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# **HOMESTAKE MINING COMPANY**

REPORT ON OAKLAND

IN THIS FILE ONLY

## **EXPLORATION DIVISION**



REPORT ON THE  
BRONCO-OAKLAND-VERDSTONE CLAIMS

FILE

Little Horn Mountain Area

Yuma County, Arizona, U.S.A.

Township 1S, Range 14W, Section 3 and Section 10

(33° 17' N, 113° 43' W)

For

Rea Petro Corporation

By

V. Ryback-Hardy, P. Eng

December 14, 1981

Hinterland Resource Services Ltd.,  
11691 Trumpeter Drive,  
Richmond, B. C.  
V7E 3X4 (604) 271-5922

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SUMMARY

On November 17 and 18, 1981, the author examined the Bronco, Verdstone and Oakland Patented mining claims in Yuma County, Arizona. The property examination was done at the request of Mr. L. Reaugh of Rea Petro Corporation. The author was accompanied on this examination by Messrs. Norman A. Grant, P. Eng., and Mr. F. Marshall Smith, P. Eng., and gratefully acknowledges their professional assistance.

The purpose of the examination was to evaluate the merit of this property as a gold-silver prospect. The property contains several gold-bearing geological structures that have been tested only in a superficial manner. In this respect, we strongly feel that this property merits a full evaluation program as outlined in this report. Successful completion of the proposed work program may outline an ore body capable of supporting a profitable mining and milling operation

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in the order of 500 tonnes per day or more.

The recommended work program required to test this property will cost approximately \$230,000 for the first phase of evaluation. It is strongly recommended that these funds be expended on this property in an orderly step-by-step exploration program.

#### INTRODUCTION

The Bronco Oakland Verdstone gold-silver prospect consists of the Bronco, Bronco 3 (half claim), the Oakland and the Verdstone 1 patented mining claims, totalling approximately 72.3 acres located in Yuma County, Arizona. The claims are presently owned by George W. Morgan and are held under lease by Mr. L. D. Holland of Holland Petroleum Corporation, Dallas, Texas. Rea Petro Corporation has negotiated an option on the above claims from Mr. Holland, and now intends to further explore and develop this mineral property.

# HOMESTAKE MINING COMPANY

REPORT ON OAKLAND

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EXPLORATION DIVISION



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#### INTRODUCTION

The Bronco Oakland Verdstone gold-silver prospect consists of the Bronco, Bronco 3 (half claim), the Oakland and the Verdstone 1 patented mining claims, totalling approximately 72.3 acres located in Yuma County, Arizona. The claims are presently owned by George W. Morgan and are held under lease by Mr. L. D. Holland of Holland Petroleum Corporation, Dallas, Texas. Rea Petro Corporation has negotiated an option on the above claims from Mr. Holland, and now intends to further explore and develop this mineral property.

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to Yuma. Food, water and fuel are available at the ARCO Gas Station on I-10 at the Vicksburg turnoff approximately 13 km west of the Hovatter Road turnoff or 32 km west of the hamlet of Quartzsite. Trailer accommodation can be established here during the initial stages of exploration.

A major electric power transmission line and a gas pipeline are located about 15 km north of the property. The nearest rail line (Atcheson-Topeka and Santa Fe) is located at Salome, about 60 km north.

According to Arizona Mining regulations, mine operators may appropriate water for mining purposes without actually possessing the water rights. However, during the exploration and early development phases, it will be necessary to bring water in by tank truck and store it on site. A typical diamond drill project (one rig) would use 16,000 to 20,000 gallons of water per day.

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available from drilled wells in the surrounding arrays.

It is estimated that the water table is approximately 100 metres below surface.

PROPERTY

The property presently consists of the following patented mineral claims. Tp. 15 R 14W Yuma County, Arizona.

<u>Claim Name</u>	<u>Serial-No.</u>	<u>-Section</u>	<u>Subdivision</u>	<u>Owner</u>
Bronco	49788	3	S2	George W. Morgan
Bronco III	49789	3	S2	George W. Morgan
Verdstone No.3	49790	10NE &	3S2	George W. Morgan
Oakland	49791	10	SE	George W. Morgan

Several original posts were found by the author.

The claims appear to be well located and protected by patent issued pursuant to federal regulations and Arizona Mining Law.

The claims are held under lease by Mr. L. D. Holland of Holland Petroleum Corporation, Dallas, Texas. Rea

10/

has consisted of trenching, pitting, drilling, shaft sinking and drifting. Four (4) shafts have been sunk on the Oakland claim, two on the Bronco, and two on the Verdstone claim. The shafts are still open and dry, however, for safety reasons, the shafts were not examined as it appeared that the ladders were in need of repair. The use of safety ropes and precautions against resident rattle snakes are required for access to the underground workings.

In 1940, 28.5 tons of selected ore was shipped to ASARCO smelter at Hayden, Arizona. This one lot assayed 0.46 oz/ton Au and 4.7 oz/ton Ag.

#### GEOLOGY

The ridges in the area are capped by 1 to 2 metres of Quaternary basalt flows. The slopes are strewn with a cover of remnant, wind-eroded boulders of basalt overtop the less resistant Kofa Volcanics.

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There are at least six veins located in two separate areas on the property (Smith) with portions of the strike-length containing gold mineralization.

The texture in the silicified breccia zones indicates several periods of brecciation and silicification.

The alteration around the veins is similar to that found in other gold deposits in the Cordillera, most notably the Lawyers deposit in Northern British Columbia. This alteration aureole includes hematite, siderite, manganiferous (black) calcite, adularia, clay minerals, quartz and chalcedony (jasperoid). The mineralization on surface consists of free gold, minor sulfides, and druzy quartz in fissure filled veins. Float containing chalcopyrite and malachite was found on the Verdstone property, however, the source was not located.

#### SAMPLING

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at depth. Precious metals tend to precipitate from hydrothermal solutions when boiling occurs. The vapors then rise through the overlying country rock producing an alteration aureole. These alteration aureoles are pathfinders to underlying mineralization.

It is the author's opinion that the Bronco-Oakland-Verdstone property has the potential of containing an economically viable epithermal gold deposit in the order of two (2) million tonnes or more of 'ore' grading 0.20 to 0.40 oz/tonne or better at a production rate of 500 tonnes per day (underground operation). There is also a potential of a much larger tonnage of lower grade 'disseminated' gold mineralization amenable to open pit 'heap leach' mining methods.

In order to test this potential, the following work program is recommended ( in collaboration with F. M. Smith P.Eng.)

1. Acquire additional claims in the area to cover

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COST ESTIMATE

It is assumed that the above recommended program is to be conducted by contract including all support costs.

PHASE I (Funds in Canadian Dollars)

Title Research and Acquisition of Additional Open Ground (Acquisition costs of held claims is beyond the scope of this report)	\$10,000
Grid Establishment and Surveying	\$12,500
Geochemical Sampling (including assaying)	\$15,000
Geophysical Surveying	\$20,000
Geological Mapping	\$15,000
Drilling (1000 metres @ \$110/metre)	\$110,000
Administration @ <u>±</u> 5%	\$ 9,125
Contingency @ 20%	\$38,325
<b>Total</b>	<hr/> <b>\$229,950</b>

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REFERENCES

Morgan, G. W., "Bronco-Oakland-Verdstone Mining

Property Report, September 28, 1979.



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LOCATION AND ACCESS (33° 17' N, 113° 43' W)

The mineral property is located in the Little Horn Mountains in Yuma County, Arizona (Township 1S, Range 14W, Sections 3 and 10); about 153 kilometres west southwest of Phoenix. Access is from Interstate 10 (I 10) to the Hovatter Road turnoff (153 km ± west of Phoenix), then approximately 38 km south by dirt road to the Oakland property. Local trails provide access to the Bronco-Verdstone property to the northwest. Two-wheel drive trucks are sufficient for gaining access to most areas of the property. It should be cautioned that the access routes pass through areas prone to flash floods and unwary persons may become stranded in the desert unless special precautions are taken. Road reconstruction, however, is simple and inexpensive, requiring only a grader or bulldozer.

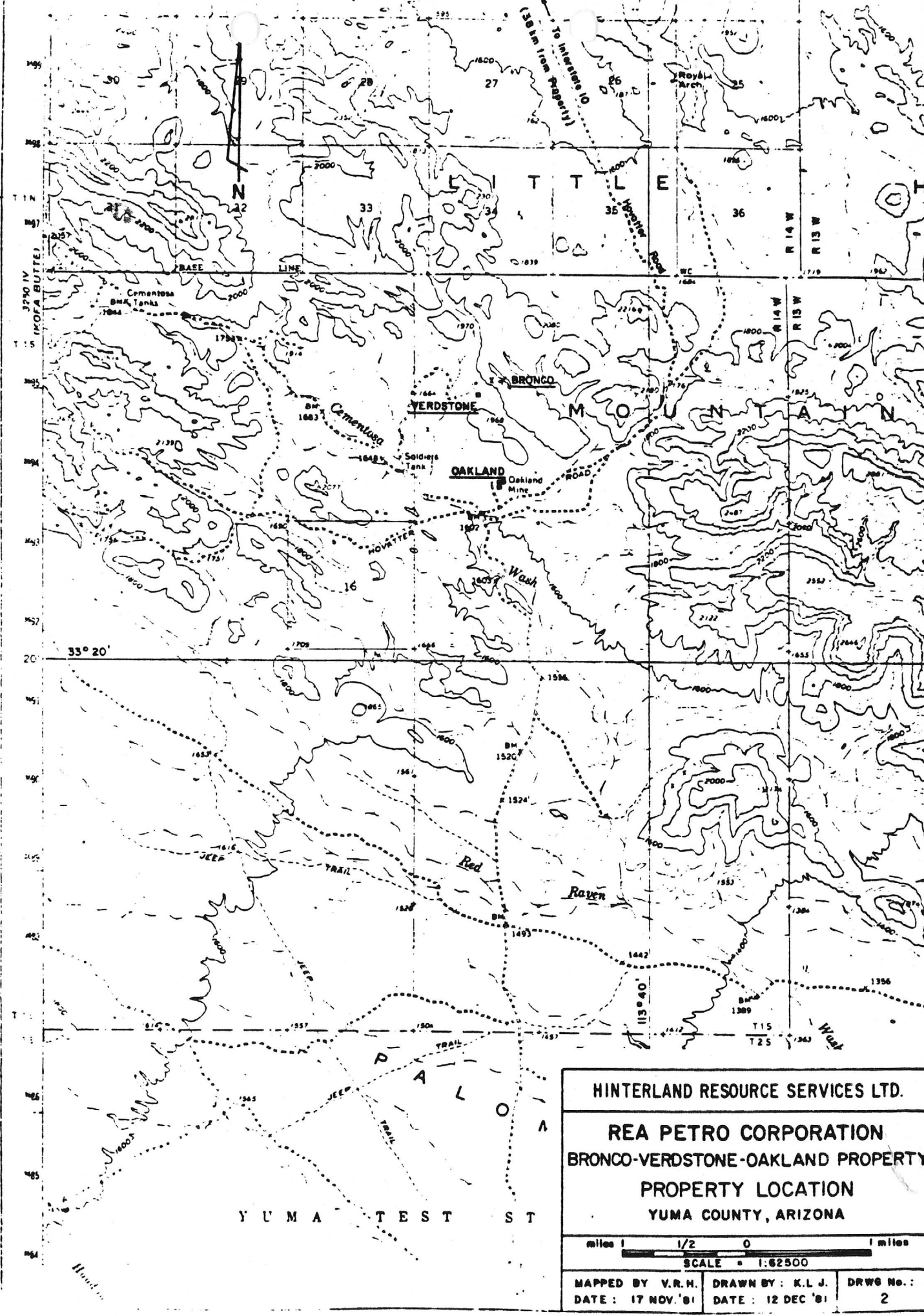
The nearest centre is Yuma Arizona, approximately 110 km to the southwest. There is no direct road link

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to Yuma. Food, water and fuel are available at the ARCO Gas Station on I-10 at the Vicksburg turnoff approximately 13 km west of the Hovatter Road turnoff or 32 km west of the hamlet of Quartzsite. Trailer accommodation can be established here during the initial stages of exploration.

A major electric power transmission line and a gas pipeline are located about 15 km north of the property. The nearest rail line (Atcheson-Topeka and Santa Fe) is located at Salome, about 60 km north.

According to Arizona Mining regulations, mine operators may appropriate water for mining purposes without actually possessing the water rights. However, during the exploration and early development phases, it will be necessary to bring water in by tank truck and store it on site. A typical diamond drill project (one rig) would use 16,000 to 20,000 gallons of water per day.



HINTERLAND RESOURCE SERVICES LTD.

REA PETRO CORPORATION  
 BRONCO-VERDSTONE-OAKLAND PROPERTY  
 PROPERTY LOCATION  
 YUMA COUNTY, ARIZONA

1 mile 1/2 0 1 mile  
 SCALE = 1:62500

MAPPED BY: V.R.H.    DRAWN BY: K.L.J.    DRWG No.:  
 DATE: 17 NOV '81    DATE: 12 DEC '81    2

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The area is sufficiently remote so that there will be minimal conflict with recreational, agricultural or residential land use. The subject area lies to the northeast of a Federal Reserve (U.S. Military Proving Ground) which has restricted access and is prohibited from development.

#### TOPOGRAPHY, CLIMATE AND VEGETATION

The topography varies from gently sloping to moderately mountainous; with several flat areas. Elevations vary from 500 to 600 metres (A S L). The climate is arid desert with very hot summers, warm to moderate winters, and very little precipitation (less than 5 cm per year). Vegetation is sparse and typical of the Arizona desert, consisting of saguaro cholla, barrel and prickly pear cacti; palo verde, ironwood, mesquite, grease and other desert shrubs and grasses.

There is no water available on site. Water may be

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available from drilled wells in the surrounding arrayos.

It is estimated that the water table is approximately  
100 metres below surface.

PROPERTY

The property presently consists of the following  
patented mineral claims. Tp. 15 R 14W Yuma County, Arizona.

<u>Claim Name</u>	<u>Serial-Number</u>	<u>-Section</u>	<u>Subdivision</u>	<u>Owner</u>
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Several original posts were found by the author.

The claims appear to be well located and protected by  
patent issued pursuant to federal regulations and Arizona  
Mining Law.

The claims are held under lease by Mr. L. D. Holland  
of Holland Petroleum Corporation, Dallas, Texas. Rea

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Petro Corporation has negotiated an option agreement with Holland to explore and develop the claims.

#### HISTORY AND DEVELOPMENT

The search for gold and silver in the Arizona territory has been a long and colourful one. Since the 1850's, tales of hidden gold lodes and lost mines are a large part of the folklore of the region. Stories of prospectors finding the 'mother lode' only to perish along the parched desert trail are very common. Some of these legends, however, have a basis in truth. Although unable to find visible gold, early prospectors were well aware of certain mineralogical associations of gold for a particular area and were very successful in finding many small gold and silver deposits in the Yuma area.

The Bronco-Oakland-Verdstone property was discovered in 1931 by Robert Davis, the grandfather of one of the former owners (R. L. Fancher). Over the years, exploration

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has consisted of trenching, pitting, drilling, shaft sinking and drifting. Four (4) shafts have been sunk on the Oakland claim, two on the Bronco, and two on the Verdstone claim. The shafts are still open and dry, however, for safety reasons, the shafts were not examined as it appeared that the ladders were in need of repair. The use of safety ropes and precautions against resident rattle snakes are required for access to the underground workings.

In 1940, 28.5 tons of selected ore was shipped to ASARCO smelter at Hayden, Arizona. This one lot assayed 0.46 oz/ton Au and 4.7 oz/ton Ag.

#### GEOLOGY

The ridges in the area are capped by 1 to 2 metres of Quaternary basalt flows. The slopes are strewn with a cover of remnant, wind-eroded boulders of basalt overtop the less resistant Kofa Volcanics.

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The Cretaceous Kofa Formation is composed of felsic to intermediate breccias and tuffs. Numerous volcanic necks form prominent landmarks throughout the region. These vents are apparently the source of the Kofa Volcanics.

Within the claim area the volcano-sedimentary stratigraphy consists of a complex of tuffs, mud flows, ash flows, agglomerate, pumaceous tuffs, and lahars cut by diabase dykes. The bedrock exposures are restricted mainly to the higher slopes while the lower slopes are predominantly covered by a calcareous cemented regolith of volcanic fragments. The composition of the Kofa volcanics is predominantly andesite with some intercalated rhyolite units. Morgan states that layering dips  $30^{\circ}$  north on the northern perimeter of the property and flat to southerly in the southern perimeter. Several quartz-carbonate filled breccia zones strike north-northwesterly across the mineral claims.



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There are at least six veins located in two separate areas on the property (Smith) with portions of the strike-length containing gold mineralization.

The texture in the silicified breccia zones indicates several periods of brecciation and silicification.

The alteration around the veins is similar to that found in other gold deposits in the Cordillera, most notably the Lawyers deposit in Northern British Columbia. This alteration aureole includes hematite, siderite, manganiferous (black) calcite, adularia, clay minerals, quartz and chalcedony (jasperoid). The mineralization on surface consists of free gold, minor sulfides, and druzey quartz in fissure filled veins. Float containing chalcopyrite and malachite was found on the Verdstone property, however, the source was not located.

#### SAMPLING

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The author and Mr. F. M. Smith, P.Eng., collected nine (9) rock chip samples as a general check on Morgan's work and as a rough indication of the tenor of mineralization. Our samples ranged in values from 0.126 oz/ton to 0.007 oz/ton gold. These samples should not be considered indicative of the economic merit of this property at this time, as they were taken from random areas; the precise mineralogical and structural gold association has not yet been determined by the author. It is very encouraging, however, to note that even these samples carry low grade values of gold.

#### CONCLUSIONS AND RECOMMENDATIONS

The Bronco-Oakland-Verdstone property gives every indication of being a promising gold deposit. The alteration pattern indicates a volcanic vent-related eruptive event. This eruptive event may have been caused by sudden vaporization (boiling) of hydrothermal solutions

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at depth. Precious metals tend to precipitate from hydrothermal solutions when boiling occurs. The vapors then rise through the overlying country rock producing an alteration aureole. These alteration aureoles are pathfinders to underlying mineralization.

It is the author's opinion that the Bronco-Oakland-Verdstone property has the potential of containing an economically viable epithermal gold deposit in the order of two (2) million tonnes or more of 'ore' grading 0.20 to 0.40 oz/tonne or better at a production rate of 500 tonnes per day (underground operation). There is also a potential of a much larger tonnage of lower grade 'disseminated' gold mineralization amenable to open pit 'heap leach' mining methods.

In order to test this potential, the following work program is recommended ( in collaboration with F. M. Smith P.Eng.)

1. Acquire additional claims in the area to cover

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possible extensions of mineralization and to cover a possible mill site with sufficient room for tailings and water storage ponds and heap leach pads.

2. Initiate a reconnaissance geological mapping and sampling program using low level colour photography to aid in selecting areas of immediate interest.

3. Establish a grid on selected targets using transit and EDM (Electronic Distance Measuring Device.) The survey equipment and personnel should also be utilized to tie in a pertinent surface features and claim posts for boundary definition.

4. Conduct detailed geological mapping, rock chip sampling (rock geochemistry), soil geochemical survey and a geophysical induced polarisation survey on the established grid.

5. Rotary and core drilling of best targets for ore definition.

COST ESTIMATE

It is assumed that the above recommended program is to be conducted by contract including all support costs.

## PHASE I (Funds in Canadian Dollars)

Title Research and Acquisition of Additional Open Ground (Acquisition costs of held claims is beyond the scope of this report)	\$10,000
Grid Establishment and Surveying	\$12,500
Geochemical Sampling (including assaying)	\$15,000
Geophysical Surveying	\$20,000
Geological Mapping	\$15,000
Drilling (1000 metres @ \$110/metre)	\$110,000
Administration @ $\pm$ 5%	\$ 9,125
Contingency @ 20%	\$38,325
Total	<hr/> \$229,950

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Phase II (contingent upon successful completion of Phase I)

Environmental Baseline Study	\$15,000
Diamond Drilling (10,000 metres @ \$125/m)	\$1,250,000
	<hr/>
Total	\$1,265,000

Successful completion of Phase I and Phase II would progress to a full scale feasibility study in the order of two (2) million dollars. The target deposit is such that a mine production rate of at least 500 tonnes per day would be required. The capital cost of placing such a mine into production is roughly ten (10) million dollars.

Respectfully submitted,



V. Ryback-Hardy, P. Eng.

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REFERENCES

Morgan, G. W., "Bronco-Oakland-Verdstone Mining

Property Report, September 28, 1979.

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STATEMENT OF QUALIFICATION

I, Victor P. Ryback-Hardy of Richmond, British Columbia do hereby certify that:

1. I am a consulting Geological Engineer with Hinterland Resource Services Ltd., at 11691 Trumpeter Drive, Richmond, B. C. V7E 3X4
2. I am a graduate of the University of British Columbia in Geological Engineering in 1970 (B. A. Sc). I am also a commissioned British Columbia Land Surveyor (1979).
3. I have been practising my profession as a Geological Engineer for 9 years.
4. I am a member of the Association of Professional Engineers of British Columbia, Registration No. 8825.
5. I have examined the Bronco-Oakland-Verdstone Claims on November 17 and 18, 1981.
6. I have no interest, nor do I expect to receive any interest, direct or indirect in the claims or the securities of Rea Petro Corporation.
7. Rea Petro Corporation is hereby given permission to reproduce this report, or any part of it, for financing purposes; provided however, that no portion may be used out of context in such a manner as to convey a meaning differing from that set out in the whole.

Dated at Richmond, B. C. this 14th day of December, 1981.







TOMBSTONE



NOGALES MEXICO



CAMP

