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# Gueen of the Hills gold prospects Salmon, Idaho U.S.A.

- SUMMARY REPORT -

Prepared For

FALCON VENTURES INTERNATIONAL CORP.

Ву

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### 1. SUMMARY

The Queen of the Hills property, located near Salmon, Idaho, includes several old gold workings and two former gold producers, the Queen of the Hills and Tendoy mines. Significant gold mineralization (reserves of about 2,000,000 ounces) occur nearby on the Beartrack property of Meridian Gold. The area is undertain by Proterozoic rocks consisting of quartzite and phyllite of the Yellowjacket Formation and megacrystic quartz monzonite. Two major structural features of regional extent, the northwesterly-trending Lemhi arch and the northeasterly-trending Trans-Challis linament intersect in the area in which the Queen of the Hills property occurs.

Most of the Queen of the Hills property is underlain by deformed quantz monzonite of Proterozoic age although sedimentary rocks of the Yellowjacket Formation crop out in the eastern part of the property. Gold mineralization is mainly controlled by northeasterly-striking fault and fracture zones, probably related to the Trans-Challis lineament. Most mineralization discovered to date occurs within fractures and faults cutting quantz monzonite and not sedimentary rocks of the Yellowjacket Formation.

Previous exploration has been limited in scope and little has been carried out which would allow the gold potential of the property to be more precisely defined than that known from early mining days. Initial work should concentrate on obtaining an understanding of the structural geology of the area and of known gold showings in order to allow a drilling programme to be planned in the area of the two former producers, Queen of the Hills and Tendoy.

# 2. CONCLUSIONS

- 1. The Queen of the Hills area has good potential for the discovery of additional gold mineralization, within the area of the former gold producers, Queen of the Hills and Tendoy and also in areas which have received little attention in the past but which have suitable structures for hosting gold mineralization.
- 2. Work to date has been insufficient to define the gold potential outside the areas of known gold mineralization.

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An exploration programme is warranted over the Queen of the Hills property to examine two aspects.

- 1. Detailed mapping and structural analysis should be undertaken in the area of the two former producers, Queen of the Hills and Tendoy. In order that an attempt can be made to predict the structural controls and geometric disposition of high grade gold mineralization and which should be tested by reverse circulation drilling.
- 2. Aerial photograph interpretation and property-wide mapping should be undertaken with an emphasis on structural interpretation, carried out to determine favourable areas for further exploration based, probably on soil and rock chip sampling where outcrop is available.

# 4. INTRODUCTION

The Queen of the Hills gold prospect, located near Salmon, Idaho, contains several former workings from which gold was produced in the late 19th Century but which have received little attention from exploration or mining companies since that time. The prospect lies within a well mineralized part of Idaho, the Leesburg-Salmon region, and includes the Beartrack gold deposit in which greater than 2,000,000 ounces of gold (about 36,000,000 tons at 0.055 oz/t) have been defined to date.

The Queen of the Hills property comprises 104 unpatented lode mining and millsite claims totalling 1,836 acres (2.87 mi<sup>2</sup>) situated a few miles from the town of Salmon (Figure 1) in northern Idaho. The claims include four known areas of gold mineralization (Figure 2) but for initial exploration purposes may be treated as a single block.

The property is easily accessible from the town of Salmon, about six miles to the southeast, and a number of vehicle trails exist within the property environs. The area has moderate topography and is covered by a mix of open pine forest and grassland, typical of this part of idaho.

# 5. EXPLORATION HISTORY

Prospectors were attracted to the Queen of the Hills area by the discovery of alluvial gold and, in the early 1900's, the Queen of the Hills and the Tendoy mines were brought into production. Typical mining grades were reported as being about 0.2 - 0.3 oz/t but with local

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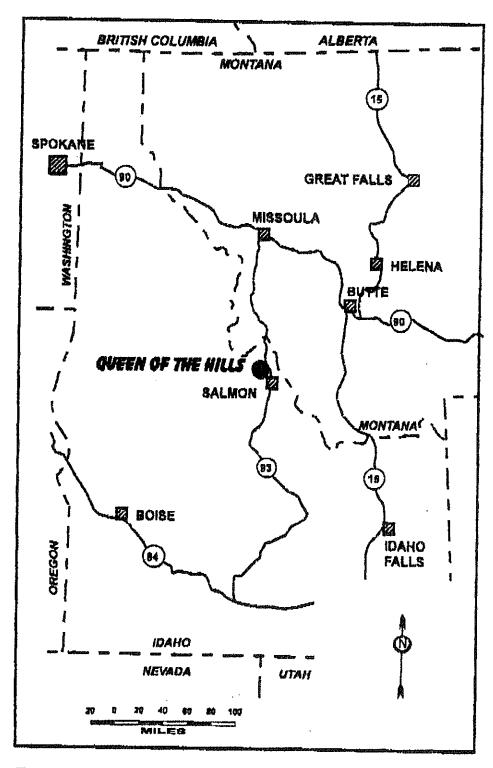


Figure 1. Location of the Queen of the Hills property

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zones of enriched gold of over 1 oz/t. There is no information available to the writer with respect to the distribution of gold within the veins of the area. Mining operations ceased after a relatively short period and it was not until 1980 when a Mr. J. Gaston attempted to reopen the Queen of the Hills mine that interest in the area was regained. Following the discovery of the multi-million ton gold deposits of nearby Beartrack, Formation Capital Corporation acquired the current Queen of the Hills property and began a programme of geological mapping and lithogeochemical sampling.

In 1991 Jetta Resources Inc. optioned the property from Formation Capital and carried out a limited amount of exploration, consisting mainly of geological mapping, rock chip sampling and soil sampling in selected areas, mainly the old Tendoy mine area. However, following some work in 1992, Jetta elected not to continue with exploration of the area, mainly because of government regulatory requirements governing exploration (D. Blanchflower, personal communication, 1995). These requirements were perceived by Jetta as being too onerous when, in fact, the regulations governing exploration in this part of Idaho are more lenient than in most other parts of the U.S.A.

Since Jetta elected not to continue with exploration of the area, no further work has been conducted on the Queen of the Hills property.

## 6. GEOLOGY

# 6.1 Regional Geology

The geology of the region in which the Queen of the Hills prospect occurs is largely underlain by quartzite and phyllite of Heliklan (Middle Proterozoic) age into which a quartz monzonite pluton was intruded, probably during the Upper Proterozoic. The emplacement of this pluton was temporally and spatially related to the development of a northwest-trending arch, the Lemhi arch, a significant structural feature which extends to the southeast into Montana and to the northwest across the northern part of Idaho. A regionally extensive northeasterly-striking structure, the Trans-Challis linearment also formed at about that time and which, today, is manifested as a number of northeasterly-trending extensional faults.

In the Salmon area there are several precious metal deposits which occur on, or near, the intersection of the northeasterly-striking Trans-Challis lineament and the northwesterly-striking Lemhi arch. These include Beartrack (29,200,000 tons at 0.035 oz/t gold) and a number of smaller deposits and prospects. Radiometric dates suggest that these deposits were formed during Cretaceous times, perhaps related to the emplacement of the Cretaceous Idaho Batholith to the west and south of Salmon.

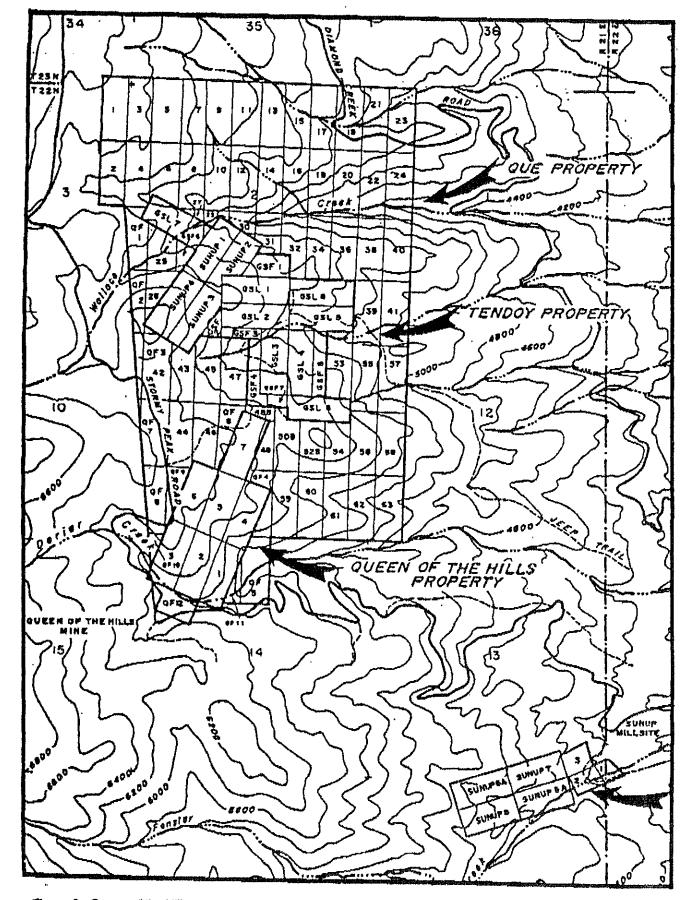


Figure 2. Queen of the Hills property - disposition of mineral claims.

# 6.2 Property Geology

The Queen of the Hills prospect is underlain by metasedimentary rocks of the Yellow]acket Formation in the east and Proterozoic quartz monzonite in the west (Figure 3). Metamorphic grade of the Yellow]acket Formation is generally low and primary depositional features can be observed within this sedimentary assemblage. The quartz monzonite typically is augen textured and contains large microcline megacrysts in a medium- to coarse-grained matrix of quartz, andesine and biotite. Cutting these rocks are several steeply-dipping northeasterly-striking extensional faults, parallel to the trend of the Trans-Challis lineament to which they are probably related. A later set of northwesterly-striking faults have displaced the northeasterly structures and veins within these structures.

# 6.3 Mineralization and Hydrothermal Alteration

The Queen of the Hills property hosts four known sets of auriferous quartz veins known as Queen of the Hills, Tendoy, Tendoy West and Blondie (Figure 3). Most of these veins are controlled by northeasterly-striking faults with the exception of the Tendoy West zone in which auriferous quartz veins strike to the northwest. Gold mineralization is closely related to sulphides, commonly comprising pyrite, chalcopyrite, minor galena, arsenopyrite and sphalerite within chalcedonic and coarsely crystalline quartz in fracture and fault zones. Calcite is a ubiquitous component of the veins. Wall rock to the veins usually display argillic and sericitic alteration with the intensity of alteration increasing towards the veins. Enclosing the argillic and sericitic alteration zones there is generally a weakly to moderately developed propylitic envelope. There is a strong association between lead and/or copper in the Queen of the Hill veins, typical of the mesothermal environment in which the mineralization was formed.

Apart from sketchy records of early mining grades (see Section 4.1) there is no information on gold distribution in the veins of the Queen of the Hills property. However, as is typical of many mesothermal vein-type gold camps, large variations in gold grade appear to be the case here with high grade ore shoots (greater than 1 oz/t) being separated by lower grade material.

Near surface weathering of the veins has occurred and secondary oxides after sulphides are common near and at the surface. Limonitic coatings of fractures often indicates proximity to a mineralized structure while goethite and hematite are common within the structures themselves.

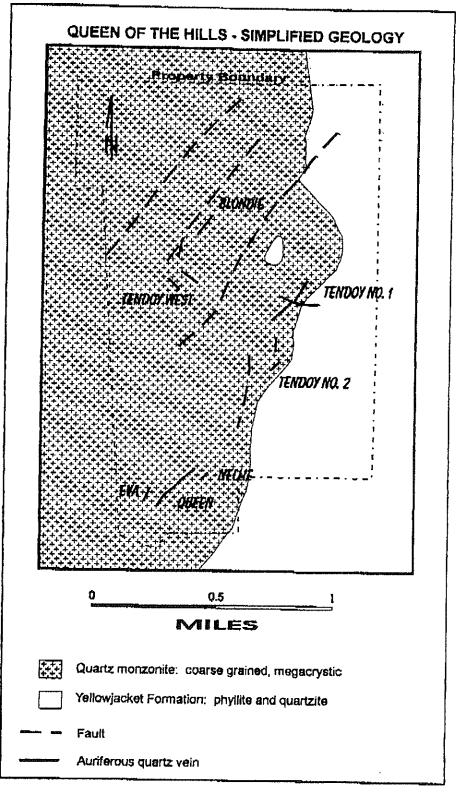


Figure 3. Simplified geology of the Queen of the Hills property.

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## 7. DISCUSSION

#### 7.1 Gold Potential

Three aspects of the gold mineralization potential of the Queen of the Hills property may be considered. The most obvious potential lies within the known vein systems themselves, in the extension of high grade shoots worked by early miners. The definition of these shoots requires compilation of mining and assay data from early mining activities and a drilling programme planned accordingly to test possible down-plunge extensions.

The second area in which there is obvious potential for the discovery of additional gold mineralization is in the possible along-strike extensions of known veins. Previous work carried out on behalf of Jettra Resources and Formation Capital suggests that soil sampling is an appropriate method to trace mineralized structures in areas of poor bedrock exposure. A soil survey over the Tendoy area resulted in the definition of linear trends of anomalous arsenic, lead and copper along strike from a known auriferous structure which may suggest a strike extension of the known mineralization. As this area appears to be the only area investigated by soil sampling to date, clearly there is potential for the discovery of vein extensions elsewhere within the property.

Potential also exists within the property for the discovery of additional vein systems unknown to early workers. If soil sampling can be used to determine possible on-strike extensions of known veins, a property wide soil survey may result in indications of additional vein systems which are unexposed or only poorly exposed. In this respect aerial photographs should be examined with the aim of developing a structural interpretation of the property area in order to determine possible additional mineralized structures.

As well as the above, there appears to be little information with respect to distribution of gold within wallrock to known veins, and gold and base metal zonation within the veins themselves. A systematic sampling programme may resolve this question.

## 7.2 Suggested Exploration Approach

The potential for the defining of economic concentrations of gold mineralization within the Queen of the Hills property is considered to be good because of the previous production history and the evidence of widespread gold within the area.

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Exploration of the Queen of the Hills property should initially focus on the definition of gold "reserves" within areas of known mineralization, specifically the Queen of the Hills area and the Tendoy area. This work should consist of detailed mapping and structural studies (building on the work of Jetta Resources Ltd.) and a reverse circulation drilling programme to test both down plunge and possible along strike extensions of known gold mineralization. If results of this work are positive, then other known targets in the area (e.g. Blondie and Tendoy West) should also be drill tested.

Notwithstanding the above, because all known gold mineralization of the area is structurally controlled, mainly by northeasterly-striking fault and fracture zones, a property-wide assessment of the gold potential of the area should also be made. Exploration to date appears to have concentrated on those areas in which known mineralization occurs and there does not appear to have been any systematic evaluation which may lead to a greater understanding of the distribution of gold within the property. Accordingly, geological mapping at an appropriate scale with special emphasis placed on the structural geology of the area, combined with aerial photograph interpretation, should be an important part of this evaluation. While geological mapping has been carried out, it has been only in a very general fashion and has done little in advancing knowledge of the gold potential of the Queen of the Hills property.

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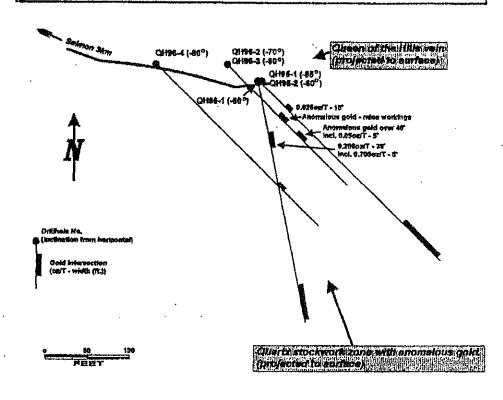
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Queen of the Hills - plan of drillholes and gold intersections.

1995 - 96 drilling programme.



# QUEEN OF THE HILLS SUMMARY OF DRILLING RESULTS

Hole No.		Depth (ft.)	Width (ft.)	Gold (oz/T)
QH95-1		245 - 250	. 5	Mine workings - no sample
QH95-2		75 - 85	10	0.026
QH96-1 incl.		115 - 150	35	0.208
	inci.	115 - 120	5	0.705
		115 - 125	10	0,496
QH96-2		220 - 235	15	Mine workings - no sample
QH96-3		310 - 350	50	Anomalous gold
	incl.	320 - 325	5	0.1