CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the G. M. Colvocoresses Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

REPORT ON

THE SADDLE MOUNTAIN GROUP OF CLAIMS

Location; This group consists of 15 patented mining claims, situated in the Saddle Mountain Mining district, Pinal County, Arizona. It is located two miles southeast from the Arizona Eastern Railway at Finney which is 5 miles by rail from the smelter at Hayden. An 8 mile road connects the property with Winkelman which is reached by rail from Phoenix or by state and county highways from Tucson and Globe.

HISTORY

This group of claims was among the first claims located in the district. They have produced considerable high grade ore in the early days. The shipping records are not available and the only evidence we have at present are assays taken while mining on the claims and the tales of old timers of the district.

The entire material from one 60 foot shaft on the Lola claim was packed a mile by burros to Ash Creek and put thru a small gravity concentrator. Mr. N. H. Mellor, who was present when this mill was in operation, says the table at times showed considerable quantities of gold, indicating that very rich pockets of gold were taken from this old shaft. A few samples taken from the sides of the shaft and from the old mill tailings showed that only a portion of the gold and silver was recovered by this method of extraction and degree of grinding. Mr. Mellor later cyanided one dump on the Philadelphia claim which averaged $20 per ton in gold and silver. Many small lots of high grade ore have been shipped from the numerous surface ore lenses by lessees in the past and Mr. T. S. Sanford and the writer shipped approximately

$5,000.00 gross ore from such lenses during the past 18 months.

CLIMATE:

As this property is located in the Dripping Spring Range at an elevation of between 2000 and 3000 feet the climate is very mild and out door work can be carried on every month in the year.

GEOLOGY AND ORE DEPOSITS

The country rock in this district consists of a volcanic complex, compoased of a large variety of Andesitic flows, breccias, conglomeratas and porphyries cut by later quartz, porphyries and intrusive masses and dikes of diorite, These surface formations are held by F. L. Ransome in Professional Paper No. 115, U.S.G.S., to be underlaind by Carboniferous limestone at not over 1000 feet depth.

The veins are persistent fault fissures in the andesite. Two, however, lie partly in the quartz porphyry and partly as contact fissures between the porphyry and andesite. The veins are numerous and many of them are easily traceable on the surface for several miles. They vary from a few inches to large altered, impregnated masses, 40 to 50 feet in width.

The ores so far exposed are mostly oxidized siliceous ores that carry silver, gold, lead, zinc, iron and copper. Silver and gold constitute the main values and as the silver occurs mainly in the sulphide form, reasonable rates are obtained from thecopper smelter at Hayden, who desire the ore for its silica content. The gangue minerals are quartz, calcite, siderite, oxides of iron, gypsum and small amounts of barite. The oxidized zone is shallow, varying from 25 to 50 feet in depth, altho a little oxidization is found two hundred feet under the surface in some of the workings in the district. Below the oxidized zone, some of the ore shoots are composed largely of sulphides of lead, zinc and iron that carry gold and ilver. Some of the veins show post mineral movement.

Accurate ore tests have been run on the sulphide ore of the district. They show that selective flotation gives a very high total recovery, 98% of the gold 96% of the silver and 92% of the lead being extracted.

Plenty of water could be developed for milling purposes. An old shaft on the Concord (see accompanying Patent Plats) on Deer Creek has furnished plenty of water even during the driest seasons when all the creeks were dry. Should sufficient milling ore be

developed to warrant a large mill, ideal mill sites are available on the Gila River and railroad which could be connected with the property by aerial tramway and airline distance of one mile with a drop of 600 feet.

ASSAY VALUES, DEVELOPMENT WORK AND POSSIBILITIES

Every claim shows numerous small prospect shafts, cuts and tunnels. Only the more important ones will be mentioned here. Nearly all the work was done on the high grade ore lenses by lessees with the limited means and when the high grade ore lenses pinched or were faulted the work stopped.

The Concord claim has one 30 foot tunnel, the face of which sampled $30 in gold and silver across one foot. All along the surface the ore has been stripped from this vein by open cutting. Two shafts that were under water were not sampled. One 150 foot tunnel and 30 foot winze from it show where narrow high grade lenses and 2 to 3 feet of lower grade ore. Another 30 foot shaft on the upper vein showed 6 inches of 60 ounce silver ore in one lense. The three veins on this claim all show narrow lenses of ore that are generally very high grade. Samples carrying as high as 900 ounces silver have been taken from this claim.

On the big rock claim, one shaft, 150 deep but open only to the 60 foot level, shows 18 inches to 4 feet of ore the full depth. Eighteen inches of this ore was mined from the surface by an open cut, 12 feet deep by 50 feet long, and averaged 20 ounces silver and $2 gold per ton. A large number of samples were taken during the mining on this claim and some showed the presence of rich gold pockets, but the ore as shipped averaged only $2 or $3 gold per ton. Deeper in the shaft the ore contained lead, zinc and iron sulphides that only assayed 6 to 10 ounces silver and $1 to $3 gold. A short distance to the east of this shaft a 100 foot tunnel has produced considerable ore 20 years ago and one car of $33 ore last year. Some of this ore was of very high grade. One width of 8" assayed 400 oz. silver. An incline slip or fault along the vein cut off the ore 15' below this

this tunnel level and two shallow winzes failed to relocate it. This vein averages 4 to 8 feet in width and the bottom workings show 3 to 4 feet of milling ore that will average 10 oz. silver and a small amount of gold. A 60 foot crosscut on the hillside below will, if extended 100', intersect this vein 200' below the surface under the 150' shaft, or a 700' drift along the vein from the ravine east of the present workings, would give 300 or 400 feet depth. Such a tunnel would develop the milling ore in the shaft and tunnel and explore a long distance of vein that shows numerous surface lenses.

The Pittsburg claim which overlaps the Big Rock shows several good lenses on the surface. The 100' shaft contained water and was sampled only near the surface. It showed from 1 to 3 feet of ore assaying 23 ounces silver and $10 gold.

The Trenton claim has one 400 foot tunnel which cuts an ore shoot 75' long, assaying 15 oz. silver and $1 gold. It shows much lead, zinc and iron sulphides and is 2 feet wide in the center of the tunnel level and tapers to either end. A winze on this ore lense may open up considerable milling ore as the tunnel seems to have cut near the top of a lense. One 30 foot open cut 500 feet below this tunnel level yielded eight tons that averaged slightly under $100 per ton; values varied from 30 to 168 oz. silver and $7 to $14 gold. A 200 foot shaft on the summit above the 400 foot tunnel has produced one or two small shipments of very high grade ore. The veins are wider to the northwest and show milling grades of ore over fair widths where samples on the surface and in small cuts.

On the claims west of the Trenton there are a great many small surface workings. One of the more important of theseis a 70 foot shaft, sunk along the foot wall of a 30 to 40 ft. vein. On the 70 foot level the vein is crosscutted and a 60' drift to the west driven along the hanging wall. Above this lower drift a 20' shaft has been sunk from the surface. This vein in these workings shows from 3 to 8 feet of lead, zinc and iron sulphides that carry from 2%

to 15% lead, 4½ oz. silver and $1.20 gold per ton. The large altered mass between the hanging and foot wall lenses contains smaller amounts of sulphides disseminatd thru it. One 60' shaft 500' east of these workings has from one to three feet of ore assaying from 7 to 18 oz. silver and $1.20 to $10 gold. The entire material from this shaft was packed to a small concentratro of Ash Creek, one mile below, East of this shaft a long crosscut tunnel has been driven to connect with an 80 foot shaft on a vein 3 to 5 feet in width that has produced several small shipments averaging approximately 60 oz. silver and small amounts of gold.

The lower group of claims has many small veins that show fair gold and silver values on the surface but the main vein on which this group is located shows a quartz vein 3 to 20 feet wide, which has produced several high grade ore shipments from the surface lenses. The Sleeper has one 150 foot shaft which has caved to the 50 foot level. Above this level three cars of ore averaging 23 to 30 oz. silver and $2 to $3 gold were shipped last year. In places the higher grade ore was 4 feet wide and assayed $40 in gold and silver. The ore was soft and was mined almost entirely by picks with an occasional light blast in the harder ribs. One the side of this higher grade ore occurs one to three feet of lower grade material assaying from 9 to 18 oz. silver. The shaft and tunnel on the Philadelphia claim show 18 inches of 18 oz. silver ore, smaller widths of higher grade ore, and several feet of lower grade sulphide.

Many of the veins on this property offer an opportunity to develop considerable tonnage of milling ore with the additional assurance that such development will result in opening up many high grade ore lenses. There has been developed no deep systematic development work. Each lessee abandoned his workings when it no longer showed a profit from the higher grade lenses. Such lenses are characteristically irregular. The property should be developed on the basis of the milling grade ore. The high grade lenses when encountered would then

be velvet. The lessees had insufficient operating capital to work on this basis. The Adjust Mine, adjacent to this propetty has shown the ore and values to extend at least two hundred feet below the surface in this district. The quartz-diorite porphyries in this district can be followed across the Gila River to Christmas and on over towards the 70 mine showing that they cut th4 carboniferous limestone b below the andesitic surface formations. This is important when considering development possibilities with depth, as these porphyries on the above mentioned properties, are held to be genetically responsible for the large replacement deposits formed in the carboniferous limestone. The iron pyrite in the deeper workings of the district has been found to carry the highest gold content. Assays of the solid iron sulphide from several of the veins on this property and the Adjust vein, both on the Adjust property and on the Ryan claim, showed values varying from $35 to $72 gold and 50 to 172 oz. silver per ton. This will become an important factor with deeper mining as the pyrite will be the more persistent mineral with depth. The veins near the surface contain considerable gypsum which has been formed by the action of the surface waters on pyrite, indicating the former presence of considerable pyrite in the original sulphides.

MINING METHODS AND PRODUCTION COSTS

The district has produced approximately $300,000.00 of gross ore up to date, practically all of which has been high grade lenses that have been worked by selective mining and careful hand sorting. The costs by this method vary greatly according to size, width and value of the lenses mined. A milling grade of ore could be mined from most of the veins in this district for a small fraction of the costs of selective mining the higher grade lenses. The vein material is soft, and easily and cheaply mined. The orehas been packed to the railroad on burros and has cost an average of $4 per ton. By constructing an aerial tramway this cost could be be reduced to $0.15 per ton. Freight to the smelter has averaged $0.40 per ton and the smelting costs $5.50 per ton.

RECOMMENDATIONS

Considerable development work should be done to determine the extent and value of the many surface bodies. While these ore bodies offer many promising opportunities and should be developed, the real need of this property and district is some deep development work. If possible a three compartment shaft, centrally located, vertical, should be equipped and sunk 500' level, and this large fissure vein system crosscut at this level. Adequate ore and waste pockets should be excavated and the shaft continued to the 1000' level and the vein system again explored in the favorable limestone horison on that level.

Altho this would require considerable expenditure it will prove by far the most economical development program in the end and may place this district well up on the list of Arizona's important producers.

Before such a program is carried out adjoining properties should be tied up under option if possible for such development program if successful will increase their value many times.

CONCLUSION:

This property contains sufficienty surface ore bodies of a shipping and milling grade, that under competent management, with a progressive development policy, should produce sufficient ore to at least warrant a small modern plant that will be very profitable to its owners. There are many excellent tunnel sites that make cheap development of these surface ores possible.

The property is readily accessible, being situated close to transportation, smelter and power facilities.

There arealways definite causes for the deposition and concentration of ore. The chances of developing oreof commercial grade and quantity are determined by certain well defined characteristics. From the experience gained while working on the surface ore bodies of many of the veins of this district, the writer has become impressed with the potential opportunities it offers to open up an important commercial ore body at depth.

It has an extensive and well mineralized network of strong persistent fissure veins that have already produced considerable quantities of high grade ore. It lies in a mining country that is noted for deep-seated mineral deposits, and is underlain by sedimentary formations at moderate depths that have proven some of the most attractive and productive ore horizons of the southwest. It contains igneous intrusions that are responsible for large and important ore bodies in these sedimentary beds in the adjoining districts. The surface and geological indications on this property warrant the assumption that an extensive development program will, with reasonable certainty, develop sufficient oe to bring substantial returns on the investment.

(Signed) C. L. Orem.

copied

REPORT ON

THE SADDLE MOUNTAIN GROUP OF CLAIMS.

LOCATION -

This group consists of 15 patented mining claims, situated in the Saddle Mountain mining district, Pinal County Arizona. It is located two miles southeast from the Arizona Eastern Railway at Finney which is 5 miles by rail from the smelter at Hayden. An 8 mile road connects the property with Winkelman which is reached by rail from Phoenix or by state and county highways from Tucson and Globe.

HISTORY -

This group of claims was among the first claims located in the district. They have produced considerable high grade ore in the early days. The shipping records are not available and the only evidence we have at present are assays taken while mining on the claims and the tales of old timers of the district.

The entire material from one 60 foot shaft on the Iola claim was packed a mile by burros to Ash Creek and put thru a small gravity concentrator. Mr. N. H. Mellor, who was present when this mill was in operation, says the table at times showed considerable quantities of gold, indicating that very rich pockets of gold were taken from this old shaft. A few samples taken from the sides of the shaft and from the old mill tailings showed that only a portion of the gold and silver was recovered by this method of extraction and degree of grinding. Mr. Mellor later cyanided one dump on the Philadelphia claim which averaged $20 per ton in gold and silver. Many small lots of high grade ore have been shipped from the numerous surface ore lenses by lessees in the past and Mr.T. S. Sanford and the writer shipped approximately $5,000.00 gross ore from such lenses during the past 18 months.

CLIMATE -

As this property is located in the Dripping Spring Range at an elevation of between 2000 and 3000 feet the climate is very mild and out door work can be carried every month in the year.

GEOLOGY AND ORE DEPOSITS -

The country rock in this district consists of a volcanic complex, composed of a large variety of Andesitic flows, breccias, conglomerates and porphyries cut by later quartz, porphyries and intrusive masses and dikes of diorite, These surface formations are held by F. L. Ransome in Professional Paper No. 115, U.S.G.S., to be underlain by Carboniferous limerstone at not over 1000 feet depth.

The veins are persistent fault fissures in the andesite. Two, however, lie partly in the quartz porphyry and partly as contact fissures between the porphyry and andesite. The veins are numerous and many of them are easily traceable on the surface for several miles. They vary from a few inches to large altered, impregnated masses, 40 to 50 feet in width.

The ores so far exposed are mostly oxidized siliceous ores that carry silver, gold, lead, zinc, iron and copper. Silver and gold constitute the main values and as the silver occurs mainly in the sulphide form, reasonable rates are obtained from the copper smelter at Hayden, who desire the ore for its silica content. The gangue minerals are quartz, calcite, siderite, oxides of iron, gypsum and small amounts of barite. The oxidized zone is shallow, varying from 25 to 50 feet in depth, altho a little oxidization is found two hundred feet under the surface in some

of the workings in the district. Below the oxidized zone, some of the ore shoots are composed largely of sulphides of lead, zinc and iron that carry gold and silver. Some of the veins are entirely quartz with disseminated sulphides scattered thru them, while others are chiefly altered andesitic material either carrying the sulphides in small lenses thru it, or, as brecciated pieces, the total forming an ore or vein breccia. Some of the veins show post mineral movement.

Accurate ore tests have been run on the sulphide ore of the district. They show that selective flotation gives a very high total recovery, 98% of the gold 96% of the silver and 92% of the lead being extracted.

Plenty of water could be developed for milling purposes. An old shaft on the Concord (see accompanying Patent Plats) on Deer Creek has furnished plenty of water even during the driest seasons when all the creeks were dry. Should sufficient milling ore be developed to warrant a large mill, ideal mill sites are available on the Gila River and railroad which could be connected with the property by aerial tramway and airline distrance of one mile with a drop of 600 feet.

ASSAY VALUES, DEVELOPMENT WORK AND POSSIBILITIES -

Every claim shows numerous small prospect shafts, cuts and tunnels. Only the more important ones will be mentioned here. Nearly all the work was done on the high grade ore lenses by lessees with the limited means and when the high grade ore lenses pinched or were faulted the work stopped.

The Concord claim has one 30 foot tunnel, the face of which sampled $30 in gold and silver across one foot. All along the surface the ore has been stripped from this bein by open cutting. Two shafts that were under water were not sampled. One 150 foot tunnel and 30 foot winze from it show where narrow high grade lenses and 2 to 3 feet of lower grade ore. Another 30 foot shaft on the upper vein showed 6 inches of 60 ounce silver ore in one lense. The three veins on this claim all show narrow lenses of ore that are generally very high grade. Samples carrying as high as 900 ounces silver have been taken from this claim.

On the big rock claim, one shaft, 150 deep but open only to the 60 foot level, shows 18 inches to 4 feet of ore the full depth. Eighteen inches of this ore was mined from the surface by an open cut, 12 feet deep by 50 feet long, and averaged 20 ounces silver and $2 gold per ton. A large number of samples were taken during the mining on this claim and some showed the presence of rich gold pockets, but the ore as shipped averaged only $2 or $3 gold per ton. Deeper in the shaft the ore contained lead, zinc and iron sulphides that only assayed 6 to 10 ounces silver and $1 to $3 gold. A short distance to the east of this shaft a 100 foot tunnel has produced considerable ore 20 years ago and one car of $33 ore last year. Some of this ore was of very high grade. One width of 8 inches assayed 400 oz. silver and many samples over a foot width assayed from 40 to 100 oz. silver. An incline slip or fault along the vein cut off the ore 15 feet below this tunnel level and two shallow winzes failed to relocate it.. This vein averages 4 to 8 feet in width and the bottom workings show 3 to 4 feet of milling ore that will average 10 oz. silver and a small amount of gold. A 60 foot crosscut on the hillside below will, if extended 100 feet, intersect this vein 200 feet below the surface under the 150 foot shaft, or a 700 ft. drift along the vein from the ravine east of the present workings, would give 300 or 400 feet depth. Such a tunnel would develop the milling ore in the shaft and tunnel and explore a long distance of vein that shows numerous surface lenses.

The Pittsburg claim which overlaps the Big Rock shows several good lenses on the surface. The 100 foot shaft contained water and was sampled only near the surface. It showd from 1 to 3 feet of ore assaying 23 ounces silver and $10 gold.

The Trenton claim has one 400 foot tunnel which cuts an ore shoot 75 feet long, assaying 15 oz. silver and $1 gold. It shows much lead, zinc and iron sulphides and is 2 feet wide in the center of the tunnel level and tapers to either end. A winze on this ore lense may open up considerable milling ore as the tunnel seems to have cut near the top of a lense. One 30 foot open cut 500 feet below this tunnel level yielded eight tons that averaged slightly under $100 per ton; values varied from 30 to 168 oz. silver and $7 to $14 gold. A 200 foot shaft on the summit above the 400 foot tunnel has produced one or two small shipments of very high grade ore. The veins are wider to the northwest and show milling grades of ore over fair widths where samples on the surface and in small cuts.

On the claims west of the Trenton there are a great many small surface workings. One of the more important of these is a 70 foot shaft, sunk along the foot wall of a 30 to 40 ft. vein. On the 70 foot level the vein is crosscutted and a 60 foot drift to the west driven along the hanging wall. Above this lower drift a 20 ft. shaft has been sunk from the surface. This vein in these workings shows from 3 to 8 feet of lead, zinc and iron sulphides that carry from 2% to 15% lead, 4½ oz silver and $1.20 gold per ton. The large altered mass between the hanging and foot wall lenses contains smaller amounts of sulphides disseminated thru it. One 60 foot shaft 500 ft. east of these workings has from one to three feet of ore assaying from 7 to 18 oz silver and $1.20 to $10 gold. The entire material from this shaft was packed to a small concentrator on Ash Creek, one mile below, East of this shaft a long crosscut tunnel has been driven to connect with an 80 foot shaft on a vein 3 to 5 feet in width that has produced several small shipments averaging approximately 60 oz silver and small amounts of gold.

The lower group of claims has many small veins that show fair gold and silver values on the surface but the main vein on which this group is located shows a quartz vein 3 to 20 feet wide, which has produced several high grade ore shipments from the surface lenses, The Sleeper has one 150 foot shaft which has caved to the 50 foot level. Above this level three cars of ore averaging 23 to 30 oz silver and $2 to $3 gold were shipped last year. In places the higher grade ore was 4 feet wide and assayed $40 in gold and silver. The ore was soft and was mined almost entirely by picks with an occasional light blast in the harder ribs. One the side of this higher grade ore occurs one to three feet of lower grade material assaying from 9 to 18 oz silver. The shaft and tunnel on the Philadelphia claim show 18 inches of 18 oz silver ore, smaller widths of higher grade ore, and several feet of lower grade sulphide.

Many of the veins on this property offer an opportunity to develop considerable tonnage of milling ore with the additional assurance that such development will result in opening up many high grade ore lenses. There has been developed no deep systematic development work. Each lessee abandoned his workings when it no longer showed a profit from the higher grade lenses. Such lenses are characteristically irregular. The property should be developed on the basis of the milling grade ore. The high grade lenses when encountered would then be velvet. The lessees had insufficient operating capital to work on this basis. The Adjust Mine, adjacent to this property has shown the ore and values to extend at least two hundred feet below the surface in this district. The quartz-

diorite porphyries in this district can be followed across the Gila River to Christmas and on over towards the 79 mine showing that they cut the carboniferous limestone below the andesitic surface formations. This is important when considering development possibilities with depth, as these porphyries on the above mentioned properties, are held to be genetically responsible for the large replacement deposits formed in the carboniferous limestone. The iron pyrite in the deeper workings of the district has been found to carry the highest gold content. Assays of the solid iron sulphide from several of the veins on this property and the Adjust vein, both on the Adjust property and on the Ryan claim, showed values varying from $35 to $72 gold and 50 to 172 oz silver per ton. This will become an important factor with deeper mining as the pyrite will be the more persistent mineral with depth. The veins near the surface contain considerable gypsum which has been formed by the action of the surface waters on pyrite, indicating the former presence of considerable pyrite in the original sulphides.

MINING METHODS AND PRODUCTION COSTS -

The district has produced approximately $300,000.00 of gross ore up to date, practically all of which has been high grade lenses that have been worked by selective mining and careful hand sorting. The costs by this method vary greatly according to size, width and value of the lenses mined. A milling grade of ore could be mined from most of the veins in this district for a small fraction of the costs of selective mining the higher grade lenses. The vein material is soft, and easily and cheaply mined. The ore has been packed to the railroad on burros and has cost an average of $4 per ton. By constructing an aerial tramway this cost could be reduced to $0.15 per ton. Freight to the smelter has averaged $0.40 per ton and the smelting costs $5.50 per ton.

RECOMMENDATIONS -

Considerable development work should be done to determine the extent and value of the many surface bodies. While these ore bodies offer many promising opportunities and should be developed, the real need of this property and district is some deep development work. If possible a three compartment shaft, centrally located, vertical, should be equipped and sunk 500 foot level, and this large fissure vein system crosscut at this level. Adequate ore and waste pockets should be excavated and the shaft continued to the 1000 foot level and the vein system again explored in the favorable limestone horison on that level.

Altho this would require considerable expenditure it will prove by far the most economical development program in the end and may place this district well up on the list of Arizona's important producers.

Before such a program is carried out adjoining properties should be tied up under option if possible for such development program if successful will increase their value many times.

CONCLUSION -

This property contains sufficient surface ore bodies of a shipping and milling grade, that under competent management, with a progressive development policy, should produce sufficient ore to at least warrant a small modern plant that will be very profitable to its owners. There are many excellent tunnel sites that make cheap development of these surface ores possible.

The property is readily accessible, being situated close to transportation, smelter and power facilities.

There are always definite causes for the deposition and concentration of ore. The chances of developing ore of commercial grade and quantity are determined by certain well defined characteristics. From the experience gained while working on the surface ore bodies of many of the veins of this district, the writer has become impressed with the potential opportunities it offers to open up an important commercial ore body at depth.

It has an extensive and well mineralized network of strong persistent fissure veins that have already produced considerable quantities of high grade ore. It lies in a mining country that is noted for deep-seated mineral deposits, and is underlain by sedimentary formations at moderate depths that have proven some of the most attractive and productive ore horizona of the southwest. It contains igneous intrusions that are responsible for large and important ore bodies in these sedimentary beds in the adjoining districts. The surface and geological indications on this property warrant the assumption that an extensive development program will, with reasonable certainty, develop sufficient ore to bring substantial returns on the investment.

(Signed) C. L.Orem.