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COPPER MOUNTAIN COMPANY

APOLLO PROJECT

Abstract

The Apollo Project was conceived after studies were made of the high altitude, 125- mile, color photographs of the Apollo 6 space mission. The photographs clearly indicate a major structural feature and intersect north of the Pyramid Mountains, near Lordsburg in southwestern New Mexico.

Further study of the area, including the general features of the major porphyry copper deposits of the southwestern United States and New Mexico indicates that the Apollo Project area is well worth additional exploration.

There are many features that make the area extremely attractive as a possible porphyry target.

1. The intersect of major north-northeasterly and northwesterly structural trends.

2. Rock exposures range from Pre-cambrian to Tert~~ray~~ary.

3. The area is on the flank of the Burro Uplift. All known major copper producing porphyries of New Mexico are associated with this uplift.

4. The project is in the same structural belt as Santa Rita and Tyrone.

5. Mineralized porphyries exist a few miles to the south in the Pyramid Mountains.

6. The major faults flanking the Pyramids extend well into the project.

7. There are no title problems on the lands under lease.

8. Preliminary exploration costs would be extremely reasonable on the project.

INTRODUCTION

The Apollo Project is located about two miles northwest of Lordsburg -- in Southwestern New Mexico. The area is rectangular in shape, being six miles wide and fourteen miles long.

There has been no mining within the project area. The land is of low relief, with a shallow soil cover supporting some native grasses and low mesquite.

The main topographic expressions are Ninemile Hill, at the southern end, and Lone Mountain at the northeast corner of the project.

ACCESSIBILITY

U. S. 70, a paved Federal Highway, cuts diagonal through the property. New Mexico State Highway 464 runs parallel to the eastern edge. Several graded county and ranch roads cross the project.

Interstate 10 and the Southern Pacific Railroad facilities are available at Lordsburg.

OWNERSHIP

Copper Mountain Company has approximately 22,720 acres of New Mexico State mineral leases covering the major geologic features of interest within the project. All the acreage carries a two percent (2%) royalty to the State. On 320 acres, in the Lone Mountain area,

an additional one percent (1%) statelike royalty is reserved to the Donegans of Albuquerque, New Mexico.

There are no title problems on the lands under lease.

TOPOGRAPHY

The area is generally flat. Relief of 200 feet is found at Ninemile Hill and at Lone Mountain.

Drainage is to the west on the eastern half of the project. This changes abruptly to the south, about midway through the area on an axial feature that generally trends to the north/northeast.

GEOLOGY AND STRUCTURE

The Apollo Project is in the southwest copper province covering southeastern Arizona, southwestern New Mexico and northern Sonora.

The area leased by Copper Mountain is on the north rim of the Sonoran geosyncline. It also lies within a prominent east/northeast trend, characterized by a belt of abrupt changes in the regional strike of the rocks, structural disturbances and prominent igneous intrusions (See, Index Map.) Being on the rim of the Sonoran geosyncline, the region is underlayed by a relatively thin blanket of sediments of Paleozoic and Mesozoic age.

The rock exposures are few. Granite, exposed over approximately a section, is prominent at Ninemile Hill. Lone Mountain, at the northeastern edge of the project, is made up of porphyritic rhyolites and andesites.

The project was picked from the Apollo 6 high altitude photographs of the southwestern part of New Mexico (see, photo map and overlays).

These photos show a very strong north/northeast structural trend along the west edge of the Pyramid Mountains and extending up through the project area.

Intersecting this feature is another trend, bearing northwestward, that originates on the north and east flank of the pyramids. The intersect of these two trends is approximately two and one-half miles southwest of the crest of Ninemile Hill.

Careful examination of the Apollo photograph shows a large circular feature adjacent to, and just northeast of, this intersect. The topographic highpoint is the granite outcrop at Ninemile Hill.

Drainage in the vicinity of Ninemile Hill (Apollo Project Map) follows a circular pattern.

The above all points to a doming effect adjacent to the main trend intersects and Ninemile Hill.

There is a definite change of the soil color, in an area straddling the main northeasterly trending structure, bounded on the south by U. S. 70 and on the north by the El Paso Natural Gas Company pipeline.

At the upper northeast corner of the Apollo Project area, Lone Mountain stands out from the surrounding plain. This feature is a bold outcrop of light tan, to light pinkish tan, porphyrytic andesites and rhyolites. Their age is early Tertiary or possibly late Cretaceous.

The main structural trend passes approximately a mile and a half to the west, near the Fuller Ranch House.

Again, drainage mirrors this northeasterly structural trend. From the Fuller House, southward to the west edge of the Ninemile Hill structure, all the major drainages turn from a westerly to a definite southerly direction.

Limited field work by Copper Mountain Company and study of the Apollo photos, suggests that there may be two or more unmapped rock exposures within the project. Over 98% of the ground is covered with recent alluvium and gravels.

The Apollo Project is on the edge of the Burro Uplift, an early Cretaceous structure, near which all major known mineralized Laramide porphyries in southwestern New Mexico are clustered.

The Northwest-trending Deming axis, of the Texas Lineament also passes directly through the project area.

A straight line, drawn through the major copper producing zones at Santa Rita and Tyrone, intersects the major northeast structural trend of the Apollo project just north of Ninemile Hill.

CONCLUSIONS

The Apollo Project has many features which make it an excellent area on which to do additional exploration for mineralized porphyry bodies. These are:

1. The intersect of major north/northeast and northwest trending structures (Apollo photo).

2. The area has exposure of rocks ranging from Pre-Cambrian to Tertiary in age. An assay of the Tertiary-Lone Mountain porphyry shows up to 70 p. p. m. of copper.

3. The area is on the southern flank of the Burro uplift, near which the major copper-bearing porphyries of Southwest New Mexico are spotted.

4. The project area is well within a major structural belt passing through the copper-producing porphyries at Santa Rita and Tyrone, New Mexico, and Bisbee, Arizona.

5. The project is on the flank of the Sonoran Geosyncline, where sediment thickness is not excessive.

6. Mineralized Laramide porphyry bodies exist a few miles to the south in the north end of the Pyramid Mountains.

7. Major structural features, and faults, flanking the Pyramids extend northward into and through the Apollo area.

8 There are no title problems on the lands Copper Mountain has under lease, over 99% of the acreage is in a continuous and contiguous block.

RECOMMENDATIONS

A. An aero-magnetic survey on east/west flight lines should be flown. This would delineate certain highs and also the lateral

boundaries of the uplift in the area. A survey of this type clearly shows the boundaries of the Pyramids to the south.

B. A preliminary ground check of the aero-magnetic results.

C. A thorough ground check of the project area to locate possible other outcrops.

D. Preliminary geochemical survey over the magnetic highs.

E. Specific target areas should be further studied with an I. P. (Induced Polarization) survey.

EXPLORATION COSTS

A. Aero-magnetic survey	$6,000.00
B. Ground check of magnetic highs	1,000.00
C. Ground check of the geology	800.00
D. Geochemical survey of magnetic anamolous areas	1,200.00
E. I. P. on target area	
Per Square Mile = $400.00	
Five (5) Square Miles	2,000 00
TOTAL preliminary evaluation of project area and the selection of a specific target prior to drilling	$11,000.00

NOTE: Costs of ground magnetic survey, geochemical survey and

geologic reconnaissance could be reduced by having one team combine all three studies.

PREPARED by CHARLES de B. HAGERMAN, Geologist
for
COPPER MOUNTAIN COMPANY

Charles de B. Hagerman
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SELECTED REFERENCES

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2. Elston, W. E., 1965. "Mining Districts of Hidalgo County, New Mexico." New Mexico Geological Society Guidebook, Sixteenth Field Conference, 1965, pp. 210-214.

   Elston, W. E., 1970. "Volcano-Tectonic Control of Ore Deposits, Southwestern New Mexico," New Mexico Geological Society Guidebook, Twenty-first Field Conference, 1970, pp. 147-153.

3. Hernon, Jones and Moore, U. S. Geological Survey 1953-1965. "Some Geological Features of the Santa Rita Guadrangle, New Mexico." New Mexico Geological Society Guidebook, Sixteenth Field Conference, 1965, pp. 175-183.

4. NASA Apollo VI Space Mission, 1968. Photograph No. 1445.

5. Titley and Hicks, 1966. "Geology of the Porphyry Copper Deposits, Southwestern North America," pp. 3-50.

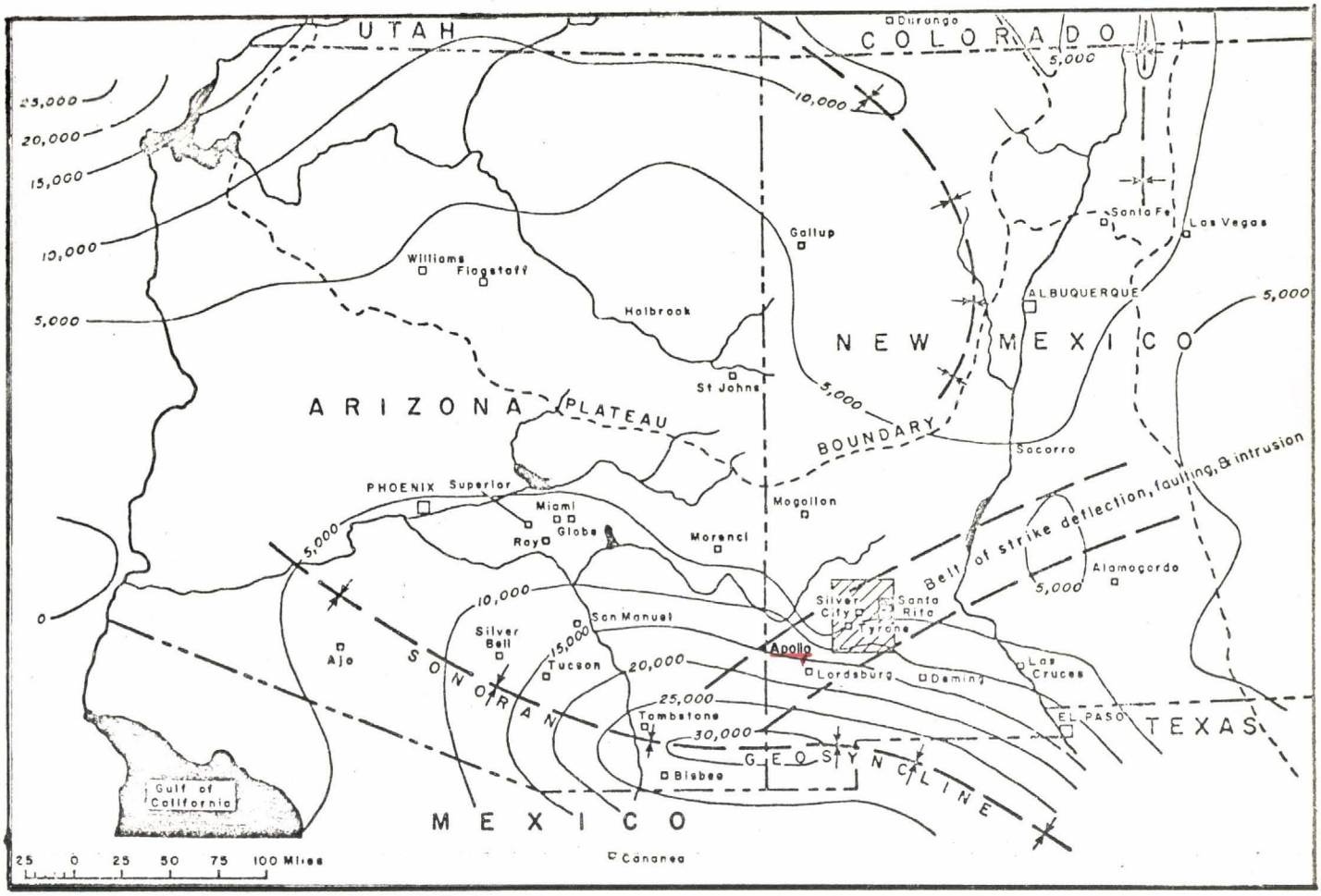
6. Trauger, F. D., 1965. U. S. Geological Survey, "Geologic Structure Pattern of Grant County, New Mexico." New Mexico Geological Society Guidebook, Sixteenth Field Conference, 1965, pp. 184-187.

APOLLO PROJECT

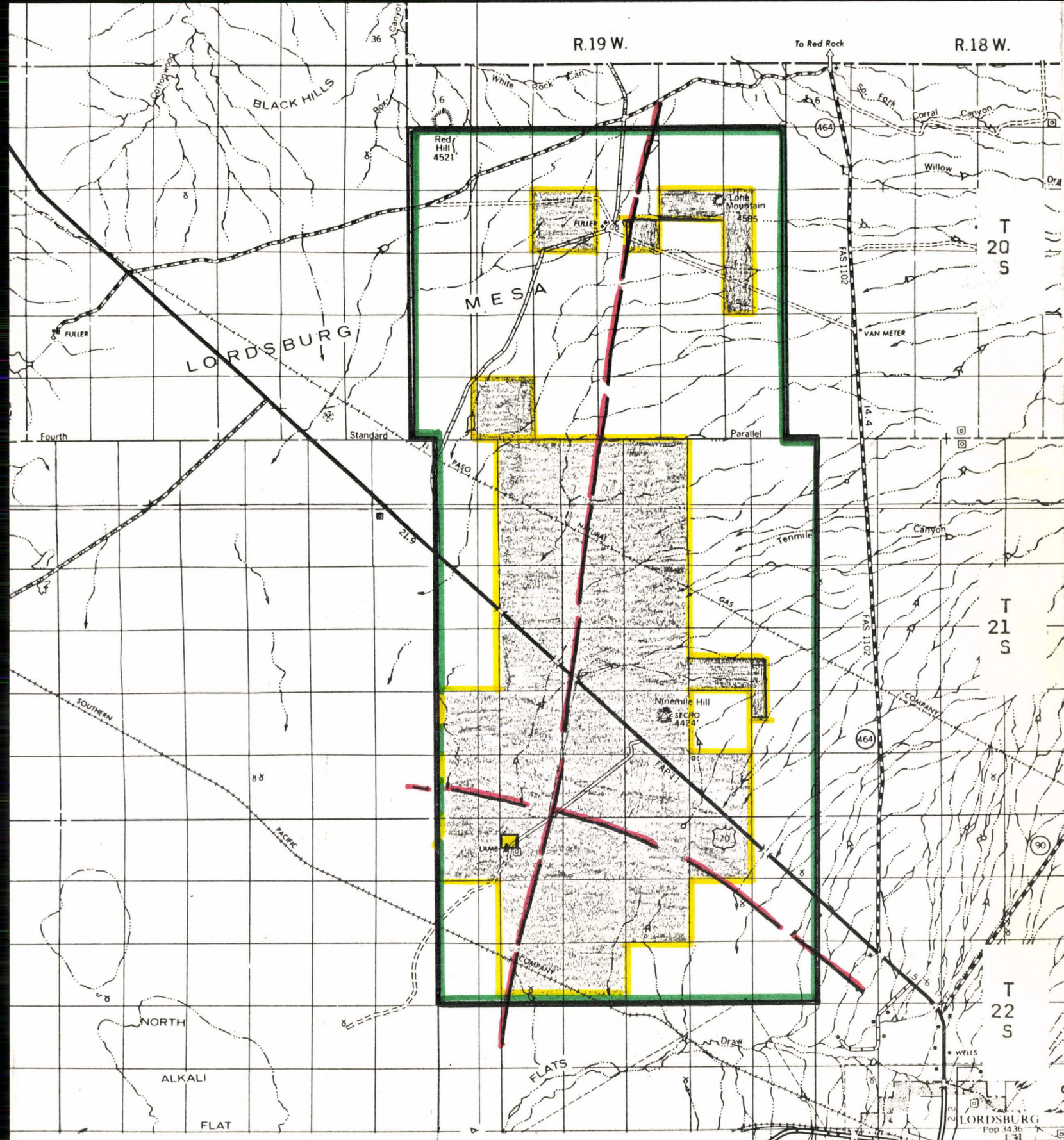
From APOLLO 6, photo 1445

Approx. Scale 1" = 9 miles

Index Map



Location of Apollo Project in relation to the Sonoran geosyncline and a belt of strike deflection, faulting, and intrusion.



APOLLO PROJECT

Legend

State mineral lease

Structural trend

Project boundry

Scale ½"= 1 mile

COPPER MOUNTAIN COMPANY
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1. The sales price of the ninety percent (90%) working interest is $360,000.00.

2. The 2% plus 1/2 of 1% down equals $9,000.00.

3. The eleven subsequent monthly payments are of $1,800.00 a month at the end of which time the full $360,000.00 is due.

COPPER MOUNTAIN COMPANY
161 North Federal Place
Santa Fe, New Mexico 87501

August, 1971

PROCEDURES FOR SALE AND/OR LEASE

I. Definitions

A. Project area: as may be shown on a plat attached to a named project; will usually involve more lands than those presently owned or leased by Copper Mountain Company (CMC). Lands within project area and subsequently acquired by any member of the joint venture shall be proportionately tendered at cost to the other members who shall have sixty (60) days to pay and accept or reject same.

B. Royalty and/or overriding royalty: the State of New Mexico two percent (2%) royalty on nonprecious minerals is thus worded: (Overrides similar to royalty.)

> "Lessee shall pay the lessor as royalty two percent (2%) of the gross returns from the smelter, mill, reduction process or other sale, less reasonable transportation and smelting or reduction charges, if any, of all ores and materials mined and extracted from the land and two percent (2%) of any and all premiums and bonuses received by lessee in connection with the discovery, production or marketing of such ores or materials... settlement for all royalties on the twentieth (20th) day of the month following the month of sale or receipt of premium or bonus."

C. Operator: that member of the joint venture who owns fifty-one (51%) percent or more of the venture, unless a minority member is specifically selected. Title to state leases shall be vested in the name of the operator who shall file with the State

of New Mexico a good and sufficient bond in the amount of $10,000.00 in favor of the State of New Mexico, for the benefit of the lessor, its surface lessee, patentee or contract purchaser, to secure payment of such damage to the livestock, water, crops, or other tangible improvements ao the lands as may be suffered by reason of development, use and occupation of the lands by the said lessee, and the lessee shall be liable and agree to pay for all such damages to the livestock, growing crops, or other improvements upon the land. Operator may explore in an unlimited manner as long as he fully informs CMC monthly of the results.

D. Working interest: the total ninety percent (90%) working interest carries a ten percent (10%) carried working interest. The total 100% working and carried interests are subject to a two percent (2%) royalty and a three percent (3%) overriding royalty.

II. General Mechanics

CMC shall set a sales price of X dollars on a ninety percent (90%) working interest, or any part thereof, and deliver title to the "operator" upon the following:

A. The ninety percent (90%) working interest shall pay one hundred percent (100%) of two percent (2%) interest on the sales price.

B. The ninety percent (90%) working interest shall pay a further one-half of one percent per month, prepaid monthly, over the next

twelve months on the sales price.

C. The ninety percent (90%) working interest shall pay the total sales price X at the end of the year.

D. If the operator fails to continue to pay the monthly interest due or fails to pay the sales price at the end of the year then he shall reassign within thirty (30) days of default all the properties within the project area to CMC.

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