W	CU	PIPE: CONTACT METAMO
M233939	VIOLA CLAIM	US	NV	41-47-08N	114-50-13W	CU	INSUFFICENT DATA TO

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M241541	VIOLA CLAIMS	US	NV	37-14-11N	114-18-45W	CU AG PB ZN BA F? MO AS MN SB SR	REPLACEMENT/VEIN
M233842	VULCAN MINE	US	NV	41-40-20N	114-37-37W	CU AG PB AU	BRECCIA FILL & VEIN
M035589	WALLSTREET AND TURK	US	NV	38-30-25N	118-04-49W	CU	FISSURE VEIN/BRECCIA
M233217	WALLSTREET AND TURK	US	NV	38-30-51N	118-04-41W	CU	FRACTURE ZONE (VEIN)
M233847	WAR EAGLE MINE	US	NV	41-40-51N	114-41-41W	CU AG AU	VEIN
M231856	WARNER MINE	US	NV	39-08-06N	117-13-19W	AG PB CU SB	VEIN/SHEAR ZONE
M242151	WASHINGTON MINE	US	NV	38-55-04N	114-18-18W	CU PB W AG ZN AU SB	VEINS?
M233354	WEB FOOT	US	NV	40-30-58N	116-00-45W	AG CU PB AU	REPLACEMENT-VEIN
M029072	WEDDING RING GROUP (	US	NV	41-55-55N	118-30-40W	AU AG CU U	VEIN
M035608	WEDGE COPPER MINE	US	NV	38-33-55N	118-06-17W	CU	CONTACT METASOMATIC
M233231	WEDGE COPPER MINE	US	NV	38-34-23N	118-06-01W	CU	REPLACEMENT
M233782	WEST SIDE CENTER SIL	US	NV	39-45-10N	115-50-46W	PB CU	
M231394	WESTERN LOCK PROSPEC	US	NV	40-31-60N	117-07-05W	CU AU AG	REPLACEMENT, VEIN
M035870	WESTERN NEVADA	US	NV	38-56-15N	119-13-47W	CU AG AU	REPLACEMENT
M231113	WET	US	NV	39-51-05N	119-37-09W	CU AG AU PB ZN	VEIN
M233848	WHITE ELEPHANT CLAIM	US	NV	41-44-14N	114-49-57W	CU	VEINS FOLLOW MINERAL
M241519	WHITMORE MINE	US	NV	36-55-36N	114-27-15W	CU PB? AG?	FAULT CONTACT WITH M
M231396	WIDOW MINE	US	NV	40-36-25N	117-02-08W	CU AU AG	OXIDE AND SUPER GENE
M232332	WILLIAMSBURG MINE	US	NV	39-31-30N	116-34-36W	AG AU PB CU	REPLACEMENT (STRATAE
M030039	WILLOW SPRING	US	NV	38-28-30N	117-10-00W	AG MO HG CU PB ZN NI CO	DISSEMINATE
M242364	WISCONSIN EXTENSION	US	NV	37-27-06N	117-29-26W	CU	LODE?
M035881	YANKEE GIRL CLAIMS	US	NV	38-46-48N	119-24-16W	CU	VEIN
M233933	YELLOW GIRL MINE	US	NV	41-45-17N	114-47-19W	CU FE MO	VEIN
M242230	YELLOW PINE MINE	US	NV	35-50-60N	115-29-42W	ZN PB AG CU AU HG	UNKNOWN
M035876	YERINGTON CENTRAL	US	NV	38-57-43N	119-16-40W	CU	REPLACEMENT
M035859	YERINGTON OPEN PIT M	US	NV	38-59-03N	119-11-43W	CU FE AG MO U	PORPHYRY
M234125	YVONNE COPPER	US	NV	41-05-55N	116-00-00W	CU AG	INSUFFICENT DATA TO
M233481	ZABRISKIE COPPER PRO	US	NV	38-31-36N	116-53-17W	CU	VEINS
W000091	GENERAL BUSH COPPER	US	NY	41-50-58N	073-33-51W	CU	
W002669	CRETA MINE	US	OK	34-30- N	099-31- W	CU AG	SEDIMENTARY
W002698	MANGUM PROSPECT	US	OK	34-50- N	099-32- W	CU AG	SEDIMENTARY
M060682	ALBRIGHT	US	OR	42-00-07N	123-45-25W	AU CU AG ZN CO AG ZN CO	GOSSAN, MASSIVE SULF
M060726	ALMEDA	US	OR	42-36-37N	123-35-03W	AU CU AG PB ZN SB BA	MASSIVE SULFIDES
M061116	BABCOCK COPPER PROSP	US	OR	42-12-11N	123-25-55W	CU	MASSIVE SULFIDE
M055859	BANFIELD	US	OR	42-50-07N	122-55-53W	CU AG HG	MINERALIZED SHEAR ZO
M015705	BANNER GROUP	US	OR	45-49-00N	116-46-06W	CU AU	VEIN
M061224	BEAVER SPRINGS PROSP	US	OR	42-53-01N	123-20-49W	CU AG AU ZN ZN	MASSIVE SULFIDE
M061856	BETH PROSPECT	US	OR	42-35-18N	123-38-48W	CU	LODE
M025268	BIMETALLIC AND GOLD	US	OR	44-52-49N	122-14-32W	AU AG ZN CU	SHEAR ZONE
M025269	BLACK EAGLE	US	OR	44-51-48N	122-16-18W	CU AU AG PB	SHEAR ZONE
M025539	BLUE ROCK	US	OR	44-19-19N	118-56-15W	CU	LODE
M061538	BOLIVAR	US	OR	42-47-46N	123-51-19W	CU	MASSIVE SULFIDE?
M060739	BRASS LEDGE QUARTZ C	US	OR	42-35-27N	123-38-30W	AU CU AG	FISSURE VEIN?
M015661	BROOKLYN GROUP	US	OR	45-10-20N	116-44-16W	CU AG AU	VEIN/SHEAR ZONE
M013499	BUCKEYE MINE	US	OR	42-24-40N	123-34-55W	CU	MASSIVE SULFIDE
M060734	BUFFALO GROUP	US	OR	42-35-54N	123-38-46W	AU CU AG	VEINS? *
M061620	BUNKER HILL GROUP	US	OR	42-22-09N	124-08-45W	CU CO	SHEAR ZONE
M061984	CALL OF THE WILD	US	OR	42-29-37N	122-36-12W	CU AU AG MN MN	CONCORDANT VOLCANIC
M060774	CARLTON GROUP	US	OR	42-32-11N	123-38-03W	AU CU	SHEAR ZONE? /DISSEMI
M061621	COBALT GROUP PROSPEC	US	OR	42-25-09N	124-00-23W	CU CO AU AG CO AU AG	DISSEMINATED
M060761	COLD SPRING	US	OR	42-32-58N	123-39-05W	AU CU AG	SHEAR ZONE
M061472	COLUMBINE CLAIM	US	OR	42-10-39N	122-46-60W	AU CU AG MN AG MN	VEIN *
M061539	COOS COPPER	US	OR	42-45-28N	124-07-45W	CU	
M061866	COPPER BELL	US	OR	42-30-06N	123-31-28W	CU	LODE
M061846	COPPER BOY	US	OR	42-16-50N	123-47-00W	CU	VOLCANOGENIC
M014358	COPPER BUTTE GROUP	US	OR	44-56-37N	117-31-25W	CU AU	DISSEMINATED
M061199	COPPER BUTTE PROSPEC	US	OR	42-48-13N	122-56-21W	CU	VOLCANOGENIC ?
M061623	COPPER CITY PROSPECT	US	OR	42-24-09N	124-02-58W	CU AU AG CO AS CO AS	"BOULDER"
M061478	COPPER KING	US	OR	42-40-30N	124-06-08W	CU AU AG	VEINLETS
M014682	COPPER MOUNTAIN GROU	US	OR	45-44-22N	116-32-26W	CU AG AU	VEIN/SHEAR ZONES
M025292	COPPER PROSPECT	US	OR	44-51-37N	122-14-40W	CU ZN	
M055919	COPPER QUEEN	US	OR	42-37-11N	123-23-36W	CU AU AG HG	VOLCANOGENIC MASSIVE
M015629	COPPER QUEEN	US	OR	44-57-26N	117-06-51W	CU AG	UNKNOWN
M015700	COPPEROPOLIS MINE	US	OR	44-33-29N	118-40-47W	CU AG AU CO MO NI ZN	REPLACEMENT
M060661	COWBOY MINE	US	OR	42-01-10N	123-36-29W	CU CO ZN AU AG NI AS NI AS	MASSIVE SULFIDE CYP
M062252	CRACKER JACK CLAIM	US	OR	42-10-34N	122-47-13W	CU	VEIN
M025273	CROWN MINE	US	OR	44-49-46N	122-19-14W	AU AG CU ZN	SHEAR ZONE

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M060669	DAISY	US	OR	42-03-05N	123-37-35W	AU CU	VOLCANOGENIC CYPRUS
M014787	DODSON (JIM) GROUP	US	OR	45-06-19N	117-24-01W	CU MO PB	VEIN/SHEAR ZONES; DE
M061823	EAGLE CREEK GROUP	US	OR	42-15-09N	123-49-55W	CU AU AG	VOLCANOGENIC
M061825	EAGLE MOUNTAIN GOSSA	US	OR	42-16-05N	123-49-24W	AU CU CU	GOSSAN, DISSEMINATED
M060644	ELEPHANT	US	OR	42-05-06N	123-33-54W	CU	MASSIVE SULFIDE
M025055	ENNIS BUTTE PROSPECT	US	OR	42-36-59N	120-31-42W	PB ZN CU	SHEAR ZONES
M015659	EVENING STAR	US	OR	45-46-31N	116-44-43W	CU AU	VEIN
M060587	FALL CREEK COPPER	US	OR	42-17-44N	123-46-03W	CU AG AU	MASSIVE SULFIDE
M014672	FARGO GROUP	US	OR	45-48-56N	116-45-51W	CU AU FE	LENS
M061800	FORT KNOX AND LUCKY	US	OR	42-40-37N	123-10-26W	CU	VEIN?/SHEAR ZONE VOL
M015655	FRAZIER PROPERTY	US	OR	45-08-52N	117-15-52W	CU AG AU MO W PB	CONTACT METAMORPHIC
M015689	FUR MOUNTAIN COPPER	US	OR	44-30-07N	117-23-46W	CU	FRACTURE FILLING
M013711	GOFF MINE	US	OR	42-40-49N	123-33-37W	AU CU AG BA	SHEAR ZONE, VOLCANOG
M025276	GOLD CREEK M. & M.	US	OR	44-52-47N	122-13-58W	AU AG CU PB ZN	SHEAR ZONES; DISSEM
M061300	GOLD NOTE	US	OR	42-40-21N	123-13-38W	AU CU AG	VEIN & GOSSAN VOLCA
M015268	GOLD PROSPECT	US	OR	42-41-29N	123-36-57W	AU CU AG CU AG	SHEAR ZONE
M061799	GOLDEN ROAD	US	OR	42-39-00N	123-08-43W	AU CU AG ZN ZN	VEIN
M025334	GRAY COPPER NO. 8	US	OR	42-24-38N	124-03-44W	CU CO NI	LODE
M013631	HANSEN MINE	US	OR	42-32-08N	123-42-03W	AU AG CU CO ZN	LODE
M061683	HASKINS & TRAVERSO	US	OR	42-02-27N	122-59-02W	AU CU AG CU AG	VEIN
M015658	HIGHLAND MARY GROUP	US	OR	45-47-39N	116-45-20W	CU FE	VEIN
M025277	HUMBUG M. & M.	US	OR	44-48-25N	122-05-34W	CU	LODE
M025050	IDOL CITY MINE	US	OR	43-46-23N	118-53-41W	AU AG PB CU	SHEAR ZONE
M060727	INDEPENDENCE	US	OR	42-36-32N	123-35-25W	AU AG CU	MASSIVE SULFIDE
W002495	IRON DIKE	US	OR	45-01-33N	116-50-57W	CU AU AG ZN	STOCKWORK-REPLACEME
M014198	JOHNSON MINE	US	OR	45-00-18N	117-48-37W	AU AG SB CU	VEIN/SHEAR ZONE
M025309	JUMBO CREEK PROSPECT	US	OR	43-36-42N	122-36-53W	CU ZN AU	SHEAR ZONE
M025302	KATMAI	US	OR	43-37-54N	122-38-15W	AU AG CU	SHEAR ZONE
M060642	KERBY QUEEN MINE	US	OR	42-05-21N	123-33-05W	CU AU	VOLCANOGENIC
M025331	KINDELL WEIR PROSPEC	US	OR	45-09-16N	123-26-43W	AG CU AU	MASSIVE SULFIDE?
M014723	LECLEAD	US	OR	45-01-29N	118-02-27W	CU AU AG	VEIN/SHEAR ZONE
M060664	LILLY	US	OR	42-02-20N	123-36-15W	CU ZN	MASSIVE SULFIDE CYP
M025293	LOWER GRANGER AND SH	US	OR	44-52-21N	122-15-18W	CU ZN	SHEAR ZONE
M060663	LYTTLE MINE	US	OR	42-01-30N	123-35-48W	U CU ZN AG	MASSIVE SULFIDE CYP
M015312	MARVIN MINE	US	OR	42-36-20N	123-37-58W	AU CU	SHEAR ZONE
M025227	MAX CLAIM	US	OR	42-09-59N	122-57-01W	CU AG AU	MASSIVE SULFIDE
M061837	MELANTERITE TUNNEL	US	OR	42-11-33N	123-52-10W	CU AU AG ZN AG ZN	MASSIVE SULFIDE; DIS
M025075	MILL CREEK PROSPECT	US	OR	42-34-36N	123-40-19W	CU AU AG	SHEAR ZONE
M061826	MILLER CREEK GOSSAN	US	OR	42-15-36N	123-49-58W	AU AG CU	MASSIVE SULFIDE ; GO
M025278	MINERAL HARBOR GROUP	US	OR	44-50-48N	122-13-41W	AU AG ZN CU PB	LODE
M061022	MOLYBDENUM PROSPECT	US	OR	42-26-43N	123-10-43W	CU AG AU BI SN TE	VEINS
M025280	MOTHER LODE GROUP	US	OR	44-52-02N	122-04-56W	CU AG PB AU	SHEAR ZONE
W002485	MOTHER LODE MINE	US	OR	44-55-01N	117-28-25W	CU AU AG BA	FRACTURE FILLING AND
M061297	MOUNTAIN VIEW	US	OR	42-41-41N	123-12-02W	AU CU	FISSURE VEIN/SHEAR Z
M025157	MYSTERY VEIN	US	OR	43-34-38N	122-38-31W	AU AG CU ZN PB	SHEAR ZONE
M025551	NOME	US	OR	44-20-51N	118-50-12W	CU CR NI	LODE
M062242	NORTH CENTRAL CLAIM	US	OR	42-02-37N	123-05-57W	AU CU CU	LODE
M013698	ONION FALLS COPPER	US	OR	42-28-15N	123-36-20W	CU	VOLCANOGENIC
M025051	PARDEE MINE	US	OR	43-45-51N	118-53-49W	AU AG PB CU	SHEAR ZONE
M061488	PINE FLAT	US	OR	42-31-22N	124-05-47W	CU AU AG	SHEAR ZONE
M060841	QUEEN OF BRONZE MIN	US	OR	42-02-59N	123-35-55W	U AU AG ZN	MASSIVE SULFIDE
M061862	RAINBOW	US	OR	42-41-10N	123-33-24W	CU AU AG BA	DISSEMINATED
M061000	RAMSEY MINE	US	OR	42-25-12N	123-35-49W	AU V CU	SHEAR ZONE
M025081	RED CUB	US	OR	42-35-05N	123-59-05W	CU ZN AG AU	DISSEMINATED; MASSI
M015633	RED KNOB CLAIMS	US	OR	44-57-24N	117-23-44W	CU	SHEAR ZONE
M015663	RED MOUND	US	OR	45-00-50N	116-51-37W	CU AG PB ZN	VEIN/SHEAR ZONE
M013244	REYNOLD'S COPPER MIN	US	OR	42-03-44N	123-45-24W	CU AU NI	SHEAR ZONE
M061198	ROWLEY MINE	US	OR	42-48-57N	122-56-34W	CU ZN AU AG	MASSIVE SULFIDE; DIS
M015715	SALMON BAR	US	OR	45-51-33N	116-47-57W	CU	VEIN/SHEAR ZONE
M025288	SANTIAM COPPER GROUP	US	OR	44-51-29N	122-15-03W	CU AG AU ZN BI	SHEAR ZONE
M061386	SHAMROCK	US	OR	42-36-04N	122-58-32W	CU NI CO PT	UNKNOWN LODE
M062002	SHASTA COSTA COPPER	US	OR	42-35-08N	123-59-07W	CU AU AG	SHEAR ZONE
M061226	SILVER PEAK	US	OR	42-51-22N	123-22-52W	CU AG AU ZN PB BA	MASSIVE SULFIDE
M025290	SILVER STAR AND HELV	US	OR	44-51-32N	122-17-03W	ZN CU AU AG	SHEAR ZONE; DISSEMI
M061867	SPECTOR	US	OR	42-28-48N	123-32-31W	CU AG	VOLCANOGENIC GOSSAN
M061138	SQUAW CREEK COPPER	US	OR	42-02-11N	123-05-15W	CU	VOLCANOGENIC ?
M061884	ST. PAUL COPPER	US	OR	42-39-55N	123-15-53W	AU CU	QUARTZ VEIN

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M015005	STANDARD	US	OR	44-32-46N	118-40-47W	CO CU AU BI PB AG	VEIN
M061007	STARR	US	OR	42-30-07N	124-17-55W	CU AU AG	MASSIVE SULFIDE OR S
M061827	STONE PROSPECT	US	OR	42-16-36N	123-49-35W	CU	GOSSAN
M061848	SULFIDE NO. 1	US	OR	42-14-51N	123-43-59W	CU AU AU	MASSIVE SULFIDE
M025240	SULFIDE OCCURRENCE	US	OR	42-30-05N	124-17-26W	CU AG AU PB ZN	LODE
M013318	TOMLINSON, GATES & T	US	OR	42-01-37N	123-25-33W	CU	LODE
M015657	TRANSVAAL MINES	US	OR	45-15-09N	117-09-47W	CU AG MO AU	CONTACT METMORPHIC
M015328	TREASURY GROUP	US	OR	42-35-41N	123-39-46W	AU CU ZN AG	SHEAR ZONE
M013239	WALDO COPPER MINE	US	OR	42-02-26N	123-35-53W	CU AU	MASSIVE SULFIDE
M025234	WAR BABY	US	OR	42-46-10N	124-12-49W	CU AU AG ZN	LODE
M025291	WOLZ PROPERTY	US	OR	44-51-19N	122-17-13W	ZN CU AU AG	SHEAR ZONE
M061855	YANKEE SILVER LODE	US	OR	42-35-11N	123-36-07W	CU AG AU ZN PB BA	DISSEMINATED; MASSIV
W100185	BUCKMANVILLE MINE/SO	US	PA	40-18-56N	074-59-10W	CU	VEIN
W100183	LEITHSVILLE	US	PA	40-33-15N	075-20-10W	CU	VEIN
W100187	OLD PERKIOMEN MINE	US	PA	40-16-05N	075-28-25W	CU	VEIN
W100188	PENNSYLVANIA COPPER	US	PA	40-16-00N	075-36-10W	CU	VEIN
W100416	PERKIOMEN/WETHERILL/	US	PA	40-08-20N	075-26-40W	CU PB	VEIN
W100765	SNIVELY (MUSSELMAN)/	US	PA	39-48-45N	077-25-20W	CU	STRATABOUND DISCORDA
W100764	VIRGIN MINE/REED HIL	US	PA	39-45-30N	077-27-55W	CU	STRATABOUND DISCORDA
W100186	YOUNG'S MINE	US	PA	40-19-10N	075-28-35W	CU	VEIN
W019086	ALLISON GOLD - COPPE	US	SC	35-06-52N	081-17-39W	AU CU FE S	QUARTZ VEIN
W019089	ALMATHEA GOLD COPPER	US	SC	35-02-25N	081-24-32W	AU CU FE S	QUARTZ VEIN
W027982	CAMERON CU - AG - PB	US	SC	35-01-53N	081-40-22W	CU PB AG FE	SIDERITE QUARTZ VEIN
W019123	CASSADY GOLD - COPPE	US	SC	35-01-51N	081-25-52W	AU CU FE S	AURIFEROUS SULFIDIC
W019114	DARWIN GOLD COPPER M	US	SC	35-01-39N	081-27-34W	AU CU FE S	AURIFEROUS SULFIDE Q
W019087	ELLIS GOLD - COPPER	US	SC	35-08-08N	081-20-32W	AU CU FE S	AURIFEROUS SULFIDIC
W002115	HAILE MINE	US	SC	34-40- N	080-35- W	AU CU MO ZN TI	SULFIDE REPLACEMENT
W027995	MARY COPPER SULFIDE	US	SC	35-02-31N	081-10-30W	CU MN FE S AU	QUARTZ VEIN
W044332	MARY MINE	US	SC	35-02-12N	081-10-45W	CU	METAMORPHIC: VEIN
W019111	MC CAW GOLD MINE	US	SC	35-02-06N	081-26-33W	AU CU AG FE S	AURIFEROUS QUARTZ VE
W031817	SALUDA COPPER MINE	US	SC	34-23-42N	082-20-10W	CU	STRATIFORM
W027550	SILVER MINE RIDGE GO	US	SC	35-04-26N	081-32-22W	FE CU S AU	STRATABOUND
W019103	SOUTHERN GOLD SULFID	US	SC	35-03-03N	081-26-17W	AU AG CU FE S	AURIFEROUS QUARTZ VE
W101757	UNKNOWN	US	SC	34-23-43N	082-20-06W	AU CU	STRATABOUND DISCORDA
SD02217	BEE MINE	US	SD	44-06-15N	103-48-15W	CU AU AG	SHEAR ZONE
SD02195	COPPER GLANCE	US	SD	44-04-37N	103-28-43W	AU CU U	REPLACEMENT, VEIN
D007203	DAKOTA CALUMET GROUP	US	SD	43-57-08N	103-26-43W	CU	VEIN/SHEAR ZONE
SD02214	DEXTER CLAIM	US	SD	44-03-54N	103-28-15W	AU AG CU PB	REPLACEMENT
SD02232	GOPHER LODE	US	SD	44-02-36N	103-53-18W	CU AU AG	VEIN
SD02182	JENNY GULCH MINE	US	SD	44-05-47N	103-33-08W	AU AG CU	REPLACEMENT
SD02221	JUNGLE MINE	US	SD	44-12-47N	103-41-38W	CU	SHEAR ZONE
SD02014	MALONEY BLUE LEAD MI	US	SD	43-58-00N	103-27-08W	CU AU AG	SHEAR ZONE
SD02259	MASTIFF GROUP	US	SD	43-56-26N	103-44-16W	CU	SHEAR ZONE
K001183	BOYD MINE	US	TN	35-01-33N	084-22-45W	CU FE S ZN PB AG AU	MASSIVE SULFIDE, STR
K000057	BUCK MILLER COPPER M	US	TN	35-20-00N	084-12-15W	CU	VEIN/SHEAR ZONE
W022860	BURRA BURRA MINE	US	TN	35-02-06N	084-22-47W	CU FE S	MASSIVE SULFIDE, STR
K001181	CALLOWAY MINE	US	TN	35-00-42N	084-22-21W	CU FE S ZN PB AG AU	MASSIVE SULFIDE, STR
K001184	CHEROKEE MINE	US	TN	35-00-32N	084-23-41W	CU FE S ZN PB AG AU	MASSIVE SULFIDE, STR
W031398	COPPERHILL MINE	US	TN	35-01-56N	084-21-57W	CU FE ZN S AG AU PB	SHEAR ZONE; REPLACE
W101731	DUCKTOWN CU DISTRICT	US	TN	35-01-56N	084-21-56W	S CU FE ZN	STRATABOUND CONCORD
K003378	DUCKTOWN DISTRICT	US	TN	35-02- N	084-23- W	CU FE S ZN PB AG AU CO NI	MASSIVE SULFIDE, STR
W022867	EAST TENNESSEE MINE	US	TN	35-02-40N	084-21-03W	CU FE S	MASSIVE SULFIDE, STR
K001182	EUREKA MINE	US	TN	35-01-56N	084-21-56W	CU FE S ZN PB AG AU	MASSIVE SULFIDE, STR
W022861	HIWASSEE MINE	US	TN	35-01-56N	084-22-53W	CU FE S	MASSIVE SULFIDE, STR
W022863	ISABELLA MINE	US	TN	35-02-01N	084-21-48W	CU FE S ZN PB AG AU	MASSIVE SULFIDE, STR
W022862	LONDON MINE	US	TN	35-02-15N	084-22-23W	CU FE S	MASSIVE SULFIDE, STR
W022864	MARY MINE	US	TN	35-00-41N	084-22-48W	CU FE S ZN	MASSIVE SULFIDE, STR
W022865	OLD POLK COUNTY MINE	US	TN	35-00-27N	084-22-56W	CU FE S	MASSIVE SULFIDE, STR
W022866	OLD TENNESSEE MINE	US	TN	35-00-57N	084-23-30W	CU FE S	MASSIVE SULFIDE, STR
D008606		US	UT	40-31-01N	112-06-45W	PB ZN CU AG	REPLACEMENT; VEIN
D006203	"RIO #1"	US	UT	39-34-13N	113-03-49W	CU AU AG MN	REPLACEMENT
D005495	A-B #2	US	UT	37-29-32N	113-27-51W	CU AG	VEIN
W027487	ABE MINE	US	UT	37-52-27N	109-43-32W	U CU V	
M058535	AJAX MINE	US	UT	39-55-39N	112-06-42W	AG AU CU PB	LODE
M057968	ALBERT MINE	US	UT	40-05-09N	113-46-26W	AU AG CU AS	CONTACT METASOMATIC
M058283	ALIX PROSPECT	US	UT	40-34-43N	111-47-09W	AU CU	VEIN
M058353	ALTA SUPERIOR TUNNEL	US	UT	40-33-12N	111-40-02W	AG CU MO	UNKNOWN

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
D011948	ALTA-HELENA TUNNEL	US	UT	40-35-16N	111-36-31W	CU FE	SKARN
D006199	ALTO MINE	US	UT	39-33-40N	113-02-05W	CU AG AU	BEDDED REPLACEMENT
D006339	AMAZON HOLLOW CLAIM	US	UT	41-57-47N	111-30-20W	PB AG CU	SHEAR ZONE
D006337	AMAZON HOLLOW CLAIM	US	UT	41-57-18N	111-30-06W	PB AG CU	SHEAR ZONE
DC13389	AMAZON MINE	US	UT	41-56-51N	111-30-05W	PB AG CU ZN	REPLACEMENT ORE
D006421	AMERICAN FLAG SHAFT	US	UT	40-37-43N	111-29-59W	AU AG CU PB MN FE	VEIN AND REPLACEMENT
D011921	AMERICAN TUNNEL	US	UT	40-37-24N	111-34-35W	CU AG AU PB MN	VEIN, REPLACEMENT
DC14042	APEX STANDARD NUMBER	US	UT	39-56-29N	112-03-16W	PB AG AU CU FE	LODE
DC14201	APEX-DELAWARE GROUP	US	UT	40-31-24N	112-10-14W	CU PB AU ZN MO	DISSEMINATED; REPLAC
DC12841	ARGENTA	US	UT	39-55-25N	112-06-42W	CU	VEIN
DC14212	ARGENTINE SHAFT	US	UT	40-30-40N	112-10-52W	CU AU PB FE	VEIN; SHEAR ZONE; RE
D005802	ATLAS MINE	US	UT	38-20-19N	113-08-29W	CU PB AG	LIMESTONE REPLACEMEN
M058339	AUSTIN PROSPECT	US	UT	40-32-02N	111-39-31W	PB CU MO	VEIN
M058459	BALD MOUNTAIN SW PRO	US	UT	40-23-15N	112-17-56W	MN CA CU	REPLACEMENT; VEIN
D008613	BATES CANYON MINE	US	UT	40-37-22N	112-14-18W	PB ZN CU FE	REPLACEMENT; VEIN
DC15012	BEAVER COPPER MINE	US	UT			CU	SKARN
W017201	BEAVER LAKE-OK MINE	US	UT	38-29-00N	113-07-00W	CU MO	
D005829	BEAVER-HARRISON #1	US	UT	38-29-39N	113-08-10W	CU	CONTACT METAMORPHIC
D005830	BEAVER-HARRISON #2	US	UT	38-29-14N	113-07-16W	CU	CONTACT METAMORPHIC
D007342	BELCHER HILL	US	UT	39-58-24N	113-11-54W	CU PB AG	FISSURE VEIN
W027762	BELL GROUP	US	UT	37-35-05N	110-04-01W	U CU	DISSEMINATED, REPLAC
DC12143	BEN HARRISON MINE	US	UT	40-27-54N	112-19-45W	PB AG AU CU ZN	REPLACEMENT
DC15285	BERTHA CLAIM	US	UT	39-58-57N	113-11-01W	CU PB	REPLACEMENT
DC14732	BIG COTTONWOOD MINE	US	UT	40-35-01N	111-35-04W	CU FE	CONTACT METAMORPHIS
DB00030	BIG INDIAN MINE	US	UT	38-14-28N	109-15-47W	CU	DISSEMINATED
W017208	BIG INDIAN MINE	US	UT	38-14-00N	109-13-00W	CU	
M058288	BIG MITT AND BLUE PO	US	UT	40-36-21N	111-47-18W	AU CU	VEIN
M045473	BINGHAM	US	UT	40-31-15N	112-08-42W	CU AU AG PT PD TE BI SE NI	LODE
W002660	BINGHAM MINE	US	UT	40-32- N	112-09- W	CU	PORPHYRY INTRUSION
W000268	BINGHAM DISTRICT (GE	US	UT	40-31- N	112-09- W	CU	SECONDARY ENRICHMENT
W002888	BINGHAM OPEN PIT MIN	US	UT	40-31-15N	112-08-42W	CU MO AG AU PB BI PT ZN PD NI TE SE	PORPHYRY CU, MODEL 1
DC14753	BINGHAM TUNNEL #2	US	UT	40-32-28N	112-05-58W	PB CU	VEIN; OTHER; FISSURE
D008521	BINGHAM WEST DIP TUN	US	UT	40-33-09N	112-11-55W	PB CU AG ZN FE	REPLACEMENT; VEIN
W017195	BINGHAM-WEST MOUNTAI	US	UT	40-31-00N	112-09-00W	AU AG CU PB ZN MO SB	
D008730	BLACK BALSAM PROSPEC	US	UT	39-57-25N	111-45-01W	CU F PB	LODE
DC15290	BLACK DRAGON MINE	US	UT	39-59-27N	113-12-39W	CU PB ZN	FRACTURE FILLING, LS
M058554	BLACK DRAGON-GREAT E	US	UT	39-55-10N	112-06-12W	AG AU CU	LODE
M058536	BLACK JACK TUNNEL	US	UT	39-55-15N	112-06-38W	PB AG CU	LODE
D007317	BLACK MARIA #2	US	UT	40-00-10N	113-12-15W	F CU PB	FISSURE VEIN
M058390	BLACK MTN. SOUTH PRO	US	UT	41-24-49N	111-57-54W	CU	VEIN
D008632	BLACK ROCK CANYON QU	US	UT	40-42-41N	112-14-07W	CU PB AG AS FE	REPLACEMENT; VEIN
DC15063	BLACKBIRD GROUP	US	UT	38-29-33N	113-17-41W	CU	DISSEMINATED
DB00078	BLACKBIRD MINE	US	UT	38-08-34N	109-08-12W	CU	BEDDED, DISSEMINATED
M058567	BLUE BIRD SHAFT	US	UT	39-53-19N	112-05-33W	CU PB AG FE	LODE
M058258	BLUE JAY AND ROBERTS	US	UT	40-56-39N	112-12-08W	CU FE BA	VEIN
M058289	BLUE JAY PROSPECT	US	UT	40-35-13N	111-47-22W	AG AU CU	VEIN
W027197	BLUE SPAR MINE	US	UT	38-52-21N	109-05-22W	CU F	PEGMATITE
D006155	BLUEBELL MINE	US	UT	41-24-11N	111-47-05W	CU FE	BRECCIA ZONE
DC15179	BONNEMORT MINES	US	UT	40-09-05N	113-49-37W	AU CU	VEIN
M058273	BOUNTIFUL PEAK CAMPG	US	UT	40-58-49N	111-48-57W	CU	VEIN
W027759	BRIDGES NO. 2 MINE	US	UT	37-38-15N	110-02-17W	U CU	DISSEMINATED, BEDDED
DB00705	BROMIDE BASIN MINE	US	UT	38-04-01N	110-47-32W	AG AU CU	VEIN OR FISSURE
DB00706	BROMIDE CROSSCUT	US	UT	38-04-02N	110-47-23W	AU AG CU W	VEIN OR FISSURE
DC12851	BROOKLYN	US	UT	39-54-51N	112-06-29W	AG PB CU	VEIN
M058479	BUCKEYE PROSPECT	US	UT	39-52-21N	112-05-57W	AG PB ZN CU	VEIN
DC13476	BUCKLAND MINING AND	US	UT	40-56-29N	111-49-04W	CU AG FE	VEIN
D005492	BULLION	US	UT	37-42-41N	113-28-28W	PB CU AG	VEIN
M058525	BULLION - BECK MINE	US	UT	39-57-00N	112-07-38W	PB CU ZN AG AS	LODE, REPLACEMENT
W027788	BULLSEYE MINE	US	UT	37-35-43N	110-12-27W	U CU	BEDDED, DISSEMINATED
M058079	BURRO MINE	US	UT	40-50-45N	111-46-43W	AG PB AU CU	REPLACEMENT
D008600	BUTTERFIELD S. MINES	US	UT	40-30-23N	112-06-23W	PB ZN AG CU	
D005834	BWANA ORE BODY	US	UT	38-27-11N	113-04-23W	CU W	SECONDARY ENRICHMENT
DC14169	CACTUS MINE	US	UT	38-29-22N	113-17-41W	CU AG AU PB FE MN	BRECCIA PIPE
DC15183	CALAVERAS MINE	US	UT	40-08-06N	113-49-31W	AU AG CU	SHOOTS AND VEINS, RE
DB01056	CALIFORNIA-SAVAGE-KI	US	UT	37-14-42N	113-22-22W	AG CU	DISSEMINATED REPLACE
W027750	CAMEL MINE	US	UT	37-38-14N	110-02-44W	U CU	DISSEMINATED, REPLAC
W027753	CAMEL NO. 1 PROSPECT	US	UT	37-39-26N	110-00-15W	U CU	BEDDED, DISSEMINATED

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W017191	CARBONATE-DYER MINE	US	UT	40-44-00N	109-35-00W	AG CU	
DC14132	CARDIFF MINE	US	UT	40-36-30N	111-39-13W	PB AG CU ZN AU	REPLACEMENT; VEIN
DC12844	CARISA MINE	US	UT	39-55-39N	112-06-03W	CU AG AU PB BA	VEIN
M058538	CARISA WORKINGS	US	UT	39-55-38N	112-05-23W	CU AG AU CD ZN	LODE
W002689	CARR FORK MINES	US	UT	40-31- N	112-12- W	CU	REPLACEMENT PORPHYRY
M057559	CARR FORK MINE	US	UT	40-31-53N	112-11-25W	CU PB ZN AG MO AU MN FE	SKARN; REPLACEMENT;
DB00513	CASCADE MINE	US	UT	38-24-27N	112-20-12W	AG CU PB ZN AU MN	VEIN
D008601	CASTRO GULCH MINE	US	UT			PB ZN AG CU	VEIN; REPLACEMENT
M058260	CEDAR SPRINGS SOUTH	US	UT	40-55-48N	112-13-07W	CU FE	VEIN
D004691	CEDAR-TALISMAN MINE	US	UT	38-22-17N	113-08-34W	PB ZN CU AG AU	BEDDING REPLACEMENT
DC14049	CENTENNIAL EUREKA	US	UT	39-56-46N	112-07-18W	AG PB ZN CU AU V U	REPLACEMENT
M058527	CENTENNIAL EUREKA MI	US	UT	39-56-38N	112-07-18W	PB AG ZN CU AU	LODE
DC15192	CENTENNIAL-ENTERPRIS	US	UT	40-07-04N	113-49-55W	AU AG CU W FE	REPLACEMENT, VEIN FI
D006230	CHARMED MINE	US	UT	38-38-39N	113-00-12W	MN CU	REPLACEMENT
DC12274	CHESTER CLAIM	US	UT	40-13-50N	113-51-12W	CU	REPLACEMENT
M058588	COLORADO NUMBER 2 SH	US	UT	39-56-21N	112-05-43W	PB AG AU CU ZN	LODE
DC14231	COLUMBIA	US	UT	40-31-13N	112-08-31W	CU AU	FISSURE FILLING
DC14737	COLUMBUS CONSOLIDATE	US	UT	40-35-23N	111-38-19W	AG PB CU ZN AU	REPLACEMENT; VEIN
M057561	COLUMBUS-REXALL MINE	US	UT	40-35-23N	111-38-29W	CU AU AG PB	REPLACEMENT
DC14232	COMMERCIAL	US	UT	40-30-54N	112-09-02W	AU AG PB ZN CU	REPLACEMENT AND FIS
D005803	COMMONWEALTH MINE	US	UT	38-20-10N	113-08-53W	PB CU AG	LIMESTONE REPLACEMEN
DC14190	CONGOR	US	UT	40-31-43N	112-07-53W	CU	CONTACT AND REPLACEM
D011925	COPPER APEX TUNNEL	US	UT	40-37-10N	111-33-35W	PB AG CU AU ZN	VEIN; REPLACEMENT
DB00518	COPPER BELT MINE	US	UT	38-25-46N	112-19-48W	CU AG	VEIN
DC15187	COPPER BLOOM PROSPEC	US	UT	40-07-48N	113-49-22W	AU CU W BI AG	VEINS AND REPLACEMEN
DB01753	COPPER BLOSSOM	US	UT	41-34-36N	112-00-44W	CU PB ZN	REPLACEMENT
DB02067	COPPER BLOSSUM	US	UT	41-03-18N	113-46-12W	CU AG AU PB	CONTACT
DC14233	COPPER CENTER TUNNEL	US	UT	40-31-05N	112-08-40W	CU AU	DISSEMINATED
D005219	COPPER DOME #1 & 2 P	US	UT	37-38-15N	113-33-09W	CU	VEIN
DC12281	COPPER HILL DEPOSIT	US	UT	40-09-43N	113-51-46W	CU PB AU AS	CONTACT METASOMATIC
D004692	COPPER KING MINE	US	UT	38-24-08N	113-06-52W	PB AG CU	LIMESTONE REPLACEMEN
D005883	COPPER MOUNTAIN MINE	US	UT	38-32-50N	113-05-02W	CU FE	FISSURE FILLINGS
D005389	COPPER MTN. GROUP	US	UT	41-14-41N	114-00-55W	CU FE PB AG ZN AU W	REPLACEMENTS, FISSUR
DC12917	COPPER QUEEN	US	UT	39-53-15N	112-05-60W	AG CU PB	VEIN
M058629	COPPER QUEEN PROSPEC	US	UT	40-35-38N	111-28-38W	CU FE	SHEAR ZONE
D005831	COPPER RANCH MINE	US	UT	38-27-44N	113-06-20W	W CU	METAMORPHIC BED/CONT
D004357	COPPER WEDGE CLAIM	US	UT	39-27-46N	113-15-48W	FE CU	VEIN
D005859	CREOLE MINE	US	UT	38-15-48N	112-53-14W	CU AU AG W BI	LIMESTONE REPLACEMEN
DB01801	CRESCENT CREEK ADIT	US	UT	38-03-59N	110-47-41W	CU AU AG	VEIN OR FISSURE
DC14197	CROWN POINT	US	UT	40-31-59N	112-09-10W	AU CU	FISSURE VEIN
D011926	CRYSTAL-ELGIN INCLIN	US	UT	40-37-13N	111-33-31W	PB AG CU ZN AU W	VEIN, REPLACEMENT
DC12859	DAGMAR SHAFT	US	UT	39-57-31N	112-08-11W	CU PB ZN AU AG	REPLACEMENT
W027785	DAISY MINE	US	UT	37-34-59N	110-12-35W	U CU	BEDDED, DESSEMINATED
DB00520	DALTON	US	UT	38-23-43N	112-19-55W	AU AG CU PB ZN	EPITHERMAL
D006238	DANA PROSPECT	US	UT	40-56-41N	109-06-49W	CU	SHEAR ZONE
W027756	DEAD BUCK MINE	US	UT	37-38-35N	110-16-26W	U CU	DISSEMINATED, REPLAC
M058347	DEER CREEK NE PROSPE	US	UT	40-30-17N	111-40-41W	CU PB	OTHER; UNKNOWN
W027231	DILLON ADIT	US	UT	38-31-52N	109-15-53W	AU CU	FISSURE VEIN
DC13236	DISTRICT REPORT	US	UT			AU CU AG BI AS SB SN PB HG YT	REPLACEMENT FISSURE
DC15467	DIXIE MINE	US	UT	37-04-11N	113-48-14W	CU PB ZN GA GE AS AG AU FE	CHIMNEY ALONG FISSUR
D006521	DML-6S CLAIM	US	UT	39-43-59N	112-35-01W	CU	QUARTZ VEIN
D011941	DOLPHIN AND CARIOCA	US	UT	40-35-60N	111-35-44W	CU FE	SKARN; REPLACEMENT
D008617	DRY FORK MINE	US	UT	40-34-44N	112-09-09W	PB ZN CU AG FE	REPLACEMENT; VEIN
D008618	DRY FORK MINE	US	UT			PB ZN CU AG FE	REPLACEMENT; VEIN
D006272	DUTCH JOHN MOUNTAIN	US	UT	40-57-11N	109-26-32W	CU	THIN VEINS AND COATI
DB00294	DYER MINE	US	UT	40-44-08N	109-34-03W	CU AG	REPLACEMENT
DC13238	DYKE #1 CLAIM	US	UT	39-33-34N	113-01-51W	AU CU	IGNEOUS CONTACT REPL
D006208	E.P.H. MINE	US	UT	39-32-41N	113-02-12W	CU AU	SHEAR-VEIN
D007361	EAGLES NEST MINE	US	UT	39-56-10N	113-49-41W	CU AU AG ZN PB FE	FRACTURE FILLING
DC14687	ECLIPSE SHAFT AND HI	US	UT	40-36-09N	111-38-15W	PB AG CU	REPLACEMENT
DC15158	EL DORADO PROSPECT	US	UT	40-09-40N	113-16-53	PB AG CU F	FISSURE VEIN
M057528	ENTERPRISE	US	UT	40-07-06N	113-49-54W	AG CU AU W FE	REPLACEMENT
D004677	ESTELLE MINE	US	UT	38-21-15N	113-05-54W	PB AG CU ZN	CONTACT METASOMATIC
DC12520	EUREKA BULLION MINE	US	UT	39-57-18N	112-04-19W	AG AU CU PB	REPLACEMENT
M058591	EUREKA BULLION SHAFT	US	UT	39-57-17N	112-04-19W	PB AG CU AU ZN	LODE
DC12856	EUREKA STANDARD MINE	US	UT	39-56-36N	112-03-35W	PB AU AG CU	LODE
M058474	EVELYN PROSPECT	US	UT	39-51-52N	112-06-01W	AG PB ZN CU	VEIN

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DC14135	FLAGSTAFF MINE	US	UT	40-35-50N	111-38-12W	AG PB CU ZN AU	REPLACEMENT
DC15273	FLYING DUTCHMAN GROU	US	UT	39-55-10N	112-31-03W	CU F MN U	FISSURE VEINS
DC14192	FORTUNA	US	UT	40-31-41N	112-07-44W	AG PB CU AU	VEIN/SHEAR ZONE
W027777	FOUND	US	UT	37-40-35N	110-07-55W	U CU	BEDDED, DISSEMINATED
D008340	FOUR ACES MINE	US	UT	39-54-46N	112-07-56W	AU AG PB CU	VEIN
D005516	FRANCIS 1 & 2	US	UT	37-43-32N	113-26-33W	PB ZN CU AG	VEIN
DC15180	FRANKIE MINE	US	UT	40-08-26N	113-49-36W	CU AG AU PB W	REPLACEMENT
DB01764	GINZA MINES AND PROS	US	UT	41-57-35N	113-16-52W	CU AU AG	QUARTZ VEINS
W027783	GIZMO MINE	US	UT	37-35-16N	110-07-40W	U CU	BEDDED, DISSEMINATED
DB00525	GLEN ERIE MINE	US	UT	38-24-32N	112-20-35W	AU AG PB CU ZN	VEIN
DC15184	GOLD BOND PROSPECT	US	UT	40-08-03N	113-49-19W	CU F B	FISSURE-REPLACEMENT
DC12845	GOLD CHAIN MINE	US	UT	39-55-46N	112-06-02W	AU AG CU PB	LODE
W002878	GOLD HILL (CLIFTON)	US	UT	40-10- N	113-48- W	AU CU PB AG W BI MO AS	PIPES, VEINS, REPLAC
DC15161	GOLD HILL MINE	US	UT	40-09-40N	113-48-20W	CU AG PB AU AS BA	VEIN
D008319	GOLDEN SUNSET ADIT	US	UT	39-55-58N	112-08-12W	PB CU	VEIN
M058560	GOLDEN TREASURE MINE	US	UT	39-53-55N	112-06-08W	CU PB AG	LODE
D007364	GOSHUTE CANYON PROPE	US	UT	39-54-39N	113-49-37W	AU AG CU PB FE ZN	FRACTURE FILLING
M057565	GOVENOR	US	UT	39-55-14N	112-06-07W	AG CU	REPLACEMENT
D007352	GREAT EASTERN PROPER	US	UT	39-59-09N	113-09-21W	CU PB AG	VEIN & REPLACEMENT
DC14717	GREAT WESTERN PROSP	US	UT	40-35-46N	111-34-18W	CU	INSUFFICIENT DATA TO
DB00527	GREAT WESTERN MINE	US	UT	38-24-39N	112-20-28W	AG CU PB ZN AU	VEIN/SHEAR ZONE
D011932	GREAT WESTERN PROSPE	US	UT	40-35-57N	111-34-24W	CU FE AU AG PB W	REPLACEMENT
DC15666	GREEN CANYON MIDDLE	US	UT	39-57-14N	111-44-49W	CU	SHEAR ZONE
DB02013	GREEN CARBONATE MINE	US	UT	41-14-49N	114-01-00W	CU PB ZN AG AU	REPLACEMENT
D011977	GREEN MONSTER MINE	US	UT	40-34-23N	111-34-42W	CU AG AU FE	VEIN; SKARN
DC14684	GYPSY BLAIR MINE	US	UT	40-36-30N	111-38-01W	PB CU	SHEAR ZONE
D005840	HARRINGTON-HICKORY M	US	UT	38-21	113-06	PB AG CU AU ZN	PIPE-LIKE, OR CHIMNE
D007729	HASTINGS NO. 2 AND N	US	UT	40-56-09N	113-47-37W	AG CU	SHEAR ZONE
M058400	HAYES MINE	US	UT	40-40-20N	111-41-27W	AU CU PB	REPLACEMENT; OTHER;
D004638	HECLA MINE	US	UT	38-18-56N	112-52-46W	CU PB AG AU FE	LIMESTONE REPLACEMEN
D003958	HECLA MINE	US	UT	38-19-03N	112-52-46W	AU AG CU PB	FISSURE FILLING AND
D007345	HIDDEN TREASURE CLAI	US	UT	39-59-31N	113-10-31W	CU PB	REPLACEMENT, FISSURE
DC14141	HIGHLAND BOY	US	UT	40-30-55N	112-10-02W	AU AG PB CU	REPLACEMENT, SKARN
W027784	HILLSIDE MINE	US	UT	37-35-04N	110-07-36W	U CU	
D006198	HINKLEY SHAFT	US	UT	39-33-40N	113-02-05W	AU AG CU	HYPOGENE-HYDROTHERM/
M058601	HOMANSVILLE SHAFT	US	UT	39-58-35N	112-04-44W	CU PB AG	LODE
DC12912	HOMESTAKE MINE	US	UT	39-53-33N	112-06-10W	CU PB AG	LODE
D004696	HOOSIER BOY MINE	US	UT	38-21-38N	113-09-21W	PB ZN AG CU	LIMESTONE REPLACEMEN
M058480	HORSESHOE HILL PROSP	US	UT	39-52-07N	112-06-22W	AG PB ZN CU	VEIN
DC14066	HUMBUG MINE	US	UT	39-56-40N	112-05-57W	PB AG CU AU ZN	LODE
DC13239	IBEX MINE	US	UT	39-33-49N	113-02-25W	AU AG CU BI	VEIN-DIKE AND CARBON
D007338	INDIAN BOY CLAIM	US	UT	39-55-10N	112-45-31W	CU MN AG	REPLACEMENT
M057555	INGERSOLL MINE	US	UT	40-30-54N	112-09-35W	CU	REPLACEMENT
D011924	IOWA COPPER MINE	US	UT	40-37-03N	111-34-05W	CU AU AG	REPLACEMENT; VEIN
DC14679	IOWA COPPER MINE	US	UT	40-37-03N	111-34-04W	CU PB AG AU	REPLACEMENT
DC14062	IRON BLOSSOM NUMBER	US	UT	39-55-31N	112-05-55W	AG PB ZN CU AU	LODE
DC12870	IRON DUKE MINE	US	UT	39-54-40N	112-07-28W	AU AG CU PB FE	LODE
DC12936	IRON KING MINE	US	UT	39-50-19N	112-24-27W	W AU AG FE CU	CONTACT METASOMATIC
M058212	JENNY JOE OCCURRENCE	US	UT	41-19-52N	111-55-53W	CU	OTHER; FRACTURE COAT
D006282	JESSE EWING CANYON C	US	UT	40-56-09N	109-09-30W	CU FE	VEIN, PEGMATITE
D005260	JESSIE MINE	US	UT	37-04-06N	113-49-40W	CU PB AG	VEIN REPLACEMENT
DC12907	JOE BOWERS MINE	US	UT	39-53-37N	112-05-34W	CU PB AG AU	LODE
D008500	JOHNSON CANYON PROPE	US	UT	39-46-53N	114-01-38W	PB CU MN AG	SHEAR ZONE
D006514	JSP #60 CLAIM	US	UT	39-33-13N	113-02-17W	CU	REPLACEMENT
D006518	JSP #76 CLAIM	US	UT	39-32-25N	113-02-09W	CU AU	REPLACEMENT
D006204	JSP 133	US	UT	39-33-21N	113-02-23W	CU AU AG	HYPOGENE-HYDROTHERM/
D007557	JUMBO PROPERTIES	US	UT	39-47-24N	113-58-43W	AU AG PB CU FE ZN	FRACTURE FILLINGS
DC15229	KELLY'S HOLE EAST PR	US	UT	39-59-16N	113-11-21W	CU PB AG	VEIN
M058574	KENNECOTT DRILL HOLE	US	UT	39-52-43N	112-06-48W	CU MO	PORPHYRY
DC15185	KENO CLAIM MINES	US	UT	40-07-59N	113-49-10W	AU AG CU	VEINS
D011907	KENTUCKY-UTAH GROUP	US	UT	40-36-25N	111-36-31W	PB AG CU AU ZN BI	VEIN; REPLACEMENT; S
D006200	KEYSTONE AND HARD TI	US	UT	39-33-38N	113-02-15W	CU AU AG	REPLACEMENT
M057616	KEYSTONE MINE	US	UT	40-37-09N	111-32-28W	PB CU	REPLACEMENT
DC12853	KING JAMES MINE	US	UT	39-54-40N	112-06-22W	CU FE AG	LODE
DC15093	KING OF THE HILLS MI	US	UT	38-22-18N	112-46-20W	W AU AG CU	CONTACT METASOMATIC
D006134	LA PLATA CLAIMS	US	UT	41-26-41N	111-40-43W	PB CU AG	FISSURE
DC12919	LACLEDE	US	UT	39-53-13N	112-06-11W	CU PB AG	VEIN

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
M058563	LACLEDE SHAFT	US	UT	39-53-14N	112-06-10W	CU AG AU PB	LODE
D005808	LADY BRYAN MINE	US	UT	38-20-07N	113-09-20W	F PB CU FE	VEIN
D008630	LAKE POINT MINE	US	UT	40-41-26N	112-14-38W	CU PB AG FE AS	REPLACEMENT; VEIN
D008631	LAKE POINT QUARRY	US	UT	40-42-38N	112-14-32W	CU PB AG AS FE	REPLACEMENT; VEIN
DB01003	LEAD HILL	US	UT	38-56-04N	111-48-38W	PB ZN CU SR	REPLACEMENT
W017209	LISBON VALLEY-PIONEE	US	UT	38-09-00N	109-06-00W	CU	
D011919	LITTLE DOLLIE TUNNEL	US	UT	40-37-16N	111-35-26W	CU AU PB AG	FISSURE; SKARN
DC12913	LITTLE MAY	US	UT	39-54-04N	112-06-02W	PB AG BI CU	VEIN
M058561	LITTLE MAY SHAFT	US	UT	39-54-04N	112-06-01W	PB AG CU AU	LODE
DC14667	LOGGER MINE	US	UT	40-38-20N	111-41-22W	PB CU FE	VEIN
W027761	LONE BUTTE NO. 1	US	UT	37-39-27N	110-04-23W	U CU	DISSEMINATED, BEDDED
W027760	LONE BUTTE NO. 4	US	UT	37-39-35N	110-03-53W	U CU	DISSEMINATED
M058290	LOWER BELLS CANYON W	US	UT	40-34-07N	111-47-10W	CU PB ZN	SHEAR ZONE
DC14035	LOWER MAMMOTH MINE	US	UT	39-55-40N	112-06-57W	ZN CU AU AG PB	LODE
M058266	LUCKY BOY PROSPECT	US	UT	40-59-50N	111-49-60W	CU AG AU W	VEIN
D006207	MACK #1 & MACK #2	US	UT	38-40-19N	113-01-15W	CU MN AU AG	FISSURE-VEIN REPLACE
DC12846	MAMMOTH MINE	US	UT	39-55-56N	112-06-41W	AU AG CU PB ZN AS	LODE,
D005833	MARIA MINE	US	UT	38-27-11N	113-04-07W	CU	SKARN
W027812	MARKEY MINE	US	UT	37-32-58N	110-18-00W	U CU	DISSEMINATED, REPLAC
D006556	MARTHA MINE	US	UT	39-33-14N	113-02-04W	AU CU AG MN	REPLACEMENT
DC14038	MARTHA WASHINGTON GR	US	UT	39-54-46N	112-06-27W	CU FE AG	LODE
DC14754	MASCOTTE TUNNEL	US	UT	40-31-38N	112-05-48W	PB ZN CU AG AU	REPLACEMENT; VEIN
D007343	METALLIC HILL #1 CLA	US	UT	39-59-09N	113-12-02W	CU PB AG	FISSURE VEIN & LIMES
D003967	MICHIGAN CLAIMS	US	UT	38-27-47N	113-18-13W	PB CU AU FE	FISSURE FILLING
M057019	MIDLAND MINE	US	UT	40-04-34N	113-50-03W	AG CU PB AU AS MO	VEINS
D007803	MILLARD CANYON GROUP	US	UT	40-50-54N	113-54-22W	CU	VEIN
DC15592	MINERAL FLAT SW PROS	US	UT	40-33-26N	111-38-06W	AG PB ZN CU	VEIN; REPLACEMENT
DC13304	MINERAL MONARCH MINE	US	UT	41-12-01N	113-20-15W	CU	VEIN
D004384	MINERS CABIN SHAFTS	US	UT	38-17-30N	113-55-11W	CU	VEIN (GOSSAN)
DC15170	MINNEHAHA	US	UT	40-05-23N	113-47-36W	CU AU AG FE	REPLACEMENT
DC12541	MINNIE MOORE	US	UT	39-56-14N	112-05-34W	AG CU	REPLACEMENT
DC14223	MINNIE TUNNEL	US	UT	40-31-15N	112-10-11W	CU	REPLACEMENT
M058607	MINTINTIC DRILL HOLE	US	UT	39-52-35N	112-07-36W	CU	INSUFFICIENT DATA TO
DC15200	MONOCCO MINE	US	UT	40-05-32N	113-48-59W	CU PB AG AU FE ZN AS	VEIN, BEDDED REPLACE
M057043	MONOCCO MINE	US	UT	40-05-31N	113-49-05W	CU PB AG AU FE AS ZN	REPLACEMENT AND FISS
M058323	MONTE CRISTO PROSPEC	US	UT	40-28-27N	116-22-30W	CU	VEIN
DC12872	MONTEREY	US	UT	39-54-40N	112-07-27W	AU AG PB CU	FISSURE VEIN
M058268	MORRIS CREEK EAST PR	US	UT	40-59-55N	111-50-26W	CU	VEIN
M058355	MOUNT BALDY PROSPECT	US	UT	40-34-01N	111-38-13W	CU	SHEAR ZONE
D011934	MOUNTAIN LAKE MINE	US	UT	40-35-01N	111-35-05W	CU FE AU AG PB W	SKARN
DB00738	MT. PENNELL	US	UT	37-56-56N	110-47-18W	CU	FISSURE
DC12145	MUERBROOK MINE	US	UT	40-27-54N	112-20-36W	PB AG CU AU ZN	REPLACEMENT
M058287	MURRAY COPPER AND VI	US	UT	40-36-59N	111-46-15W	CU AU PB	VEIN
DC13477	NANCE AND FANNING PR	US	UT	41-02-32N	111-52-08W	CU	VEIN
DC12269	NAPOLEON MINING CO.	US	UT	40-10-36N	113-48-30W	CU AG AU ZN PB	REPLACEMENT LODE
DC14745	NATIVE COPPER PROSPE	US	UT	40-34-44N	111-38-45W	CU	OTHER; FISSURE VEIN;
DC15227	NEW ERA CLAIM	US	UT	39-59-12N	113-12-10W	CU PB AG F	FISSURE VEINS & REPL
DC12272	NEW YEAR-ROY CLAIMS	US	UT	40-14-33N	113-50-42W	CU	FISSURE VEINS
D011940	NEW YORK TUNNEL	US	UT	40-36-21N	111-35-29W	CU FE	SKARN
D005094	NEWFOUNDLAND COPPER	US	UT	41-15-22N	113-19-48W	CU	REPLACEMENTS AND VEI
DC12914	NIEBAVER MINE	US	UT	39-53-35N	112-06-30W	CU PB AG AU	LODE
D006511	NO NAME	US	UT	39-36-58N	113-04-33W	CU	REPLACEMENT
D005888	NORMA #3 CLAIM	US	UT	38-32-38N	113-05-30W	CU FE	FISSURE FILLINGS
DC14759	NORTH BINGHAM MINE	US	UT	40-35-00N	112-09-24W	PB ZN AG CU FE	REPLACEMENT
M058556	NORTH STAR MINE	US	UT	39-55-15N	112-06-22W	CU PB AG AU	LODE
W017206	NORTH STAR MINE	US	UT	38-23- N	113-08- W	CU AG PB ZN	REPLACEMENT
DC14265	NORTHERN CHIEF	US	UT	40-30-09N	112-08-57W	AU AG CU PB ZN	REPLACEMENT & VEINS
DC12553	NORTHERN SPY MINE	US	UT	39-55-46N	112-05-58W	PB AG CU	LODE
D000632	OK MINE	US	UT	38-29- N	113-07-50W	CU MO AG AU	SECONDARY ENRICHMENT
D011939	OLD EVERGREEN DRAIN	US	UT	40-36-32N	111-35-13W	CU FE	SKARN
DB00743	OLD FAITHFUL MINE	US	UT	38-11-55N	111-17-42W	CU	BEDDED, DISSEMINATED
M058484	OLD SUSAN MINE	US	UT	39-51-26N	112-06-49W	AG PB ZN CU	VEIN
W002885	OPHIR-RUSH VALLEY DI	US	UT	40-23-36N	112-17-03W	PB AG CU ZN AU	BEDDED REPLACEMENT,
M057532	OREGON PROSPECT	US	UT	40-09-27N	113-50-04W	CU AS	CONTACT METASOMATIC
DC12933	ORIENT MINE	US	UT	39-50-36N	112-24-02W	CU AU	REPLACEMENT
DC15244	OZARK	US	UT	40-04-35N	113-48-21W	CU AG AU AS	VEIN
M057980	OZARK MINE	US	UT	40-04-51N	113-47-42W	AU AG CU AS	VEINS

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D008439	PAGE TUNNEL	US	UT	40-15-02N	113-50-08W	PB AG CU AU BA	REPLACEMENT VEIN
DC12942	PAYMASTER & IRON CAP	US	UT	39-49-52N	112-23-16W	CU PB	MESOTHERMAL VEINS
DC15468	PAYMASTER MINE	US	UT	37-03-57N	113-48-20W	CU PB AG	FISSURE VEIN
DC15238	PETERSON PROSPECT	US	UT	39-59-19N	113-12-01W	PB AG CU F	FISSURE VEINS IN QUA
D006219	PHIL SHOP HOLLOW COP	US	UT	41-01-47N	111-35-50W	CU	VEIN
DC12873	PICNIC MINE	US	UT	39-54-43N	112-07-51W	AU AG CU PB	VEIN
DC13276	PICNIC MINE	US	UT	39-54-44N	112-07-51W	AU AG CU PB	VEIN
DB01055	PLATA #1 , 2 & 3	US	UT	37-14-33N	113-20-48W	AG CU	DISSEMINATED REPLACE
D005811	PLUMBIC MINE	US	UT	38-23-24N	113-06-45W	CU PB ZN	REPLACEMENT
M057530	POLESTAR MINE	US	UT	40-08-01N	113-48-56W	AU AG CU W	FISSURE VEINS
DC14050	PRIMROSE	US	UT	39-54-27N	112-07-10W	AG CU PB	VEIN
DB00091	PROFIT #2 COPPER PRO	US	UT	38-06-32N	109-06-06W	CU	FRACTURE COATINGS
DB00090	PROFIT COPPER PROSPE	US	UT	38-06-16N	109-05-60W	CU	FRACTURE COATING
D011916	PROSPECTS IN SILVER	US	UT	40-36-09N	111-37-24W	CU	INSUFFICIENT DATA TO
D012028	PROSPECTS WEST OF SI	US	UT	40-36-09N	111-35-32W	CU	SKARN
D007363	PROSPERITY PROPERTY	US	UT	39-56-22N	113-51-10W	CU PB AG ZN AU FE	FRACTURE FILLING
DC14051	RABBIT'S FOOT	US	UT	39-54-34N	112-07-11W	CU PB AG	FISSURE VEIN
W027792	RADIUM KING WEST CHA	US	UT	37-34-54N	110-14-04W	U CU	BEDDED, DESSIMINATED
W027772	RARIN NO. 2	US	UT	37-43-31N	110-11-47W	U CU	BEDDED - DISSEMINATE
D006279	RED CREEK	US	UT	40-55-53N	109-13-21W	CU	SHEAR
D005799	RED WARRIOR MINE	US	UT	38-20-54N	113-08-53W	PB ZN CU AG AU	LIMESTONE REPLACEMEN
D006221	REE'S RANCH ADIT	US	UT	41-03-30N	111-37-08W	CU FE	BEDDING PLANE DEPOSI
D011933	RELIEF SHAFT	US	UT	40-34-58N	111-34-55W	CU FE AU AG PB W	SKARN
DC12915	REPUBLIC SHAFT	US	UT	39-53-23N	112-06-37W	CU AG AU	LODE
M058475	RISING SUN PROSPECT	US	UT	39-52-01N	112-05-15W	AG PB ZN CU	VEIN
D006193	ROCKWELL SHAFT	US	UT	39-45-18N	112-38-46W	CU PB ZN AG AU MN	INTRUSIVE DIKE
M058299	ROCKY MOUTH CANYON A	US	UT	40-32-36N	111-48-04W	CU MO PB	VEIN
W017200	ROCKY-HARRINGTON-HIC	US	UT	38-21-00N	113-06-00W	AG CU W	
D008403	ROSE TOWSLEY CLAIM P	US	UT	40-09-24N	113-47-54W	AU CU	VEIN
DC15186	RUSTLER PROSPECT	US	UT	40-07-57N	113-49-53W	AU CU MO W	REPLACEMENT ALONG FI
M058589	S. HANSEN DRILL HOLE	US	UT	39-53-10N	112-07-25W	CU	PORPHYRY
D008603	SAINTS REST GULCH NE	US	UT	40-30-31N	112-06-31W	PB ZN AG CU	REPLACEMENT; VEIN
D008602	SAINTS REST GULCH SW	US	UT	40-30-28N	112-06-38W	PB ZN CU	
DC12144	SALVATION-HERCULES M	US	UT	40-28-01N	112-19-30W	PB AG CU AU	REPLACEMENT; VEIN
DC14838	SANTAQUIN KING WORKI	US	UT	39-52-49N	111-46-32W	PB AG CU	SHEAR ZONE
D011908	SCOTIA PROSPECT	US	UT	40-36-45N	111-36-27W	PB AG CU ZN AU	VEIN; REPLACEMENT
M058272	SE CENTERVILLE CANYO	US	UT	40-54-35N	111-51-13W	CU	VEIN
DC12910	SHOEBRIDGE-BONANZA	US	UT	39-53-40N	112-05-47W	CU PB AG	FISSURE VEIN
M058568	SHOWERS MINE	US	UT	39-53-27N	112-05-35W	CU PB AG AU	LODE
DC12863	SILVER BELL PROSPECT	US	UT	39-58-58N	112-12-02W	CU	REPLACEMENT
D008339	SILVER BOW MINE	US	UT	39-54-46N	112-07-45W	AU AG PB CU ZN	VEIN
M058334	SILVER CREEK SOUTH W	US	UT	40-31-21N	111-39-58W	CU PB	UNKNOWN
DB01731	SILVER EAGLE	US	UT	41-28-43N	111-56-34W	CU PB AG	VEIN
M058336	SILVER GLANCE LAKE S	US	UT	40-32-34N	111-38-05W	AG CU MO PB BI	OTHER; FRACTURES
M058337	SILVER GLANCE LAKE S	US	UT	40-31-54N	111-40-07W	CU MO PB	OTHER; UNKNOWN
DB00293	SILVER KING	US	UT	40-43-07N	109-34-01W	PB ZN CU AG AU	REPLACEMENT
DC15198	SILVER KING	US	UT	40-05-37N	113-48-45W	PB AG CU AU	FISSURE FILLING
D006404	SILVER KING CONSOLID	US	UT	40-38-03N	111-31-15W	PB AG CU W	VEIN/REPLACEMENT
D006405	SILVER KING MINE	US	UT	40-37-54N	111-30-45W	PB AG ZN AU CU MN FE	VEIN AND REPLACEMENT
M057966	SILVER KING MINE	US	UT	40-05-25N	113-48-56W	AG CU AU PB	FISSURE VEINS AND RE
M058335	SILVER LAKE NE ADITS	US	UT	40-31-25N	111-40-08W	CU MO PB AG	SHEAR ZONE
M058338	SILVER LAKE NE ADITS	US	UT	40-31-37N	111-39-27W	AG PB CU MO BI	VEIN
D007719	SILVER PRINCE NO. 6	US	UT	40-55-01N	113-49-55W	CU	SHEAR ZONE
DB01744	SILVER RIDDLE MINES	US	UT	41-34-32N	113-41-29W	CU PB AG AU	FISSURES, PARTIAL RE
D005891	SKYLARK MINE	US	UT	38-32-11N	113-06-50W	CU PB ZN AG	REPLACEMENT
D006143	SMITHFIELD CANYON CL	US	UT	41-52-31N	111-44-26W	CU	FRACTURE FILLING
M057641	SNAKE CREEK DISTRICT	US	UT	40-34-29N	111-34-44W	CU	CONTACT METASOMATIS
D008622	SOUTH FORK MINE	US	UT	40-33-29N	112-12-04W	PB ZN CU FE	VEIN; REPLACEMENT
D011993	SOUTH QUINCY TUNNELS	US	UT	40-35-58N	111-30-19W	PB AG CU FE	VEIN; SHEAR ZONE
D007588	SOUTH THORPE HILLS A	US	UT	40-10-12N	112-09-24W	CU	SHEAR ZONE
M058253	SOUTHPORT MINE	US	UT	40-27-50N	112-20-45W	PB AG CU AU	REPLACEMENT
D007470	SPAGHETTI SHAFT	US	UT	39-41-55N	113-56-39W	AG CU AU	VEIN/FISSURE
W027789	SPOOK - DEE BULLSEYE	US	UT	37-34-45N	110-11-11W	U CU	BEDDED, DISSEMINATED
D008635	SPRING TUNNEL PROSPE	US	UT	40-30-12N	112-10-05W	CU PB	REPLACEMENT; VEIN
M058313	ST. LOUIS TUNNEL	US	UT	40-36-39N	111-38-16W	CU AG	REPLACEMENT
D004682	ST. MARY MINE	US	UT	38-19-51N	113-09-03W	PB CU AG BI	LIMESTONE REPLACEMEN
M058093	ST. PATRICK PROSPECT	US	UT	40-38-23N	111-47-09W	CU PB AG AU SB	VEIN

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W027767	STANDARD	US	UT	37-36-58N	110-02-21W	U CU	DISSEMINATED, BEDDED
D011975	STEAMBOAT TUNNEL	US	UT	40-34-23N	111-34-48W	FE CU	SKARN
DB01660	STONE HOUSE MINES	US	UT	41-10-46N	113-22-48W	CU AG PB AU BI	VEINS-FISSURES
D006546	STRAWBERRY MINE	US	UT	41-08-01N	111-49-55W	CU FE	PEGMATITE
D005806	SULLIVAN GROUP	US	UT	38-20-48N	113-09-42W	F CU PB	LIMESTONE REPLACEMEN
D011927	SUMMIT EXTENSION	US	UT	40-36-59N	111-33-24W	CU AU FE	VEIN
DC14039	SUNBEAM	US	UT	39-54-33N	112-06-42W	AG PB CU	FISSURE VEIN
D004706	SUNDOWN MINE	US	UT	38-21-56N	113-04-47W	PB ZN CU MN	FISSURE VEINS
D003988	SUNDOWN MINE	US	UT	38-21-59N	113-04-47W	PB ZN CU AG MN FE CLY3	FISSURE FILLING, CON
M058473	SUNRISE CANYON PROSP	US	UT	39-51-32N	112-05-54W	AG PB ZN CU	VEIN
D005839	SUNRISE MINE (PROSPE	US	UT	38-26-52N	113-03-41W	CU	SECONDARY ENRICHMENT
D005259	SURPRISE MINE	US	UT	37-04-24N	113-49-49W	CU PB AG	VEIN REPLACEMENT
M058271	SW CENTERVILLE CANYO	US	UT	40-54-49N	111-51-37W	CU	SHEAR ZONE
DC14053	SWANSEA MINE	US	UT	39-54-44N	112-07-51W	AU AG PB CU ZN	FISSURE VEIN
D011917	SWASTIKA COPPER PROP	US	UT	40-36-30N	111-35-59W	CU	SKARN
DC12911	TESORA PROSPECT	US	UT	39-54-05N	112-05-54W	PB CU AG AU	LODE
D011947	TILLITE CLAIMS	US	UT	40-35-11N	111-36-50W	CU MO	DISSEMINATED
W017197	TINTIC	US	UT	39-57-00N	112-07-00W	AG AU CU PB ZN FE V	REPLACEMENT
DC14845	TINTIC BULLION MINE	US	UT	39-57-45N	112-04-46W	AU AG CU PB ZN	VEIN
M058485	TINTIC COALITION CLA	US	UT	39-51-33N	112-06-30W	AG PB ZN CU	VEIN
M058328	TOM MOORE TUNNEL	US	UT	40-35-28N	111-38-05W	AG PB CU ZN AU	VEIN; REPLACEMENT
DB00771	TR # 1 GROUP.	US	UT	38-13-16N	111-18-04W	CU	BEDDED, DISSEMINATED
DB01898	TRINITY MINE	US	UT	38-30-57N	112-15-32W	CU	REPLACEMENT
DC13289	TRIXIE MINE	US	UT	39-55-54N	112-03-59W	AG PB ZN CU AU BA BI SB	FISSURE VEIN, REPLAC
M058616	TRIXIE MINE	US	UT	39-55-53N	112-03-60W	AU AG CU PB ZN SIL	LODE
DC15168	TROY PROSPECT	US	UT	40-07-39N	113-47-30W	AU BE CU PB	FISSURE VEIN
M057737	TUNNEL EXTENSION NO.	US	UT			CU BI SN AG AU PB SB	FISSURE FILLING
D006551	TUNNEL HOLLOW AND MI	US	UT	41-00-56N	111-34-47W	CU	VEIN
D011937	TUSCARORA TUNNEL	US	UT	40-35-04N	111-35-46W	CU	VEIN
DC12547	TWENTIETH CENTURY MI	US	UT	39-56-49N	112-04-37W	AG CU	REPLACEMENT
DC15182	UNDINE MINE	US	UT	40-08-47N	113-49-22W	AU CU AG PB FE	REPLACEMENT, CONTACT
D005497	UNKNOWN	US	UT	37-43-04N	113-24-26W	CU AG	VEIN
D005496	UNKNOWN	US	UT	37-43-47N	113-26-32W	CU AG	VEIN
D005494	UNKNOWN	US	UT	37-44-55N	113-27-33W	CU AG	VEIN
D005487	UNKNOWN	US	UT	37-44-06N	113-29-31W	CU AG	FRACTURE FILLING
D007718	UNKNOWN	US	UT	40-56-04N	113-49-37W	CU	SHEAR ZONE
D007725	UNKNOWN	US	UT	40-52-59N	113-49-52W	CU AG	SHEAR ZONE
D007805	UNKNOWN	US	UT	40-51-45N	113-54-33W	CU	VEIN
DB00082	UNKNOWN	US	UT	38-07-47N	109-07-35W	CU	BEDDED, DISSEMINATED
DB00103	UNKNOWN	US	UT	38-10-48N	109-12-43W	CU	BEDDED, DISSEMINATED
DB00107	UNKNOWN	US	UT	38-09-14N	109-08-11W	CU	BEDDED, DISSEMINATED
DB00290	UNKNOWN	US	UT	40-43-15N	109-33-26W	CU	REPLACEMENT
W027757	UNKNOWN	US	UT	37-38-55N	110-02-38W	U CU	
W027770	UNKNOWN	US	UT	37-43-37N	110-12-10W	U CU	BEDDED DISSEMINATED
W027805	UNKNOWN	US	UT	37-40-30N	110-13-32W	U CU	DISSEMINATED REPLACE
D005229	UNKNOWN COPPER PROSP	US	UT	37-30-46N	113-11-22W	CU	CAVITY FILLING
D005220	UNKNOWN COPPER PROSP	US	UT	37-38-40N	113-32-24W	CU	VEIN
D005998	UNKNOWN INCLINE	US	UT	38-27-17N	113-18-33W	CU PB	REPLACEMENT
D005814	UNKNOWN MINE	US	UT	38-22-32N	113-07-12W	CU	LIMESTONE REPLACEMEN
D005813	UNKNOWN MINE	US	UT	38-23-47N	113-06-48W	CU	FISSURE FILLING
D004629	UNKNOWN MINE	US	UT	38-31-05N	112-50-58W	CU PB	FISSURE FILLINGS
D004350	UNKNOWN MINE	US	UT	38-34-23N	112-48-35W	CU FE	IGNEOUS HYDROTHERMAL
D007373	UNKNOWN PROSPECT	US	UT	39-53-11N	113-51-06W	CU PB AU FE	VEIN
D006555	UNKNOWN PROSPECT	US	UT	39-49-44N	112-24-49W	W CU PB	CONTACT METAMORPHIC
D006192	UNKNOWN PROSPECT	US	UT	39-45-32N	112-37-52W	CU PB AG U MO F FE	HYDROTHERMAL ALTERA
D006184	UNKNOWN PROSPECT	US	UT	39-49-35N	112-25-47W	CU	REPLACEMENT
D005877	UNKNOWN PROSPECT	US	UT	38-30-09N	113-08-48W	CU	FISSURE FILLINGS
D005875	UNKNOWN PROSPECT	US	UT	38-30-53N	113-08-25W	CU	FISSURE FILLING AND
D007806	UNKNOWN PROSPECT	US	UT	40-50-30N	113-55-17W	CU	SHEAR ZONE-GOSSAN
D006185	UNKNOWN PROSPECTS	US	UT	39-49-37N	112-25-43W	CU	REPLACEMENT
D005889	UNKNOWN PROSPECTS	US	UT	38-32-24N	113-05-55W	CU	REPLACEMENT
D005776	UNKNOWN PROSPECTS	US	UT	38-19-52N	113-09-13W	PB ZN AG CU F	REPLACEMENT
D006326	UNKNOWN SHAFT	US	UT	39-49-41N	112-25-36W	CU	CARBONATE REPLACEMEN
D007603	UNNAMED PROSPECT	US	UT	40-08-02N	113-17-35W	CU	FISSURE VEIN
M058384	UPPER BAER CANYON WO	US	UT	41-02-07N	111-52-41W	CU	PEGMATITE
M058259	UPPER BUFFALO SCAFFO	US	UT	40-57-16N	112-12-54W	CU FE	VEIN
M058270	UPPER WARD CANYON PR	US	UT	40-54-09N	111-47-45W	CU PB ZN	SHEAR ZONE

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DC12633	UTAH AND NEBRASKA MI	US	UT	41-09-47N	112-20-27W	AU AG CU PB	VEIN
M046822	UTAH COPPER	US	UT	40-32-00N	112-09 W	CU MO AU AG PT	LODE
D000641	UTAH COPPER DIVISION	US	UT	40-31- N	112-09- W	MO CU PB AG	DISSEMINATED, PORPHY
D007619	UTAH PEAK NO. 2 PROS	US	UT	40-15-18N	114-01-23W	CU	FISSURE VEIN WITH SO
D005882	UTE MINE	US	UT	38-31-59N	113-04-40W	CU FE	VEIN FILLINGS
M057623	VALEO MINE	US	UT	40-35-58N	111-27-47W	CU AG AU	REPLACEMENT
DC14036	VICTOR MINE	US	UT	39-55-22N	112-05-60W	CU AU AG PB	REPLACEMENT
M057491	VICTORIA NO 1 PROSPE	US	UT	41-59-25N	111-26-15W	PB CU BA	VEIN
DC12537	VICTORIA SHAFT	US	UT	39-56-41N	112-06-50W	PB AG AU CU	LODE
M058483	VOLCANO RIDGE NORTH	US	UT	39-51-42N	112-06-49W	AG PB ZN CU	VEIN
M058482	VOLCANO RIDGE NW PRO	US	UT	39-51-32N	112-07-23W	CU MO	OTHER; DISSEMINATED
M058486	VOLCANO RIDGE WEST P	US	UT	39-51-08N	112-06-59W	AG PB ZN CU	VEIN
W027755	W. N. MINE	US	UT	37-38-23N	110-02-53W	U CU	DISSEMINATED, REPLAC
D011936	W.S. BRIGHTON PROSPE	US	UT	40-35-03N	111-35-26W	CU	UNKNOWN
DC14200	WALL GROUP	US	UT	40-31-27N	112-08-57W	AU AG CU PB ZN	DISSEMINATED
D006515	WALTON #1, 2 MINE	US	UT	39-32-19N	113-01-27W	CU	REPLACEMENT
M058331	WASATCH DRAIN TUNNEL	US	UT	40-34-60N	111-39-02W	AG CU PB AU ZN	VEIN
DC12920	WEST MORNING GLORY	US	UT	39-53-15N	112-06-39W	AG CU AU	VEIN
M058562	WEST MORNING GLORY S	US	UT	39-53-15N	112-06-21W	CU AG	LODE
D011978	WEST PARK MINE	US	UT	40-34-26N	111-34-25W	CU AG AU FE	VEIN, SKARN
M057640	WEST QUINCY PROPERTY	US	UT	40-36-20N	111-30-60W	CU SB	CONTACT METASOMATIS
D011991	WEST QUINCY SHAFT	US	UT	40-36-22N	111-31-02W	CU AG	DISSEMINATED
D008344	WEST SWANSEA MINE	US	UT	39-54-56N	112-08-06W	AU AG PB ZN CU	VEIN
DC15162	WESTERN UTAH EXTENSI	US	UT	40-09-25N	113-48-31W	AG CU AU FE AS	FISSURE VEIN
W027799	WHITE CANYON NO. 1	US	UT	37-37-47N	110-06-47W	U CU	BEDDED, DISSEMINATED
D004690	WILD BILL MINE	US	UT	38-22-43N	113-08-60W	PB CU AG ZN AU F	FISSURE REPLACEMENT
W027795	WINDY DAY	US	UT	37-33-58N	110-13-28W	U CU	DESIMINATED REPLACEM
D003996	WOODHOUSE SHAFTS	US	UT	38-21-13N	113-05-27W	AU AG PB CU ZN MN FE	HYDROTHERMAL REPLACE
DC14068	YANKEE CONSOLIDATED	US	UT	39-56-54N	112-05-47W	AG PB CU ZN AU	LODE
W027793	YANKEE GIRL	US	UT	37-34-08N	110-14-12W	U CU	BEDDED DISSEMINATED,
W027794	YANKEE GIRL NO. 6	US	UT	37-34-08N	110-14-19W	U CU	BEDDED, DISSEMINATED
W027764	YELLOW JOHN MINE	US	UT	37-34-43N	110-05-04W	U CU	DISSEMINATED BEDDED
DC14229	YORK MINES	US	UT	40-31-15N	112-10-23W	CU PB	REPLACEMENT; VEIN
D008604	YOSEMITE MINE	US	UT	40-30-44N	112-06-47W	PB CU ZN AG	REPLACEMENT; VEIN
DC12544	ZUMA MINE	US	UT	39-56-10N	112-04-39W	CU AU AG PB ZN FE	LODE
W030903	ABBOTT PROSPECT	US	VA	36-35-53N	078-46-52W	CU	VEIN/SHEAR ZONE (?)
W030920	ALLEN MINES	US	VA	37-55-04N	078-52-58W	CU	VEIN/SHEAR ZONE
W030883	AMBLER MINE	US	VA	38-52-25N	078-06-40W	CU	VEIN/SHEAR ZONE (?),
W030904	ANACONDA MINE	US	VA	36-33-32N	078-46-05W	CU	VEIN/SHEAR ZONE
W028992	ANACONDA MINE	US	VA	37-36-37N	078-26-57W	CU PYR	VEIN/SHEAR ZONE
W030840	ANN ELIZA MINE	US	VA	36-49-44N	080-44-44W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W030841	ANN PHIPPS MINE	US	VA	36-47-44N	080-47-55W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W030843	ANNA MARY MINE	US	VA	36-49-48N	080-44-37W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W030894	AUSTIN PROSPECT	US	VA	36-35- N	081-08- W	FE CU PYR1	GOSSAN, MASSIVE SULF
W030873	BARNES MINE	US	VA	36-44-53N	078-41-02W	CU AG AU	VEIN/SHEAR ZONE
W000408	BATNA MINE	US	VA	38-23-39N	077-53-40W	CU	VEIN, DISSEMINATED
W030905	BAYNHAM PROSPECT	US	VA	36-39-02N	078-45-11W	CU	VEIN/SHEAR ZONE
W000329	BEALETON PROSPECT	US	VA	38-33-17N	077-43-58W	CU PYR	VEIN, DISSEMINATED
W030887	BELCHER PROSPECT	US	VA	36-47-54N	080-23-41W	FE CU PYR1 PYR	GOSSAN, MASSIVE SULF
W030844	BEN WHITE PROSPECT	US	VA	36-48-32N	080-46-28W	CU ZN PB PYR1 FE	GOSSAN, STRATA-BOUNC
W030845	BETTY BAKER MINE	US	VA	36-50-43N	080-43-28W	CU PYR1 PYR FE MPG ZN PB	STRATA-BOUND AND STR
W030846	BLAIR, T., MINE	US	VA	36-44-52N	080-53-24W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W000324	BRENTSVILLE PROSPECT	US	VA	38-41-17N	077-29-58W	CU	FISSURE DEPOSITS
W030847	BROWN AND STEPHENSON	US	VA	36-48-23N	080-46-36W	CU ZN PB FE PYR1 AS	GOSSAN, STRATA-BOUNC
W031203	CAMP KIWANIANNA PROS	US	VA	37-07-00N	080-12-06W	ZN CU AS AU PYR	VEIN/SHEAR ZONE, REP
W000343	CHANTILLY PROSPECT "	US	VA	38-53-01N	077-24-57W	CU AG	DISSEMINATED, VEIN
W000342	CHANTILLY PROSPECT "	US	VA	38-53-20N	077-25-08W	CU	DISSEMINATED
W030906	CHAPPELL PROSPECT	US	VA	36-40-17N	078-44-60W	CU	VEIN/SHEAR ZONE
W030842	CHRISTIAN TRACT MINE	US	VA	37-30-43N	079-00-36W	CU	LENS, VEIN/SHEAR ZON
W031306	COFER PROSPECT	US	VA	38-03-00N	077-52-31W	ZN PB CU AU AG PYR AS	STRATA-BOUND & STRA
W030848	COPPERAS HILL MINE	US	VA	36-45-15N	080-53-05W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W030895	COX, H., PROSPECT	US	VA	36-36-10N	081-03-37W	CU PYR1	GOSSAN, MASSIVE SULF
W030849	CRANBERRY COPPER MIN	US	VA	36-48-11N	080-47-04W	CU ZN PB FE PYR1 AS	GOSSAN, STRATA-BOUNC
W030874	CRENSHAW PROSPECT	US	VA	36-58-51N	078-31-37W	CU	VEIN/SHEAR ZONE
W000407	CULPEPER PROSPECT	US	VA	38-26-02N	077-59-49W	CU FE	DISSEMINATED, PORPHY
W030850	DALTON HILL MINE	US	VA	36-47-38N	080-46-09W	CU ZN PB FE PYR1 PYR AG	GOSSAN, MASSIVE SULF
W030875	DANIEL'S MINE	US	VA	36-59-39N	078-32-37W	CU AU	VEIN/SHEAR ZONE

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W030918	DARK HOLLOW MINE	US	VA	38-31-38N	078-24-34W	CU	VEIN/SHEAR ZONE
W030851	DAVIS PROSPECT	US	VA	36-47-38N	080-46-09W	CU ZN PB PYR1 FE PYR	GOSSAN, MASSIVE SULF
W030921	DOLAN PROPERTY PROSP	US	VA	37-42-18N	078-41-19W	CU	DISSEMINATED (?)
W030907	DOROTHY MINE	US	VA	36-35-24N	078-47-42W	CU	VEIN/SHEAR ZONE
W030896	DOUGLAS LAND COMPANY	US	VA	36-36- N	081-38- W	CU	
W030852	EARLY PROSPECT	US	VA	36-45- N	080-42- W	CU	DISSEMINATED, METAMO
W000332	ELK RUN PROSPECT	US	VA	38-33-14N	077-40-16W	CU	DISSEMINATED, VEINS
W030926	EMPIRE MINE	US	VA	38-47-24N	078-17-33W	CU	VEIN/SHEAR ZONE, POR
W030908	ESTHER MAY PROSPECT	US	VA	36-35-56N	078-46-53W	CU	VEIN/SHEAR ZONE
W030853	FAIRMONT COPPER MINE	US	VA	36-48-22N	080-46-39W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W030838	FOLLY MINE	US	VA	37-33-41N	078-58-07W	CU	LENS, VEIN/SHEAR ZON
W028970	FORD MINE	US	VA	37-41-37N	078-22-56W	AU CU	VEIN/SHEAR ZONE
W030881	FROGTOWN PROSPECT	US	VA	39-05-29N	077-57-40W	CU PB	VEIN/SHEAR ZONE
W030897	FULTON PROSPECT	US	VA	36-36-02N	081-03-52W	CU PYR1	GOSSAN, MASSIVE SULF
W030854	GALUP MINE	US	VA	36-50-14N	080-44-03W	CU ZN PB PYR1 FE PYR	GOSSAN, STRATA-BOUNC
W030855	GARDNER MINE	US	VA	36-47- N	080-36- W	CU PYR	DISSEMINATED, METAMO
W030876	GILLIAM PROSPECT	US	VA	37-00-03N	078-31-39W	CU	VEIN/SHEAR ZONE
W030856	GOAD MINE	US	VA	36-47- N	080-36- W	CU PYR	DISSEMINATED, METAMO
W030927	GOONEY-MANOR MINE	US	VA	38-52-59N	078-14-27W	CU AU AG	VEIN/SHEAR ZONE; SEC
W030917	GOOSE CREEK MINE	US	VA	39-05-37N	077-30-21W	CU AG	DISSEMINATED
W030892	GRASSY HILL PROSPECT	US	VA	37-01- N	079-54- W	CU	VEIN/SHEAR ZONE (?),
W030898	GREER PLACE PROSPECT	US	VA	36-41- N	081-26- W	CU	DISSEMINATED
W030877	GROVE MINE	US	VA	37-01-08N	078-30-03W	CU	VEIN/SHEAR ZONE
W030899	HAMPTON MINE	US	VA	36-36-34N	081-03-47W	CU PYR1 FE	GOSSAN, MASSIVE SULF
W000466	HEMMER MINE	US	VA	38-01-11N	077-54-32W	ZN PB CU AU AG PYR PYR1	STRATA-BOUND MASSIVE
W031269	HENDERLITE MINE	US	VA	36-51-18N	081-27-37W	BA F CA CU PYR	RESIDUAL, VEINS, REP
W030909	HIGH HILL MINE	US	VA	36-39-36N	078-45-34W	CU AG AU	VEIN/SHEAR ZONE
W030901	HIGHTOP MINE	US	VA	38-18-53N	078-34-04W	CU	PORPHYRY, VEIN
W030888	HILTON PROSPECT	US	VA	36-51-28N	080-25-26W	CU PYR	GOSSAN, MASSIVE SULF
W030889	HOGAN PROSPECT	US	VA	36-53-09N	080-19-13W	CU FE PYR PYR1	GOSSAN, MASSIVE SULF
W101242	HOWELL (FERRUM) PROS	US	VA	36-57-00N	080-11-00W	FE CU	RESIDUAL/SUPERGENE
W030893	HOWELL MINE	US	VA	36-57- N	080-11- W	FE CU ZN PYR1 PYR AS	GOSSAN, STRATA-BOUNC
W028993	HUDGINS PROSPECT	US	VA	37-40-48N	078-18-30W	ZN CU PB AU AG PYR PYR1	STRATA-BOUND MASSIVE
W000467	HUNTER PROSPECT	US	VA	38-00-51N	077-54-46W	ZN PB CU AU AG PYR PYR1	STRATA-BOUND MASSIVE
W030860	IDA MINE	US	VA	38-36-12N	078-25-35W	CU	VEIN
W030857	IRON RIDGE MINE	US	VA	36-42-55N	080-55-29W	PYR1 CU FE ZN PB AS	STRATA-BOUND AND STR
W030925	JEFFERSON PEAK PROSP	US	VA	36-39- N	080-35- W	CU	VEIN/SHEAR ZONE, MET
W000340	JENKINS FARM PROSPEC	US	VA	38-59-04N	077-19-39W	CU	VEIN/SHEAR ZONE
W030923	JOE CREEK MINE	US	VA	37-40- N	078-48- W	CU PYR	VEIN/SHEAR ZONE
W028969	JOHNSON MINE	US	VA	37-41-36N	078-18-05W	CU FE PYR ZN PB AU AG	STRATA-BOUND MASSIVE
W030910	KAY PROSPECT	US	VA	36-41-33N	078-46-37W	CU AG AU	VEIN/SHEAR ZONE, POR
W030858	KINCANNON PROPERTY M	US	VA	36-48-49N	080-46-07W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W030859	KIRKBRIDE MINE	US	VA	36-47-11N	080-48-42W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W030861	LEONARD MINE	US	VA	36-41-52N	080-56-27W	CU FE ZN PB PYR1 AS	GOSSAN, STRATA-BOUNC
W101163	LICK FORK POSPECT	US	VA	37-04-55N	080-12-15W	CU S	IRREGULAR/UNCERTAIN
W001172	LICK FORK PROSPECT	US	VA	37-04-55N	080-12-15W	NI CO CU PYR1	LENS, MASSIVE SULFID
W028994	LIGHTFOOT MINE	US	VA	37-42-10N	078-22-32W	AU CU	VEIN, VOLCANIC
W030862	LINEBERRY, F., MINE	US	VA	36-43-59N	080-54-21W	CU FE ZN PB PYR1 AS	GOSSAN, STRATA-BOUNC
W030863	LINEBERRY, J., MINE	US	VA	36-43-38N	080-54-26W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUNC
W030911	LITTLEJOHN PROSPECT	US	VA	36-35-30N	078-47-14W	CU	VEIN/SHEAR ZONE
W030878	MACLEAN SHAFT PROSPE	US	VA	36-45- N	078-41- W	CU	VEIN/SHEAR ZONE
W030884	MANASSAS GAP MINE	US	VA	38-51-47N	078-07-24W	CU	PORPHYRY
W055391	MARION MILLER PROSPE	US	VA	36-35-18N	081-40-10W	AU CU	LODE (VEIN) ?
W030929	MARTIN MINE	US	VA	38-48-31N	078-17-45W	CU	VEIN
W030864	MCGRADY, J.J., PROSP	US	VA	36-47- N	080-35- W	CU	DISSEMINATED, METAMO
W030879	MCNENY PROSPECT	US	VA	36-59-03N	078-32-59W	CU	VEIN/SHEAR ZONE
W030900	MEADOW CREEK PROSPEC	US	VA	36-38-36N	080-58-29W	CU PYR	GOSSAN, MASSIVE SULF
W030930	MILLS PROSPECT	US	VA	38-51-15N	078-12-26W	CU	PROBABLY DISSEMINATE
W030924	MINE RUN PROSPECT	US	VA	38-45-35N	078-21-04W	CU	PROBABLY DISSEMINATE
W030839	MOORE MINE	US	VA	37-29-29N	078-53-12W	CU	DISSEMINATED
W030912	MORONG PROSPECT	US	VA	36-35-55N	078-45-46W	CU	VEIN/SHEAR ZONE
W030885	MOSBY PROSPECT	US	VA	38-52-43N	078-06-03W	CU	PROBABLY DISSEMINATE
VA01728	MOUNT MARSHAL PROSPE	US	VA	38-45-53N	078-11-35W	CU	COPPER STAIN
W055392	OSBORNE PROSPECT	US	VA	36-36-24N	081-31-23W	AU CU	LODE (VEIN) ?
W030913	PANDORA PROSPECT	US	VA	36-37-06N	078-45-08W	CU	PORPHYRY
W030882	PARIS PROSPECT	US	VA	39-01-52N	077-58-07W	CU	VOLCANIC, VEIN
W030914	PONTIAC MINE	US	VA	36-37-53N	078-46-06W	CU	VEIN/SHEAR ZONE

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VA01718	RICHARDS MINE	US	VA	38-47-39N	083-45-36W	CU	
W030931	RUDACILL PROSPECT	US	VA	38-50-55N	078-12-19W	CU	PROBABLY DISSEMINATE
W030865	SARAH ELLEN MINE	US	VA	36-46-50N	080-49-12W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUND
W030915	SEABOARD MINE	US	VA	36-35-29N	078-46-38W	CU AG AU	VEIN/SHEAR ZONE
W030932	SEALOCH MINE	US	VA	38-52-55N	078-06-26W	CU	VEIN
W030902	SIMS MINE	US	VA	38-23-26N	078-26-31W	CU PYR	VEIN/SHEAR ZONE
W000341	SPENCER FARM PROSPEC	US	VA	38-54-14N	077-28-25W	CU	VEINS
W055412	STITH MINE	US	VA	36-38-44N	078-20-42W	CU AU AG	
W030866	STONE PROSPECT	US	VA	36-48- N	080-46- W	CU ZN PB PYR1 FE PYR	GOSSAN, MASSIVE SULF
W030919	STONEY MAN MINE	US	VA	38-35-50N	078-22-22W	CU	PORPHYRY, DISSEMINAT
W030867	SUTPHAN MINE	US	VA	36-48- N	080-35- W	CU PYR	DISSEMINATED, METAMO
W030922	TAYLORS PROSPECT	US	VA	38-13- N	078-14- W	CU PYR	DISSEMINATED
W030891	TAZ WEEKS PROSPECT	US	VA	36-49-36N	080-29-43W	CU PYR	GOSSAN, MASSIVE SULF
W055389	THEODORA COPPER MINE	US	VA	38-56-59N	077-25-24W	CU AG	CONTACT METASOMATIC
W031205	TICES MILL PROSPECT	US	VA	37-05-60N	080-13-15W	CU ZN AU PYR AS	GOSSAN, MASSIVE SULF
W001171	TONCRAE MINE	US	VA	36-49-48N	080-22-33W	CU FE CO NI PYR1 PYR AG	MASSIVE SULFIDE, DIS
W032039	VIRGINIA AND PITTSBU	US	VA	38-53-47N	078-12-28W	CU	VEIN/SHEAR ZONE: SEC
W030916	WALL MINE	US	VA	36-36-34N	078-46-39W	CU	VEIN/SHEAR ZONE
W031223	WEDDLE PROSPECT	US	VA	36-51-09N	080-22-14W	FE CU PYR	LENS
W030868	WHITMORE MINE	US	VA	36-42- N	080-38- W	CU PYR FE	GOSSAN, STRATA-BOUND
W055386	WILDCAT #2 MINE	US	VA	36-48-04N	080-47-10W	CU ZN PB PYRL FE	GOSSAN, STRATABOUND
W030869	WILDCAT MINE	US	VA	36-47-59N	080-47-25W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUND
W030870	WILKERSON TRACT MINE	US	VA	36-43-34N	080-54-40W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUND
W030880	WILSON PROSPECT	US	VA	37-00-47N	078-30-49W	CU	VEIN/SHEAR ZONE
W030871	WOLFPIT MINE	US	VA	36-47-54N	080-47-38W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUND
W030872	YARNELL MINE	US	VA	36-43-20N	080-54-54W	CU ZN PB PYR1 FE AS	GOSSAN, STRATA-BOUND
W033631	BERKSHIRE COPPER MIN	US	VT	44-59-51N	072-45-56W	CU	DISSEMINATED SULFIDE
W102101	BERKSHIRE COPPER MIN	US	VT	44-59-42N	072-45-54W	CU	IRREGULAR, UNCERTAIN
W102181	BLOOD MT.	US	VT	43-45-30N	072-15-00W	CU	STRATABOUND CONCORD
W102014	BOLLES HILL MINE	US	VT	44-32-40N	071-38-35W	CU	VEIN
W033054	BOLLES HILL MINE (18	US	VT	44-32-32N	071-37-25W	CU	STRATABOUND DISSEMIN
W102097	COOKVILLE MINE	US	VT	44-00-45N	072-17-15W	CU	STRATABOUND CONCORD
W033632	COOKVILLE MINE	US	VT	44-00-39N	072-17-25W	CU FE	STRATABOUND DISSEMIN
W033947	COOKVILLE MINE	US	VT	44-00-43N	072-17-26W	CU FE	MASSIVE SULFIDE., DI
W033450	COPPER MINE, UNNAMED	US	VT	44-24-43N	072-39-55W	CU	STRATABOUND CONCORD
W102103	COPPER MINE, UNNAMED	US	VT	44-24-50N	072-39-25W	CU	STRATABOUND CONCORD
W102180	CUTTINGSVILLE COPPER	US	VT	43-29-30N	072-51-55W	CU AU FE	STRATABOUND CONCORD
W102189	ELIZABETH MINE & SOU	US	VT	43-49-00N	072-20-00W	CU	STRATABOUND CONCORD
W033070	ELIZABETH MINE (1881	US	VT	43-49-10N	072-20-17W	CU ZN AG AU SLF	STRATABOUND, STRATIF
W000677	ELIZABETHTOWN	US	VT	43-49- N	072-20- W	CU CO NI	REPLACEMENT(?)
W102188	ELY (COPPERFIELD) M	US	VT	43-55-50N	072-17-15W	CU	STRATABOUND CONCORD
W033055	ELY MINE (1865)	US	VT	43-55-45N	072-17-10W	CU ZN	STRATIFORM, STRATABC
W102016	ESSEX MINE	US	VT	44-23-33N	071-50-30W	CU	STRATABOUND CONCORD
W033052	ESSEX MINE (1860'S)	US	VT	44-23-33N	071-50-30W	CU	CONCORDANT VEIN
W102100	EUREKA MINE/ SMITH/U	US	VT	44-03-20N	072-18-05W	CU	STRATABOUND CONCORD
W033615	GOVE MINE	US	VT	43-52-44N	072-21-06W	CU ZN	STRATABOUND, MASSIVE
W102013	H. COE MINE	US	VT	44-46-40N	071-53-15W	CU	STRATABOUND CONCORD
W033639	KIBLING MINE	US	VT	43-45-40N	072-19-25W	CU	STRATABOUND, MASSIVE
W033448	NICKOLSON PROPERTY	US	VT	44-47-06N	071-54-46W	CU	STRATABOUND VEIN AND
W033690	NORTON MINE	US	VT	44-53-51N	071-31-11W	PB CU ZN AU	DISSEMINATED SULFIDE
W033458	OLD COPPER MINE	US	VT	43-49-35N	072-37-25W	CU	VEIN AND DISEMMINATE
W102182	ORANGE & GOVE MINE	US	VT	43-53-00N	072-21-15W	CU	STRATABOUND CONCORD
W033614	ORANGE MINE	US	VT	43-53-02N	072-21-41W	CU ZN	STRATABOUND, MASSIVE
W033056	PIKE HILL MINES (190	US	VT	44-03-37N	072-18-32W	CU ZN	STRATIFORM, STRATABC
W102215	RICHFORD COPPER PROS	US	VT	45-00-30N	072-38-36W	CU	STRATABOUND
W033059	TAGGART MINE (1859)	US	VT	43-37-16N	072-41-06W	PB CU AG AU	VEIN
W033449	UDALL MINE	US	VT	44-34-56N	072-30-30W	CU ZN FE U	STRATABOUND, CONCORD
W102094	UDALL MINE/WOLCOTT M	US	VT	44-34-40N	072-30-30W	CU	STRATABOUND CONCORD
W033454	UNNAMED	US	VT	45-00-36N	072-37-52W	CU MAR	STRATABOUND, DISSEMI
W033460	UNNAMED	US	VT	43-53-42N	072-41-43W	CU	DISSEMINATED SULFIDE
W033461	UNNAMED	US	VT	44-24-40N	072-42-29W	CU	STRATABOUND, DISSEMI
W033634	UNNAMED	US	VT	43-43-44N	072-18-47W	CU	DISSEMINATED SULFIDE
W033641	UNNAMED	US	VT	43-38-41N	072-20-44W	CU	STRATABOUND DISSEMM
W033651	UNNAMED	US	VT	43-52-41N	072-20-44W	CU	STRATABOUND, DISSEMI
W033652	UNNAMED	US	VT	43-54-48N	072-17-38W	CU	MASSIVE SULFIDE
W033894	UNNAMED	US	VT	43-41-35N	072-25-13W	CU	MASSIVE SULFIDE
W033623	WALKER MINE	US	VT	43-53-10N	072-23-02W	CU	STRATABOUND, MASSIVE

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W102164	WALLINGFORD	US	VT	43-26-40N	072-57-10W	CU AG	UNCERTAIN
W102102	WATERBURY-BARNES HIL	US	VT	44-24-35N	072-42-45W	CU	UNCERTIAN
W033633	WATERMAN MINE	US	VT	43-45-21N	072-14-57W	CU	STRATABOUND, CONCORD
M025737		US	WA	47-56-22N	121-29-32W	CU FE W ZN	LODE
D001394	49TH PARALLEL	US	WA	48-59 N	119-29 W	CU AU W	SHEAR ZONE
M025789	ABRAHAM-HUFF CLAIM	US	WA	48-26-11N	117-11-37W	CU FE	SHEAR ZONE
M025791	ACKERLUND PROSPECT,	US	WA	48-21-33N	117-11-36W	CU ZN AU AG	REPLACEMENT
M056131	ADDISON	US	WA	48-03-05N	118-34-55W	CU PB ZN AG AU W	VEIN
D001408	ADDISON (PACIFIC MUT	US	WA	48-06 N	118-35 W	PB CU ZN AG AU W	QUARTZ VEIN
M060107	ADMIRAL MINE	US	WA	48-09-52N	117-54-43W	CU AG AU	VEIN
M060156	ALDER MINE	US	WA	48-19-15N	120-09-25W	AU AG CU ZN	REPLACEMENT
M025792	ALGER AND MCCULLOUGH	US	WA	48-16-07N	117-05-55W	CU PB AG	REPLACEMENT
M700405	ALVIC PROSPECT	US	WA	48-57-13N	121-39-36W	CU	LODE
M056560	AMERICAN FLAG CLAIMS	US	WA	48-45-13N	118-50-41W	CU AG AU ZN PB	SHEAR ZONE
M700350	ANACOPPER	US	WA	48-29-36N	122-37-16W	CU AU AG	DISSEMINATED, SHEAR
M056329	ARK	US	WA	48-32-59N	118-06-54W	AG PB ZN CU AU	VEIN
M025730	ARLINGTON PROSPECT	US	WA	48-06-12N	121-36-47W	AU AG CU PB	
M025731	ARMAMENT PROSPECT	US	WA	47-53-09N	121-26-49W	CU MO W	
M700351	BALD MOUNTAIN MINE	US	WA	48-26-08N	122-05-49W	CU AU	SHEAR ZONE (?)
M025732	BALD MOUNTAIN PROSPE	US	WA	48-06-44N	121-35-37W	AU AG CU PB	LODE
M025733	BANGOR CREEK PROSPEC	US	WA	48-04-41N	121-33-15W	CU AU AG FE	REPLACEMENT
M025809	BEAD LAKE PROPERTY	US	WA	48-15-59N	117-05-43W	PB CU AG FE ZN	REPLACEMENT
M025734	BELL AND CROWN PROSP	US	WA	48-03-34N	121-34-28W	CU AU AG PB	LODE
M056809	BI-METALLIC MINE	US	WA	48-51-07N	119-08-25W	MO CU AG AU W	SHEAR ZONE
M025862	BIG DOME PROSPECT	US	WA	47-29-18N	121-01-41W	CU W U	DISSEMINATED
M700203	BIG FALLS PROSPECT	US	WA	46-24-05N	122-11-46W	CU	LODE
D001663	BILLY GOAT	US	WA	48-45- N	112-25- W	CU AU AG SB MO PB	QUARTZ VEINLETS
M025600	BITTER CREEK PROSPEC	US	WA	47-50-15N	121-29-13W	CU FE	SHEAR ZONE
M700283	BLACK AND WHITE MINE	US	WA	47-34-31N	123-20-40W	CU MN	CONTACT METASOMATIC
M056753	BLACK BEAR MINE	US	WA	48-50-19N	119-37-51W	AU AG CU	SHEAR ZONE
M700155	BLACK FALLS PROSPECT	US	WA	46-21-03N	122-06-51W	CU	LODE
M700156	BLACK JACK PROSPECT	US	WA	45-46-19N	122-12-00W	CU AU AG MO	LODE
M700282	BLACK TAIL	US	WA	47-36-10N	123-20-45W	CU	INSUFFICIENT DATA TO
M060148	BLACK WARRIOR PROSP	US	WA	48 28 47N	121 01 25W	ZN PB CU AG	VEIN/SHEAR ZONE
M700157	BLUE BIRD PROSPECT	US	WA	45-44-56N	122-10-19W	CU AG AU	LODE
M025863	BLUE BONNET PROSPECT	US	WA	47-27-05N	121-01-25W	CU NI AU AG	INSUFFICIENT DATA TO
M056576	BLUE LAKE MINE	US	WA	48-41-14N	119-42-29W	CU AU	LOAD
M025602	BLUE ROCK PROSPECT	US	WA	48-00-55N	121-21-08W	CU AU AG	SHEAR ZONE
M025659	BLUEBELL PROSPECT	US	WA	47-56-59N	121-26-02W	AU AG PB CU	INSUFFICIENT DATA TO
M025658	BLUFF PROSPECT	US	WA	47-55-46N	121-25-54W	AU CU	LODE
M025864	BOB CANSON PROSPECT	US	WA	47-27-39N	121-02-33W	CU AS	SHEAR ZONE
M056561	BONANZA	US	WA	48-28-29N	118-51-13W	CU	SHEAR ZONE
M025605	BORDER QUEEN PROSPEC	US	WA	47-57-46N	121-39-20W	CU AU	REPLACEMENT
M025793	BORNITE PROPERTY	US	WA	48-13-50N	117-05-02W	CU AU	REPLACEMENT
M700407	BOULDER CREEK PROSPE	US	WA	48-56-21N	122-00-56W	CU FE	REPLACEMENT
M025794	BOX CANYON PROSPECT	US	WA	48-46-56N	117-24-33W	CU	SHEAR ZONE
M025606	BROKEN RIDGE PROSPEC	US	WA	47-54-35N	121-26-14W	CU AG AU ZN SIL	
M700159	BRONZE MONARCH MINE	US	WA	46-18-28N	122-06-33W	CU AU AG	LODE
D001664	BUCKEYE	US	WA	48-45- N	119-35- W	CU PB AU AG SB	VEIN
M056539	BUCKEYE CLAIM	US	WA	48-50-56N	119-31-18W	CU PB AU AG SB AS	VEIN
M025607	BUCKEYE MINE AND MIL	US	WA	47-46-33N	121-31-26W	AU CU AG FE	
M700161	BUMBLEBEE PROSPECT	US	WA	46-20-13N	122-10-11W	CU PB ZN	LODE
M025609	CALUMET PROSPECT	US	WA	47-50-22N	121-28-16W	CU ZN	SHEAR ZONE
M056634	CARR CLAIMS	US	WA	48-53-55N	119-31-54W	CU AU AG PB ZN MO	REPLACEMENT AND CONT
M025865	CASCADE MINING PROSP	US	WA	47-27-45N	121-19-21W	CU PB AG AU	LODE
M025610	CASCADE PROSPECT	US	WA	47-50-54N	121-27-41W	CU AU AG FE	
M025611	CHARLOTTE MINE	US	WA	47-52-08N	121-29-25W	CU AU AG	SHEAR ZONE
US53009	CHELAN LAKE DIST (HO	US	WA	48-12- N	120-47- W	CU ZN AU AG FE	VEINS AND SHEAR ZONE
W017873	CHEWELAH	US	WA	48-19-00N	117-40-00W	AG CU PB MO SB	
US53026	CHEWELAH DIST (UNITE	US	WA	48-19- N	117-40- W	CU AG PB ZN	VEINS AND SHEAR ZONE
M700163	CHICAGO-PROSPECT	US	WA	46-18-50N	122-05-22W	CU AU AG ZN PB AS	LODE
US53012	CHIWAWA DIST (RED MT	US	WA	48-02- N	120-51- W	CU AG	STOCKWORKS PIPES & I
M060174	CHLORIDE QUEEN MINE	US	WA	48-41-33N	117-51-26W	PB ZN AG CU	VEIN AND REPLACEMENT
D001645	CLEOPATRA MINE	US	WA	47-40- N	121-30- W	AG SB PB CU ZN AU	REPLACEMENT, FRACTUR
M700349	CLIFF CLAIM	US	WA	48-30-12N	121-04-15W	ZN CU	LODE
M025612	CLIFF PROSPECT	US	WA	48-06-37N	121-38-11W	CU FE	REPLACEMENT
D001721	COLUMBIA RIVER	US	WA	48-40- N	118-05- W	CU AU AG SB	QUARTZ VEIN

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M700164	COMMONWEALTH MINE	US	WA	46-18-00N	122-03-57W	CU ZN PB AU AG AS	LODE
D001625	COMSTOCK	US	WA	48-55- N	118-40- W	CU AG PB ZN SB	SYENITE DIKE
M025657	CONSOLIDATED PROSPEC	US	WA	48-06-36N	121-37-31W	AU AG CU	
M700023	CONWAY PROSPECT	US	WA	48-56-57N	121-42-39W	CU AU AG	VEIN
M025613	COPPER BELLE MINE	US	WA	47-50-54N	121-36-50W	CU AG AU W MN FE	SHEAR ZONE
M700165	COPPER BOTTOM PROSPE	US	WA	46-20-18N	122-10-18W	CU PB	LODE
M025616	COPPER CHIEF PROSPEC	US	WA	47-55-55N	121-26-53W	CU AU AG PB FE	
M060163	COPPER GLANCE MINE	US	WA	48-45-06N	120-18-06W	CU AU AG FE	SHEAR ZONE
M060124	COPPER KING MINE	US	WA	48-19-18N	117-39-39W	CU AG AU	VEIN
M025617	COPPER KING MINE	US	WA	47-51-32N	121-28-32W	CU	SHEAR ZONE
M700408	COPPER KING PROSPECT	US	WA	48-57-45N	122-11-14W	CU AU	VEIN
D001421	COPPER MINING CO.	US	WA	46-48 N	121-21 W	CU W MO	SHEAR ZONE
D001724	COPPER QUEEN	US	WA	48-25- N	117-35- W	CU SB	QUARTZ VEINS
M056553	COPPER QUEEN CLAIM	US	WA	48-58-13N	116-14-60W	CU FE W	SHEAR ZONE
M025618	COPPER QUEEN MINE	US	WA	48-05-32N	121-35-05W	CU AU FE	REPLACEMENT
M025866	COPPER QUEEN PROSPEC	US	WA	47-25-05N	121-15-10W	CU	SHEAR ZONE
M056533	COPPER WORLD CLAIM	US	WA	48-51-29N	119-35-45W	CU AU AG FE	SHEAR ZONE
M056534	COPPER WORLD EXTENSI	US	WA	48-51-26N	119-35-30W	CU AU AG W ZN FE	MASSIVE SULFIDE
M025621	COPPERHEAD PROSPECT	US	WA	48-05-02N	121-34-38W	CU AU AG	LODE
M025619	COURTNEY MINE	US	WA	48-13-44N	121-38-09W	AU AG CU PB	LODE
M025620	COVERED WAGON MINE	US	WA	47-54-03N	121-26-32W	CU AU	INSUFFICIENT DATA TO
M056885	CRESCENT MINE	US	WA	48-32-22N	119-28-45W	CU	REPLACEMENT AND CONT
M700166	CRYSTAL PROSPECT	US	WA	46-21-48N	122-12-16W	CU	LODE
M056334	DAISY - TEMPEST	US	WA	48-22-45N	118-04-42W	AG PB CU AU	VEIN
US53015	DANVILLE (LONE STAR	US	WA	48-59- N	118-36- W	CU AU	
W017859	DANVILLE-LONE STAR	US	WA	48-59-00N	118-36-00W	CU	
M025622	DEER LAKE PROSPECT	US	WA	48-07-40N	121-35-48W	CU	LODE
M056425	DEER TRAIL MONITOR	US	WA	48-05-26N	118-06-19W	MO CU GAR	CONTACT METAMORPHIC
M025623	DIAMOND HITCH PROSPE	US	WA	47-57-11N	121-26-34W	CU AU AG	SHEAR ZONE
M056529	DIVIDEND ADIT	US	WA	48-58-48N	119-29-14W	CU AU AG	DISSEMINATED
M025867	DOLPHIN MINE	US	WA	47-26-40N	120-58-39W	CU AG AU CO FE	MASSIVE SULFIDE
M060139	DORIS PROSPECT	US	WA	47-57-12N	121-29-36W	CU AG	VEIN
W017841	DUTCH JOHN LEASE	US	WA	48-13-00N	120-03-00W	MO W CU FE	CONTACT METASOMATIC
D001648	DUTCH MILLER	US	WA	47-35- N	121-15- W	CU AU SB	SHEAR ZONE
M700205	EAGLE PEAK MINE	US	WA	46-45-49N	121-47-19W	CU AU AG CO AS U MO ZN	LODE
M700154	EARL GROUP	US	WA	46-21-25N	122-04-38W	CU AU AG	LODE
D001728	EDNA (KING)	US	WA	48-15- N	117-50- W	CU AG AU SB	QUARTZ VEIN
M060106	EDNA MINE	US	WA	48-11-50N	117-53-13W	CU AG AU	VEIN
M025624	EL DORADO PROSPECT	US	WA	48-00-23N	121-20-05W	AU AG CU	SHEAR ZONE
M700352	ELLABEA AND FLAIM CL	US	WA	48-28-55N	121-04-05W	CU	DISSEMINATED
M700353	ELSIE CLAIM	US	WA	48-30-00N	121-03-02W	CU	
M025625	ETHEL MINE	US	WA	47-52-18N	121-29-18W	CU AU AG FE	
D001707	EUREKA	US	WA	48-15- N	121-30- W	CU AG AU PB SB	
M025626	EVERETT PROSPECT	US	WA	48-04-36N	121-32-40W	AU AG CU	
M025627	EVERGREEN PROSPECT	US	WA	47-53-58N	121-25-56W	AU CU AG	LODE
M025797	FAIR HOPE PROSPECT	US	WA	48-16-03N	117-05-55W	CU FE	LODE
M025634	FANNY PROSPECT	US	WA	48-04-14N	121-33-60W	AU AG CU	LODE
M700354	FIDALGO ISLAND	US	WA	48-28-22N	122-38-05W	CU AU AG	LODE
M056715	FLOYD CLAIM	US	WA	48-56-14N	119-41-24W	CU AU	REPLACEMENT AND CONT
D001709	FOGGY MINE	US	WA	48-00- N	121-19- W	SB AG ZN PB CU AU AS	FRACTURE ZONE
M025630	FOUR BROTHERS PROSPE	US	WA	48-04-33N	121-34-03W	CU	INSUFFICIENT DATA TO
D001393	FOUR METALS PROPERTY	US	WA	48-57 N	119-39 W	PB AG CU ZN W MO	LODE
M700168	GERMANIA PROSPECT	US	WA	46-21-25N	122-05-27W	AU CU	LODE
M700035	GLACIER MINE	US	WA	48-53-44N	121-54-55W	CU AU AG	BOULDER FLOAT
US53008	GLACIER PEAK DEPOSIT	US	WA	48-12- N	120-58- W	CU MO	STOCKWORKS PIPES & I
W002695	GLACIER PEAK PROSPEC	US	WA	48-12- N	120-58- W	CU	PORPHYRY INTRUSION
W017895	GLACIER PEAK-MINERS	US	WA	48-12-00N	120-58-00W	CU MO	
M700169	GOAT MOUNTAIN PROSPE	US	WA	46-22-41N	122-08-40W	CU	LODE
M056543	GOLD DUST CLAIM	US	WA	48-58-48N	119-29-14W	CU AU AG	DISSEMINATED
M056762	GOLD HILL GROUP	US	WA	48-49-18N	119-43-29W	AU AG CU PB ZN	SHEAR ZONE
D001710	GOLD MTN.	US	WA	48-25- N	121-35- W	AU AG CU SB	QUARTZ VEINS
M056544	GOLDEN CHARIOT MINE	US	WA	48-59-18N	119-28-41W	CU AU AG W MO	SHEAR ZONE
M025870	GRANDVIEW PROSPECT	US	WA	47-26-09N	120-51-38W	CU AG AU NI	SHEAR ZONE
M056108	GRAY	US	WA	48-02-33N	118-34-11W	AG AU CU	VEIN
M060122	GRAY EAGLE MINE	US	WA	48-37-10N	118-02-54W	CU AG AU MO PB	REPLACEMENT
M025631	GREEN CROWN PROSPECT	US	WA	48-12-55N	121-41-24W	AU AG CU	SHEAR ZONE
M700206	GREEN RIVER PROSPECT	US	WA	46-23-55N	122-13-55W	CU	LODE

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M025632	GUNN PEAK PROSPECT	US	WA	47-49-33N	121-29-31W	CU AG AU FE	SHEAR ZONE
M025902	HANCOCK PROSPECT	US	WA	47-57-31N	121-26-03W	CU AU AG NI CO	LODE
M025903	HANNAH PROSPECT - HE	US	WA	48-08-08N	121-34-16W	CU	INSUFFICIENT DATA TO
M025904	HANNAH PROSPECT - WH	US	WA	48-13-19N	121-40-36W	AU AG CU	REPLACEMENT
M025798	HARDROCK THOMAS PROS	US	WA	48-23-01N	117-12-28W	CU AU AG W	LODE
M025799	HAWKEYE - GRAY EAGLE	US	WA	48-15-21N	117-04-19W	CU PB AG AU	LODE
M025905	HECLA PROSPECT	US	WA	48-06-36N	121-37-26W	AU AG CU FE	REPLACEMENT
M025908	HELENA AND SADIE PRO	US	WA	47-57-16N	121-28-03W	CU AU AG	SHEAR ZONE
M025907	HELENA MINE - MT. BA	US	WA	48-08-43N	121-34-09W	CU AU AG	SHEAR ZONE
M025906	HELENA PROSPECT - N.	US	WA	47-49-51N	121-32-06W	CU FE	SHEAR ZONE
M056564	HIDDEN TREASURE DEPO	US	WA	48-13-59N	119-02-49W	CU AG AU FE	CONTACT METASOMATIC
M025909	HIGHLAND PROSPECT	US	WA	48-12-31N	121-38-05W	AU AG CU	INSUFFICIENT DATA TO
W002709	HOLDEN MINE	US	WA	48-13- N	120-52- W	CU ZN AG AU PB	MASSIVE SULPHIDES
M056631	HOME RUN PROSPECT	US	WA	48-11-47N	119-04-20W	AG CU AU	CONTACT METASOMATIC
M025910	HOODOO PROSPECT	US	WA	48-04-16N	121-32-39W	CU AU AG SN FE	LODE
M025800	HOOSIER CLAIM	US	WA	48-51-39N	117-24-55W	CU AU AG	CONTACT METASOMATIC
M025654	HORSESHOE AND TREASU	US	WA	47-57-34N	121-27-21W	AU CU	LODE
M025912	HUSTLER CLAIMS	US	WA	48-01-03N	121-27-54W	CU MO W	LODE
M025913	IMPERIAL PROSPECT	US	WA	48-04-43N	121-32-24W	CU AG AU PB	LODE
M700172	INDEPENDENCE MINE	US	WA	46-22-12N	122-09-18W	CU AU AG PB	LODE
M025914	INDEPENDENCE PROSPEC	US	WA	47-57-00N	121-26-06W	CU FE	LODE
M025915	INDEX BORNITE PROSPE	US	WA	47-48-57N	121-29-48W	CU AG FE	SHEAR ZONE
US53033	INDEX DIST (SUNSET)	US	WA	47-52- N	121-28- W	CU AG AU	VEINS AND SHEAR ZONE
M700173	INDEX GROUP	US	WA	46-20-37N	122-05-32W	CU AU AG	LODE
M025755	INDEX PEACOCK PROSPE	US	WA	47-49-38N	121-29-29W	CU FE	SHEAR ZONE
M025754	IOWA MINE	US	WA	47-58-24N	121-29-46W	CU AU AG FE W ZN MO	
M025802	ISABELLE CLAIM	US	WA	48-25-07N	117-12-38W	AU AG CU	LODE
M700054	J.E. SIGH MINE	US	WA	48-57-07N	121-38-03W	CU AU	VEIN
M056784	JACKPOT PROSPECT	US	WA	48-56-41N	118-59-38W	AU CU AG FE	REPLACEMENT
M025671	JASPERSON PROSPECT	US	WA	47-57-02N	121-27-01W	AU AG CU PB HG V SB ZN	
M060127	JAY DEE MINE	US	WA	48-18-49N	117-41-13W	AG PB CU ZN	VEIN AND REPLACEMENT
M025753	JERRY CHATMAN MINE	US	WA	47-58-45N	121-30-04W	CU W FE	LODE
M056828	JOHNNY BOY PROSPECT	US	WA	48-30-60N	119-45-57W	PB CU ZN	LODE
M054832	JONES PROPERTY	US	WA	48-31-25N	120-09-16W	CU AG AU HG	DISSEMINATED
D001416	JUNO - ECHO (WESTERN	US	WA	48-18 N	117-41 W	CU AG AU W MO	QUARTZ VEIN
M060109	JUNO -ECHO MINE	US	WA	48-17-28N	117-41-01W	CU MO W AG AU	CONTACT METAMORPHIC
M025670	JUSTIN PROSPECT	US	WA	48-14-42N	121-34-18W	AU AG CU HG	LODE
M700262	KATHRYN CLAIM	US	WA	48-02-45N	124-05-00W	CU	INSUFFICIENT DATA TO
M025752	KAZIAN PROSPECT	US	WA	47-54-40N	121-26-40W	CU PB ZN	INSUFFICIENT DATA TO
M025751	KELLEY CREEK PROSPEC	US	WA	47-59-33N	121-29-35W	CU FE	REPLACEMENT
M056545	KELSEY CLAIMS	US	WA	48-59-19N	119-28-17W	CU AG AU	REPLACEMENT
M025750	KEYWINDER PROSPECT	US	WA	48-13-47N	121-37-53W	AU AG CU	LODE
M025749	KITANNING PROSPECT	US	WA	47-52-11N	121-27-19W	CU FE	SHEAR ZONE
D001628	KOHLER	US	WA	48-30- N	118-20- W	SB CU	QUARTZ LENSES & STRI
M025748	KROMONA MINE	US	WA	47-55-05N	121-35-33W	CU AG AU MO W FE	
D001736	KRUG	US	WA	48-25- N	117-45- W	CU AG AU SB	QUARTZ VEINS
M056611	LADY OF THE LAKE CLA	US	WA	48-34-10N	119-44-18W	AG PB CU ZN AU W MO	LODE
M025747	LAKE SERENE MINE	US	WA			CU AG AU FE	
M025801	LAKESIDE CLAIM	US	WA	48-15-44N	117-04-46W	CU	INSUFFICIENT DATA TO
M056165	LANCASTER	US	WA	49-48-29N	118-35-29W	CU PB ZN AU AG	REPLACEMENT
M700177	LAST CHANCE MINE	US	WA	45-42-36N	122-12-45W	CU V AU AG PB ZN	LODE
M056614	LAST CHANCE MINE	US	WA	48-29-19N	119-44-02W	AG PB CU ZN	VEIN
M700178	LAST HOPE GROUP	US	WA	46-21-28N	122-06-49W	CU AG AU PB	LODE
D001704	LAWRENCE	US	WA	48-25- N	121-45- W	CU SB	FRACTURE ZONE
M700355	LAWRENCE CLAIMS	US	WA	48-19-00N	121-47-07W	CU AS	FRACTURE ZONE
D001737	LIBERTY COPPER	US	WA	48-25- N	117-45- W	CU AU SB	QUARTZ VEINS
M025746	LITTLE CHIEF PROSSP	US	WA	48-02-03N	121-32-59W	CU AU AG NI CO FE	
M056589	LONE PINE MINE	US	WA	48-59-54N	119-33-19W	AG PB CU AU	VEIN
M056166	LONE STAR AND WASHIN	US	WA	48-59-43N	118-36-18W	CU AU AG	VEIN, REPLACEMENT
M060142	LONE STAR AND WASHIN	US	WA	48 59 31N	118 36 10W	CU AU MO AG	VEIN/SHEAR ZONE, DIS
M060111	LOON LAKE BLUE BIRD	US	WA	48-08-44N	117-37-51W	CU	VEIN
D001739	LOON LAKE COPPER	US	WA	48-10- N	117-35- W	CU AG AU SB	QUARTZ VEIN
M060110	LOON LAKE COPPER MIN	US	WA	48-08-49N	117-38-10W	CU AG AU	VEIN
M025745	LOST CREEK PROSPECT	US	WA	47-52-03N	121-26-05W	CU AU AG FE	
M056861	LUCKY JIM VEIN	US	WA	48-15-50N	119-38-37W	CU AG AU	EVAPORITE
D001766	LUCKY STRIKE	US	WA	48-15- N	121-35- W	CU BI	DISSEMINATED
M025744	LUCKY STRIKE PROSPEC	US	WA	48-06-35N	121-30-42W	CU BI FE	REPLACEMENT

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Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
M025743	LUCKY STRIKE PROSPEC	US	WA	48-04-30N	121-35-15W	CU	INSUFFICIENT DATA TO
M025736	MACKINAW PROSPECT	US	WA	47-58-51N	121-26-38W	CU NI AU AG CO V	
M056652	MAID OF ERIN PROSPEC	US	WA	47-50-17N	118-22-35W	AU	PLACER
M056582	MALOTT PROSPECT	US	WA	48-15-15N	119-40-42W	CU ZN MO NI	PEGMATITE
M700356	MATRIX PROPERTY	US	WA	48-25-18N	122-38-55W	CU AU	SHEAR ZONE
M700179	MAYBEE MINE	US	WA	45-44-49N	122-09-43W	CU AG AU ZN	LODE
M025917	MERCHANT PROSPECT	US	WA	47-49-47N	121-26-27W	CU FE	SHEAR ZONE
M056536	MIDAS NO. 1 PROSPECT	US	WA	48-51-42N	119-37-58W	CU	REPLACEMENT
M056546	MIKELSON CLAIM	US	WA	48-59-49N	119-29-32W	CU	REPLACEMENT
US53034	MILLER RIVER DIST (R	US	WA	47-38- N	121-33- W	CU AG	STOCKWORKS PIPES & I
M025868	MINERAL CREEK MINE	US	WA	47-25-30N	121-15-16W	CU AG AU FE MO	CONTACT METASOMATIC
M700180	MINERS QUEEN MINE	US	WA	45-46-32N	122-11-30W	CU MO AU AG	STOCKWORK
M700181	MINNIE LEE GROUP	US	WA	46-22-19N	122-08-57W	CU AG AU	LODE
M060138	MINT CLAIMS	US	WA	47-58-32N	121-29-45W	CU AU AG W ZN MO PB	VEIN
M056566	MODOC	US	WA	48-12-05N	119-03-08W	CU AU AG ZN MN FE	CONTACT METAMORPHIC
US53011	MONTE CRISTO (MACKIN	US	WA	48-00- N	121-27- W	CU NI AU CO	
US53032	MONTE CRISTO (MYSTER	US	WA	47-57- N	121-21- W	AG PB CU AU ZN	VEINS AND SHEAR ZONE
M056555	MONTEREY	US	WA	48-57-24N	118-58-43W	CU FE AU AG PB	CONTACT METAMORPHIC
M700182	MORNING PROSPECT	US	WA	46-22-42N	122-10-32W	CU	LODE
M056059	MORNING STAR	US	WA	48-58-02N	118-31-05W	AU AG CU PB	VEIN
M056167	MORNING STAR	US	WA	48-58-02N	118-31-05W	AU AG CU	VEIN
D001765	MOUNTAIN BEAVER	US	WA	48-45- N	120-25- W	AU CU AG BI	MINERALIZED AGGLOMER
M025738	MOUNTAIN CEDAR PROSP	US	WA	48-00-09N	121-32-50W	CU AU AG NI FE ZN S CR	
M700183	MOUNTAIN CHIEF PROSP	US	WA	46-20-46N	122-07-36W	CU AG PB	LODE
M056567	MULTNOMAH	US	WA	48-11-58N	119-02-41W	CU AU AG PB	REPLACEMENT
M056667	MYERS CK	US	WA	48-57-00N	118-59-15W	FE CU	REPLACEMENT
D001712	MYRTLE C.	US	WA	48-20- N	121-30- W	AU AG CU HG SB	
M056405	NAPOLEON	US	WA	48-44-12N	118-06-03W	FE CU AU	CONTACT METAMORPHIC
M025739	NATIONAL PROSPECT	US	WA	47-57-21N	121-26-11W	CU AU AG FE	
M025740	NESTA PROSPECT	US	WA	48-12-53N	121-37-24W	CU AU AG MO PB ZN	
D001683	NEVADA	US	WA	48-40- N	119-40- W	AG PB CU SB	VEIN
M056751	NEW HOPE CLAIMS	US	WA	48-56-58N	119-38-59W	CU AU AG NI	VEINS
D001713	NEW SEATTLE	US	WA	48-10- N	121-35- W	AG AU CU SB	
M025713	NEW SEATTLE PROSPECT	US	WA	48-07-16N	121-37-16W	AG AU CU SB	LODE
M025742	NEW YORK PROSPECT	US	WA	48-04-10N	121-33-18W	AU AG CU	LODE
M025918	NICKEL BIRD	US	WA	48-04-02N	121-32-15W	CU AG PB FE	SHEAR ZONE
M056627	NINA LU PROSPECT	US	WA	48-09-20N	119-00-23W	AG AU CU	
M056556	NIP AND TUCK PROPERT	US	WA	48-57-30N	118-59-10W	CU AU AG	
M056800	NO MONICKER PROSPECT	US	WA	48-29-24N	119-40-47W	CU AU AG PB ZN MO	REPLACEMENT AND CONT
M025919	NON PAREIL PROSPECT	US	WA	47-51-23N	121-26-55W	CU AU AG CO NI FE	SHEAR ZONE
M700361	NORTH COAST MINE	US	WA	48-34-33N	121-00-57W	CU AU AG MO FE	INSUFFICIENT DATA TO
M025920	NORTH STAR PROSPECT	US	WA	47-51-05N	121-31-42W	CU FE	SHEAR ZONE
M700185	NORWAY MINE, NORWAY-	US	WA	00-00-00N	122-23-07W	CU AU AG	LODE
M700184	NORWAY-SWEDEN GROUP	US	WA	46-18-02N	122-06-38W	CU AU AG ZN	LODE
M056557	NUMBER NINE CLAIMS	US	WA	48-58-13N	116-14-60W	CU ZN	CONTACT METAMORPHIC
M025921	O AND B MINE	US	WA	47-58-44N	121-24-13W	CU AU AG ZN AS	SHEAR ZONE
M056547	O.K. MINE	US	WA	48-59-35N	119-29-02W	CU AG AU MO W	VEIN
M056548	OHIO CLAIM	US	WA	48-59-20N	119-28-50W	CU	REPLACEMENT
D001684	OLENTANGY	US	WA	48-55- N	119-10- W	AU CU PB ZN SB	FAULT ZONE
M025922	OLSON PROSPECT	US	WA	48-02-31N	121-31-05W	CU FE	SHEAR ZONE
M056774	OPAL PROSPECT	US	WA	48-57-09N	119-03-45W	AU CU PB	
M025923	ORO FINO PROSPECT	US	WA	47-53-40N	121-24-56W	CU AU AG	SHEAR ZONE
M056581	PALMER PROSPECT	US	WA	48-25-54N	119-35-36W	CU	
M700210	PARADISE PROSPECT	US	WA	46-46-02N	121-47-00W	CU AS	LODE
D001687	PEACOCK	US	WA	48-35- N	119-45- W	AU AG CU PB ZN SB	QUARTZ VEINS
M700074	PETERSON-NELSON PROS	US	WA	48-56-60N	121-38-42W	CU AG AU ZN	DISSEMINATED
M060165	PICKWICK MINE	US	WA	47-30-06N	120-58-21W	CU AU AG NI MO	SHEAR ZONE
M056757	PINNACLE MINE	US	WA	48-51-59N	119-37-10W	AU CU PB ZN AG	REPLACEMENT
M700187	POLAR STAR MINE	US	WA	46-21-10N	122-06-21W	CU AU AG AS	LODE
D001637	POLEPICK	US	WA	48-10- N	118-35- W	CU ZN PB SB	QUARTZ VEINS
M056577	Q.S. COPPER CO. CLAI	US	WA	48-40-34N	119-40-43W	CU AU AG	REPLACEMENT
M700357	QUEEN AND BUCHANAN	US	WA	48-28-26N	121-04-27W	CU PB	SHEAR ZONE
W017896	RAILROAD-LAKE CHELAN	US	WA	48-11-00N	120-47-00W	AU AG CU PB ZN MO	
M056836	RAINBOW PROSPECT	US	WA	48-57-32N	118-59-09W	W CU	CONTACT METAMORPHIC
M700404	RED BIRD PROSPECT	US	WA	48-55-27N	121-53-37W	CU AU ZN	VEIN
M025925	RED CROSS PROSPECT	US	WA	47-52-03N	121-35-30W	CU AG AU FE	LODE
D001690	RICH BAR	US	WA	48-50- N	119-30- W	CU ZN AG PB SB	QUARTZ VEIN

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M056549	RICH BAR GROUP	US	WA	48-58-37N	119-32-14W	CU ZN AG PB	VEIN
M700084	SAGINAW PROSPECT	US	WA	48-57-36N	121-37-28W	AU AG PB CU	LODE
M700087	SHANGHAI AND NANKIN	US	WA	48-44-37N	120-43-10W	AU AG CU	LODE
M056829	SILVER BLUFF CLAIM	US	WA	48-34-54N	119-36-12W	AG CU AU	VEIN
M025871	SILVER BULLION PROSP	US	WA	47-26-15N	121-00-28W	CU FE	DISSEMINATED
D001616	SILVER FIEND	US	WA	47-30- N	120-50- W	PB AG AU CU SB	QUARTZ VEIN
M700439	SILVER STAR PROSPECT	US	WA	45-43-47N	122-16-54W	CU AU AG ZN PB	LODE
M700191	SKAMANIA MINE	US	WA	45-43-37N	122-11-58W	CU AU AG V	LODE
M025927	SMITH-WAY PROSPECT	US	WA	47-54-08N	121-26-02W	CU FE	LODE
M700273	SOLDIER BOY CLAIM	US	WA	48-28-47N	121-04-18W	AU ZN CU AG PB	LODE
M025928	ST. LOUIS MINE	US	WA	48-06-48N	121-35-14W	CU AU AG W	SHEAR ZONE
M700358	STEPHENS	US	WA	48-29-43N	122-38-48W	CU AU AG	SHEAR ZONE
US53031	SULTAN DIST (FLORENC	US	WA	47-57- N	121-37- W	CU MO AU W	VEINS AND SHEAR ZONE
M025929	SULTAN KING PROSPECT	US	WA	47-57-02N	121-27-47W	CU AU AG MO FE	LODE
W002702	SULTAN PROSPECT	US	WA	47-57- N	121-37- W	CU MO	PORPHYRY UNKNOWN
M025930	SUNRISE PROSPECT	US	WA	48-00-29N	121-30-14W	CU AG AU MO FE	UNCONSOLIDATED SEDIM
M025647	SUNRISE PROSPECT	US	WA	48-14-18N	121-40-00W	AU AG CU PB ZN MO AS	
M060137	SUNSET MINE	US	WA	47-51-27N	121-27-45W	CU AG AU	VEIN
M700192	SWEDEN MINE, NORWAY-	US	WA	46-17-50N	122-06-45W	CU AU AG ZN	LODE
D001762	TALISMAN	US	WA	48-55- N	118-15- W	CU ZN AG PB W BI	CONTACT METAMORPHIC
M060146	TALISMAN MINE	US	WA	48-59-16N	118-14-12W	CU PB ZN W AG BI CD	METAMORPHIC REPLACEM
M060141	TOGO MINE	US	WA	48-02-52N	118-04-17W	CU AG AU PB	VEIN
M700193	TOLEDO GROUP	US	WA	46-21-47N	122-07-33W	CU	LODE
M056736	TRIUNE MINE	US	WA	48-53-55N	119-31-54W	AU AG PB CU	VEIN
M060140	TURK MINE	US	WA	48-02-53N	118-04-56W	CU AG AU	VEIN, REPLACEMENT
US53010	TWISP-METHOW DIST (A	US	WA	48-19- N	120-09- W	CU ZN AU AG	
M025931	UNCLE SAM PROSPECT	US	WA	47-48-41N	121-29-06W	CU AU AG FE	SHEAR ZONE
M060118	UNITED COPPER MINE	US	WA	48-19-16N	117-39-45W	CU AG AU	VEIN
D001755	UNITED SILVER COPPER	US	WA	48-25- N	117-35- W	CU AG AU SB	FRACTURE FILLING
D001760	WALL STREET	US	WA	48-45- N	117-45- W	CU NI SB	SHEAR ZONE, QUARTZ V
M025667	WAYSIDE MINE	US	WA	48-05-43N	121-56-05W	CU AU AG PB ZN V	
M700409	WELLS GREEK GOSSAN	US	WA	48-53-34N	121-47-48W	CU AG FE	REPLACEMENT
M025665	WHITE GANDER PROSPEC	US	WA	48-13-22N	121-38-12W	CU AG AU	INSUFFICIENT DATA TO
M025932	WILD ROSE PROSPECT	US	WA	47-57-44N	121-25-06W	CU HG CO AS NI AU AG	CONTACT METASOMATIC
M025666	YANKEE BOY PROSPECT	US	WA	48-05-29N	121-56-57W	CU AU PB ZN	SHEAR ZONE
M700194	YELLOW JACKET MINE	US	WA	45-43-54N	122-10-46W	CU AG AU	LODE
M700195	YELLOW METALS PROSPE	US	WA	46-18-21N	122-06-05W	CU AU AG	LODE
M700196	YOUNG AMERICA GROUP;	US	WA	46-18-16N	122-06-24W	CU AU AG	LODE
M056126	ZALLA M	US	WA	48-46-00N	118-49-53W	AG CU AU F	VEIN
W019008	CRANDON ZN - CU DEPO	US	WI	45-30- N	088-53- W	ZN CU AG AU PB	
W018792	GRAYSVILLE MINE	US	WI	42-52- N	090-11- W	PB ZN CU	STRATIFORM
W019009	PELICAN RIVER ZN - C	US	WI	45-32- N	089-25- W	ZN CU	
W032399		US	WY	41-03-54N	105-29-52W	CU	CONTACT METASOMATIC
W032392	ALBANY MINE	US	WY	41-12-08N	106-14-55W	CU	LODE; SHEAR ZONE
W032136	ALBION MINE	US	WY	41-30-12N	106-08-15W	AU PB CU AG	LODE
W032395	ANNIE MINE	US	WY	41-03-58N	105-59-10W	CU AU	LODE
FS00017	AZURITE	US	WY	41-11- N	106-55- W	CU	VEIN
W032434	BARTLETT COPPER KING	US	WY	41-10-05N	105-10-59W	CU	INSUFFICIENT DATA TO
FS00014	BIG BLUE NO. 1	US	WY	41-11- N	106-55- W	CU	VEIN
W032220	BIG PARK PROSPECT	US	WY	42-20-32N	110-40-05W	CU	OTHER; SECONDARY ENR
M045445	BLANCHE MINE	US	WY	41-13-20N	106-17-06W	CU PT PGM	NEW RAMBLER CU-AU-PG
W032393	BLANCHE MINE	US	WY	41-13-12N	106-17-10W	CU FE	SHEAR ZONE; LODE
W032432	BRENNING PROSPECT	US	WY	42-25-57N	105-56-44W	CU	INSUFFICIENT DATA TO
W032404	BUCANEER PROSPECT	US	WY	41-01-25N	105-20-10W	CU FE	LODE
W032192	BUFFALO FORK PROSPEC	US	WY	43-50-27N	110-26-57W	CU	LODE
W032853	BUTTE CLAIM	US	WY	44-38- N	109-43- W	AU AG CU	LODE
W032890	CHERRY CREEK PROSPEC	US	WY	42-17-02N	107-19-05W	CU W PYR TH	LODE
M045453	CLIFF MINE	US	WY	41-16-38N	106-11-08W	AU PT CU AG PGM	NEW RAMBLER CU-AU-PG
W032394	COLORADO MINE	US	WY	41-03-58N	105-59-04W	CU AU AG PB FE	LODE
W032904	COMSTOCK MINE	US	WY	41-10-33N	105-11-17W	CU AG AU	LODE; SHEAR ZONE; RE
W032851	COPPER KING	US	WY	44-38- N	109-47- W	AU AG CU PB	SHEAR ZONE
W032379	COPPER KING MINE	US	WY	41-01-14N	106-16-08W	CU MO	PEGMATITE
W032436	COPPER KING MINE	US	WY	42-29-38N	105-47-02W	CU	LODE
W032177	COPPER KING MINE (AD	US	WY	41-08-41N	105-11-08W	AU CU	DISSEMINATED; REPLAC
W032389	CUPRITE MINE	US	WY	41-11-54N	106-14-26W	CU AU AG CR CO PYR	LODE
W032391	DOUGLAS MINE	US	WY	41-11-47N	106-16-25W	CU AU CO	LODE; SHEAR ZONE
M045444	DUCHESS MINE	US	WY	41-13-20N	106-17-06W	CU PT PGM	NEW RAMBLER CU-AU-PG

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W032382	EUREKA PROSPECT	US	WY	42-24-24N	105-22-22W	CU AU FE	LODE; GOSSAN
W032137	FAIRVIEW CLAIM	US	WY	41-07-14N	106-18-28W	AU CU	LODE
W032902	FAIRVIEW MINE	US	WY	41-10-42N	105-11-28W	CU AG AU	LODE; SHEAR ZONE
W032221	FERNEY GULCH MINE	US	WY	42-21-00N	110-47-30W	CU ZN AG BA AS CO PB MO	OTHER; SECONDARY ENR
W032433	GOLD CRATER GROUP	US	WY	41-10-31N	105-06-22W	CU	LODE
W032178	GREAT STANDARD GROUP	US	WY	41-08-47N	105-11-16W	AU AG CU	LODE
W032518	GRIGGS MINE	US	WY	42-26-02N	110-46-17W	CU AG ZN AU BA AS	OTHER; SECONDARY ENR
FS00015	HIDDEN TREASURE NO.	US	WY	41-11- N	106-55- W	CU FE	VEIN
FS00005	HOMESTAKE	US	WY	41-11- N	106-55- W	CU	VEIN
M045443	INDEPENDENCE MINE	US	WY	41-16-54N	106-11-04W	AU AG PT IR OS RH CU	NEW RAMBLER CU-AU-PG
W032414	ISLAND CITY GROUP PR	US	WY	41-12-21N	107-02-58W	FE CU	LODE
W032417	KANSAS GROUP MINE	US	WY	41-06-38N	106-12-59W	CU AU	LODE
W032429	KENTUCKY BELL PROSPE	US	WY	42-20-58N	105-32-15W	CU	LODE
M045449	KENTUCKY DERBY MINE	US	WY	41-17-04N	106-10-56W	OS PD IR PT AU CU AG PGM	NEW RAMBLER CU-AU-PG
W002697	KERWIN KIRWIN DISTRI	US	WY	43-53- N	109-17- W	CU	PORPHYRY UNKNOWN
W032400	KING SOLOMON CLAIM	US	WY	41-00-47N	105-33-40W	CU	INSUFFICIENT DATA TO
W032386	LAKE CREEK MINE	US	WY	41-07-18N	106-13-53W	CU AU	SHEAR ZONE
W032884	LENOX MINE	US	WY	41-09-24N	105-11-00W	CU ZN	INSUFFICIENT DATA TO
W032903	LONDON MINE	US	WY	41-08-07N	105-11-34W	AU CU AG	LODE; SHEAR ZONE
W032901	LOUISE MINE	US	WY	41-08-17N	105-11-30W	CU AG AU	LODE; SHEAR ZONE
W032431	MAMMOTH PROSPECT	US	WY	42-23-00N	105-42-26W	CU	LODE
W032416	MAUDEM GROUP MINE	US	WY	41-07-18N	106-13-18W	CU AU	LODE
W032387	MEDICINE BOW MINES C	US	WY	41-12-37N	106-17-26W	CU AU CO	INSUFFICIENT DATA TO
M045455	NEW RAMBLER MINE	US	WY	41-13-07N	106-16-57W	CU AG PT PD AU NI	NEW RAMBLER CU-AU-PG
W032390	NEW RAMBLER MINE	US	WY	41-13-12N	106-16-51W	CU AU AG PT PD	LODE; SHEAR ZONE
W032435	ORIOLE MINE	US	WY	42-29-43N	105-46-55W	CU	LODE
W032892	PERCIS CLAIMS	US	WY	41-33-19N	105-31-45W	CU	REPLACEMENT
W032430	PYRAMID MINE	US	WY	42-23-25N	105-41-26W	CU FE	LODE; DISSEMINATED
W032889	SHERMAN GROUP PROSPE	US	WY	41-04-55N	105-19-08W	CU AU	DISSEMINATED
W032516	SPRING LAKE CREEK PR	US	WY	42-24-03N	110-46-30W	CU AG ZN FE	OTHER; SECONDARY ENR
W032381	TENDERFOOT PROSPECT	US	WY	42-25-24N	105-21-10W	CU AG AU ZN	LODE; GOSSAN
W032891	THE COCKSCOMB PROSPE	US	WY	41-36-33N	110-58-53W	CU	INSUFFICIENT DATA TO
W032145	THREE CRIPPLES MINE	US	WY	42-24-05N	105-21-59W	AU AG CU NI ZN	LODE
W032893	UNIDENTIFIED OCCURRE	US	WY	41-55-08N	110-48-40W	CU	INSUFFICIENT DATA TO
W032418	UNIDENTIFIED PROSPEC	US	WY	41-06-46N	106-01-40W	CU	LODE
W032419	UNIDENTIFIED PROSPEC	US	WY	41-09-47N	106-02-15W	CU	LODE
W032898	UNIDENTIFIED PROSPEC	US	WY	41-21-23N	105-27-14W	CU	REPLACEMENT
W032866	UNNAMED PROSPECT	US	WY	42-52-04N	104-29-17W	CU	PEGMATITE; DISSEMINA
TC20156	LOS CANOS	VE	TA	07-37-15N	072-07-18W	AG CU U	
TC20139	SEBORUCO AND CERRO M	VE	TA	08-09-30N	072-04-00W	CU	DISSEMINATED & VEINL
TC20141	AROA DISTRICT	VE	YA	10-27-12N	068-53-30W	CU S	HYDROTHERMAL VEIN ST
M046406	MESCHEDE	GE		51-21- N	008-16- E	PT CR NI CU ZN AG AU	LODE
M046407	SAUERLAND REGION	GE		51-10- N	007-45- E	PT CR NI CU ZN AG AU	LODE
M046409	SIEGERLAND	GE				PT CR NI CU ZN AG AU	LODE
M046836	BOR COMPLEX	YO	SE	44-05- N	022-10-00E	PT CU PD AU AG	LODE
W002454	COPPER-COUNTRY SUMMA	ZR				CU	
DE00065	KINSENDA MINE	ZR				CU	
M046471	RUWE	ZR	AF	10-40- S	023-34- E	AU AG PT PB CU PD MO	SEDMENTARY COPPER
W029732	DIKULUWE	ZR	SH	10-44- S	025-22- E	CU CO	STRATABOUND, SEDIMEN
W029736	KAKANDA	ZR	SH	10-44- S	026-23- E	CU CO	STRATABOUND, SEDIMEN
W029737	KAMBOVE WEST	ZR	SH	10-52- S	026-36- E	CU CO	STRATABOUND, SEDIMEN
W029729	KAMOTO	ZR	SH	10-43- S	025-25- E	CU CO	STRATIFORM, SEDIMENT
W029738	KAZIBIZI, ZAIRE	ZR	SH	10-50- S	026-34- E	CU CO	STRATABOUND
W029742	KIPUSHI	ZR	SH	11-47- S	027-14- E	ZN CU AG GE CD MO RE	STRATABOUND, DISSEMI
W029739	M'SESA, ZAIRE	ZR	SH	10-51- S	026-35- E	CU CO	STRATABOUND
W029731	MASHAMBA	ZR	SH	10-44- S	025-22- E	CU CO	STRATIFORM, SEDIMENT
W029733	MUPINE	ZR	SH	10-42- S	025-25- E	CU CO	STRATABOUND, SEDIMEN
W029728	MUSONOI	ZR	SH	10-42- S	025-27- E	CU CO	STRATABOUND, SEDIMEN
W029740	MUSOSHI	ZR	SH	12-16- S	027-42- E	CU CO	STRATABOUND, SEDIMEN
W029734	MUTOSHI	ZR	SH	10-40- S	025-33- E	CU CO AU PT PD V	STRATABOUND, SEDIMEN
W029735	TENKE - FUNGURUME	ZR	SH	10-37- S	026-17- E	CU CO	STRATABOUND, SEDIMEN
W029741	TSHINSENDA, ZAIRE	ZR	SH	12-16- S	027-57- E	CU CO	STRATABOUND, SULFIDE
W006894	BALUBA COPPER-COBALT	ZA		13- - S	028-10- E	CO CU	STRATABOUND
W006893	BANCROFT COPPER-COBA	ZA		12-20- S	027-45- E	CU CO	STRATA-BOUND
DE00068	CHAMBISHI MINE	ZA				CU CO	
W006891	CHIBULUMA COPPER-COB	ZA		12-50- S	028- - E	CO CU	STRATA-BOUND
DE00066	KANSANSHI MINE	ZA				CU	

Major Copper Deposits in MRDS

Record Number	Site for Sort	Country Code	State Code	Latitude DMS	Longitude DMS	CommoditiesLong	Deposit Type
DE00067	LUANSHYA MINE	ZA				CU	
DE00069	NAMPUNDWE MINE	ZA				PYR CU	
W006892	NKANA COPPER-COBALT	ZA		12-50- S	028-12- E	CU CO	STRATA-BOUND
W032842	NCAANGA	ZA	CH	09- - S	028-30- E	CU	SUPERGENE
W032841	MUFULIA	ZA	MU	12-30-	028- - E	CU	STRATABOUND
W032843	BWANA MKUBWA, ROKANA	ZA	ND	13- - S	028-30- E	CU	UNKNOWN
DE00074	ARCTURUS/MAZASE/MUNE	ZI				AU AG CU	
W029610	EMPRESS	ZI		18-28- S	029-25- E	NI CU CO FE	SULFIDE, DISSEMINATE
W029609	MADZIWA	ZI		17-02- S	031-27- E	NI CU CO	MAGMATIC, GABBROIC,
DE00077	MIRIAM MINE	ZI				CU	
DE00075	RENCO MINE	ZI				AU CU	
W029608	TROJAN	ZI		17-18- S	031-20- E	NI CU CO	MASSIVE SULFIDES, DI
W032803	SHACKELTON	ZI	LO	17-00- S	029-55- E	CU	SEDIMENT-HOSTED
M046832	ATHENS MINE	ZI	MA	19-19-00S	030-35-00E	AU CU PT NI AG	LODE
W032808	MANGULA	ZI	MA	17- - S	030- - E	CU	UNKNOWN
W032807	NORAH	ZI	MH	16-39- S	029-55- E	CU	SEDIMENT-HOSTED, STR
Grand total							

LA VERDE
MEXICO CITY
CERRO PELON
INGUARAN
CONNORS
JAMAICA
JEAN RABEL
NIETA
MEME
HAITI
DOMINICAN REPUBLIC
PUERTO RICO
ROSITA
NICARAGUA
PETAQUILLA
BOTIJA
TALAMANCA
COSTA RICA
CERRO COLORADO
PANAMA
PANTANOS
PEGADORCITO
RIO PITO
BOGOTA
COLOMBIA
PERU
BUENOS AIRES
ARGENTINA
SAN JOSE
CHILE
POLCURA
OTUE
GALLETUE
CAMPANA MAHUIDA
LA VOLUNTAD
QUITO
ECUADOR
CHAUCHA
FIERRO URCO
RIO PLAYAS
LOS LINDEROS
CANARIACU
LA GRANJA
MICHIQUILLAY
PERU
PASHPAP
ANTAMINA
TOROMOCHO
LOS PINOS
LIMA
ALMACEN
FERROBAMBA
CHALCOBAMBA
TINTAYA
CERRO VERDE
AZULYACO
SAN JOSE
SANTA ROSA
CUAJONE
QUELLEVACO
TOQUEPALA
MOCHA
CERRO COLORADO
SAGASCA
COPOQUIRE
COLLAHUASI
QUEBRADA BLANCO
CHUQUICAMATA
SAN JOSE DEL ABRA
MANTOS BLANCOS
PAMPA NORTE
BUENA ESPERANZA
SIERRA GORDO
CHILE
PANCHO ARIA
ANTOFAGASTA
TACA TACA
LA ESCONDIDA
INCA VIEJO
EL SALVADOR
FARALLON NEGRO
POTRERILLOS
BAJO DE LA ALUMBRERA
MANTOS VERDE
CERRO RICO
DOMEYKO
ARROYA CHITA
LOS LOROS
ARGENTINA
ANDACOLLO
ALCAPAR ROSA
LOICA
PACHON
LOS PELAMBRES
PARAMILLOS NORTE
RIO BLANCO
PARAMILLOS SUR
EL SOLDADO
RIO DE LAS VACAS
DISPUTADA
CERRO MERCEDARIO
LA PALOMA
MENDOZA
LOS BRONCES
SANTIAGO

Recap of calculated values from Prospectus', etc.

Mine/Years	Ave Cu Grade	Ave Concentrator Recov. of Cu	Average Recovered per ton of processed ore: oz Silver	oz Gold	% Molybdenum
Berkeley Open-Pit					
1971-1975	0.64%	74.8%	0.145	0.001	NA
Continental East Open-Pit					
1974-1975	0.47%	76.2%	0.032	0.0000	NA
Butte UG Mine					
1971-1975	3.16%	94.5%	9.85	0.002	NA
Jerrington					
1971-1975 Sulfide	0.54%	83.1%	NA	NA	NA
1971-1975 Oxide	0.43%	73.2%	NA	NA	NA
Twin Buttes					
1971-1974	0.86%	72.3%	0.085	NA	0.010
1973-1977 Sulfide	–	72.0%	–	–	–
1975-1977 Oxide	–	72.0%	–	–	–
Utah Copper					
1972-1976	0.64%	NA	0.068	0.008	0.015
Chino					
1972-1976	0.85%	NA	0.004	0.0002	0.003
Ray					
1972-1976	0.99%	NA	0.020	0.0001	0.002

Copper USGS P.P. 907-A-B — 1975

which the observed distribution is hypothesized as being a sample. The beta statistics and the chi square statistics provide complementary information about the adequacy of fit, lesser weight generally being given to chi square statistics because of the arbitrary decisions that must be made when an observed frequency distribution is constructed (Shapiro and others, 1968).

Average grade and tonnage data were obtained from 267 copper deposits. Of these, 146 are massive sulfide deposits, 103 are porphyry deposits, and 18 are strata-bound deposits. Frequency distributions of tonnage and grade were constructed, and summary and goodness-of-fit statistics were computed for each type of deposit. Within the 103 porphyry deposits, 4 subdivisions were recognized which were based upon the metallogenic province within which the deposits occurred. The summary statistics are shown in tables 1 and 2, and goodness-of-fit statistics, in table 3.

Examination of table 1 shows that the African strata-bound deposits have the highest average grade (3.78 percent Cu), followed closely by the massive sulfide deposits, which have an average grade of 2.92 percent copper. The porphyry deposits have an average grade of 0.63 percent Cu, which is nearly one-fifth that of the massive sulfide deposits. Within the porphyry deposits, the average grade ranges from 0.49 percent copper for the Canadian deposits to 0.99 percent copper for the South American deposits. The average grades for the United States-Mexico deposits (0.59 percent copper) and the southwest Pacific deposits (0.52 percent copper) are close to the average grade of the Canadian deposits.

The massive sulfide deposits are far more variable in average grade than the other type of deposits; they have a standard deviation of 2.35 percent copper. This is a consequence of the large skewness in the distribution of grade of these deposits. The standard deviation of the average grades of the strata-bound deposits is 1.18 percent copper, which is only half that of the massive sulfide distribution. The standard deviations of three of the four subclasses of porphyry deposits range only from 0.12 percent copper to 0.17 percent copper. The fourth member of this class of deposits (South American) has a standard deviation (0.36 percent copper) more than twice that of any of the other members of this class.

Porphyry copper deposits contain an average of 548 million tons of ore (table 2), about six times as much ore as that contained in the strata-bound deposits, which average 91 million tons. Massive sulfide deposits contain an average of only 10.3 million tons of ore by comparison, or nearly an order of magnitude less than that contained in the average

TABLE 1.—*Summary statistics for the average grades of copper deposits*

Type of deposit	Number of deposits	Arithmetic data: Mean grade	Arithmetic data: Standard deviation	Arithmetic data: Median grade	Logarithmic data: Mean, $\log_{10}$ of grades	Logarithmic data: Standard deviation, $\log_{10}$ of grades
Porphyry:						
Canada	21	0.0049	0.0017	0.0047	−2.331	0.147
United States and Mexico	38	.0059	.0014	.0057	−2.243	.101
South America	20	.0099	.0036	.0093	−2.033	.160
Southwest Pacific	24	.0052	.0012	.0051	−2.296	.114
World	103	.0063	.0027	.0059	−2.233	.162
Massive sulfide	146	.0292	.0235	.0229	−1.640	.303
Strata-bound	18	.0378	.0118	.0362	−1.442	.132
All	267	.0210	.0213	.0140	−1.855	.392

TABLE 2.—*Summary statistics for the tonnage of copper deposits*

Type of deposit	Number of deposits	Arithmetic data: Mean (millions of metric tons of ore)	Arithmetic data: Median (millions of metric tons of ore)	Arithmetic data: Mean (thousands of metric tons of copper)	Arithmetic data: Median (thousand of metric tons of copper)	Logarithmic data: Mean, $\log_{10}$ of metric tons	Logarithmic data: Standard deviation, $\log_{10}$ of metric tons
Porphyry:							
Canada	21	245	177	1,210	824	8.247	0.354
United States and Mexico	38	815	338	4,781	1,932	8.529	.629
South America	20	773	347	7,622	3,214	8.540	.610
Southwest Pacific	24	203	120	1,058	608	8.080	.436
World	103	548	234	3,452	1,368	8.369	.565
Massive sulfide	146	10.3	2.26	301	52	6.354	.828
Strata-bound	18	91	41.4	3,453	1,496	7.617	.690
All	267	223	16.5	4,679	230	7.217	1.208

strata-bound deposit. Nearly the same relative differences in tonnages between deposit types were found when the median tonnage is used as a measure of the "center of gravity" of the distributions. Strata-bound deposits contain a median 41.4 million tons, and the massive sulfides have a median of 2.26 million tons. When considering the distribution of the tonnage of ore in each type of deposit, the median is a more appropriate measure of the center of gravity because of the large skewness toward the high tonnage tail in each of these distributions.

African strata-bound deposits have the largest quantity of contained copper—a median of 1,496,000 tons. The porphyry deposits have a median that is slightly less—1,368,000 tons—and the massive sulfide deposits contain even less copper by comparison—a median of 52,000 tons. Within the four subclasses of porphyry deposits, the median metal content ranges from 608,000 tons for the southwest Pacific deposits to 3,214,000 tons for the South American deposits. The United States-Mexico deposits have a median of 1,932,000 tons of copper metal, which is more than twice as much as the median for the Canadian deposits but only a little more than half that for the South American deposits.

The process of selecting an appropriate theoretical distribution model to describe the observed grade and tonnage frequency distributions for each of the three types of copper deposits was based upon statistical tests of the beta and chi square goodness-of-fit statistics. The results of these tests are shown in table 3. With the exception of the southwest Pacific porphyry deposits, the lognormal distribution model was found to be superior to the normal distributions in describing the observed distribution of mean grade and tonnage.

Each of the observed distributions of tonnage of ore studied was found to be highly skewed toward high tonnages, and, as a consequence, the normal model does not provide an adequate fit to the observed data. The lognormal model, on the other hand, was found to fit each of the observed tonnage distributions rather well. For each category shown in table 3, column 1, the skewness of the observed tonnage distribution was within the expected range for a sample from a lognormal population, and in only one category did the peakedness depart significantly from the lognormal model. In four of the eight categories, the chi square goodness-of-fit statistics were significant. However, we give less weight to the chi square test statistic because the statistic will produce varying results depending upon the choice of class limits. The lognormal distribution is accepted as an adequate model for the distribution of tonnage of ore in deposits from each category of deposit.

As a result of the above analysis and the assumption that the observed data can be regarded as randomly drawn from their respective parent populations, the lognormal models provide not only an adequate description of tonnage of ore in yet-to-be-discovered deposits of the three types of deposits studied, but also offer an adequate description of their mean grades. An additional benefit of the above results is that the correlation between the logarithms of the mean grade and tonnage in these deposits can be tested statistically.

CORRELATIONS BETWEEN GRADE AND TONNAGE

Among the problems that must be resolved before resource models can be constructed is the relationship between the pairs of variables being examined. In this paper, the pairs of variables are the average grades and the tonnages of the copper deposits in each of the sets of deposit types under consideration; the degree to which these variables vary together is tested. The degree of association or interdependence of the pairs of variables is examined by means of the correlation coefficient for each set of samples. The values of the correlation coefficient can range between minus one and plus one, a perfect linear relationship being indicated by a minus one or plus one value, and complete linear independence indicated by zero. In this paper, the sample correlation coefficients are tested in table 4 against the null hypothesis that the population of grades and tonnages has zero correlation. The frequency distribution of the pairs of logarithmic variables examined in the last section closely approximate the bivariate normal distribution necessary for the significance tests of the null hypothesis.

TABLE 4.—*Correlation coefficients between average copper grade and total tonnage*

[NS, not significant; **, significant at the 1-percent level]

Type of deposit	Number of deposits	Correlation coefficient	
		Arithmetic data	Logarithmic data
Porphyry:			
Canada	21	−0.16NS	−0.22NS
United States and Mexico	38	.00NS	−.09NS
South America	20	−.07NS	−.17NS
Southwest Pacific	24	−.05NS	−.07NS
World	103	.09NS	.05NS
Massive sulfide	146	−.13NS	−.42**
Strata-bound	18	−.10NS	−.19NS
All	267	−.22**	−.67**

Misc

ASARCO

TEL [illegible]-1274

RECEIVED
NOV 15 1971
S. W. U. S. EXPL. DIV.

AMERICAN SMELTING AND REFINING COMPANY
CANADIAN EXPLORATION DIVISION

S. A. ANZALONE
EXPLORATION SUPERVISOR

504 - 535 THURLOW STREET
VANCOUVER 5, B.C.

12 Nov/71

Mr. W.L. Kurtz, Supervisor,
Tucson Office.

Arizona, U.S.A.
Porphyry Copper Deposits

Dear Bill:

Please refer to the attached copy of Mr. J.C. Balla's memo to you dated 7 Dec/71 re the subject PORPHYRY COPPER DEPOSITS IN BRITISH COLUMBIA. Also enclosed is a clipping from the September issue of World Mining Magazine.

In his memorandum, Mr. Balla points out that opportunities for property acquisitions by Asarco in British Columbia may improve in the near future. It now appears, however, that while the thinking in Tucson has been directed at "golden opportunities" in B.C., a large Canadian company (Noranda) has turned its attention to the U.S. Southwest, and is quietly "buying up" Bagdad Copper. There must be a moral hidden here somewhere, although I can't quite put my finger on the correct biblical quotation.

Along this same line of thinking, and I admit it may sound facetious, Anaconda appears to be in sufficient economic difficulty to possibly open them up to some form of merger with another large mining company. They may, in fact, be in sufficiently dire straits to be vulnerable to a "take over". When you have an opportunity, I would appreciate your thoughts on this subject.

Yours very truly,

Sal

S.A. Anzalone.

SAA:sm
Encls
CC: JJCollins, JCBalla, w/encls.

Arizona . . .

Noranda Mines Actively Seeks to Buy Stock in Bagdad Copper

While many of the largest copper mining companies, from Kennecott Copper Corporation on down, have taken a good look at acquiring a major interest in or control of Bagdad Copper Corporation for many years a Canadian company has now acted.

Noranda Mines Limited, a fully integrated base metal producer with large interests in potash, molybdenum, and aluminum, has mounted an aggressive stock purchase program for Bagdad shares. The management of Bagdad estimates that Noranda now owns about 187,000 shares or 13 percent. Management has not solicited Noranda's interest.

In the first six months of 1971 Bagdad produced 9,907 tons of copper versus 7,752 in the similar 1970 period. Costs continue to rise and the recently approved wage pact by major United States companies will again raise costs. In addition Bagdad is paying a 1.5 cent per pound of copper smelter surcharge to American Smelting and Refining Company as its contribution to payment of Asarco's pollution control program.

Bagdad continues to plan expansion and when this is implemented it will add 228,000,000 tons of 0.47 percent ore to reserves. Leach and LIX production of copper would not be materially increased.

Cpy to Sal Anzalone
J.J. Collins

RECEIVED SEP 13 1971

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

September 7, 1971

S.A.A.
SEP 13 1971

TO: W. L. Kurtz

FROM: J. C. Balla

PORPHYRY COPPER DEPOSITS
IN BRITISH COLUMBIA, CANADA

This past weekend I talked with Ray Robinson about various topics, and he mentioned that it appears to him, from unknown sources, that hard times maybe coming to the low grade porphyry copper deposits of British Columbia. The reason is that the Japanese maybe becoming satiated with copper, and begin cancelling or cutting back their deliveries of copper concentrate from B.C. Since some of the porphyry copper deposits are marginal producers, the results could be a closing of some of the mines.

Although the above will have considerable adverse effects on the B.C. mining industry (if it comes to pass), it could also represent a golden opportunity for ASARCO to acquire copper and molybdenum reserves for the future by acquiring some of these properties.

Although our main interest is to find ore, not reserves for the future, the acquisition of some of these properties, (if possible), could put us in a stronger position for the future.

I am not aware of what ASARCO Canada thinks about the above topic. In all probability, they've already given it serious consideration.

John

John C. Balla

JCB:sg

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

November 15, 1971

TO: W. L. Kurtz

FROM: J. C. Balla

S. Anzalone's Letter of
12, November 1971, Regarding
Arizona, U.S.A., Porphyry Copper Deposits

Mr. Sal Anzalone's letter regarding "golden opportunities" ("Copper opportunities" might be more appropriate) is appreciated. It is indeed a pleasure to see that ASARCO's thinking is not provincial in scope, but is on a continent (and indeed global) scale. Mr. Anzalone need not be concerned about the moral implications of the Tucson office looking far afield (in this case, B. C.) and missing something close at home (Bagdad). The Bagdad Copper deposit is familiar to the Tucson office (one file drawer completely full of data on the mine), and also to the New York office (the last memo on the property was to Mr. Hennebach). The possibility of ASARCO doing what Noranda is doing has been appreciated.

Anaconda's "dire straits" are also well known, and the availability of their properties (in the U.S., Hall, Nevada; Heddlestone, Montana, Stillwater, Montana) is public knowledge. Presumably, ASARCO has passed judgement on these properties.

To go one step further, the company is also aware that Moly Corp. (Questa) is available, and judgement has been passed on that opportunity. Also, that Bunker Hill (Coeur d' Alene district) is also available for acquisition.

Thus, it would appear that the ASARCO exploration districts are well aware of the opportunities available within the districts. The occassional reminders from outside the district are indeed appreciated.

John

John C. Balla

JCB:sg

Form SL-1035

KEEP THIS ON TOP

File No. J.H.C's

Subject: PORPHYRY COPPER DEPOSITS, ARIZONA & N.MEXICO

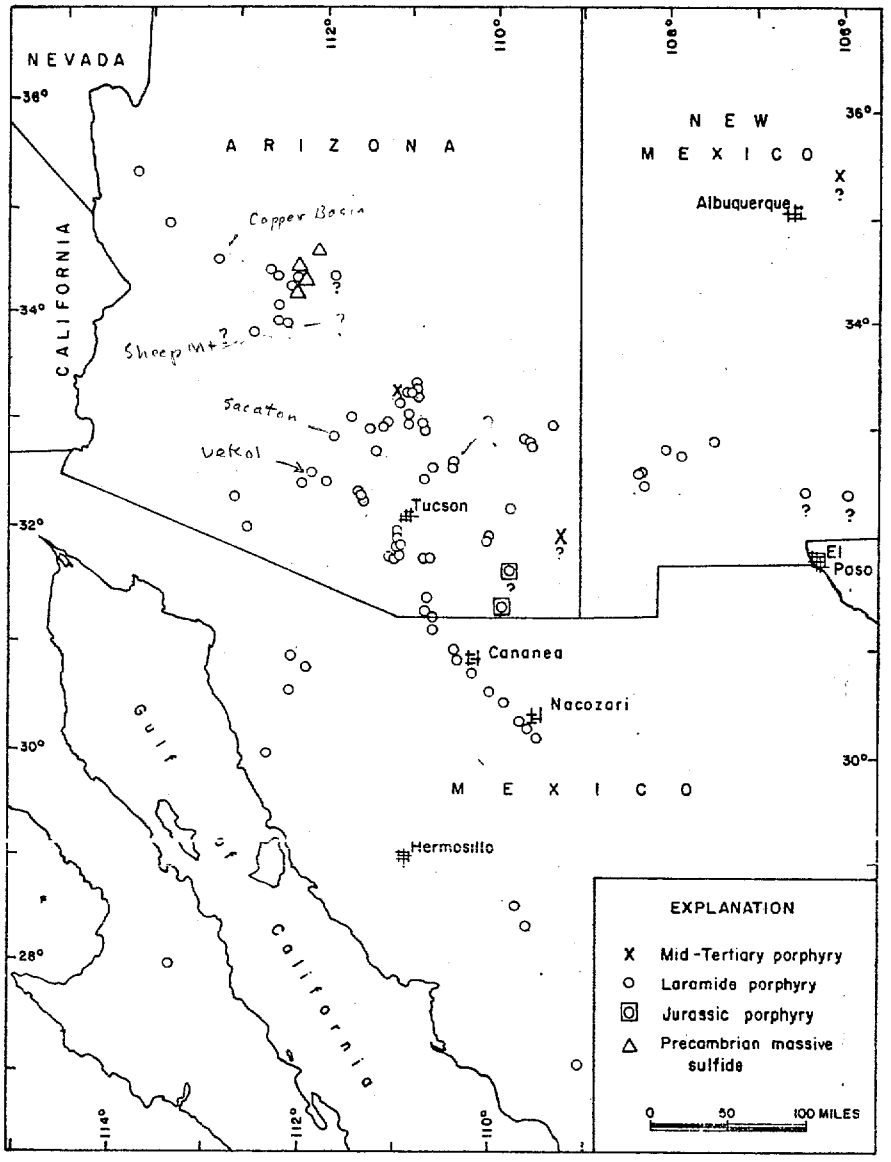
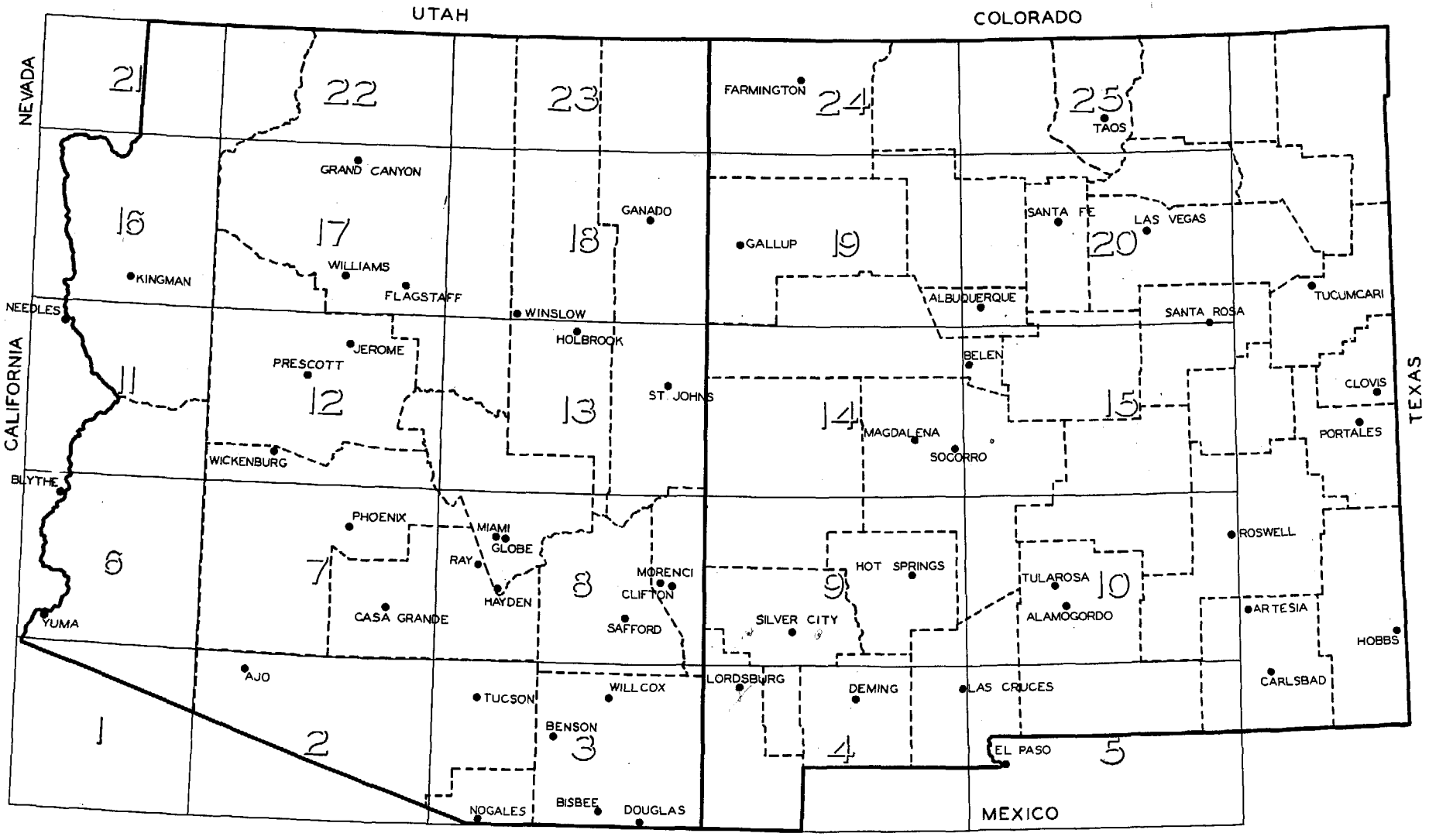


FIG. 2. Map showing the distribution of porphyry occurrences in the Southwest province. Deposits shown have porphyry type alteration and contain at least 20,000,000 tons of 0.1 percent Cu. (The deposit in Baja California is Jurassic (?) in date.)

ore bodies in the same area. This greater density allows better definition of structural controls and a more precise outlining of the general cluster.

Figure 3 shows the Southwest province ore bodies with age dates and age contours. This map demonstrates a progressive decrease in age from northwest to southeast among the Laramide deposits. The Mesozoic deposits in Nevada fit this pattern, as do a number of dated intrusive bodies in northwestern Nevada. The mid-Tertiary deposits do not fit the pattern, however, nor does Bisbee, the single Mesozoic age Southwest deposit. It appears that in a very general way the locus of porphyry mineralization first shifted progressively southward from British Columbia to Sonora during Mesozoic and Laramide time (200 to 54 m.y. ago) and then shifted eastward for the deposition of the mid-Tertiary deposits.

Age dates of volcanic rocks of andesitic-rhyolitic composition in southeastern California have recently been reported by Armstrong and Higgens (1973). Plotted with dates for other volcanic rocks these demonstrate a similar southward transgression of ages during the Tertiary period. These data suggest an overall progression in age from 55 m.y. in northern Idaho to 22 m.y. in northwestern Arizona, and



American Smelting and Refining Company

INDEX MAP – ARIZONA AND NEW MEXICO

SHOWING SHEETS TO PORPHYRY COPPER GEOLOGIC MAPS (SCALE 1 INCH = 4 MILES)

By: K. G. Papke

September, 1952

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

November 28, 1972

MEMORANDUM FOR: J.J. Collins

PORPHYRY COPPER DEPOSITS
ARIZONA - NEW MEXICO

The last compilation of porphyry copper occurrences was made five years ago (my file memo of March 11, 1968). Since then several new discoveries have been made and some marginal deposits became commercial by reason of a higher copper price. However, statistically the odds remain around 50-50 that a newly discovered porphyry prospect will prove commercial. This conclusion rests on the fact that the number of productive deposits plus those potentially productive equals those in the marginal or submarginal class.

I expect soon to bring the study up to date and am including here only a listing of deposits separated into two categories ----- "Commercial" and "Marginal, or Sub-Marginal".

COMMERCIAL DEPOSITS

1. >Morenci
2. >Santa Rita
3. San Manuel - Kalamazoo
4. >Miami - Inspiration
5. >Ray
6. >Ajo
7. > Bisbee
8. Mission-Pima-North San Xavier
9. Twin Buttes
10. Esperanza-Sierrita
11. Tyrone
12. >Bagdad
13. Copper Cities
14. Silver Bell
15. Christmas
16. Mineral Park
17. Castle Dome - Pinto Valley
18. Lakeshore
19. Lone Star - Kennecott, Safford
20. Safford - Phelps Dodge
21. Helvetia ?
22. Rosemont
23. Vekol
24. Sacaton
25. Johnson Camp
26. Red Mt. - Patagonia

MARGINAL OR SUB-MARGINAL DEPOSITS

		Drilled By
1.	Copper Creek	Newmont
2.	Border Pipe	Chapman Morehouse
3.	PD Prospect	Phelps Dodge
4.	Greenback	?
5.	Kelvin	Con Coppermines
6.	Sunnyside	Asarco
7.	Turquoise	Asarco, Bear Creek
8.	Red Hills (Texas)	Asarco, Bear Creek (?)
9.	Pioneer	Duval & others
10.	Blackwater	Magma Copper-Bear Creek-Duval
11.	Cerrillos	Bear Creek
12.	~~Hiltscher~~	Bear Creek

13.	Steeple Rock	Bear Creek
14.	Madera	Miami Copper
15.	Cactus	Miami Copper
16.	Three R	Anaconda
17.	Copper Basin	Phelps Dodge
18.	Chilito	Bear Creek
19.	Sheep Mtn.	Phelps Dodge
20.	Organ Dist. (Organ Mtn., N.M.)	Kerr-McGee
21.	Saginaw Hill	Anaconda
22.	Four Metals	Noranda-Iso
23.	Black Mt. Prospect	
24.	Rock House	
25.	Tyndall District	
26.	Tombstone	

J. H. Courtright
J.H. COURTRIGHT

JHC:kre

SOUTHWEST PORPHYRY COPPER DEPOSITS

1. In Arizona and New Mexico 25 porphyry copper deposits that can be classed as commercial. Of the 25, 16 are currently producing. The remaining 9 comprise those under development plus those that are regarded as potentially commercial.

   As presently known there is an equal number of sub-marginal deposits. These 25 are so classed by reason of low grade or small size. This is in contrast to other deposits, such as lead, zinc or silver, where the non-economic occurrences are in the overwhelming majority. ~~To name a few~~ Sag. Mine Hill

2. This slide shows the extent of volcanic and alluvial cover. The pre-mineral rocks are indicated by the blue color. The red dots indicate the productive and potentially productive deposits. The sub-marginal deposits are shown as red circles. Prospects of uncertain classification are represented by ~~red~~ crosses. Duval's Mineral Park (Ithaca Peak) mine is located here . . . . . etc.

   The overall trend is northwesterly, but northeast trends are dominant locally . . . . . - The Phoenix area

3. As first stated, 50% of the known porphyry copper occurrences are in the commercial class.* In terms of exploration odds, this indicates that a new discovery should have a 50-50 chance of proving profitable. The known deposits lie within a region that is approximately 70% covered with rocks of post-porphyry copper age.

   Accordingly, it can be theorized that the remaining concealed deposits could outnumber those so far discovered. This ratio perhaps is subject to modification in view of the possibility that intrusives and their associated metal deposits may to some extent preferentially occur in positive blocks -- mountain ranges rather than in the basins. However, many deposits occur low on the mountain flanks and under adjacent pediments, and what appears to be the roots of the Sacaton ore body lie in the middle of the Santa Cruz valley. It may be that the mountains appear to be a more favorable environment simply by reason of exposure.

   Several of the occurrences shown here were almost entirely concealed, for example:

4. For some time our exploration efforts in the Southwest have been oriented principally toward the search for deposits in covered areas. Gravity surveys to outline pediments with shallow cover have been followed up by I.P. surveys. Air and ground reconnaissance in search of mineralized windows in the cover and for evidence of alteration-mineralization around the margins has been carried out extensively.

It is planned to continue this program in selected areas along the more priminent copper trends, such as . . . . . Southern Galliuro Mountains, Southern edge of the Santa Cruz Valley, and the area between the Vekols and Ajo.

Particular attention will be given to the Gila type conglomerates and other mid- to late-Tertiary sediments which may contain alt + min boulder detrital copper derived from deposits which are now concealed. Such conglomerates are copper bearing in the Morenci area (exposures in the S. F. river canyon), Sacaton and San Manuel areas (information from drill holes). Illustrate with sketch . . . .

Also reassessment of prospects previoulsy examined and/or drilled has been going on and will continue. For instance, Posten Butte . . . Turquoise . . . .

Abandoned mines are numerous, but

5. It is interesting to note that Castle Dome is the only porphyry copper that has been "mined out". However, large diameter coring for metallurgical samples is currently in progress there and it is probable that mining will be resumed at Castle Dome on a much larger scale than in the past. PD recently announced that Bisbee was to be phased out by 1975. It, too, may later be reopened if the demand for copper continues to accelerate. Dave Lowell estimates the present average grade mined in the U. S. at .64% Cu. Projected, the average grade declines to .25% Cu by the end of the century.

J. H. C.

SEP 22 1969

J. DAVID LOWELL
CONSULTING GEOLOGIST

5215 N. ORACLE TUCSON, ARIZONA 85704 PHONE 887-5341

September 17, 1969

Copied for WES
JDS
BEK
9/22/69

Severn P. Brown, Publications Chairman

Geology Unit Committee, AIME
James R. Dunn & Associates, Inc.
Box 158
Averill Park, New York 12018

Dear Sev:

The following is a brief review of porphyry copper exploration activity during the past year. Several of the items have been documented with clippings, I am personally familiar with about half of the deposits, but I have no specific information at all on a number of them. Deposits which I am sure have been mentioned in the press are starred. The deposits are arranged in order of decreasing significance.

*(1) Metcalf - large Cu Mo - Phelps Dodge Corp - discovered several years ago, but first public reference was recent announcement that deposit will be put into production, Morenci district, Arizona.

*(2) Valley Copper - ± 1,200,000,000 T ± .45 Cu - Cominco and Bethlehem Copper, Highland Valley district, B.C., Canada.

*(3) La Caridad - + 200,000,000 T .80 Cu, ultimate tonnage very large - Asarco (includes Anaconda Santa Rosa claim), Nacozari district, Sonora, Mexico.

*(4) Bay property - large Cu Mo - Utah Construction & Mining Co., Port Hardy district, Vancouver Island, B.C., Canada.

*(5) Lakeshore - 600,000,000 T ± .75Cu but with very difficult metallurgical, stripping, and royalty problems - El Paso Gas and Hecla, Casa Grande district, Arizona.

*(6) Mowat - Ni Cu - Anaconda - Stillwater district near Nye, Montana.

*(7) Lornex - 300,000,000 T 0.427 Cu - Rio Algom Mines, Ltd. and Yukon Consolidated Gold Corp., Ltd., Highland Valley, B.C., Canada.

*(8) Heddleston - large Cu Mo Ag - Anaconda - Helena district, Montana.

*(9) Ingerbell - Cu Mo - Newmont - Princeton district, B.C., Canada.

*(10) Safford - large Cu Mo underground deposit - Phelps Dodge Corp. Discovery made several years ago, but decision made during past year to sink a shaft and cave a test block, Safford district, Arizona.

*(11) Vekol - ± 75,000,000 T ± .60 Cu - Newmont. Discovery was made in 1965, but additional work is being done to determine possibility of putting deposit into production, Casa Grande district, Arizona.

*(12) Bougainville - 220,000,000 T (+) .63 Cu, .025 oz Au - Bougainville Copper Pty. Ltd. - decision made to go into production, Bougainville Island, New Guinea.

(13) Kerwin - Amax - no public announcement. Drilling and underground work in progress, Kerwin, Wyoming.

*(14) Sacaton - 35,000,000 (+) T Cu Mo - Asarco - Casa Grande district, Arizona.

*(15) Hall - Mo Cu - Anaconda, Tonopah district, Nevada.

(16) Rosemont - Cu Mo - Anaconda. No announcement of results or production plans, Helvetia district, Arizona

*(17) Cuajone - Cu Mo - Southern Peru Copper Co. Discovery several years ago, but recent feasibility work done, Peru.

*(18) Michiquillay - Cu Mo - Southern Peru Copper Co. Discovery several years ago, but recent feasibility work done, Peru.

*(19) Cerro Verde - Cu Mo - Anaconda. Recent feasibility work done, Peru.

*(20) Highmont - Cu Mo - Highmont Mining Corp., Ltd. Recent drilling on this prospect is said to have outlined slightly better than marginal grade-tonnage deposit, Highland Valley district, B.C., Canada.

(21) Ruby Creek - Cu Mo - Kennecott. Drilling and shaft sinking, Kobuk River, Artic Ridge area, Alaska.

*(22) Casino Silver - Cu Mo - Casino Silver Mines, Ltd. Recent discovery of chalcocite blanket type of deposit unusual in Canada, 80 miles south of Dawson City, Yukon Territory, Canada.

*(23) Discoveries announced in Fiji and New Guinea for which I have no information.

*(24) Porphyry copper prospects have been announced by U.N. teams in Argentina and Panama, but no commercial deposits have yet been confirmed in either area (evidence suggests that U.N. results were greatly exaggerated in both of these projects).

Significant publications during the year would include "Ore Deposits of the United States," edited by John D. Ridge, which contains a number of porphyry copper papers. There were two apparently first-class Russian papers on broad interpretations of ore genesis (I cannot find references for these), and the Penrose Conference on "Depositional Environment of the Porphyry Coppers," while not resulting directly in publications will undoubtedly result in a number of papers on porphyry copper geochemistry and genesis. Copies of the program and a summary description are attached.

Exploration techniques used in the discoveries with which I am familiar were principally geologic mapping and offset drilling of known mineralization. Geochemical surveys have been widely used particularly in western Canada and tropical areas in the Caribbean, Central America and the Pacific. Geophysical work has been done in all of the porphyry districts.

Interesting exploration developments would certainly include comment on the growing nationalism in South America which has resulted in some shift of exploration to western Canada, the U.S., and Australia. The Mexicanization policy in Mexico has evidently stabilized the economic environment for mining sufficiently to encourage a surge of new exploration by U.S. and Canadian companies in Mexico during the past year.

Discoveries in the Philippines, Fiji, New Guinea, and Bougainville have generated considerable exploration interest in the Pacific "Ring of Fire" belt. A reported porphyry copper discovery in Iran raises the possibility that a similar belt exists in northern Africa. During the past year there has been considerable speculation regarding possible relationships between the porphyry copper belts and the rift systems.

This has been a once-over-lightly review of porphyry copper exploration, but I hope that it will suffice for your purposes.

Hope to see you at the February meeting.

With best regards,

J. David Lowell

JDL:h

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

April 10, 1968

W.E.S.

JUN 6 1969

J.H.C.

APR 12 1968

TO: J.H. Courtright

FROM: J.D. Sell

Porphyry Copper Deposits
Arizona and New Mexico

In reading your revised copy of the above subject, I would like to submit the following word-of-mouth thoughts.

Rock House (N. of Superior). I've heard that Kerr-McGee conducted extensive mapping and sampling in the area and that they had one drill rig in for a short time.

Castle Dome Miami has had a deep drilling rig in the area for the past four or five years. I've heard that results are encouraging and thoughts are trending toward reopening the Castle Dome mine with the new reserves apparently dipping toward the north.

Kalamazoo Attached is Magma-Newmonts report on the property acquisition.

Magma-Superior In the annual reports they now announce over 9 million tons of plus 5% reserves (new plus old developed but unmined) in their replacement ore body under the dacite. The ore is now found not only in the basal portion of the Devonian but also in several (3 or 4 mineable) in the Mississippian and some in the Pennsylvanian limestones. Although little word is available, the amount of porphyry being found to the east suggests that a large porphyry intrusive feeder system way be present somewhere under the dacite.

James D. Sell

James D. Sell

JDS:ir

NEWMONT MINING CORPORATION
300 PARK AVENUE
NEW YORK, N. Y. 10022

March 18, 1968

SPECIAL REPORT TO STOCKHOLDERS

RE MAGMA COPPER COMPANY PROPERTY ACQUISITION:

Magma Copper Company, 80.6% owned by Newmont Mining Corporation, has agreed to purchase a large new copper property adjoining its San Manuel mining property in Arizona, as reported in the joint press release made today by Newmont and Magma, reading as follows:

"New York, N. Y.—Messrs. P. Malozemoff, President and Chairman of the Board of Newmont Mining Corporation, and W. P. Goss, President of Magma Copper Company, today jointly announced that Magma, which is 80% owned by Newmont, has agreed to purchase the Kalamazoo copper property in Arizona from Quintana Minerals, Ltd.-Kalamazoo, a Texas partnership of Houston, Texas, for $27,000,000 in cash and stock equivalent.

The Kalamazoo property, which adjoins Magma's San Manuel mine in Arizona, has been drilled by Quintana and is estimated to contain over 500 million tons of ore averaging better than 0.7% copper. It is believed to be similar in size and grade to the San Manuel orebody, although lying at considerably greater depth, with the top of the orebody approximately 2500 feet below the surface. San Manuel is presently mining ore 2075 feet below the surface.

The three-party agreement calls for Quintana to receive from Magma $15,000,000 in cash and 42,478 shares of Magma common stock, and from Newmont 78,208 shares of Newmont common stock and $4,800,000 in cash. Newmont will receive from Magma 169,912 shares of Magma common stock.

Mr. Goss said that the additional ore reserves should make it possible for Magma to expand their present 40,000 tons per day mining operation at San Manuel, and that one plan under consideration is to increase the rate to 60,000 tons daily. He pointed out that such a program would require additional underground development and plant expansion over the next few years. Additional loan financing is to be obtained as required for this project.

Mr. Malozemoff said that Newmont's participation in the transaction was brought about by the desire of Quintana to receive a portion of their payment in Newmont stock, and by Newmont's desire to maintain its 80% ownership of Magma.

Newmont, a major U. S. non-ferrous mining company, is engaged in the exploration, development and financing of mining properties throughout the world. It reported net earnings in 1967 of $50,744,000. Magma a large primary copper producer in the United States, has mines at San Manuel and Superior, both in Arizona. Its profits of $12,240,000 in 1967 were down considerably from the previous year because of the nationwide copper strike which caused it to cease operations at both mines on July 15, 1967."

Very truly yours,

P. Malozemoff

P. MALOZEMOFF,
President and Chairman

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

March 11, 1968

FILE MEMORANDUM

PORPHYRY COPPER DEPOSITS - ARIZONA & NEW MEXICO

This memo will serve to update my review of Arizona-New Mexico deposits written February 18, 1963 (copy attached hereto).

During the past five years there were several new discoveries, and due to increased copper prices, several deposits classed as marginal in 1963 have become economic. Also, several prospects were drilled and proven to be either too low grade or too small. However, statistically the odds remain 50-50 that a newly discovered prospect will prove "commercial". An updated list of deposits follows (refer to attached geologic map showing mine and prospect locations):

(1) Commercial ~~Producitve~~ Deposits
~~(Includes those under development)~~

Revised 8-15-72

~~Over 100 Million Tons*~~
1 Morenci
2 Santa Rita
3 San Manuel - Kalamazoo
4 Miami - Inspiration
5 Ray
6 Ajo
~~Cananea (Sonora, Mex.)~~
7 Bisbee
8 Mission-Pima-North San Xavier
9 Twin Buttes
10 Esperanza-Sierrita
11 Tyrone

~~Under 100 Million Tons*~~
12 Bagdad
13 Copper Cities
14 Silver Bell
15 Christmas
16 Mineral Park
17 Castle Dome ~~(mined out)~~ - Pinto Valley
~~18 Lakeshore~~
19 Lone Star = Kenn, Safford.
~~20 Safford~~ - Phelps Dodge
21 Helvetia
22 Rosemont
23 Vekol
24 Sacaton
25 Johnson Camp
26 Red Mt - Patagonia

Lakeshore
Safford P.
Lone Star, Kenn.
26 Red Mt, Patagonia

*Production ~~plus~~ potential

(2) Marginal (?) "Deposits"
(Undeveloped)

~~Lone Star~~ . . . . . Reportedly 800 million tons @ .55% Cu, mixed sulphides and oxides. Nuclear blasting for in-place leaching under consideration. Kennecott.

~~San Juan~~ . . . . . "Large ore body too deep for open pit mining." Owned by Phelps Dodge.

~~Helvetia~~ . . . . . 14 million tons .80% Cu. Mixed sulphides and oxides. Controlled by Anaconda.

~~Rosemont~~ . . . . . SE of Helvetia - copper in tactite. Tonnage and grade unknown. Anaconda.

~~Vekol Mtn.~~ . . . . . Reported 70 million at .56% Cu. Newmont and New Jersey Zinc Companys.

(3) Deposits Currently Under Exploration

~~Sacaton~~ . . . . . Asarco

~~Johnson Camp~~ . . . . . Cyprus

1 Copper Creek . . . . . Newmont
~~Poston Butte~~

(4) Marginal or Sub-Marginal Deposits
~~(Proven either too small or too low grade)~~

		Drilled by
2	Border Pipe	Chapman Morehouse
3	PD Prospect	Phelps Dodge
4	Greenback	?
5	Kelvin	Con Coppermines
6	Sunnyside	Asarco
7	Turquoise	Asarco, Bear Creek
8	Red Hills (Texas)	Asarco, Bear Creek (?)
~~9~~	~~Poston Butte~~	Asarco
~~10~~	~~Lake Shore~~	USBM, Shattuck-Denn & Trans Arizona
9 ~~10~~	Pioneer	Duval & others
10 ~~11~~	Blackwater	Magma Copper-Bear Creek-Duval
11 ~~12~~	Cerrillos	Bear Creek
12 ~~13~~	Hiltscher	Bear Creek
13	Steeple Rock	Bear Creek
14	Madera	Miami Copper
15	Cactus	Miami Copper
16	Three R	Anaconda
~~17~~	~~Red Mtn.~~	Kerr-McGee
17 ~~18~~	Copper Basin	Phelps Dodge
18 ~~19~~	Chilito	Bear Creek
19 ~~20~~	Sheep Mtn.	Phelps Dodge
20 ~~21~~	Organ Dist. (Organ Mtn., N.M.)	Kerr-McGee
21 ~~22~~	Saginaw Hill	Anaconda
22 ~~23~~	Four Metals	Noranda-Iso
23	Black Mt prospect	

(5) ~~Porphyry Copper Prospects - Untested, but probably Sub-marginal~~

24 ~~Rock House~~ (N. of Superior) — Outcrops indicate minor chalcocite enrichment below, but zone too small in size.

25 ~~Tyndall District~~ (S. Santa Rita Mtns.) — Zone of strong quartz-sericite-pyrite alteration several square miles in extent. General character of leached outcrops, plus occasional exposure of sulphides in old adits. Indicate little more than traces of either primary or secondary copper. Drilled

26 Tombstone

(5) continued

~~Tombstone~~ Zone of alteration one mile or more in diameter lies southwest of this old silver mining district. Outcrops do not appear too promising.

The "productive" deposits of category (1) total 18 in number, including Cananea in Sonora. Adding to this, categories (2) and (3) which include some possibly marginal deposits, the total number of economic porphyry copper deposits in the Southwest is 26. If the "untested" deposits (5) (not sufficiently attractive so far to merit exploration drilling) are included with those of No. (4), the total of sub-marginal deposits is 27.

Using the most conservative approach, the 50:50 ratio becomes 20:30 if the Marginal (?) Deposits (undeveloped) are not included with the Productive Deposits.

As stated in the 1963 memorandum, "This ratio has no bearing on the chances of finding a new porphyry copper prospect in the Southwest U.S." But, if a zone of porphyry copper type mineralization alteration of sufficient size (a half-mile or more in diameter) is discovered, the odds are even (or at least 20:30) that the zone contains an ore body.

Brief comments on some of the more important deposits, discovered recently or under development, follow:

Tyrone was dormant in 1963; P.D. is currently preparing the deposit (400 million tons at .70% Cu) for production at a reported rate of 30,000 TPD, open pit.

McGee (now Duval's Sierrita Mine). Duval acquired this property after Bear Creek dropped it. Further drilling indicated 400 million tons of .32% copper and .056% MoS_2 mineable by open pit. With a government loan and guarantee of 38¢ copper to repay the loan, Duval is preparing to mine and mill at 60,000 TPD.

Twin Buttes. Anaconda acquired this property and continued the drilling program started by Banner, resulting in the discovery of what is very likely the "roots" of the Mission deposit six miles to the north. A 200 million ton pre-mine stripping program is well under way. Reportedly, the mill will operate at 30,000 TPD on .7% copper ore.

North San Xavier. This deposit lies two miles north of the Mission and is within the Mission-Pima zone of mineralization. Early wide-spaced drilling indicated a small deposit of marginal grade. Recent interspaced drilling has indicated an open pit ore body of around 50 million tons of .60% copper.

Kalamazoo. Quintana Corp. recently discovered this deposit which represents the upper half of the San Manuel ore body displaced southwesterly 1-1/2 miles by the San Manuel fault. The deposit, which contains over 500 million tons of .74% copper, lies between 3000 and 5000 ft. below the surface. No plans for development reported.

Copper Creek. Reportedly Newmont has discovered "ore grade" copper-moly mineralization at 2000 feet depth in the Copper Creek district east of San Manuel.

Vekol Mtns. Deposit (Reward Mine Area). This deposit, situated northwest of Lakeshore and Silverbell, was recently drilled out by Newmont and New Jersey Zinc. Reportedly it contains 70 million tons of open pit ore grading .56% copper. Burdened by Indian Reservation royalties and a 3 to 1 stripping ratio, the deposit appears to be marginal at the present copper price.

Sheep Mtn. Prospect. During 1965-66, Phelps Dodge conducted an extensive drilling program near Castle Hot Springs east of Wickenburg. Reportedly they found a zone of copper-moly mineralization averaging .4% copper equivalent (moly value converted to copper value) amounting to several hundred million tons. The zone lies beneath 1000 to 2000 feet of post-mineral volcanics. The property appears to have been abandoned.

J. H. Courtright

JHC:lmi

J. H. Courtright

cc: JJCollins
DFCoolbaugh
WLKurtz
RKKirkpatrick

J.H. Courtright
See
Ga 0.0.16

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

March 14, 1963

CONFIDENTIAL

Mr. C. P. Pollock, Exploration Manager
American Smelting and Refining Company
120 Broadway
New York 5, New York

PORPHYRY COPPER DEPOSITS - ARIZONA & NEW MEXICO

Dear Sir:

Attached is a memorandum with map by Mr. Courtright in which he lists and comments briefly on the known porphyry deposits in the Southwest and arrives at the gambling odds involved in porphyry copper exploration.

He limited his tabulation to the Southwest because there are enough deposits and ore bodies here to provide a sound statistical base.

He concludes that, given a porphyry copper deposit at least one-half mile in diameter, the odds are about even that the deposit will contain a commercial ore body. These odds are far better than any statistics which could be put together for any of the other base and precious metals, wherein the ratio of known deposits to ore bodies might be derived.

This 50-50 chance, of course, does not include the gambling odds for finding a porphyry prospect. In the Southwest these odds are long because the area has received, and is being given, so much exploration attention. These "prospecting" odds are much more favorable in other countries, particularly Latin America, if political and economical conditions are, for the purpose of these comments, disregarded.

The basic gambling odds of 50-50 can be applied in a general way to these other countries, and to other areas in this country, once a porphyry deposit is found.

Yours very truly,

Kenyon Richard

KENYON RICHARD

KR/kw
Attachment
cc: CPPollock(2 extra)
DJPope
KWhiting
RBSprague
AGBlucher

ALL CONFIDENTIAL, W/ATT.

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona
February 18, 1963

FILE MEMORANDUM

PORPHYRY COPPER DEPOSITS - ARIZONA & NEW MEXICO

A general review of porphyry copper exploration in the Southwest was contained in my memorandum of October 4, 1950. Since that time considerable exploratory work has been carried out by various companies, and several new mines have been put into production. The purpose here is to bring the picture up to date and to re-examine the gambling odds involved in porphyry copper exploration.

In the following tabulation porphyry copper occurrences are divided into 5 different categories: (1) Productive Deposits, (2) Marginal Deposits (undeveloped), (3) Deposits Currently Under Exploration, (4) Prospects which have been Tested and Proven Sub-Marginal, and (5) Untested Prospects.

1) Productive Deposits

Over 100 Million Tons*
- Morenci
- Santa Rita
- San Manuel
- Miami-Inspiration
- Ray
- Ajo
- Cananea (Sonora, Mex.)
- Bisbee
- Mission-Pima

Under 100 Million Tons*
- Bagdad
- Copper Cities
- Silver Bell
- Esperanza
- Christmas
- Mineral Park (under development)
- Castle Dome (mined out)

* Production plus potential

2) Marginal Deposits (Undeveloped)

Tyrone..... Reportedly plus 400 million tons @ .70% Cu, chiefly chalcocite. Owned by Phelps Dodge.

Lone Star..... Reportedly 800 million tons @ .55% Cu, mixed sulphides and oxides. Kennecott.

San Juan..... "Large ore body too deep for open pit mining." Owned by Phelps Dodge.

Helvetia..... 14 million tons .80% Cu. Mixed sulphides and oxides. Controlled by Banner.

3) Deposits Currently under Exploration

Sacaton	Asarco
McGee (NW of Esperanza)	Bear Creek
Saginaw Hill (So. Tucson Mtns.)	Anaconda
Red Mt. (Patagonia)	Kerr-McGee
Twin Buttes	Banner
Four Metals	Noranda
Johnson Camp	Cyprus
Chilito	Bear Creek

4) Sub-Marginal Deposits
Proven either too small or too low grade

	Drilled By
Kelvin	Con Coppermines
Copper Creek	Bear Creek & others
Sunnyside	ASARCO
Turquoise	ASARCO, Bear Creek
Red Hills (Texas)	ASARCO, Bear Creek(?)
Poston Butte	ASARCO
Lake Shore	USBM, Shattuck-Denn & Trans Arizona
Pioneer Group	Duval Sulphur & others
Blackwater	Magma Copper
Cerrillos	Bear Creek
Hiltscher	Bear Creek
Steeple Rock	Bear Creek
Madera	Miami Copper
Cactus	Miami Copper
Three R	Con Coppermines (property recently acquired by Anaconda)
Copper Basin	Phelps Dodge

5) Porphyry Copper Prospects - Untested

Rock House (No. of Superior)	Outcrops indicate minor chalcocite enrichment below, but zone too small in size.
Border Pipe (So. of Patagonia)	Mineralized breccia pipe ± 500' in diameter. Outcrops indicate original disseminated pyrite with minor enrichment. Deposit too small to warrant drilling.
Tyndall District (So. Santa Rita Mts.)	Zone of strong quartz-sericite-pyrite alteration several square miles in extent. General character of leached outcrops, plus occasional exposure of sulphides in old adits, indicate little more than traces of either primary or secondary copper.

5) Con't

Tombstone	Zone of alteration one mile or more in diameter lies southwest of this old silver mining district. Outcrops do not appear too promising, but total extent of zone has not been determined. Further reconnaissance planned.
Organ District (Organ Mts.,NM)	Zone of alteration ½ mile wide extends about one mile northwesterly where it passes beneath valley alluvium. Mineralization in exposed portion of zone not sufficiently attractive to warrant exploration. Possibilities under cover highly speculative. A possible application of geophysics was considered at one time; however, the area is now partly within the White Sands Testing Range.

The Productive Deposits listed above (see attached map for location) range in size from 18 million tons (Castle Dome) to a plus one billion tons (Morenci), if future potential is added to past production. With the exception of Castle Dome, which is mined out, nearly all of the mines listed here have a future life of at least 10 years, and at least 50% of them a future life of over 20 years.

Tyrone is included in the group of marginal deposits; however, under different ownership this deposit would likely be in production. Phelps Dodge spent several years in drilling and evaluating and then placed it on the shelf --- presumably because they possess ample resources of lower cost copper elsewhere. Tyrone, with a relatively large tonnage and a grade of .70% copper, would be at least equally profitable, if not more so, than either of Duval Sulphur's two deposits, Esperanza and Mineral Park.

Among the Deposits Currently under Exploration, Saginaw Hill and the Four Metals are noteworthy simply because both are relatively small deposits which have undergone repeated unsuccessful exploration attempts by various companies in the past. Anaconda is now drilling a 3000' hole on Saginaw Hill and Noranda is preparing to drill the Four Metals.

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Twin Buttes. This is the area generally considered to be the probable location of the "roots" of the Mission-Pima zone of mineralization. According to a local contractor, Banner recently cancelled plans for an additional 90,000 feet of diamond drilling at Twin Buttes. The area may still hold exploration possibilities.

Most of the copper ore mined at Johnson Camp came from more or less massive sulphide lenses in the Cambrian Abrigo formation. Disseminated copper occurs, however, in the Cambrian quartzite and in the lowermost part of the overlying limy shale of the Abrigo. During the past few years, 150,000 tons or more of oxidized copper-bearing rock has been mined open pit and shipped to the Douglas, El Paso and Hayden smelters for siliceous flux; and recently, Cyprus completed a series of drill holes in this disseminated copper horizon, reportedly indicating a zone 150' thick and 2000' long of .75% Cu. No intrusive rocks of the porphyry copper type have been found in the area; however, the deposit resembles a porphyry type occurrence in other respects, and an intrusive center of relatively strong alteration-mineralization could exist under the alluvial covered valley east of the mine.

Brief comments on the Untested Porphyry Copper Prospects are included in the foregoing list.

Referring to the attached map, it is to be noted that with the exception of Christmas, mines developed within the past 12 years --- Mineral Park, Mission, Pima, and Esperanza --- all fall within a northwest-trending belt which includes Bagdad, Sacaton, Silver Bell and Cananea. In his report on the discovery of the Sacaton Prospect (Feb. 13, 1961), Mr. Kinnison referred to the aforementioned belt as the Silver Bell zone, and pointed out that the Sacaton area was situated at the intersection of this zone and two cross-trending zones which he labeled "Miami" and "Poston Butte". Since that time, drilling at Sacaton has demonstrated the existence of a major-sized porphyry copper deposit, the full extent of which has yet to be determined. This, and other new discoveries, tend to emphasize certain trends along which the exploration chances may be better; but we must still depend on finding a lead, such as an altered outcrop with evidence of leached sulphide mineralization, or altered boulders derived from a now-buried outcrop, wherever it be located --- on trend, or off.

In 1950 (above mentioned memo of Oct. 4, 1950) there were 12 "commercial" deposits (excluding Tyrone and Pilares) and 10 deposits regarded as either "non-commercial" or as "prospects" with unknown potential. The ratio has changed some in the past 12 years, but the odds still appear very favorable. Today there are 17 "commercial" deposits (including Tyrone), 3 marginal, 16 sub-marginal, 8 currently under exploration and 5 untested. Four of those currently under exploration, Saginaw Hill, Chilito, Red Mt., and Four Metals, should be regarded as sub-marginal on the basis of prior exploration results. Thus, we have a 20-25, or 4-to-5 ratio if the 3 marginal deposits are included with the 17 "commercial" deposits, and all 5 untested deposits are included with the sub-marginal deposits. This ratio has no bearing on the chances of finding a new porphyry copper prospect --- due to the great concentration of exploration personnel in the Southwest for many years, this chance must be regarded as very slim --- but it does suggest that if a new prospect

is found, and the zone of alteration-mineralization demonstrated to be of adequate size (say, a half mile or more in diameter), the odds should be roughly even that the zone will contain a "commercial" ore body.

J. H. Courtright

J. H. COURTRIGHT

JHC/kw
Attachment - Map

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

February 18, 1963

FILE MEMORANDUM

PORPHYRY COPPER DEPOSITS - ARIZONA & NEW MEXICO

A general review of porphyry copper exploration in the Southwest was contained in my memorandum of October 4, 1950. Since that time considerable exploratory work has been carried out by various companies, and several new mines have been put into production. The purpose here is to bring the picture up to date and to re-examine the gambling odds involved in porphyry copper exploration.

In the following tabulation porphyry copper occurrences are divided into 5 different categories: (1) Productive Deposits, (2) Marginal Deposits (undeveloped), (3) Deposits Currently Under Exploration, (4) Prospects which have been Tested and Proven Sub-Marginal, and (5) Untested Prospects.

1) Productive Deposits

Over 100 Million Tons*	Under 100 Million Tons*
Morenci	Bagdad
Santa Rita	Copper Cities
San Manuel	Silver Bell
Miami-Inspiration	Esperanza
Ray	Christmas
Ajo	Mineral Park (under development)
Cananea (Sonora, Mex.)	Castle Dome (mined out)
Bisbee	
Mission-Pima	

* Production plus potential

2) Marginal Deposits (Undeveloped)

Tyrone..... Reportedly plus 400 million tons @ .70% Cu, chiefly chalcocite. Owned by Phelps Dodge.

Lone Star..... Reportedly 800 million tons @ .55% Cu, mixed sulphides and oxides. Kennecott.

San Juan..... "Large ore body too deep for open pit mining." Owned by Phelps Dodge.

Helvetia..... 14 million tons .80% Cu. Mixed sulphides and oxides. Controlled by Banner.

3) Deposits Currently under Exploration

Sacaton	Asarco
McGee (NW of Esperanza)	Bear Creek
Saginaw Hill (So. Tucson Mtns.)	Anaconda
Red Mt. (Patagonia)	Kerr-McGee
Twin Buttes	Banner
Four Metals	Noranda
Johnson Camp	Cyprus
Chilito	Bear Creek

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File Memo February 18, 1963

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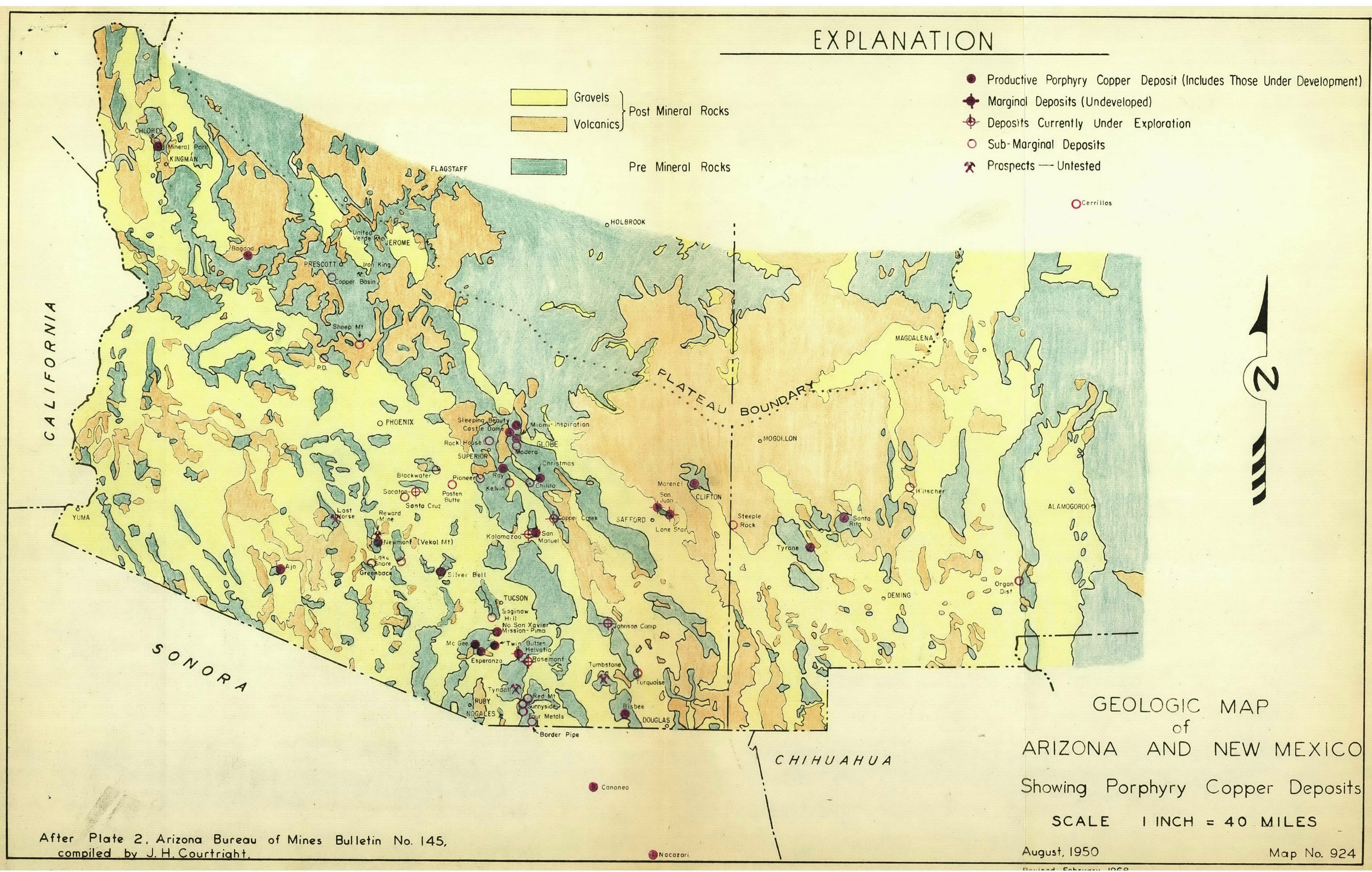
J. H. Courtright

J. H. COURTRIGHT

JHC/kw
Attachment - Map



After Plate 2, Arizona Bureau of Mines Bulletin No. 145, compiled by J. H. Courtright.

Aa-0.0.16

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

December 13, 1961

J. H. C.
DEC 13 1961

Mr. C. P. Pollock, Exploration Manager
American Smelting and Refining Company
120 Broadway
New York 5, New York

PORPHYRY COPPER EXPLORATION
Regional Mapping
Southern Arizona

Dear Sir:

Enclosed is copy of memorandum by Mr. Blucher which is a record of his regional mapping in south-central Arizona.

Some of his mapping was incomplete. His index map provides a reference for the location in our files of his field sheets for the incompleted areas. You will recognize the names of those districts and areas which he completed and for which you have maps and reports in the New York files.

I might mention that it has been our practice to do this kind of regional mapping only in areas where we have particular reason to expect that obscure porphyry copper occurrences would be brought to light only by this kind of work.

I have no specific plans to complete any of Blucher's unfinished areas in the near future. He has made sufficient coverage of these areas to insure there are no good exploration possibilities. The geological information on his incompleted field sheets will be very useful to those of us working in the field here, but there seems no present need to draft final maps.

Yours very truly,

Original Signed By
K. Richard

KENYON RICHARD

Enclosure
KR/z
cc: RKKirkpatrick, w/attach.
JHCourtright, " "
AGBlucher - Santiago Office, w/attach.
JEKinnison, w/attach.

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

December 6, 1961

MEMORANDUM FOR K. E. RICHARD:

PORPHYRY COPPER EXPLORATION
Regional Mapping
Southern Arizona

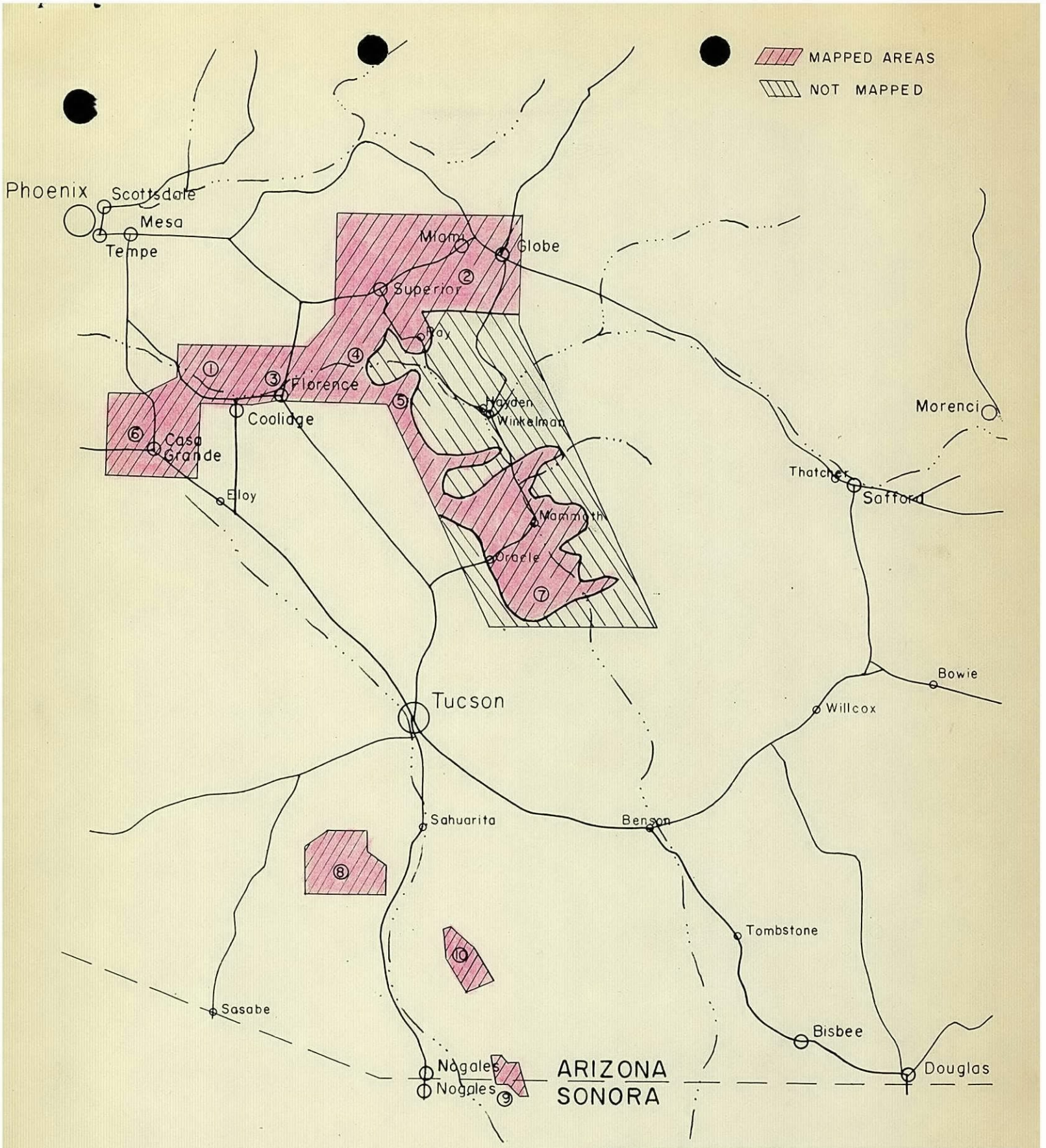
In the summer of 1957 it was decided that the broad reconnaissance studies of the "porphyry note program" had checked out most of the obvious prospecting leads in southern Arizona, and that a somewhat more detailed program should be undertaken. Accordingly, you instructed me to begin a reconnaissance mapping program in which particular attention would be given to alteration extending beneath the edge of covering post-mineral formations. This work was started in November of 1957 in the region between Globe and Superior, Arizona.

As this work progressed, procedures were established which have been generally followed throughout the mapping of this and subsequent areas. These are outlined in my memorandum entitled, Progress Report, Regional Mapping, Globe-Superior Area, dated March 24, 1958. On the attached map are shown all of the areas so mapped since the beginning of this project. Most of this work was accomplished between regular geological assignments, and in some quadrangles the mapping is incomplete. However, in most cases sufficient knowledge was gained in each quadrangle to indicate that the best potential areas were within that part of the quadrangle in which mapping was complete.

The field sheets of these areas in which mapping was not finished have been placed in the files. Although they do not have legends, the color code described in the above mentioned progress report has been used consistently. In the event I return to work in this area, or another geologist is assigned to continue this work, they can be added to or extended without editing or recopying.

A. G. BLUCHER, JR.

Attachment
AGB/z



DISTRICT	MAP NO	REPORT
1 Blackwater Mining District	1457	Aa-16A.2.0
2 Globe-Superior District	1407	Aa-7.7.0
3 Poston Butte Prospect	1465	Aa-16A.2.0A
4 Price Prospect	1483	Aa-16A.6.16A
5 Ray-Christmas District	1495	No Report
6 Sacaton Prophyry Copper Prosp.	1490	Aa-16A.3.19B
7 San Manuel Copper Creek	1496	No Report
8 Sierrita District	1474	Aa-16.19.0B
9 Southern Patagonia Mountains	1401	Aa-19.16.0
10 Southern Santa Rita Mountains	1400	Aa-19.19.0

INDEX MAP

REGIONAL MAPPING
Southern Arizona

Scale 1" = 20 Miles

December 1961

A.G. Blucher

NM-12.12-16A

J. H. COURTRIGHT

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

December 1, 1959

J. H. C.
DEC 4 1959

C. P. Pollock, Exploration Manager
American Smelting and Refining Company
120 Broadway
New York 5, New York

Reports on:
PARSONS, ANGLIN, DAY,
GREASEWOOD, and MINA
DEL TIRO Prospects

Dear Sir:

Enclosed are reports by Mr. Blucher on the five subject prospects. These were examined by him during the past summer and fall months.

None of these prospects warrants further attention. For this reason I had specified that the work of drafting and compilation of these reports be set aside from time to time in favor of more urgent work. This accounts for the delay in getting this material in final form and transmitting it to you.

Following are summaries of these reports:

PARSONS PROSPECT, Carrizozo, New Mexico

Disseminated molybdenite in strongly altered zones localized by breccia pipes. Too low in grade and too small to be of interest.

ANGLIN CLAIMS, Twin Buttes District, Arizona

This property is on the north fringe of the mineralized zone which contains the Esperanza porphyry copper mine of the Duval Sulphur and Potash Company. No exploration possibilities.

DAY PROSPECT, Gila Mountains, Arizona

A porphyry copper prospect of small size exposed in a window in post-mineral volcanic cover rocks about 20 miles northwest of the Safford porphyry copper district. No worthwhile exploration possibilities.

GREASEWOOD PROSPECT, Pinaleno Mountains, Arizona

Some copper-staining in weakly altered volcanics; but no favorable mineralization. Reconnaissance for possible additional alteration zones

on west side of Pinaleno Mountains, as suggested by Mr. Blucher, will be undertaken later.

MINA DEL TIRO PROSPECT, Cerrillos District, New Mexico

Zn-Pb-Cu-Ag vein; small ore shoot mined; of no interest. Porphyry copper-type alteration elsewhere in the district will be investigated at a later date.

A copy of this transmittal letter is attached to each report for your convenience in filing.

Yours very truly,

Original Signed By
K. Richard

KENYON RICHARD

Enclosures - 5 reports with maps
cc: AGBlucher

AMERICAN SMELTING AND REFINING COMPANY
NORTHWESTERN MINING DEPARTMENT
J. C. KIEFFER, MANAGER
P. I. CONLEY, CHIEF GEOLOGIST
MU. 3-5929
MU. 4-5432

G. A. DIROM, ASSISTANT CHIEF GEOLOGIST
& RESIDENT ENGINEER

814 ~~813~~ BIRKS BUILDING - 718 GRANVILLE ST.
VANCOUVER 2, B.C.

March 5th, 1959

Mr. J.H. Courtright,
American Smelting and Refining Company,
813 Valley National Building,
Tucson, Arizona,
U.S.A.

J. H. C.
MAR 12 1959

Dear Harold:

We recently received a copy of U.S.B.M. Mineral Yearbook - 1957 Preprint on Arizona and Cec Coveney has made a synopsis of the production figures of the copper mines. I am enclosing a copy of this and if you can find time I would appreciate you adding approximate figures for the recoveries and the percent Cu in the heads. This is only for general reference purposes and copies will go in our Porphyry Copper book and our copper file. I am short of copies but if you would like a copy I will send you a photocopy.

I imagine you are keeping busy especially with reduced staff and an improving copper market. We are down to veterans here viz., Shorus, Cec, Bill Stevenson and myself. An exploration office can always keep busy.

Dave Fletcher was permanently transferred to Wallace to replace your MExican friend Bob.

Bethlehem Copper underground work on the Jersey looks rather encouraging but it is too early to draw any final conclusions. I'll send you a copy of our next "Progress Report".

Not very much news about Craigmont. I hope to arrange for Cec to visit it next week and on the same trip Bethlehem and Torwest.

We occasionally hear indirectly through old contacts here that the Harold Courtrights are doing fine. I am pleased Vi likes Arizona and is enjoying life there. Why shouldn't she?

Hope you get up this way this Season.

With best regards,

Sincerely,

Gaw.

G. A. DIROM

GAD/sm
Enc.

813 Valley National Building
Tucson, Arizona
March 12, 1959

J. H. C.
MAR 12 1959

Mr. G. A. Dirom
American Smelting and Refining Company
814 Birks Building
Vancouver, B. C.

Dear Gav,

Have your letter of March 5 with list of porphyry copper production data. Am returning same with penciled notes on estimated grade and recovery. Comments follow:

1. Morenci (chalcocite ore) - Heads may be lower and recovery higher.

2. Lavender pit (chalcocite ore) - Figure shown for heads (1.10% Cu) is average of 40 million ton ore body. One is very high (±20%) in pyrite - most porphyries contain on the order of 3% to 7% pyrite. Concentrate is very low - 12 to 15% Cu.

3. Ajo (chalcopyrite-primary) - gold value given appears low. Average in 1948 .006 oz.

4. (Underground) Copper Queen - high grade primary in brecciated limestones - selective mining (not a porphyry copper).

5. Ray pit (chalcocite, secondary and primary chalcopyrite). Most of chalcocite ore in schist mined out. Recently have been mining more primary ore in diabase. The grade (diabase ore) is about .70% Cu. Please note the figure of 1.19% Cu is incorrect for copper content of ore mined.

6. Inspiration (secondary chalcocite and copper silicate, mixed ore). Plant is unique in that electrolytic copper is produced from leaching of oxides (rather than sludge, or cement copper) - thus bypassing the smelter except for the sulphide concentrate product. The open pit mine is unique also in that the ore is dumped into a hole in the middle of the pit and hoisted to the surface through a shaft. This eliminates haulage roads out of the pit and thus permits steeper slopes and lower stripping ratios. The cost of hoisting would of course be less than the truck costs out of the pit.

7. Copper Cities (chalcocite) - Don't know the grade of heads for 57, but average grade of 40 million tons was advertized as .71% Cu. Normally, this would not be sufficient to justify development, but Miami Copper's capital cost was very low due to the fact that they had a mill and mining equipment which was transferred from a nearby worked out deposit (Castle Dome).

8. Magma - vein deposit.

9. Silver Bell (chalcocite). The high non-sulphide (.15%) accounts for the low recovery.

10. Pima (primary chalcopyrite). The ore body is a tabular mass in tactite - 200 feet thick, dips about 45° - contains a 30 foot thick band of 5% Cu - encased in material grading about 1.0% Cu. Some .4% to .6% material in the hanging wall. Use .60% Cutoff to the mill. .40% to .60% is stockpiled.

11. Bagdad (chalcocite). This mine has been operating for about 15 years - made a profit and paid dividends in only one year (1956). The reasons for this are numerous. First, a nucleus of good ore (plus 1.00% Cu) was unsuccessfully block-caved. Later open pit mining was started on a hand-to-mouth basis at 3000 tpd - now, stripping ratio is high ±3 to 1 (w/o) and grade is low. Only a narrow margin of profit at present copper price.

12. San Manuel (chalcocite and chalcopyrite). Some secondary chalcocite ore, but main part of 400 million reserve is primary chalcopyrite ore. (.80% Average). Have government loan and guaranteed floor price of 27¢ for copper. Many unforeseen problems were encountered in block cave mining. They reportedly were losing money until this year.

13. Miami (chalcocite). For a number of years they had extremely efficient block cave system. Plant was amortized on .8 to 1.0% ore. Later they were able to show a profit on .65% -- Reportedly (last year), mine would be closed in a few months. They have produced considerable cheap copper by leaching old cave blocks. This will continue for many years.

Underground work is still in progress at the Mission (East Pima) metallurgical testing has been completed, but further testing of grade and check of drill holes was requested by N.Y. First muck sampling was by the "grab" method. They now have a fancy plant in operation. Handles 5 tons per hour and crushes to minus 1/4 inch. The automatic sampler takes cuts at 15-second intervals and provides about 700 lbs from a 15 ton round. The 700 lbs is piled into a cone shape and split down to about 35 lbs. This is ground to minus 10 mesh, mixed and a 2 to 3 lb portion split out for the pulverizer (minus 100 mesh). Check made so far (by running two or more 35 lb cuts from the same 700 lb sample) shows less than 5% variation which is satisfactory - considering that the usual assay variation (on duplicate pulps) is around 3% on a 1.00% copper ore.

Salt Lake City, Utah

June 2, 1954

MEMORANDUM FOR: Mr. W. R. Landwehr

UTAH, TOOELE COUNTY
GOLD HILL DISTRICT

While checking the literature for information on age-relationships of the volcanic flow rocks and the porphyry intrusives in Utah, I came across a description of a sizable area of alteration in the monzonite of the Gold Hill district, situated 90 airline miles westerly from Salt Lake City. This is in Professional Paper 177, by T. B. Nolan, page 95.

Nolan describes the area of strong sericite and quartz alteration as being some three miles in length, extending west of the Climax mine an unspecified distance and south to within 1/2 mile of Goshute Spring. He states, "In Rodenhouse wash the igneous texture (of the monzonite) is largely, and in places completely, destroyed .....fine grained aggregate of sericite and chlorite cut by reticulating veinlets of quartz."

No mention is made of disseminated sulphide mineralization or iron staining in the outcrops, but in view of the size of this zone with alteration features similar to those of porphyry copper deposits, an investigation of the area should be made. The objective would be to determine if there are possible continuations of the zone under the gravel cover to the east, and if any of the outcrops show evidence of pre-existing copper mineralization.

Of interest also are the "pipe-like" tungsten bearing deposits 1½ miles west of the altered zone. Nolan does not consider these to be breccia pipes, but they may be, and as such they could be of significance in view of the fact that breccia pipe occurrences are characteristic of the majority of the known porphyry copper districts.

J. H. COURTRIGHT

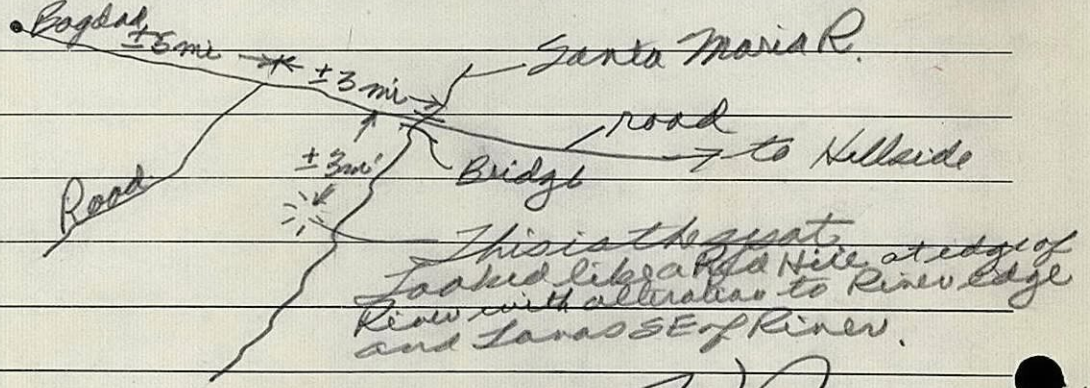
JHC:si

FORM SL-1045 2M 7-5-51

SALT LAKE OFFICE

Memorandum for Kenyon Richard

While flying back to Las Vegas on Bonanza I had a good opportunity to see the area near Bagdad. There appear to be several alteration areas in the vicinity that are near the past are leads. One very interesting area is on the Santa Maria River SE of Bagdad + South of the road about as sketched below.



DATE 2/3/54

JWR

(over)

The area may be a little small for a porphyry copper but may be of interest otherwise

FCR

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

July 7, 1953

Mr. W. R. Landwehr, Chief Geologist
Western Mining Department
Salt Lake City Office

PORPHYRY COPPER

Dear Sir:

Reference is made to your letter of June 26th. I trust you have received your copy of Mr. Papke's letter of June 29th to me listing dates of our aerial reconnaissance and dates of corresponding note file descriptions of subsequent ground checking. In the future the porphyry notes will include the date of any related aerial reconnaissance.

In the last paragraph you suggest that the geologist should make a rough sketch of the area, illustrating principal geologic features and you suggest the Steeple Rock District as an example. In the case of this district it happens that Mr. Papke had enough field notes to compile such a sketch. Two copies of this are included and should be attached to your copies of the porphyry note on Steeple Rock (Bitter Creek) dated June 1, 1953.

I would like to mention that this case is unusual because it was of sufficient interest that Papke returned to it for a couple of days' additional reconnaissance, and Courtright and I also spent another day going over it. In most cases the areas visited are not of this degree of interest and only a few hours are spent in reconnaissance as compared to several days on the Steeple Rock area. If only a few hours are spent in an area and it is turned down, this usually is because a certain geologic feature, such as an altered area, was expected but found not to exist. This brief type of inspection does not permit the accumulation of enough field data to compile even the roughest kind of a sketch map and so it has been our plan not to attempt to provide sketch maps in these instances. On the other hand, there are several areas which we have looked over enough to be reasonably sure they offer no commercial possibilities but they have disseminated mineralization and are carried on our "possible" list because we think they warrant some sort of rough mapping to provide data of scientific interest to our over-all accumulation of information on disseminated sulphide deposits. As examples, Bigbug, Arizona, and White Signal, New Mexico, are districts of this category in which we will eventually do some mapping.

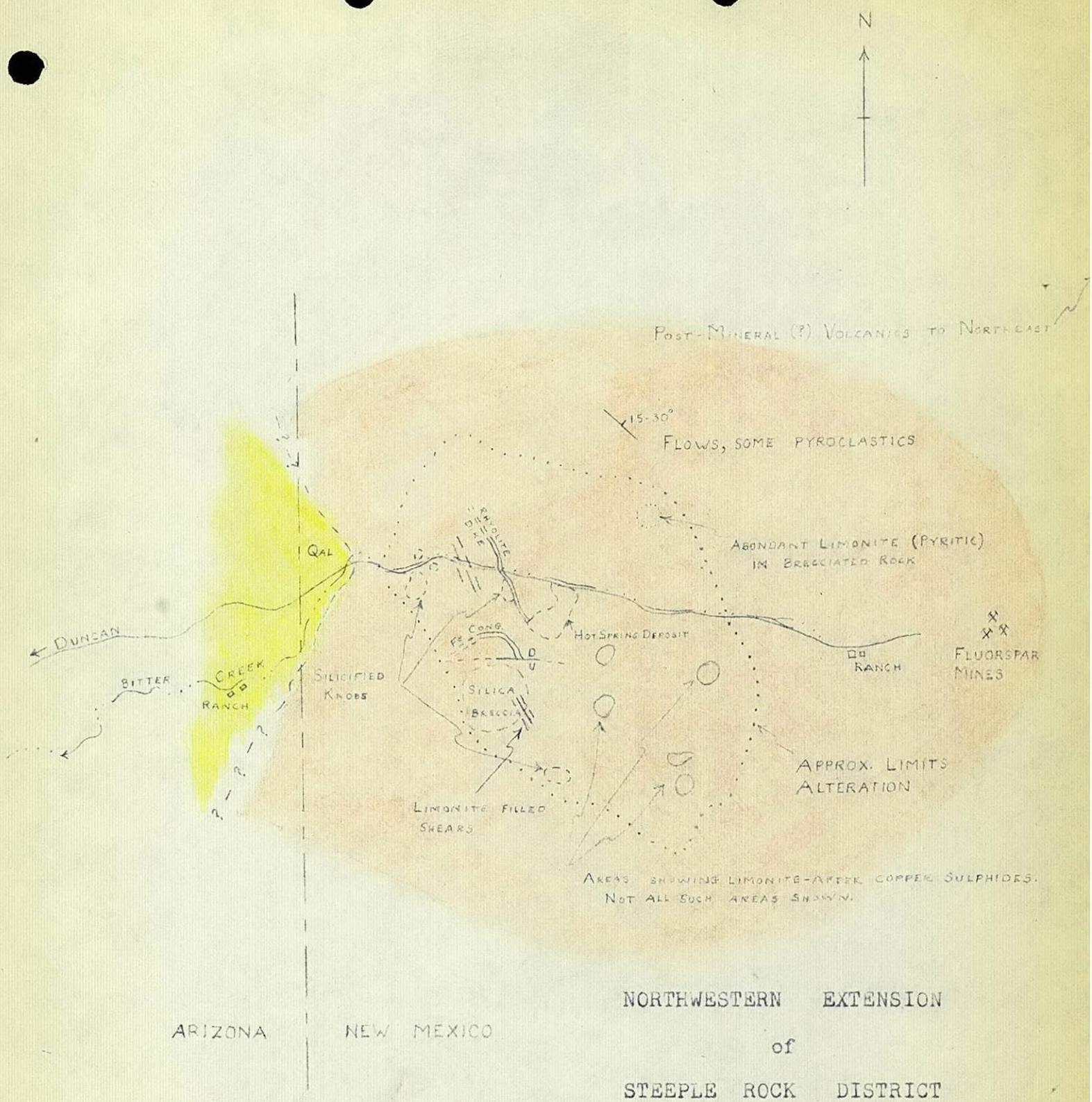
I presume this is what you have in mind in suggesting the geologist make a rough sketch of the principal geologic features.

Yours very truly,

Original Signed by
K. Richard

KENYON RICHARD

KR:ar
2 Attachments
cc:TASnedden with 1 Attachment
JHCourtright " 1 "
KCPapke " 1 "



NORTHWESTERN EXTENSION

of

STEEPLE ROCK DISTRICT

Sketched on uncorrected enlargement of aerial photograph index sheet

approximate scale 1" = 1/2 mile

K. Papke
June, 1953

WK file
Porph. Copper Garrow

RECEIVED
SEP 22 1988
EXPLORATION DEPARTMENT

New York, N.Y., September 19, 1988

TO: R. L. Brown

Open Pit Porphyry Copper Deposits in the USA

I attach a list showing open pit mineable porphyry copper deposits in the United States which might be available for acquisition by Asarco. On that basis I have excluded deposits owned by Phelps Dodge, Cyprus, Magma, and Kennecott, deposits with severe environmental problems such as those in the high Cascades in Washington and those recently covered by the Mt. St. Helen eruption, small deposits containing less than 10 million tons of mineralization, which I understand are being studied by Mr. Anzalone, any deposit grading less than 0.4% Cu, and all deposits which could only be mined by block caving.

These are crudely ranked with the best at the top by my opinion of their attractiveness and I included undeveloped deposits owned by Asarco in the ranking (except for Ray). The rankings are not numbered and clearly mix technical problems, such as saturated gravel cover at Florence, with non-technical problems such as negotiating a reasonable deal with the Papago Tribe.

Some of this data comes from handwritten notes and is incomplete. Mr. Kurtz can likely add to the list, fill in gaps, and also alter the rankings. Mr. Balla might add to the list for deposits in the northwest USA.

F. T. Graybeal

F. T. Graybeal

FTG:mc
Att.

cc: W. L. Kurtz (w/att.)

OPEN PIT CONFIGURATION

Deposit	Owner	Reserve (M=million)	Comments
Hillsboro	Quintana (?)	50 M tons-0.5% Cu	Partly mined, chalcopyrite with gold credit, mill removed.
N. Silver Bell	Asarco		Attractive with BS&K.
Heddleston	Asarco		The 0.15 oz Ag will not be recovered by heap leaching.
Helvetia Group	Asarco		
Mineral Butte	Blackwater Indian Reserv.	40 M tons-0.4% Cu	Completely oxidized, low waste/ore, a heap leach candidate.
BlueBird	formerly Ranchers	100 M tons (?)-0.5% Cu	Completely oxidized. Mine since 1965. Waste/ore may be high.
Vekol	Papago Reserv.	100 M tons-0.55% Cu	Some oxide, moderate strip ping, internal post-minera dikes a grade control problem.
Florence	unknown	500 M tons-0.5% Cu	Under 400 ft. H_2O-bearing conglomerate, abou 1/3-1/2 is oxide copper ca over chalcopyrite.
Christmas	sold to Cyprus (?)	345 M tons-0.42% Cu	Just east of underground mine, all chalcopyrite, they also had designed a one billion ton pit.
Kirwin	Amax (?)	161 M tons-0.51% Cu	Chalcocite at 0.3% Cu cut-off, strip ratio=0.5/1 wit 0.022% MoS_2. Some question on reserve and ma have been reduced. 40 miles E. of Yellowstone Park.
Park-Salyer	Asarco-Freeport trade to Simmons	none	Vague potential to locate open pittable chalcocite ore.

FTG-9/19/88

WLK file
Porph Copper
General

WLK Copy

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

November 28, 1972

MEMORANDUM FOR: J.J. Collins

PORPHYRY COPPER DEPOSITS
ARIZONA - NEW MEXICO

The last compilation of porphyry copper occurrences was made five years ago (my file memo of March 11, 1968). Since then several new discoveries have been made and some marginal deposits became commercial by reason of a higher copper price. However, statistically the odds remain around 50-50 that a newly discovered porphyry prospect will prove commercial. This conclusion rests on the fact that the number of productive deposits plus those potentially productive equals those in the marginal or submarginal class.

I expect soon to bring the study up to date and am including here only a listing of deposits separated into two categories ----- "Commercial" and "Marginal, or Sub-Marginal".

COMMERCIAL DEPOSITS

1. Morenci
2. Santa Rita
3. San Manuel - Kalamazoo
4. Miami - Inspiration
5. Ray
6. Ajo
7. Bisbee
8. Mission-Pima-North San Xavier
9. Twin Buttes
10. Esperanza-Sierrita
11. Tyrone
12. Bagdad
13. Copper Cities
14. Silver Bell
15. Christmas
16. Mineral Park
17. Castle Dome - Pinto Valley
18. Lakeshore
19. Lone Star - Kennecott, Safford
20. Safford - Phelps Dodge
21. Helvetia ?
22. Rosemont
23. Vekol
24. Sacaton
25. Johnson Camp
26. Red Mt. - Patagonia

MARGINAL OR SUB-MARGINAL DEPOSITS

		Drilled By
1.	Copper Creek	Newmont
2.	Border Pipe	Chapman Morehouse
3.	PD Prospect	Phelps Dodge
4.	Greenback	?
5.	Kelvin	Con Coppermines
6.	Sunnyside	Asarco
7.	Turquoise	Asarco, Bear Creek
8.	Red Hills (Texas)	Asarco, Bear Creek (?)
9.	Pioneer	Duval & others
10.	Blackwater	Magma Copper-Bear Creek-Duval
11.	Cerrillos	Bear Creek
12.	Hiltscher	Bear Creek

13.	Steeple Rock	Bear Creek
14.	Madera	Miami Copper
15.	Cactus	Miami Copper
16.	Three R	Anaconda
17.	Copper Basin	Phelps Dodge
18.	Chilito	Bear Creek
19.	Sheep Mtn.	Phelps Dodge
20.	Organ Dist. (Organ Mtn., N.M.)	Kerr-McGee
21.	Saginaw Hill	Anaconda
22.	Four Metals	Noranda-Iso
23.	Black Mt. Prospect	
24.	Rock House	
25.	Tyndall District	
26.	Tombstone	

J.H. Courtright

J.H. COURTRIGHT

JHC:kre

Porph Co Owners WLK

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

March 11, 1968

FILE MEMORANDUM

PORPHYRY COPPER DEPOSITS - ARIZONA & NEW MEXICO

This memo will serve to update my review of Arizona-New Mexico deposits written February 18, 1963 (copy attached hereto).

During the past five years there were several new discoveries, and due to increased copper prices, several deposits classed as marginal in 1963 have become economic. Also, several prospects were drilled and proven to be either too low grade or too small. However, statistically the odds remain 50-50 that a newly discovered prospect will prove "commercial". An updated list of deposits follows (refer to attached geologic map showing mine and prospect locations):

(1) Producitve Deposits
(Includes those under development)

Over 100 Million Tons*
- Morenci
- Santa Rita
- San Manuel - Kalamazoo
- Miami - Inspiration
- Ray
- Ajo
- Cananea (Sonora, Mex.)
- Bisbee
- Mission-Pima-North San Xavier
- Twin Buttes
- Esperanza-Sierrita
- Tyrone

Under 100 Million Tons*
- Bagdad
- Copper Cities
- Silver Bell
- Christmas
- Mineral Park
- Castle Dome (mined out)

*Production plus potential

(2) Marginal (?) "Deposits"
(Undeveloped)

Lone Star . . . . . Reportedly 800 million tons @ .55% Cu, mixed sulphides and oxides. Nuclear blasting for in-place leaching under consideration. Kennecott.

San Juan . . . . . "Large ore body too deep for open pit mining." Owned by Phelps Dodge.

Helvetia . . . . . 14 million tons .80% Cu. Mixed sulphides and oxides. Controlled by Anaconda.

Rosemont . . . . . SE of Helvetia - copper in tactite. Tonnage and grade unknown. Anaconda.

Vekol Mtn. . . . . Reported 70 million at .56% Cu. Newmont and New Jersey Zinc Companys.

(3) Deposits Currently Under Exploration

Sacaton	Asarco
Johnson Camp	Cyprus
Copper Creek	Newmont

(4) Sub-Marginal Deposits
(Proven either too small or too low grade)

	Drilled by
Border Pipe	Chapman Morehouse
PD Prospect	Phelps Dodge
Greenback	?
Kelvin	Con Coppermines
Sunnyside	Asarco
Turquoise	Asarco, Bear Creek
Red Hills (Texas)	Asarco, Bear Creek (?)
Poston Butte	Asarco
Lake Shore	USBM, Shattuck-Denn & Trans Arizona
Pioneer	Duval & others
Blackwater	Magma Copper-Bear Creek-Duval
Cerrillos	Bear Creek
Hiltscher	Bear Creek
Steeple Rock	Bear Creek
Madera	Miami Copper
Cactus	Miami Copper
Three R	Anaconda
Red Mtn.	Kerr-McGee
Copper Basin	Phelps Dodge
Chilito	Bear Creek
Sheep Mtn.	Phelps Dodge
Organ Dist. (Organ Mtn., N.M.)	Kerr-McGee
Saginaw Hill	Anaconda
Four Metals	Noranda-Iso

(5) Porphyry Copper Prospects - Untested, but probably Sub-marginal

Rock House (N. of Superior)	Outcrops indicate minor chalcocite enrichment below, but zone too small in size.
Tyndall District (S. Santa Rita Mtns.)	Zone of strong quartz-sericite-pyrite alteration several square miles in extent. General character of leached outcrops, plus occasional exposure of sulphides in old adits. Indicate little more than traces of either primary or secondary copper.

(5) continued

Tombstone — Zone of alteration one mile or more in diameter lies southwest of this old silver mining district. Outcrops do not appear too promising.

The "productive" deposits of category (1) total 18 in number, including Cananea in Sonora. Adding to this, categories (2) and (3) which include some possibly marginal deposits, the total number of economic porphyry copper deposits in the Southwest is 26. If the "untested" deposits (5) (not sufficiently attractive so far to merit exploration drilling) are included with those of No. (4), the total of sub-marginal deposits is 27.

Using the most conservative approach, the 50:50 ratio becomes 20:30 if the Marginal (?) Deposits (undeveloped) are not included with the Productive Deposits.

As stated in the 1963 memorandum, "This ratio has no bearing on the chances of finding a new porphyry copper prospect in the Southwest U.S." But, if a zone of porphyry copper type mineralization alteration of sufficient size (a half-mile or more in diameter) is discovered, the odds are even (or at least 20:30) that the zone contains an ore body.

Brief comments on some of the more important deposits, discovered recently or under development, follow:

Tyrone was dormant in 1963; P.D. is currently preparing the deposit (400 million tons at .70% Cu) for production at a reported rate of 30,000 TPD, open pit.

McGee (now Duval's Sierrita Mine). Duval acquired this property after Bear Creek dropped it. Further drilling indicated 400 million tons of .32% copper and .056% MoS_2 mineable by open pit. With a government loan and guarantee of 38¢ copper to repay the loan, Duval is preparing to mine and mill at 60,000 TPD.

Twin Buttes. Anaconda acquired this property and continued the drilling program started by Banner, resulting in the discovery of what is very likely the "roots" of the Mission deposit six miles to the north. A 200 million ton pre-mine stripping program is well under way. Reportedly, the mill will operate at 30,000 TPD on .7% copper ore.

North San Xavier. This deposit lies two miles north of the Mission and is within the Mission-Pima zone of mineralization. Early wide-spaced drilling indicated a small deposit of marginal grade. Recent interspaced drilling has indicated an open pit ore body of around 50 million tons of .60% copper.

Kalamazoo. Quintana Corp. recently discovered this deposit which represents the upper half of the San Manuel ore body displaced southwesterly 1-1/2 miles by the San Manuel fault. The deposit, which contains over 500 million tons of .74% copper, lies between 3000 and 5000 ft. below the surface. No plans for development reported.

Copper Creek. Reportedly Newmont has discovered "ore grade" copper-moly mineralization at 2000 feet depth in the Copper Creek district east of San Manuel.

Vekol Mtns. Deposit (Reward Mine Area). This deposit, situated northwest of Lakeshore and Silverbell, was recently drilled out by Newmont and New Jersey Zinc. Reportedly it contains 70 million tons of open pit ore grading .56% copper. Burdened by Indian Reservation royalties and a 3 to 1 stripping ratio, the deposit appears to be marginal at the present copper price.

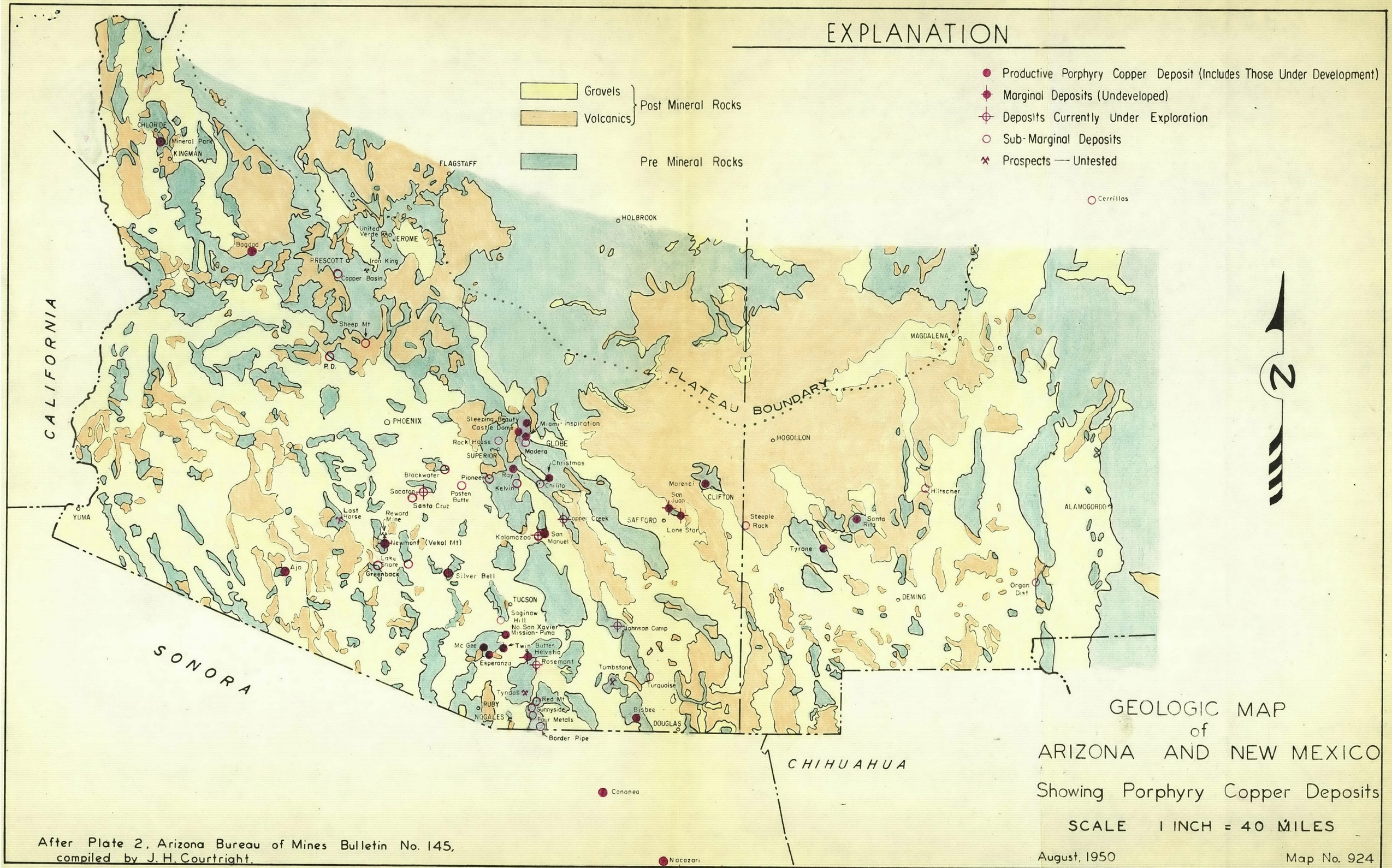
Sheep Mtn. Prospect. During 1965-66, Phelps Dodge conducted an extensive drilling program near Castle Hot Springs east of Wickenburg. Reportedly they found a zone of copper-moly mineralization averaging .4% copper equivalent (moly value converted to copper value) amounting to several hundred million tons. The zone lies beneath 1000 to 2000 feet of post-mineral volcanics. The property appears to have been abandoned.

J. H. Courtright

JHC:lmi

J. H. Courtright

cc: JJCollins
DFCoolbaugh
WLKurtz
RKKirkpatrick



After Plate 2, Arizona Bureau of Mines Bulletin No. 145, compiled by J. H. Courtright.

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona
February 18, 1963

FILE MEMORANDUM

PORPHYRY COPPER DEPOSITS - ARIZONA & NEW MEXICO

A general review of porphyry copper exploration in the Southwest was contained in my memorandum of October 4, 1950. Since that time considerable exploratory work has been carried out by various companies, and several new mines have been put into production. The purpose here is to bring the picture up to date and to re-examine the gambling odds involved in porphyry copper exploration.

In the following tabulation porphyry copper occurrences are divided into 5 different categories: (1) Productive Deposits, (2) Marginal Deposits (undeveloped), (3) Deposits Currently Under Exploration, (4) Prospects which have been Tested and Proven Sub-Marginal, and (5) Untested Prospects.

1) Productive Deposits

Over 100 Million Tons*	Under 100 Million Tons*
Morenci	Bagdad
Santa Rita	Copper Cities
San Manuel	Silver Bell
Miami-Inspiration	Esperanza
Ray	Christmas
Ajo	Mineral Park (under development)
Cananea (Sonora, Mex.)	Castle Dome (mined out)
Bisbee	
Mission-Pima	

* Production plus potential

2) Marginal Deposits (Undeveloped)

Tyrone..... Reportedly plus 400 million tons @ .70% Cu, chiefly chalcocite. Owned by Phelps Dodge.

Lone Star..... Reportedly 800 million tons @ .55% Cu, mixed sulphides and oxides. Kennecott.

San Juan..... "Large ore body too deep for open pit mining." Owned by Phelps Dodge.

Helvetia ..... 14 million tons .80% Cu. Mixed sulphides and oxides. Controlled by Banner.

3) Deposits Currently under Exploration

Sacaton	Asarco
McGee (NW of Esperanza)	Bear Creek
Saginaw Hill (So. Tucson Mtns.)	Anaconda
Red Mt. (Patagonia)	Kerr-McGee
Twin Buttes	Banner
Four Metals	Noranda
Johnson Camp	Cyprus
Chilito	Bear Creek

4) Sub-Marginal Deposits
Proven either too small or too low grade

	Drilled By
Kelvin	Con Coppermines
Copper Creek	Bear Creek & others
Sunnyside	ASARCO
Turquoise	ASARCO, Bear Creek
Red Hills (Texas)	ASARCO, Bear Creek (?)
Poston Butte	ASARCO
Lake Shore	USBM, Shattuck-Denn & Trans Arizona
Pioneer Group	Duval Sulphur & others
Blackwater	Magma Copper
Cerrillos	Bear Creek
Hiltscher	Bear Creek
Steeple Rock	Bear Creek
Madera	Miami Copper
Cactus	Miami Copper
Three R	Con Coppermines (property recently acquired by Anaconda)
Copper Basin	Phelps Dodge

5) Porphyry Copper Prospects - Untested

Rock House (No. of Superior)	Outcrops indicate minor chalcocite enrichment below, but zone too small in size.
Border Pipe (So. of Patagonia)	Mineralized breccia pipe ± 500' in diameter. Outcrops indicate original disseminated pyrite with minor enrichment. Deposit too small to warrant drilling.
Tyndall District (So. Santa Rita Mts.)	Zone of strong quartz-sericite-pyrite alteration several square miles in extent. General character of leached outcrops, plus occasional exposure of sulphides in old adits, indicate little more than traces of either primary or secondary copper.

5) Con't

Tombstone	Zone of alteration one mile or more in diameter lies southwest of this old silver mining district. Outcrops do not appear too promising, but total extent of zone has not been determined. Further reconnaissance planned.
Organ District (Organ Mts.,NM)	Zone of alteration ½ mile wide extends about one mile northwesterly where it passes beneath valley alluvium. Mineralization in exposed portion of zone not sufficiently attractive to warrant exploration. Possibilities under cover highly speculative. A possible application of geophysics was considered at one time; however, the area is now partly within the White Sands Testing Range.

The Productive Deposits listed above (see attached map for location) range in size from 18 million tons (Castle Dome) to a plus one billion tons (Morenci), if future potential is added to past production. With the exception of Castle Dome, which is mined out, nearly all of the mines listed here have a future life of at least 10 years, and at least 50% of them a future life of over 20 years.

Tyrone is included in the group of marginal deposits; however, under different ownership this deposit would likely be in production. Phelps Dodge spent several years in drilling and evaluating and then placed it on the shelf --- presumably because they possess ample resources of lower cost copper elsewhere. Tyrone, with a relatively large tonnage and a grade of .70% copper, would be at least equally profitable, if not more so, than either of Duval Sulphur's two deposits, Esperanza and Mineral Park.

Among the Deposits Currently under Exploration, Saginaw Hill and the Four Metals are noteworthy simply because both are relatively small deposits which have undergone repeated unsuccessful exploration attempts by various companies in the past. Anaconda is now drilling a 3000' hole on Saginaw Hill and Noranda is preparing to drill the Four Metals.

Reportedly Bear Creek ("McGee" Prospect) has been finding .4 to .5% primary copper in diorite and andesite in ground adjacent to the Experanza.

Red Mt., Patagonia, lies within a large alteration zone which includes the Sunnyside breccia pipe (drilled by Asarco in 1950). Kerr-McGee recently completed driving an incline on the east side, encountering low grade (± .05% Cu) primary mineralization. Reportedly, they plan drilling higher on the mountain.

Chilito produced 91,000 tons of 1.4% Cu. This ore, which consisted of disseminated copper in quartzite, was shipped to Hayden as siliceous flux. Kennecott acquired the property last year.

Banner recently drilled several holes in a gravel covered area southeast of

Twin Buttes. This is the area generally considered to be the probable location of the "roots" of the Mission-Pima zone of mineralization. According to a local contractor, Banner recently cancelled plans for an additional 90,000 feet of diamond drilling at Twin Buttes. The area may still hold exploration possibilities.

Most of the copper ore mined at Johnson Camp came from more or less massive sulphide lenses in the Cambrian Abrigo formation. Disseminated copper occurs, however, in the Cambrian quartzite and in the lowermost part of the overlying limy shale of the Abrigo. During the past few years, 150,000 tons or more of oxidized copper-bearing rock has been mined open pit and shipped to the Douglas, El Paso and Hayden smelters for siliceous flux; and recently, Cyprus completed a series of drill holes in this disseminated copper horizon, reportedly indicating a zone 150' thick and 2000' long of .75% Cu. No intrusive rocks of the porphyry copper type have been found in the area; however, the deposit resembles a porphyry type occurrence in other respects, and an intrusive center of relatively strong alteration-mineralization could exist under the alluvial covered valley east of the mine.

Brief comments on the Untested Porphyry Copper Prospects are included in the foregoing list.

Referring to the attached map, it is to be noted that with the exception of Christmas, mines developed within the past 12 years --- Mineral Park, Mission, Pima, and Esperanza --- all fall within a northwest-trending belt which includes Bagdad, Sacaton, Silver Bell and Cananea. In his report on the discovery of the Sacaton Prospect (Feb. 13, 1961), Mr. Kinnison referred to the aforementioned belt as the Silver Bell zone, and pointed out that the Sacaton area was situated at the intersection of this zone and two cross-trending zones which he labeled "Miami" and "Poston Butte". Since that time, drilling at Sacaton has demonstrated the existence of a major-sized porphyry copper deposit, the full extent of which has yet to be determined. This, and other new discoveries, tend to emphasize certain trends along which the exploration chances may be better; but we must still depend on finding a lead, such as an altered outcrop with evidence of leached sulphide mineralization, or altered boulders derived from a now-buried outcrop, wherever it be located --- on trend, or off.

In 1950 (above mentioned memo of Oct. 4, 1950) there were 12 "commercial" deposits (excluding Tyrone and Pilares) and 10 deposits regarded as either "non-commercial" or as "prospects" with unknown potential. The ratio has changed some in the past 12 years, but the odds still appear very favorable. Today there are 17 "commercial" deposits (including Tyrone), 3 marginal, 16 sub-marginal, 8 currently under exploration and 5 untested. Four of those currently under exploration, Saginaw Hill, Chilito, Red Mt., and Four Metals, should be regarded as sub-marginal on the basis of prior exploration results. Thus, we have a 20-25, or 4-to-5 ratio if the 3 marginal deposits are included with the 17 "commercial" deposits, and all 5 untested deposits are included with the sub-marginal deposits. This ratio has no bearing on the chances of finding a new porphyry copper prospect --- due to the great concentration of exploration personnel in the Southwest for many years, this chance must be regarded as very slim --- but it does suggest that if a new prospect

is found, and the zone of alteration-mineralization demonstrated to be of adequate size (say, a half mile or more in diameter), the odds should be roughly even that the zone will contain a "commercial" ore body.

J. H. Courtright

J. H. COURTRIGHT

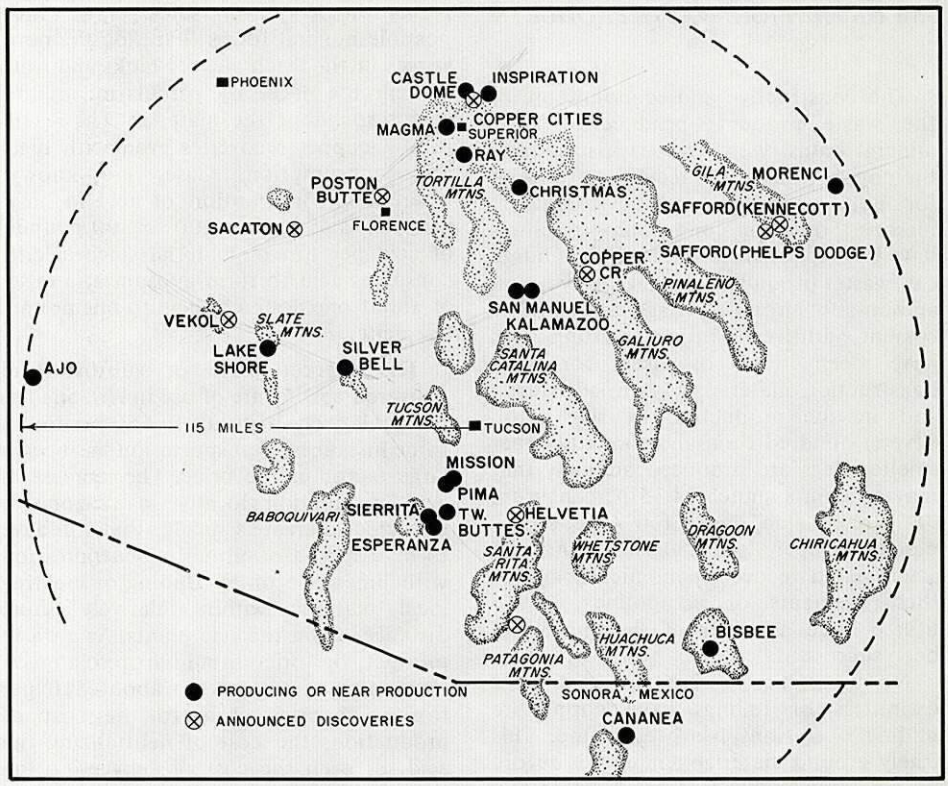
JHC/kw
Attachment - Map

ARIZONA MINERAL RESOURCES

Arizona is a mineral-rich state as indicated by the preliminary valuation of its mineral production in 1970, a record of almost $1.16 billion. Copper production, 910,000 tons and 53 percent of the U.S. total, accounted for 92 percent of the State's total mineral production value. Production of molybdenum, 14 million pounds; silver, 7 million troy ounces; and gold, 111 thousand troy ounces accounted for 2.0, 0.6, and 0.3 percent of the mineral production value of the State, and in amounts rate Arizona's production respectively as third, second, and fourth in the United States. The production of these latter three metals results almost entirely as by-products of copper production.

Other sizeable amounts of mineral products produced in Arizona in 1970 were sand and gravel, 15.7 million short tons; zinc, 10.2 million tons; stone, 2.7 million tons; petroleum, 1.8 million barrels (42 gallons per barrel); natural gas, 1.2 billion cubic feet; and pumice (volcanic scoria), 0.9 million tons. Other mineral products produced in Arizona in 1970 in relatively less amounts or for which the amounts are not made public are: asbestos, cement, clay, diatomite, feldspar, gem stones, gypsum, helium, iron ore, lead, lime, mercury, mica (scrap), perlite, pyrites, and tungsten.

New mining operations are opening up each year in the State and new prospective mines are being found and evaluated as to their possible exploitation. In 1970 the two new major operations were Duval's 72,000 ton a day Sierrita open pit mine and mill south of Tucson and Peabody Coal's strip coal mine at Black Mesa on the Navajo and Hopi Indian Reservation. The latter is scheduled to reach a production of 13 million tons a year by 1976. New major copper orebodies to be brought into production in the near future are San Manuel's Kalamazoo at San Manuel, Phelps Dodge's Metcalf near Morenci, and the Hecla and El Paso Gas mine at Lake Shore, South of Casa Grande. Prospective copper mines undergoing exploration, development or feasibility studies include San Manuel's Vekol Hills deposit to the south of Casa Grande, Anaconda's Santa Rita Mountains (Helvetia-Rosemont) deposits, Kerr-McGee's Red Mountain discovery in Patagonia, Miami's faulted extension of the Miami-Inspiration orebody and the Pinto Valley occurrence near Castle Dome, Phelps Dodge's and Kennecott's Safford deposits, Continental Oil's Poston Butte copper occurrence near Florence, A.S. & R's Sacaton prospect north of Casa Grande and several investigations in the Copper Creek area east of Mammoth. The location of these active and prospective mines is shown on the adjoining map. The prospective copper production from these discoveries plus the announced expanded output from established operations should maintain Arizona for many years in the future as the number one copper producing state in the United States, as well as a leading copper-rich area in the world.



Prof. S. R. Titley

MAP SHOWING PORPHYRY COPPER DEPOSITS IN ARIZONA

In the nonmetallic field, new mining industries are being developed for salt and clay in the Phoenix area and for limestone in the Santa Rita Mountains south of Tucson. Interest in other nonmetallic mineral products should increase in the future as their importance is recognized.

The importance of Arizona's mineral resources is emphasized by the predictions of all sectors of the mineral and fuel industries that greatly increased demands for mineral products will occur in the next few decades. The U.S. Bureau of Mines foresees a yearly increase in world demands for minerals in the next thirty years of between 3.6 and 5.5 percent. This means, for example, that world copper production must rise from about 7 million to 14 million tons, lead from some 3.8 million to 7 million tons and zinc from about 5.6 million to 10 million tons. World petroleum consumption in the next twenty years will almost equal the total presently known reserves of the non-communist world and the U.S. consumption alone for the period, an estimated 150 billion barrels, will exceed presently proven U.S. reserves. Requirements for natural gas in the U.S. for the same period are expected to exceed 4 hundred trillion cubic feet and the predicted need for uranium for nuclear energy is about 2.5 times presently estimated reserves. U.S. reserves of extractable coal, some 600 billion tons, are ample for many years but increased costs of production due to environmental, health, and safety laws; depletion of the more available deposits; and higher costs of mining and transportation make it more difficult for the producers to remain competitive with other fuels.

In general, the limiting factor in producing the required minerals and fuels for the future is not one of availability but the cost of access, recovery, and environmental protection. It would appear that advances in the technology of discovery and exploitation, although expensive to develop and use, are the only ways that the cost limitations and related environmental problems can be overcome.

USE OF MINERAL WASTE PRODUCTS

The constructive and economic use of the waste products produced by the mineral industry in Arizona, particularly the copper industry, is receiving attention for both economic and environmental reasons. Some soil conditioning products have been made from selected, metallurgical waste products and relatively small amounts of iron-rich slags are used as cement additives. Copper smelting slags have been tried or used for road construction material, as railroad ballast, and in the production of slag wool. Several hundred thousand tons of copper smelter slags are produced annually that may contain as much as 35 percent iron, 38 percent zinc, and a few tenth's of a percent copper, lead and sulfur. As yet, attempts to recover economically any of these elements or compounds, or to utilize large amounts of slag, have not been successful.

No constructive use for the vast quantities of tailings from copper-ore milling operations has been found. This finely ground material generally is devoid of any recoverable mineral product and the sand and slime tailings produced have neither the cohesiveness of clay nor suitable qualities to be used as construction or industrial sand.

The main waste product from copper smelting, both for economic and environmental reasons, is the sulfur dioxide produced from the sulfur-rich copper-iron concentrates. Normally in the past the sulfur dioxide passed out as a gas in the smelter smoke but in order to meet the new emission standards, the copper smelters have or are installing equipment to extract sulfur dioxide from the waste gas. In most cases the end product will be sulfuric acid and when all current and proposed acid plants are in normal operation, as much as 8000 tons of acid may be produced daily. Sulfuric acid, due to its corrosive character, is difficult to store, expensive to ship any distance, and can not be disposed of as a waste product without chemical treatment to produce a less harmful material, such as gypsum (calcium sulfate).

The most economically promising local use of sulfuric acid is in the leaching of copper from low grade, oxidized and silicated, copper-bearing material. Some such material in Arizona leaches readily and economically with low acid consumption while other such material may contain high acid consuming minerals, such as calcite. The cost of the acid has been one of the main factors in determining the feasibility of a copper leaching operation. Another factor, particularly in material high in lime and other chemical substances, has been the formation of gypsum, silica gel, or other possible mineral forms that clog the pore spaces in the leach piles or tanks and thus prevent the necessary perculation of the acid throughout the material. The result is low copper recoveries even with high acid consumption. Cases are known where the consumption of acid in limy material is as high as 200 to 300 pounds of acid per ton of material since calcite consumes acid to form gypsum at a ratio of about one pound of acid to one pound of calcite.

The market price of sulfuric acid delivered to the site of use in Arizona has been relatively high, up to $60 per ton in some instances. Transportation has been a large factor in the price. The increase in acid production locally in Arizona is expected to create a surplus that will have to be disposed of either by neutralization with limestone or by finding or creating local markets within relatively short distances from the acid plants. As a waste product, the price should drop to a much lower figure, possibly to about $10 per ton or a price close to the cost of production, the cost of neutralizing the acid, or even the cost of delivery to the site of use.

The neutralization of acid to form gypsum does not appear to be a profitable method of disposal. The market for high quality gypsum within a reasonable shipping distance of Arizona sources, at present, is limited and the reserves and resources of natural gypsum deposits in Arizona are extensive. The average value of gypsum mined in Arizona in 1970 was about $5.10 per ton. Even if clean, colorless gypsum could be produced from sulfuric acid, it is very doubtful if the product could compete economically with commercially mined gypsum.

George Roseveare, Bureau metallurgist, believes that a new and different approach should be taken in copper leaching practice, particularly in respect to material having a relatively high lime content. He notes that the Timma Mining Industries Ltd. in southern Israel have developed a process where the limy copper-bearing material is ground to a pulp of not more than 10-mesh particles and then agitated in a battery of Pachuca tanks with acid at a density of 50 percent solids. The amount of acid added is controlled to give a strong application at the start to provide a higher differential attack on the copper minerals than on the lime. The copper-bearing solution is separated from the tailings by counter-current washing in thickeners. Acid consumption is relatively high but the value of the high copper recovery more than offsets the cost of the acid. Furthermore, soluble salts, gypsum, or other products formed in the process cause no serious problems, the process is continuous, and the plant easy to operate. The same process also is being used in Africa and South America with equally good results.

Arizona has a considerable potential reserve of oxidized and silicated, low grade, copper bearing material that might be leached profitably providing a suitable, high recovery processing method is used and the cost of acid delivered to the site is reasonably low. It is within reason to assume that under favorable conditions some 4000-6000 tons of sulfuric acid could be used daily in such operations. It is certainly a raw material source that should attract the interest of the exploration geologist and the mining industry as an economical and feasible use of excess acid.

The likelihood of excess and low cost acid being locally available in Arizona also has attracted the interest of industry and agriculture. The Cooperative Extension Service of the University of Arizona has initiated inquiries into the possible beneficial uses in proposed new industrial complexes and for agriculture. Some soil experts feel there may be a need for sulfur-bearing soil amendments in many parts of Arizona. It has also been pointed out that sulfuric acid, if low cost, might be used extensively in the treatment of water resources presently unsuitable for agriculture due to their high salt content. Although much general research has been done on possible uses of sulfuric acid or sulfur compounds in agriculture, it has not been compiled to give an accurate picture in respect to Arizona conditions. The preliminary discussions on these matters are being followed up with the possibility that a research program may result.

WORLDS OLDEST ROCKS?

The University of Arizona has been designated by the National Aeronautic and Space Administration (NASA) as a national repository of a collection of what may be some of the world's oldest sedimentary rocks, dated in part as at least 3.4 billion years old. Dr. Bartholomew Nagy, geoscience professor and chief scientist in the organic geochemistry laboratory, last summer collected about 1,000 pounds of rock samples in the Barberton Mountain Land of Eastern Transvaal, South Africa. The repository was established to make available for study what appears to be some of the oldest known sedimentary rocks and to permit their comparisons with the NASA lunar samples. In particular, Dr. Nagy hopes to discover if there was life on the earth and what the earth was like at that early date.

FIELD NOTES FROM THE ARIZONA BUREAU OF MINES

Vol. 1, No. 2 Earth Science and Mineral Resources in Arizona *June 1971*

SEARCH AND RESEARCH

by
S. B. Keith

MINERAL EXPLORATION IN ARIZONA

The search for mineral substances has been an important function in human development ever since early man became aware that certain rocks, minerals, and metals not only were useful but in many cases essential to his well-being. Man started looking for these mineral materials and began to associate their occurrence with certain localities or types of rocks. The men who specialized in finding desirable minerals were the first prospectors. Mineral exploration started as an art, depending on man's physical senses of sight, feel, and taste, rather than a science based on geologic knowledge of the origin and occurrence of mineral substances.

Archaeological records indicate that the aborigines of Arizona were agrarians. They fashioned simple tools and weapons from suitable rocks found exposed on the surface. They fashioned pottery from clay found along stream channels or in old lake beds. Mineral pigments of iron, manganese, copper, and uranium were used for coloring and the mineral turquoise was used in special decorations. Salt beds in the Verde River Valley were mined at an early date and the observation that lightning could set on fire the exposures of high volatile coal in the Black Mesa area of northeastern Arizona led to the mining of coal for fuel as early as 1300. Although they may have been aware of particles of gold in some stream gravels, of wire silver in weathered vein outcrops, and of native copper in the exposures of the copper deposits, these materials did not attract them either for ornaments or for tools. Exploration for metals in Arizona awaited the arrival of Europeans in the middle of the 16th century.

The earliest explorers, the Spanish conquistadors, were not hunting for mineral deposits, but later expeditions under Espejo and Oñate, in the late 1500's and early 1600's, prospected for precious metals in northern and western Arizona. Some precious metals were located by those expeditions but were not worked. About the same time small and spotty superficial deposits of oxidized silver ore were found and mined in mountains bordering the Santa Cruz Valley and the Spaniards tried to work the Ajo deposit for copper. However, there does not appear to have been any large scale mining activity in Arizona during the periods of Spanish and Mexican occupation.

Arizona Historical Society

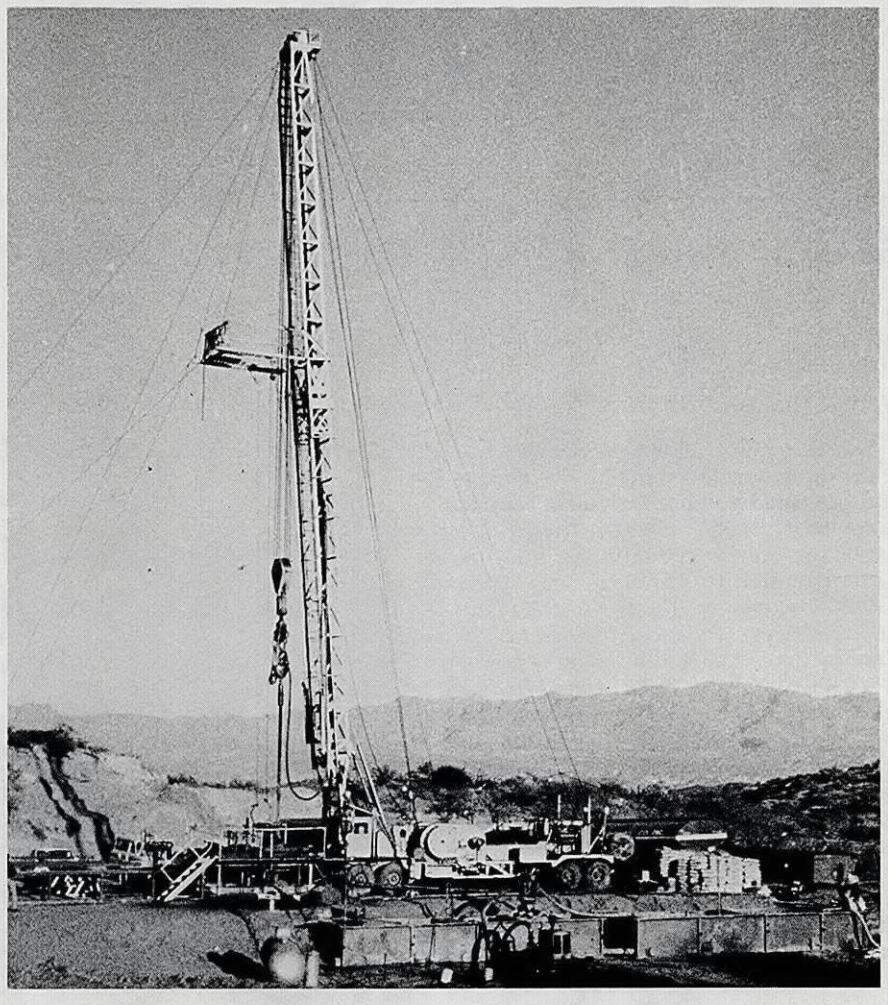
PROSPECTING IN THE PAST

The first Americans entering Arizona territory were trappers and it was not until the United States took possession through the Treaty of Guadalupe-Hidalgo (1848) and the Gadsden Purchase (1853) that mineral exploration by Americans started in earnest. In 1853 the Poston party and others were actively exploring and developing lead and silver deposits in the Santa Rita, Cerro Colorado and neighboring mountains. By 1857 prospecting parties also were moving eastward into Arizona territory from California, finding a succession of small but rich gold placers and gold and silver lodes. Prospecting methods were simple and geology played a small part in the early discoveries.

Continued on page 2

Search and Research (continued)

The science of geology was developing rapidly by this time and geologic information on Arizona was being reported by scientific personnel attached to boundary commissions, railroad surveys, and military expeditions. One of the first geologic descriptions of southern Arizona, by Antisell, was published in 1855 and the first maps showing geologic features of the Territory appeared in the 1850's. Technical geologic reports on mineral deposits in Arizona, by Blake and others, began to appear in the late 1850's and early 1860's. Except for the disruption brought on by the Civil War, mineral exploration activities in Arizona increased rapidly. Most of the major mineralized districts had been found by the late 1800's and many had seen their peak periods of development and production by 1900. The U.S. Geological Survey publications on mining districts in Arizona started appearing in the early 1900's and by 1915 mineral exploration and mining had attained such an important role in Arizona that the Arizona Bureau of Mines was established to assist the mining industry in the development of the mineral resources of the State. Within a few years geologic investigations became an important function of the Bureau, largely through the efforts of the late Dr. Eldred Wilson who became a staff geologist in 1919. Since that time a major share of the Bureau's activities has been directed to furnishing basic information on the geology and mineral resources of the State, acting in general as a geological survey.



PROSPECTING IN THE PRESENT

Through the years mineral exploration has become a science in itself. The early prospecting methods - the pick, shovel, and gold pan - have been supplemented by detailed mapping of the geology, recording features such as stratigraphy, structure, igneous intrusions, mineral zoning, and rock alteration. The microscope has complemented the hand lens and the naked eye. Drilling methods permitted more rapid examination and sampling of rocks beneath the surface. A variety of geophysical and geochemical methods and airborne instrumentation have made possible the detection of hidden mineral occurrences. Even more sophisticated "tools" for the mineral explorationist are being developed. The individual prospector may still have a place in the discovery of mineral resources exposed at the surface but to a large extent he is being replaced by well-trained and well-equipped parties of exploration geologists.

In Arizona, mineral exploration for most metals has been carried out thoroughly and successfully for some 120 years and it is doubtful that any exposed metallic mineral occurrence of present economic consequence has been missed. The same situation does not apply to many nonmetallic mineral occurrence such as clays, zeolites, fluorspar, etc., which often are not readily recognized in the field. The value and utilization of many nonmetallic minerals has been poorly understood. Exploring for mineral deposits is always a gamble and the primary sources of mineral products occur only where they exist in the earth's crust. They can not be grown, made or moved at will. Mineral resources of economic importance, outside of some common materials such as sand, gravel and stone, make up a very small percentage of the earth's crust. On the average only one out of a hundred or more metal prospects may be worthy of a detailed examination, and of a hundred given careful study, only one may turn out to be an economical or feasible mining operation. For many nonmetallic mineral materials a similar ratio of discovery to economic exploitation would apply. Thus the odds of finding an economic deposit are long and the risks in time and money are great.

It is certain that the demand for mineral products will increase and the problems of satisfying the demand will become more complex. Readily accessible reserves of many mineral materials are being depleted, the costs and technical difficulties of discovering and exploiting new resources are increasing, and the requirements for protecting the environment are becoming more stringent. Today's mineral explorationists must take all these factors into consideration. He must acquire a sound basic understanding of all geologic factors and carefully use and evaluate the results of all appropriate and available technical tools and technique at his disposal. Over all it will require hard work, imagination and ingenuity, vast sums of money, and a high degree of cooperation and understanding between scientist, government agencies, and the public if man's requirements for minerals and his desired satisfactory environment are to be achieved. The Arizona Bureau of Mines has and will continue to help provide the basic geologic information and service needed to meet these objectives.

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FIELD NOTES FROM THE ARIZONA BUREAU OF MINES

Vol. 2 No. 4 Earth Science and Mineral Resources in Arizona *Dec. 1972*

COPPER MINING AND ARIZONA LAND USE PLANNING A GEOLOGIST SPEAKS

Dr. Spencer R. Titley
Professor of Geosciences
College of Earth Sciences
The University of Arizona

Ed. Note: This is the second article in a series on the factors influencing land use planning decision making.

INTRODUCTION

Copper deposits of Southern Arizona constitute a nearly unique resource on this planet. There are few other known locations were the forces and processes of nature combined to form such a concentration of metal in such a restricted region. The great number of discoveries on the Island of Luzon during the past ten years suggest that a small part of the Phillipines are similarly endowed and, although of a different origin, similar concentrations of copper are known in the Democratic Republic of the Congo and in Zambia in south-central Africa. Also, other large deposits of the type found in southern Arizona occur in the western hemisphere, but nowhere are these deposits found in the known abundance and concentration as in this part of the American southwest.

In deciding the best use of the gradually vanishing undeveloped land in the United States, many problems are being created by expanding population and man's requirement for a quality environment. Not the least of these requirements is the requirement for the preservation of certain areas in their natural state. Curiously, concern for the future of mineral resources has not appeared to be a factor in many of these decisions. In Arizona, the problems of land use involve another variable which must be considered: the presence of large bodies of ore. The professional voice of the exploration geologist seems to have been strangely muted while the debate on these decisions continues. Although the debate continues concerning the level of atmospheric contamination acceptable in extracting and processing copper, and heated words are being exchanged between various interest groups about land and mineral law reform in state and national capitals, the knowledgeable citizen hears or reads little, if any, strictly geological information in reports of these debates. He is generally presented statistics of economics and production, and the occasional sweeping generalization that copper deposits occur in the ground and must be mined to extract the metal.

The problems of contamination resulting from processing and extraction are rightfully those of the present, and their consideration is long overdue. Solutions, however, must be in terms which recognize the uniqueness of the known and potential copper occurring in this region. Equally important are the problems of land use and land acquisition. Many known and certainly some as yet undiscovered copper ore bodies exist in southern Arizona; these *must* be considered when land use decisions are being made and before the "system goes critical". Geologic understanding and the role of the professional geologist must no longer be ignored if wise policy is to be made. It should be the duty of the interested policymaker, the lawmaker, and his constituents to acquire, if not an understanding, at least an appreciation of the occurrence and distribution of certain natural resources in Arizona, the United States, the Western Hemisphere, and the world simply because world mineral economics and technology are becoming increasingly important in political decisions. Arizona cannot isolate herself from these broader aspects of mineral resource occurence and use. The decisions and plans which must be made must recognize that a major resource exists which is not only State, but national in scope, and that copper, as well as other metals, occurs only in certain regions and often to the exclusion of other metals.

Continued on page 2

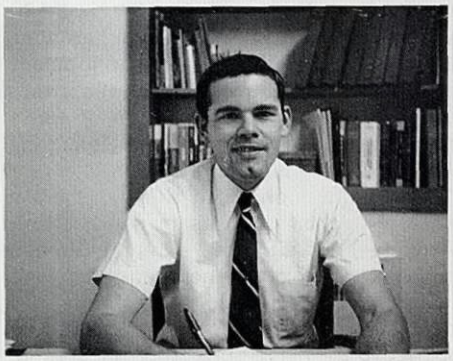
A NOTE FROM THE DIRECTOR:

DEPARTMENT HEAD NAMED

It is my pleasure to announce the appointment of Dr. Thomas J. O'Neil as Head, Department of Mining and Geological Engineering, College of Mines, The University of Arizona.

Dr. O'Neil, who is a specialist in the field of mineral economics, has been a graduate student and full-time faculty member of the Department of Mining and Geological Engineering since 1968. Prior to coming to The University of Arizona, Dr. O'Neil received a B.S. degree in mining engineering from Lehigh University, Bethlehem, Pennsylvania, and an M.S. degree in mining engineering from Pennsylvania State University, University Park, Pennsylvania. He has been a development engineer for Ingersoll-Rand Company, Rock Drill Division, and an industrial engineer for Kennecott Copper Corporation, Utah Copper Division.

Dr. O'Neil has been an active participant in professional society and College activities. He is currently the national secretary of the Mining and Exploration Division of the American Institute of Mining, Metallurgical and Petroleum Engineers, and a registered Professional Mining Engineer in the State of Arizona.



Dr. Thomas J. O'Neil, recently appointed Head, Department of Mining and Geological Engineering.

GEOLOGIST SPEAKS *Continued*

METALLOGENIC PROVINCES AND COPPER DEPOSITS

Most metals which man extracts occur in abundance in discrete (well defined) regions termed *Metallogenic Provinces.* Several metals may occur together in deposits in one region or province *(polymetallic provinces),* or provinces may contain only one metal. The copper deposits of southern Arizona compose a polymetallic province because they also contain as by-products molybdenum, zinc, and some gold and silver. For hundreds or thousands of years man has recognized the discrete nature of the occurrence of metals. However, it has been only during the past decade with the increased number of discoveries that the discrete nature of many provinces has been revealed, and that geological, geophysical, and geochemical data have provided what geologists now consider a firm basis for beginning to understand where and why discrete provinces might occur.

Historically, the recognition of a metallogenic province has had lasting political and economic implications. We are now concerned with the present and future importance of copper in Arizona. Curiously, this region indirectly figured in a major political decision based on concepts of metallogenics nearly 200 years ago. A belief propounded by the Greeks that gold resulted from the interaction of the sun's rays with certain types of fluids in the earth was propagated into the late part of the second millenia. With this belief, Spain concentrated her efforts at conquests in the New World to those regions where the sun's rays were strongest. After several hundred years of fruitless search based on this concept, Spain relinquished all territorial rights in the western hemisphere north of the Gulf of California in the treaty of 1790. (Godwin as cited by Adams, 1938, p. 283). Hopefully, our understanding of the processes of natural concentration of metals has advanced during the past 180 years. Hopefully, also, our growing understanding will aid in the development of policies which will further the clean, intelligent, and wise extraction of those metals which occur in this region, long ago mistakenly ignored by Spain.

There are more than thirty presently known copper deposits in southeastern Arizona and adjoining parts of Mexico and New Mexico. Of these, only ten were being mined in 1953; the remaining 21 deposits represent discoveries or rediscoveries made since then (see Table 1). All but four occur in southeastern Arizona. Not all of these are presently being mined or developed, but it seems certain that most have the potential for ultimate development and extraction. It takes only a simple arithmetic operation to appreciate the fact that since 1953 the rate of discovery in this region has been more than one per year, a record of discovery unparalleled in any other region of comparable size. The fact that these discoveries have been and continue to be made in this small part of the southwest attests to the unusual geologic quality of this region.

Exploration continues in this part of the North American continent because a large number of deposits occur in this region and thus the probability for discovery is certainly higher than in most other parts of the continent, and indeed, in most other parts of the world. The copper bodies which are being sought and which have been found belong for the most part to a distinct genetic type of deposit termed "porphyry copper". Although differing to varying degrees in the details of their geology, most of these deposits are broadly similar to each other in the way they came into being, in the nature in which the rocks containing copper have been modified, and in the amount of copper which they contain. They are correctly termed large, low-grade copper deposits. Despite their "low-grade", however, they represent very anomalous amounts of copper when the earth as a whole is considered.

The amount of copper in the deposits of Arizona is variable but averages between 0.4% and 0.6% (8 to 12 pounds of copper per ton of rock). The processes which act in and below the earth's crust produced this concentration. Parts of some deposits in Arizona have been upgraded to smaller volumes of around 1% copper or 20 pounds of copper per ton of rock by processes which have acted at the surface of the earth in the geologic past by dissolving and re-precipitating this lower grade copper. It is noteworthy that much of this copper has been mined in the past several decades and extraction of copper is now, in large part, that of the lower ore grades. Although of lower grade, the copper in these deposits is still present in amounts of from 8 to 12 pounds per ton of rock. This represents the end product of a natural upgrading of copper from 0.02 pounds per ton in the deep rocks of the earth to 12 pounds per ton in a copper deposit—an enrichment of 600 times the amount of copper present in the deep rocks below the crust! Clearly, unusual processes must have acted to bring this about, and although it is beyond the scope of this article to discuss modern arguments and thoughts about those processes in any detail, it is undeniably true that it has happened, *and only in special places on earth.* Southern Arizona is one such place.

One important aspect of this amount of copper in the rocks of Arizona deposits deserves further comment. This amount of copper, 0.4-0.6%, is the result of a complex sequence of geologic events. Nature has exceeded this level of concentration in only a few copper

Table 1
MAJOR COPPER BODIES IN CONTIGUOUS SOUTHEASTERN ARIZONA, NEW MEXICO, AND SONORA

Producing Prior to 1953	
Ajo	
Bisbee	
Castle Dome	
Cananea	
Chino (Santa Rita)	
Copper Cities	
Inspiration	
Magma	
Morenci	
Silver Bell	
Miami	(10)
Ray	
Production Since 1953	
Christmas	
Esperanza	
Mission	
Pima	
Sierrita	
San Manuel	
Twin Buttes	
	(7)

Discoveries and Developments	
Copper Creek	
Helvetia	
La Caridad	
Lake Shore	
Kalamazoo	
Poston Butte (Florence)	
Red Mountain	
Rosemont	
Sacaton	
Safford (KCC)	
Safford (P.D.)	
Morenci (Metcalf)	
Tyrone	
Vekol	
Johnson Camp - Dragoon	(14)
Sanchez	
Producers in northwestern Arizona (Not Shown on Map)	disc-dev.
Mineral Park	Copper Bonanza
Bagdad	Sheepman
	(2)
Total	33

bodies. Consequently, man has to work with rocks containing this small amount of copper. There is no way to upgrade or increase the amount of copper in these rocks, and we certainly cannot wait the millions of years necessary on the off chance that nature would upgrade it further. It should go without saying that the more copper in a rock, the more valuable it becomes, and those who search for and extract copper would desire nothing better than to find and produce copper from rocks of higher metal content. The fact that copper can be profitably produced from rocks of such low grade is basically a reflection of the necessity to do so but is also testimonial to the quality of man's technology and his imagination in devising low-cost extractive techniques.

Figure 1 shows the location of all operating large copper mines in southeastern Arizona and adjoining parts of New Mexico and the State of Sonora, Mexico. In addition, the map shows other known bodies of copper mineralization of this region that are either prospects where the amount of copper contained can be economically extracted or copper bodies presently undergoing development. Several characteristics of this map deserve comment.

First, the distribution of these mines and mineralized bodies is not erratic. They occur as features of a broad arcuate belt as illustrated in Figure 2. This belt starts near Nacozari, Sonora, and extends from there northwestward into Maricopa County, where it turns eastward, extending across Arizona into southwestern New Mexico. This belt and the copper deposits within and closely adjacent to it ignore county, state, and international boundaries. That more deposits occur in Arizona than in Mexico or New Mexico within the belt may simply reflect the lack of thoroughness with which those adjoining regions have been explored. We do not yet know if copper bodies of the sort which occur in the arcuate belt occur in any great quantity outside of or within the area enclosed by the belt in southern Arizona and adjoining regions, but the possibility is real.

Second, it is noteworthy that the known ore deposits occur as separate bodies of copper mineralization; that is, the bodies are isolated. There is no indication from geology as it is presently known and understood that there is any continuous mineralization by copper in economic quantities in this belt. It *is* significant that in many instances the copper deposits apparently occur in clusters. Such clustering is known in the Sierrita Mountains southwest of Tucson, where at least four separate bodies occur in a restricted area. Other clusters occur in the Globe-Miami area, and there is strong suggestion of clustering in the San Manuel-Copper Creek region, as well as in the group of deposits near Safford. Exploration is far from complete in and around many of the deposits of the region, but when it has been completed, it is likely that presently known bodies in many parts of the belt will be revealed to have been parts of a cluster of copper ore bodies. Reasons for the clustering are not known, but it is an important aspect of our knowledge of the nature of occurrence of copper bodies not only in this region but others as well.

Third, the ore deposits shown on the map reflect, with only one possible exception, the position of *old* mining districts. This in itself is a potentially valuable tool in land zoning decisions. Up to this time all the copper bodies except for the one at Sacaton reflect the results of thorough and sometimes deep exploration of some areas where mineralization was already

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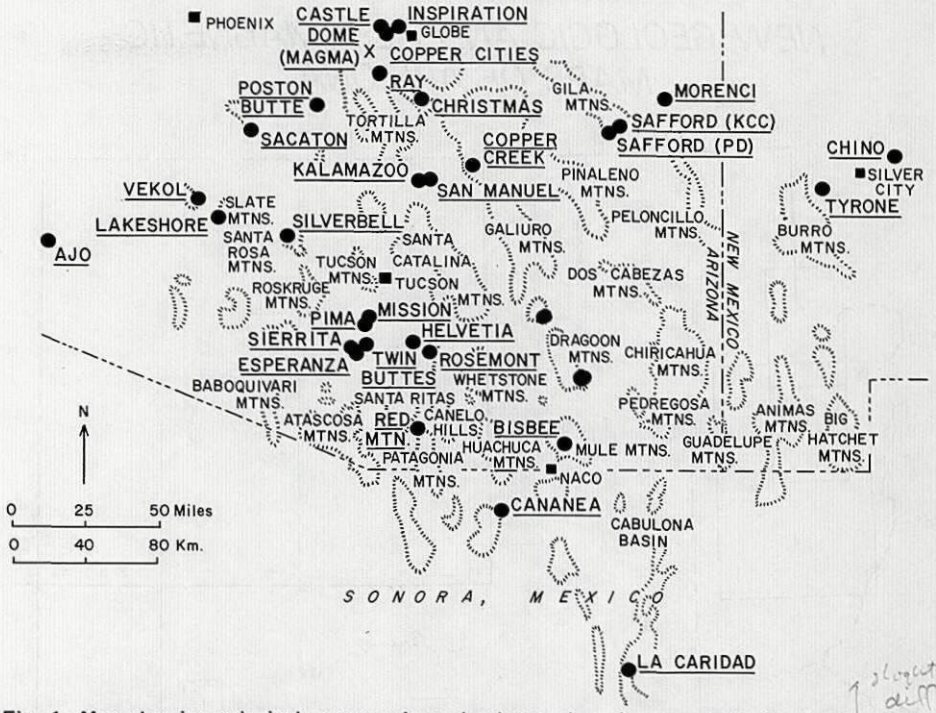


Fig. 1. Map showing principal copper mines, development, and prospects in the Southwestern Copper Province.

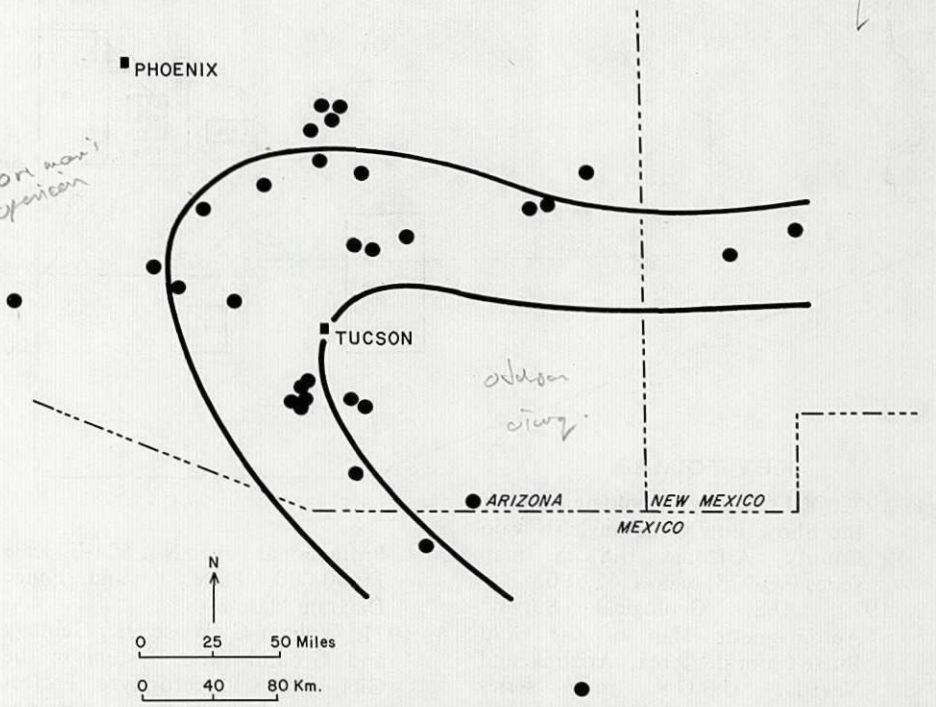
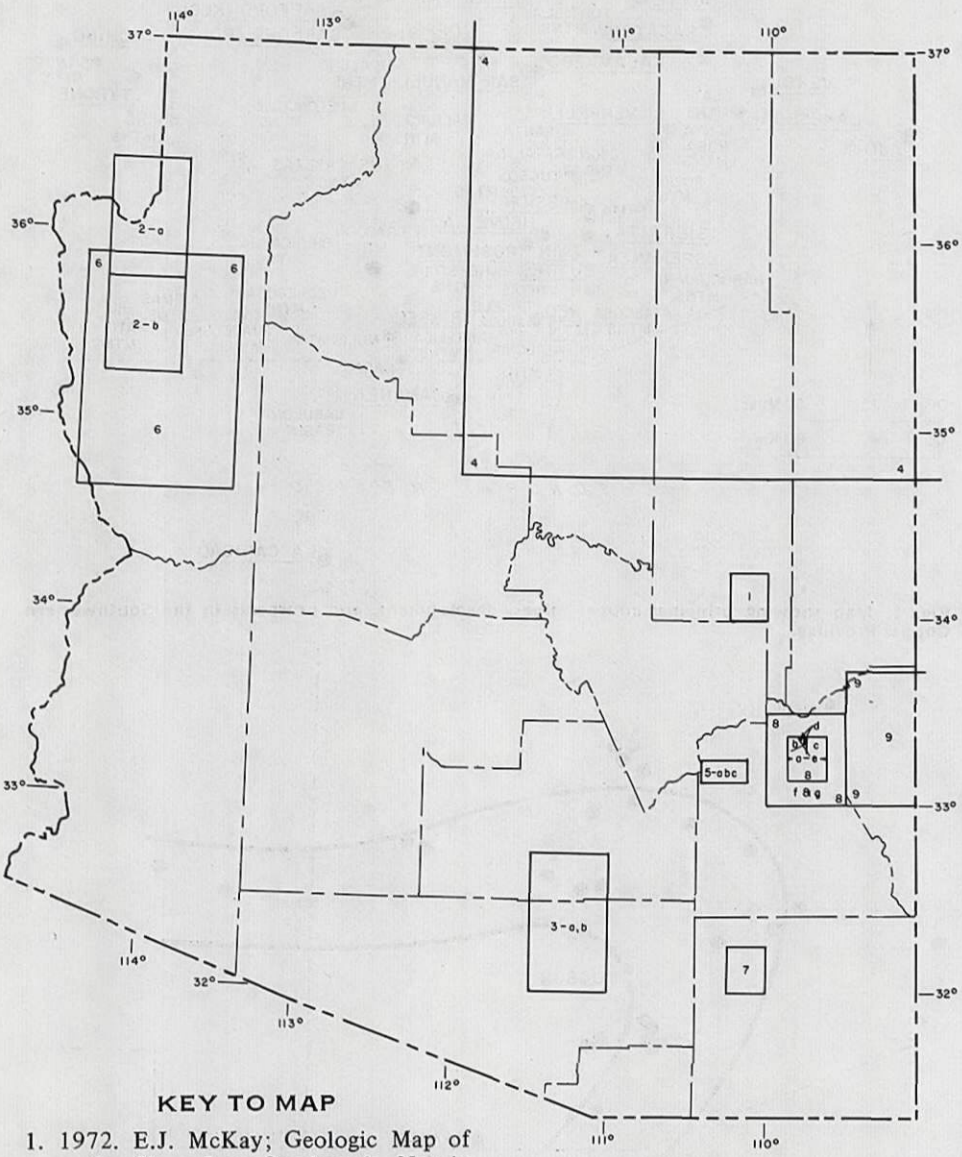


Fig. 2. Provisional geologic boundaries of the southwestern copper deposits.

NEW GEOLOGIC AND AEROMAGNETIC MAPS OF ARIZONA



KEY TO MAP

1. 1972. E.J. McKay; Geologic Map of the Show Low Quadrangle, Navajo County, Arizona: U.S.G.S. map series GQ-973, scale 1:62,500.
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   (a) Fig. 1. Reconnaissance Geologic Map, Point of Pines Region, San Carlos Indian Reservation, Arizona: scale 1:62,500.
   (b) Fig. 2. Geologic Map of the Point of Pines West Quadrangle, San Carlos Indian Reservation, Arizona: scale 1:24,000.
   (c) Fig. 3. Geologic Map of the Point of Pines East Quadrangle, San Carlos Indian Reservation, Arizona: scale 1:24,000.
   (d) Fig. 4. Geologic Sections, Point of Pines East and Point of Pines West Quadrangles, San Carlos Indian Reservation, Arizona: scale 1:24,000.
   (e) Fig. 5. Structure Map Point of Pines Region, San Carlos Indian Reservation, Arizona: scale 1:62,500.
   (f) Fig. 6. Complete Bouguer Gravity Map of the Point of Pines Region, Arizona: scale 1:62,500.
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GEOLOGIST SPEAKS *Continued*

known. The fact that one was found at Sacaton, apparently unrelated to previously recognized mineralization, however, is a fair portent of the future course of exploration and discovery of copper bodies in the arcuate belt. In some instances, old mining districts hold a high probability of having a deeply buried "heart" of copper ore somewhere near them, *but* there is also a high probability of discovery within the arcuate belt of copper deposits which have not yet revealed their presence in any way now recognizable.

Fourth, the arcuate belt of porphyry copper deposits is a belt of deposits of only one age and one type. Not included in this belt are copper deposits of other ages such as those at Bisbee, Ithaca Peak, near Kingman, and Bagdad. These deposits, together with a host of smaller base and precious metal deposits, occur within and near the area of the belt. Thus, the position of the belt as now defined should not be construed as the final outline of the position of known porphyry copper deposits. As discoveries increase in other parts of the region, it may be possible to better define the factors controling the location of other porphyry copper deposits in the areas adjoining the arcuate belt. The arcuate belt *is* an area in which the probability of discovering additional copper deposits of one age and type is very high. The areas adjoining the belt still manifest a good probability of at least some as yet undiscovered copper bodies occuring because of the presence within the area surrounded by the belt of Bisbee, and the presence of Ajo, Ithaca Peak, and Bagdad outside of it.

Finally, most of the copper deposits of southeastern Arizona occur in a region that once was the shallow shelf of an ancient sedimentary basin, although we cannot say for certain why they should be there, or if indeed there is any direct relationship. The basin, which extended through what is now most of Cochise County and into Sonora and Chihuahua Mexico, is no longer recognizable as such

Continued on page 8

The staff of the Arizona Bureau of Mines attempts to fulfill speaking requests, especially at schools. Among those asked to speak on a variety of geological subjects are David D. Rabb, Mining Engineer; Robert T. O'Haire, Associate Mineralogist, and Wes Peirce, Geologist, whose approach is to take along materials for the children to touch, taste, smell, hold, and see. The following thank-you letters were among those received by Dr. Peirce from members of Miss Jean Hansen's 4th grade class at Jefferson Park Elementary School in Tucson.

THE YOUNGER SET

Tucson Ariz
November 3, 1972

Dear Dr. Peirce
Thank you for coming
I enjoyed it a lot. I like the
halite rock the very best.
The antelope was very interesting
How many teeth does a mammoth
have? Why is the rock
in the valley softer than the rock
in the mountains? How do you get
the halite rock out of the ground
How do you tell how old it
is?

Sincerely Brandt

A GOOD QUESTION ALWAYS PRECEDES A GOOD ANSWER. KEEP UP THE GOOD WORK, BRANDT.

Tucson Ariz.
October 16, 1972

Dear Dr. Peirce,
We all thank you for coming.
We all had different reasons to thank you for coming.
My reason was I enjoyed being with you.
I have always liked fossels.
One reason was I like to see how the rock formed around the animals or leaf.
I had never seen a real fossil until you showed me them.
My Mother and Father did not believe that I had eaten something 200, Million years old and had held a Million fossles in my hand

Gratefully yours
Karen Elizbeth
Martin.

EVEN MOMS AND DADS CAN STILL LEARN, SO BE PATIENT WITH THEM.

Tucson, A.z.
Oct. 16, 1972

Dear Dr. Peirce,
I enjoyed your visit very much.
I had never known anything about fossils until you came to our school. I loved the mammoth tooth you brought. And I remembered that I tasted something over 200,000,000 years old and that I held something with over 1,000,000 fossils in it. I really enjoyed your visit.

Verry Gradefully,
Abby Wine

DR. PEIRCE CONGRATULATES ABBY AND KAREN FOR CORRECTLY REMEMBERING SUCH BIG NUMBERS!

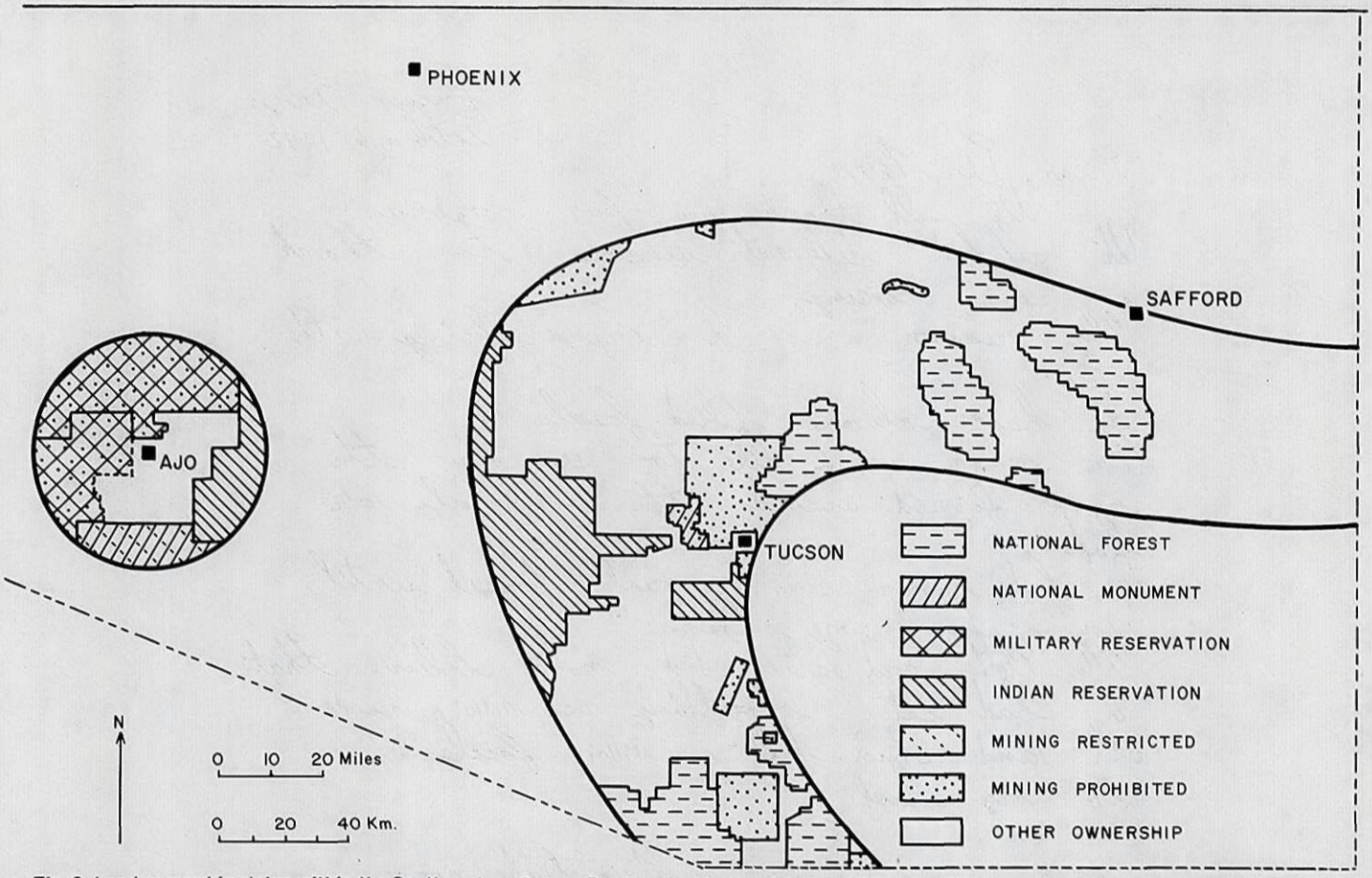

Fig. 3. Land ownership status within the Southwestern Copper Province and in the vicinity of Ajo (modified from land status map in Reference 2).

GEOLOGIST SPEAKS *Continued*

but is interpreted with a high degree of certainty from the distribution and thickness of rocks which formed in it. At about the end of the age of dinosaurs, the basin edge was the site of the evolution of a great number of volcanos. It was by these volcanic processes, which lasted about 15 million years, with their buried chambers of copper-bearing molten rock serving as a source, that nature formed the copper deposits of southern Arizona. Evidence for this is rather good—we can see the volcanic rocks near and about many of the deposits of southeastern Arizona, we can determine that they are of about the correct age to be related to the copper deposits, and in many places they contain copper mineralization. Where we see clusters of copper deposits, we are probably seeing the now-cooled granitic rock hearts of a cluster of ancient, long-gone volcanos.

Therefore, the arcuate belt containing the copper deposits can not only be drawn simply by including most of the known deposits of this region in the complete absence of geological knowledge, but also, it can be described in terms of lines grossly identifiable with rocks whose geologic importance is recognized.

LAND STATUS

The preceding discussion has been a summary of much geologic thought by many who have studied these deposits for a long time. There is not total agreement on certain concepts of genesis or formation of the deposits, but there is general concurrence that a large number of deposits occur here. Intense exploration underway here now attests to the general belief that more exist than have been found. There *is* a region in southeastern Arizona where, in comparison with most other regions on earth, the probability of finding copper deposits is very high. This *fact* leads to a consideration of the distribution of various types of land and land ownership in Southern Arizona.

Figure 3 is a base map outlining those areas with differing regulations governing mining. The gross outline of the arcuate belt of copper deposits in southeastern Arizona has been superimposed. As can be observed, the land types within the belt include virtually all types of lands set aside or recognized for some special purpose. Indian reservations, national forests, areas of definite mining prohibition, game and special ranges, and national monuments as well as a variety of public and privately held lands compose the varied ownership, and reflect the diverse nature of regulations governing or prohibiting land acquisition for mining purposes. The small scale of the map precludes showing a great amount of detail but this information may be gained from a study of the larger scale state publications (2). What is significant about this map and its superimposed geologic information is the great diversity of ways in which land is already designated for purposes other than extraction of mineral resources in a region now recognized as having an unusual and unique potential for copper mineralization.

SUMMARY

Regarding land status and potential ultimate use in southern Arizona, in my opinion the following comments and questions merit more than passing consideration *now*, in the early 1970's.

This nation, bounteously endowed with mineral resources and mineral wealth, seems always to have taken them for granted. So long as land was plentiful in the West, there seemed no reason to consider them otherwise. With few exceptions, when designating the status

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THE NEW AMERICA OF THE YEAR 2000 A.D.

The following is an interview with Dr. W.H. Dresher by KTUC Radio Station, Tucson, on May 30, 1972.

Dr. William H. Dresher,

Dr. Dresher, You were telling me earlier about "The Second America". What do you mean by this?

A number of recent events have caused us to realize that the United States isn't as healthy as it should be in providing for the material needs of its people—the recent repatriation of American interests in the copper mines of Chile, our recent reliance on the Soviet Union for chrome ore for use in our manufacture of stainless steel, our total dependence on Latin American countries for bauxite for manufacture of aluminum, and the growing list of other mineral imports required for American industry. These realizations coupled with the fact that Americans are still growing in number and our average standard of living is still increasing has caused our planners in Washington to become increasingly concerned. Dr. Vincent McKelvey, Director of the United States Geological Survey, coined the phrase, "The Second America" to emphasize the fact that, to satisfy the needs of our people, we must essentially double the physical resources of the United States between now and the year 2000. What Dr. McKelvey is saying is that we must duplicate the Nation's "entire physical plant"—replace obsolete and worn out highways, automobiles, buildings, communications systems, power plants, etc. as well as provide new facilities to accommodate the people who will be here by the year 2000 in an amount which will essentially double all of the production which we have accomplished to date—and we have only about 28 years to accomplish this if our standard of living is not to be severely reduced!

This is a startling realization. Why are we just now hearing of this?

This really isn't new. After W.W. II, a government study group—The Paley Commission—warned of this; however, we chose to establish our material priorities around defense and space accomplishments rather than around establishing a secure basis for the needs of our people. The Korean War, Sputnick, and the Vietnam War have diverted our attention from these issues. However, the fact remains that since 1948 we have *tripled* our consumption of energy—heat and electricity—per capita and with it the material goods which we consume so that today we have the highest standard of living in the entire world *but* we have the poorest prospects for maintaining it. As a nation, we are 5% of the World's population, occupy 7% of its land area, and consume 30% of its mineral and energy output. Yet, we do not have rich resources of minerals and fuels within our boundaries.

This is indeed an accomplishment for us, but isn't this a little unfair to the rest of the world?

This, of course, is the argument of the Environmentalists and the Conservationists and, to some extent, they are correct. We *are* using more of the World's goods than we deserve! Yet, who among us is willing to give up what he already has? Except for war time restrictions, we have never had to step back in our standard of living. You and I can certainly hold the line where we are. But that isn't the real problem before us. The problem is how to bring those "have nots" among us up to what you and I have. How do we provide for *these* people over the next 25 years? As for the rest of the world, the developing nations are beginning to emerge. This is one reason why our mineral imports are being restricted. These countries must develop their own manufacturing industry if they are going to catch up to us. They would prefer to sell us manufactured goods than raw materials and by doing so strengthen their own economy.

Wouldn't importation of finished goods be the answer to our problems? This would help us and help the developing nations.

Only partially, for we cannot afford to allow our domestic industry to become weakened. Last year was the first year we have had a deficit in foreign payments since 1894. We must balance our payments or face unemployment and deprivation ourselves. The deficit was partially caused by the 8 *billion* dollar shortage of U.S. mineral production. By the year 2000, this shortage is projected to reach 64 billion dollars—a cause for great concern. The steel industry has already been forced to lay off nearly 13,000 men with the permanent shut down of Jones and Laughlin Steel Corp., Bethlehem Steel Corp., and U.S. Steel Corp. facilities. President Nixon recently asked the major European countries and Japan to limit their exports of steel to this country for the next 3 years to help alleviate this problem. Our problems are just beginning. A serious recession could result if our domestic industry is not kept strong.

What seems to be the answer to these problems? What are we to do about them?

The answers are not simple. However, positive steps are being taken: *First,* the Congress of the United States passed an act, The Mining and Minerals industry in the United States, one which will operate through private enterprise with a minimum of Federal control. *Second,* the President has established a commission—The Natural Materials Policy Commission—to report to him by June, 1973 on a recommended course of action. This Commission is now in operation and considering several facets of the problem. *Third,* steps are being taken to improve our technology. Regardless of the outcome of any decision-making, one thing is clear: we must increase our level of sophistication and proficiency in providing raw materials for our manufacturing industry. The reasons for this are twofold: (1) increased domestic production of power and minerals could mean increased pollution, and we cannot tolerate any deterioration in our environmental quality in achieving our goals, and (2) domestic ores are plentiful but too low in grade to economically compete in the world market by the use of conventional technology. Therefore, the Senate and, last week, the House of Representatives in Washington, have now both passed bills to aid in mineral industry education and to establish mineral technology research centers in every state. The College of Mines of the University of Arizona expects to play a major role in the training of young men and women for the minerals industry and in the development of improved technology, both of which are

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YEAR 2000 *Continued*

required to meet the challenge ahead of us in meeting the needs of "The Second America". Our young people have a challenge which has been unequalled in history . . . the challenge of assuring a quality life for every American while preserving our environment and our natural resources. For, if the solutions to the problems we have been discussing are to be found, they must be found during the working life of these young men and women.

GEOLOGIST SPEAKS *Continued*

of lands, their characteristic as specifically mineral-bearing or of high mineral potential has received little attention. With no intent to suggest that any special formal status be given southern Arizona and her known and potential copper resources, can we perhaps now at least recognize that there exists here a unique planetary resource? And cannot this recognition be "factored" into future decisions regarding all sorts of land use planning?

There has been an indifference towards the way the land has been spoiled in not only the extraction of mineral resources but sometimes the search for them. This indifference has resulted from our mineral wealth and the immense land in which to search for them. Public pressure and the recognition of some sort of problem have led to steps to improve this situation. We need only look to the future of the development of additional copper in this region, however, to gain some idea of the immense nature of the potential and continuing problems that extraction and processing will bring to the State.

It is perhaps a major understatement to say that the problems posed by the present and potential incompatibility of extraction and processing on one hand, and urban growth and maintenance of environmental quality on the other, are challenging. They are like no others known on earth at this time. It is fair to say, however, that the first steps towards their solution will come from an awareness of their existence on the part of the citizenry, state policymakers, and industry.

Do we not now, then, have a two-fold obligation, first, to recognize the value to Arizona and to the nation of the unique copper resource that is Arizona's and, second, to recognize the need *now* for imaginative planning for development of that resource with a minimum of environmental and esthetical impact? Problems are solved by cooperation. They cannot be solved by completely ignoring their existence, or by ignoring them until they have reached a point where their solution is attended by emotion and a lack of cooperation rather than reason.

Primarily, should we not now be considering the potential impact of sharply increasing demands on copper by present and developing technologically-oriented nations and its influence on Arizona copper during the next two decades or longer? Should it not now be possible to begin considering the problem in its entirety rather than the piecemeal fashion which is now and has been the pattern of the past? Is it not time to begin to consider the potential overall problems and take the first steps toward some wise policies and decisions?

Shouldn't we *now* become aware of the potential impact of the ultimate development and exploitation of most of the copper bodies known today over the next 15 years, and the continuing impact of the discovery and development of bodies not yet known? Are we undertaking any research now on the best ways to minimize this impact? Not to my knowledge.

Long range problems exist which we cannot yet even define. But for the present, could we not ask some specific questions? For example, should we not now be planning for the eventuality of development of copper bodies where the arcuate belt crosses the Tucson-Phoenix corridor? Already discoveries encroach upon the path of planned urbanization.

Is it too soon to consider the possibility of a "consolidated" smelting center in Arizona, developed and built by the producers of copper well away from areas of potential urbanization where, through present and developing techniques of low-pollution level processing, Arizona can ultimately derive the economic benefits from the processing of copper and its associated metals?

With a view toward maintenance of the esthetical qualities of the region and lowered extractive costs for ores, should we not now begin to recognize the advantages of certain methods of mining by underground breakage of certain types of orebodies and subsequent leaching of copper—or even extraction of copper by methods as yet unknown? And should we not be seeking the counsel of ground-water hydrologists on this problem. And is it not time for the federal government to become aware of the fact that major research and "breakthroughs" in extractive processes, not only for copper but for other resources as well, are sorely needed in the national good?

Should we not now adopt an extremely cautious attitude in acts which modify land status in this region through either zoning or withdrawal for some special purpose which result in restrictions and prohibitions on exploration and ultimate development of any mineral-bearing or untested lands in these mineralized regions of Arizona? And should not this same caution apply to other parts of the United States where we can identify metallogenic provinces of the other metals and minerals necessary to our well being?

On an international basis, should we not be considering these same problems with our neighbors to the south in Mexico? Prevailing southeasterly winds do not portend well for the Tucson or Phoenix region in the likely event more copper is discovered and processed in the arcuate belt south of the international border. We must again remember the Metallogenic Provinces are not aware of county, state, or national boundaries.

Finally, is it not time for far-seeing leaders to begin evolving far-seeing plans to accommodate the total resources of this region? There are few places on earth at this time where the juxtaposition of so many potentially incompatible activities have the potential for mismanagement and conflict. Given the proper education, the proper cooperation, and the ability to evolve the proper policies *before* the problems become critical, Arizona may be able to have her cake and eat it too!

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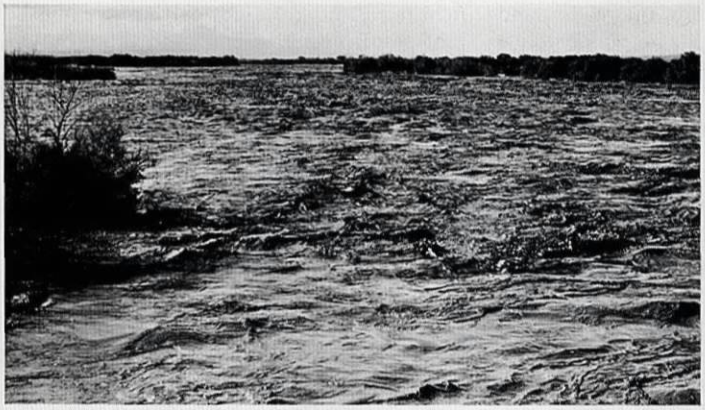
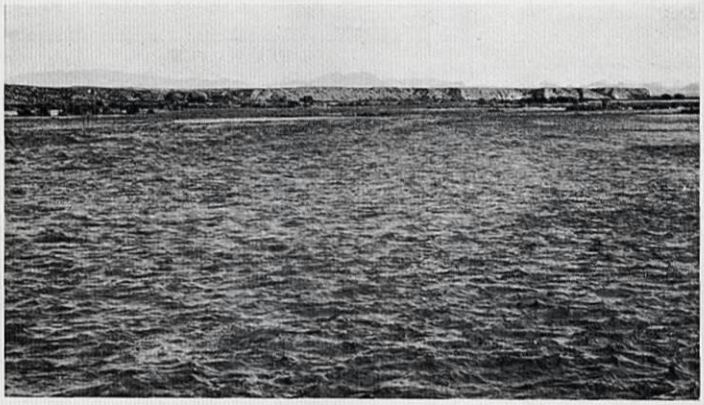
THE MIGHTY MISSISSIPPI? – NO – THE NORMALLY DRY GILA – DOING WHAT COMES NATURALLY

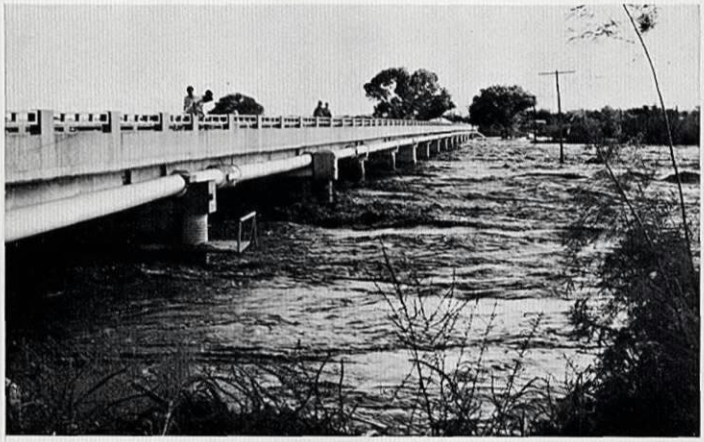
(H.W. Peirce pictures – Oct. 20, 1972)



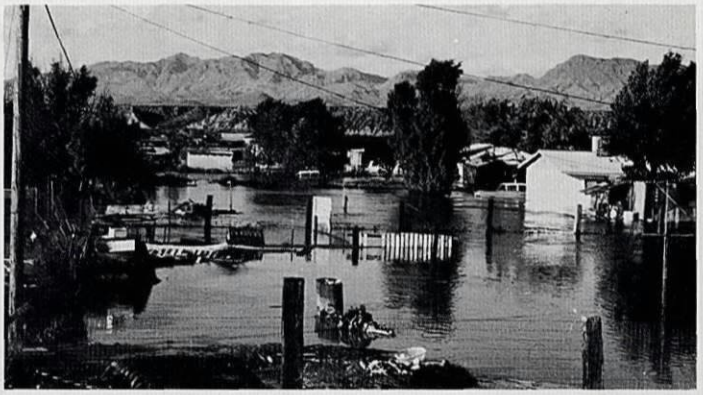


GILA RIVER FLOW AT SAFFORD, ARIZONA—NEAR FLOOD CREST

The U.S. Geological Survey, Tucson, estimates the peak flow at about 70,000 cfs (cubic feet per second). This is reported to be the highest flow since records began in 1914. The highest flow, about 100,000 cfs, occurred in January, 1916.



AS GOES THE BRIDGE SO GOES SAFFORD'S WATER SUPPLY (PIPE).



THE GILA FINDS ANOTHER CONFLICT ON ITS FLOODPLAIN.

The much photographed lowland community of Little Hollywood near Safford. It might be fair to say that a high river and a low community combined to produce these results.

THE GILA FINDS A CONFLICT ON ITS FLOODPLAIN—COTTON.

Whether floods are to be considered constructive or destructive depends upon one's viewpoint. The floodplain, exploited by man the world over, owes its flatness, fertility, and texture to natural processes associated with flooding. A long—range view suggests that floodplains are renewed by repetitive flooding events. Too, one's view would be affected by location, whether above or below a "protecting" dam, in this case Coolidge Dam, which is down-river. River channels are recharge zones for vital groundwater and flow is essential for renewal of water supplies. On balance, the longer ranging view is the more natural. It is possible that temporary crop losses will be made up by enhanced future production because of increased fertility, water supply, leaching of detrimental salts that collect in irrigated fields, etc.

GEOLOGIC HAZARDS — CONTRIBUTE YOUR OBSERVATIONS

The Arizona Bureau of Mines, in the continuing interest of promoting safety and proper adjustment to geologic circumstances, presented GEOLOGIC HAZARDS AND LAND-USE PLANNING in Vol. 2, No. 3 of FIELDNOTES.

Our stated goal was to help stimulate awareness on the part of individuals searching for residential sites in Arizona. Although emphasis was placed on Tucson examples, the principles involved are widely applicable.

In the interest of gaining additional insight, we are asking you, the reader, and your acquaintances, to help assemble a more comprehensive file on geologically precarious or potentially precarious situations in Arizona.

We also are interested in, besides threats stemming from floods, erosion, rock falls, land slides, slumping, earthquakes, and volcanism, etc., manifestations of minor earth movements that result either in cracks in the ground or in man-made structures. We are especially interested in learning more about residence cracking in Arizona.

If you have a concern, or think that concern should be generated about any of these or other earth phenomena, we invite you to write to us—better sooner than later! Observe and report. Please address correspondence to:

GEOLOGIC HAZARDS
ARIZONA BUREAU OF MINES
THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

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FIELD NOTES
Volume 2, No. 4 *Dec. 1972*
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University of Arizona
President .....John P. Schaefer
Arizona Bureau of Mines
Director .....William H. Dresher
Editor .....F. Catherine Cate
ARIZONA BUREAU OF MINES
THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

Cook file Porph Cu General

MARCH 18-20
1976

PORPHYRY COPPER SYMPOSIUM

A symposium sponsored by the

ARIZONA GEOLOGICAL SOCIETY

and the

UNIVERSITY OF ARIZONA

at the
UNIVERSITY OF ARIZONA
STUDENT UNION
Tucson, Arizona

FIRST BLAST AT METCALF
(Ray Manley Photography)

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Spouses' Activities	Rose Marie Heidrick
	Carol B. Graybeal
Digest X Editors	Judith P. Jenney
	Jan C. Wilt

SUMMARY OF SYMPOSIUM REGISTRATION

Symposium registration fee covers Thursday night Pow-Wow, Thursday and Friday luncheons, technical sessions, field trip with box lunch, and program with abstracts.

CALENDAR OF EVENTS

WEDNESDAY, MARCH 17, 1976 **4:00–9:00 p.m.**

Sheraton Pueblo Inn
Freeway South of Congress

REGISTRATION and pick up pre-registration packet
NO-HOST SOCIAL HOUR
Shalako of the Southwest 7:00–9:00 p.m. A walking fashion show of Indian jewelry, courtesy of Quad El Arts (Marianne Lieurance), handpainted fashions (Mary P. Bull), and sandpaintings (Molly Talbot McKinney).

THURSDAY, MARCH 18, 1976 **8:00 a.m.–5:00 p.m.**

REGISTRATION and pick up pre-registration packet
Gallagher Theater, Student Union
University of Arizona

TECHNICAL SESSION I

Thursday Morning **8:15 a.m.–12:00 noon**
Gallagher Theater, Student Union

8:15–8:30 WELCOME *Charles P. Miller, President Arizona Geological Society*
Dr. John P. Schaefer, President University of Arizona

MODERATORS – Maurice H. Brady and Robert T. O'Haire

8:30–8:55 Silicate Mineral Assemblages and Their Relationship to Sulfide Mineralization, Pinos Altos Mineral Deposit – *J.F. McKnight and M.L. Fellows*

8:55–9:20 Regional Structure of the Safford District – *P.G. Dunn*

9:20–9:45 Alteration and Mineralization of the Cyprus-Johnson Camp Deposit – *R.L. Clayton*

9:45–10:15 COFFEE BREAK

10:15–10:40 Geology and Mineralization of Copper Creek, Bunker Hill Mining District, Arizona – *J.O. Guthrie and D.G. Moore*

10:40–11:05 Geochemical Zoning at the Kalamazoo Porphyry Copper Deposit – *M.A. Chaffee*

11:05–11:30 Geology and Mineralization of the Ray Silicate Orebody – *N.A. Gambell*

11:30–11:55 Vekol Hills Copper Deposit – *H.J. Steele*

LUNCHEON: 12:00 noon–2:00 p.m.
Arizona Ballroom, Student Union

Policies of the Department of Interior toward Natural Resources – *William L. Fisher, Hon. Deputy Assistant Secretary for Energy and Minerals, Department of the Interior*

TECHNICAL SESSION II

Thursday Afternoon **2:00–5:00 p.m.**
Gallagher Theater, Student Union

MODERATORS – Judith P. Jenney and J. Harold Courtright

2:00–2:25	I.P. Depth Penetration in Exploring Porphyry Coppers – *H.D. McLean and C.L. Elliot*
2:25–2:50	Geology and Mineralization of the Lights Creek Stock, Plumas County, Calif. – *L.O. Storey*
2:50–3:15	Controls of Oxide Copper Mineralization, MacArthur Property, Lyon County, Nevada – *D.A. Heatwole*
3:15–3:45	COFFEE BREAK
3:45–4:10	Alteration and Distribution of Sulfide Mineralization at Copper Canyon, Nevada – *D.W. Blake, T.G. Theodore, and E.L. Kretschmer*
4:10–4:35	Recent Geologic Developments at the Bagdad Porphyry Copper Deposit – *P.K. Medhi*
4:35–5:00	The Root Zone Characteristics of Porphyry Copper Systems – *W.P. Durning*

SOCIAL POW-WOW, 7:00–9:00 p.m.
Santa Cruz Plaza, 1802 W. Grant Road, Suite 122
(see enclosed map)
BUFFET AND REFRESHMENTS

POSTER SESSIONS (in-depth group discussions):
- Skarn Alteration – *Don Burt*
- Cenozoic Magmatic Evolution – *Charlie Chapin*
- Metallogenic Map of Sonora – *Ariel Echavarri*
- Plate Interactions and Porphyries – *Tom Heidrick*
- Cenozoic Volcanics – *Mike Sheridan*
- Mineral Resource Program in Alaska – *U.S.G.S.*
- Relationship of Minerals to Energy Production – *U.S.G.S.*
- Good Cheer – *Everybody*

AGS spouses present a showing of creative arts and crafts of the Southwest:

Ojos de Dios – *Bonnie Hamilton*
Mining Scenes in Watercolors – *Betty Herndon*
Tooled Leather – *Ruth Kessler*
Mineral Specimens in Watercolors – *Pat Marohn*
Sandpainting and Copper Jewelry – *Molly Talbot McKinney*
Shalako of the Southwest – *Mary P. Bull*
Bronze Sculpture – *George-ann Tognoni*
Indian Jewelry – courtesy of Quad El Arts (*Marianne Lieurance*)

FRIDAY, MARCH 19, 1976

REGISTRATION: 8:00–10:00 a.m.
Gallagher Theater, Student Union

TECHNICAL SESSION III

Friday Morning **8:30 a.m.–12:00 noon**
Gallagher Theater, Student Union

MODERATORS – C. Jan Wilt and C. Philip Jenney

8:30–8:55	Tectonic Setting of the Porphyry Copper Deposits of Southeastern Arizona and Some Adjacent Areas – *H.D. Drewes*
8:55–9:20	Structural Reconnaissance of the Southwest Porphyry Copper Province – *T.W. Mitcham*
9:20–9:45	The San Xavier Fault – *L.J. Jansen*
9:45–10:15	COFFEE BREAK
10:15–10:40	Geology of the San Xavier North Porphyry Copper Deposit, Pima Mining District, Arizona – *J.R. King*
10:40–11:05	Geologic Summary of the Cyprus-Pima Mine *J.D. Langlois*
11:05–11:30	Stratigraphy, Alteration, and Ore Controls in the Main Ore Zone, Twin Buttes Mine, Pima County, Arizona – *C.F. Barter*
11:30–11:55	Economic Geology of the Sierrita-Esperanza Orebody *R.J. West*

LUNCHEON: 12:00 noon–2:00 p.m.
Arizona Ballroom, Student Union

Copper in Mexico and the New Mining Law – *Jorge Leipen Garay, Sub-Secretario de Recursos no Renovables, Mexico, D.F.*

TECHNICAL SESSION IV

Friday Afternoon **2:00–5:00 p.m.**
Gallagher Theater, Student Union

MODERATORS – Stanton B. Keith and Thomas L. Heidrick

2:00–2:25	Highlights and Activities in Minerals Science Research, University of Arizona – *E.J. McCullough and T.J. O'Neil*
2:25–2:50	Geology and Mineralization of the La Verde Porphyry Copper Deposit, Michoacan, Mexico – *P. Eckman*
2:50–3:15	Geologic Factors Affecting Economics of Porphyry Copper Mining Operations – *H.J. Winters, Jr.*
3:15–3:45	COFFEE BREAK
3:45–4:10	Textural Variations and Mineral Zoning of the Pilares Breccia Pipe – *J.A. Thoms*
4:10–4:35	Metallogenic Map of Sonora – *A. Echavarri*
4:35–5:00	The Age and Origin of Porphyry Copper and Genetically Related Mineral Deposits in Mexico – *P.E. Damon*

NO-HOST SOCIAL HOUR: 7:00–8:00 p.m.
Ramada Inn, Poolside
404 North Freeway

BANQUET: 8:00 p.m.
Ramada Inn

Thirty-year Evolution of Porphyry Copper Exploration in the Southwestern USA: Techniques and Philosophies – *K.E. Richard;* Case Histories of Discoveries – *J.D. Lowell*

SATURDAY, MARCH 20, 1976

FIELD TRIPS

Note: Trips are by *scheduled bus* only on March 20. Starting times vary. Loading at Mall in front of Student Union. A box lunch with beverage will be provided for all participants.

1 SACATON MINE – FLORENCE DEPOSIT

Sacaton Mine and discovery outcrop. Drill core, cross sections, and review of Poston Butte outcrops. Limited to 80 persons. Departure time 6:45 a.m. Leaders: *R. Cummings, Asarco; P. Nason, Conoco.*

2 SAN MANUEL MINE – KALAMAZOO DEPOSIT

Underground in a.m.; study of pre-mineral outcrops above Kalamazoo in p.m. Underground clothes required. Limited to 30 persons. Departure time 6:45 a.m. Leaders: *Magma staff.*

3 PATAGONIA MOUNTAINS

Hardshell disseminated silver deposit; Mowry Mn-Ag-Pb-Zn replacement; Cu-Zn skarns at Washington Camp. Limited to 40 persons. Departure time 6:45 a.m. Leaders: *S. Davis, Asarco; N. Lehman, St. Joe Minerals.*

4 COPPER CREEK MINING DISTRICT, GALIURO MOUNTAINS

Breccia pipes, intrusive rocks, and alteration-mineralization. Possible stop at Kalamazoo if time permits. Limited to 80 persons. Departure time 6:45 a.m. Leaders: *J. Guthrie, Newmont; D.G. Moore, Exxon.*

5 JOHNSON CAMP, LITTLE DRAGOON MOUNTAINS

Texas Canyon quartz monzonite; alteration and mineralization; tour of Johnson pit; significant structures. Limited to 80 persons. Departure time 6:45 a.m. Leaders: *R. Clayton, Cyprus; J. Kantor, Superior Oil.*

6 MISSION – PIMA – SAN XAVIER NORTH MINES

Hypogene and supergene mineralization in Paleozoic and Mesozoic sedimentary rocks. Limited to 80 persons. Departure time 7:30 a.m. Leaders: *L. Jansen, Asarco; J.R. King, Asarco; D. Williamson, Cyprus-Pima; J. Langlois, Cyprus-Pima.*

7 TWIN BUTTES – SIERRITA MINES

Alteration-mineralization in skarn and igneous rocks. Limited to 80 persons. Departure time 7:30 a.m. Leaders: *J. Kelley, Anamax; R. West, Duval-Sierrita.*

8 PIMA MINING DISTRICT, SIERRITA MOUNTAINS

San Xavier fault and related structures; Helmet fanglomerate; district mineralization. Limited to 80 persons. Departure time 7:30 a.m. Leaders: *C. Barter, Anaconda; J. Kinnison, consultant.*

9 ENVIRONMENTAL GEOLOGY OF THE TUCSON REGION

Relationships among mountains, valleys, bedrock, alluvium, drainage, mineral and water resources – earth history – and people. Limited to 80 persons. Departure time 7:30 a.m. Leader: *W. Peirce, Arizona Bureau of Mines.*

Please check your ticket!

SPOUSES' ACTIVITIES

Co-Chairpersons . . . . . Rose Marie Heidrick
Carol B. Graybeal
Art Show Coordinator . . . . . Mary P. Bull
Members . . . . . Arlene Anthony
Gloria Krier
Marta Lehman
Marnee Sell
Helen Titley
Frankie Wilkins

COFFEE: Thursday morning, March 18, 9:00 a.m.
Hall of Fame Lounge
Student Union

SPECIAL SPOUSE ACTIVITIES

Thursday, March 18 "Fiddler on the Roof"
Special performance by the Hungry Actor Playhouse,
Sponsored by WAAIMEs, lunch included, $6.50.

Friday, March 19 Trip to Arizona-Sonora Desert Museum
Transportation and box lunch, $5.00.

Friday, March 19 Special tour of Tucson Insights
Arizona Civic Theater Guild

Tucson Insights is a backstage tour of one of America's oldest and most unique cities. Its life-style is an unforgettable blend of Indian, Spanish, and Western history and culture. This memorable tour includes visits to some of our nationally prominent historic and cultural sites, a look at the local history and unusual desert flora and fauna, a look at the way of life of today's Tucsonans, a fabulous buffet luncheon, and time to browse through the patio shops of the Southwest's finest craftsmen. Tour, including lunch, is $12.00.

Spouses are also invited to attend Symposium social functions:

Thursday luncheon	$4.00
Thursday night Social Pow-Wow	$3.00
Friday luncheon	$4.00
Friday banquet	$8.00

Self-guided tours of the University of Arizona campus:
Grace H. Flandrau Planetarium
Minerals Museum
Arizona Historical Society
Arizona State Museum
Museum of Art

Additional tour information will be provided at the Spouses' Program Registration Desk.

ABSTRACTS OF PAPERS

Silicate Mineral Assemblages and Their Relationship to Sulfide Mineralization, Pinos Altos Mineral Deposit. Part 1: Regional and Local Geology – *John F. McKnight, Exxon Company, U.S.A., Tucson, Arizona 85705*

Exxon Company, U.S.A.'s Pinos Altos mineral deposit in southwestern New Mexico was discovered through regional compilation, ground follow-up, and detailed target area evaluation. The prospect lies in a broad structural uplift that contains a complexly differentiated sequence of Laramide calc-alkaline igneous rocks. The Pinos Altos monzonite-syenodiorite to quartz monzonite stock contains numerous northeast-trending metallized fissure veins. Metal zoning is indicated in these veins by abundant copper shows at the north end of the stock, and by a strong halo of lead-zinc-silver shows across the middle and south end of the intrusive complex. Similarly, replacements in a block of Pennsylvanian Magdalena limestone west of the stock indicate mineral and alteration zoning from a source at the north end of the stock. Zinc-lead mineralization at the south end of this block occurs in chloritic marble; to the north, zinc-lead-copper mineralization occurs in chlorite-actinolite skarn. At the northernmost exposure of the limestone near Exxon's deposit, copper-zinc mineralization occurs in garnet-diopside-actinolite skarns. Upfaulted, Colorado sandstone exposed over the deposit contains modest copper shows.

Silicate Mineral Assemblages and Their Relationship to Sulfide Mineralization, Pinos Altos Mineral Deposit. Part 2: Skarn Assemblages and Sulfide Mineralization – *Michael L. Fellows, Exxon Company, U.S.A., Tucson, Arizona 85705*

Copper-zinc-silver sulfide mineralization is present in calc-silicated Paleozoic strata adjacent to the north end of the Pinos Altos stock. Most of the mineralization occurs in three principle zones in impure limestones of the Pennsylvanian Magdalena Group. The favorable host rocks are covered by Cretaceous sandstone, andesite, and locally, Mid-Tertiary pyroclastic and sedimentary rocks.

Three alteration events are discernable. The first is an essentially isochemical thermal metamorphic event. The second is a metasomatic event in which iron, silica, sulfur and base metals were added to the wallrocks forming a massive garnet-quartz-calcite skarn with minor amounts of iron oxides and base metal sulfides. Major sulfide deposition began late in this metasomatic stage and continued into the subsequent retrograde alteration stage, the third alteration event. This retrograde or silicate-destructive phase took place in the presence of a hydrous fluid as temperature decreased.

Chalcopyrite, sphalerite, pyrite, magnetite, specular hematite and a variety of silver sulfides and sulfosalts are interstitial to the calc-silicates. The bulk of sulfide deposition accompanied the silicate-destructive retrograde alteration event. However, significant mineralization does occur with unaltered prograde calc-silicate assemblages.

Sulfide and iron oxide minerals are zoned with respect to the wallrock contact. Magnetite-chalcopyrite occur close to the stock and give way outwards to chalcopyrite-sphalerite and then pyrite-sphalerite.

Regional Structure of the Safford District – *Peter G. Dunn, Quintana Minerals Corporation, 2475 North Jack Rabbit Avenue, Tucson, Arizona 85705*

The Safford mining district is restricted to a 15-mile long, northwest-trending belt of Eocene igneous rocks along the southwestern flank of the Gila Range in Graham County, Arizona. It includes two major and two smaller porphyry copper deposits, and is one of the larger districts in the southwest as measured by the amount of copper metal.

Premineral andesitic extrusive rocks, including bedded and crystal tuffs emplaced in volcanic vents, have been intruded by a quartz diorite stock, a series of latite and quartz latite dikes, and several small quartz monzonite intrusions. All the rocks are co-magmatic and yield K-Ar age dates ranging from 58-52 million years. The porphyry mineralization is directly related to the quartz monzonite bodies, and is part of the magmatic sequence.

The individual deposits are controlled by N60-70E structures marked by premineral dikes and mineralized fractures. The deposits occur in structural blocks over the length of the premineral outcrop and are separated by other blocks showing only weak propylitic alteration. At present the deposits do not appear to be controlled by a single linear structure. Northeast-striking faults, which are locally mineralized, have controlled and offset the various blocks. Displacement between the blocks has been both vertical and lateral; these displacements may account for the lack of alignment of the deposits. Some of these faults have had later postmineral movement.

Northwest-striking, postmineral faults include the Butte fault, which extends the full length of the district. It offsets the Phelps-Dodge deposit, and has as much as 4000 feet of vertical displacement. A similar northwest fault has offset the Sanchez deposit, and others have controlled the oxide-supergene portion of the Kennecott deposit.

Alteration and Mineralization of the Cyprus Johnson Camp Deposit – *R.L. Clayton, Cyprus Mines Corporation*

The Johnson mineralized area is on the northeast side of the Little Dragoon Mountains in southeast Arizona. Initial mining by Cyprus Mines Corporation (1942-1957) was centered around metasomatic massive sulfide (chalcopyrite, sphalerite, and pyrite) replacement deposits largely confined to the middle member of the Cambrian Abrigo Formation. Currently, a stratagraphically controlled secondary CuOx deposit in the lower member of the Abrigo Formation is being mined by open pit methods.

The rocks of the area range in age from early Precambrian to recent, but the bulk of the economic minerals occur as skarn deposits in the paleozoics. The paleozoics lie in a slightly undulating monocline striking northwest and dipping 40° northeast. These sediments have been metasomatically altered by the intrusion of the Texas Canyon quartz monzonite stock of Tertiary age (53my-Livingston et. al, 1967). The stock is a biotite quartz monzonite characterized by K-spar phenocrysts and is infamous for its lack of copper mineralization. Interestingly, however, on the east side of the stock, wherever it protrudes or noses into the sediments, a mineral deposit has been found adjacent to and/or in line with the protrusions, i.e., Johnson, I-10, Strong & Harris and Dragoon.

The Upper and Middle Abrigo members, which enclosed the replacement deposits, were altered to white tactite (diopside, quartz, orthoclase) and garnetite (grossularite, diopside, orthoclase, and quartz). The Lower Abrigo shale has been altered to a biotite hornfels and is the horizon currently being mined.

There were two phases of a single alteration process in the district. The first phase was one of metamorphism whereby inpure carbonated rocks were altered to silicate rocks, the composition of which depended upon the dolomite-calcite character of the original sediment. The second phase was one of metasomatism in which quantities of potassium, base metals, sulfur, etc. were added via quartz veins to favorable horizons of deposition.

The Lower Abrigo hornfels have been pervasively invaded by mineralized quartz veins. Through the process of limited supergene enrichment, the deposit has been enriched about 30%. Oxidation of the secondary chalcocite and primary chalcopyrite of these quartz veins, resulted in an economical mining grade. The underlying Bolsa quartzite is an impervious unit which confined the secondary solutions to the Lower Abrigo hornfels. The principle ore minerals are chrysocolla, malachite, azurite, and tenorite(?).

A conjugate fault system formed at Johnson while the beds were still horizontal. It consisted of northwesters, northeasters and ateeply dipping easters. Following or during the tilting of the beds to the northeast during late Cretaceous time another conjugate system evolved consisting of lower angle easters, westward dipping northwesters and northeasters. Post alteration fault movement from a few inches to 1000 feet indicate reactivation of these systems, probably during the intrusion of the stock.

This system of faulting and intrusion of the stock has massively fractured the Lower Abrigo hornfels at Johnson creating a particularly amendable host for quartz veining and secondary leaching processes.

The Geology and Mineralization of Copper Creek, Bunker Hill Mining District, Galiuro Mountains, Arizona – *J.O. Guthrie, Newmont Exploration Ltd., 200 West Desert Sky Road, RFD 6, Tucson, Arizona 85704, and D.G. Moore, Jr., Exxon Company, U.S.A., 2425 North Huachuca Drive, Tucson, Arizona 85705*

The Copper Creek area is located 14 miles northeast of San Manuel on the western slope of the north-central Galiuro Mountains. It is in the Bunker Hill Mining District.

Minor outcrops of Precambrian and Paleozoic sediments are found in the eastern and northeastern portions of the district. In the north, west and south portions, there is a thick, heterogeneous sequence of andesitic and dacitic volcanics designated as Cretaceous (?) Glory Hole Volcanics.

Intrusive into these older rocks is the Laramide age Copper Creek stock. Overlying the stock is the Tertiary Galiuro Volcanics, a thick group of rhyolitic to andesitic welded tuffs, flows, ash falls and agglomerates. The Plio-Pleistocene Gila Conglomerate is in fault contact with the older rocks along the western edge of the district.

The Copper Creek stock consists of an equigranular-textured phase (Copper Creek granodiorite) and a porphyritic-textured phase (dacite porphyry). The porphyritic phase is divided into pink porphyry, feldspar porphyry and dark porphyry varieties.

The principal structural trends are east-northeast, northwest and north. These directions are expressed by fracturing, veins, faults and the shapes and alignment of the intrusives and breccias.

Spacially and chronologically associated with the dacite porphyry are the numerous breccia pipes. These features vary in size, shape and depth. The breccias consist of pebble to cobble-size, subangular to locally rounded fragments derived from the surrounding wall rock. Quartz and sericite are common intra-fragmental minerals. Locally tourmaline, sulfides, rock flour, biotite or orthoclase are present.

The genesis of the breccias is closely linked with the emplacement of the dacite porphyry stocks. Intersecting structures localize and control the emplacement of the porphyries and the shapes of

the breccias. The intrusive force of the porphyry has fractured the host rocks and this fractured zone served as a hydrothermal fluid channelway. The fluids further enhance the breccia texture by solution leaching. Collapse by shrinkage of the porphyry and possible multiple intrusive activity may also be involved in the development of the breccia.

Significant porphyry copper mineralization is present in the American Eagle Basin located in the south-central portion of Copper Creek. The copper mineralization occurs at 2000 feet or more below the surface in an area of relatively intense veining and clusters of breccia pipes and dacite porphyry plugs.

The deposit is a low sulfide system averaging approximately 3% (by weight) total sulfide. In the upper portions the sulfide is predominately pyrite. This grades downward into the ore zone of predominately chalcopyrite. Bornite and some molybdenite occur at the base and below the ore zone. The mineralization shows strong fracture and breccia control throughout the system.

Zones of pervasive alteration are not well defined at Copper Creek. In the American Eagle Basin sericite is the dominant alteration product. It is associated with the breccia pipes, veins and many of the dacite porphyry plugs. Potassic and argillic alteration occur as scattered zones. Present also in lesser amounts are tourmalinization, silicification and propylitization.

The individual veins have well-developed, zoned alteration selvages. A complete zoning sequence, beginning at the central quartz-sulfide veins and going outward, consists of: (1) quartz-sericite, (2) quartz-sericite-chlorite, (3) orthoclase and (4) sericite-clays. Some areas of pervasive quartz-sericite alteration occurs where alteration selvages have coalesced. More commonly, pervasive weak propylitic alteration is present between the veins.

Potassic alteration increases with depth below the American Eagle Basin. The ore-grade mineralization occurs in a mixed zone of breccia and fracture-controlled phyllic alteration that is superimposed on the pervasive potassic alteration. Strong potassic alteration, orthoclasization, floors the ore zone. Deep drilling in the heart of this system has encountered propylitic alteration below the potassic zone.

Geochemical Zoning at the Kalamazoo Porphyry Copper Deposit, Pinal County, Arizona – *M.A. Chaffee, U.S. Geological Survey, P.O. Box 25046, Denver Federal Center, Denver, Colorado 80225*

Since most of the exposed porphyry copper deposits in the Southwestern United States have already been found, exploration in the future will have to concentrate on locating blind deposits, including those occurring at depth within exposed rock bodies. The Kalamazoo porphyry copper deposit near San Manuel, Pinal County, Ariz. represents a known, zoned example of this type of blind deposit.

Samples of core and cuttings from four holes drilled through the Kalamazoo deposit were analyzed for bulk density and for as many as 62 different elements. Two of the holes penetrated both the alteration zones and the ore zone (0.5 percent Cu) near the top of the deposit as it existed before structural tilting. The other two holes intersected the ore zone near its roots.

The distributions of values for bulk density were compared to the distributions of most of the elements. The variations in bulk density correlate most closely (and at a highly significant level) with variations in concentrations of S and Fe. These correlations suggest that the density values are basically a measure of the pyrite content of the samples.

Of the 62 elements determined, at least 21 show distinct zones of high or low concentrations that are spatially related to the alteration zones, the pyrite zone, and the copper ore zone. Minor or trace elements provide more useful information than do most of the major rock-forming elements. Except for iron, element ratios derived from this study do not seem to provide any useful information that could not be obtained from examination of the individual elements. The ratio of Fe/Mn (and possibly ratios of Fe/Mg and Fe/Ca) can be used to separate those iron anomalies related to the pyrite zone from those related to other causes.

Evaluation of depth-versus-concentration curves for the 21 selected elements indicates that each curve exhibits anomalies of one of four types: (1) anomalies in the barren- (or low-grade-) core zone (some examples are B, Ba, Sr); (2) anomalies in the ore zone (Cu, Mo, Ag, Au, Te); (3) positive anomalies in aureoles around the ore zone (Co, V, Fe, S, Se, Au, Te); and (4) negative anomalies in aureoles around the ore zone (Mn, Rb, Cs, Tl, Zn, Pb). In addition, the locations--relative to the ore zone--of concentration peaks for the various zoned elements are reasonably consistent between drill holes, suggesting that a tentative three-dimensional geochemical model of the Kalamazoo deposit can be synthesized.

The elements forming type 2 anomalies probably are present in a roughly cylindrical zone surrounding the core zone. Most of the elements forming type 3 anomalies seem to occur in single aureoles that surround the ore zone at varying distances. However, there are two separate zones in which the concentrations of both Au and Te are high;

the inner zone coincides with the cylindrical ore zone, whereas the outer one seems to be conical in form, expanding rapidly outward with depth.

If other porphyry copper deposits with similar alteration-mineralization zoning also exhibit chemical zoning similar to that found at Kalamazoo, then element zoning should be useful in the search for other blind deposits contained within exposed rock bodies.

Geology and Mineralization of the Ray Silicate Orebody – *Neil A. Gambell, Kennecott Copper Corporation, Ray Mines Division*

The Ray orebody is owned and operated by Kennecott Copper Corporation and is located in eastern Pinal County, Arizona, eighty-five miles southeast of Phoenix. The orebody has been a major copper source since 1911, producing an estimated 2.2 million tons of copper. The bulk of this production has been derived from sulfide ores.

The Ray deposit is a porphyry copper with ore grade (0.4%+) hypogene and supergene sulfide mineralization being largely restricted to Precambrian host rocks consisting of schist, quartzose sediments and diabase intrusives.

Associated with the sulfide deposit is a complex body of silicate copper mineralization. By the early 1960's, drilling had delineated some 93 million tons of potential ore and a program of research and pilot plant studies was initiated with the objective of developing a viable extration process. Success was realized in 1969 when a vat leaching system utilizing sulfuric acid from the smelter acid plant began production.

Silicate copper mineralization is found in the Precambrian Pinal Schist, Pioneer Formation, Dripping Spring Quartzite, diabase and to a lesser extent in the early Tertiary Granite Mountain Porphyry. In postmineral rocks, significant amounts of silicate copper is present in the Whitetail Conglomerate and the Apache Leap Tuff.

The distribution of the silicate copper mineralization suggests that it developed in the core zone (low total sulfide, high chalcopyrite) of the sulfide system. Erosion, faulting and folding also played an important role in localizing the orebody. Although the work is still in progress, the deposit appears to show definite zoning patterns in secondary mineral assemblages, and it is possible to demonstrate some paragenetic relationships.

Geologic aspects which affect the amount of copper recovered by the leaching process are the ore mineralogy, gangue mineralogy, rock type, and the nature of the mineralization (vein/fracture or disseminated).

In an attempt to anticipate potential problem areas, the construction of feet percent copper and percent readily soluble of the total copper contour maps for the major lithologic types is a useful tool.

The use of the term silicate, when referring to the orebody, is due to abundance of chrysacolla however, the deposit also contains copper bearing manganese wad, copper montmorillonite and halloysite clays, copper-iron oxide complexes, malachite, cuprite, libethenite, dioptase, azurite, native copper, and chalcocite.

At the present time, 10,000 tons of silicate ore is being mined on a five-day basis. This ore is crushed to minus ½ inch, classified, (coarse fraction to leach vats slime fraction to a thickener circuit) and leached with a 35 g/l sulfuric acid solution. After a ten day leach cycle, a pregnant solution containing 20 to 35 g/l copper is sent to electrowinning. Plant life recoveries have varied from 45 to 75 percent of the total copper with the acid consumption being approximately 100 pounds per ton of ore treated. Early in 1976, a 4000 ton per day expansion of silicate ore will be initiated with the completion of a new grinding and agitation leaching circuit. This circuit will allow utilization of increased acid production brought about by environmental considerations, and yield better classification of the ore. At current operating rates, the silicate plant will produce some 23,000 tons of copper per year.

Vekol Hills Copper Deposit – *H.J. Steele, Newmont Exploration Ltd., 200 West Desert Sky Road, RFD 6, Tucson, Arizona 85704*

The Vekol Hills copper deposit is located on the Papago Indian Reservation, Pinal County, Arizona, about 25 airline miles southwest of Casa Grande on the easterly sloping pediment at the northeast edge of the Vekol Mountains.

The stratigraphic succession of formations in the vicinity of the deposit consists of the Precambrian Pinal schist and related granitic intrusives unconformably overlain by the younger Precambrian Apache group of sediments and intrusive diabase. This sequence in turn is unconformably overlain by the Cambrian Bolsa quartzite and Abrigo calcareous siltstones and shales. The Devonian Martin and Mississippian Escabrosa limestone are present in sequential

order followed by Mesozoic quartzites and conglomerates of the Phonodoree and Vekol formations. Stocks, dikes and sills of Laramide (?) quartz, feldspar and hornblende porphyries intrude all the aforementioned rocks. The sedimentary rocks strike northeasterly and dip at 30° to 40° to the northwest.

Mineralization at the Vekol Hills deposit occurs in diabase sills, quartzite, limestone, shale and sandstone of Precambrian to Devonian age. Minor mineralization is found in the Laramide (?) porphyry. Primary mineralization occurs as pyrite, chalcopyrite and molybdenite as fracture fillings and disseminations throughout the host rock. Oxidation and supergene enrichment is relatively unimportant in the total volume of mineralized material in the deposit and its distribution is dependent in part on lithology and major fracture controls.

Induced Polarization Depth Penetration in Exploring for Porphyry Coppers – *C.L. Elliot, Elliot Geophysical Company, Tucson, Arizona, and H. David MacLean, Newmont Exploration Ltd., Tucson, Arizona*

The induced polarization responses of a mineralized system measured at surface is a function of several factors:

1. the spacing of the electrode configuration,
2. the physical dimensions of the mineralized system,
3. the intrinsic response of the system,
4. the resistivity distribution of overlying or surrounding materials.

The depth penetration of a given induced polarization survey system is then a function of all of these parameters and each must be considered separately, and in relationship with the others.

These factors might be summarized in the expression

$$R = \Sigma B_j \Delta_j$$

where Δ_j is the physical property contrast and B_j is a weighting coefficient which is primarily dependent on the geometry of the responsive zone and the sensor. The physical property contrast associated with porphyry copper systems is generally small, but in the case of shallow systems, the above equation can be completely dominated by an appropriate electrode spacing which keeps the weighting coefficient associated with the porphyry copper system large in relation to that associated with the surrounding less responsive material. However, when target depths increase, this relationship is maintained only with increasingly greater difficulty.

The typical southwestern porphyry copper system presents an oval subcrop pattern having dimensions of about 3,000 to 6,000 feet (Guilbert and Lowell, 1974). Thus for shallow systems, limitations imposed by the size of the mineralized system relative to the size of the electrode array employed, are not significant. Nor is the intrinsic response parameter, in as much as the typical porphyry copper deposit is surrounded by a highly responsive pyritic halo. While conveniently ignoring these factors, it has also been possible to disregard the effects of the overlying resistivity distribution; the spacing of the electrode configuration could be simply increased to the point where the response attenuation from resistivity changes could be disregarded.

Even allowing for a substantial pyritic halo, the dimensions of porphyry copper systems impose an absolute limit on the electrode spacing when search depths approach 1500 feet or more. Further, electrical noise at the larger electrode spacings effectively dictates a maximum separation. Although sophisticated survey equipment and procedures can minimize somewhat the problem of noise from the instrument and from other sources, geologic noise cannot be removed so easily. At the point where the geometric factors affecting the surface IP response become relatively inflexible, then the resistivity of the overlying media becomes the dominant influence on the depth at which a mineralized system can be recognized from the surface.

The theoretical IP response of systems buried by multiple resistivity layers for a variety of commonly used electrode arrays has been calculated by one of the authors (Elliot) of this paper. Dramatic attenuation of the IP response from a mineralized system at a given depth is occasioned by either reducing or increasing the resistivity of a single overlying layer. Additionally, the more typical two-layer overburden consisting of dry and wet gravel further attenuates and complicates the response; the contribution of the overlying media is negative under certain resistivity conditions and thus sometimes completely masks the response of the target systems.

The resolution of the resistivity distribution of overlying strata is essential to the analysis of the depth penetration of a given IP survey system and a knowledge of the shallow or near surface layers becomes increasingly important as the resistivity section becomes more complex. Thus, no matter how great the anticipated depth of a target zone, closely spaced electrode configurations are essential so that the resistivity section can be

analyzed and a suitable array for the expected exploration depth can be devised. Under certain adverse conditions where the electrode spacings are limited by electrical noise or target size considerations, the resistivity relationship of the target and overlying media might limit the search depth of conventional IP exploration systems to unacceptably shallow depths.

The depth of penetration of IP systems where the electrode spacing is limited, is almost entirely a function of resistivity, and this factor must be critically analyzed before an estimate of search depth can be made. By a careful choice of IP electrode arrays and survey procedures based on measurements from an orientation survey, detection of mineralized systems at depths of 1500 to 2,000 feet is possible with conventional systems. No doubt even greater depths will be possible under favorable resistivity conditions and as more effective electrical noise suppression techniques become available.

Geology and Mineralization of the Lights Creek Stock, Plumas County, California – *L.O. Storey, Placer Amex, Inc.*

The Lights Creek stock is located in northern California about 100 miles northwest of Reno, Nevada. It is within the Sierra Nevada physiographic province near its juncture with the Cascade and Basin and Range Provinces. Structurally it is closely associated with Basin and Range type features. The area is thought to lie within the influence of the Walker Lane structural lineament and may also be affected by the eastward projection of the Mendocino fracture zone.

The Lights Creek stock is of late Jurassic to early Eocene age and was emplaced as a differentiated satellite of the Sierra Nevada Batholith. The stock hosts at least three large porphyry type copper bearing zones. These zones are at the site of the old Superior Mine and at the newly discovered Sulfide Ridge and Moonlight Valley areas. Geologic reserves at a 0.2% copper cutoff for the Moonlight Valley are estimated at 250 million tons of 0.35% copper. For Superior Mine the reserves are approximately 100 million tons of 0.33% copper. An undetermined large tonnage of low-grade material in the Sulfide Ridge area is estimated to grade approximately 0.25% copper.

Petrographic studies indicate that the stock is of a heterogeneous composition with a granodioritic center grading outwardly to a granitic periphery. The peripheral areas of the stock are also shown to be more fractured, exhibit the most copper mineralization, and have a higher degree of potassium feldspar.

There is a most striking association of copper sulfides occurring with tourmaline as intergrowths in veinlets and disseminations. The abundant tourmaline suggests a late pneumatolytic vehicle for at least some of the ore.

There is a lack of characteristic alteration zonal patterns in the Lights Creek deposits. Alteration assemblages of minerals are present locally and occur overlapping in the ore areas; however, strong and discreet zonation is not apparent. The low sulfur content in the ore zones, as well as the possible contribution of late pneumatolytic copper to the ore zones rather than abundant hydrothermal ore, may account for the unusual mineral assemblages at Lights Creek.

It is suggested that the Lights Creek type of copper occurrences are not easily recognized because of their unique mineral assemblages and that these low-grade types with relatively fresh appearing outcrops could become the ore bodies of the future.

Controls of Oxide Copper Mineralization, MacArthur Property, Lyon County, Nevada – *David A. Heatwole, The Anaconda Company*

The MacArthur deposit is an outcropping, oxidized porphyry copper occurrence located approximately 5 miles north of Anaconda's Yerington mine, Lyon County, Nevada. A significant tonnage of ore was developed on the property in 1971-72.

The Jurassic quartz monzonite host rock of the deposit is intruded by two types of quartz monzonite porphyry and a rhyolite, also Jurassic in age. Two varieties of Tertiary hornblende andesites constitute the youngest rocks in the deposit. All of the intrusive rocks, except the older quartz monzonite, occur as northwest-trending dikes which dip moderately to the north.

Low grade sulfide copper mineralization accompanied the intrusion of the older quartz monzonite porphyry. The alteration pattern associated with the Jurassic intrusive was strongly influenced by the northwest fracture pattern, and generally consists of a phyllic zone to the north and west, a very weakly potassic central zone, and a strong albite zone to the east.

Oxide copper values occur in three distinct mineral assemblages: (1) green copper oxides (2) black copper wad (3) dark brown limonites.

Copper and iron are crudely zoned in the oxide mineralogy with a high iron to copper ratio in the north and west parts of the orebody, and low iron to copper oxide assemblage to the east. Economic grade oxide copper zones on the MacArthur property are erratic and difficult to project. Although poorly defined, several geologic features appear to be controlling the grade distribution:

Major Controls

1. Primary Grade Distribution - Higher grade oxide zones occur where the original sulfide grade was higher.

2. Exotic Copper or Oxide Enrichment - Supergene copper from the peripheral phyllic zone has moved laterally to enrich the low-grade porphyry copper center.

Minor Controls

1. Superleach Zone - Copper values leached from the present bedrock surface are redeposited several feet below.

2. Andesite Dikes - Unpyritized andesite dikes absorb exotic copper.

3. Fracture Pattern - Strong northwest-trending fracture pattern imparts similar trends to the grade zones.

4. Oxidized Enrichment - Deep zone of oxide mineralization immediately above the top of sulfide may represent an oxidized enrichment blanket.

The MacArthur deposit is an oxidized, low grade porphyry copper deposit which has been locally enriched by exotic copper. The probable source of the exotic copper was primary sulfide mineralization peripheral to the porphyry center.

Alteration and Distribution of Sulfide Mineralization at Copper Canyon, Lander County, Nevada – *David W. Blake, Duval Corporation, Battle Mountain, Nevada 89820; Ted G. Theodore, U.S. Geological Survey, Menlo Park, California 94025; and Edward L. Kretschmer, Duval Corporation, Battle Mountain, Nevada 89820*

Hypogene sulfides, thermal metamorphism products, and hydrothermal alteration are related systematically to an altered granodiorite laccolith that intruded Paleozoic sedimentary rocks at Copper Canyon, Nevada, during the middle Tertiary. Associated with this granodiorite are two commercial Cu-Au-Ag porphyry deposits that formed exclusively in the adjacent wallrock. Total sulfide content in the granodiorite is generally less than 2 percent; uneconomic molybdenite mineralization occurs only in the granodiorite and its immediate wallrock. The granodiorite is surrounded asymmetrically by a widespread and very irregularly shaped high-sulfide shell where the total sulfide content is greater than 2 percent; this asymmetry probably reflects both structural and chemical controls. All known Cu-Au-Ag ore bodies are within the high-sulfide shell and their economic boundaries are closely defined by rock having more than 1 volume percent pyrrhotite. The ore bodies are for the most part in rock with the lowest pyrite to chalcopyrite ratios determined for this porphyry system. In addition, two other high sulfide-low Cu areas contain significant Au with minor Ag.

Alteration effects at Copper Canyon are a combination of contact metamorphism and later hydrothermal products that have produced an irregular concentric pattern about the altered granodiorite and are represented outward by potassic, phyllic, transitional and propylitic zones. The potassic zone coincides with the Cu-Au-Ag mineralization and it includes the strong development of secondary biotite and K-feldspar.

Recent Geological Developments at the Bagdad Porphyry Copper Deposits, Eureka Mining District, Yavapai County, Arizona – *Purnendu K. Medhi, Cyprus Bagdad Copper Company, Bagdad, Arizona*

Cyprus Bagdad Copper Company and its predecessor companies have been operating at the Bagdad porphyry copper deposit for the last four decades. Mining and milling capacity of the present operation is six thousand tons per day, and the deposit is now being prepared for production at a mining and milling rate of forty thousand tons per day. The expanded operation is scheduled to go on stream by December, 1977.

The regional geology is characterized by a section of metamorphosed sediments which is intruded by felsic to basic intrusive rocks of Precambrian age. This Precambrian metamorphosed and igneous complex was intruded by a series of stocks, plugs, and dikes during the Laramide age. These intrusive bodies form a seven mile long belt along a N60°-70°E trend. At present, the Bagdad stock is the largest and only productive intrusive body in this belt.

The Bagdad stock, which hosts copper-molybdenite mineralization, is a granodiorite/monzonite/quartz monzonite porphyry intrusive. Within this single major intrusive unit, separate intrusive rock units are recognized, though chemical, mineralogical, and age relationships are not completely known.

Hypogene sulfides consist of chalcopyrite and pyrite with a minor amount of molybdenite, which occurs primarily in veinlets and microveinlets and, to a lesser degree, are disseminated in zones of pervasive alteration. A close relationship exists between certain silicate mineral assemblages and hypogene sulfide minerals.

Four major types of silicate alteration assemblages are: 'biotite-albite-orthoclase-quartz-sericite', 'biotite-orthoclase-quartz-sericite, 'Quartz-sericite-clay', and 'clay-chlorite-quartz-sericite'. These silicate mineral assemblage zones are in part overlapping, vertically as well as laterally.

From the present data, it is hard to speculate on the pattern of concentric zoning of alteration, as typically observed in some porphyry copper deposits of the world. However, Bagdad porphyry copper deposit exhibits certain similarities in regard to alteration and mineralization to most of the porphyry copper deposits of the southwestern United States.

The Root Zone Characteristics of Porphyry Copper Systems as Identified at the Little Hill Mines Area, Pinal County, Arizona

– William Perry Durning, SAGE Associates, Tucson, Arizona

Root zone characteristics of porphyry copper systems have been infrequently and inadequately described in geologic literature. The best published information of which I am aware are Sillitoe's 1973 paper "Tops and Bottoms of Porphyry Copper Deposits"; Lowell and Guilbert's 1970 paper "Lateral and Vertical Alteration and Mineralization Zoning in Porphyry Ore Deposits"; and Hollister, Potter and Barker's 1974 paper "Porphyry Type Deposits of the Appalachin Orogen". However, the best information on porphyry copper root zones is unpublished and exists only in private company files.

Recognition of a porphyry copper root zone at the early stages of a property evaluation program is extremely important in establishing its exploration potential. The purpose of this presentation is to outline some of the important characteristics of the root zone as an aid to the exploration geologist. The root zone characteristics discussed in this paper were identified by the author at the Little Hill Mines area during detailed geological, geochemical and geophysical surveys and drilling for a University of Arizona Masters Thesis and a property evaluation by AMAX Exploration, Inc. Geological and other data collected at Little Hill support the root zone interpretation; however, conclusive proof does not exist since erosion or faulting has removed all overlying economic mineralization.

The Little Hill Mines area is located about 25 miles north-northeast of Tucson, Arizona on the northwest flank of the Santa Catalina Mountains. The principle rock types are Precambrian schist, gneiss and quartz monzonite. A quartz monzonite of probable Laramide age is intruded along the Precambrian gneiss-quartz monzonite contact. These older rocks are all intruded by Tertiary rhyolite, latite and monzonite dikes.

The Mogul fault trends west-northwest and is the dominant structural feature at Little Hill. The fault shows a minimum of 4,500 feet of throw and 1,500 feet of left lateral displacement. Movement on the Mogul is both premineral and postmineral. Other faults, foliation, mineralized joints and veins often have a strike parallel or sub parallel to the Mogul fault.

Alteration and mineralization at Little Hill covers an area roughly 8,000 x 4,500 feet. The alteration and mineralization can be divided into three zones: the inner, middle and outer. These zones are defined hy specific alteration suites which roughly correspond with copper grade and pyrite to chalcopyrite ratios. The alteration-mineralization zones form a non-concentric pattern elongated along the Mogul fault and truncated by the fault to the south.

The inner zone alteration and mineralization covers an area of about 3,500 x 1,000 feet and roughly coincides with the eastern two-thirds of Laramide (?) quartz monzonite outcrop. Alteration in this zone is characterized by quartz veins, quartz flooding, secondary K-feldspar, as veinlets and reaction rims on plagioclase, magnetite and minor sericite, and chlorite. Mineralization in the inner zone is tr. to 0.75 volume percent sulfides in quartz veins and locally as disseminations. Copper values are low 0.02-0.07%, and the pyrite to chalcopyrite ratios range between 1:1 and 5:1.

The middle alteration and mineralization zone is 5,000 x 2,000 feet, abuts and locally surrounds the inner zone on the east, and extends to the east of the inner zone along and to the north of the Mogul fault. Alteration in this zone is characterized by quartz veins, sericite dusting of plagioclase, secondary K-feldspar, magnetite, biotite, chlorite, and minor carbonate, clay and epidote. Mineralization consists of 0.25-1.00 volume percent sulfides which occur as blebs of pyrite, chalcopyrite and minor molybdenite. Seventy to eighty percent of the sulfides occur in veins. Copper values average 0.10 to 0.25 percent and decrease with depth. Pyrite to chalcopyrite ratios range between 1:1 to 4:1. This middle zone is roughly outlined by rock chip copper geochemical values > 600 ppm.

The outer zone alteration and mineralization forms a wide envelope 8,000 feet long and up to 4,500 feet wide around the inner and middle zones. Alteration minerals in this zone are principally chlorite, epidote and magnetite and minor sericite, quartz, clay and carbonite locally; in high pyritic areas, sericite alteration may be strongly developed due to supergene processes. Mineralization is primarily pyrite with minor magnetite, molybdenite and chalcopyrite. Sulfide content ranges from 0.25 to 3.00 volume percent which occurs mostly in veins and vein envelopes. Copper values are 0.01 to 0.03 percent and the pyrite to chalcopyrite ratio is 10:1 or greater.

At Little Hill the equigranular Laramide quartz monzonite, the inner, middle and outer zone alteration suites, the textural occurrences of the alteration minerals, the low total sulfides, the abundance of magnetite, the decrease in copper values with depth and the bleb-like nature of the sulfides are consistent with root zone features identified by other authors in the sparse literature published on root zones.

Superficial similarities of alteration and mineralization in the root and hood zones of a porphyry copper system may in some instances permit their confusion with one another. Some of the characteristics which may distinguish the root zone from the hood zone are:

	Root Zone Characteristics		Hood Zone Characteristics
1.	Equigranular mineralizing intrusion.	1.	Porphyritic mineralizing intrusion.
2.	Intrusion shows quartz veins, quartz flooding, secondary K-feldspar, magnetite, and minor sericite and chlorite alteration.	2.	Intrusion shows propylitic to argillic alteration.
3.	Most intense alteration typically occurs adjacent to veins. Between veins, rock appears fresh.	3.	Alteration pervasive but may be strongest near veins.
4.	Akali feldspar occurs as rims and veinlets.	4.	Alkali feldspars may occur in veinlets.
5.	Low total sulfide (0.25-3%). High sulfides spotty in occurrence.	5.	Low to moderate or high total sulfides (1-10%).
6.	Bleb sulfides in vein envelopes.	6.	Fine grained disseminated sulfides.
7.	Low pyrite to chalcopyrite ratios (1:1 to 5:1) in inner and middle zones.	7.	High pyrite to chalcopyrite ratio (> 10:1) throughout.
8.	Copper grade decreases with depth.	8.	Copper grade increase with depth.
9.	Introduced magnetite present to abundant. Magnetite may replace pyrite or occur in veinlets.	9.	Primary magnetite present but often replaced by pyrite.
10.	Pb, Zn, Au, Ag mineral zoning absent or poorly developed.	10.	Pb, Zn, Au, Ag mineral zoning often present.
11.	Breccia pipes are rare or absent.	11.	Breccia pipes frequently present.

These root zone features have been seen at Little Hill and other areas but studies are insufficient to support their widespread use outside the southwestern United States porphyry copper province.

If a prospect is identified as a root zone it may be concluded: 1) Copper grade will not increase with depth; 2) Secondary enrichment is unlikely; 3) If the root zone is exposed due to fault uplift the productive portion of the porphyry copper system may be preserved on the down thrown side; 4) Significant copper oxide occurrences may be present; 5) Skarn or replacement deposits may be present if favorable host rocks occur in the vicinity of the intrusion.

Tectonic Setting of the Porphyry Copper Deposits of Southeastern Arizona and Some Adjacent Areas – *Harald Drewes, U.S. Geological Survey, Box 25046, Denver Federal Center, Denver, Colorado 80225*

The major mineral deposits of southeastern Arizona and the adjacent parts of Sonora, New Mexico, and south-central Arizona occur in tectonically complex parts of the Basin and Range geologic province. This complexity is the cumulative result of at least 3 periods of severe and diverse kinds of regional deformation, as well as of some local disturbances. The oldest faults of the region are major northwest-trending basement flaws that were recurrently active. Next, the Laramide orogeny resulted in the development first of thrust faults and then of magmas and mineralizing fluids. Finally, the Basin and Range block faults formed. Although most of the major mineral deposits of the region, among them the renowned porphyry copper deposits, are temporally associated with the Laramide orogeny, they are spatially associated with the oldest faults. Furthermore, conditions arising from the youngest period of deformation have modified the deposits in many ways. A synthesis of the entire geologic development of the region thus is a vital key to understanding at least the distribution of the major ore deposits, if not also some of their individual features.

During the Precambrian, at least some of the major northwest-trending faults were formed in what are now the crystalline basement rocks. This early movement and some subsequent movement probably was left slip, and the amount of the earliest horizontal movement on one fault may have been about 15 km (10 mi). Some faults of this system were activated or reactivated during the Triassic, Jurassic, and Early Cretaceous; many of them were reactivated during the Paleocene; and some segments were reactivated during mid-Tertiary and even later times. These northwest-trending basement flaws were probably the main conduits for upward-moving magmas and mineralizing fluids at least since the Triassic, for many stocks were emplaced along the faults and all major mineral deposits lie within a few kilometres of the faults. A critical feature of these faults is that they were not active synchronously in Triassic and younger times, but that they did provide a structural anisotropy which guided the development of many subsequent features. Consequently, the geologic record varies, not only from fault to fault, but also from one segment of a major fault to another. Under these circumstances it is no wonder that their extent and perhaps their significance has not been fully appreciated, although they have been flagged by such workers as Harrison Schmitt, Kenyon Richard, Harold Courtright, and Evans Mayo.

During Late Cretaceous time, and perhaps somewhat later toward New Mexico, a regional thrust sheet formed near the surface in response to northeast-directed compressive stress. The allochthon extends northwest, west and south of the Little Dragoon Mountains near Benson, Arizona, and it extends east at least to the New Mexico border, about 15 km (10 mi) south of Interstate Highway 10, and probably on eastward to the El Paso area. The allochthon consists of several subordinate thrust sheets that are broken by many minor thrust faults, tear faults, and disharmonic normal faults; locally the thrust sheets are also folded.

The role of the thrust faults in the distribution of the major mineral deposits is secondary to that of the northwest-trending basement flaws, apparently because the thrust faults were relatively shallow features. In most places mineralization and plutonism of Laramide age followed the period of major thrust faulting. That being the case, the actual amount of northeastward thrust movement is of little consequence to the mineralization. Major ore bodies probably occur in the allochthon because it was present in the zone of appropriately decreasing pressure and temperature near the surface and because it contains many rocks having a composition favorable to mineral deposition. However, in some mining districts, such as Tombstone and Helvetia, the minor structures related to the thrust faults provided second-order and third-order conduits for mineralizing fluids migrating away from the master faults as they moved upward. Nevertheless, the thrust faults and mineralization may be related indirectly, for the compressive deformation of the rocks at the surface is probably genetically linked to the generation of magma and mineralizing fluids at depth through the underthrusting of an extensive crustal plate. Further speculations in this direction are more appropriate to the tectonic synthesis of a much larger region than southeastern Arizona.

During Oligocene and later time the region was deformed again, this time in response to east-west-oriented tension. This stress condition led to the development of normal faults, grabens, and tilted blocks typical of the Basin and Range province, and it permitted upward movement of additional magma and locally also of some ore fluids. In a few places domes of gneiss and fault blocks were raised. Where older faults were suitably oriented, the normal faults were deflected from a north-south orientation. Thus, some segments of the basement flaws were reactivated as normal faults. Some of the uplifted areas rose so rapidly and so far that the gross topographic imbalance led to gravity sliding and low-angle normal faulting. Where the gravity faults were subparallel to thrust fault segments these segments were reactivated. Where the gravity faults cut rocks that were previously thrust faulted, intruded, or mineralized, the earlier features were moved piggyback fashion by the younger gravity faults, such as happened on the San Xavier fault on the east flank of the Sierrita Mountains and in the Rincon Mountains. This last period of major deformation, then, guided the development of the present topography, helped to determine the depth of exposure or of burial of mineral deposits, and influenced the development and distribution of secondary mineralization.

From the foregoing review of the tectonic development of southeastern Arizona and the relations between this development and mineralization several conclusions may be drawn: (1) In order to understand the distribution of the major mineral deposits both the regional geology and the local geology near the deposits must be known; it is as important to know the total geologic development of an area as it is to know just the events of the period of major mineralization. (2) In southeastern Arizona and adjacent areas the distribution of the northwest-trending basement flaws appears to be a key to the distribution of the major ore bodies. The most favorable segments for mineralization are those which contain a scattering of intrusives and host rock alike, not those which are obliterated by intrusive bodies or devoid of such bodies. Geophysical methods may be useful in testing the presence and distribution of the master faults herein outlined, for even where concealed they may separate rocks of contrasting geophysical signature. (3) Prime ground for mineralization typically lies in favorable rock along secondary structures a few kilometres from the master faults. Perhaps a systematic study of the direction of ore fluid movement and of the optimum distance from the master faults (and/or depth at which mineralization occurred) would provide guidance to further restricting exploration targets. (4) More must be learned of events and conditions at the depths in which ore fluids and metal sources arise, so that regional tectonic patterns may be better utilized in economic exploration.

Structural Reconnaissance of the Southwest Porphyry Copper Province – *Thomas W. Mitcham, Pangea Resources, 6644 North Amahl Place, Tucson, Arizona 85704*

Some preliminary conclusions are suggested by results to date of a structural reconnaissance of the Province which is in progress. The reconnaissance essentially involves mapping of faults from synoptic views presented on available high-altitude photography and hyper-altitude imagery. The faults are being platted by inspection onto USGS topographic base maps, variously 7.5-minute, 15-minute, and

1 x 2 degree quadrangles. As illustrated by selected examples displayed, proved and indicated faults are shown by solid lines, and inferred faults by dashed lines. An attempt is made to express order of magnitude of fault movement by weight of line.

A perusal of 27 newly mapped quadrangles suggests that generally fault density (in terms of miles of fault trace per square mile) greatly exceeds that indicated by published maps. This, of course, should be no surprise to those who have conducted detailed geologic mapping within mining districts. The following examples of fault densities are computed minimum figures because, in all cases, more intense mapping would undoubtedly increase the mapped fault density.

Quadrangle	Size	Fault density miles tr./sq.mi.	Remarks
Chloride AZ	7.5'	5.40	this reconn.
Clifton AZ	15'	3.31	this reconn.
Grand Canyon-Williams AZ	2°	0.38	this reconn.
Haunted Canyon AZ	7.5'	7.68	this reconn.
Haunted Canyon AZ	7.5'	1.90	Peterson (1960)
Santa Rita NM	7.5'	3.95	Jones,et al (1967)

Santa Rita is possibly unique among published quadrangle maps in the Province because of a combination of circumstances, which accounts for the display of a fault density which is unusually high among published maps of large areas. These circumstances include a long district history of intense mapping, numerous widespread underground workings, and a relatively thin stratigraphic section with a number of excellent marker beds and some very useful marker sills.

Some of the variations in fault density in the above tabulation are due to quadrangle size, i.e., fault details are mapped with greater facility on larger scales.

To date in this reconnaissance, fault mapping has been accomplished for a total of 24 smaller quadrangles (7.5 and 15-minute) in the Province. The results of this "sampling" suggest that the average miles of fault trace per 15-minute quadrangle in the Basin and Range portion of Arizona is at least 800 miles, including an extrapolation into suboutcrop beneath thick basin-fill deposits.

In addition to revelations of relatively high fault density, even on the Colorado Plateau (Grand Canyon-Williams quadrangle), faults and patterns of fault systems mapped to date suggest the following tentative conclusions:

(1) Faults in the Province are interconnected, i.e., regardless of strike length (100's of feet or over 100 miles), faults terminate at intersections with other faults, with only rare exceptions. The entire Province is so structured by an intricate, interconnected fault system that a given local geologic event may be related to others hundreds of miles away. The events may include igneous intrusive and extrusive events and mineralization.

(2) Strikes of individual faults within the Province system variously and widely represent about every compass bearing, although preferred sets are dominant locally. In form, strikes are variously sinuous, irregular, and arcuate, as well as relatively straight.

(3) Fault patterns generally do not vary significantly from one terrane to an adjoining terrane, even where the terranes are in sharp contrast, e.g., Precambrian isoclinally folded metavolcanics vs. Miocene flat-lying ash flows.

(4) Fault density is high, and faults are easily mapped in most pre-Pliocene rocks, even under relatively unconsolidated cover where the cover is thin--less than 100 feet, but density of detectable faults drops off sharply in thick Pliocene-Recent sedimentary basin-fill and valley-fill deposits. However, faults in basalt fields as young as Pleistocene are commonly detectable, and these frequently represent recurrent movement on older faults.

(5) A large percentage of the faults in the Province are probably recurrent over extensive periods of time, but this concept is difficult to test because the necessary critical data are only rarely available. Circumstances somewhat unique in the Santa Rita district, referred to above, have resulted in so many critical readings on the Ground Hog-Ivanhoe-Lovers Lane fault that this ore-controlling fault may be the most thoroughly measured fault in the Western Hemisphere. A total of 5 periods of movement are established, 2 being preore and 3 being postore. Without significant change in attitude, this fault, which is probably the master mineralizer of the Santa Rita mining district, cuts and offsets postore volcanic cover rocks updip from ore.

The San Xavier Fault, Pima Mining District, Arizona – *Louis J. Jansen, ASARCO Inc.*

The San Xavier fault is a low angle, undulating surface underlying approximately 50 square miles of the northeastern pediment of the Sierrita Mountains, south of Tucson, Arizona. This fault has long been recognized as a major post-mineral structure separating ore bearing rock in the upper plate from barren rock in the lower plate or footwall. Three large open pit copper mines, (Mission, Pima and San Xavier North), and numerous smaller underground mines are located in the upper plate.

The upper plate includes Precambrain granite, Paleozoic and Mesozoic rocks, Laramide quartz monzonite porphyry, and the Helmet fanglomerate. The thickness of this upper plate ranges from a few tens of feet along the outcropping portion to approximately 2,000 feet in the central trough. The lower plate is dominantly Precambrian granite and granodiorite.

The Helmet fanglomerate crops out in the southern part of the upper plate north of Twin Buttes. The location of the Helmet fanglomerate roughly coincides with the central trough of the San Xavier fault, and this fault forms the basal contact of the fanglomerate.

The outcrop of the south and west margins of the fault is roughly arcuate-shaped, opening to the northeast. A structural contour map of the fault surface, based on several hundred drill hole penetrations, reveals a central, northeast-plunging trough, with steeper dipping southern and western flanks. As presently delineated, the fault extends north from Twin Buttes approximately 8 miles, and is about 6 to 8 miles across the widest portion.

There are two published hypotheses regarding the age and direction of movement of the San Xavier fault, and the formation of the Helmet fanglomerate. The first (Cooper, 1960) proposes that the upper plate moved northward approximately 6 miles from the area of Twin Buttes, during post-Helmet time. The second (Weaver, 1965) proposes gravity sliding of the upper plate to the east into a tectonic basin being formed by the rising Sierrita batholith. The Helmet fanglomerate was later shed into the same tectonic basin onto the upper plate. A recent paper (Lukanuski, 1975) suggests that the Helmet fanglomerate and other, similar formations in southern Arizona, were formed in local, rapidly developing, tectonic basins undergoing tilting.

Comparison of geologic features in the upper plate with the area south of Twin Buttes; microstructures in the Helmet fanglomerate; and the basal fault contact of the Helmet fanglomerate favor a northward direction of movement in post-Helmet time, or perhaps contemporaneous with Helmet formation.

The record of geologic events in this part of the Pima Mining District includes: pre-intrusive, pre-mineral faulting and folding with a general northwest trend; Laramide intrusion and mineralization; development of the San Xavier fault and northward movement of the upper plate; and high angle normal faulting of the upper plate and the San Xavier fault.

Geology of the San Xavier North Porphyry Copper Deposit, Pima Mining District, Arizona – *John R. King, ASARCO Inc.*

The San Xavier North porphyry copper deposit is located on the Papago Indian Reservation about 15 miles south of Tucson. Events which led to its development began in 1955 with the discovery by Asarco geologists of porphyry copper type alteration and mineralization in two small outcrops surrounded by alluvium. Subsequent drilling delineated a deposit containing an oxide copper zone, a chalcocite zone, and a primary sulfide zone. Initial production began in 1968 with the mining of copper-bearing silica flux. Production of copper oxide ore began in 1973 at approximately 4,000 tons per day.

The deposit occurs entirely within Cretaceous clastic rocks and intrusive quartz monzonite porphyry. The clastic rocks include arkosic sandstones and interbedded fine-grained siltstones, possibly equivalent to the Amole Arkose in the Tucson Mountains. The sedimentary rocks were folded prior to porphyry intrusion and hydrothermal activity. A low-angle fault, that is probably a continuation of the San Xavier gravity slide, separates the mineralized rocks from underlying unaltered Precambrian granite.

Hypogene ore grade mineralization averages nearly 0.5% copper and is confined to the clastic wall rocks in an arcuate zone adjacent to the main porphyry mass. The sulfide system contains 1-4 volume percent sulfides with a pyrite:chalcopyrite ratio varying from 10:1 in the pyrite shell to 0.5:1 in the ore zone. Stratigraphy exerts an important control on the distribution of chalcopyrite. The siltstones average about twice the copper grade of the coarser-grained sandstones. Molybdenum and silver mineralization is concentrated within the ore zone and porphyry.

Phyllic alteration is pervasive in all rock types within the sulfide zones; however, the strength of phyllic alteration is greatest in the pyrite shell at or near its interface with the chalcopyrite zone. Quartz veining is most abundant in the ore zone with only minor occurrences in the pyrite shell and porphyry.

Supergene enrichment is two-fold or greater in the chalcopyrite zone where chalcocite selectively replaces chalcopyrite in preference to pyrite. In these areas a blanket varies from 30 to 100 feet thick and grades in the range of 0.6 to 1.0% copper. The chalcocite blanket does not conform to bedrock topography and the eastern part of the enriched zone is partially oxidized and eroded. The copper oxide zone consists of a mixture of chrysocolla, malachite, neotocite, melaconite, and minor azurite and represents in-place oxidation of preexisting chalcocite. The oxide copper grade is approximately 0.8% copper.

Current interpretations are that the formation of the supergene deposit occurred prior to or during the formation of the Mid-Tertiary Helmet Fanglomerate. Partial oxidation occured after Mid-Tertiary faulting before the deposition of the alluvial gravels which then covered and, to a great extent, preserved the deposit.

Geologic Summary of the Cyprus-Pima Mine – *Joseph D. Langlois, Cyprus-Pima Mining Company*

The Cyprus-Pima orebody falls within the class of porphyry copper deposits and is of probable Laramide age. Since discovery in the 1950's, over 100,000,000 tons of ore have been milled with production of mill feed currently exceeding 50,000 tons per day. Ore grade primary chalcopyrite mineralization is present to varying degrees in Paleozoic and Mesozoic sedimentary rocks that are intruded by a weakly mineralized, altered quartz monzonite porphyry of Tertiary age. These rocks are separated at depth from a barren granite by a gently dipping mylonite zone. Alteration has resulted in the development of various hypogene mineral assemblages depending in part on initial wall rock composition. Igneous and clastic sedimentary rocks show typical assemblages of the potassic, phyllic, and propylitic types. Paleozoic carbonate rocks have been partially altered to a complex group of hornfels. Structural complexity characterizes the Cyprus-Pima deposit with both high angle and low angle faults of pre-Laramide to Miocene age. The mylonite zone separating strongly to weakly mineralized rocks from barren granite at depth is correlated with the San Xavier fault. Ore grade mineralization is present both as veinlets and disseminations with the major copper sulfide as chalcopyrite. Scattered, discontinuous bodies of chalcocite are present only in minor quantities near the relatively shallow base of oxidation. Major ore controls appear to be primarily structural with lithologic controls exerting a secondary influence. Both the Mesozoic and Paleozoic sedimentary rocks were thoroughly brecciated by crackle zone and other intense fracturing with the bulk of the ore tonnage occurring in the Mesozoic clastic rock sequence.

Stratigraphy, Alteration, and Ore Controls in the Main Ore Zone, Twin Buttes Mine, Pima County, Arizona – *Charles F. Barter, The Anaconda Company*

The Twin Buttes and Sierrita-Esperanza deposits are located at the two known mineralization centers on the eastern side of the Sierrita Mountains. Both centers are characterized by plugs and dikes of quartz monzonite porphyry intruded along the southern and southeastern flank of a Laramide granidorite batholith.

At Twin Buttes, a southeast-trending, elongate mass of quartz monzonite with a variety of related porphyries extends from the batholith and intrudes the Paleozoic and Mesozoic sequences. A thermal and metasomatic aureole has been formed around this intrusive complex. The Paleozoic through Laramide rocks are covered by 300 to 600 feet of gravels; the lower portion of which is of probable Pliocene age. The Twin Buttes deposit is segmented by post-mineralization, northeast-trending normal faults and low-grade intrusives. The main ore zone is located on the southwest side of a quartz monzonite porphyry mass dated at 58 million years.

The Mesozoic sequence in the main ore zone is folded into an open syncline. At the top of this sequence is the two-member Angelica Arkose. The Angelica is underlain by volcanics and clastics of Triassic and possible Jurassic age. An angular unconformity separates Triassic from younger Mesozoic rocks. At the base of the Mesozoic is a carbonate-rich conglomerate which overlies the Paleozoics along a 50° southwest dipping angular unconformity.

The Paleozoics generally have steep northeast dips and are strongly folded. The youngest, northermost, Paleozoic in the main ore zone is the Permian Concha Limestone and the oldest is the Earp Formation. Between these formations are a three-member Scherrer Formation, a four-member Epitaph Formation, and the Colina Limestone.

Alteration in the Mesozoic clastics and volcanics consists of partial recrystallization, biotization and later sericitization developed most strongly along quartz-sulfide veinlets. In these rocks, there is a general decrease in biotite and an increase in epidote and pyrite away from the intrusive. Only the Angelica Arkose contains persistent unenriched grades above 0.4 percent copper.

Early skarn formation in the Paleozoic carbonates involved extensive magnesium metasomatism. Diopside, pale garnet and local wollastonite were among the first alteration minerals developed. A later stage of darker garnet with associated chalcopyrite-rich sulfides replaced and veined the earlier calc-silicates. Subsequently, the earlier skarns were partially altered to hydrous calc-silicates such as tremolite, actinolite and nontronite, adjacent to pyrite, chalcopyrite, quartz, anhydrite stringers and near the relatively permeable siltstones. Hypogene alteration-mineralization essentially ended with the introduction of quartz-pyrite veins containing some spahlerite, chalcopyrite and galena and minor amounts of fluorite and tetrahedrite. Increased amounts of partially silicated marbles is the most obvious manifestation of decreasing metasomiatism in the Paleozoic carbonates.

In the quartzose clastics of the Paleozoic section, early alteration consists of partial recrystallization, biotization and formation of diopside in calcareous siltstones and quartzites. Later alteration of diopside to hydrous calc-silicates and alteration of biotite to sericite occurs along quartz, anhydrite, sulfide veinlets and in varying degrees throughout particular siltstone horizons.

The single most important ore control at Twin Buttes is the altered carbonate rocks. Superimposed on this dominant feature are factors such as distance from the mineralization center, promimity to permeable rocks, intensity of fracturing and partial reworking of early sulfides by later hydrothermal events.

An understanding of these controls and careful documentation of their effects allowed postulation of a high-grade reserve in the main ore zone. Subsequent drilling has proven the presence of a number of strata-limited ore bands containing a significant tonnage of high-grade mineralization.

Economic Geology of the Sierrita/Esperanza Orebody – *Richard J. West*

After being worked sporadically since 1895, the Esperanza property was purchased by Duval Corporation in 1955. Following completion of an exploratory drilling program under the direction of Dr. Harrison Schmitt, pre-mine stripping started in 1957, and subsequent production started in 1959.

With the beginning of stripping in early 1968 and the start of mill operations in March 1970, the Sierrita mine became one of the largest copper-molybdenum ventures in Arizona.

The combined Esperanza-Sierrita complex, to be known as the Esperanza Mine, will eventually be a pit 12,500 feet in length, 6,500 feet wide, and 2,250 feet in depth.

The Esperita complex, a porphyry-type copper-molybdenum deposit, occurs within intensely fractured and moderately altered rhyolite and andesite, quartz diorite, dacite porphyry, quartz monzonite and quartz monzonite porphyry with an attendant intrusive breccia.

Essential to the emplacement of the orebody is the Laramide Ruby Star granodiorite, from which ore solutions were derived. The deposit lies at the south end of this pluton, which makes up much of the Sierrita Mountains, Pima County, Arizona.

Alteration in the ore zone is predominantly potassic, with phyllic and minor argillic assemblages. Prophylitic minerals commonly occur outside the pit areas. All rock types are mineralized and altered.

Major primary minerals are limited to pyrite, chalcopyrite, and molybdenite. Silver, although recovered in minor amounts, is not recognized in mineral form. Minor minerals include galena, spalerite, tennantite-tetrahedrite, magnetite, marcasite, fluorite, and rare bornite.

Significant amounts of secondary enrichment were limited to Esperanza and West Esperanza. Initial interest in these two areas was due to the presence of a well-developed chalcocite blanket, most of which has been mined. Other secondary minerals commonly found included cuprite, tenorite, malachite, azurite, chrysocolla, native copper, and minor turquoise.

Mineralization at Esperita is structurally and lithologically controlled. Linear mineralized zones parallel or girdle fault trends, major joint sets, and intrusive contacts. In addition, hypogene mineralization is associated with specific rock types, and is generally fracture controlled within these units. Minor disseminations occur normally in breccia and quartz monzonite porphyry.

Highlights and Activities in Minerals Sciences Research, University of Arizona – *E.J. McCullough, Department of Geosciences, University of Arizona, and T.J. O'Neil, Department of Mining and Geological Engineering, University of Arizona*

Some of the most interesting dissertation and thesis work now being done in Mining and Geological Engineering concerns the technological aspects of exploration planning and data-gathering. Since the ultimate goal of geologic exploration is to bring a new mine into production, the conceptual model of an exploration target includes engineering and economic guidelines. The guidelines are working assumptions during reconnaissance exploration; later they become a context for outlining discoveries of ore mineralization and evaluating prospects. Finally, economic, geologic, and engineering guidelines become design parameters for a surface mine, an underground mine, or a solution mine. Two illustrations can be taken from the fifteen theses and dissertations now in progress.

David Hackman, a Ph.D. candidate in geological engineering, is designing an exploration and evaluation program for supergene copper orebodies that are intended for solution mining. In his dissertation work, the collection and interpretation of geological and geochemical data are oriented specifically to the requirements in an economic analysis, based on the metallurgical, ground preparation, and fluid control characteristics of a deposit. The overall program, for use in general guidelines to evaluation, is based on a detailed study of the San Antonio de La Huerta copper deposit in Sonora.

Pete Knudsen, a Ph.D. candidate in mining engineering, has completed a thesis in which geostatistical methods of ore reserve estimation are compared with three conventional ore reserve estimation methods. His work continues in the field of geostatistics and mathematical methods of evaluation tonnage and grade in ore-bodies and exploration targets.

Six faculty of the Department of Geosciences have particularly active research programs in non-renewable resources. Paul Damon continues to work to establish a space-time relationship for the Sierra Madre del Sur metallogenetic provinces of Mexico. In the Basin-Range and Colorado Plateaus he is involved in field and laboratory studies, including the development and use of radioactive dating, natural isotopic tracers, and chemical analytical technique for the determination of the age, chemistry, and origin of ore deposits and igneous rocks. George Davis is completing a tectonic analysis of folds within the Colorado Plateau for the Arizona Oil and Gas Conservation Commission. The folds are probably related to basement fractures that have controlled the emplacement of igneous bodies and salt anticlines, as well as the loci of accumulation of oil, gas, and uranium. Bart Nagy is working with the University of the Witwatersrand on the Vaal Reef gold-organic ore of the Witwatersrand Deposits. He hopes to establish a firm theoretical understanding of the evolution of these ores, with an emphasis on the nature of the organic matter, and to subsequently develop practical and reliable exploration techniques for gold-organic ores based on such a theoretical framework. Denis Norton is involved in a series of projects dealing with the nature of chemical mass transfer in hydrothermal systems. These varying projects include developing a model of mass abundance of minerals in hydrothermal systems, analyzing the Mayflower Pluton in the Park City District with regard to hydrothermal processes, studying the porosity of plutons, and developing criteria useful in the detection of low permeability geothermal systems. John Sumner continues his studies on the implications of regional geophysical patterns in Arizona. He is also instrumental in the development of a departmental data base presently involving topographic, gravity, and magnetic data. Spence Titley is working to delineate a pre-mid-Tertiary tectonic framework which guided the emplacement of the porphyry copper deposits. In addition, he continues to study the correspondence in time of the environments of formation of the southwestern porphyry copper systems and the sea-floor spreading events of that region.

During the 1974-75 school year, students in the Department of Geosciences completed four MS degrees and three Ph.D. degrees in the area of mineral sciences research.

Geology and Mineralization of the La Verde Porphyry Copper Deposit, Michoacan, Mexico – *Philip Eckman, Beaver Exploration Company*

The La Verde porphyry copper deposit is in the state of Michoacan in central Mexico, two hundred miles west of Mexico City. Extensive exploration and feasibility studies for a plant at 15,000 to 20,000 tons per day have been completed, and a production decision awaits suitable timing.

The site is on the south side of the east-west striking central volcanic belt of Mexico, which geographically divides the North American continent from Central America, and is said to be the only major east-west trending range in the entire western hemisphere. Eight separate volcanic cones can be seen from the peak above the mine site, the closest being about two miles away. The mine is on the south slope of the Sierra del Marques, a bow shaped quartz diorite ridge up to a thousand feet high above the surrounding plain and three miles long, trending east-west, convex to the north. It is divided at the point of most flexure by a low pass into east and west segments, or hills. These two hills are quite different geologically, and there are substantial copper deposits on both of them. The quartz diorite is part of a large batholith that also contains Asarco's Inguaran copper mine located thirty miles southeast of La Verde, and many copper prospects.

On the East Hill at La Verde the quartz diorite is intruded by several quartz-feldspar porphyry and aplite stocks and dikes up to two thousand feet across. In the peripheral area of one of these porphyry stocks there is developed a breccia zone containing fragments and blocks to several feet across of both porphyry and diorite, in a cataclastic matrix of quartz, feldspar and chlorite. The matrix forms ten to forty percent of the breccia. There are four separate orebodies associated with this porphyry stock, all contained within a half-mile diameter, and it is proposed that they be mined within one pit.

The No. 1 Orebody is on the south side of the porphyry stock, and is in the diorite breccia. Bornite and chalcopyrite occur disseminated, as veinlets, and as stringers to several inches across in a series of northeast striking faults that cut the zone. Bornite content is about twice that of chalcopyrite, and is concentrated in the central part of the zone. Pyrite is minor, under two percent. The zone terminates on strike coincident with the east and west limits of the porphyry stock, and at depth where the breccia zone fades into massive diorite.

The No. 2 Orebody is within the porphyry stock, and is a steeply dipping sheeted zone of closely spaced laminae of pyrite-chalcopyrite-bornite parallel to and near the north contact of the stock. It does not outcrop, and widens with depth.

The No. 3 Orebody is in breccia north of the porphyry stock and is similar in character to the No. 1 Orebody, but dips vertically.

The No. 4 Orebody is in diorite crackle breccia west of the porphyry stock. Bornite and chalcopyrite occur disseminated and as blebs and veinlets mainly associated with quartz, calcite and tourmaline in the matrix of the breccia, but also in the fragments. This orebody also does not outcrop, and widens greatly with depth.

On the West Hill, centered a mile west of the center of the East Hill orebodies, there is a single ore zone some two thousand feet long by up to a thousand feet wide, trending north-south. The mineralization is largely confined to parallel east-west striking veins of heavy pyrite-chalcopyrite, dipping nearly vertically and a few inches to several feet thick. There are dozens of these veins, and as the diorite between them is only sparsely mineralized, the grade of the ore is largely determined by the thickness and spacing of the veins. They are localized at the north-south trending contact of a body of quartz diorite porphyry and the equigrained quartz diorite which forms the bulk of the Sierra del Marques. Whether the quartz diorite porphyry is an intrusive stock, or a segregation within the other diorite is unknown. There is no noticeable difference in the nature or grade of the mineralization over the drilled vertical range of fifteen hundred feet.

All of the veins in the West Hill orebody are bordered by diorite highly altered to a fine grained quartz-epidote-sericite rock, and the width of this selvage is from a fraction of an inch to several feet, depending on the thickness of the vein. Where veins are closely spaced, such highly altered zones are continuous over widths of up to scores of feet.

On the East Hill, alteration in the breccia orebodies is confined to minor chlorite, epidote and sericite, and the presence of pink feldspar. Unlike the West Hill, the intensity of alteration is quite weak, and nowhere is the medium to coarse grained texture of the diorite destroyed. The No. 2 Orebody, within the quartz-feldspar porphyry stock, shows a marked increase in quartz and sericite as compared to the unmineralized porphyry.

Oxidation extends to variable depths up to about two hundred feet, and the grade of the ore in the oxide and sulfide zones is about the same. There is no leached zone, and no chalcocite blanket.

The outcropping orebodies, Nos. 1 and 3 on the East Hill, and the West Hill Orebody, are all contained within the plus 1,000 ppm copper contour based on soil sampling, allowing for some down hill creep. Extensive Induced Polarization surveys showed a prominent anomaly extending over the entire mineralized area, although the localized anomaly highs do not correspond with the individual orebodies.

Ore boundaries are controlled by assay walls and designed pit slopes, and various calculations of the drilled tonnage can be made within the range of sixty to ninety million tons grading 0.6 to 0.7% copper. Molybdenum content is insignificant, but the gold and silver content are somewhat higher than usual in this type of deposit. The West Hill orebody is larger and lower grade than the East Hill total.

Geologic Factors Affecting Economics of Porphyry Copper Mining Operations – *Harry J. Winters, Jr., Consulting Geological Engineer*

The cost of copper produced from sulfide concentrates from most United States porphyry copper mines exceeds $0.60 per pound. With rare exception the cost of production from new mines will exceed $0.70 per pound. Only the margin on copper precipitates, molybdenum, and precious metals has kept several mines from slipping into a loss position in the present copper market. An understanding of the effects of geologic factors on production costs has always been very important to achievement of competitive costs, but never more than now. Such understanding is also more essential than ever to evaluation of new projects, expansions as well as new mines, to ensure collection and meaningful compilation of geologic information needed for planning, and to make possible an accurate estimate of a project's competitive position.

One of the keys to competitive costs is efficient materials handling from mine through refinery. The system of transportation of ore and waste to beneficiation plants and dumps cannot be well planned without a thorough understanding of the number and distribution of ore types and grade distribution. Inadequate knowledge of ore type and grade distribution, bench by bench, can lead to transportation system bottlenecks which result in very high mining costs per ton of material mined. It can also lead to improper equipment selection with consequent inordinate amounts of walking of shovels and drills and high maintenance costs.

More geologists are needed who can bridge the gap between exploration and planning. The ability to do so will continue to come chiefly from personal initiative, but mining and geology departments of educational institutions should be more active in this discipline.

Textural Variations and Mineral Zoning of the Pilares Breccia Pipe -- *J.A. Thoms, The Anaconda Company*

The Pilares breccia pipe, located in the Nacozari mining district, about 7 km southeast of Nacozari, Sonora, is the host for the Pilares Mine which produced over 16,600,000 metric tons of ore with an average grade of +2.5 percent copper. The well-defined, oval-shaped pipe has maximum dimensions of 600 by 300 meters and a known vertical extent of 725 meters. The major axis trends N35°W. The pipe cuts vertically through a sequence of andesitic extrusive and volcaniclastic rocks overlain by latite flow breccia. The vol-

canic sequence generally strikes N45°E and dips 20-25° southeast. Within the pipe, all volcanic units are thoroughly brecciated and the andesite-latite contact has been displaced downward as much as 150 meters, suggesting collapse during brecciation. Except for a diabase dike, no intrusive rocks are known to occur above the 700-Level of the mine. Three general types of brecciation have been observed: (1) tight, (2) open, and (3) tabular. Contacts between the types are gradational and in some places types (2) and (3) occur together. Up to 30 percent open space developed during brecciation. The entire mass of breccia comprising the pipe has been erratically mineralized; abrupt changes in total sulfide content, pyrite-chalcopyrite ratios and copper values occur through short intervals. Previously mined high grade (+2% Cu) ore bodies were localized in nearly continuous vertical ore shoots in the NW and SE noses of the oval, in narrow lenses along wall contacts, and in isolated pods ("core ore bodies") in the interior of the pipe. Detailed mapping of channels cut for sampling in rehabilitated mine workings on the 100-, 500-, 600-, and 700-Levels has provided new information on sulfide distribution in the interior of the pipe. Zones consisting predominately of (1) pyrite and (2) chalcopyrite have been defined, as well as mixed pyrite-chalcopyrite zones. A wide belt of specularite extends from wall-to-wall along the minor axis of the oval on the surface, but pinches out rapidly with depth. A symmetrical sulfide mineral zoning pattern is not readily apparent.

Metallogenic Map of Sonora – *Ariel Echavarri Perez, Department of Geology, University of Sonora, Hermosillo, Sonora, Mexico*

As a first step in the recently initiated Metallogenetic Map of Sonora, information about geological environment and type of deposit of many Sonoran localities is given. Non-metallic deposits are graphite, anthracite, fluorite, and beryl. The first two, of Triassic age, are of sedimentary origin, commonly forming lenses. Sonora is the leading graphite-producing state. Fluorite is produced from veins in Tertiary volcanic rocks. Beryl in minor quantities is associated with granitic pegmatites. Precious and base metal deposits, as well as tungsten are mined from contact-metasomatic zones, epithermal and mesothermal veins, breccia pipes, and low-grade porphyry-type bodies. Gold has been produced from placers.

In the last ten years, porpyry-type deposits have been of most interest. Copper of this kind is found as an extention of the well-known province of the SW United States, but it also continues in a belt along the Pacific margin of the Republic of Mexico. In Sonora most copper deposits are found in stocks which intruded calc-alkaline volcanic, as well as sedimentary, metamorphic or even other plutonic rocks. However, in some localities cupolas of great batholiths are mineralized. In these, the shape of the ore bodies is disc-like and the typical vertical zonation is absent. Intrusive and collapse breccias are relatively common.

Alteration and mineralization patterns are not unlike those of the Arizona deposits. In some areas the potassic, phyllic and propylitic zones are well-exposed, whereas in others only the sericitic-propylitic or the propylitic zones can be observed. The mineralogy is that of the most accepted models. One deposit, however contains mainly molibdenite. In some breccias scheelite and wolframite have been noted. The age of mineralization is Upper Cretaceous-Lower Tertiary, time during which the Laramide Revolution produced intense magmatic activity. Recent radiometric studies indicate that the mineralization is progressively younger towards the eastern portion of Sonora. Regional associations between structures and igneous rocks suggest that the deposits formed as a result of subduction of an oceanic plate probably active until Late Oligocene time.

The Age and Origin of Porphyry Copper and Genetically Related Mineral Deposits in Mexico – *Paul E. Damon, Laboratory of Isotope Geochemistry, Department of Geosciences, University of Arizona, Tucson, Arizona 85721*

It is now widely accepted by many geologists that the subduction process generates magmas which give rise to the porphyry copper deposits. With the uniformitarian dictum in mind that "the present is the key to the past," we have taken advantage of the opportunity to study the age and genesis of ore deposits in Chiapas, Mexico, which is the site of an active Benioff Zone reflecting the subduction of the Cocos Plate under Mexico. We have also extended our investigations to Sinaloa, Durango, and Sonora which, like Arizona, have not been the site of subduction during late Cenozoic time. The opportunity for this study was provided by a cooperative project between the University of Arizona, Laboratory of Isotope Geochemistry and the Consejo de Recursos Naturales no Renovables.

The pattern of seismic epicenters from the Middle American Trench to inland Chiapas defines a subduction zone which steepens proceeding eastward from the Isthmus of Tehuantepec (Molnar and Sykes, 1969). Most of the major geological features of Chiapas, e.g., the Sierra Madre de Chiapas, the Central Depression and the folded ridge and valley province of the north, are parallel to the Middle American Trench. The Sierra Madre de Chiapas is the locus of mid- to late Miocene sub-volcanic intrusions into a Permo-Triassic batholithic complex. Some of these sub-volcanic porphyritic intrusions are associated with disseminated and contact metamorphic mineral deposits.

A volcanic lineament striking northwest-southeast transects other structures. This lineament has been the locus of andesitic-dacitic strato-volcanos from early Pliocene time to the present. Two active strato-volcanos, Tacaná and Volcan de la Union occur at opposite ends of the cordon. Several important ore deposits occur within the lineament. The transecting orientation of the volcanic lineament probably resulted from a west to east steepening of the subduction zone which occurred in late Miocene time.

The relationships in Chiapas are in close accord with Sillitoe's (1973) evidence which favors the emplacement of the tops of typical porphyry copper deposits at depths of 1.5 to 3 km beneath the summits of strato-volcanos. In general, it would not be profitable to look for pre-Miocene porphyry copper deposits in Chiapas because deep erosion has removed pre-Miocene sub-volcanic rocks exposing granitic rocks which were crystallized at greater depth.

Generalizing from our work in Chiapas, it seems quite certain that all of Mexico and Central America under which the Cocos Plate is subducting, should be the locus of porphyry and contact metamorphic mineral deposits. With the strato-volcano model in mind, it should not be difficult to design effective exploration programs.

North of Cabo Corrientes, the Sierra Madre Occidental and coastal plains are relatively inactive seismically, despite their near proximity to the East Pacific Rise. Apparently, subduction ceased in Miocene time and none of the dated mineral deposits are post-Miocene in age. According to Henry (1975), the igneous activity which gave rise to the Sinaloan batholith was quasi-continuous from about 100 to 45 m.y. ago. We have found that most of the important ore and mineral deposits are associated with the later phases of the emplacement of the batholith. The age of the important mineral and ore deposits of Sinaloa and Sonora are very similar, i.e., late Laramide or Eocene in age.

Mid-Tertiary volcanism in both Sonora and Sinaloa are remarkably similar to concurrent volcanism in Arizona and New Mexico. Andesites and basaltic andesites are interbedded with rhyodacitic ash flows and the episode of silicic volcanism is followed by extensive basaltic volcanism, e.g., the extrusion of the Hornillos formation in Sinaloa. The existence of chemically similar, concurrent volcanism over the entire extent of the Sierra Madre Occidental of Mexico and the Basin and Range Province of southwestern U.S.A. and Mexico is a phenomenon of grand scale which the developing theory of plate tectonics must take into consideration. To our knowledge, no porphyry copper ore deposit has been found to be genetically associated with this vast extrusion of Oligocene-Miocene volcanic magma. Many of these volcanic rocks are associated with ash flow caldera, which do not seem to the locus of disseminated ore deposits, but, was there a total absence of andesitic-dacitic strato-volcanos?

Henry, C.D., 1975. Geology and geochronology of the granitic batholithic complex, Sinaloa, Mexico: Unpublished Ph.D. dissertation, University of Texas at Austin.

Molnar, P., and L.R. Sykes, 1969. Tectonics of the Caribbean and Middle America regions from focal mechanisms and seismicity: Geol. Soc. Amer. Bull., v. 80, p. 1639-1684.

Sillitoe, R.H., 1973. The tops and bottoms of porphyry copper deposits: Econ. Geology, v. 68, p. 799-815.

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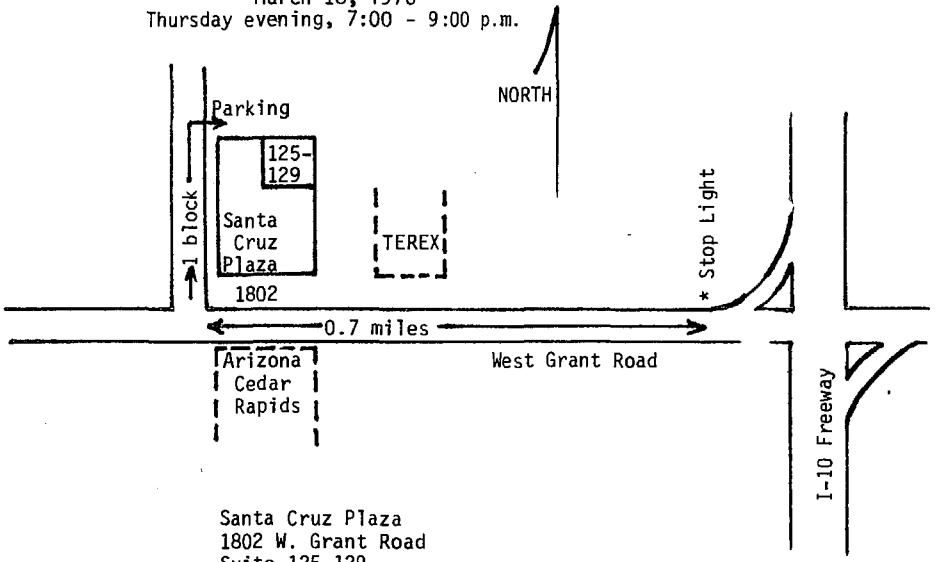
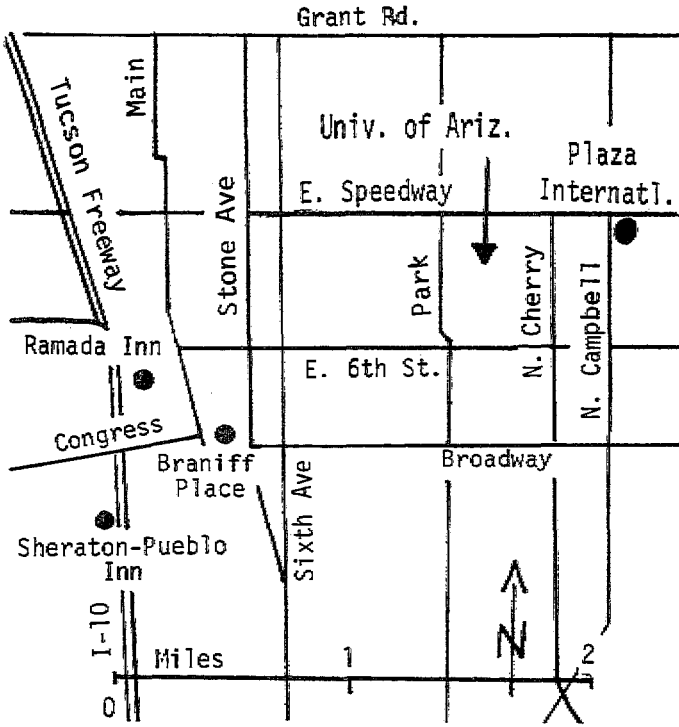
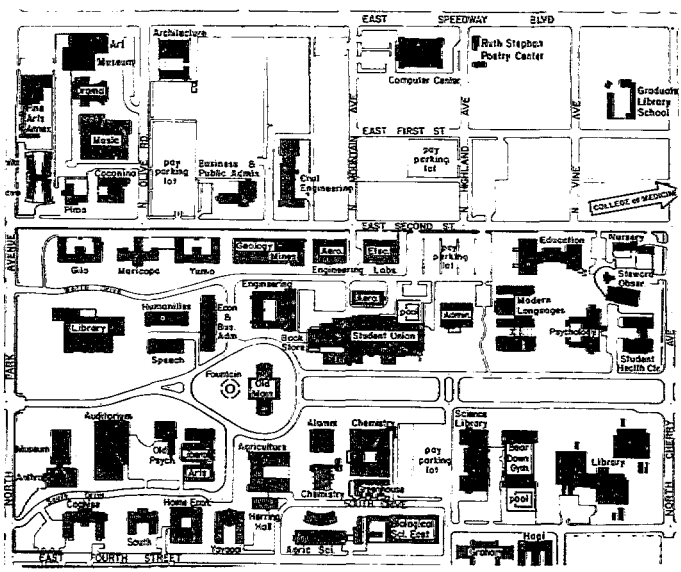
SOCIAL POW-WOW LOCATION

March 18, 1976
Thursday evening, 7:00 - 9:00 p.m.



Santa Cruz Plaza
1802 W. Grant Road
Suite 125-129
NE Corner of Complex



In the event of overflow registration, the Technical Sessions will be held at the Main Auditorium instead of Gallagher Theater.

Please park in X or W lots near Highland Avenue and East 2nd Street—north of the Student Union. Pay parking in force where posted. Detailed parking map will be forwarded on confirmation of registration.