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REYNOLDS METALS EXPLORATION, INC.

Reynolds Metals Company • 5301 Longley Lane • Suite 157 • Reno, Nevada 89511-1805 Telephone (702)829-8018 • Facsimile (702)829-8026

DATE: May 19, 1992

TO: Dr. Douglas Jinks

FROM: Ray Irwin 🔾

SUBJ: Preliminary Moss Mine Drilling Proposal

Should Billiton Minerals accept Reynolds Metals' proposal for a 30-day exclusive proposal, I believe that Reynolds should utilize this time to drill the <u>eight</u> holes outlined on the attachment and shown on the attached map. These holes would:

- determine whether or not a large tonnage deposit could be situated SSW of the Moss shaft,
- 2) test the up-dip nature of the Moss structure at holes MC-12 and MC-14 and infill between MC-12 and MC-14 and MC-11 and MC-12
- 3) Redrill MC-17 that sToped short of the Moss structure.

This drilling program totals 3100' and would have an estimated cost of \$46,500.

In addition to the drilling, a small hand collected bulk sample should be obtained from surface workings. This sample would be utilized to determine leachability characteristics at various size fractions.

Proposed <u>Hole</u>	<u>Location</u>	<u>TD</u>	Bearing/ Inclination	<u>Purpose</u>
А	MM-11 Pad	600'	South /-50°	Test north dipping sheeted -stockworked zones for bulk mineable potential
В	MM- 5 Pad	300'	N10°E/-50°	Test Moss structure west of Moss shaft
С	MM- 6 Pad	500'	S10°W/-50°	Test north dipping sheeted -stockworked zones for bulk mineable potential
D	MC-12 0/S 120' NE of MC-12	300'	N10°E/-50°	Test Moss structure updip of MC-12
E	120' East MC-12	350'	N10°E/-50°	Test Moss structure between MC-12 and MC-14
F	MC-14 0/S	300'	N10°E/-50°	Test Moss structure updip of MC-12
G	103' SE MC-11	400'	N10°E/50°	Test Moss structure between MC-11 and MC-12
Н	at MC-17	350'	N10°E/-50°	Test Moss structure at MC-17
	TOTAL:	3100'		

Moss Project Report

Submitted to: Mr. Mark Sander

Magma Copper Company 7400 North Oracle Road

Suite 200

Tucson, Arizona 85704

Submitted by: Mr. Abdullah Arik

Mintec, Inc. P.O. Box 31420

Tucson, Arizona 85751

Respectfully Submitted:

Abdullah Arik

MINTEC, INC.

Tucson, Arizona

February 10, 1992

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EXECUTIVE SUMMARY

The Moss Deposit located in Mohave County, Arizona is a veintype deposit which strikes west-northwest. Gold and silver mineralization occurs in quartz-carbonate vein and in stockwork veins in the hanging wall and footwall which steeply dips due south-southeast. There are 96 drillholes in the area, which have been drilled at angles approximately due north to intersect the mineralized veins.

Using the assay information from the drillholes, a 3-D block model of the Moss Deposit has been developed to calculate the preliminary geologic and minable reserves. The block size used was 25' x 25' with a bench height of 20'. The model had the following limits:

Easting	290,500	to	294,000
Northing	1,491,500	to	1,493,000
Elevation	1,500	to	2,600

The 5-foot assays were composited into 20-foot benches for use in variogram study and in interpolation of block grades. Northsouth drillhole cross-section maps were generated at 100'-200' intervals to check the data and to see the continuity of the mineralization down dip and along strike.

Preliminary statistical analyses and variogram study were performed to help decide the parameters of the variogram and search strategy to use during interpolation. Block grades were then interpolated using both kriging and inverse distance weighting methods. Three cases were tried with the strike and dip of the deposit to be N78W and -68° SW, respectively:

1. Inverse distance weighting method of power three (ID3).

Search distances along the strike and down dip are 100-

feet. Search distance vertical to the plane is 20-feet.

- ID3. Search distances along the strike and down dip are 300-feet. Search distance vertical to the plane is 20feet.
- 3. Kriging using the search strategy of Case #2.

Based upon these interpolations, the following geologic reserves were obtained down to 1,600' elevation at 0.02 opt gold cutoff:

Case #1	Case #2	Case #3
ID3 (100' Search)	ID3 (300' Search)	Kriging (300' Search)
Ore Tons 3,545,000	7,414,000	7,851,000
Grade opt 0.044	0.038	0.035
	43	
:	6 674,0000 :042	

Based upon the block grades generated with Case #2, an economic pit design of the deposit was developed using the floating cone algorithm.

The parameters used for this design were:

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Mining cost/ton waste = $0.83

Total operating cost/ton ore = $\frac{54.89}{45^{\infty}} \text{ in the distance of the distanc
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At 0.02 and 0.03 opt cutoffs, the reserves from the economic pit were as follows:

	0.02 opt	0.03 opt	Dilatinz
Ore tons	2,996,000	1,932,000	
Grade opt	0.044	0.055	Mining recovery
Waste tons	5,868,000	6,932,000	J .
S.R.	1.96	3.59	•

CONCLUSION

The results from this study are very preliminary because of the relatively sparse exploration drilling in the area, and assumptions made on the continuity of the gold mineralization between sections and down dip. Low to medium grade gold mineralization in the deposit makes it difficult to determine whether further investment in drilling is warranted. For immediate concern, the areas where gold mineralization was projected beyond a comfortable distance must be drilled to verify the continuity of the mineralization. Mining decisions based on the current reserves without such drilling would otherwise be extremely risky.

INTRODUCTION

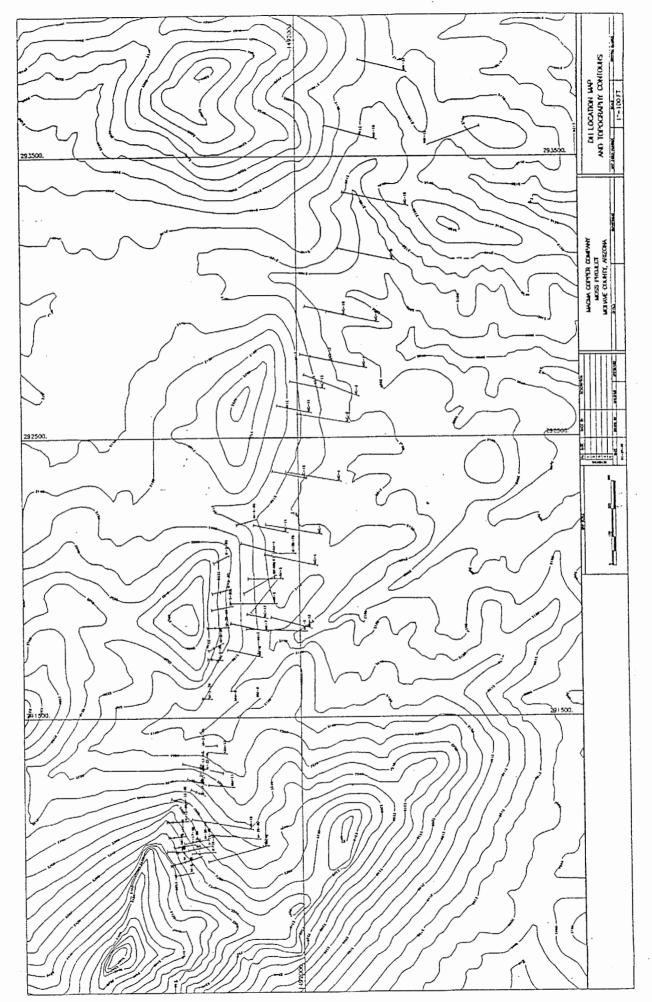
The Moss Project area located in Mohave County, Arizona is approximately 4000' long and 2000' wide. The gold mineralization in the area is mostly confined to quartz-carbonate vein and stockwork veins in the hanging wall and footwall. These veins strike west-northwest and steeply dip due south-southeast. There are 96 drillholes in the area with depths ranging from 30' to 550'. The drillhole spacing is 50' to 200' along strike. The holes have been drilled at angles approximately due north to intersect the mineralized veins.

The objective of this study was to develop a 3-D block model of the deposit using the available drillhole data, and to design a preliminary floating cone economic pit. The geological and minable reserves from this study is to aid Magma-Moss personnel in decision making for further drilling in the area.

STUDY AREA

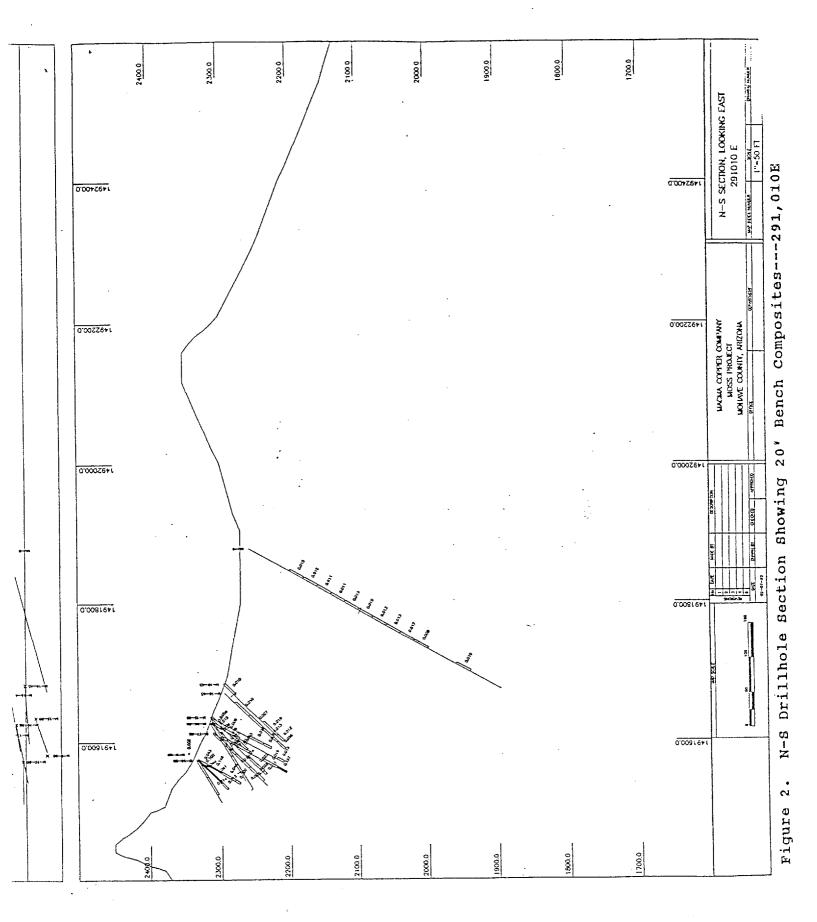
The Moss Project area is approximately 4000' long and 2000' wide. The coordinates of this area is from 290,500E to 294,500E and from 1,491,000N to 1,493,000N. There are 96 drillholes in the area with over 16,000 feet of drilling. Most holes are inclined with depths ranging from 30' to 550'. The spacing of the drillholes along the strike of the deposit is 50' to 200'. Figure 1 shows the locations of the drillholes and the topography contours in this area.

The gold mineralization is low grade and mostly confined to quartz-carbonate vein and stockwork veins in the hanging wall and footwall. These veins strike approximately west-northwest and steeply dip due south-southeast. Figures 2 through 16 are N-S cross-section plots at about 200' intervals showing 20' bench composite assays that are equal or greater than 0.008 oz/ton gold.

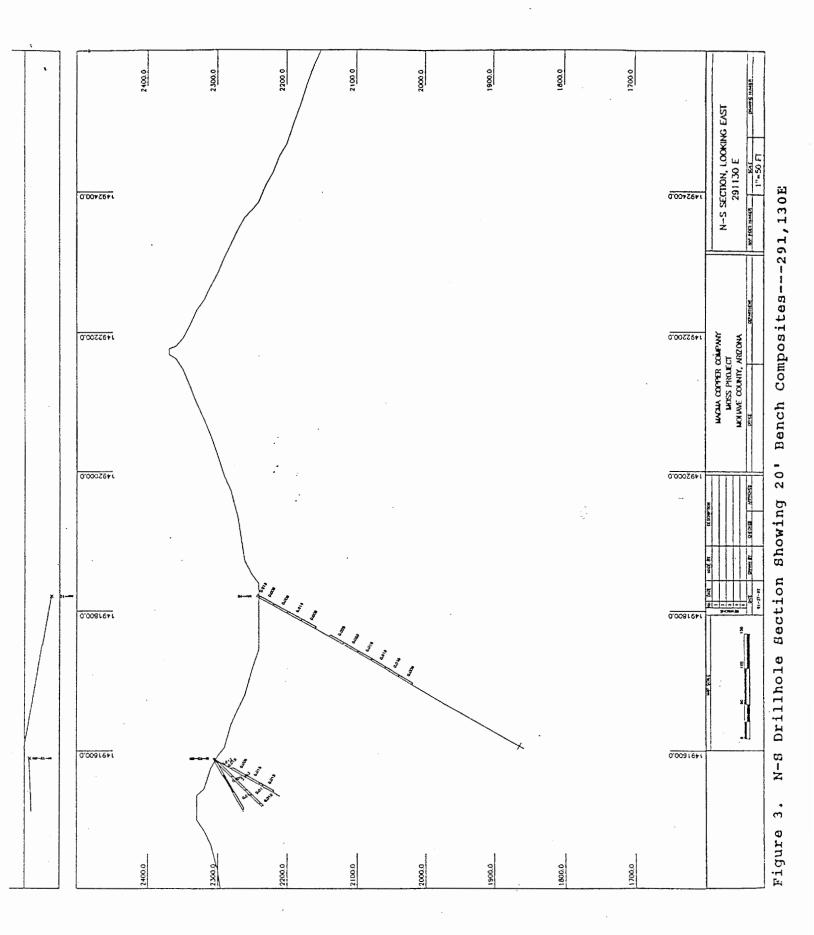


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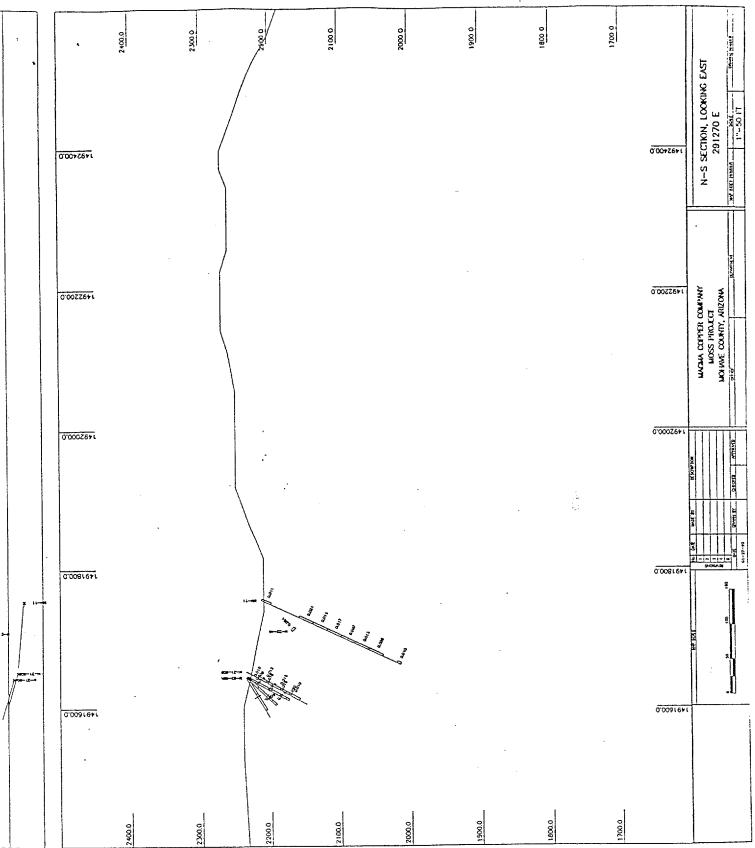
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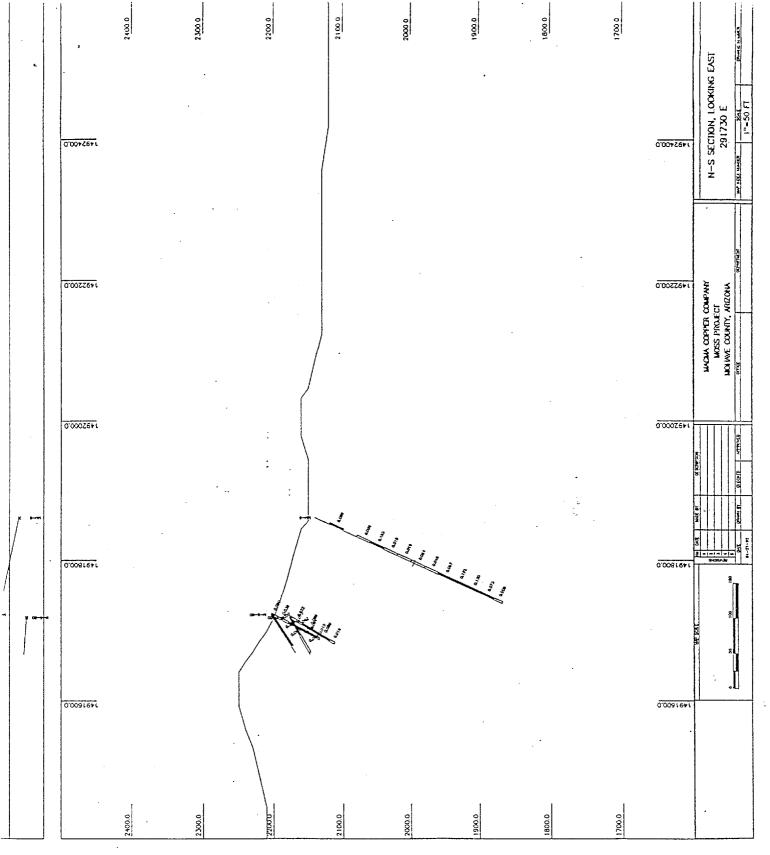


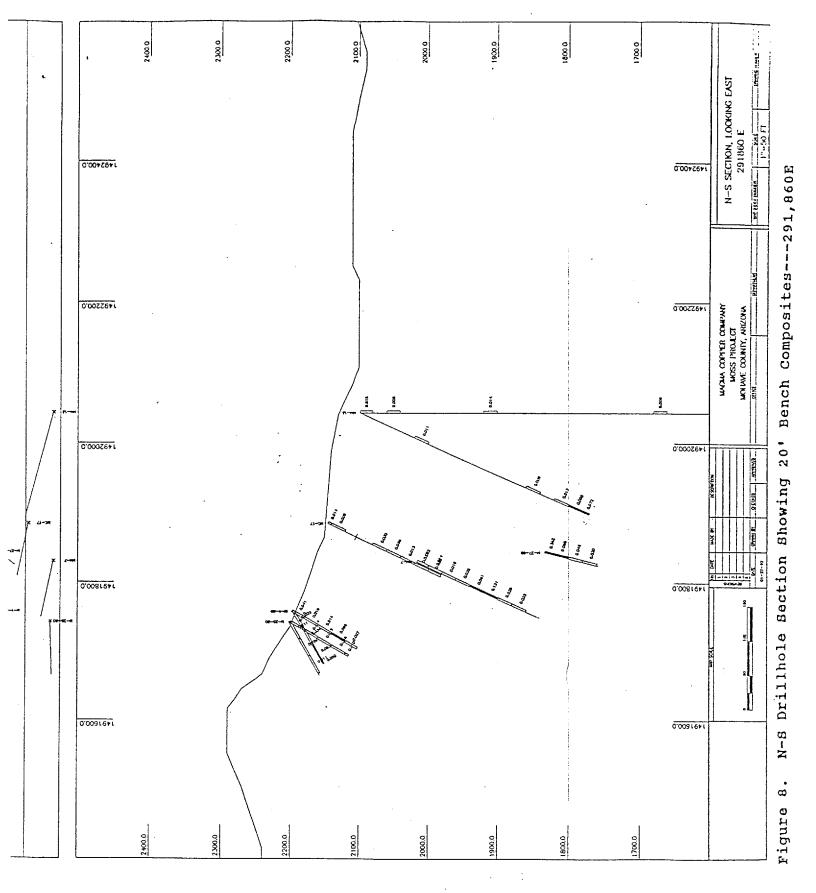
N-8 Drillhole Section Showing 20' Bench Composites --- 291,270E Figure 4.

	3	2400 0	2300.0	20001	21000	20000	0 0061	1600.0	1700 0		SI
	0'00+25+1	·								0'00'7Z6F1	1320 E 1320 E 1320 E 1320 E
	0.00558+1					,				0°00ZZ6⊁1	tes
	0.0002224							: *		0'000Z6+1	owing 20"
	0'0081671									0,005124.1	Section
X Grand-and	0,00316+1									0.0031941	N-8 Drillhole
		2 400 0	2300.0	22000	2100.0	2000.0	1900.0	0.0001	1700.0		Figure 5.

•	0.0045841	2400 0	23000		21000	2000 0	0.0061	0.00081	1700 0	0°00+25+1	N-S SECTION, LOOKING EAST 291550 E WINGHAM NATIONAL TO PERSTANT
	0.00 <u>5</u> 28+r		·							0.0052841	LUCALA COPPER COLPANY LICS PROLECT LICH LATER ARECOM REG COLMEY, ARECOM
	0'000Z6+L						·	ű.			n otoia
X	0'00816*1					44.00				0 0001671	1 1 1 2 2 2 2 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4
	0'00916+1	2400.0	2200.0	2200.0	2100.0	2000.0	0.000 [1]	1800.0	1700.0	0.00are+r	

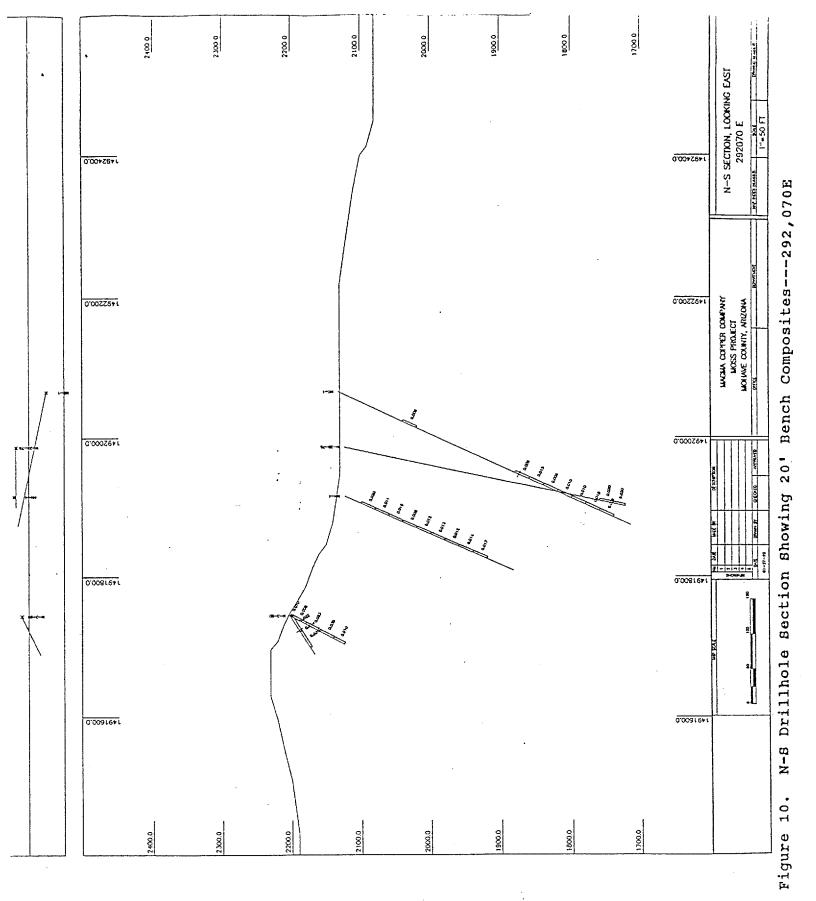
Figure 6. N-8 Drillhole Section Showing 20' Bench Composites -- 291,550E



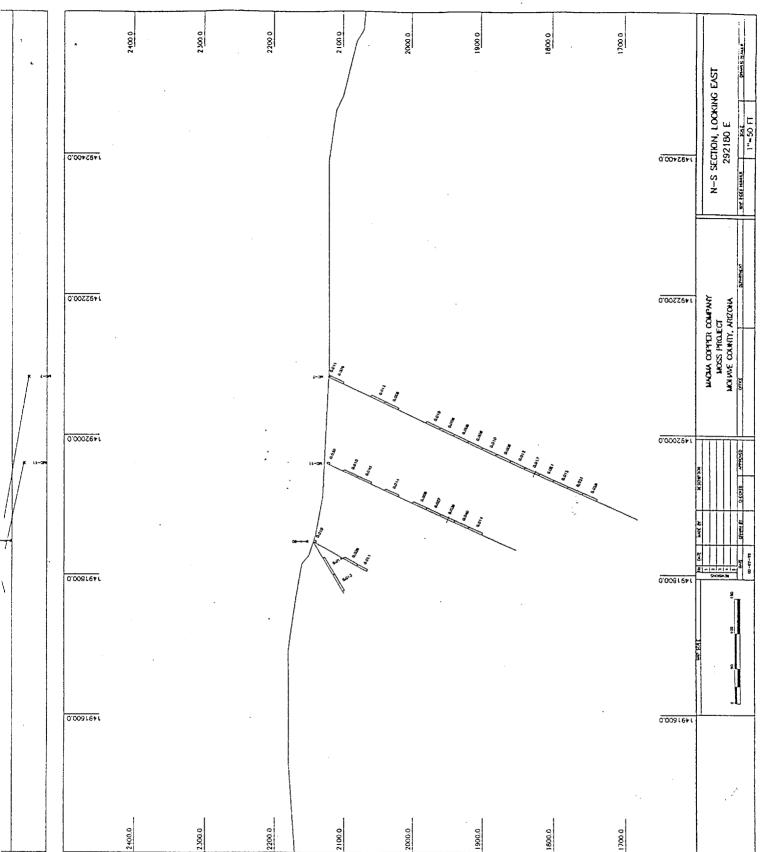


Project #US1242-003

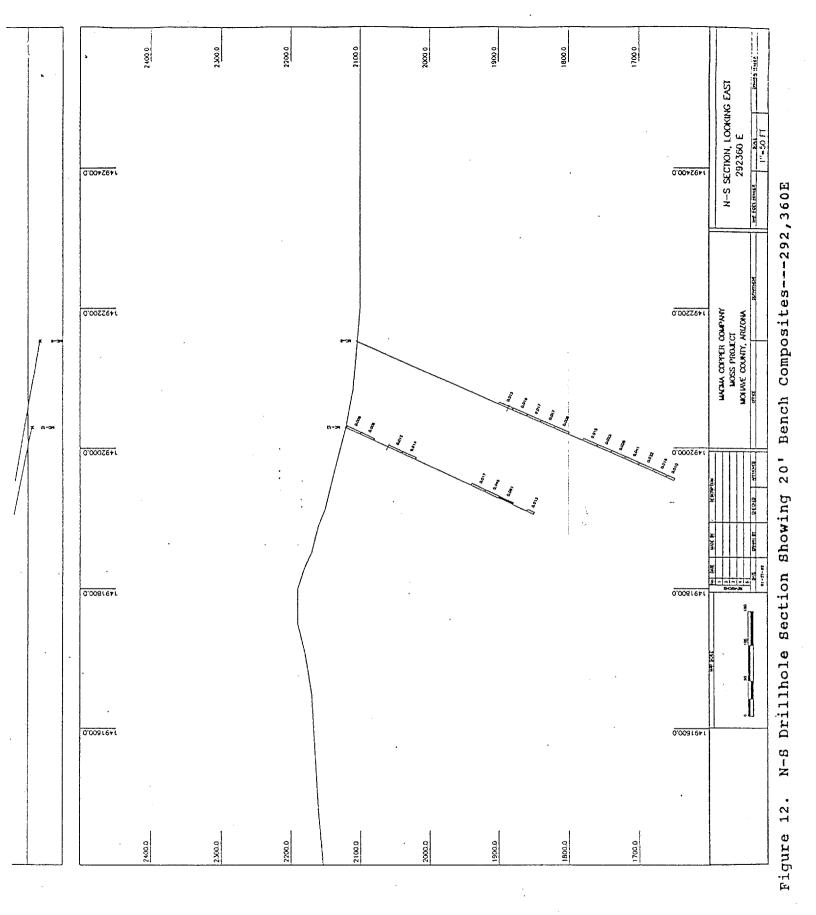
N-8 Drillhole Section Showing 20' Bench Composites --- 291,950E Figure 9.



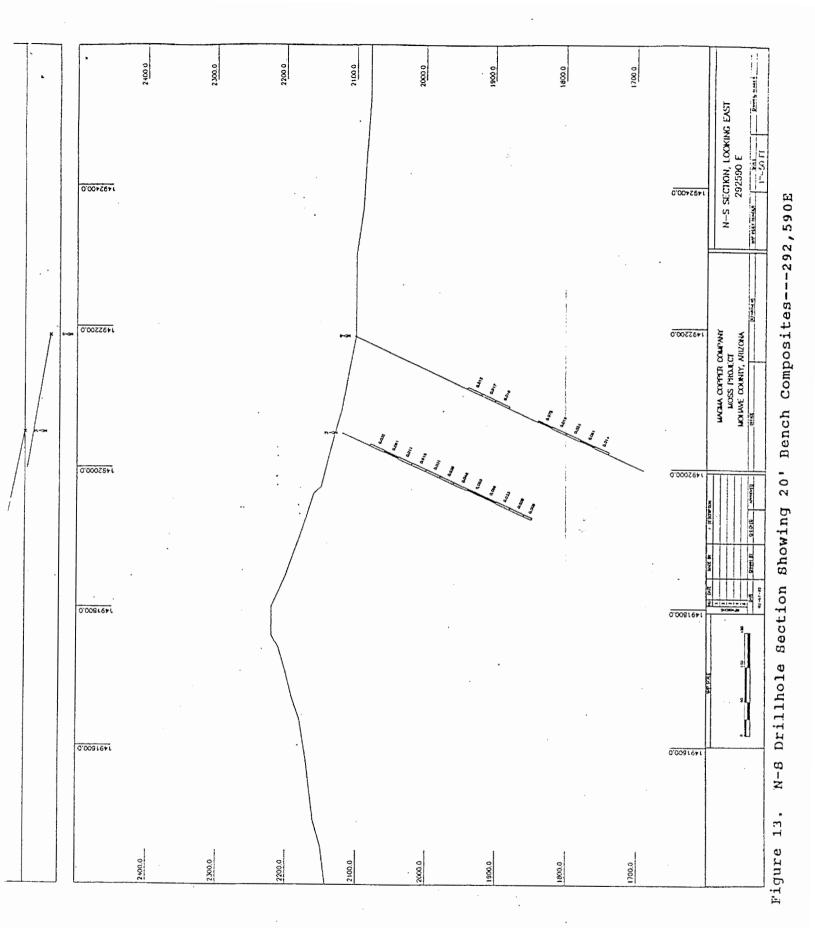
Project #US1242-003



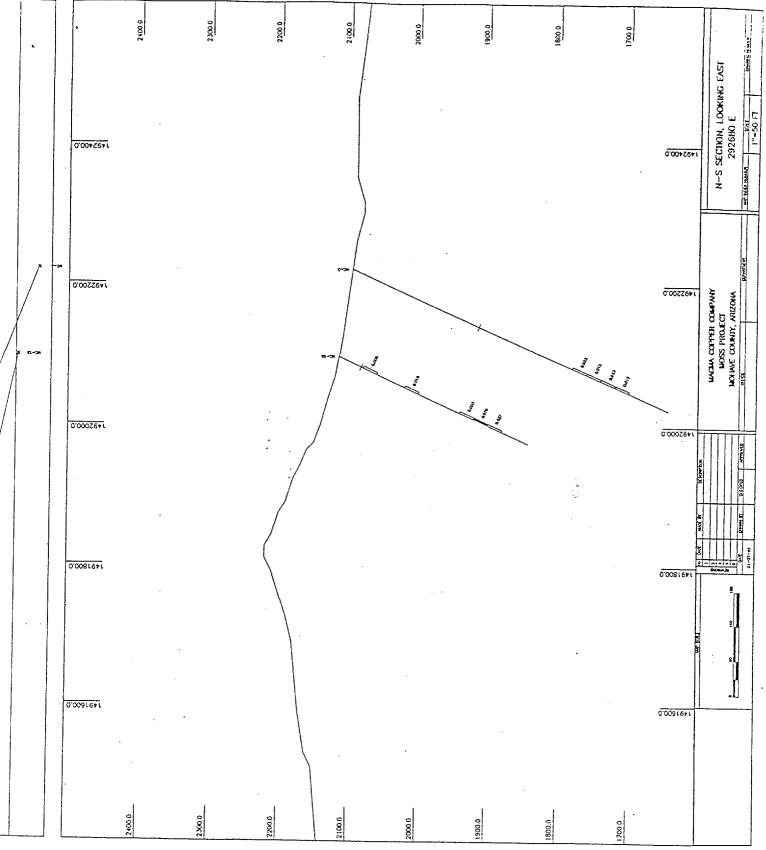
N-s Drillhole Section Showing 20' Bench Composites --- 292,180E Figure 11.

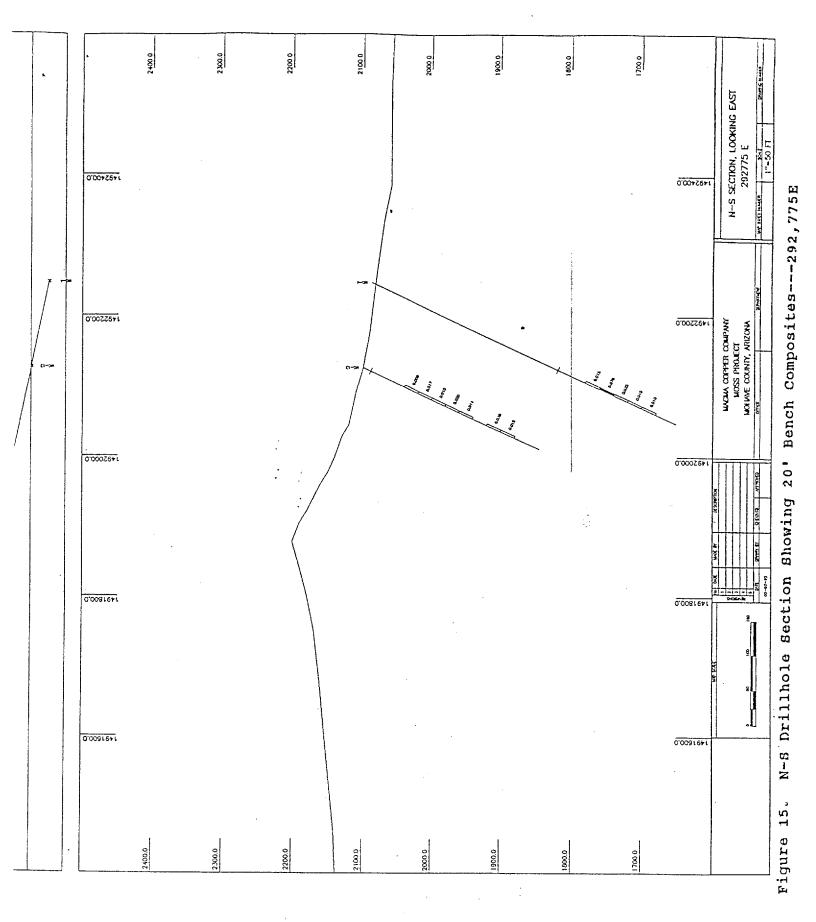


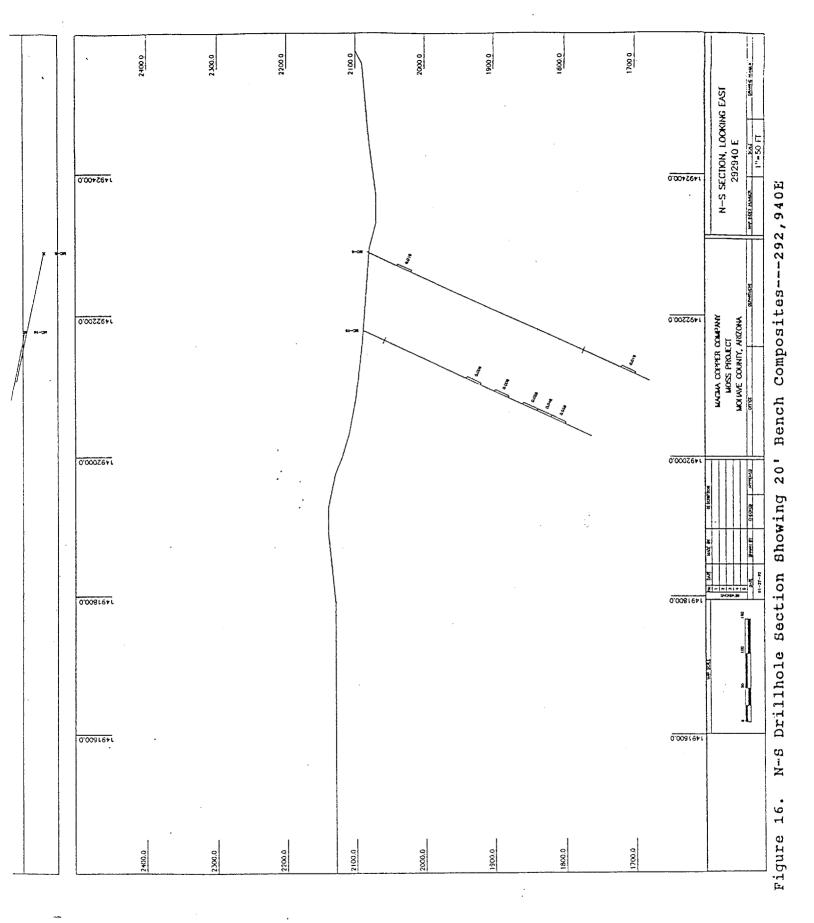
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Project #US1242-003







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DATA STATISTICS AND VARIOGRAM STUDY

Minter received the copies of drillhole logs for 96 holes from Magma. These holes were assayed for gold at 5-foot intervals. Some holes were also assayed for silver. Minter entered the gold values for each drillhole in to the MEDSYSTEM data base. Silver values were not entered, but space was allocated for silver in the case of future need.

The average grade of all assays at 0.020 opt cutoff is 0.050 opt. Table 1 gives the statistics of all assay values at 0.005 intervals. Figure 17 shows a histogram of these assays.

The assay grades were composited to 20' bench height for use in interpolation of block grades and variogram study. Table 2 gives the statistics of all composite data at 0.005 intervals. Figure 18 shows a histogram of these composites.

A preliminary variogram study was conducted using the composite data that are less than 0.25 opt. Two directional variograms were developed, one along strike direction (N78W or N102E), and the other perpendicular to the plane of dip. These variograms with the theoretical models used are shown in Figures 19 and 20, respectively. Because of the spacing of the drillholes, the variogram in strike direction cannot reveal the short-scale continuity.

	Statistics of cutoff grades	all gold	assays at	different
Cutoff Grade	Samples Above	Percent Above	Mean Above	C.V.
0.000 0.005 0.010 0.015 0.020 0.025 0.030 0.035 0.040 0.045 0.050 0.055 0.060 0.065 0.070 0.075 0.080	3309.0 2087.0 1503.0 961.0 836.0 553.0 500.0 372.0 338.0 265.0 247.0 203.0 190.0 157.0 145.0 127.0 122.0 104.0	100.0 63.1 45.4 29.0 25.3 16.7 15.1 11.2 10.2 8.0 7.5 6.1 5.7 4.7 4.4 3.8 3.7	0.017 0.026 0.033 0.046 0.050 0.065 0.069 0.083 0.087 0.100 0.116 0.120 0.132 0.137 0.147 0.150	2.097 1.622 1.421 1.202 1.152 1.014 0.985 0.904 0.881 0.823 0.809 0.767 0.755 0.719 0.705 0.681 0.675
1		3.0 2.6 2.5 2.3 2.2 1.8 1.5 1.4 1.3 1.1 1.0 1.0 0.9 0.8 0.8 0.7 0.7	0.165 0.177 0.179 0.188 0.190 0.206 0.224 0.231 0.238 0.240 0.253 0.253 0.265 0.265 0.265 0.265 0.265 0.286 0.286 0.294 0.308 0.313	0.494 0.491 0.485 0.474 0.474 0.467
	e Value =	0.650 ion = Sta	ndard Devi	ation/Mean

Figure 17. Histogram of All Gold Assays

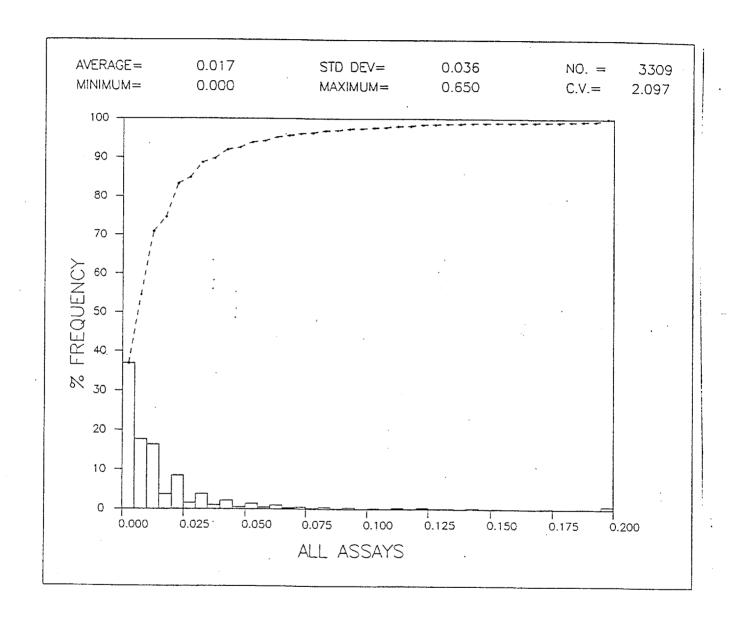


Table 2.	Statistics of different cu		composite as	ssays at
Cutoff	Feet	Percent	Mean	c.v.
Grade	Above	Above	Above	
0.000	14525.4	100.0	0.017	1.590
0.005	10118.5	69.7	0.023	1.283
0.010 0.015	6853.7 4827.3	47.2 33.2	0.031 0.039	1.080 0.949
0.020	3363.0	23.2	0.049	0.837
0.025	2567.6	17.7	0.057	0.761
0.030	2007.5	13.8	0.065	0.698
0.035	1722.5	11.9 9.5	0.071 0.079	0.665 0.619
0.040 0.045	1378.3 1198.3	8.2	0.085	0.594
0.050	979.3	6.7	0.093	0.558
0.055	897.4	6.2	0.097	0.543
0.060	786.8	5.4	0.102	0.527
0.065 0.070	665.3 565.3	4.6 3.9	0.110 0.117	0.506 0.485
0.075	517.0	3.6	0.122	0.476
0.080	432.0	3.0	0.130	0.457
0.085	392.0	2.7	0.135	0.446
0.090 ;	312.0	2.1	0.147	0.421
0.095 0.100	287.0 227.0	2.0 1.6	0.152 0.167	0.411 0.375
0.105	193.0	1.3	0.178	0.342
0.110	193.0	1.3	0.178	0.342
0.115	192.9	1.3	0.178	0.342
0.120 0.125	192.9 192.9	1.3 1.3	0.178 0.178	0.342
0.130	192.9	1.3	0.178	0.342
0.135	152.9	1.1	0.191	0.329
0.140	132.9	0.9	0.199	0.318
0.145	132.9	0.9	0.199	0.318
0.150 0.155	112.9 92.9	0.8 0.6	0.208 0.220	0.311 0.298
0.160	80.0	0.6	0.230	0.283
0.165	80.0	0.6	0.230	0.283
0.170	. 80.0	0.6	0.230	0.283
0.175 0.180	80.0 80.0	0.6 0.6	0.230 0.230	0.283 0.283
0.185	80.0	0.6	0.230	0.283
0.190	80.0	0.6	0.230	0.283
0.195	40.0	0.3	0.269	0.277
Min. Data	a Value =	0.000		
Max. Data	a Value =	0.342		
C.V. = Co	peff. of Var	iation = Sta	ndard Devia	tion/Mean

Figure 18. Histogram of All Composite Gold Assays

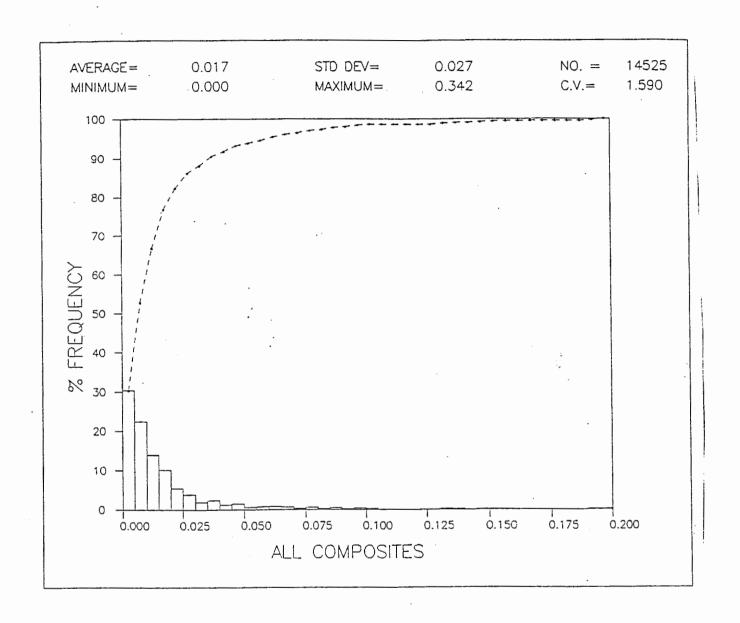


Figure 19. Variogram and Theoretical Model Fit Along Strike Direction.

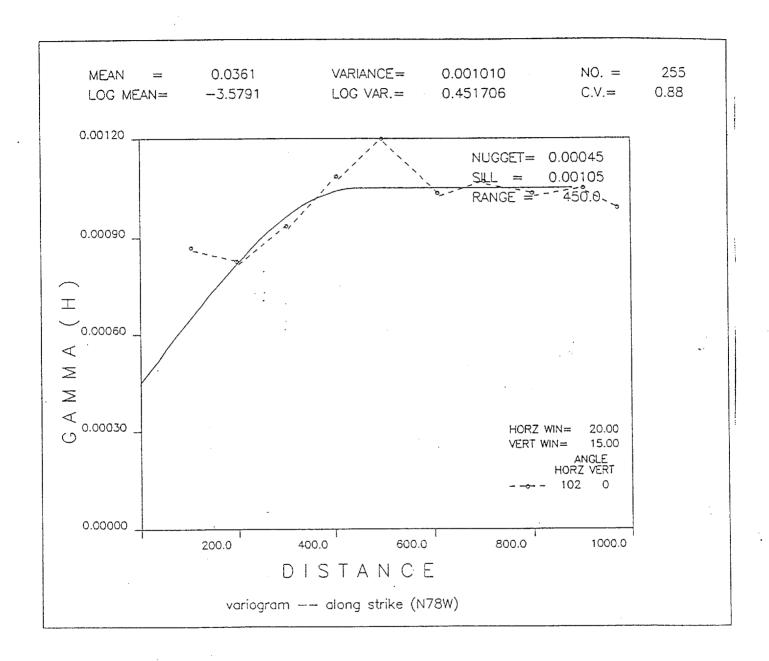
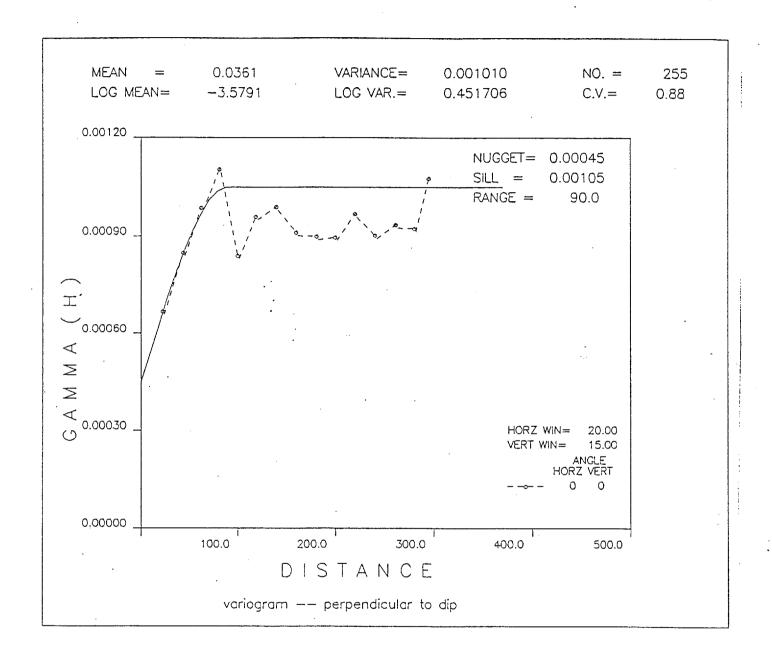


Figure 20. Variogram and Theoretical Model
Fit Perpendicular to the Plane of Dip



3-D BLOCK MODELING

A 3-D model of the Moss Deposit was built to assess the preliminary geologic and minable reserves using the following limits:

Easting 290,500 to 294,000 Northing 1,491,500 to 1,493,000 Elevation 1,500 to 2,600

The blocks in the model are 25' square blocks. The bench height is 20'. Therefore, there are 140 columns, 60 rows, and 55 benches in this model. The total number of blocks in the model is 462,000.

Each block in the model has been assigned a value between 0 and 100 to indicate the percentage of the block below the topography. Several other items have been reserved in each block to store the grades and other pertinent information from different interpolations. Table 3 gives the description of the items stored in each block of the model.

Gold grades were assigned to the blocks using both kriging and inverse distance weighting interpolation methods. Using a strike direction of N78W (or N102E), and dip angle of -68° SW, three different cases were tried:

- 1. Inverse distance weighting method of power three (ID3). Search distances along the strike and down dip are 100-feet. Search distance vertical to the plane is 20-feet.
- 2. ID3. Search distances along the strike and down dip are 300-feet. Search distance vertical to the plane is 20-feet.

3. Kriging using the search strategy of Case #2.

Tables 4, 5, and 6 give the geologic reserves from these three cases, respectively. They were computed using a tonnage factor of 12.5 cubic feet per ton, down to 1600' elevation.

Figures 21 and 22 are the sample N-S sections through the block model at 291,950E and 292,590E showing gold grades that are greater than or equal to 0.008 opt. The bench composite gold values are also shown on these sections.

Table 3.	Desc	ription of the Items Stored in the 3-D Block Model
TOPO	-	% of the block below topography
GOLDI	_	Estimated gold grade from inverse distance weighting method (ID3) 300' search
GOLDK	_	Estimated gold grade from kriging 300' search
RECAU	_	Estimated gold grade from ID3 100' search
KRGVR	-	Kriging estimation error
DIST	_	Distance to the closest composite value
SILVR	_	Reserved for future use
KODE	-	Reserved for future use
ROCK	_	Reserved for future use
ORTYP	-	Reserved for future use
PRCNT	_	Reserved for future use
PROP	_	Reserved for future use

Table 4. Geologic reserves from ID3 to 1600' elevation at different cutoff grades -- 100' search C.V. Cutoff Ore Tons Percent Mean Grade x 1000 Above Above 0.000 18875.0 100.0 0.014 1.46 12555.2 66.5 0.020 1.14 0.005 43.4 0.027 0.95 8185.3 0.010 0.81 0.015 5287.6 28.0 0.035 3544.9 18.8 0.044 0.71 0.020 14.1 0.051 0.64 0.025 2665.8 11.2 0.59 0.030 2112.5 0.058 0.55 9.2 0.063 0.035 1736.4 1390.3 7.4 0.070 0.52 0.040 5.9 1113.1 0.077 0.49 0.045 0.084 0.46 4.8 0.050 901.5 0.090 0.43 0.055 747.1 4.0 596.6 0.40 0.060 3.2 0.098 0.38 2.7 0.105 0.065 502.3 0.35 2.3 0.111 0.070 440.7 2.0 0.117 0.33 0.075 377.2 1.8 0.122 0.31 0.080 335.3 0.29 1.6 0.128 295.2 0.085 1.4 0.28 0.090 262.6 0.132 0.137 0.27 1.3 0.095 238.0 212.0 1.1 0.142 0.25 0.100 0.147 0.23 186.0 1.0 0.105 0.151 0.22 171.0 0.9 0.110 0.8 0.155 0.21 154.0 0.115 0.157 0.21 0.120 145.0 0.8 0.7 0.161 0.20 0.125 132.0 122.0 0.6 0.163 0.19 0.130 0.169 0.18 0.135 104.0 0.6 0.5 0.172 . 0.18 95.0 0.140 0.17 86.0 0.5 0.175 0.145 0.17 79.0 0.40.178 0.150 0.3 0.183 0.17 65.0 0.155 0.3 0.190 0.17 51.0 0.160 0.2 0.197 0.16 41.0 0.165 34.0 0.2 0.204 0.15 0.170 0.208 0.15 30.0 0.2 0.175 30.0 0.2 0.208 0.15 0.180 29.0 0.209 0.15 0.2 0.185 0.15 27.0 0.1 0.211 0.190 0.228 0.16 14.0 0.1 0.195 0.000 Min. Data Value = Max. Data Value = 0.284 C.V. = Coeff. of Variation = Standard Deviation/Mean

Table 5.	Geologic rese at different	erves from ID3 cutoff grades	to <u>1600'</u> e. 300' sea	levation
Cutoff Grade	Ore Tons x 1000	Percent Above	Mean Above	c.v.
Grade 0.000 0.005 0.010 0.015 0.020 0.025 0.030 0.035 0.040 0.055 0.060 0.055 0.060 0.065 0.070 0.075 0.080 0.085 0.090 0.095 0.100 0.105 0.110 0.115 0.120 0.125 0.130 0.135 0.140 0.145 0.150 0.165 0.170 0.175 0.180	x 1000 51876.8 33892.3 20178.4 11686.7 7414.2 5537.3 4049.5 3013.7 2258.7 1729.8 1249.0 955.6 724.8 607.6 512.4 427.0 373.0 326.0 277.0 243.0 212.0 179.0 157.0 135.0 116.0 101.0 79.0 67.0 53.0 42.0 36.0 27.0 23.0 19.0 15.0 14.0 14.0	Above 100.0 65.3 38.9 22.5 14.3 10.7 7.8 5.8 4.4 3.3 2.4 1.8 1.4 1.2 1.0 0.8 0.7 0.6 0.5 0.5 0.4 0.3 0.3 0.3 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0	Above 0.011 0.016 0.022 0.030 0.038 0.043 0.049 0.055 0.061 0.067 0.075 0.082 0.090 0.096 0.101 0.107 0.112 0.116 0.121 0.125 0.129 0.134 0.138 0.143 0.147 0.151 0.157 0.162 0.168 0.175 0.168 0.175 0.180 0.189 0.195 0.201 0.211 0.213 0.213	1.28 0.98 0.80 0.68 0.53 0.50 0.47 0.44 0.42 0.40 0.37 0.32 0.27 0.26 0.27 0.26 0.25 0.21 0.20 0.20 0.20 0.19 0.19 0.19 0.16 0.16 0.16
0.185 0.190 0.195	12.0 12.0 8.0	0.0 0.0 0.0	0.219 0.219 0.232	0.15 0.15 0.15
1	ata Value = ata Value =	0.000 0.277		
c.v. =	Coeff. of Va	riation = Stan	dard Deviat	ion/Mean

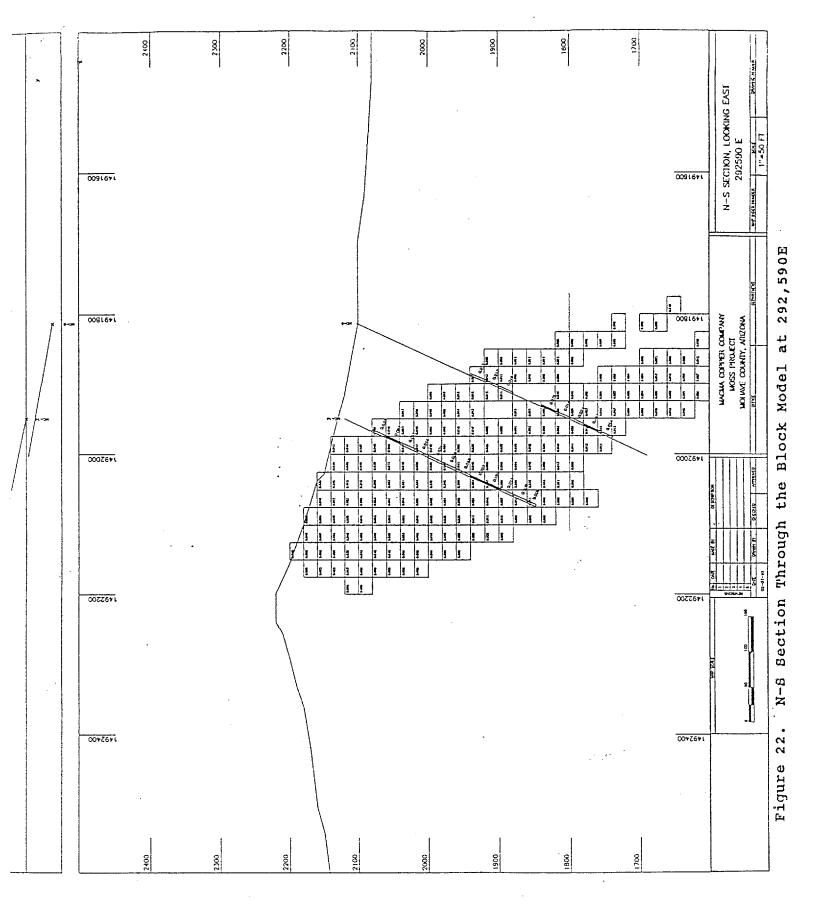
Table 6. Geologic reserves from kriging to 1600' elevation at different cutoff grades -- 300' search

Cutoff	Ore Tons	Percent	Mean	c.v.
Grade	x 1000	Above	Above	
0.000	51876.7	100.0	0.011	1.16
0.005	35179.1	67.8	0.016	0.90
0.010	21041.6	40.6	0.022	0.72
0.015	12034.4	23.2	0.029	0.59
0.020	7851.4	15.1	0.035	0.51
0.025	5473.8	10.6	0.041	0.46
0.030	3836.7	7.4	0.047	0.41
0.035	2855.9	5.5	0.053	0.38
0.040	2148.7	4.1	0.058	0.35
0.045	1640.1	3.2	0.063	0.33
0.050	1109.6	2.1	0.071	0.30
0.055	849.8	1.6	0.077	0.27
0.060	678.8	1.3	0.082	0.25
0.065	544.1	1.0	0.087	0.23
0.070	451.5	0.9	0.091	0.21
0.075	363.0	0.7	0.096	0.20
0.080	283.0	0.5	0.101	0.18
0.085	236.0	0.5	0.104	0.17
0.090	196.0	0.4	0.108	0.16
0.095	154.0	0.3	0.112	0.15
0.100	118.0	0.2	0.117	0.14
0.105	86.0	0.2	0.123	0.13
0.110	64.0	. 0.1	0.128	0.12
0.115	53.0	0.1	0.132	0.12
0.120	41.0	0.1	0.136	0.11
0.125	30.0	0.1	0.141	0.10
0.130	24.0	0.0	0.144	0.10
0.135	16.0	0.0	0.150	0.09
0.140	13.0	0.0	0.153	0.09
0.145	9.0	0.0	0.159	0.09
0.150	6.0	0.0	0.164	0.09
0.155	4.0	0.0	0.170	0.09
0.160	3.0	0.0	0.174	0.09
0.165	2.0	0.0	0.180	0.10
0.170	1.0	0.0	0.192	0.00
0.175	1.0	0.0	0.192	0.00
0.180	1.0	0.0 0.0	0.192 0.192	0.00
0.185	1.0	0.0	0.192	0.00
0.190	1.0	0.0	0.132	0.00
	_			ļ

Min. Data Value = 0.000 Max. Data Value = 0.192

C.V. = Coeff. of Variation = Standard Deviation/Mean

Project #US1242-003



Project #US1242-003

PIT DESIGN

An economic pit design of the deposit was developed using floating cone algorithm based on the block grades generated from Case #2. The parameters used for this design were as follows:

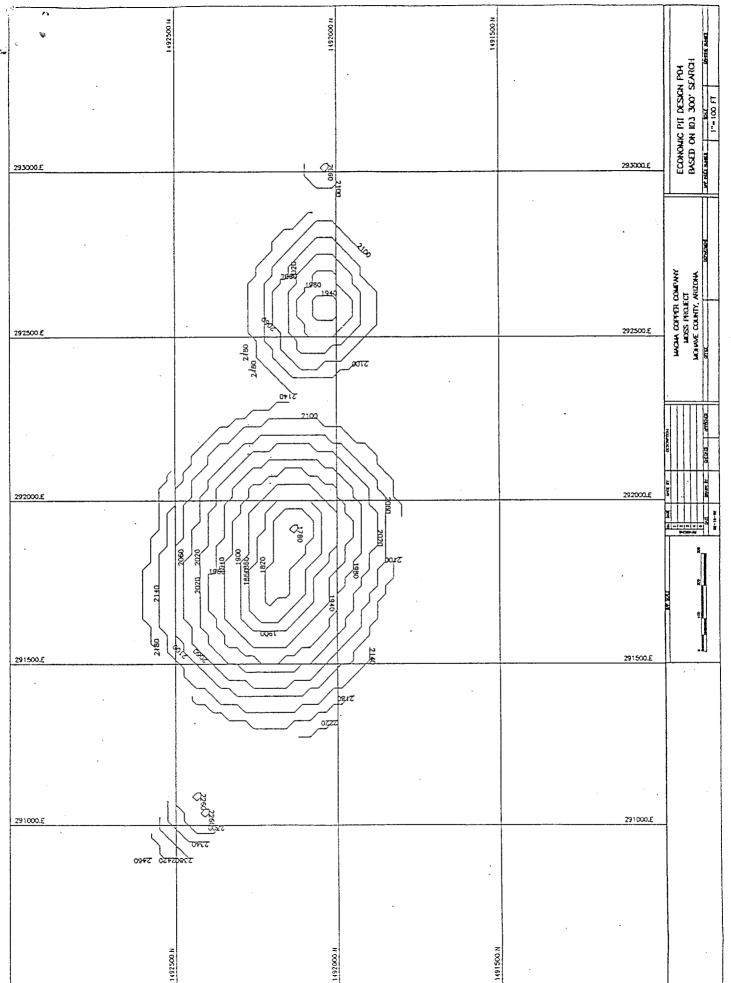
Mining cost/ton waste = \$0.83 Total operating cost/ton ore = \$4.89 Pit Slope = 45° Gold price/oz = \$350 Recovery = 60%

Table 7 summarizes the reserves in this pit design. Again, the tonnage factor used was 12.5 cubic feet per ton for both ore and waste. The blocks included in this pit are whole blocks based on whether the center of the block falls inside or outside the pit. Therefore, the pit walls are not smooth. Furthermore, no haul roads were incorporated into the pit because of the preliminary nature of the pit design. Figure 23 shows a plan view of this pit.

Table 7. Reserves at different cutoff grades in economic pit design P04 from floating cone

Cutoff Grade	0.000	0.010	0.020	0.030	0.040
Ore x 1000	5855.	4776.	2996.	1932.	1300.
Grade	0.028	0.033	0.044	0.055	0.065
Waste x 1000	3009.	4088.	5868.	6932.	7564.
S.R.	0.514	0.856	1.959	3.588	5.818

- Notes: 1. Pit bottom is at 1800' elevation
 - 2. Tonnage factor used is 12.5 cu.ft/ton
 - 3. Block grades are based on ID3 with 300' search



Economic Pit Design Using Floating Cone Figure 23.

MC-1 INDICATED

	ı	1			Г
Block #	GRADE (OPT)	FT2	FT ³	Tows	567 (567)
Block 1	.053	1325×101	133,825	10,706	
Block 2	. 027	2325	234,825	18,786	507
Block 3	. 030	2750	277,750	22,220	667
	. 036	2250	227, 250	18,180	654
Block 4	.020	2325	234, 825	18,786	374
Block 5					
				Total tons 88,678	10tel 03
					2771
				88,678	
					·
	ı	1	1	I	

MM-1 AND MM-2 INDICATED

Block	, ,		- 2		
Block HOTE #	GRADE (OPT)	FT ²	FT ³	Tows 47, 754	07
1316ck 2	.036	9,475 863	596, 925		1,719
Block 3	. 043	1,300×63	81,900	6,552	202
Block 4	.045	14,325X885	1, 267, 763	101,421	4,564
Block 5	.022	10, 12.5×885	896,063	71,685 .	1,577
Block 6	.105	7950x885	703, 575	56,286	5,910
Block 7	.03 9	2000 X 885	177,000	14, 160	552
				·	
				Total Tons	Total 03
				10tal 10ns 297,848	14,604
	1	I	i	I	

mm-1 And mm-2 Inferred

	, ,	j		•	1
Block Hole #	GRADE (OPT)	FT ²	FT ³	TONS	07
Block#1	. 036\	3250 X63	204,750	380 ر16	590
			· 		
	·				
				Totalfons	Total 03 590
				Totalfons 16,380	590
				,	
	•		-		

,

0.11-	1	1	1	ı	T.
Block #	GRADE (OPT)	FT ²	FT ³	TONS	07
Block 1 Block 2 Block 3	•021 .097 .037	18,780 × 67 23,750 × 93 23,750 × 93 15,950 × 93 2,500 × 93	1,252,900	100, 232 176, 700 118, 668	2,105 17,140 4,391
Block 4 Block 6	. 08¢ .∞020	5250 893	488,250	39,060	7 <i>8</i> l
				Total tons = 453,260	Total 03 = 26,017

MC-2, MM-7 INFERRED

Block Hote#	GRADE (OPT)	FT ²	FT ³	TONS	07
Blocks	. 037	4625 X93	430,125	34,410	1, 273
					·
				Total tons 34,410	Total 03.

INDICATED

MC-3 AND ME-15

		1		1 ·	Í
Block Hot e#	GRADE (OPT)	FT ²	FT3	TONS	07
Block#1	.064	12,175 1400	1, 217, 500	97,400	6,234
Block#2	.023	2,300×100	230,000	18,400	423
VBlock#3	.060	7, 900	790,000	63,200.	3,792
Block#4	.026	1, 125	112,500	9000	234
				Total tons	Total 03
			,	188,000	10,683
					,
			·		
					l

MM-3 INDICATED

Block#	GRADE (OPT)	FT ²	FT ³	Tons	07
Block 1	. 048	13,000 1 3,000 XI44.5	1,878,500	150,280	7,213
Block 2	. 047	20,900	3,020,050	241,604	11, 355
		-			
			·		·
				1 1 kms	Tatal 03
				Total 1000	76tal 03 18,568
		·		Total tons 391,884	18,568
				,	
					•

MC-4 AND MC/13

INDICATED

,		1/Vaich ir			
Mc-4/mc/13 Black# Hole#	GRADE (OPT)	FT ²	FT ³	TONS	07
8k-1	.032	4475 X128		45,824	1,466
8k-2	.067	3500	448,000	35,840	2,401
-					·
					-400
				Total tons	Total 03 3,867
				81,664	3,867
		,			
	l	1	1	1	

1-4/me-13	j 1			1	l [.]
HOLE#	GRADE (OPT)	FT2	FT ³	TONS	07
Bk-3	.035	3950 ×128	505,60	40,448	1,416
				, maga i	·
				Total tons	total o
				Total tors 40,448	total 6
					,

11 12 ***	GRADE (OPT)	FT2	FT3	TONS	07
HOLE# Block 4	. 058	5000 x 224	1,120,000	89,600	5, 197
Block 5	.038	88 50x 224	1,982,400	158,592	6,026
Block 6	. 047	7375	1,652,000	132, 160	6,212
Block7	.027	1000	224,000	17, 920	484
Block8	044	11, 125	2,492,000	199, 360	772 ر 8
				Total Tons =	Total 03
				597,632	26,691
			,		
					øi ;
					1

MC-5 INSORRED

ſ		· •		I	
HOLETT	GRADE (OPT)	FT ²	FT3	TONS	07
Block 1	.053	2625 X224	588,000	47,040	2,493
Block Z	. 038	10,575	2,368,800	189,504	7,201
Block 3	.047	9625	2,156,000	172,480	8,107
				Total tons	Total 03
				409,024	17,801
					-

MC-6 IndicATEd

	,		1	1	r
Block ≠ole #	GRADE (OPT)	FT ²	FT ³	TONS	07
Block 1	.021	2750X212	583,000	46,640	980
1310ck 2	. 057	6675	1, 415, 100	113,208	6,453
VBlock 3	. 03 0	9850	2088,200	167,056	5,012
				•	03.
				Total Tons	Total 12,445
				Total Tons = 326,904	12,445

1

m c-6 INFERRED

1	!	, 			
HOLE#	GRADE (OPT)	FT2	FT ³	TONS	10,803
Block 4	.057	11,175×212	2,369,100	Tons 189,528	10,803
Block	• 0 3 /				
				·	
					112 03
				Total tons 189,528	Total 03
				10 (28	10803
	·			189,300	1
		·			
		•			
			and the same of th		
	·	·			
		•		,	
	l	1	1	1	

MC-7 INDICATED

` ,		ı		ı	i'
HOLE#	GRADE (OPT)	FT ²	FT ³	TONS	07
Block 1	. 041	6375X1465	933,938	74,715	3,063
Block Z	.023	5600	820,400	65,632	1,510
Block 3	.020	3375	494, 438	39,555	791
Block 4	.020	1.72 4 3 00	629,950	50,396	1008
				Total tons	Total 03 6,372
				230, 298	6,3/2
· .					
		4			I

MM-8 INDICATED

		4			
Block	GRADE (OPT)	FT ²	FT ³	TONS	07
Block#1	.098	1200 X121.5	145,800	11) 664	1,143
Block#2	.143	1875	227, 813	18,225	2,606
Block#3	. 089	18,775	2,281,163	182,493	16,242
Block#4	.054	12,375	1,503,563	120, 285	6,495
B10ck#5	. 068	6375	774, 563	61, 965	4,214
Block #6	. 052	725	88,088	7, 047	366
				· .	
				Total Tons	Total 03.
				401,679	31,066
			:		

Block HOTE # Block 7	GRADE (OPT)	1250X1215	FT ³ 151,875 60,750	To N5 12, 150 4, 860	07 1, 191 253
Block 8	. 052	500	<i>QU, 1-</i>		·
				Total tms 17,010	Total 03
				17,010	1,444

	5 - 1 - ()	2	<i>⊏</i> 7 3	70.15	07
HOIEH	GRADE (OPT)	FT ² 7075X198	FT ³ 1,400,850	TONS	0Z 4,259
BlockI	.038	1250	247,500	8 19,800	\$693 693
Block2	, 035	1230			•
					·
				Total tons =	Total 03 4952
				131,868	4952
	1				I

ř

MC-8 AND MC-16 INFERRED

1	. 1		_		
HOLET	GRADE (OPT)	FT2	FT ³	TONS	07
Block 3	.038	11,250	2, 227, 500	178,200	6,772
	:				
				Total tons 178,200	Table or
					1010
				178,200	6,772
					•
					·

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mm-13, mm-14, mc-17 IND:CATED

	,	,	ſ	1	· ·
HOLE#	GRADE (OPT)	FT2	FT ³	Tons	07
Block 1	.056	9650 X128.5	1,240,025	99,202	5,555
Block 2	.021	1,97 5	253, 7 88	20,303	426
Block 3	.061	375 ₀	481,875	38,550	2,352
Block 4	.021	6125	787,063	62,965	1, 322
Block 5	.036	16,700	2,145,950	171,676	6 ,180
Block 6	.043	975	125,288	10,023	, , ,
			,		
				Total fons	Total 03
				402,719	16,266
		·		400,	
	·				
•					1.

MM-13, MM-14, MC-17 INFERRED

_ Hol€#	GRADE (OPT)		F73	TONS	5,558
Block #7	.035	10370001400	1,985,325	158, 826	6,875
Block #8	050	13,37 5	1,718687.5	137,495	6,0.5
		1.	TOTAL	296, 3 <u>2</u> 1	433 ر12
				-	
	i				
		-			
	,				

Post-It™ brand fax transmittal memo 7671		# of pages > 7
DR. DouglAS JiNKS	From	IRWIN
Dept.	Co.	
Fax #	Phone #	
	" "	

TO: DR. DouglAS J:NKS

From: RAY IRWIN

RE: COMPASS MINERALS' INITIAL MOSS MINE PROPOSALS

IN RESPONSE TO COMPASS MINERALS! INITIAL MOSS

MINE PROPOSALS I HAVE SUGGESTED THE FOllowing:

1) THAT THETWOODS, OOD PAYMENTS TO THE WILLIAMS

SAMILY BE CREDITED TOWARD THE BILL MILLIAMS

PURCHASE PRICE. MAICOLM HUMPHREYS AND MICAL SLATER

BELIEVE, BASED ON A CONVERSATION WITH GREGORY

GINTOST, THAT THE WILLIAMS FAMILY WILL

POST PONE THE BUYOUT FOR 12 MONTH PERIODS

FOR EACH \$50,000 PAYMENT RATHER THAN 6 MONTH

PERIODS AS THE AGREEMENTIS NOW WARITIEN. I

SAID THAT IT WAS CRUCIAL TO PUSH-BACK

THE PURCHASE DATE AS LONG AS POSSIBLE AND

THAT OUR PROPOSED TERMS Should STIPULATE

THIS REQUIREMENT.

- 2) I Told MESSRS. Humphreys and STATER

 THAT FOR THE long TERM ECONOMIC VIABILITY

 OF THE PROJECT THAT THE PRODUCTION ROYALTY

 TO BE PAID TO GREGORY GINTOFF MUST BE REDUCED

 TO 1-290 NSR, AND THAT OUR PROPOSED

 TERMS MUST INCLUDE THIS REQUIREMENT.
- 3) OUE All AGREED THAT MR GINTOFF'S AdvANCEL ROYALTY PAYMENTS OF \$35,000 MUST be REJUCED AND

dELAYED TO SOME DEGREE.

4) I Told MR. Humphreys That The Proposed Production Royalty To Bill: TON MINERALS Should be The 190 NSR RATHER THEN THE 252% NPI TO PREVENT POTENTIAL LEGAL PROBLEMS AT A LATER date. The proposed \$500,000 cap to this Royalty WAS ACCEPTABLE.

MRHUMPHREYS PLANS ON PUTTING TOGETHER

A REVISED bid INCORPORATING THESE POINTS

THIS AFTERNOON. UPON RECEIPT, THE REVISED

PROPOSAL WILL BE FAXED TO YOU.

Day Lowin 3:23Pm

· Déar Sir.

REF : Moss MINE PROJECT

DR. Douglas J:NKS	RAY IRWIN	
Co	Co.	
Dept.	Phone #	
Fax #	Fax #	

Reynolds Metals Exploration Inc (RMEX) and Compass Minerly
himited (CML) propose the following terms and conditions
for the acquisition of various patented and unpatented
lode claims that comprise the Moss Mine Project
as set out it saledule A.

RMET and CML offer to acquire and keep in good standing, subject to the terms set out below and conditions precedent 1, 2, 3, 4, 5 per 6, and conditions subsequent the Moss Mine Project with the exception of New York patented claims MS 3767 - 1, 2, 3 E4 and Gold Hill patented claims MS 3280-1,2,3 E4 which will be excluded from this agreenent and terminated or assigned on transferred to Billiton Minerals Inc U.S.A (BMI) on at Billiton Minerals Inc U.S.A

- A. RMEX/CML well spend \$100,000 on initial explorations of the Moss three Project within 6 months of signing a formal agreement with BMI and thereof the continue to expeditionsly explore and dependent upon results develop the project.
- B. At the end of .12 months RMEX/CML will notify BMI and Mr. G. Gintoff of any patented on unpatented claims to be excluded from the continuing Moss Mine Project program and will if requested within 30 days ansign on transfer the claims to BMI on at BMI's direction to Mr. G. Gintoff on if not so notified

terminate the relevant agreements an abandon unpatented claims. not al andy

c. On commencing mine production well from claims subject to this egreenent and and listed in schedule A except New York MS 3767

1,2,3 and 4 and Gold Hill M.S. 3280 -1,2,3 and 4

BMI would receive a 170 N.S.R rogalty until \$500,000 had been paid out

D. Conditions Precedent

This offer is subject to the following conditions precedent.

williams option

- 1. The Williams option be extended for 1 year to August 3 1993 for an amount of \$50,000 payable on August 3 1992.
- 2. That a further extention of the Williams option be granted for I year to August31994 for an amount of \$50,000 payable on August 3 1993.
- 3. That all option payments made by RMEX | CMC be deducted from the exercise price of \$1,000,000 which is due payable on August 3, 1994.

 G. Gintoff Agreement
- 4. G. Gintoff to receive a 21/2 % NSR royally from Sold and silver produced from all patented claims subject to this as-eenent and seh out is Schedule A except New York 3767
 1,2,3 & 4 and Gold Hill 3280 1,2,3 and 4
- 5. G. Gintoff to receive a 1/2 % NSR royally from gold and silver produced from the Ruth 2213 patented clair and Rattan 857 patented clair

6. No royally will be paid on production
from any other patented an impatented
claim comprising this agreement
7 Advance payments against the royalty would
be paid commencing I shy 1893 and
would comprise the following.

July 1 1993 \$10,000

July 1 1995 and thereofter \$20,000

All advance royalty payments would be
deducted from the relevant NSR royally
payments from product on

E Conditions Subsequent

It would be the intention of RMEX [cm to

It would be the intention of RMEX | CML to renegotiate on explore and if warranted drop otter option agreements which are onerous for their size and potential. In IL is recognized that reregotiation may not be provide in which case BMI would be give a 30 day notice to assigned transferd the subject patented claims and to BMI on at BMI's direction to M. C. Gintoff before the agreenest are terminded.

& Martinez option

8. No increase is the Martinez option above \$1000 is envisaged until Septembe 1993. It would then be increased to \$1500 per month with all option payments deducted until the full exercise price of \$250,000 was paid out. Hudson option

9. Exercise of residual option price to be deferred

till March 1985 with a much payments of
\$6500 maintained until theh dale
Greenwood option
10 No changes planned.
If you are in agreement with these indicative terms expressed in this offer RMEX and CML
will expeditionly seek relevant approveds
to proceed.
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Mical N. Slater, President • 5301 Longley Lane, Suite A-1 • Reno, Nevada 89502 • Telephone (702) 825-1135 Telecopy (702) 825-3005 For ! Douca Jinks

Possible

MOSS MINE PROPOSALS

- (1) A PROPOSAL THAT STANDS A GOOD CHANCE OF GETTING THE PROPERTY
 - · CHLIRMEX MAKES WILLIAMS PAYMENT OF \$50,000

 AUGUST 3RD IN RETURN FOR 6 MONTH EXCLUSIVE OPTION OVER MOSS PROPERTY.
 - · CHL RMEX IF THEY CONTINUE BETOND 6 MONTHS WILL

 ASSUME ALL GINTOFF, WILLIAMS, CALIFORNIA MOSS PAYMENTS

 BUT WILL SEEK TO DEFER THE \$1 MILLION DOLLAR

 EXERCISE OF WILLIAMS PAYMENT BY 12 MONTHS.
 - · CML RME + WILL PAY BILLITON EITHER A 19. NSR OR

 2/2 % NET PROFIT INTEREST (LATTER IS PROBABLY CHEARER)

 CAPPED AT \$500,000.

 CHLIRMEY AGREES TO CARRY OUT \$150,000 EYPL. PROGRAM
- 2 PROPOSAL THAT CONSTITUTES A BONA FIDE OFFER BUT MAY NOT BE GOOD ENOUGH FOR BILLITON TO KEEP THEIR CURRENT DEAL TOGETHER,
 - · CML/RMEX GRANTED AN EXCLUSIVE OPTION OVER MOSS PROPERTY. FOR GMONTHS
 - · CHL RMEX AGREES TO CARRY OUT \$150,000 EXPLORATION
 PROGRAM OVER MOSS, IN PERIOD.
 - · CHL RMEX IF THEY CONTINUE BEYOND 6 MONTHS
 WILL ASSUME ALL GINTOFF WILLIAMS CALIFORNIA MOSS
 PAYMENTS BUT WILL NEGOTIATE DEFERAL AND
 OR REDUCTION PAYMENTS
 - · CHL/RMEX WILL PAY BILLITON A 190 NSR OR 2/2 NPI CAPPED AT \$500,000

REGARDS

MALCOLM HUMPHREYS

Shell Mining Company



An affiliate of Shett Oil Company

P.O. Box 2906 Houston, TX 77252-2906

FACSIMILE NUMBER

(713) 870-2978

VERIFICATION NUMBER

(713) 870-2254

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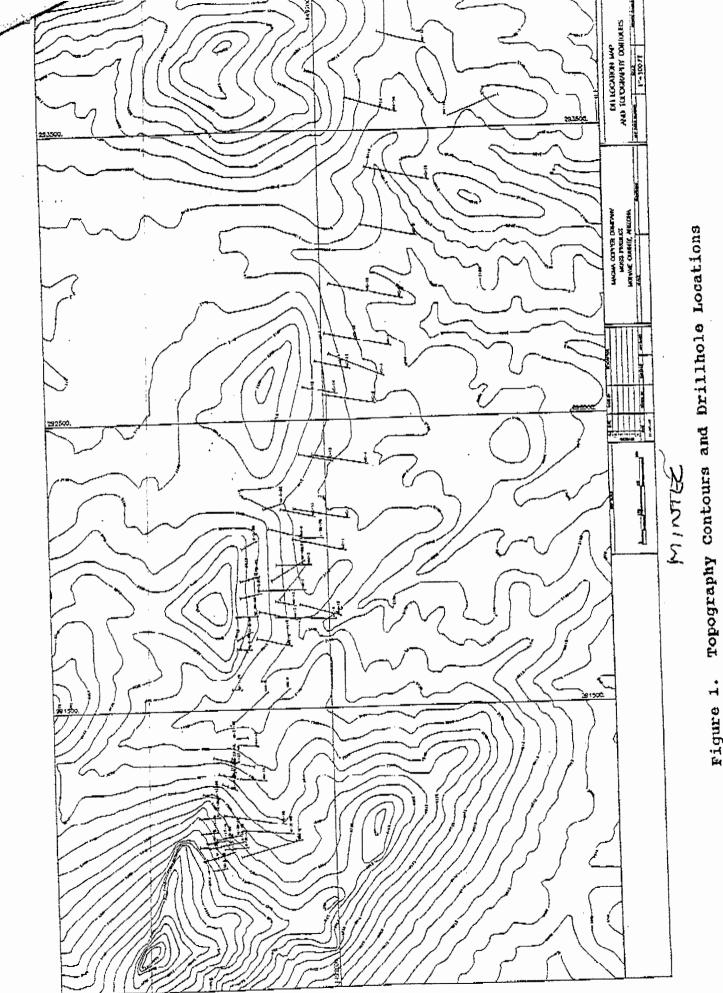
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Table 7. Reserves at different cutoff grades in economic pit design P04 from floating cone

Cutoff Grade	0.000	0.010	0.020	0.030	0.040
Ore x 1000	5855.	4776.	2996.	1932.	1300.
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Waste x 1000	3009.	4088.	5868.	6932.	7564.
S.R.	0.514	0.856	1.959	3.588	5.818

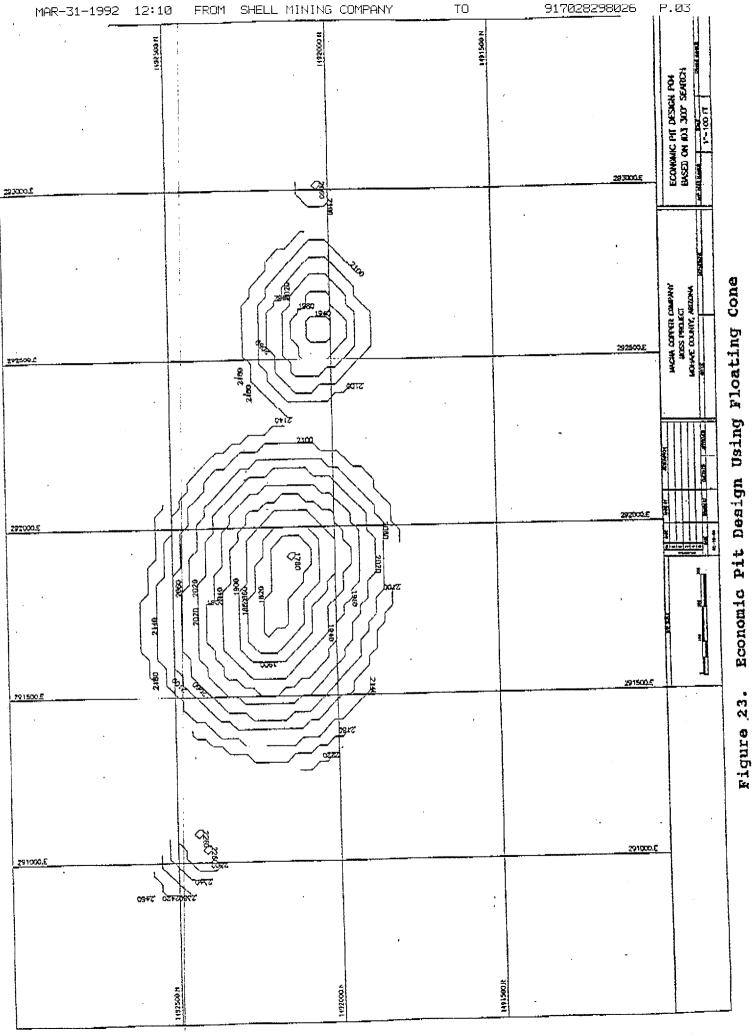
Notes:

- 1. Pit bottom is at 1800' elevation
- 2. Tonnage factor used is 12.5 cu.ft/ton
- 3. Block grades are based on ID3 with 300' search



February 10, 1992

Figure 1.



EXECUTIVE SUMMARY

ΤO

The Moss Deposit located in Mohave County, Arizona is a veintype deposit which strikes west-northwest. Gold and silver mineralization occurs in quartz-carbonate vein and in stockwork veins in the hanging wall and footwall which steeply dips due south-southeast. There are 96 drillholes in the area, which have been drilled at angles approximately due north to intersect the mineralized veins.

Using the assay information from the drillholes, a 3-D block model of the Moss Deposit has been developed to calculate the preliminary geologic and minable reserves. The block size used was 25' x 25' with a bench height of 20'. The model had the following limits:

Easting	290,500	to	294,000
Northing	1,491,500	to	1,493,000
Elevation	1,500	to	2,600

The 5-foot assays were composited into 20-foot benches for use in variogram study and in interpolation of block grades. Northsouth drillhole cross-section maps were generated at 100'-200' intervals to check the data and to see the continuity of the mineralization down dip and along strike.

preliminary statistical analyses and variogram study were performed to help decide the parameters of the variogram and search strategy to use during interpolation. Block grades were then interpolated using both kriging and inverse distance weighting methods. Three cases were tried with the strike and dip of the deposit to be N78W and -68° SW, respectively:

1. Inverse distance weighting method of power three (ID3).
Scarch distances along the strike and down dip are 100-

ΤO

- 2. ID3. Search distances along the strike and down dip are 300-feet. Search distance vertical to the plane is 20-feet.
- Kriging using the search strategy of Case #2.

Based upon these interpolations, the following geologic reserves were obtained down to 1,600' elevation at 0.02 opt gold cutoff:

Case #1	Case #2	Case #3
ID3 (100' Search) Ore Tons 3,545,000 Grade opt 0.044	1D3 (300' Search) 7,414,000 0.038	Kriging (300' Search) 7,851,000 0.035

Based upon the block grades generated with Case #2, an economic pit design of the deposit was developed using the floating cone algorithm.

The parameters used for this design were:

Mining cost/ton wa	ste	=	\$0.83
Total operating co	st/ton ore	=	\$4.89
Pit Slope			45°
Gold price/oz		=	\$350
Recovery		=	60%

At 0.02 and 0.03 opt cutoffs, the reserves from the economic pit were as follows:

	0.02 opt	0.03 opt
Ore tons	2,996,000	1,932,000
Grade opt	0.044	0.055
Waste tons	5,868,000	6,932,000
S.R.	1.96	3.59

STUDY AREA

TΩ

The Moss Project area is approximately 4000' long and 2000' wide. The coordinates of this area is from 290,500E to 294,500E and from 1,491,000N to 1,493,000N. There are 96 drillholes in the area with over 16,000 feet of drilling. Most holes are inclined with depths ranging from 30' to 550'. The spacing of the drillholes along the strike of the deposit is 50' to 200'. Figure 1 shows the locations of the drillholes and the topography contours in this area.

The gold mineralization is low grade and mostly confined to quartz-carbonate vein and stockwork veins in the hanging wall and footwall. These veins strike approximately west-northwest and steeply dip due south-southeast. Figures 2 through 16 are N-S cross-section plots at about 200' intervals showing 20' bench composite assays that are equal or greater than 0.008 oz/ton gold.

DATA STATISTICS AND VARIOGRAM STUDY

TO

Mintec received the copies of drillhole logs for 96 holes from These holes were assayed for gold at 5-foot intervals. Some holes were also assayed for silver. Mintec entered the gold values for each drillhole in to the MEDSYSTEM data base. Silver values were not entered, but space was allocated for silver in the case of future need.

The average grade of all assays at 0.020 opt cutoff is 0.050 opt. Table 1 gives the statistics of all assay values at 0.005 intervals. Figure 17 shows a histogram of these assays.

The assay grades were composited to 20' bench height for use in interpolation of block grades and variogram study. gives the statistics of all composite data at 0.005 intervals. Figure 18 shows a histogram of these composites.

A preliminary variogram study was conducted using the composite data that are less than 0.25 opt. Two directional variograms were developed, one along strike direction (N78W or N102E), and the other perpendicular to the plane of dip. These variograms with the theoretical models used are shown in Figures 19 and 20, respectively. Because of the spacing of the drillholes, the variogram in strike direction cannot reveal the short-scale continuity.



1016 Greg Street, Sparks, Nevada 89431 702 / 356-1300 FAX 702 / 356-8917

Report on

Preliminary Direct Agitated Cyanidation Testwork - Moss Cuttings Intervals
MLI Job No. 1727
January 29, 1992

for

Mr. Mark Sander Magma Copper Company 7400 North Oracle Road - Ste 200 Tucson, AZ 85704

EXECUTIVE SUMMARY

Direct agitated cyanidation (bottle roll) tests were conducted on two Moss cuttings intervals at the as received (nominal 10 mesh) feed size to determine precious metal recovery, recovery rate, and reagent requirements.

Metallurgical results show that Moss cuttings intervals were amenable to direct agitated cyanidation treatment at the as recieved feed size. Gold recoveries of 87.9 and 78.7 percent were achieved from intervals MC-6 (56) and MC-14 (28), respectively, in 96 hours of leaching. Respective silver recoveries were 70.0 and 59.4 percent. Gold recovery rates were fairly rapid and extraction was substantially complete in 24 hours. Additional gold values were extracted between 24 and 96 hours, but at a very slow rate. Reagent requirements were low.

SAMPLE PREPARATION AND HEAD ASSAYS

Two cuttings intervals from the Moss project were received for the preliminary testing program. Each interval was thoroughly blended and split to obtain one kilogram for a bottle roll test, and a sample for single direct head assay.

TATUA COULHAI IO SIYARRANAP P.10

EXECUTIVE SUMMARY

The exploration program consisting of geologic and alteration mapping, surface sampling and drilling of the Moss Project has been completed. A total of 10,207 feet in 22 holes was drilled to evaluate potential gold and silver mineralization along 3500 feet of strike length of the mineralized Moss vein.

A drill indicated resource estimate of 89,117 ounces gold at a grade of 0.053 opt was compiled for a 600 foot segment of this vein from data generated by Billiton Minerals USA. Extrapolation of tonnage and grade in this segment onto an undrilled, adjacent claim indicated potential for 213,000 to 382,000 contained ounces gold. Anomalous gold mineralization in surface samples suggested additional potential may exist below a large area of strong silicification at the west end of the Moss vein.

An exploration drilling program consisting of two parallel lines of 17 holes, designed to penetrate the vein at depths of 200-300 feet and 400-500 feet, was conducted on the $(o \sim e)$ previously undrilled claim. Phase - II of this program consisted af a horizontal fan of three shallow-angle holes, 700 to 1040 feet in depth, which tested an 800 foot segment of the vein in the silicified area. A fourth hole in this phase was lost at 317 feet and a fifth tested an area of strong acid leaching on Billiton's unpatented lode claims.

Computer-generated resource estimates based on Phase - I drilling data yield a geologic resource of 7.414 million tons at 0.038 opt, or 281,732 contained ounces gold and a pit resource of 2.996 million tons at 0.044 opt, or 131,824 mineable ounces gold.

Phase - II drilling in the silicified area unexpectedly encountered mineralized intervals only in the upper 400 ft of the three holes and not adjacent to the Moss vein as anticipated. Average grade of these intervals is 0.015 opt gold. The maximum probable resource in this area is abut 64,000 ounces gold, but the low grade and unfavorable topography make economically profitable recovery unlikely.

The mineable resource estimate of 131,824 ounces is well below the 250,000 to 300,000 ounce range necessary for Magma to profitably develop and exploit this deposit. Targets which may have contributed to this resource have been tested unsuccessfully and no additional targets are recognized at this time. Based on the results of this evaluation it is recommended that Magma Copper Company terminate the Moss Project.

INTRODUCTION

The Moss property is located in the San Francisco Mining District, near Oatman in Mohave County, Arizona (Figure 1). The property was leased by Magma Copper Company from Billiton Minerals USA in 1991, however, final agreement on the sublease of some patented claims was not finalized with the owners until the Fall of 1991. Preliminary evaluation, including mapping and surface sampling had begun prior to the final agreement and drilling commenced subsequent to it.

EXPLORATION PROGRAM

A preliminary data review and sampling program was conducted in April 1991 (Jeanne, 1991) prior to acquisition of the property by Magma Copper Co. As an agreement with Billiton was being negotiated, a more detailed program including mapping and additional sampling was begun.

Geologic mapping was conducted at a scale of 1" = 400' on a portion of the topographic base prepared by IntraSearch for Billiton Minerals. The area mapped in detail comprises about 2.4 square miles in the immediate vicinity of the Moss vein (Plate I).

Outside the area mapped in detail but overlapping the southeastern corner of Billiton's unpatented BMX claims, are widespread exposures of strongly acid-leached Moss Porphyry. I felt this area worthy of some attention, and conducted some cursory limonite and alteration mapping and sampling. No formal maps were prepared pending the outcome of a drill hole planned at the site of a multiple trace element anomaly and exceptionally strong alteration.

Based on data from Billiton and the initial exploration, a drilling program was planned and conducted for portions of the Moss vein on the Key No. 1 and California Moss claims (Plate 4). A second phase of drilling was conducted on the silicified peaks at the west end of the Moss vein and for the strongly altered area in Mossback wash on Billiton's unpatented BMX claims. A total of 10,207 feet was drilled in 22 holes. All holes were drilled at angles of -65° to -30° except the one hole in Mossback wash which was vertical.

Surface samples from the vein on the California Moss claim indicate potential for mineralization similar to that on the Key No. 1 claim. Three parallel lines of drill sites were prepared on the California Moss to test the continuity of mineralization eastward from the Key No. 1 at deep, shallow and intermediate depths. The intermediate depth holes extended the line of Billiton's holes MM-1, 2, 4, 7 and 8 targeting the vein at depths of 250 to 350 ft. The deeper holes, targeting the vein at depths of 400 to 500 ft, were located along a line 100 feet south. Pads for the shallow holes, intended for air track drilling at depths 100 to 200 ft, were located 100 feet north of the intermediate holes along an extension of the line of air track holes drilled by BF Minerals, but were not drilled.

Younger Intrusives

A series of north to northeast trending dikes of rhyolite porphyry intrude the Alcyone Fm. and Moss Porphyry. The dikes contain subhedral to well rounded phenocrysts of potassium feldspar which locally impart a characteristic "birdseye" texture to the rock. The phenocrysts are supported by a fine-grained groundmass of potassium and plagioclase feldspar, quartz and minor biotite.

Minor dikes and small pods of andesite and andesite porphyry intrude the Moss. One such dike averages about 1 foot in width but is traceable over a distance of 2,800 feet (Plate I). This particular dike, on the Gold Hill claims, occupies a structure which, in places, was previously invaded by a quartz-carbonate-pyrite vein.

ALTERATION

Few localities on the property afford the opportunity to examine unaltered Moss porphyry. One such locality is north of the Moss vein on the northeast slope of hill 2371, where salmon-pink K-spar is visible in outcrop. The muck piles around the headframe also contain unaltered K-spar and it is common in drill hole cuttings from the footwall of the Moss vein.

The porphyry generally is characterized by varying degrees of chloritic alteration which imparts a pale- to dark-green color to outcrops. In the southeast part of the mapped area, limonite development and bleaching predominate, respectively producing light to medium brownish and pale yellow to white colors. In the silicified peaks, pervasive silicification is dominant and along the Moss vein, stockwork quartz veins and weak pervasive silicification are present (Plate II).

For mapping purposes, two degrees of chloritic alteration were noted. The weakest produces a bronzy to green color in biotite with minor chlorite development in the groundmass immediately adjacent to the phenocryst. Other mafic minerals typically are found in clots and irregular masses which are completely chloritized. K-feldspars have lost their salmon-pink color. Plagioclase phenocrysts, which may be up to half an inch in length, typically are cloudy to white, imparting a distinctly porphyritic texture to the rock. Although incipiently altered, the feldspars typically are still quite hard and cleavable with twinning evident. The groundmass typically is light to medium gray and in outcrop, the rock is pale to medium gray green. Limonite is common on fracture surfaces, particularly in areas of silicification. Weak to moderate pervasive silicification may be present with this grade of chloritization as in the stockwork zones in the hanging wall of the Moss vein.

The second type of chloritic alteration is stronger than that described above. The groundmass, in addition to biotite and other mafics, is completely chloritized giving outcrops a dark green color. Clay alteration of plagioclase is more intense and phenocrysts can be gouged with a pin. On weathered surfaces they commonly have been completely

removed, leaving large casts. Greenish grus is a characteristic weathering product of this alteration type.

The second type is more abundant on the hanging wall side of the vein, and the first on the footwall side, however, both are gradational and may be intermixed.

In the southeast part of the mapped area, the influence of a large area of acid leaching becomes apparent. This area contains abundant pyrite and in the more strongly pyritized areas, weathering has produced enough acid to mobilize the iron and bleach and leach the rock to white or pale-yellow hues. Peripheral to these areas, the iron has undergone little or no transport and from a distance, soil and outcrops have a brownish color as opposed to the pale to dark green of the chloritized areas. In hand specimen biotite and other mafic minerals, as well as much of the groundmass, are replaced by limonite. Plagioclase phenocrysts are commonly altered to white clay. Some can be scratched only with a pin and others can be gouged out with a fingernail. Limonite development overlaps areas of chloritic alteration and patches of chloritized rock among the limonitic can be seen locally. Hand specimens from these areas are greenish-brown on freshly broken surfaces. Weathering of limonite flooded rock typically produces a blockier form of grus that that of the chloritized rock.

The leached and bleached areas typically have fewer outcrops owing to the abundance of clay. Locally, silicification is present and freshly broken surfaces reveal a thoroughly bleached interior in which biotite and other mafic minerals are clay altered and at some localities, sericitized. Feldspars commonly are bleached but only weakly altered; taking metal from the scratch of a pin and showing cleavage and twinning. Hematite and limonite are common on fracture surfaces and more abundant in silicified rock. Weathering generally produces a light to medium brown grus.

Strong pervasive silicification has invaded the Moss Porphyry and the Alcyone Formation forming the peaks at the west end of the Moss vein. Less intense silicification is locally present in the hanging wall for several thousand feet east of the headframe. In both areas, stockworks of white, clear and/or drusy quartz veinlets are common. The pervasive silicification carries anomalous but not typically ore grade gold mineralization. The stockworks are also auriferous and commonly higher in grade. At the east end of the Moss vein and at scattered localities in the mapped area, gray to reddish-brown jasperoid-like silicification is present. It is very dissimilar to the quartz of the main part of the vein and is barren of mineralization.

MINERALIZATION

Throughout the district, numerous quartz and quartz-carbonate-pyrite veins occur which have been the focus of attention since the discovery of gold there by John Moss in 1863. The Moss vein is the most significant and is traceable for about 3500 feet. The vein is hosted primarily by the Moss Porphyry, but it is also present in the overlying Alcyone

A1.40585A805P

Formation. Development of other, similar veins on the Ruth, Gold Hill, New York and Rattan claims has also been undertaken.

The Moss vein consists, in places, of two parallel veins. A quartz vein up to 15 feet in thickness typically occupies the footwall contact and locally a carbonate vein of similar dimensions may be present at the hanging wall contact of the quartz vein or as a separate vein several feet into the hanging wall. Typically the quartz is white, locally drusy or sugary, but may be fine grained and appear merely to be silicified gouge. In places, carbonate minerals have intergrown with the quartz and where exposed to weathering, the carbonate has been removed leaving a vuggy latticework of silica. In numerous veins varying from fractions of an inch to several inches in thickness, vein filling consists of an outer envelope of quartz, or bands of quartz, enclosing a carbonate core. The carbonate/quartz relationship seen in these and in the Moss vein indicates the carbonate was a later phase in the mineralizing event. Widely disseminated blebs of pyrite are associated with both phases and veins of this association are identified as quartz-carbonate-pyrite or qc-p veins. Fluorite has been noted at a number of localities in the Moss vein; it was mentioned by Godbe (1982) in his report on the property and was noted among cuttings in several of the Magma drill holes. No clear relationship of fluorite to higher or lower grades of precious metal mineralization is evident, however.

Surface samples of silica-rich portions were collected separately from carbonate-rich portions of the Moss vein. Select samples were also taken of stockwork zones, hanging wall and footwall rock, and from exposures where particular features are evident which may assist in understanding the deposit. Highest grades of gold mineralization are associated with the carbonate phase of vein growth. Stockwork zones commonly contain ore grade gold as well. Most of these zones, although appearing to consist mainly of small quartz veinlets, also contain significant amounts of carbonate.

Quartz veins without a noticeable carbonate content are present at numerous localities on the property, however, primary carbonate veins are always associated with quartz veins. A few isolated veins of gray calcite do occur, but they are not significantly mineralized and are thought to be secondary fracture fillings of transported material.

In the drilling, the intervals containing the highest grades of gold also contain varying proportions of q-c-p veins. None of the Magma holes, however, encountered the abundance of these veins as was encountered by the Billiton drilling on the Key #1 claim.

METALLURGY

Two groups of metallurgical tests were completed. The first, on cuttings from Billiton's drill holes and bulk ore samples collected from the adit on the California Moss No. 1 claim was discussed in more detail in my earlier report. The second group consisted of bottle roll tests of sulfide ore from Magma's drill holes. Lab reports from both groups of tests are included in Appendix F.

Gold recoveries in bottle roll tests of -1" mesh bulk ore materials were 42% after 96 hours. Recoveries from cuttings from Billiton's drill holes ranged from 53 to 78% and on those from Magma's holes 78 to 88%.

RESOURCE ESTIMATES

After the initial phase of drilling a hand calculated drill-indicated resource was completed based on data from the California Moss claim (Table 1). This estimate yielded a resource of 100,409 ounces gold at a grade of about 0.024 opt Au. A similar estimate for the area drilled by Billiton had been prepared in an earlier report (Jeanne, 1991) which yielded an estimate of 89,117 ounces at a grade of 0.053 opt Au, for a total of about 190,000 ounces.

Mintec Inc. prepared two resource estimates using all available drilling data. An in situ or geologic resource estimate using an 0.02 opt cutoff and a 300 ft search radius yielded 7,414,000 tons at 0.038 opt or a total contained resource of 281,732 ounces gold. An estimated pit resource using a 0.02 opt cutoff and a 100 ft search radius yielded 2,996,000 tons at 0.044 opt and a 1.96:1 strip ratio or 131,824 mineable ounces. Both Mintec's and my estimates assumed continuity of mineralization through those drill sites which had been skipped in Magma's program by projecting average grades from adjacent drill holes. Since none of the data suggested otherwise, it was assumed that infill drilling on these skipped sites would not encounter any significantly higher grades nor longer intervals of mineralization and therefore could not improve the resource estimate. Copies of data printouts, cross sections, plan maps and pit plans prepared by Mintec have been provided to Magma and are not included in this report.

After the second phase of drilling, a very rough estimate of the potential resource of the silicified peaks area was prepared (Jeanne, 1992) yielding an absolute maximum potential of 185,000 contained ounces and a more probable 48,000 contained ounces gold. The grade on which this estimate is based, however, is very low; 0.012 ounces per ton, which is the average grade of the upper 300 to 400 ft. of the three drill holes. The average grade of the mineralized intervals in these three holes is 0.016 opt Au. Applying this grade to to the calculations yields only 64,000 ounces.

In addition to the disappointing tonnage and grade figures from the silicified peaks, stripping ratios are likely to be high. Topography is steep in the area and continues to climb on the footwall side of the Moss vein. A 45° pit slope superimposed on cross sections of the two westerly holes shows significant footwall material would have to be removed before the pit would reach the levels of the longer mineralized intercepts. It does not appear that this area could contribute to the economics of a mining operation at Moss.

TRLECOPIER

To: Jim Curl, Shell Mining

FROM: Doug Jinks, Reynolds Metals

cc: /Ray Irwin

DATE: April 1, 1992

SUBJ: MOSS MINE REPORTS

PAGES TRANSMITTED: 1

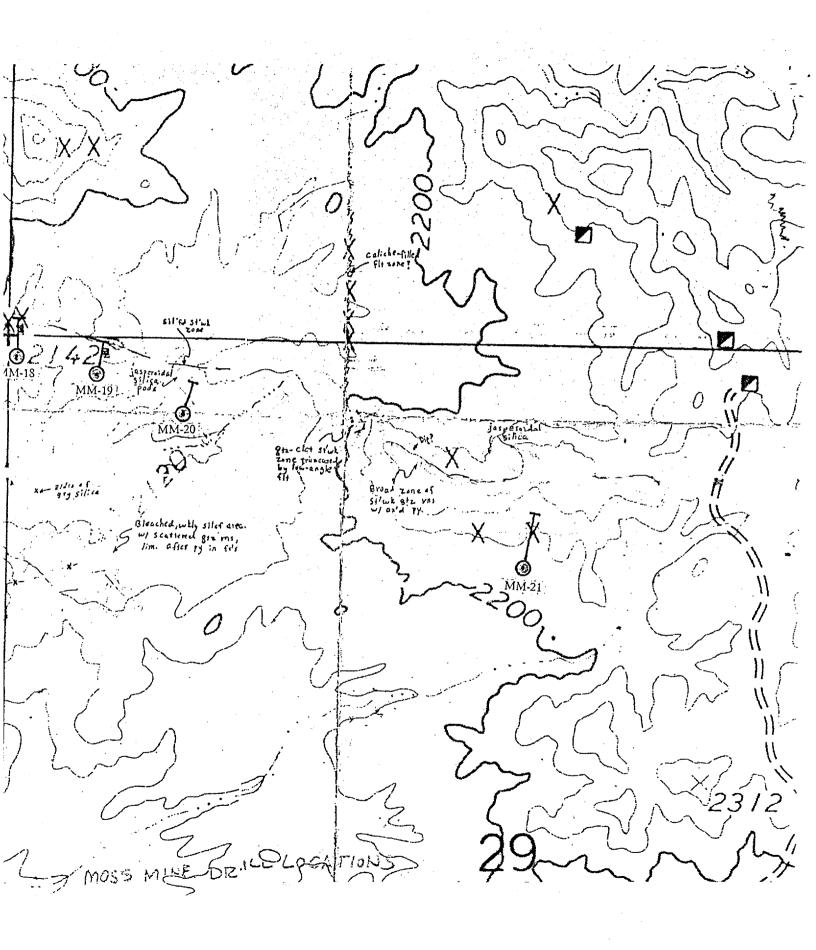
We are in receipt of your FAX of 3/31/92 containing the above summary reports. Thank you!

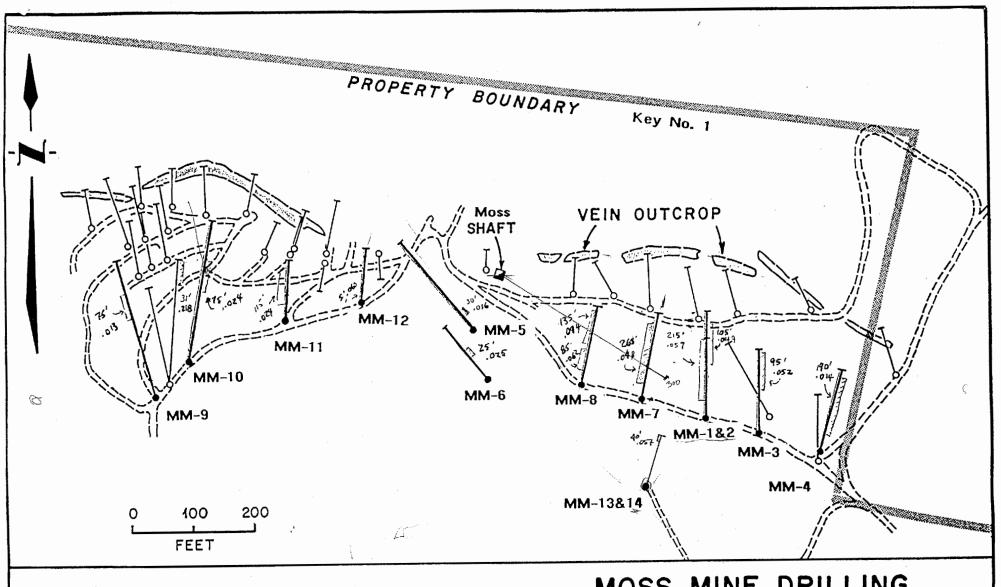
Ray Irwin of our Reno office, informs me that he has been in contact with you concerning the complete data package, including drill logs. This information will be required for Reynolds to assess its interest in Moss.

It will not be necessary to forward a data package to Richmond, but I would appreciate a copy of your cover letter when you forward the package to Reno.

Regards,

D. D. Jinks





Reverse circulation drill hole, Billiton 1990

Air-Trac drill hole, BF Minerals 1982

Outcrop exposure of vein system

MOSS MINE DRILLING
MOSS MINE PROJECT
MOHAVE COUNTY, ARIZONA



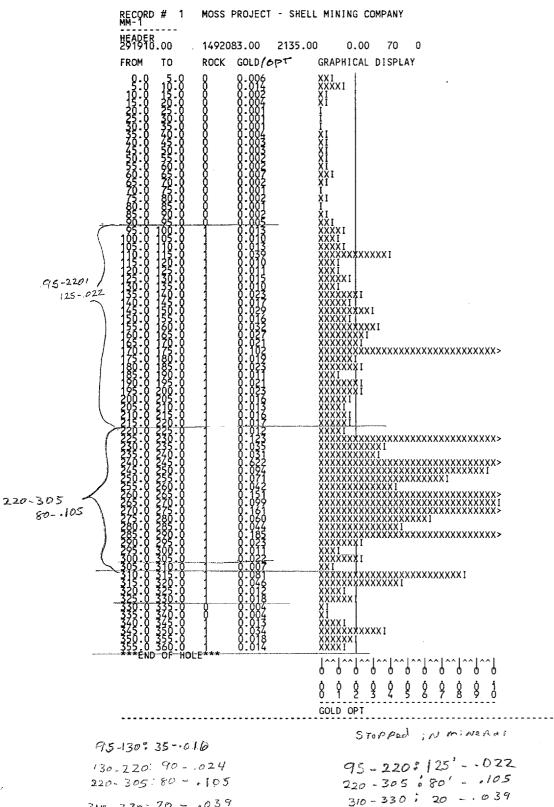
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RAY, HERE IS THE DRIVE HOLE SUMMARZIES MOND REGULATION. WE HAVE THE DETAILED DATA HERE IN HOUSTON, IE YOU AIRE INTERESTION IN VISITION TO GO THROUGH IT.

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Some FAIRY STRONG DISCUSSIONS Going WITH OTHER Companies, SO LET US KNOW WHAT YOUR LEVEL OF INTEREST IS!

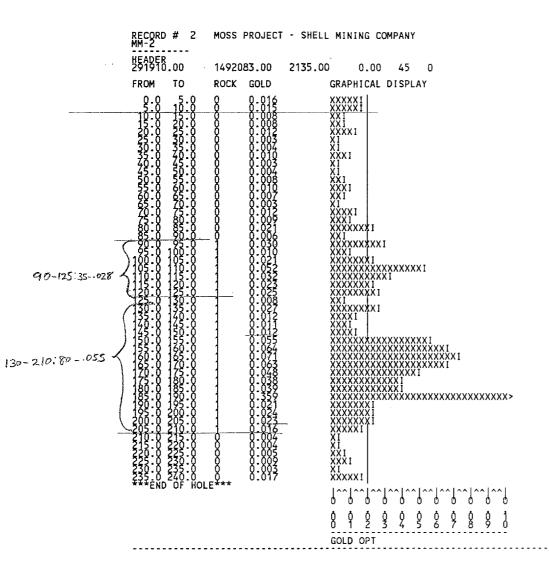
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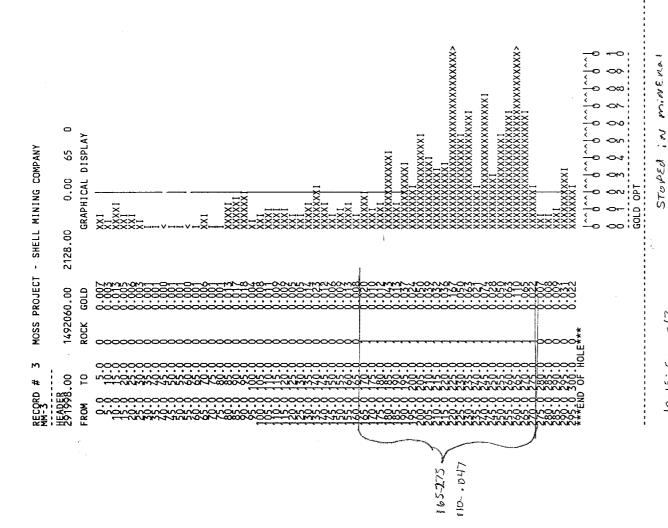
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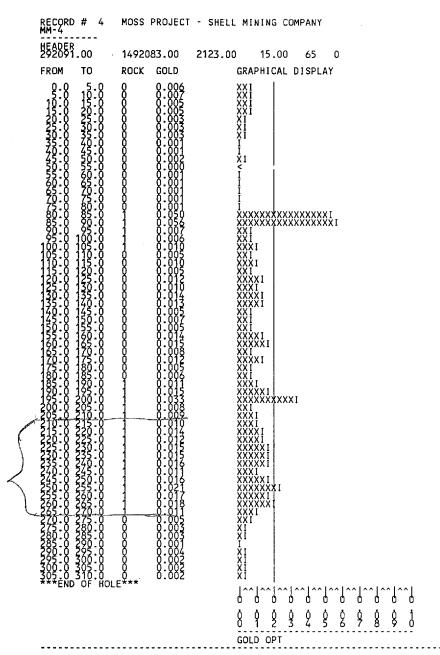
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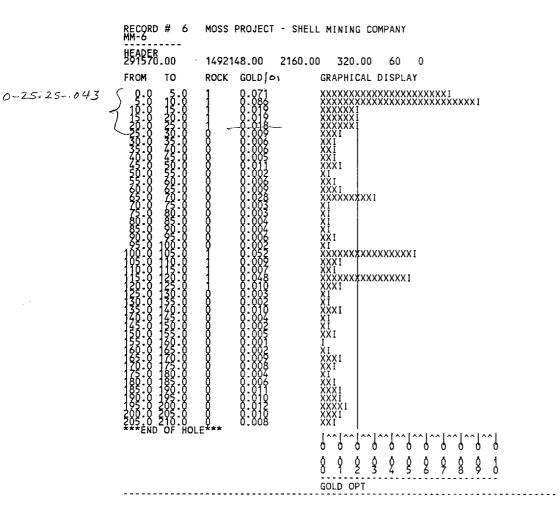


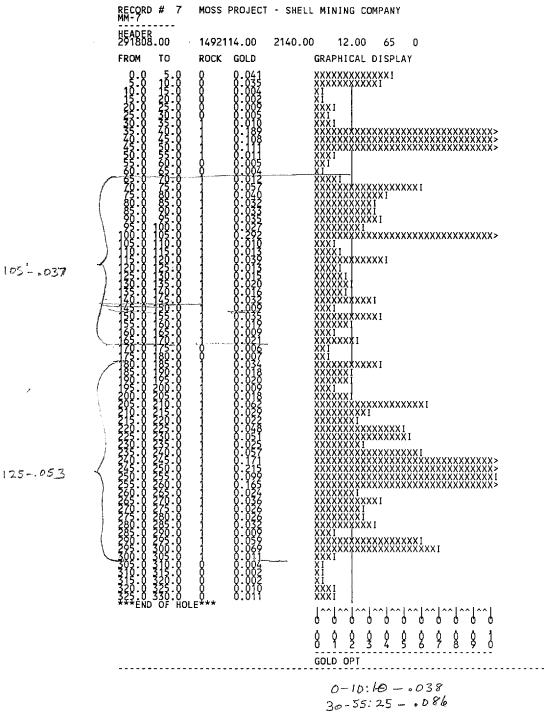
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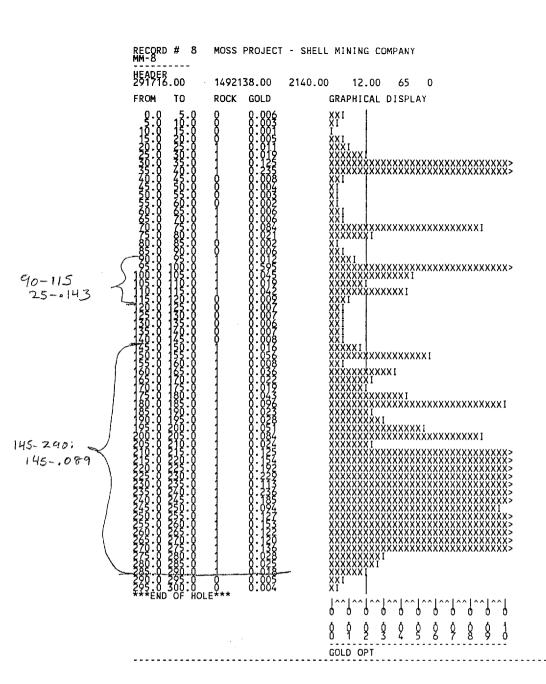
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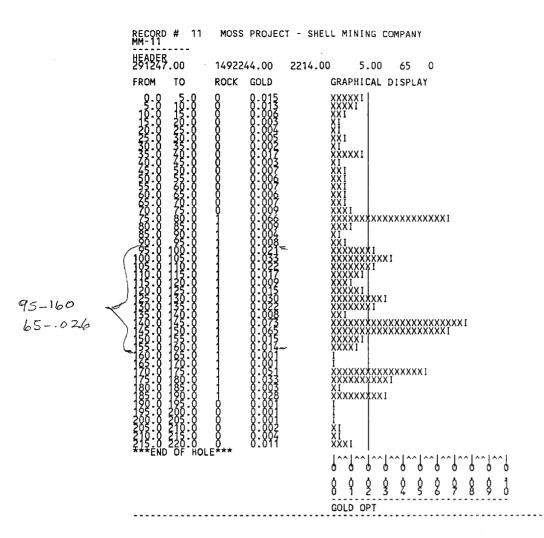


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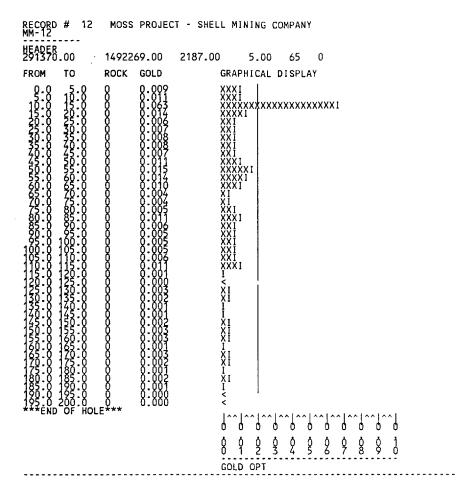


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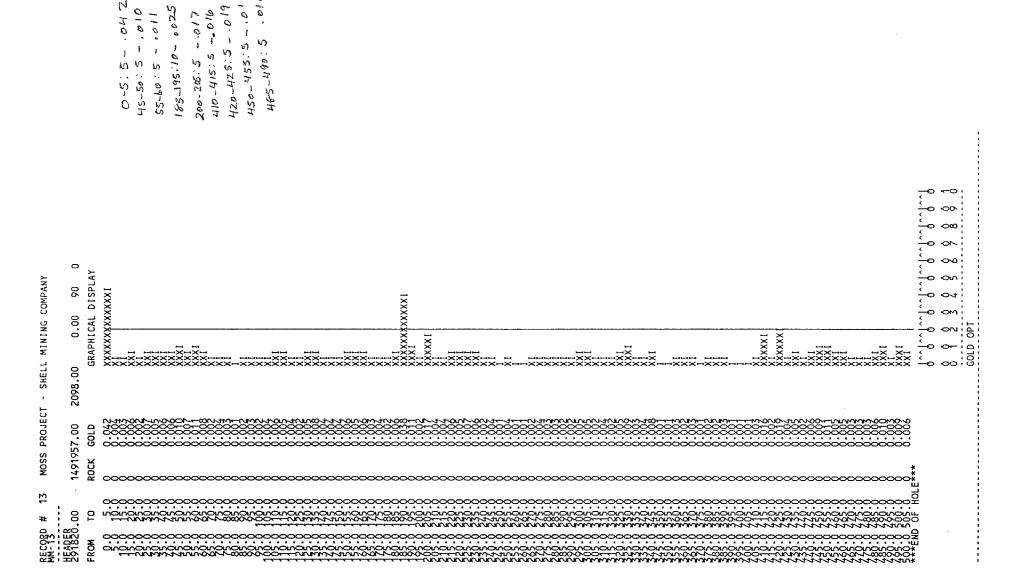
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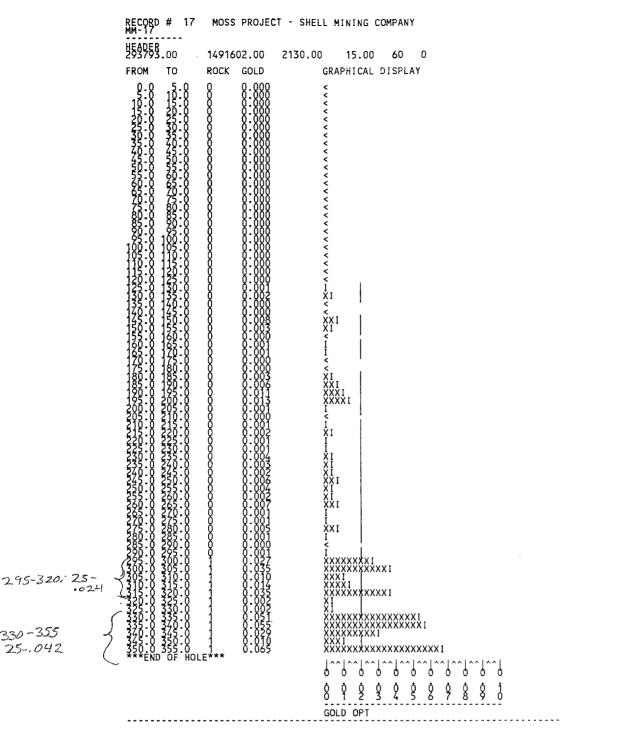
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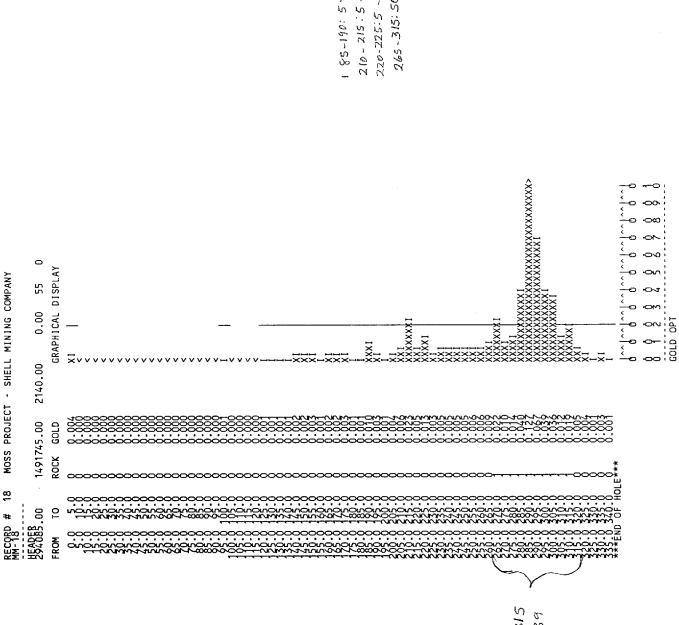


190-200:10--012

330-355 25-.042

Stopped in mineral

295-320:25-024 330-355:25 - -042



.039

.010.

2.65-315 50-.039

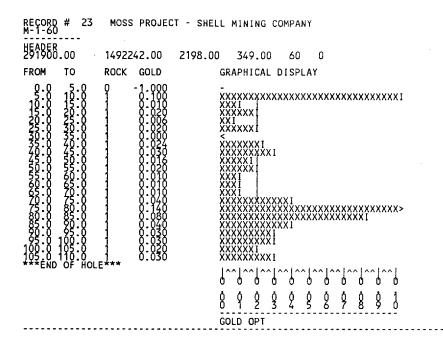
5-.010

BARREN

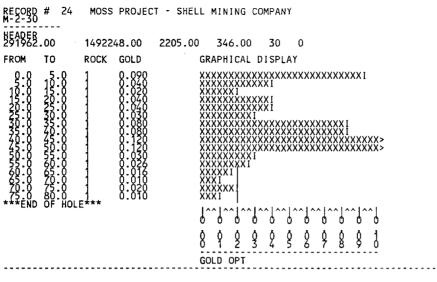
~ ~

M-1-30	PROJECT - SHE	ELL MINING COMPANY
HEADER 291900.00 14922	42.00 2197.0	00 349.00 30 0
FROM TO ROCK	GOLD	GRAPHICAL DISPLAY
00000000000000000000000000000000000000	60000000000000000000000000000000000000	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
0-90:90	038	STOPPED IN MINERAL

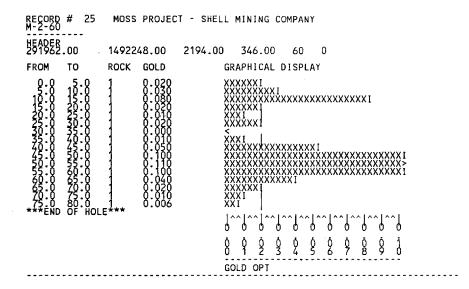
,678



5-20:15-.043 25-30:5-.020 35-110:75-.035

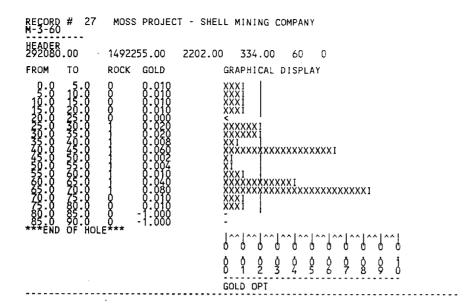


0-80: 80-.048

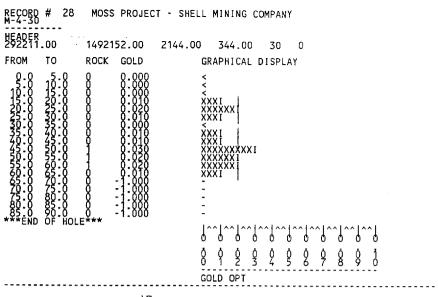


0-30:30-.03

10-45:35-.036

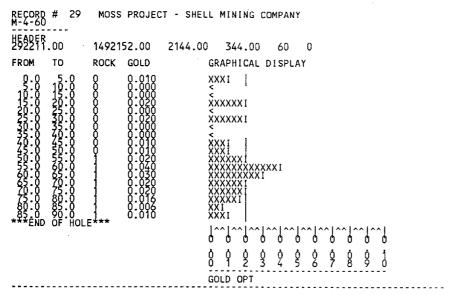


0-20: 20-.01 25-45: 20-.027 55-80: 25-.03



- 結婚。

15-30: 15 -.013 35 -65: 30 -.016



0-5: 5-.01 15-20:5-.02 25-30:5-.02 40-80:40-.02 85-90:5-.01

RECORD # 30 M-5-30 HEADER 291767.00	MOSS PROJE	CT - SHELL MINING COMPANY 2204.00 332.00 30 0
FROM TO	ROCK GOLD	GRAPHICAL DISPLAY
0.000000000000000000000000000000000000	0.0200 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.000000	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

0-70: 70-.068

RECORD # M-5-60	31 Moss	PROJEC	T - SHELL	MINING	COMPAN	ΙΥ		
HEADER . 01	14922	78.00	2204.00	332.00	60	0		
FROM TO	ROCK	GOLD	GF	RAPHICAL	DISPL	AY.		
05000000000000000000000000000000000000	HOLE***	05100000000000000000000000000000000000		(XI (XI (XI	XXX1 I XXX1 XXXXX XXXX XXXX XXXX XXXXX XXXXX I	XXXXXXX IXI XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	

0-80: 80-.054

RECORD # 32 M-6-30	MOSS PRO	JECT - SHELL MINING COMPANY	
HEADER 291705.00	1492282.0	2178.00 4.00 30 0	
FROM TO	ROCK GOL	GRAPHICAL DISPLAY	
0.000000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$0	XXXXXXXX>

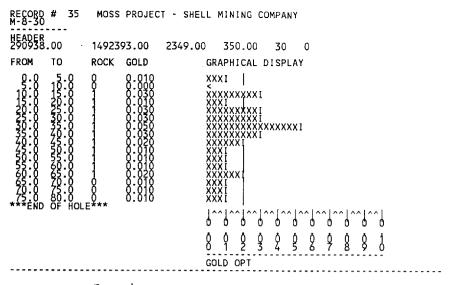
0-60:60 - . 053 STOPPED IN MINERAL

RECORD # 33 MOSS P M-6-60	PROJECT - SHELL MINING	COMPANY
HEADER 291705.00 1492282	2.00 2178.00 4.0	0 60 0
FROM TO ROCK G	GOLD GRAPHICA	L DISPLAY
50500000000000000000000000000000000000	0.000	XXXXI XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

0-75:75-.063 STOPPED IN MINERAL

RECORD M-7-70	# 34	MOSS	PROJEC	T - SHELL M	INING CO	OMPANY	,
HEADER 291588	.00	14923	21.00	2160.00	4.00	70	0
FROM	TO	ROCK	GOLD	GRA	PHICAL D	ISPLA	ΛY
00000000000000000000000000000000000000	00000000000000000000000000000000000000	00000 E***	0.040 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	**** **** *** *** *** *** *** *** ***	†	(XI (XXXX) (XXXXX (XI (XXXXX	\^_\^\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

0-75: 75- .043

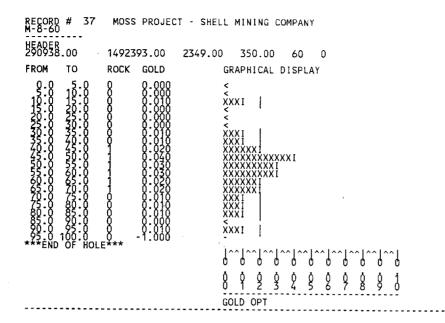


0-5: 5-01

STOPPEDIN MIN

RECORD # 36 M-8-45	MOSS PROJEC	T - SHELL MINING COMPANY
HEADER 290938.00	1492393.00	2349.00 350.00 45 0
FROM TO	ROCK GOLD	GRAPHICAL DISPLAY
00000000000000000000000000000000000000	0 -1.000 0 0000 0 00000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 00000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 00000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 00000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 00000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 00000 0 0000 0 00000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 00000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 00000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 0000 0 000	XXXI XXXXXI XXXXXXXI XXXXXXXXXXI XXXXXXXX

10-80:70 - .024



10-15; 5-.01 30-85: 55 -.019 90-95: 5- 01

RECORD # 38 M-9-30 HEADER	MOSS PROJE	CT - SHELL MINING COMPANY
HEADER 290980.00	1492418.00	2346.00 343.00 30 0
FROM TO	ROCK GOLD	GRAPHICAL DISPLAY
0.000000000000000000000000000000000000	0.040000000000000000000000000000000000	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

0-35:35 - .031

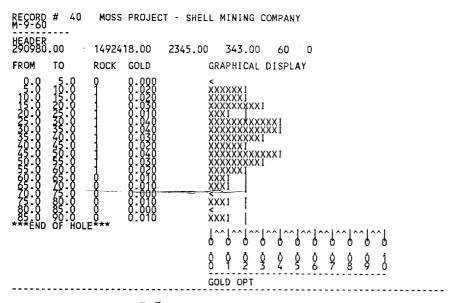
45-55: 10 - .01

60-65:5 -.01

### ADER 290980.00 1492418.00 2345.00 343.00 45 0 FROM TO ROCK GOLD GRAPHICAL DISPLAY 0.0 5.0 1 0.020 XXXXXXXXI 15.0 20.0 1 0.030 XXXXXXXXXI 15.0 20.0 1 0.040 XXXXXXXXXXI 20.0 25.0 1 0.040 XXXXXXXXXXI 20.0 25.0 1 0.040 XXXXXXXXXI 20.0 25.0 1 0.020 XXXXXXXXI 20.0 25.0 1 0.020 XXXXXXXXI 20.0 25.0 1 0.020 XXXXXXXI 20.0 25.0 1 0.020 XXXXXXXI 20.0 25.0 1 0.020 XXXXXXI 20.0 25.0 0 0.010 XXXI 25.0 25.0 0 0.010 XXI 25.0 25.	RECORD M-9-45	# 39	MOSS	PROJEC	T - SHELL	MINING (COMPANY	(
0:0 15:0 1 0:020	HEADER 290980	.00	14924	18.00	2345.00	343.00	45	0	
10.0 15.0 1 0.0 0 0.0 0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	FROM	TO	ROCK	GOLD	G	RAPHICAL	DISPLA	AY	
	00000000000000000000000000000000000000	50000000000000000000000000000000000000	00000000 E***	0.030 0.030 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.0400 0.04	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	**************************************	[^^[^^]	J^^J^^J^^J	^ 6 - 6

0-65:65-024

e wie



5-70:65-.025 85-90:5-.010

RECORD # 41 M-10-30	MOSS PROJE	CT - SHELL MINING COMPANY	
HEADER 291014.00	1492427.00	2335.00 0.00 30 0	• •
FROM TO	ROCK GOLD	GRAPHICAL DISPLAY	
50000000000000000000000000000000000000	1 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.02200 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.02200 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.0220 0.022	XXXXXI XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	

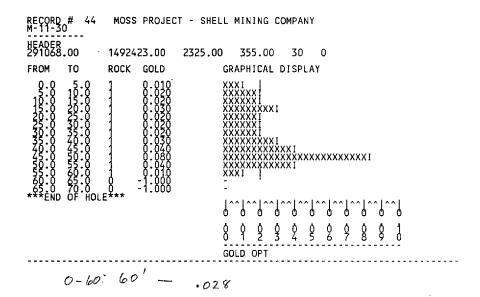
0-55; 55 - .030

RECORD # 42 M-10-45	MOSS PROJEC	T - SHELL MINING COMPANY
1540ER 291014.00	1492427.00	2334.00 0.00 45 0
FROM TO	ROCK GOLD	GRAPHICAL DISPLAY
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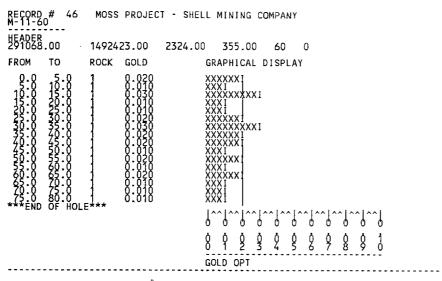
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0-70:70-076 STOPPED: N MINERAL



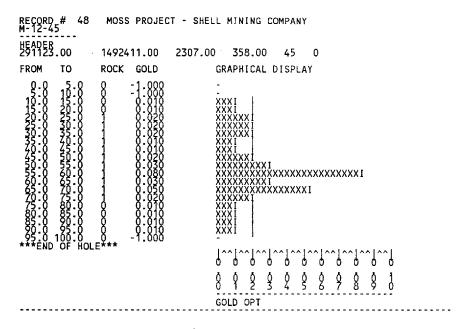
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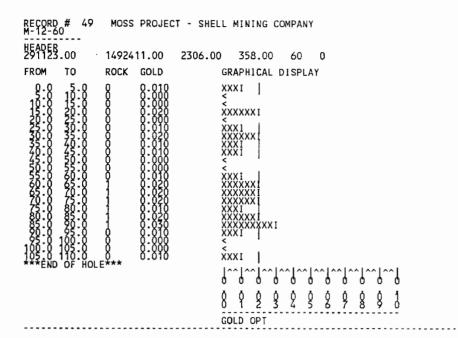
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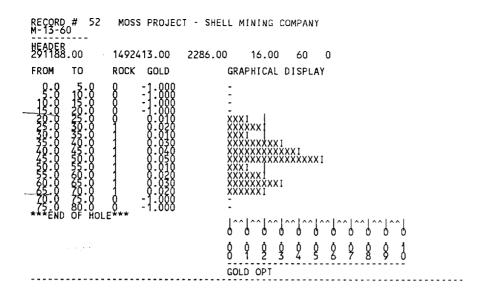
10-95:85 -.022



0-5; 5-.010 15-20: 5...020 25-45: 20--013 55-95: 40--018 105-110: 5--010

5-10; 5-.010 15-55: 40-.018

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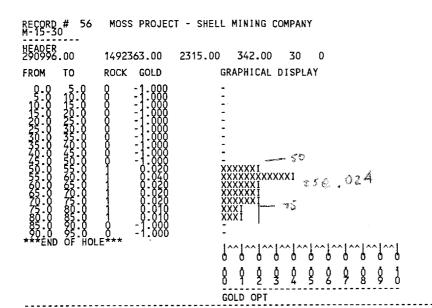
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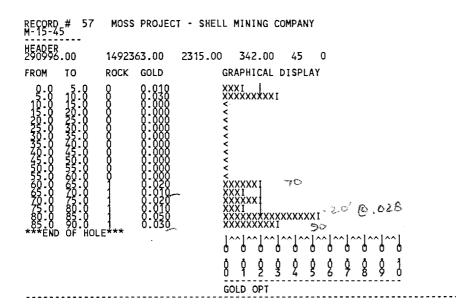
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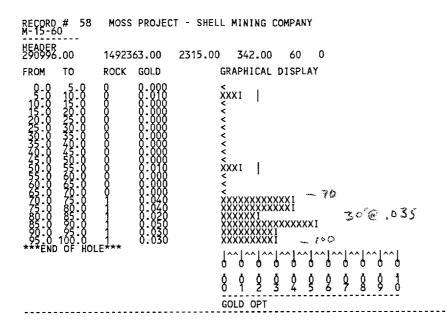
RECORD # 54 M-14-45	MOSS PI	ROJECT - SHE	ELL MINING	COMPANY		
#EADER 291216.00	1492350	.00 2246.0	00 25.00	45	0	
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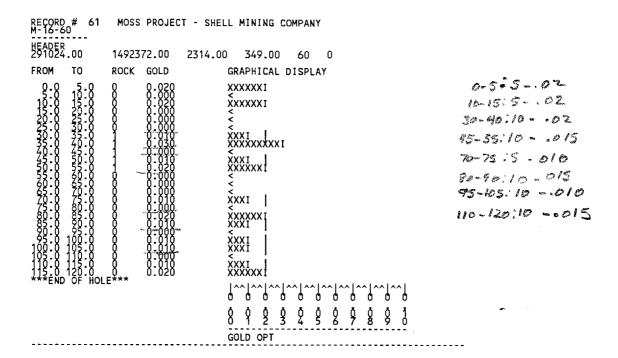


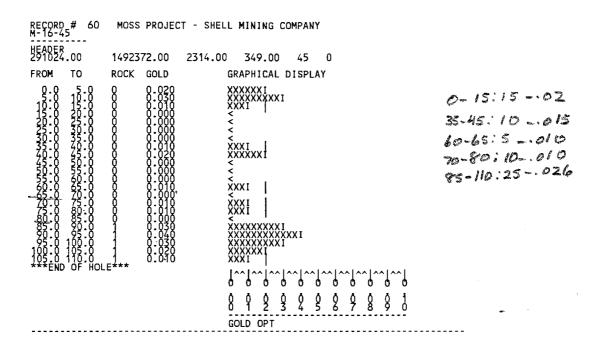


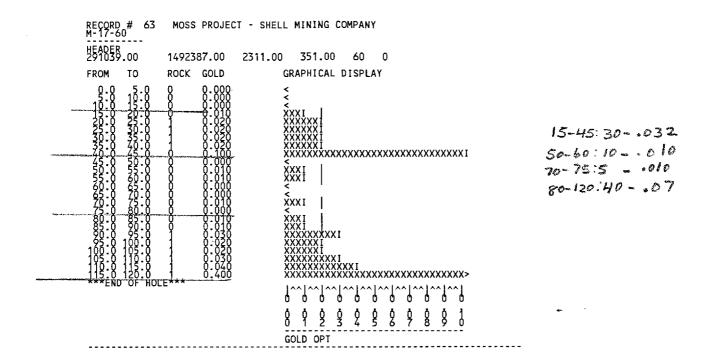


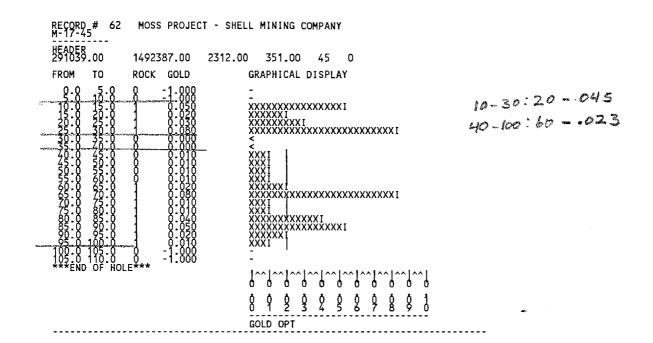
M=16-30 H=ADER 291024.00 59 7 0 0 0 7 7 1492372.00 MOSS PROJECT - SHELL MINING COMPANY GOLD 2315.00 GRAPHICAL DISPLAY COLD - QP T NO 0wo 4 S **√0. 0**-9

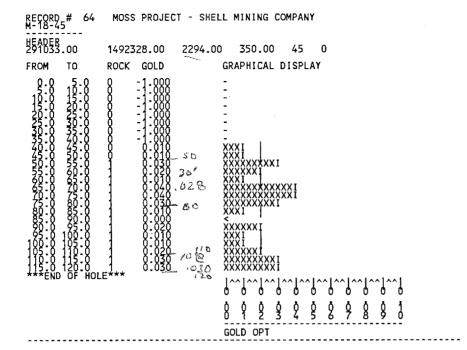
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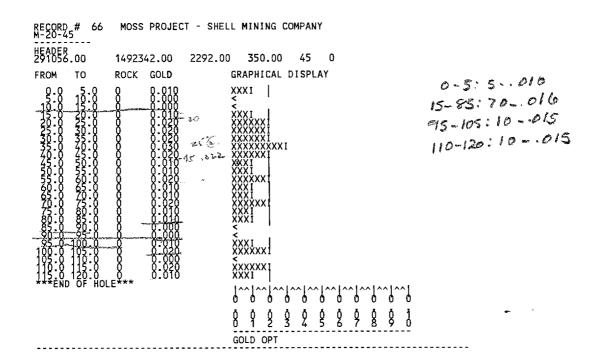


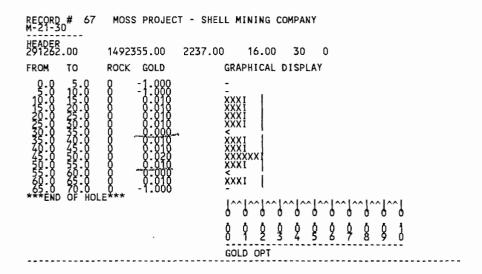




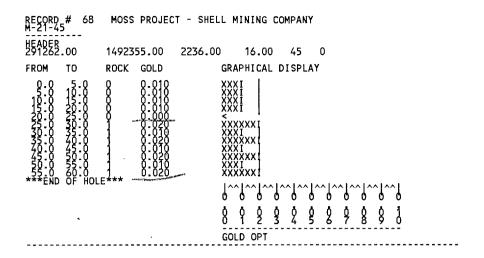


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HEADER 291011	.00	14923	15.00	2296.00	356.0	0 4	5	0				
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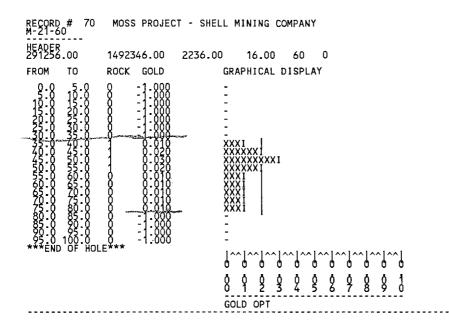
10-30:20-.010 35-55: 20 ,012



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FROM TO	ROCK GOLD	GRAPHICAL DISPLAY
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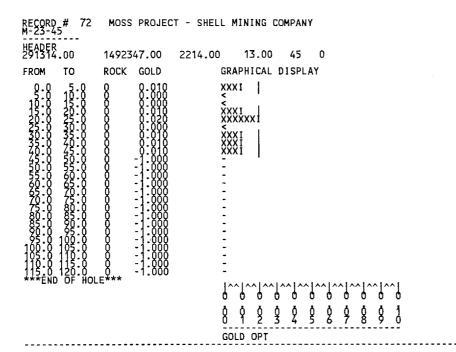
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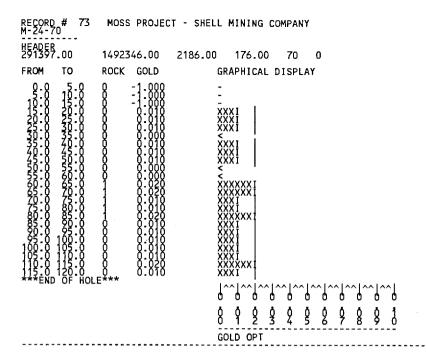


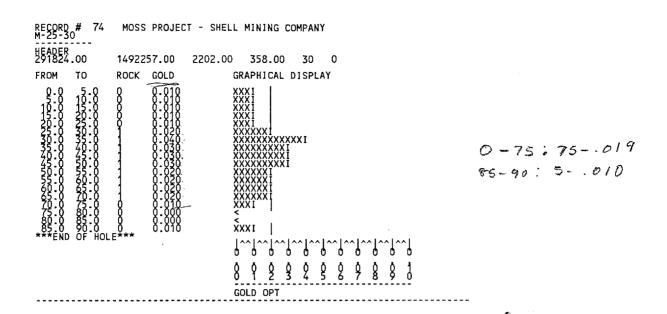
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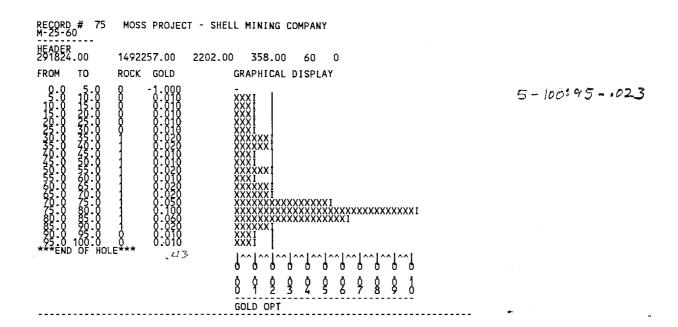
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HEADER 291310.00	1492332.00	2214.00 193.00 45 0
FROM TO	ROCK GOLD	GRAPHICAL DISPLAY
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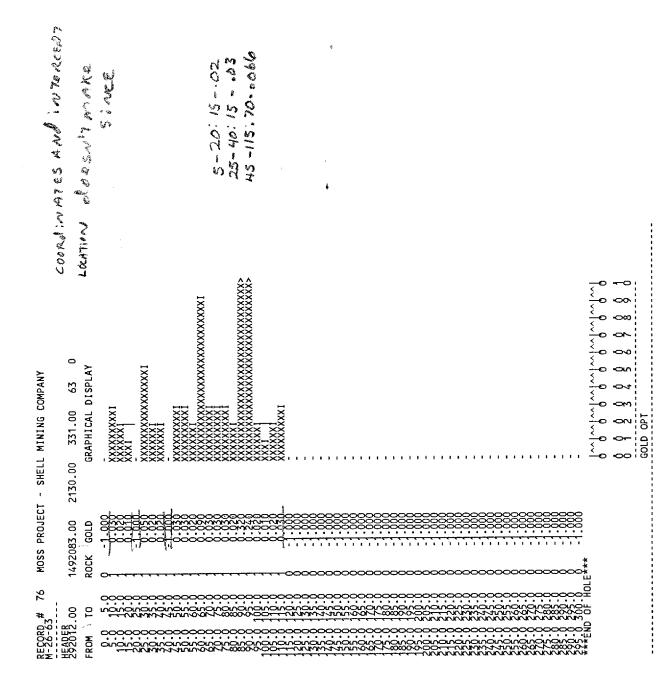
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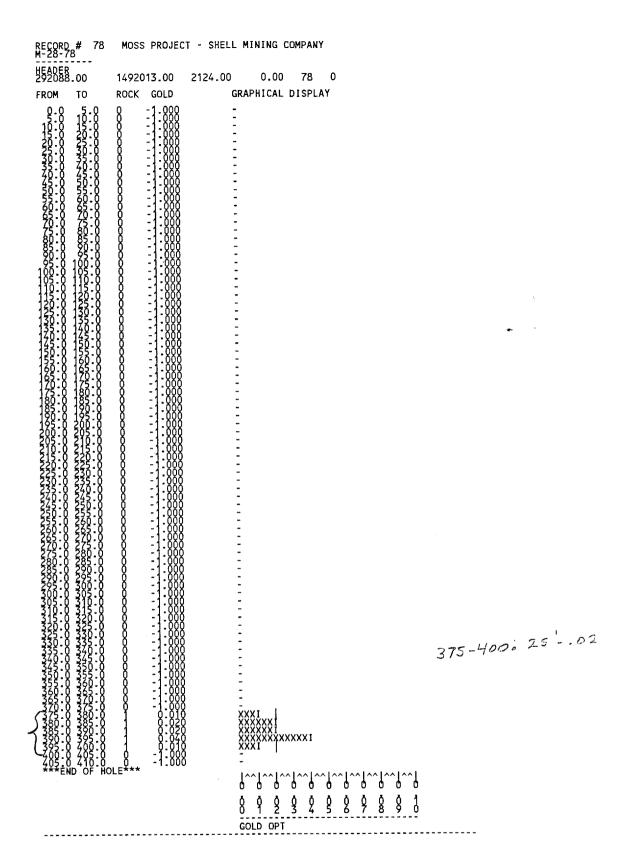


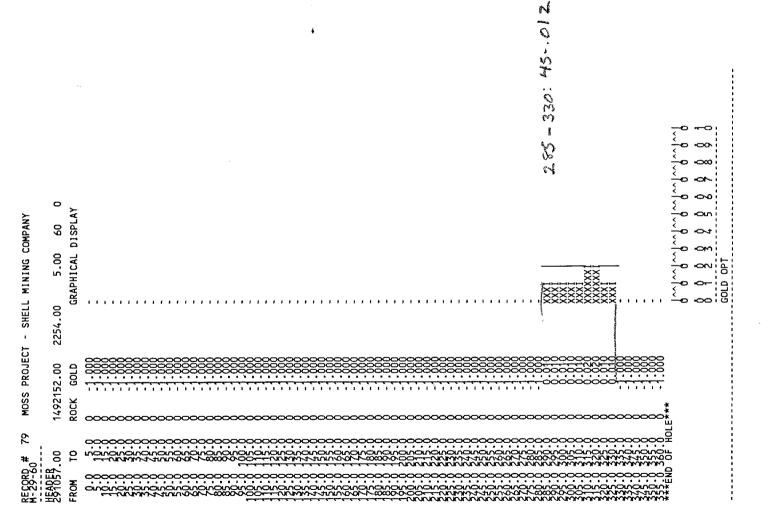
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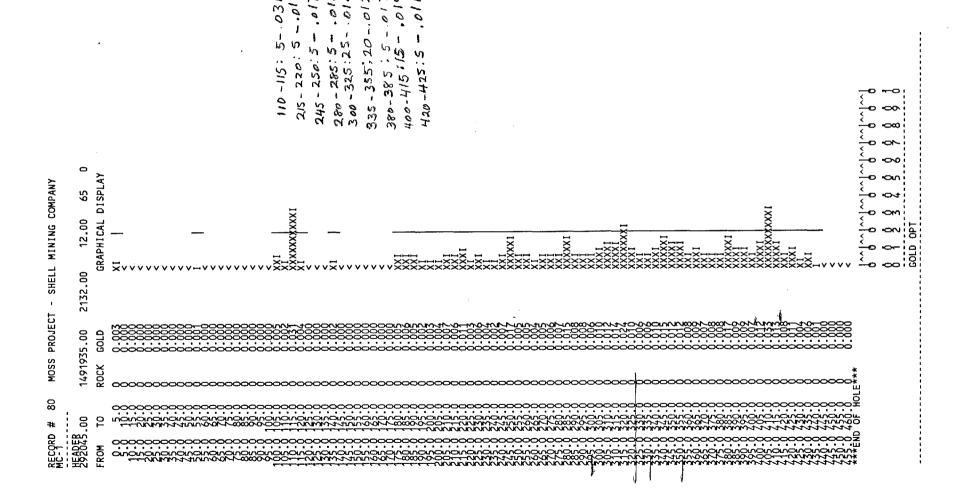
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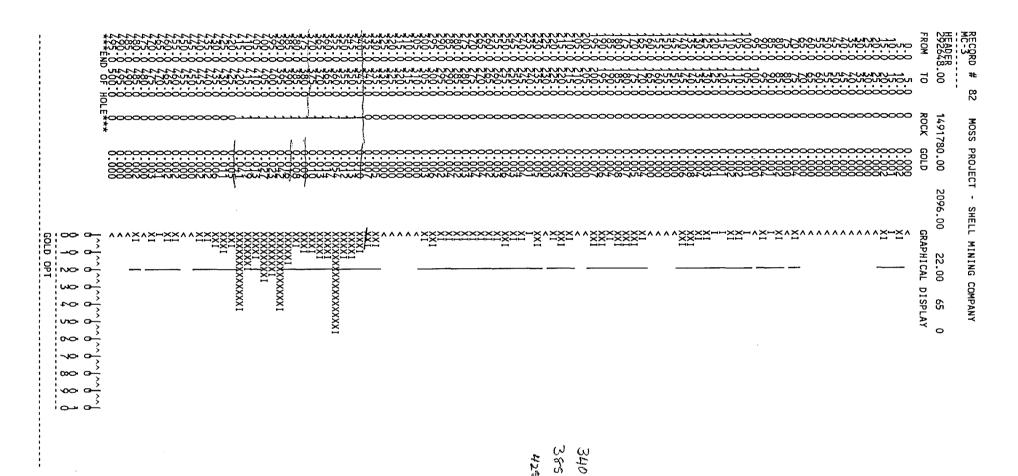
RECORD # 77 MOSS PROJECT - SHELL MINING COMPANY M-27-68	
HEADER 291993.00 1492082.00 2129.00 309.00 68 0	
FROM TO ROCK GOLD GRAPHICAL DISPLAY	
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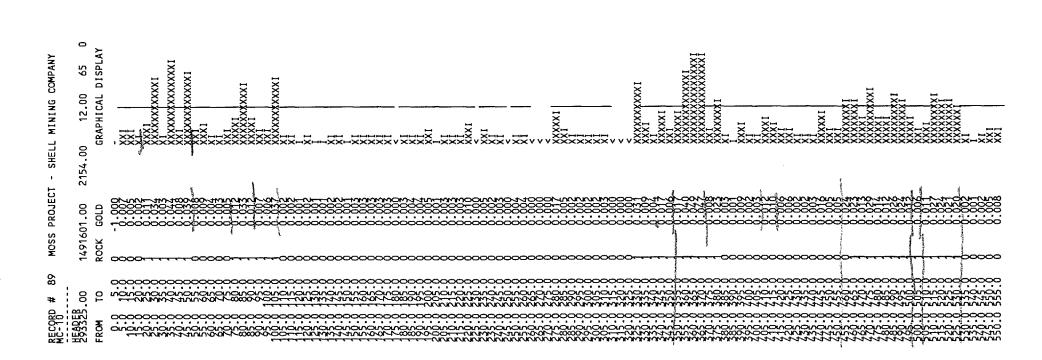
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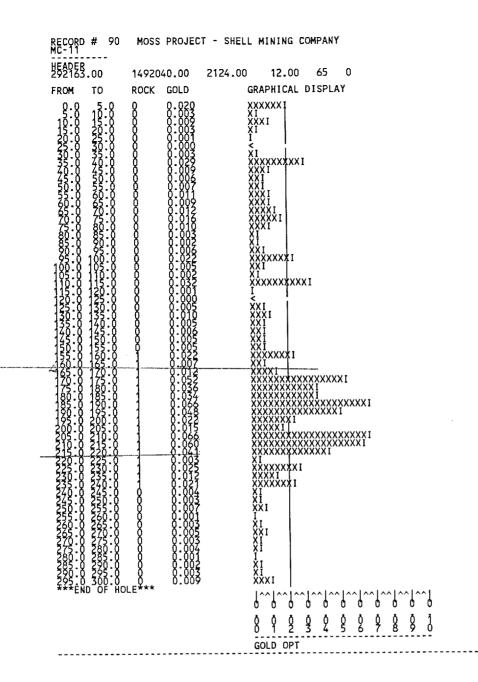
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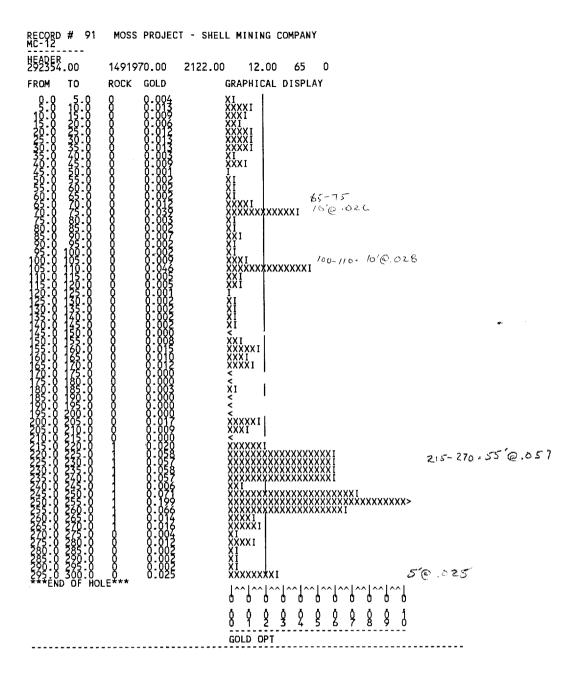
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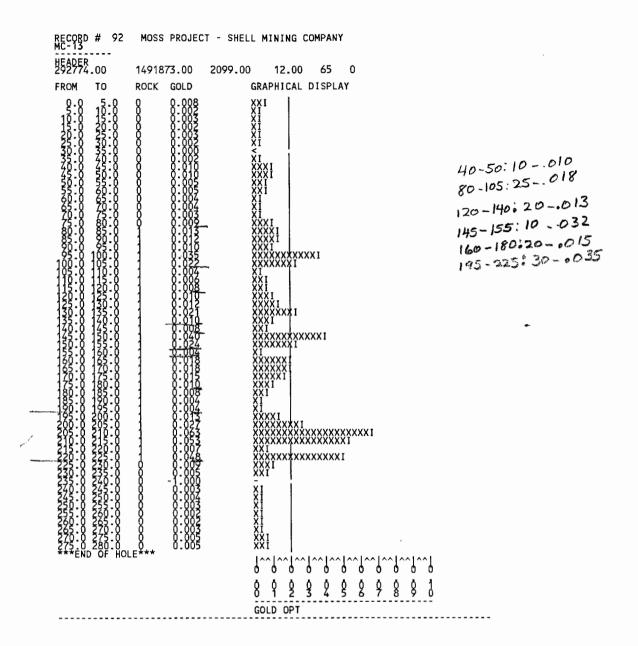


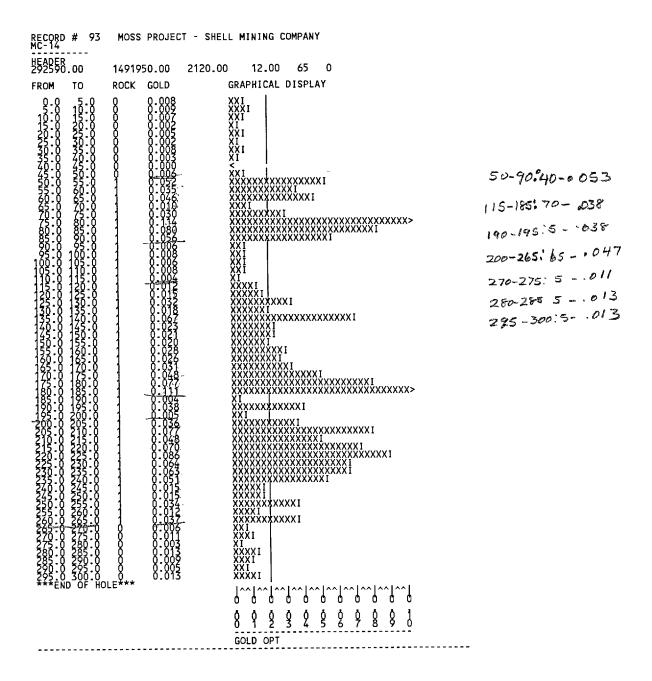
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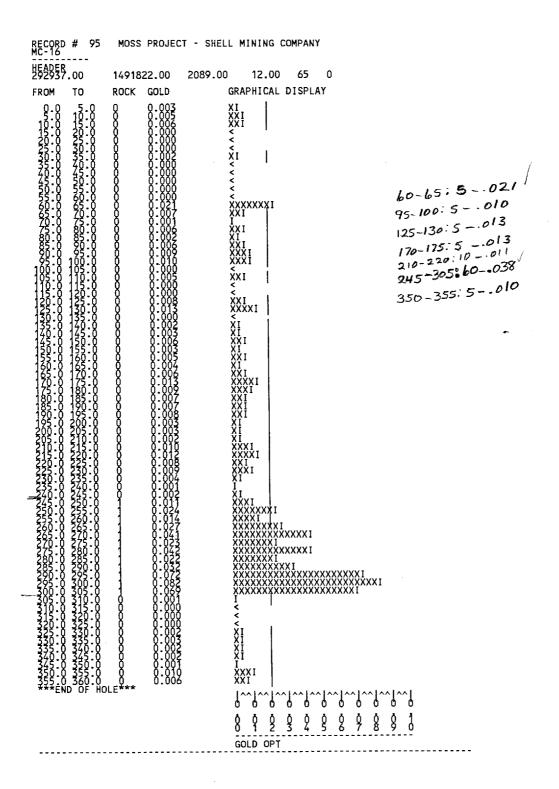


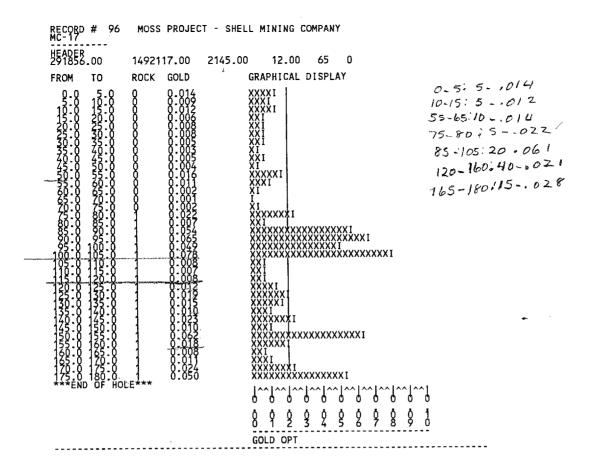


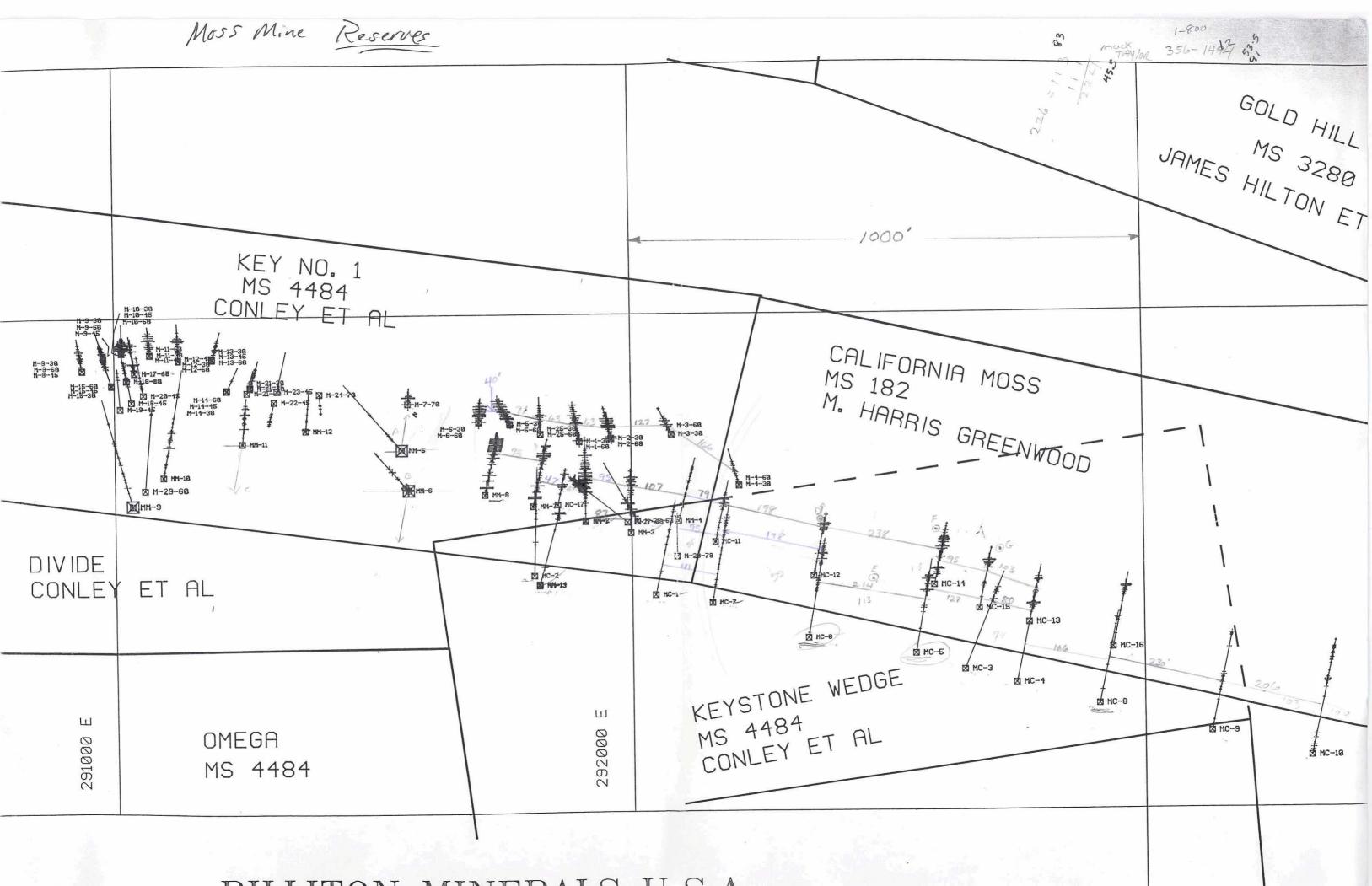
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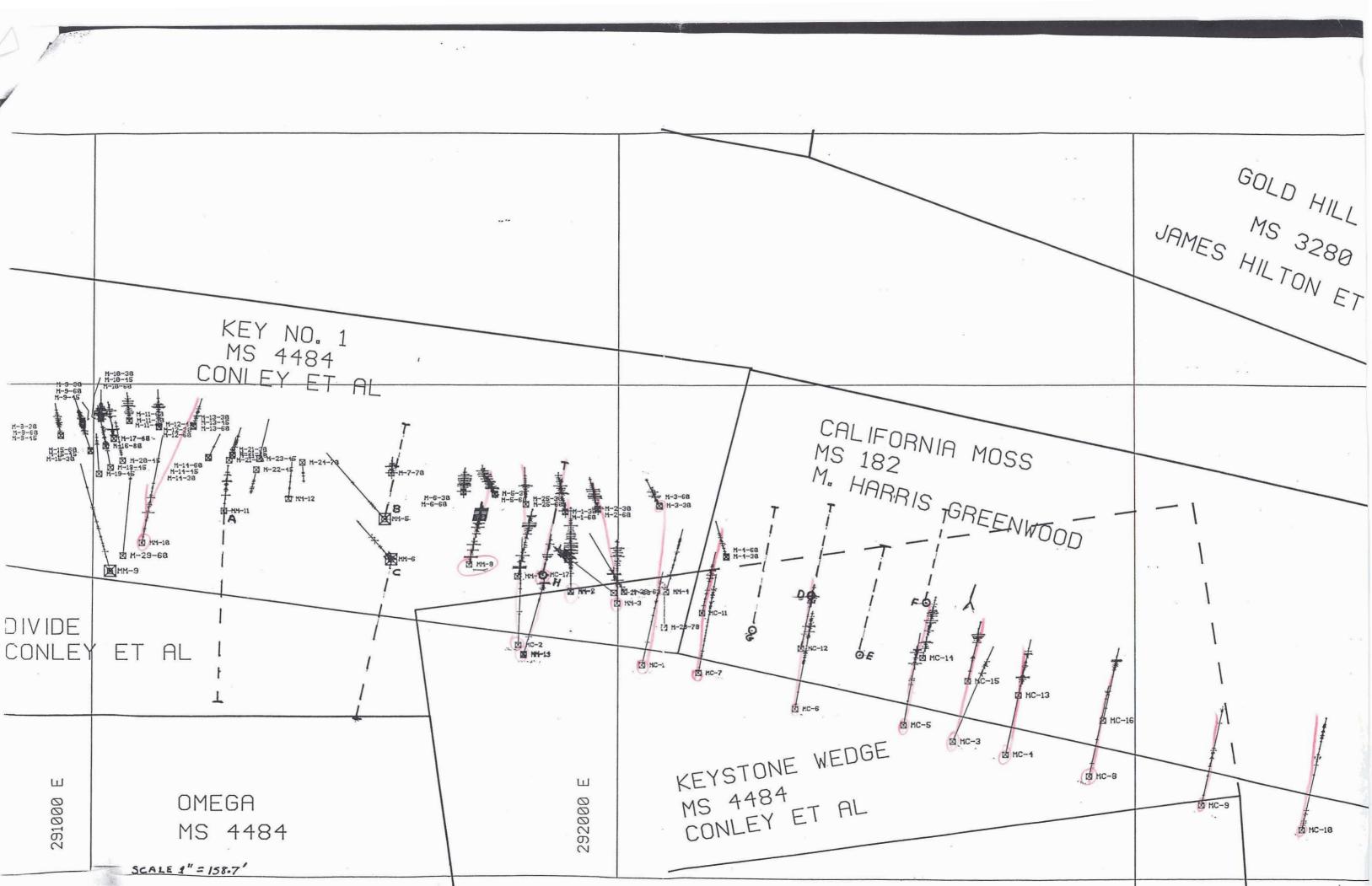
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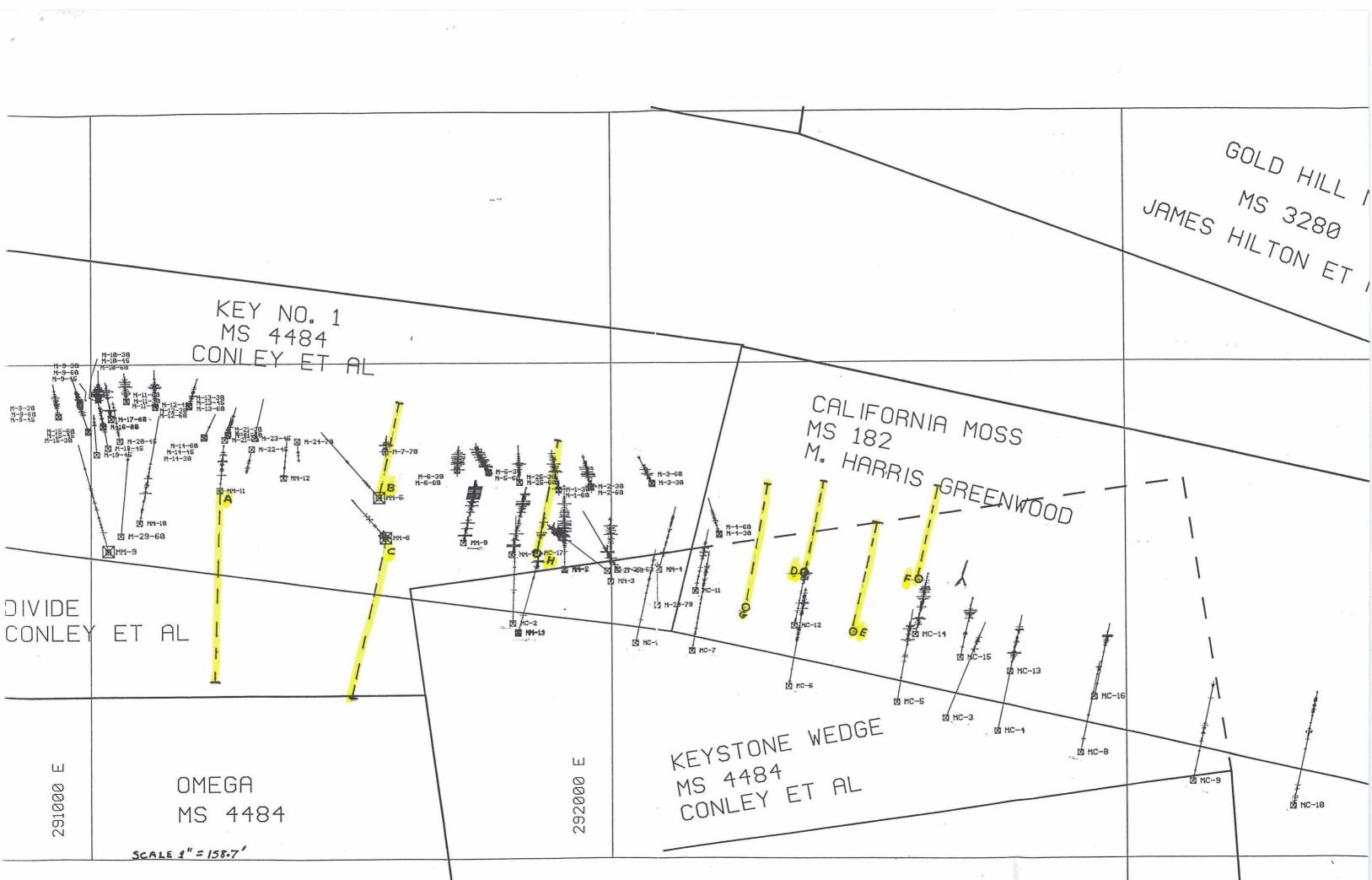
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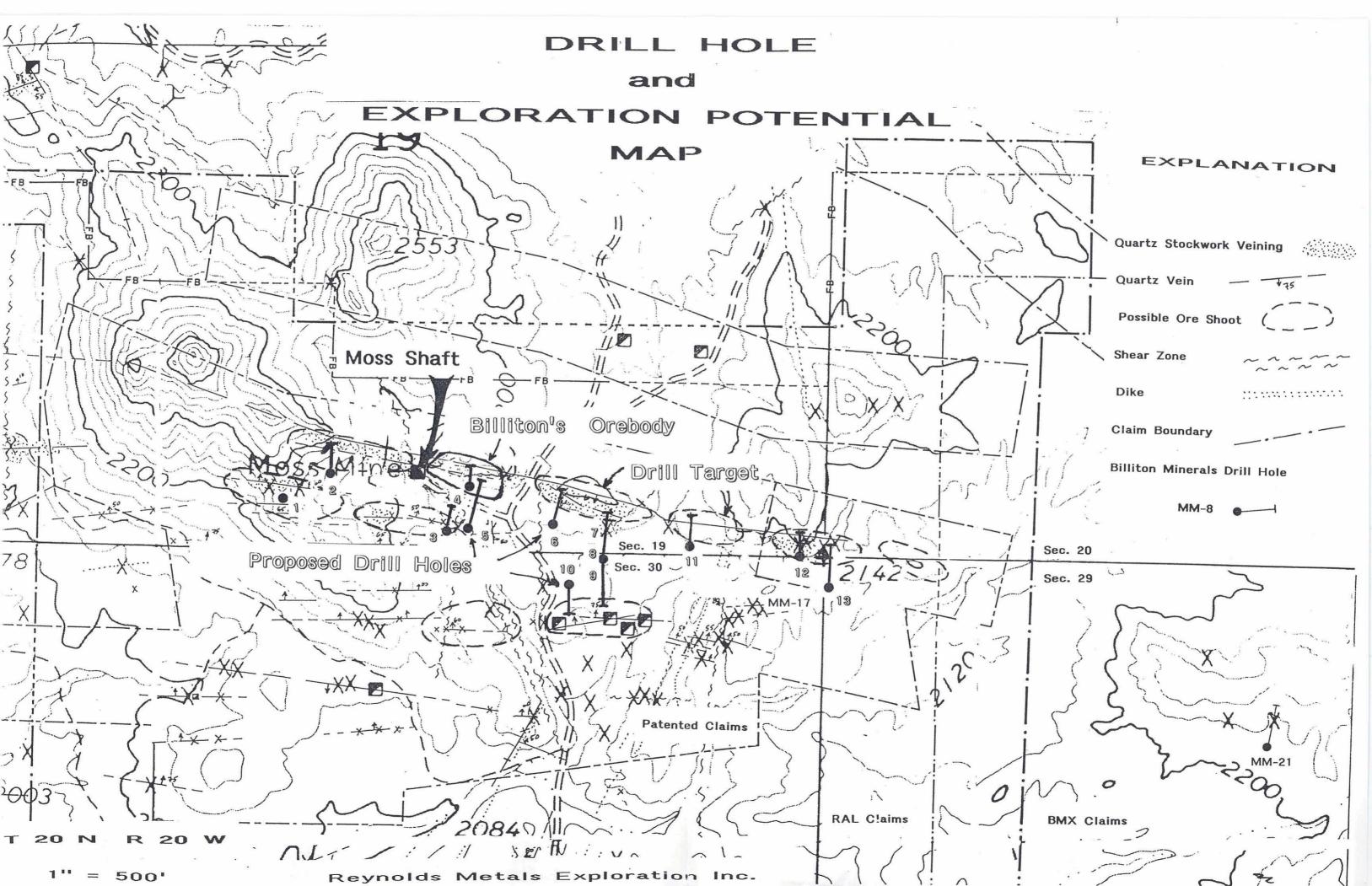












MOSS MINE PROJECT

Preliminary Report

BY:

R.E. Irwin

M.R. Winston

M. Slater

February 12, 1991

SUMMARY

The Moss mine project was submitted to Reynolds for review by Billiton Minerals, USA as part of a larger package designed to include all or most of their projects, as well as their staff. Interest only in the Moss mine property was made very plain to Billiton and a Confidentiality Agreement was signed February 4, 1991.

A data review was conducted at Billiton's Reno office on February 7th by R.E. Irwin and M.R. Winston. This report summarizes all the available information to date.

The land status and terms of underlying agreements controlled by Billiton are reveiwed in detail to assess Reynolds possible inherited costs, as well as a review of the general geology and exploration potential. A summary by M. Slater of the known ore reserves outlined to date is provided for general economic considerations.

Recommendations are to proceed with making Billiton an offer for the Moss property contingent upon resolving current claim conflicts.

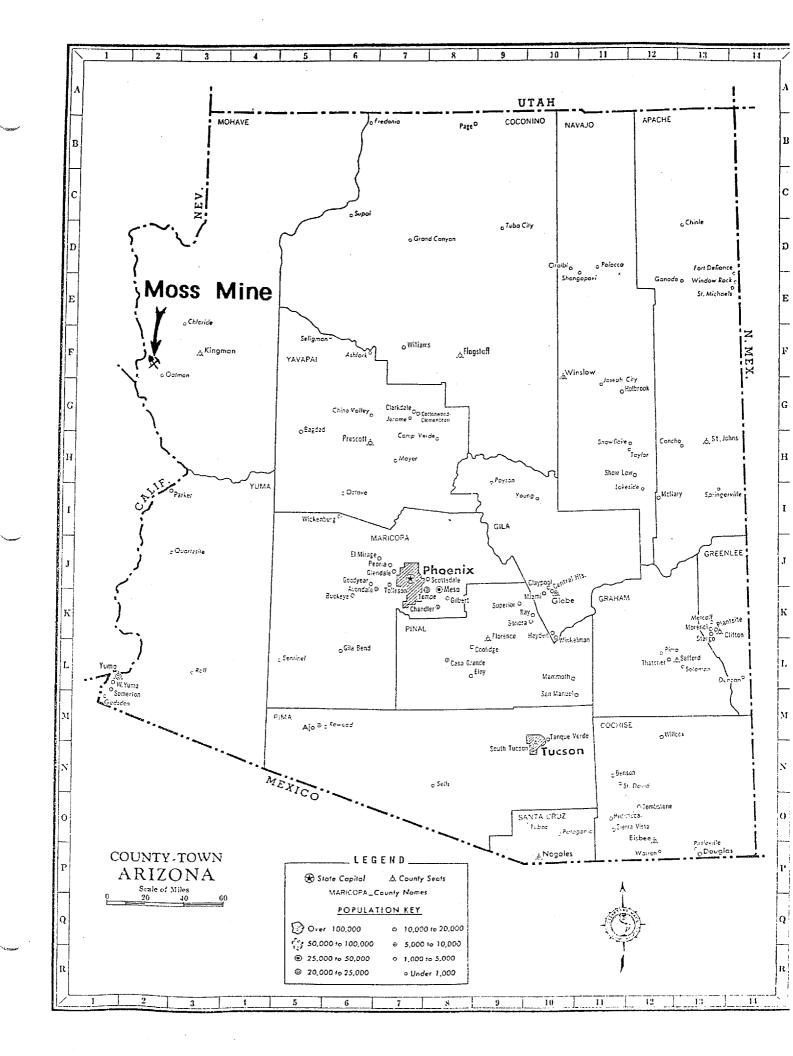
LOCATION/HISTORY

The Moss mine is located in the Oatman mining district about 10 miles east of Bullhead City in Mohave County, Arizona. It is situated in Sec. 19, T2ON, R2OW, Gila and Salt River Meridian.

Kingman, Arizona is about 40 miles to the northeast and Las Vegas, Nevada is about 100 miles to the northwest. Access to the property from Bullhead City is about 8 miles east via the Silver Creek road, thence northerly on a 4 \times 4 road 1 1/2 miles directly to the Moss mine.

The mine area is in an area of low-lying, rugged hills with elevations ranging from 2100 to 2500 feet above sea level.

Gold was discovered in the Oatman district in 1863 by Army personnel stationed along the Colorado River west of Oatman at Camp Mohave. The first production from the Oatman district was by John Moss from the Moss vein in 1863-1864. After a nonproductive period beginning about 1870, high-grade gold was discovered along the Tom Reed vein in Oatman and was produced until 1924. Nearly all production from the Oatman district had ceased by 1943. In recent decades, several companies have explored the district for bonanza veins and disseminated deposits alike, but none has been successful.



LAND STATUS

The Moss mine project being offered for sale consists of eleven partial or full patented claims covered by option agreements, three patented claims under negotiation and 67 unpatented lode claims (BMX 1-67) located by Billiton Minerals. These claims occupy portions of Secs. 19, 20, 29 and 30, T20N, R20W. Billiton's expenditures to date on this project are estimated to be \$250,000. Based on the terms of the existing agreements, outstanding and projected land holding costs are approximately \$1.85 million.

The eleven patented claims are held under two separate option agreements. The Gregory Gintoff/Barbara Williams agreement covers the Key No. 1, Key No. 2, Moss Millsight, Omega, Divide and Keystone Wedge while the Gregory Gintoff/Martinez agreement covers the Rattan Extension, Mascott, Partnership Empire and Ruth Extension. (See attahced status map.) The highlights of the various agreements are summarized below. Apparently the Gintoff/Billiton Minerals agreement is currently undergoing some modifications.

<u>Gintoff/Williams</u> Agreement

The Gintoff/Williams agreement is simply a purchase agreement having a two year term under which activities are restricted to exploration. Bulk sampling and test leaching are prohibited. Under this agreement the Williams' received a \$10,000 payment upon signing (July, 1990), a \$20,000 payment 180 days after signing the agreement and are due a \$40,000 payment in July, 1991. None of these payments are credited to the purchase price of \$1 million, which must be exercised by July, 1992.

Upon exercising the option, the Williams will have no further interest in the claims. At the current time a 1/16 interest in these claims still needs to be acquired. Apparently Billiton and Gintoff are having trouble locating this party.

Gintoff/Martinez Agreement

The Gintoff/Martinez agreement is a purchase agreement having a five year term. Unlike the Williams agreement, it would appear that the purchaser could obtain a bulk sample for metallurgical testing. Under this agreement the Martinez family will receive \$500 per month beginning 180 days after the execution of the agreement (October 17, 1990); \$1000 per month during the second year of the option; \$2000 per month during the third year of the option and \$2500 per month during the fourth and fifth year of the option. The purchase price is \$250,000 with all option payments credited to and deducted from the total purchase price at closing. Upon execution of the purchase option, the Martinez family will have no retained interest.

Gintoff/Billiton Minerals Agreement

As a result of the Gintoff/Billiton Minerals and various amendments, Billiton has agreed to accept assignment of the Gintoff options and assume all of the option obligations. As consideration, Billiton paid Gintoff \$20,000 upon execution of the agreement (May, 1990) and will pay him an additional \$40,000 in May, 1991 to retain sole right to explore and purchase.

Upon exercising the \$1 million purahose of the Williams patented claims, Gintoff would receive an annual \$60,000 advance royalty payment until commercial production is achieved. After commercial production has begun, Gintoff would receive a 3 1/2% gross value royalty (no deductions) on all production obtained from the patented claims comprising the Williams and Martinez agreements, as well as the two Mosley claims (Rattan Mine and Ruth) that are currently under negotiation. Gintoff would also receive a 2 1/2% gross value royalty (no deductions) on all other properties within the area of interest. (See map) There is a further royalty provision that royalties payable by Billiton cannot exceed the equivalent of a 5% NSR royalty (not defined).

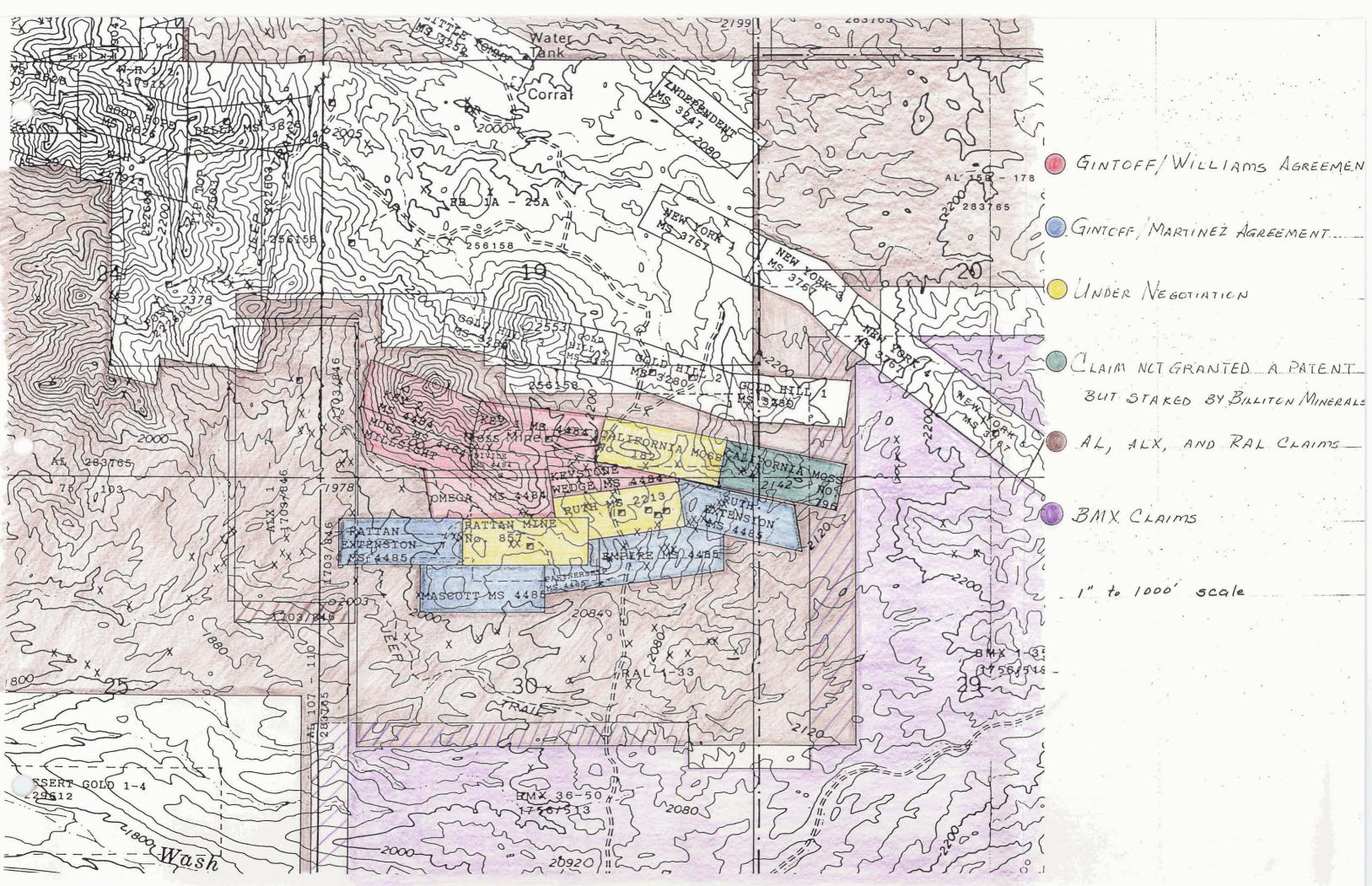
If in any given year the total production royalty payable to Gintoff is less than \$100,000, Gintoff will receive as an advance royalty the difference between \$100,000 and any production royalty.

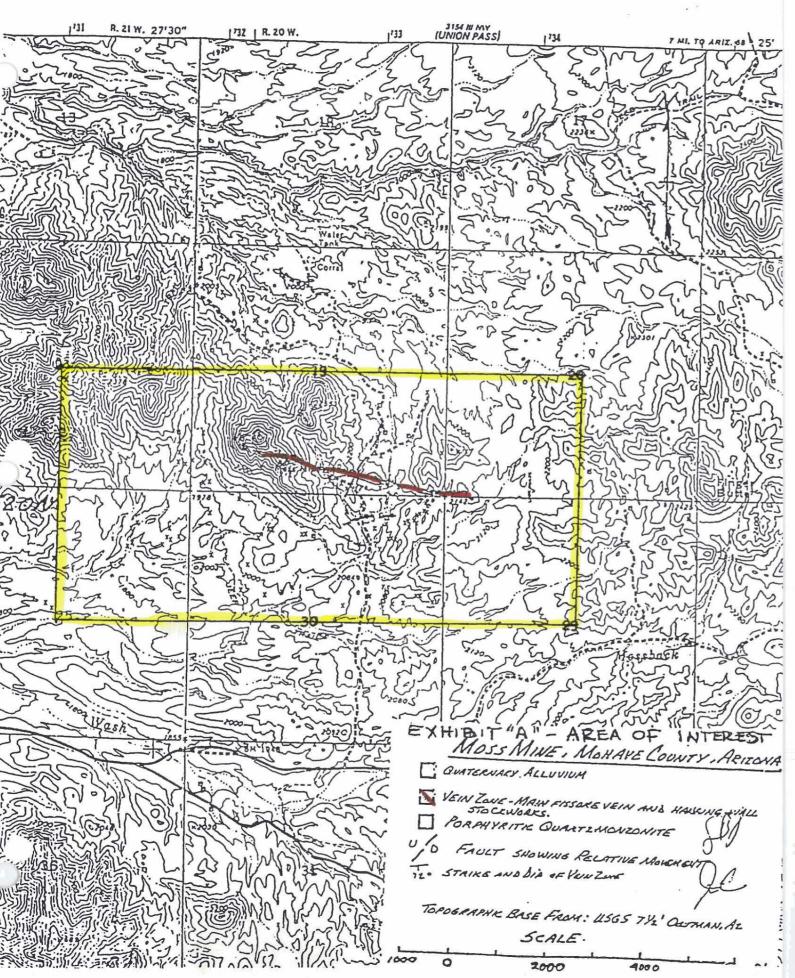
Billiton would be entitled to recoup one half of the purchase price on the Williams option (\$500,000) plus any advance royalties paid to Gintoff.

If production were suspended, but commercial reserves remained, Gintoff would receive an advance royalty of \$60,000 for a period of 3 years. After which time the Gintoff interest could be purchased by Billiton for 75% of the value of the gross production royalty that would be due Gintoff on the remaining commercial reserve. Alternatively, Gintoff would be given the option to mine the property and Billiton would receive the equivalent gross production royalty originally due Gintoff.

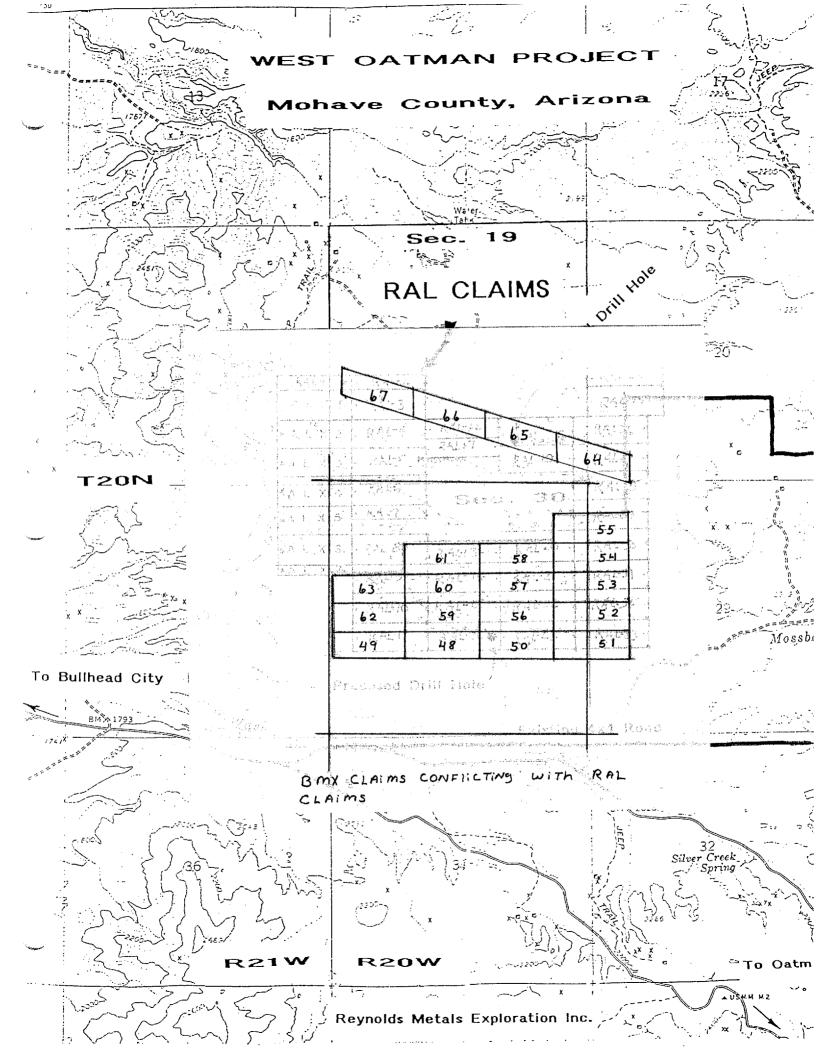
BMX Claims

As stated previously and in addition to the patented claims that Billiton has under agreement or is involved in negotiations, Billiton Minerals has staked two contiguous blocks of claims totaling 67 claims in portions of Secs. 19, 20, 21, 29 and 30 T20N, R20W. The first set of claims (BMX 1-50) were located July 2-4, 1990, while the second set (BMX 51-67) was located September 20, 1990 and overlie some of the Reynolds Metals/Compass Minerals RAL claims. The second block of BMX claims were located on the assumption that the RAL claims had not been recorded with the BLM. A preliminary examination indicates that 20 of Billiton's claims (BMX 48-67) are in conflict and junior to the RAL claims.





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GENERAL GEOLOGY

The gold-bearing veins of the Oatman district are localized in mid-Tertiary volcanic rocks and associated hypabyssal stocks of late Oligocene to early Miocene in age. The Tertiary volcanic sequence comprised of trachyte, latite, rhyolite and basalt, rests on a Precambrian basement of schist, gneiss and granite.

Two small stocks and a series of dikes intrude the volcanic rocks in the Oatman area. The Moss porphyry is a northwest-southeast elongate stock of zoned quartz monzonite. Intense and pervasive argillic alteration is evident in the Oatman district. This alteration is thought to be either a late phase of the Moss porphyry intrusion which affected both the lower and middle sequences of volcanics, or is related to an unmapped rhyolitic center located at the eastern margin of the Moss porphyry. This postulated third stage magmatic event would also be responsible for the gold mineralization in the district.

The other stock named the Times porphyry is thought to be older than the Moss porphyry, but exact relationships are unclear.

Ore Deposits

The ore bodies of the district occupy dilatant zones within fault structures. They vary from tabular fissure fillings to complex stockworks of broken and quartz-filled veins. Most of the large mines were located in and around the town of Oatman, but several other gold-bearing veins, such as the Moss, are located peripheral to the major structures.

The Moss mine is situated on a large outcrop of massive vein quartz and silicified wallrock. The Moss vein generally strikes N75-80 $^{\rm O}$ W and dips about 70 $^{\rm O}$ to the south. Outcrop widths vary from 5 feet to over 50 feet in width along strike for about 2700 feet, except where offset by northwest-trending, cross-cutting fault zones. Ore bodies occur within late stage quartz filling of the complex vein systems and increase in width at depth.

The Moss mine was developed over a vertical range from surface to the 300 level. All ores mined were reportedly within the oxidized zone. Development levels were located at 65 feet, 220 feet and 300 feet below the collar of the shaft. The most extensive level along strike east of the shaft is the 65 level which is about 300 feet long with several cross cuts. The amount of stoping, if any, is unknown. A 200 foot cross-cut adit accesses the 65 level from the arroyo southeast of the shaft. The adit trends due north from the portal which is presently caved.

Production records from the Moss mine have not been kept. Reports by others place total production at \$500,000 through 1910. All of this ore came from above the 220 level, with most coming from the near surface workings.

Gold mineralization at the Moss mine is characterized by two distinct types. Native gold with very low silver concentrations is associated with micron sized silver-rich gold. Both types are found in siliceous gangue with iron oxides, calcite and fluorite. The gold was most likely liberated from pyrite during oxidation.

Ore Reserve Estimates

A series of cross sections were constructed along drill holes in the Moss mine area. A zone of ore grade intercepts measuring approximately 500 feet in strike length and from 40 feet in thickness near surface, to over 300 feet in thickness at depth, can be demonstrated. (See schematic cross section.) These dimensions are documented also by underground and surface assays. Projecting this zone to a depth of 500 feet along the majority of the 500 foot strike length and utilizing an average thickness of 200 feet, yields a total tonnage of four million short tons (assuming 12.5 ft³/ton).

The grade of this zone is estimated to average 0.05 opt gold, which translates to 200,000 contained ounces. Recovery is the major question on this deposit. Preliminary bottle roll tests suggest that a recovery factor of 75% may be appropriate. It should be stressed, however, that little is known regarding the leachability of the deeper and less oxidized portions of the zone. We do know, from our drilling in the district, that the water table can be expected at about 200 feet. This is approximately the depth that the ore zone thickens dramatically and, therefore the majority of the 200,000 contained ounces is below the water table. If we assume the 75% recovery factor is valid, 150,000 ounces of gold could be expected to be recovered from this deposit.

The stripping ratio of a pit designed to extract the four million tons was estimated from cross sections and the topographic base map. We estimate the overall stripping ratio at about 4.5:1 with 55° pit slopes.

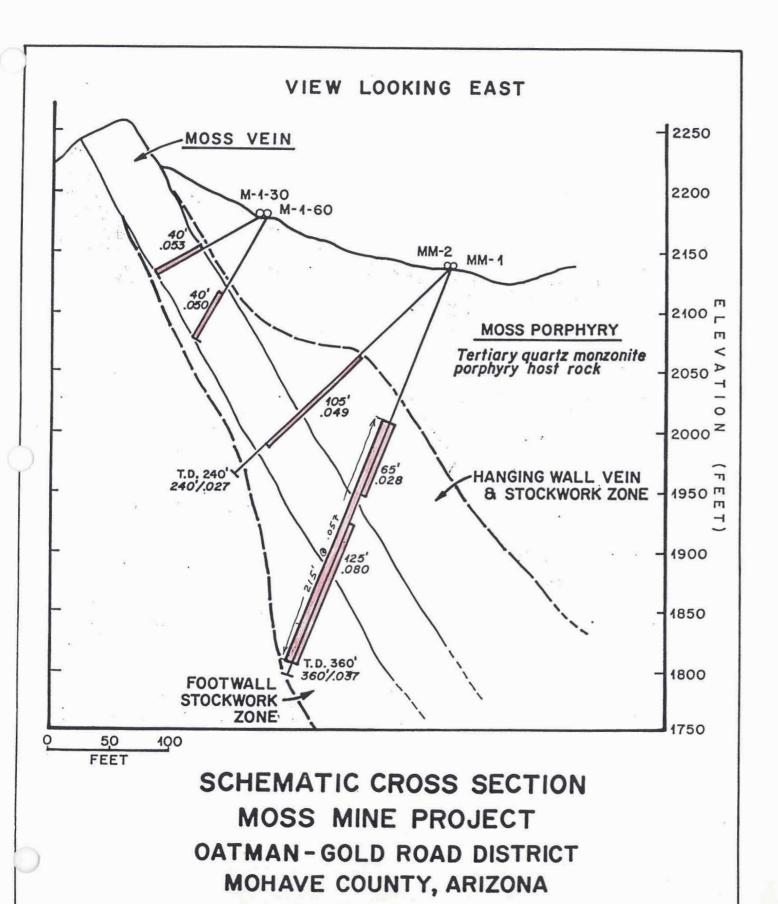
Exploration Potential

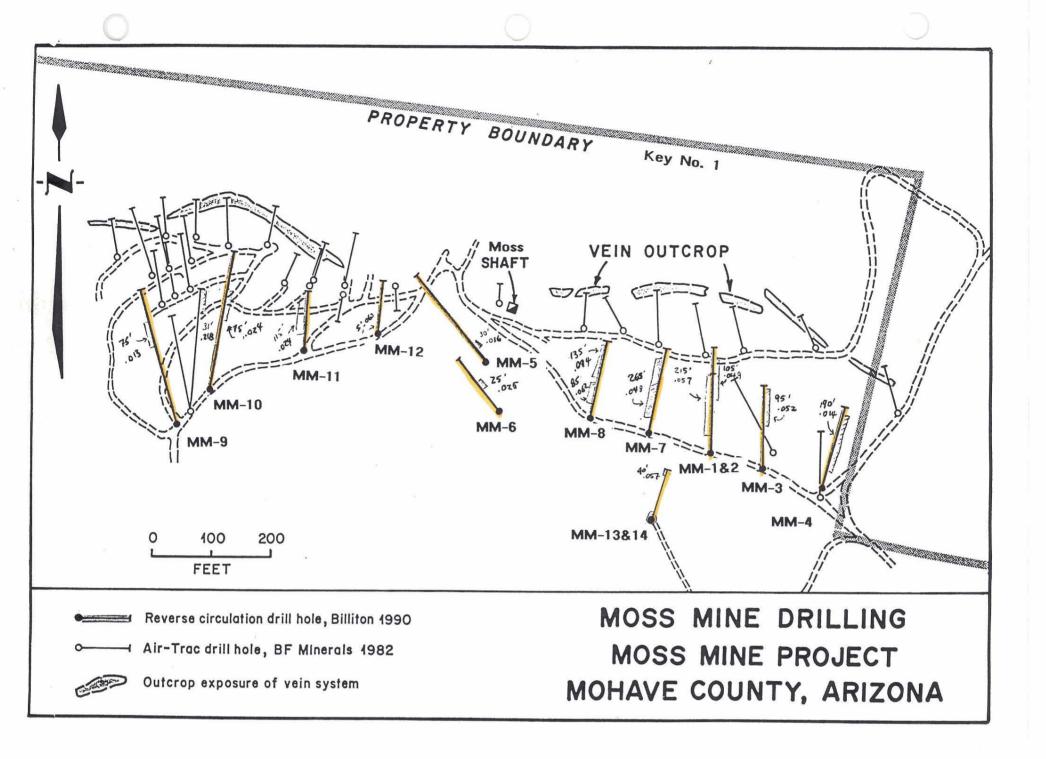
On the exploration potential map (11 x17) included with this report, possible ore shoots are indicated by heavy, dashed lines. All of the known reserves are confined to the ore shoot located immediately east of the Moss shaft. This possible ore body is outlined by drill holes MM-1 through MM-3, MM-7 and MM-8 (See detail map). The other possible ore shoots are predicted from Reynolds' rock chip geochem sampling and geologic mapping, as well as Billiton's drilling program.

The most promising target is the ore shoot located just east of the known reserves in the California Moss patented claim. No drilling has been performed in this area because Billiton has not yet finalized their agreement on this claim. Surface rock chip geochem and samples from the small adit cross-cutting the vein all indicate a well mineralized zone. The vein is bold in relief and is associated with pervasive quartz stock work veining in the hanging wall zone.

The possible ore shoot on the west side of the Moss shaft is another good target although several drill holes to date indicated only lower grade mineralization.

Considering the large number of surface exploration targets, it seems reasonable to predict a doubling of the current reserve base after an aggressive exploration program. The possibility of higher-grade zones at depth along the Moss vein should not be overlooked. A bulk-minable underground operation could be developed if the vein width remained constant or increased with depth.





DRILL HOLE and EXPLORATION POTENTIAL MAP **EXPLANATION** Quartz Stockwork Veining Quartz Vein Possible Ore Shoot 110 Moss Shaft Shear Zone Dike Claim Boundary Billiton Minerals Drill Hole MM-8 78 Sec. 20 Sec. 29 MM-16 MM-18 Patented Claims RAL Claims BMX Claims R 20 W SEP AU 1" = 500' Reynolds Metals Exploration Inc.

CONCLUSIONS AND RECOMMENDATIONS

Following a review of Billiton's data on February 7th, it became apparent that the gold mineralization at the Moss mine is not restricted, as might be expected, to a narrow high grade quartz vein nor is the style of mineralization identical to that characterizing the bulk of the Oatman district. Gold mineralization is controlled by the west-northwest striking, south dipping Moss vein, wich is actually a silicified structural zone at least 40 feet wide bordered in the hanging wall by a zone of quartz-carbonate stockworking and subparallel mineralized structures. The width of the mineralized zone though variable appears to locally attain widths of 200 feet or more. These widths having potentially open pitable grades, are confirmed by Billiton's drilling, as well as previous underground chip samples.

To date Billiton Minerals has drilled 21 reverse circulation holes. Four of the holes are located west of the Moss shaft (M-9 through M-12), while ten are located immediately east and southeast of the shaft (M-1 through M-8, M-13 and M-14). Six holes have also been drilled on the California Moss claim located approximately 2000 feet east of the Moss shaft. Although some of the western pattern of holes (M-9 through M-12) and the California Moss holes (M-15 through M-19) encountered encouraging mineralization, the thickness and grades are insufficient to be of interest economically. Additional drilling in both areas is warranted, however, to fully assess the potential of these portions of the Moss structure.

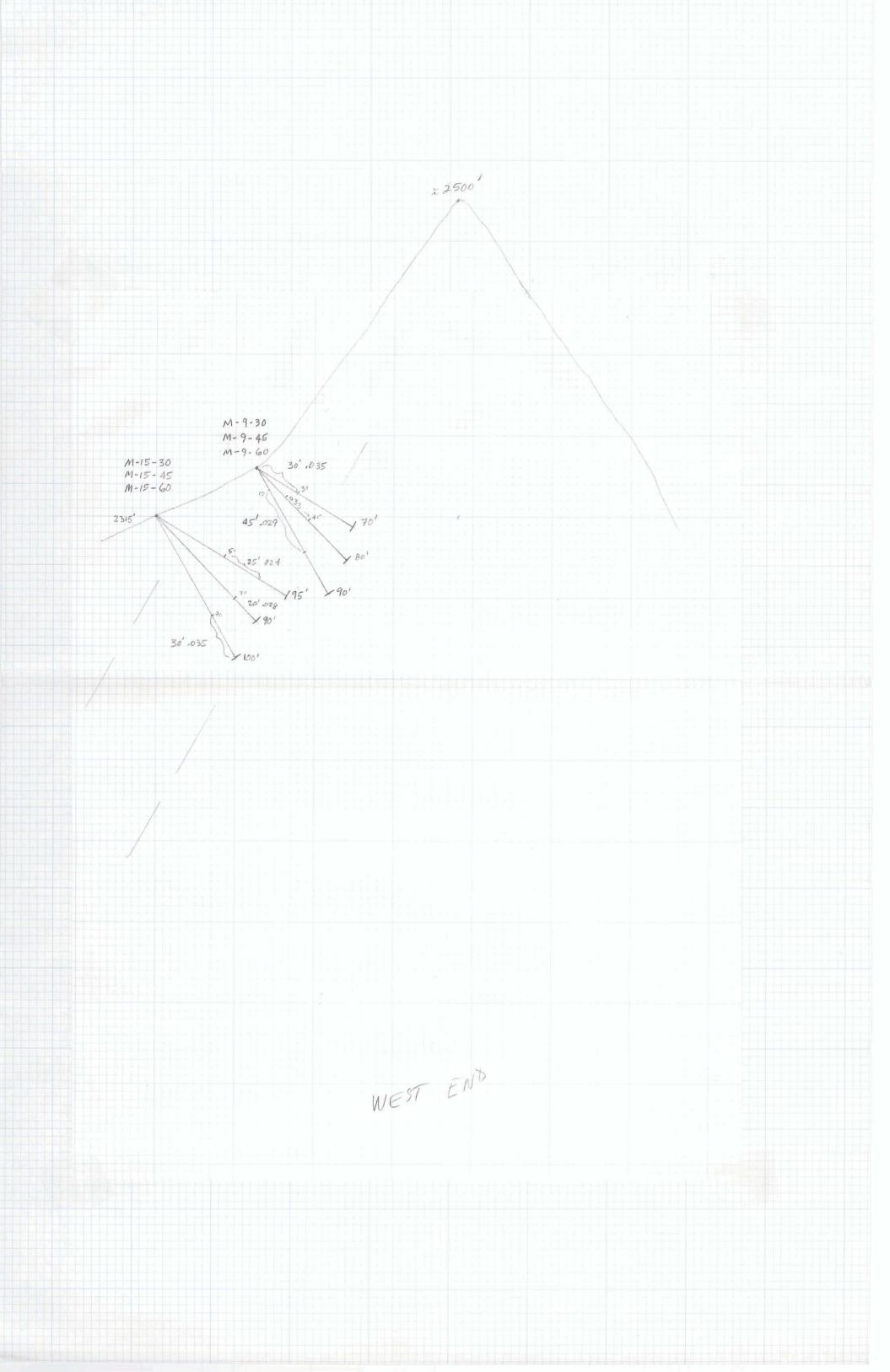
On February 9th, Mr. Mical Slater, calculated a resource estimate based on the drilling immediately east of the Moss shaft. This preliminary estimate indicates that a resource of four million tons averaging .05 opt Au may be present. This resource equates to 200,000 ounces of gold having a waste to ore ratio of 4:1.

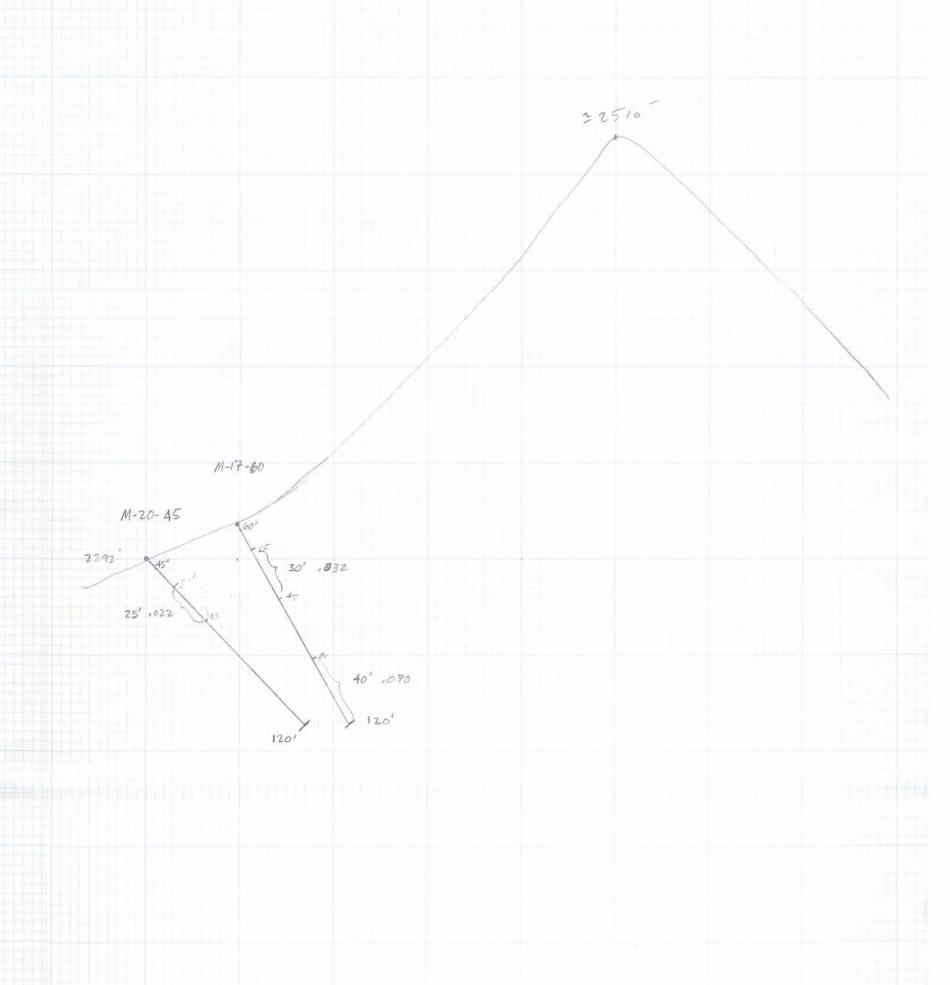
Metallurgical data is almost non-existant. Billiton has had bottle roll tests performed on only five drill samples (not composites). These preliminary results indicate that gold recoveries are approximately 75%. Unfortunately, no test work has been performed on drill samples obtained below the water table which is approximately 200 feet below the surface.

By assuming a purchase price based on \$10.00 per ounce for the geologic resource, the Moss mine property as it is, may have a value of \$2 million. Unfortunately, the upcoming land costs associated with the project total \$1.8 - 1.9 million and could be higher should acquisition costs of the remaining patented claims be more costly than expected. Since much of the costs associated with exploration and pre-production remain, a purchase price for the Moss mine project must be kept to a minimum, probably not exceeding Billiton's investment in the project of \$250,000.

Obviously, Billiton is wanting and expecting to receive a much better price. I would, therefore, expect our offer to be rejected and the property possibly sold to a higher bidder. The successful bidder may, however, withdraw its offer during its due diligence period upon finding that the RAL claims are valid. Should this occur, Billiton may then be forced to accept our offer or terminate their agreements with Gintoff, rather than make the upcoming property payments.

If this occurs, Reynolds and Compass would then be in a position to negotiate with Gintoff directly. Should he be unreasonable, perhaps the best approach is to wait and see if he can meet the upcoming land payments himself. Perhaps in the end, he may have to walk away from the project or be forced to deal with Reynolds and Compass under much more reasonable terms.





West Emd

