

SUMMARY OF FEASIBILITY REPORT
ON THE
CLAY COUNTY MINE
GILPIN COUNTY, COLORADO

For
WINSTOCK MINING CORPORATION

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30 September 1983

Revised
15 June 1984

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SUMMARY OF FEASIBILITY REPORT
ON THE
CLAY COUNTY MINE

SUMMARY

The Clay County mine is located in the Central City Mining District of Gilpin County, Colorado. It is dominantly a gold and silver deposit.

The original Clay County mine followed an ore shoot in what is now the Center Vein. This was mined to a depth of about 550 feet between 1891 and the adverse economic climate following World War I. In 1932 the Gold Ridge tunnel and shafts were driven to the south of the zone of present interest, and ore was produced sporadically. The National Tunnel was driven from Clear Creek Valley, 3,500 feet to the north to intersect and drain the old Clay County workings at their lowest level. They apparently discovered what is now the West Vein, and began stoping in two areas north of the present workings before being closed by government policy in 1942 to free workers for the war effort.

The present property consists of 12 patented claims of 60 acres and 6 unpatented claims. Workings to date include 1,600 feet of new haulage decline, with cross-cuts at 40 foot intervals to evaluate the veins. It has been discovered that there are at least four parallel veins here, each with ore shoots. So far less than half of even the known length of the Clay County vein system has been explored.

Bulk samples of ore were tested at Dawson Metallurgical Laboratories in Utah. These first milling tests were disappointing, with recovery of 72.2% of the gold. Subsequent tests gave recoveries up to 82% on some samples. Historically, mill recovery of precious metals from ore in this camp has been approximately 80%.

The mine is dry, and will remain so down to the National Tunnel level. The rock is competent and does not require timbering, but it is abrasive. The veins are vertical, or nearly so. Operation at 100T/day for 300 days/yr. is assumed.

The operating costs break down as follows:

| | |
|-----------------------------|---------------|
| Milling and laboratory | \$ 30/ton |
| Smelting and transport | 16/ton |
| Mining and administration | 52/ton |
| Development and exploration | <u>12/ton</u> |
| Total | \$110/ton |

All quotations are in U.S. funds.

Inflation from 1983 is 209% to 2023.

$$2.09 \times \$110/\text{ton} = \underline{\underline{\$230/\text{ton}}}$$

CONCLUSIONS

1. Underground exploration of the Clay County ore deposit since 1979 has completed about 2,500 ft. of workings in the form of crosscuts, drifts, raises and a trackless decline. Three new veins and four ore shoots have been encountered to date with much potential for new discoveries.
2. The upper portion of the West Vein has been brought to the level of a proven ore reserve. This block comprises 35,200 tons at .411 oz/T gold, 4.32 oz/T silver, and 0.68% copper, or a gold equivalent of 0.54 oz/T. The 85% confidence limits lie at 0.47 and 0.61 oz/T gold equivalent.
3. The other three ore shoots are smaller, but of somewhat higher average grade. Proven and probable reserves for all veins total 107,900 tons containing .449 oz/T gold and 3.80 oz/T silver, or 0.57 oz/T gold equivalent. This reserve would permit 3½ years of mining at 100 TPD for 300 days/year. Inferred ore reserves approximately double this tonnage.
4. Preliminary milling results have been disappointing, showing recovery of only 72.2% of the gold and 61.4% of the silver, with the possible necessity of shipping the concentrate to the Cominco Smelter at Trail, B.C. Feasibility estimations have been calculated on this pessimistic scenario, although more recent work indicates that further testing will raise the precious metal recovery rate closer to the 80% usually associated with pyritic ores of this area.
5. Total operating costs are expected to be \$110 per ton of ore including milling, transport, and smelting. To date U.S. \$2,470,000 have been invested in this project. It is estimated that to bring the mine into self-sustaining production at 100 TPD will require a further \$1,836,000.
6. The break-even gold price for the mine is estimated to be \$300/oz. As the mine is dry, it could be shut down for periods of low gold prices without much adverse effect.
7. Estimated net profits (before taxes) are \$32/Ton or \$0.96 million per year with gold at \$400/oz., \$69/T, or \$2.08 million per year at \$500/oz. and \$20/Ton or \$0.60 million at \$350/oz. To calculate Winstock's portion of the estimated net profit, the above figures should be multiplied by the percentage interest held by Winstock in the Black Hawk joint venture.
8. A program is recommended to prepare the mine for underground production, including driving of a needed raise and a small amount of crosscutting and drilling, dominantly to plan the future course of the decline. This work, including four months operating overhead, is estimated to cost \$133,500.

The largest ore shoot discovered to date is in the West Vein with a width of 420 feet. This has been tested by 15 crosscuts from the decline and two raises, and is considered to constitute proven ore down to the old Clay County third level 280 feet below the decline portal. This block was found to contain 35,200 tons of ore averaging 0.411 oz/T gold and 4.32 oz/T silver. The combined gold, silver, and copper equivalent is 0.54 oz/T gold with 85% confidence levels at 0.47 oz/T and 0.61 oz/T.

In addition to the West Vein, four other ore shoots were discovered and their grade estimated on one level from the decline. These are considered to constitute probable ore, along with an extension of the West Vein ore shoot to the old National Tunnel level, a total vertical depth below portal similar to the ore shoot's width. Combined proven and probable ore reserves stand at 107,900 tons, averaging 0.449 oz/T gold, 3.40 oz/T silver, or .57 oz/T gold equivalent. This is sufficient for 3½ years reserve at 100 T/day operation. Breakage dilution should not be a problem with the vertical ore shoots and competent rock of this area, but statistics for a 10% breakage dilution are shown on accompanying figures.

In addition, there is a lower grade ore zone containing ore of 69,000 T of 0.26 oz/T gold equivalent. Given the development and infrastructure already in place, this would become profitable above a gold price of approx. \$580/oz.

Indicated ore is derived from three sources:

- a) An extension of known ore zones to 250 feet below the National Tunnel level.
- b) A similar extension of the original Clay County Mine ore shoot.
- c) Addition of the Adams and West Fourth ore shoots. These were discovered during construction of the National Tunnel and have not yet been evaluated.

SUMMARY OF FEASIBILITY REPORT
ON THE
CLAY COUNTY MINE

INTRODUCTION

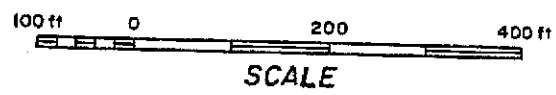
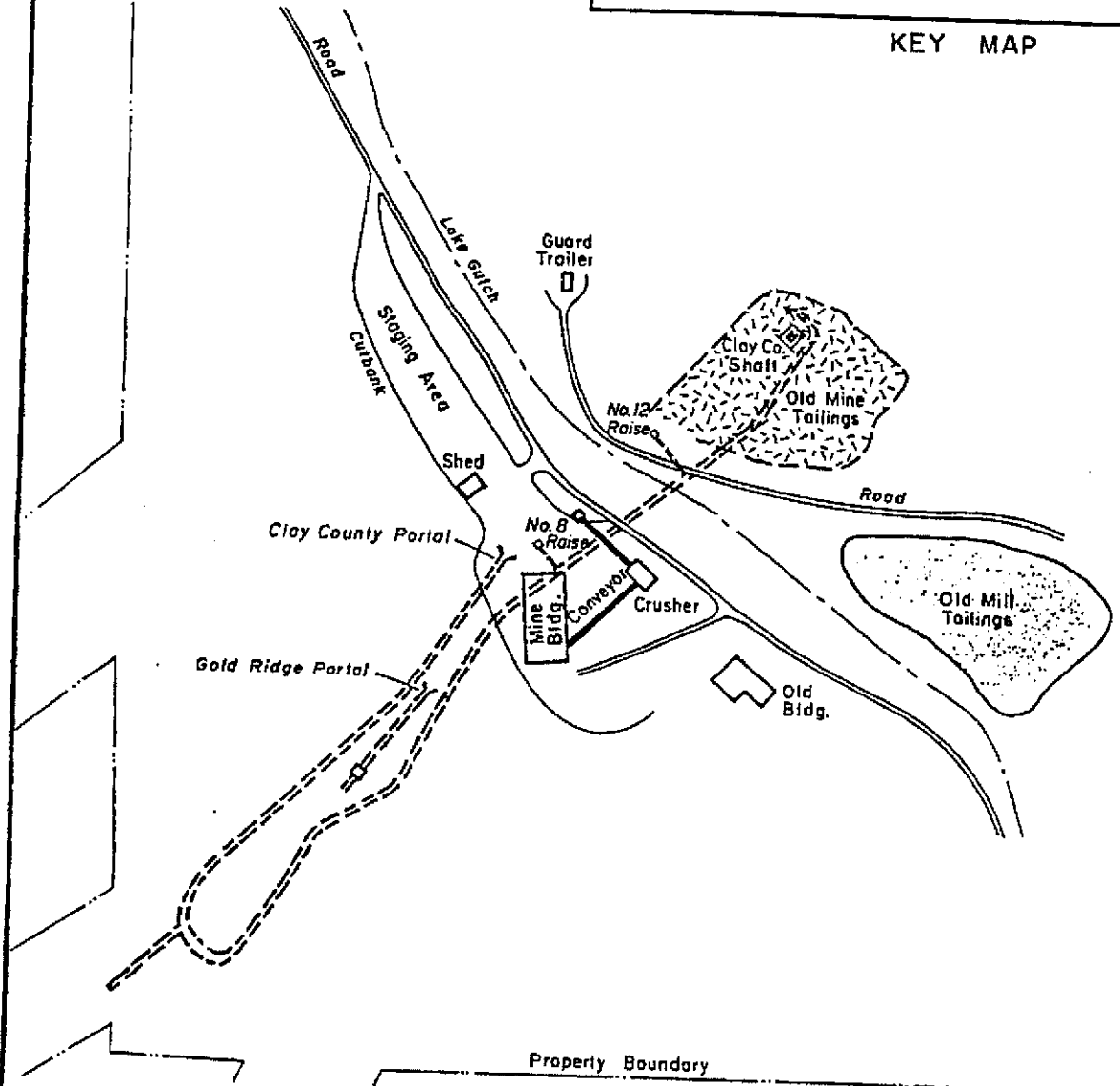
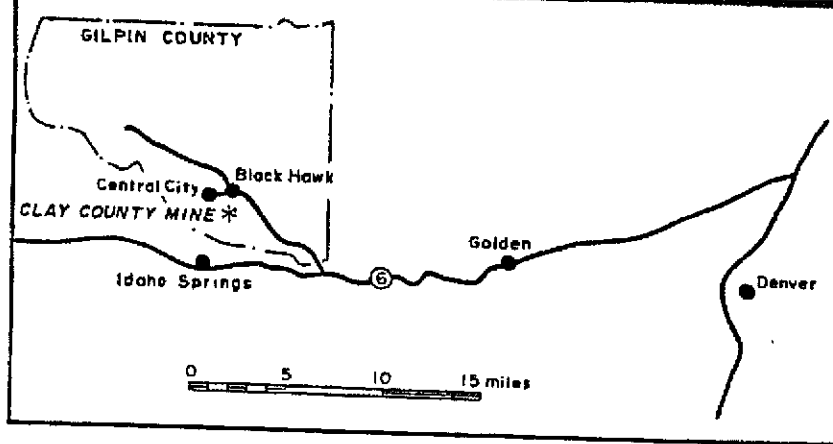
This report is the result of a study of the Clay County gold-silver mine and partly completed mill in the Central City District of Gilpin County, Colorado. It is based on work begun in March of 1983, but carried out largely during July and August of that year. All aspects of milling and mill design have been evaluated separately by J.W. Fisher, P.Eng. Mineral extraction and milling tests were carried out by Dawson Metallurgical Laboratories of Utah. All dollar figures quoted are in U.S. funds.

The Clay County property is jointly owned by Black Hawk Ltd. and Winstock Mining Corporation. Score Resources (U.S.A.) Ltd. has an option to participate in Winstock's share. The present phase of work began in 1979, and by the end of 1982 Black Hawk had spent \$2,169,000*. This work explored a thousand foot length of vein system with over 2,500 feet of trackless decline, drifts, raises, and cross-cuts, and placed the grinding circuit for a 100 TPD mill. In addition to the original vein, three new veins and several ore shoots were discovered.

Work carried out in 1983 has included the driving of two raises, shaft clearing and some minor drifting, in addition to a detailed sampling and assay program and the milling and mineralogical studies. This program was designed to accomplish three objectives.

- a) To place at least one year of ore reserve in the proven category, based on a 100 TPD operation.
- b) To place at least three years of ore in the proven and probable categories.
- c) To determine through assays, mill tests and cost analyses under what range of gold prices the Clay County Mine could profitably be placed in production.

* By joint venture agreement it was agreed that the fair market value of the Black Hawk work was \$1,500,000 and this amount has been used for contribution calculation purposes.



WINSTOCK MINING CORPORATION
VANCOUVER, B.C., CANADA

LOCATION AND PLAN VIEW
CLAY COUNTY MINE VICINITY
GILPIN COUNTY, COLORADO

| | | | |
|-------|-------|----------|-----------|
| DRAWN | P. W. | DATE | OCT., 83. |
| APPD. | D. C. | DWG. No. | FIG. 1 |

LOCATION AND DESCRIPTION OF PROPERTY

Clay County Mine is located in the southeastern segment of the famous Central City mining district of Gilpin County, Colorado. This has had several hundred producing mines, with 26 important producers located within two miles of the Clay County shaft. The property lies between 8,300 and 8,700 feet in elevation, and is serviced by a good road from Central City.

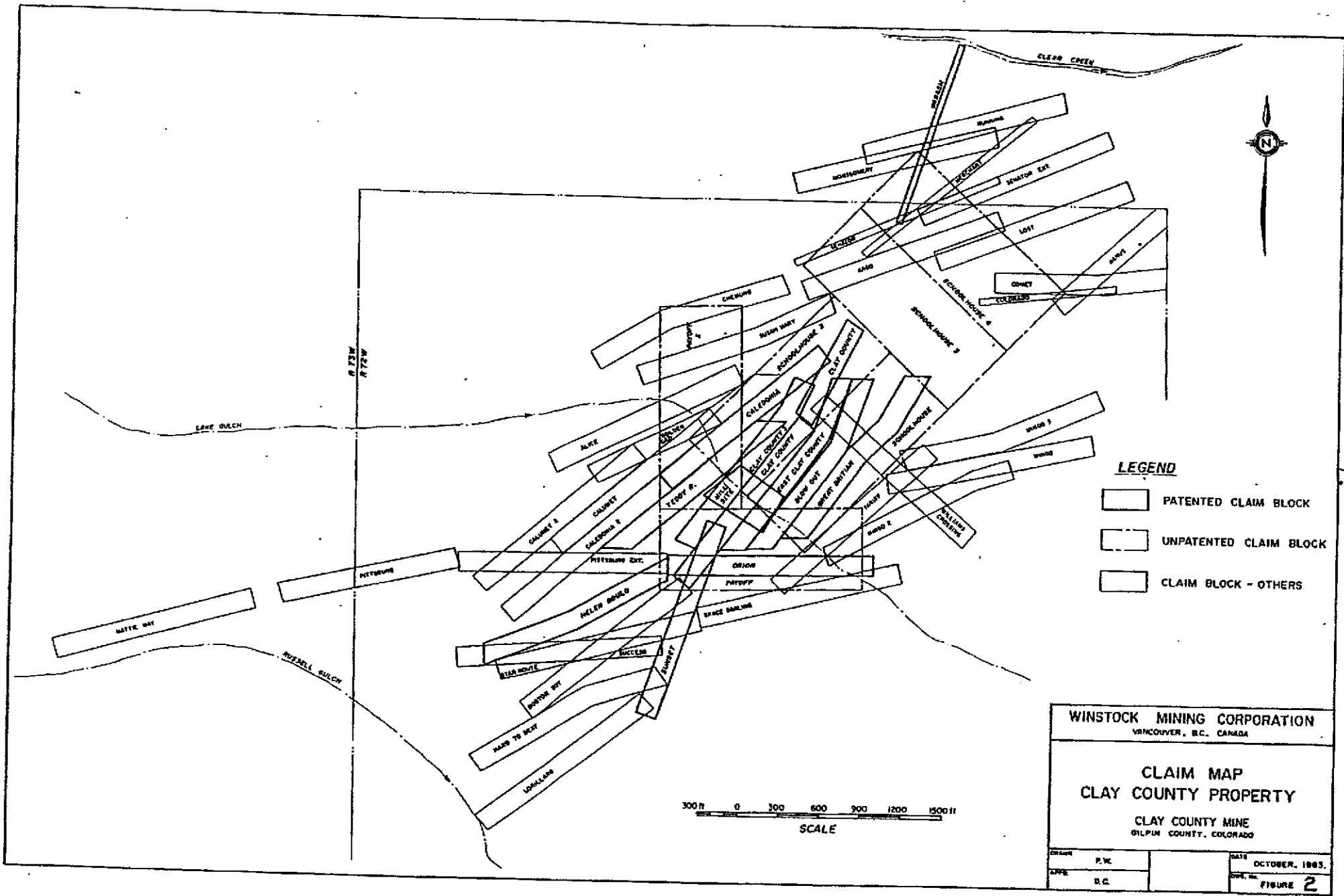
The Clay County property consists of 12 "patented" mineral claims covering about 60 acres, and 6 unpatented claims of 120 acres (see Figure 2 following this page).

CLAY COUNTY MINE HISTORY

There have been four stages in the development of the Clay County Mine. The original Clay County Mine consisted of a central shaft and about 3,000 feet of workings. This main shaft goes down seven levels, but apparently most ore was produced above the third level in this phase of mining, which was all on what is now referred to as the Center Vein. It is estimated that between 1891 and 1917 precious metals of a total value of \$600,000 - \$700,000 were shipped (with gold near \$20/oz.). Cut-off grade was reported to have been about 0.5 oz/Ton Au. The mine was presumably closed by the adverse economic climate for gold following World War I.

In 1932 there was a rejuvenation of interest in precious metals, and the Gold Ridge tunnel was driven, starting about 200 ft. above and to the southwest of the present decline entrance and millsite. This also drifted on the Center Vein and appears to have been seeking the free-milling gold of the near-surface zone. Ore was produced sporadically until 1956. Most of this work occurred beyond the area of present interest, except for a shaft sunk from near the tunnel mouth. This shaft connects with the old workings on the third level and also with the new decline. It is open above the decline. Several fine specimens of free gold were taken from the upper parts of this shaft, some now residing in the Smithsonian Institute.

It is not yet known what the old miners found in the lower levels of the Clay County shaft, but they had enough faith in the vein to extend the National Tunnel from Clear Creek valley (3,500 feet to the north) to connect with the Clay County workings at the 6th



LEGEND

- PATENTED CLAIM BLOCK
- UNPATENTED CLAIM BLOCK
- CLAIM BLOCK - OTHERS

| | |
|---|-------------------------|
| WINSTOCK MINING CORPORATION VANCOUVER, B.C. CANADA | |
| CLAIM MAP CLAY COUNTY PROPERTY | |
| CLAY COUNTY MINE GILPIN COUNTY, COLORADO | |
| DRAWN P.W. | DATE OCTOBER, 1903. |
| APPROVED S.C. | DRAWING NO. FIGURE 2 |

300 ft 0 300 600 900 1200 1500 ft
SCALE

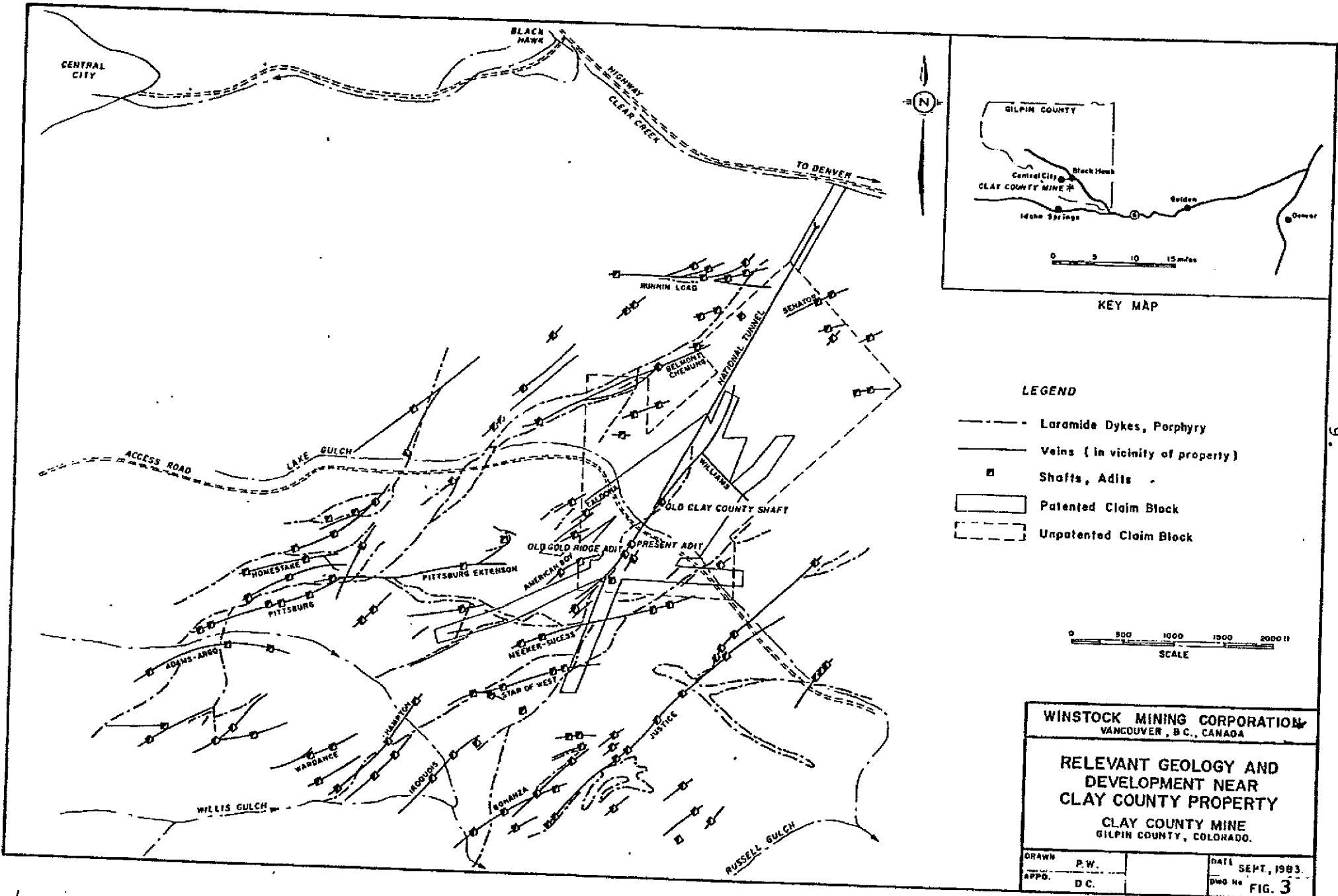
level, about 470 ft. below surface. It is this tunnel which drains and keeps dry the present mine. The National Tunnel was driven from the northwest, and it appears that this was the cause of discovery of the West Vein. It is known that ore was stope-mined to north of the present workings, either on this vein or on some entirely new vein. When the old Clay County shaft was encountered, development continued on the fourth level where a cross-cut was driven to the West Vein. Some ore was removed before 1942, when the government virtually stopped all precious metal mining to free workers for the war effort. National Tunnel was blocked by a stope collapse near its mouth and was never reopened.

The present phase of work has centered on the driving of a trackless decline at approximately a 20% grade from a point between the old Clay County and the Gold Ridge shafts. It was planned that the decline would parallel an unmined sector of the Center Vein, but almost immediately it intersected what is now referred to as the West Vein at a high-grade ore shoot. The real Center Vein and another East Vein were later intersected also. To date, 2,200 feet of tunnel have been completed, with cross-cuts to test veins at approximately 40 foot intervals. Both the old Clay County and the Gold Ridge shafts have been successfully intersected. These will serve as ventilation, and the former has been cleared downward to connect with the National Tunnel, from which much of the mining in the lower levels is planned. Some 3,000 - 4,000 tons of ore have already been taken from the Center and East Veins near the decline's southern extremity for test purposes (the Walker stope).

The method of driving a trackless decline parallel to a vein was new in the region. Previously, mining had depended on shafts down ore shoots or on tracked tunnels and drifts which followed veins where possible, but the decline method has since been adopted by other groups in the area. The major advantages of a trackless decline parallel to veins is that mining costs are lower once extraction has started. The disadvantages are that it initially cost more to set up (these costs have already been met, as the decline is in place), and that in not following on the vein it is more difficult to obtain the quantity of data necessary for ore reserve calculations.

REGIONAL GEOLOGY

The Central City mining district is located within the Precambrian crystalline belt of the Colorado Front Range. In this region the Precambrian rocks are largely gneisses, intruded by bodies of pegmatite. (Figure 3).



WINSTOCK MINING CORPORATION
 VANCOUVER, B.C., CANADA

RELEVANT GEOLOGY AND
 DEVELOPMENT NEAR
 CLAY COUNTY PROPERTY

CLAY COUNTY MINE
 GILPIN COUNTY, COLORADO.

| | | | |
|--------|------|--------|------------|
| DRAWN | P.W. | DATE | SEPT, 1983 |
| APPRO. | D.C. | DWG No | FIG. 3 |

The ore deposits are veins, or occasionally stockworks. They were emplaced in Laramide times in fissures or shears with a mesothermal character, involving some mineralization of adjacent wallrocks by impregnation. The ore veins are numerous and run in virtually all directions. Almost without exception, they are steeply dipping, and few are more than 3,000 feet in length, although aligned or en echelon systems may be traced over greater distances. Most sulphide-bearing veins of any size have produced at least some gold, and as a result of this density, the Central City mining area has not been dominated by any single deposit.

Traditionally the veins of this area have proven to be of variable width and value along their length. The ore grade material has tended to occur in shoots, occupying roughly a quarter of the total vein length. Some of these shoots were very rich, and most appear to have averaged in excess of 1 oz/Ton gold.

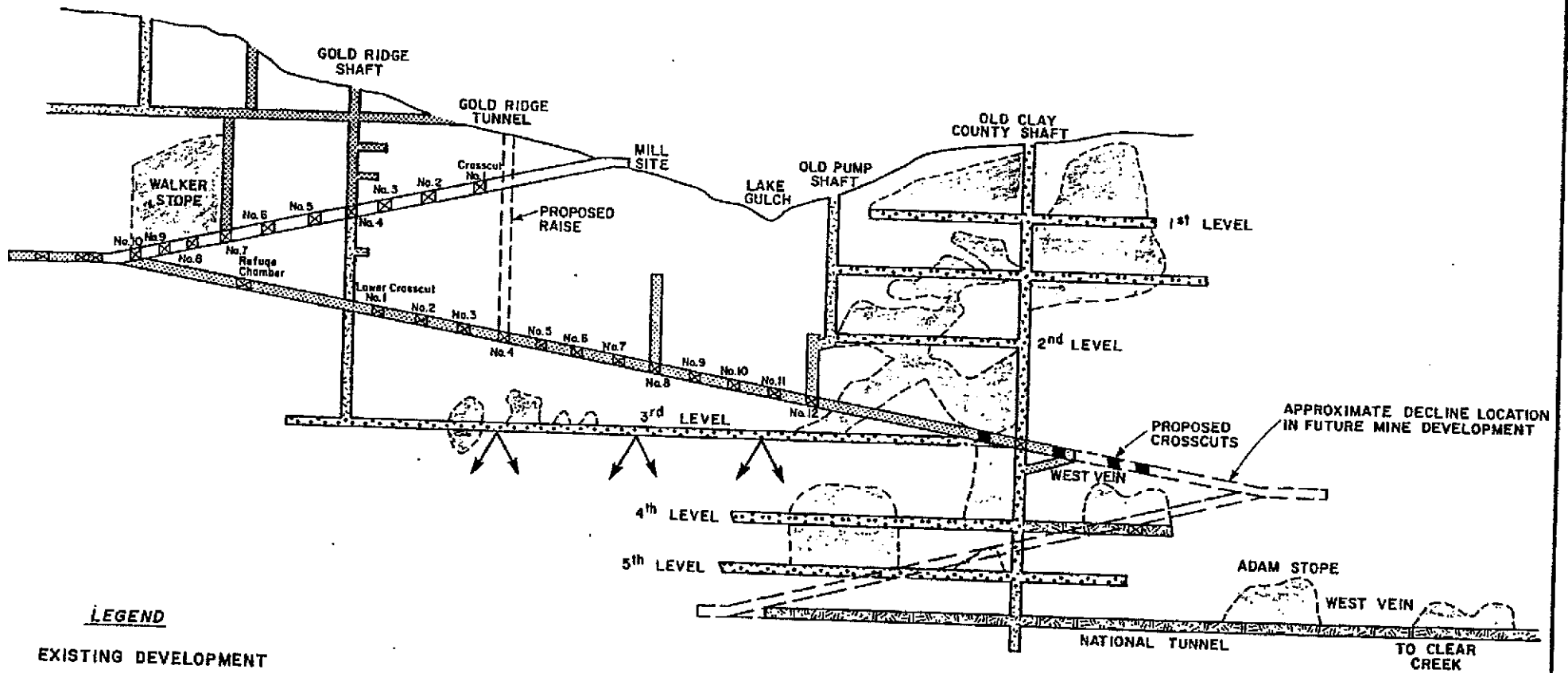
One of the most surprising characteristics of this camp has been the previously mentioned persistence of the ore shoots to depth, despite the lateral variations in vein tenor. Mining on most shoots appears to have stopped due to economic or technical problems, rather than a termination of ore values.

DESCRIPTION OF MINE

Surface construction at the Clay County Mine presently includes a 60 ft. x 100 ft. mine building and workshop, and the grinding circuit for the mill.









The Clay County vein system cuts mainly through Precambrian biotite-microcline gneiss. Most deposits of importance in this region have been closely associated with dykes or small bodies of Tertiary porphyry, and it is gratifying that such an intrusion is a prominent feature of the Clay County Mine.

Almost all of the workings are on the Center Vein, and virtually all of the ore for Clay County Mine was extracted from within 200 feet of the old shaft. This is joined to the Gold Ridge shaft by an exploratory tunnel on the old third level, which is now accessible from the bottom of the decline. The ceiling of this tunnel has been scarred by small stopes, raises and ragged cuts, which have largely destroyed its usefulness for evaluating that part of the Center Vein. No suitable ore shoot was apparently found, and the sampling of this vein sector from the decline above confirms this, although there is a zone of 320 foot strike length which constitutes low grade ore viable at elevated gold prices.



LEGEND

EXISTING DEVELOPMENT

-  OLD CLAY COUNTY WORKING
-  GOLD RIDGE PHASE
-  NATIONAL PHASE
-  RECENT DEVELOPMENT
-  CLOSED
-  CROSSCUT
-  STOPES
-  DRILL TARGET AREA



NOTE: Revised July, 1984.

| | |
|---|----------------------------------|
| WINSTOCK MINING CORPORATION VANCOUVER, B.C., CANADA | |
| COMPOSITE VIEW OF OLD, NEW & PROPOSED WORKINGS CLAY COUNTY MINE GILPIN COUNTY, COLORADO. | |
| DRAWN P. W. APPD. D. C. | DATE SEPT., 1983 DWG. NO. E1C |

The old Clay County shaft has now been cleaned out from the decline down to the National Tunnel, and the Tunnel was found to be flooded. The Tunnel does drain, and it is not clear whether its flooding is a temporary result of the unusually wet summer or is a permanent level of water balance. It will be pumped in any case to provide part of the mill water supply. At about the level of the National Tunnel, hoisting of ore will become more economical than using the decline, and the Clay County shaft will have to be fitted for this. Both it and the upper Gold Ridge shafts are presently used for ventilation.

The vein system has proved complex, but appears to be dominated by four roughly parallel structures named the West, Center (original), East-central and East Veins. At least one ore shoot has been discovered in each, despite limited evaluation. Of the circa 1,000 foot strike length served by the decline, cross-cuts have tested the East vein for only 200 feet and the East-central (length uncertain) for about 500 ft. Although the situation is complicated, it appears that even the West Vein has not yet been tested for the 250 feet in which it is separated from the decline by old stopes. Furthermore, the decline parallels this vein system for only a portion of its known length.

Several of the patented claims of the present property were staked on veins which have not yet been explored. In addition, at least three other sizable vein systems owned by other interests (the Williams cross-vein, Boston Boy and American Boy) will be available from the workings as they expand, and could hence be explored and mined inexpensively from underground levels. Their owners have already been approached and suitable agreements are available.

The veins are either vertical or steeply dipping with plunges generally to the west. They are occasionally bowed along strike, especially where influenced by quartz monzonite intrusions, and locally offset up to a foot by low angle fractures, but their overall trend is simple and continuous. (In this they are similar to most veins of the region.) The trends of the four structures are not completely parallel, however, either in dip or along strike, and vein intersections may well be found as exploration continues. Such intersections have been the site of bonanza ore shoots in some other mines of the region.

Although cut by few post-mineralization structures, the veins themselves have been the locus of shearing both during and after ore placement. The former stage of deformation is visible in a common breccia texture. Both quartz and massive sulphide clasts are held in a matrix of later sulphide and silica emplacement. The post-mineralization movements are expressed as shear zones, either within or flanking the veins. These are often accompanied by loose,

crushed quartz or pyrite, or by zones of argillic alteration, locally with adularia. In the upper workings these are centers of oxidation and secondary enrichment. It is likely that post-ore movements also explain the pinch-and-swell nature of the ore shoot mineralization, which is locally reduced to barren, thin shears and then widens again to zones of anomalous thickness.

Vein mineralogy is complex and variable. It is dominantly quartz and pyrite, but may contain as much as several percent of the sulphides of copper, zinc and lead. Tetrahedrite and tennantite are also common and likely carry much of the silver.

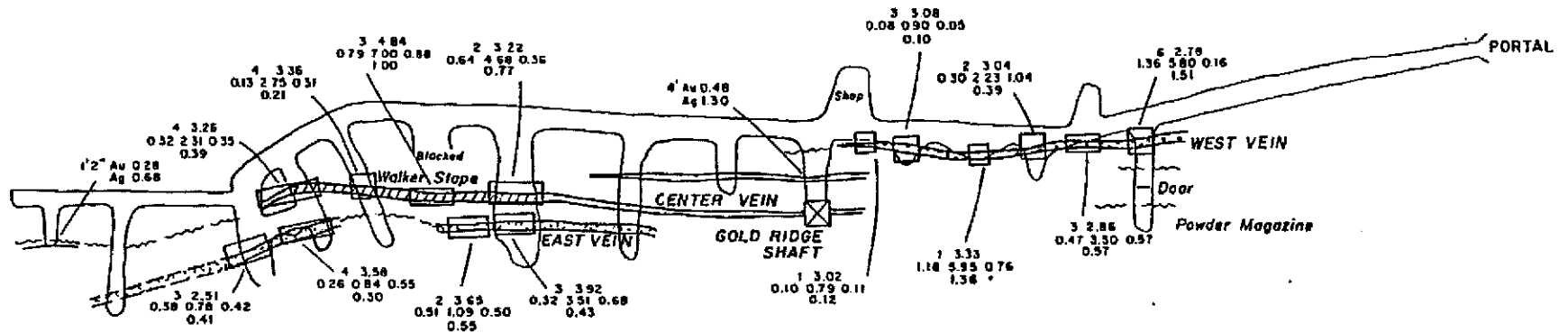
ORE RESERVE CALCULATION AND GRADE ESTIMATIONS

Development work and detailed sampling were carried out in the summer of 1983 with two major objectives, namely to bring the ore reserves of the upper West Vein (above the old third level) into a proven category, and to establish the width and approximate grades of the other ore shoots so far discovered adjacent to the decline.

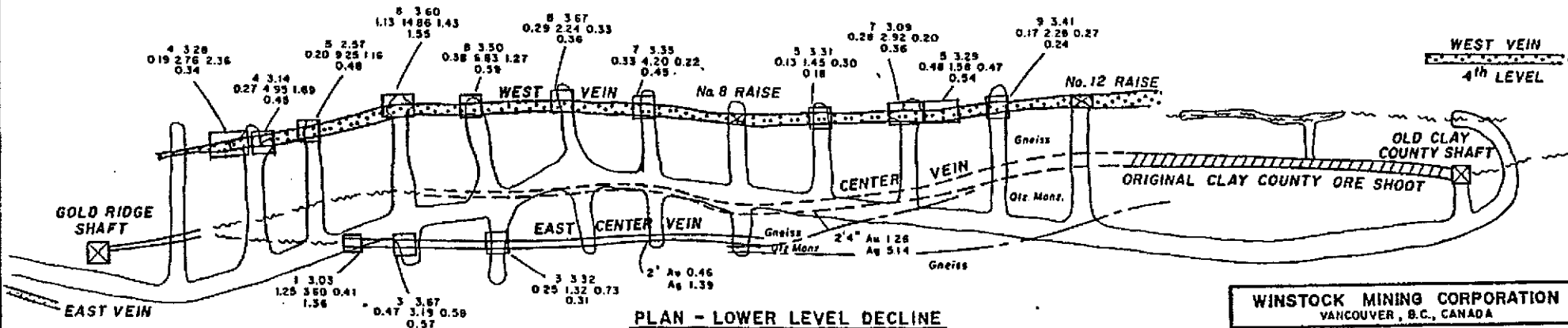
Detailed sampling was carried out along these raises, from the various cross-cut intersections and from some short drifts along the veins.

In most places the veins consisted of a more or less massive sulphide sector flanked by disseminated sulphides and silicification. In these cases the sections with concentrated and disseminated sulphides were sampled separately to avoid blending problems during assay. Most gold and silver measurements are hence composites of two assays, combined to produce a grade across the minimum mining width of three feet. Assays were combined with regard not only to the relative widths of the two materials, but also to their densities.

Composite assays have been grouped into "windows", giving the average grades for sites where cross-cuts intersect a vein or for segments of the raises and drifts. Most windows are of approximately 10 feet length, intersections greater than 20 feet being divided into two or more. Composites were weighted by vein width (where greater than three feet) and density in obtaining window averages. (Figure 5, p. 14).

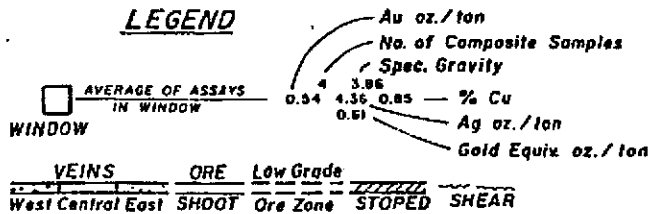


PLAN - UPPER LEVEL DECLINE



PLAN - LOWER LEVEL DECLINE

LEGEND



WINSTOCK MINING CORPORATION
VANCOUVER, B.C., CANADA

PLAN OF CLAY COUNTY MINE
WITH ASSAY VALUES FOR
SAMPLE WINDOWS

CLAY COUNTY MINE
GILPIN COUNTY, COLORADO.

| | | | |
|-------|------|----------|-------------|
| DRAWN | P.W. | DATE | SEPT., 1983 |
| APPD. | D.C. | Dwg. No. | FIG. 5 |

All grades are based on a minimum mining width of three feet. Although there are a few sites in which the mineralized zone is thicker than this, they are not sufficient to appreciably influence the average. The West vein ore shoot is large, having a width (strike length) of 420 feet. With completion of the exploratory raises and detailed sampling, the block of this ore above the old Clay County third level is relegated to proven category, yielding 35,200 tons of 0.54 oz/T gold equivalent (see Table I, p. 16). These equivalents are obtained by assuming that the silver price is 1/40th that of gold, while copper is priced at 570 lb/oz Au. For gold at \$400/oz, this would place silver at \$10/oz and copper at 70¢/lb.

The Clay County third level lies 250 feet below the decline portal. From here down 180 feet to the National Tunnel level is considered probable ore in the West Vein, in addition to the entirety of the other ore shoots whose combined width is 310 feet. Ore in the probable category comprises a reserve of 72,700 T at 0.58 oz/T gold equivalent. It should be noted that this extends the West ore zone to a depth (430 ft.) only slightly greater than its width (420 ft.). In the Central City area, it would not be surprising if an ore shoot as large as this continued downward for one or two thousand feet. It is less certain that each of the smaller ore shoots will continue for this depth - the Walker shoot for example.

Ore shoots outlined in this mine to date have been verified, or nearly so. Those used in calculating proven and probable ore are outlined in Figure 6, p. 17).

A resume of grade and tonnage estimates is given in Table I and will be discussed in the Economic Evaluation section.

Most gold, silver and copper assaying for this evaluation was carried out by Auro-Tech Assaying, located in Wheat Ridge, Colorado. Additional assays were made by General Testing Laboratories of Vancouver. Assays related to the metallurgical tests and bulk samples were done through Dawson Metallurgical Laboratories, located at Murray, Utah.

COST ANALYSIS

Mining and milling costs are never easy to predict, although with the mine being in an established mining camp and having been under development since 1979, many of the uncertainties are reduced.

ORE GRADE AND TONNAGE - RESERVE ESTIMATIONS

PROVEN ORE

| | <u>Gold oz/T</u> | <u>Silver oz/T</u> | <u>Copper %</u> | <u>Gold Equiv.</u> | <u>Recov- erable</u> | <u>Density T/Ft³</u> | <u>Shoot Width</u> | <u>Area Ft²x1000</u> | <u>Tonnage</u> |
|----------------------------------|----------------------|------------------------|---------------------|------------------------|--------------------------|-------------------------------------|------------------------|-------------------------------------|----------------|
| West ore zone to old third level | .411 | 4.32 | 0.68 | 0.54 | 0.38 | .104 | 420 ft. | 112.7 | 35,200 |

PROBABLE ORE

| | | | | | | | | | |
|---|------|------|------|------|------|------|-----|------|--------|
| West vein between third and national levels | .411 | 4.32 | 0.68 | 0.54 | 0.38 | .104 | 420 | 84.0 | 26,200 |
| Walker Shoot below stope - Central vein | .530 | 4.71 | 0.55 | 0.67 | 0.47 | .106 | 120 | 45.6 | 14,500 |
| East-Central vein ore shoot to national level | .633 | 2.69 | 0.58 | 0.72 | 0.51 | .104 | 90 | 43.2 | 13,500 |
| Twin East vein ore shoots to national level | .371 | 2.16 | 0.58 | 0.45 | 0.32 | .112 | 100 | 55.0 | 18,500 |
| TOTAL for Probable Ore | .467 | 3.55 | 0.61 | 0.58 | 0.41 | .106 | | | 72,700 |

PROVEN AND PROBABLE TOTAL

| | | | | | | | | | |
|---------------|------|------|------|------|------|------|--|--|----------|
| | .449 | 3.80 | 0.63 | 0.57 | 0.41 | .105 | | | 107,900 |
| | ==== | ==== | ==== | ==== | ==== | ==== | | | ===== |
| (10% dilution | .408 | 3.45 | 0.57 | 0.52 | 0.37 | | | | 118,700) |

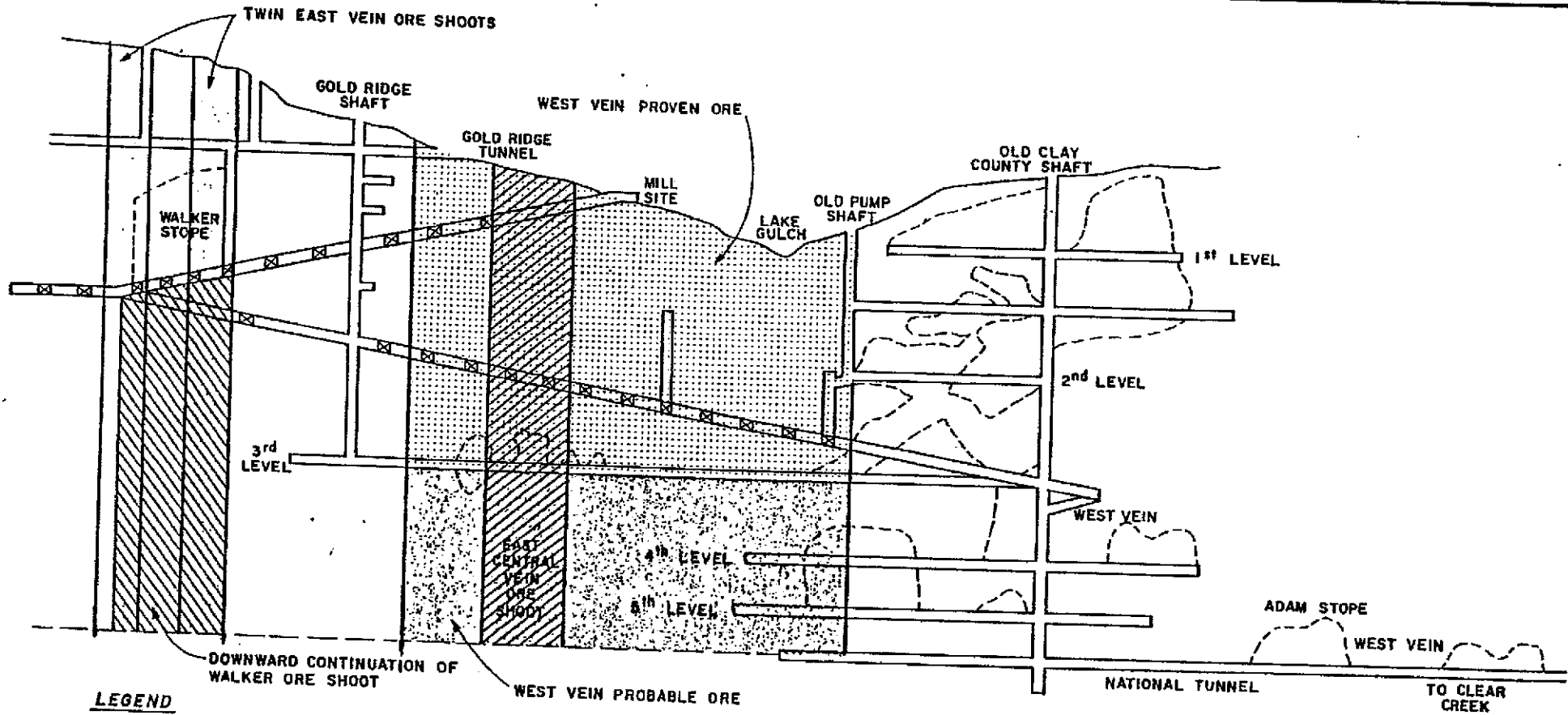
INDICATED ORE

| | | | | | | | | | |
|--|--|--|--|--|--|--|------|-------|---------|
| 150 ft. below National Tunnel - zones as above | | | | | | | | 182.5 | 57,500 |
| Way County ore shoot extension | | | | | | | ±200 | 50.0 | 15,800 |
| Fourth level west ore shoot | | | | | | | 100 | 73.0 | 23,000 |
| Adams ore shoot | | | | | | | ±170 | 100.0 | 31,000 |
| TOTAL Additional Ore | | | | | | | | | 127,300 |



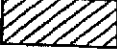
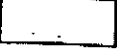

(CENTRAL, LOW-GRADE ZONE)

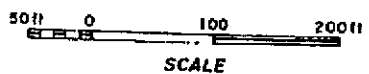
| | | | | | | | | | |
|--|------|------|------|------|------|------|-----|-------|---------|
| | 0.19 | 2.34 | 0.33 | 0.26 | 0.18 | .101 | 330 | 227.7 | 69,000) |
|--|------|------|------|------|------|------|-----|-------|---------|

TABLE 1



LEGEND

-  WEST VEIN PROVEN ORE
-  WEST VEIN PROBABLE ORE
-  EAST CENTRAL VEIN (PROBABLE ORE)
-  EAST VEIN (PROBABLE ORE)
-  CENTRAL VEIN (WALKER ORE SHOOT) - PROBABLE ORE



WINSTOCK MINING CORPORATION
VANCOUVER, B.C., CANADA

APPROXIMATE LOCATION OF
KNOWN ORE SHOOTS
CLAY COUNTY MINE
GILPIN COUNTY, COLORADO

Drawn P.W.
APPD. DATE JULY, 1984

Gilpin County has historically been a mining area and derived much of its income from mines and mine-related tourism. The Central City area has been designated as a mining district and the Clay County property has already been marked by tailing piles and other effects of past work. Hence permits for construction of mine and mill disposal of mill wastes have been obtained without costly restrictions, beyond the usual necessity of a tailings pond and mill effluent control. The mine is fortunate to be adjacent to a gulch which may be used as a pond site with minimal preparation. Water is available from a well in this gulch and from the National Tunnel.

Costs will be broken down as follows:

1. Mine Development (continuing)

Development for the first stage of mining is almost completely in place with over 2,000 feet of decline and cross-cuts. It will, however, be necessary to continue the decline and drifts, both to explore for new ore shoots and to reach the next level of the known ones. (There is only a one year supply of ore above the present decline.) Although the exact mode of development of the mine will greatly depend on where new ore is found, a lenient budget for the first two years will be:

- | | | |
|----|---|-------------|
| a) | Continuation of decline, costing approx. \$210/ft at beginning and \$250/ft at depth | |
| | - 1,500 ft. at \$230/ft | = \$345,000 |
| b) | Crosscuts to evaluate and mine veins | |
| | - 1,800 ft. at \$110/ft | = \$198,000 |
| c) | Exploratory drilling costs and other development expenses | \$ 75,000 |
| d) | First stage preparation of the old Clay County shaft, as hoisting will become the more economic method at moving ore below approximately the National level | \$100,000 |

TOTAL = \$718,000 for the first two years, or approximately \$12/T of ore milled.

This work should be carried out over the first two years of mining and does not include mine preparation costs or that of underground exploration to plan the future decline, as discussed under recommendations.

2. Mining and Administration

The usual method of estimating mining costs is to obtain current operating costs for mines of approximately similar size and type, adjusting these as far as possible for any differences in methods or mine character. The problem is complicated by different systems used to assign administration and mechanical support costs in accounting.

Characteristics pertinent to cost analysis for the Clay County mine are as follows:

- a) The veins are nearly vertical, and will be exploited by shrinkage stoping, mainly on the minimum mining width of three feet.
- b) The rock is competent, requiring little or no timbering, but it is abrasive and the rate of consumption of bits and steel is high.
- c) The mine is dry, and will remain so until at least the National Tunnel level. Part of the water required will be pumped from this tunnel.
- d) Mine haulage is based on a trackless decline, and will likely remain so for at least the first three years of operations. Below the National level it may prove more efficient to raise ore by the old Clay County shaft.
- e) A tailings disposal area is immediately at hand.
- f) The mine site is accessible all year, the basis of 300 operating days/year being used as a cost analysis convention.
- g) Except for a guard trailer, no crew housing is required and the access road is county-maintained.

Operating cost figures for three similar precious metal mines of approximately equal size were obtained and adjusted for date and for Clay County conditions. In addition, an estimate was compiled using the U.S. Bureau of Mines Cost Estimation composite, and another approximation obtained from a local mining consultant familiar with the operation. These estimates ranged from \$46/T to \$55/T with an average of \$50.50. A mining and administration cost of \$52/T has been used.

3. Milling and Laboratory

As the milling plan has not been completely established, only a rough approximation of operating costs is available. For combined flotation and cyanide leaching, the best available figure is \$28.77/T. This does not include costs associated with transport or smelting of the concentrate. An additional \$1.25/T has been added for assay and grade control, bringing the total mill operation and rental cost to \$30/T.

4. Smelting and Transport

The charges for transporting the concentrate to the Cominco Smelter at Trail, B.C., and smelting it are estimated at \$340/T of concentrate or \$15.75 per ton of ore mined. This does not include contractual losses of metals during smelting, which are instead deducted in calculating gross profits.

The final costs used in evaluation are:

| | |
|-----------------------------------|----------------|
| Mine development and exploration | \$ 12/T |
| Mine operation and administration | 52/T |
| Mill operation | 30/T |
| Smelting and transport | <u>16/T</u> |
| Total | <u>\$110/T</u> |

The above estimates have been kept on the high side, rather than adding a contingency percentage.

ECONOMIC EVALUATION

Proven ore reserves are entirely from the upper West Vein with a gold equivalent (in gold, silver and copper) of 0.54 oz/T of which 0.38 oz/T are available at the present level of mill testing. Proven ore comprises 35,200 tons, or somewhat over one year's supply assuming extraction of 100 tons per day for 300 days per year.

Probable reserves include three other ore shoots which are smaller but slightly higher in grade. Combined proven and probable ore stands at 107,900 tons or approximately 3½ years mining with an average grade of 0.58 oz/T of which 0.41 oz/T is presently retrievable. These averages have been used in the economic evaluation which follows. All quotations are in U.S. funds.

Calculation of the returned value of the Clay County ore, or gross profit before operating expenses, makes use of the Cominco Smelter Schedule and the preliminary milling results. The schedule pays for only 93% of the precious metals and 40% of the copper. Furthermore, there is a copper penalty counted against silver. These losses are reflected in the ore value estimations, while the actual smelting charge, lesser penalties and transport cost per ton of ore are considered operating expenses. On the positive side, the smelter will give a small royalty for lead and zinc contained. Lead and zinc assays have not been carried out widely in sampling, and so the values from the bulk mill test sample are used, worth \$47 per ton of concentrate.

Table 2 shows ore value calculations under four scenarios with gold at \$400/oz. The first (Case A) is for the average from all ore shoots in proven and probable reserves, using the flotation and cyanide leaching results from the preliminary milling tests. Under these circumstances, the ore will return \$149 per ton.

Case B is for the same material assuming that a precious metal recovery of 80% may be achieved with refinement of the milling process. (This does not count the 7% smelter loss.) The result is a \$21 per ton increase in value.

Case C is similar to Case A, but with a 10% dilution factor due to breakage in stoping. (Given the vertical veins and firm rock, this should not normally be encountered.) The result is a \$12 per ton reduction in gross profit.

Case D used the same recovery assumption as Case A, but is for the ore of the West Vein only. This is somewhat lower in gold but higher in silver than the average, and has a value of \$142 per ton.

TABLE 2

CALCULATION OF ORE VALUE AND GROSS PROFIT PER TON
(GOLD AT \$ 400 PER OUNCE)

| | Gold oz./ton | | Silver oz./ton | | Copper % | | U.S. \$ / ton | |
|---|--------------|-------|----------------|-------|----------|-------|---------------|------|
| Millhead Ore | .449 | .449 | 3.80 | 3.80 | 0.63 | 0.63 | 228 | 228 |
| | .408 | .411 | 3.45 | 4.32 | 0.57 | 0.68 | 208 | 216 |
| Following Floatation | .251 | .271 | 1.75 | 2.13 | 0.51 | 0.51 | 118 | 164 |
| | .228 | .230 | 1.59 | 1.99 | 0.46 | 0.55 | 119 | 126 |
| Concentrate Contains | 5.420 | 5.850 | 37.80 | 46.00 | 11.00 | 11.00 | 2700 | 2954 |
| | 5.420 | 4.970 | 37.80 | 43.00 | 11.00 | 11.90 | 2700 | 2585 |
| After Smelter Loss (as per Contract) | 5.040 | 5.440 | 34.10 | 42.60 | 4.40 | 4.40 | 2420 | 2664 |
| | 5.040 | 4.620 | 34.10 | 37.80 | 4.40 | 4.80 | 2420 | 2293 |
| Add Lead and Zinc Values | | | | | | | 2467 | 2711 |
| | | | | | | | 2467 | 2340 |
| Smelter Return / Ton Milled | .233 | .252 | 1.58 | 1.97 | .203 | .203 | 114 | 126 |
| | .212 | .214 | 1.43 | 1.75 | .185 | .222 | 105 | 108 |
| Cyanide Return / Ton Milled | .074 | .088 | .58 | .91 | | | 35 | 44 |
| | .067 | .067 | .53 | .66 | | | 32 | 34 |
| Total Return / Ton (Gross Profit) | .307 | .340 | 2.16 | 2.88 | .203 | .203 | 149 | 170 |
| | .279 | .280 | 1.96 | 2.41 | .185 | .222 | 137 | 142 |

FOR AVERAGE OF PROVEN AND PROBABLE ORE RESERVES

- A. For floatation and cyanide at present test level.
- B. For an 80% recovery.
- C. As in 'A' with 10% wallrock dilution.
- D. For West Vein only.

| | |
|---|---|
| A | B |
| C | D |

To June 15, 1984 a total of \$2,470,000 is considered to have been invested in the Clay County Mine project. To this must be added the money still required to put the mine into production and operate it until smelter returns commence. Their sum will be the total initial investment, on which investment return is calculated.

Table 3 lists the expected costs which will be involved in placing the mine into production based on the latest estimates for capital requirements to complete the 100 ton per day mill. In addition to these, there has been an agreed sum of \$445,000 to be paid for that part of the mill which is already completed.

The underground preparation for mining should be proceeded with as soon as possible and is discussed in more detail under recommendations. The costs of surface preparation are based on plans to produce a semi-solid mill waste which will require little alteration to the present tailings disposal area. Electrical installation and office expansion will take place during mill construction.

In addition to the foregoing preparation costs, enough operating capital must be on hand to keep mine and mill operating until cash returns make it self sufficient. If underground preparation has been completed and mill is in place, and with ore derived from the number four raise added to the present stockpile, it is estimated that operating capital for 75 days (three months) is required. Assuming that costs for further mine development are waived for this period, a sum of \$765,000 is considered sufficient.

Total start-up costs are hence expected to be \$1,836,500, and the total investment to reach \$4,306,500. A comparison of costs, profits, and return on this total investment for various prices of gold are tabulated in Table 4.

TABLE 3

ESTIMATED COST TO BRING MINE INTO PRODUCTION

UNDERGROUND PREPARATION

| | |
|------------------------------|-----------|
| No. 4 raise completion | \$ 40,000 |
| Crosscuts and drilling | 33,500 |
| Operating overhead, 4 months | 60,000 |

SURFACE PREPARATION

| | |
|---|--------|
| Electrical power installation | 60,000 |
| Office and laboratory expansion | 20,000 |
| Tailings disposal preparation and lesser items | 35,000 |
| Operating overhead, 2 months | 30,000 |

MILL CONSTRUCTION

| | |
|---|---------|
| To buy Moose mill as is | 445,000 |
| To complete mill, with 15% added contingency | 358,000 |

OPERATING CAPITAL

| | |
|---|----------------|
| To operate mine and mill at full volume for 3 months | <u>755,000</u> |
|---|----------------|

\$1,836,500
=====

TABLE 4

PROFIT ESTIMATIONS OF DIFFERENT GOLD PRICES

To calculate Winstock's portion of the estimated net profit the before tax net profit figures should be multiplied by the percentage interest held by Winstock in the Black Hawk Joint Venture.

Assuming - 100 TPD
300 day/yr operation

PRICE OF GOLD IN DOLLARS PER OUNCE

| CASE A | 300 | 350 | 400 | 450 | 500 | 550 | 600 |
|--|------|------|------|------|------|------|------|
| Present Mill Test Recovery | | | | | | | |
| Gross profit per Ton (\$) | 112 | 130 | 149 | 168 | 186 | 205 | 224 |
| Gross profit per Year (\$x10 ⁶) | 3.35 | 3.91 | 4.47 | 5.04 | 5.58 | 6.15 | 6.71 |
| Net profit per Ton (\$) | 2 | 20 | 39 | 58 | 76 | 95 | 114 |
| Net profit per Year (before tax) (\$x10 ⁶) | 0.06 | 0.60 | 1.17 | 1.74 | 2.28 | 2.85 | 3.42 |
| Simple Interest on Total Investment (%) | 1.4 | 14 | 27 | 40 | 53 | 66 | 79 |
| CASE B | | | | | | | |
| 80% Mill Recovery | | | | | | | |
| Gross profit per Ton (\$) | 128 | 149 | 170 | 191 | 213 | 234 | 255 |
| Gross profit per Year (\$x10 ⁶) | 3.83 | 4.46 | 5.10 | 5.74 | 6.38 | 7.01 | 7.65 |
| Net profit per Ton (\$) | 18 | 39 | 60 | 81 | 103 | 124 | 145 |
| Net profit per Year (before tax) (\$x10 ⁶) | 0.54 | 1.17 | 1.80 | 2.43 | 3.09 | 3.72 | 4.35 |
| Simple Interest on Total Investment | 13 | 27 | 42 | 56 | 72 | 86 | 101 |
| CASE C | | | | | | | |
| 10% Dilution of CASE A | | | | | | | |
| Gross profit per Ton (\$) | 103 | 120 | 137 | 154 | 171 | 188 | 206 |
| Gross profit per Year (\$x10 ⁶) | 3.08 | 3.60 | 4.11 | 4.62 | 5.14 | 5.65 | 6.17 |
| Net profit per Ton (\$) | -7 | 10 | 27 | 44 | 51 | 78 | 96 |
| Net profit per Year (before tax) (\$x10 ⁶) | 0.30 | 0.81 | 1.32 | 1.53 | 2.34 | 2.88 | |
| Simple Interest on Total Investment | 7.0 | 18 | 31 | 36 | 54 | 67 | |

RECOMMENDATIONS

The following is recommended for the next phase of development of the Clay County Mine:

Mine preparation and development should include organization of surface and underground for full scale production. A double compartment raise 5' x 12' should be driven to surface to provide an escape way as well as mine ventilation.

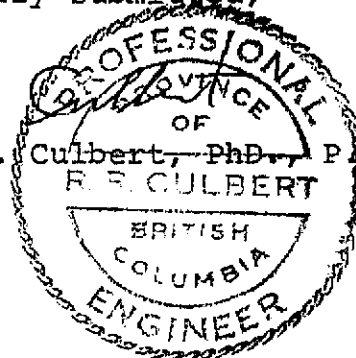
In addition, exploration crosscuts totalling 100 feet in length and 2,000 feet of Jackleg drilling should be carried out to evaluate ore located between the No. 3 and the National Tunnel levels and to west of the present workings. The objective of this exploration, involving about 17.6% of the total cost of this phase, is to upgrade our knowledge of the lower portions of the West Vein ore shoot, presently of "probable ore" status, and to locate ore shoots adjacent to the present termination of the decline (Figure 4; p. 11). This information is important largely in planning the future course of the decline.

The estimated cost of this program (U.S. funds) is as follows:

| | | |
|----|--|---------------------------|
| 1. | To drive 5' x 12' double compartment timbered raise (in ore) 200' @ \$200/foot | \$ 40,000 |
| 2. | Exploration crosscuts 100' @ \$175/foot | 17,500 |
| 3. | Test hole drilling by Jackleg (1 7/8" hole) 2,000' @ \$8/lineal foot | 16,000 |
| 4. | Mine and operating overhead (during preparation) 4 months @ \$15,000/month | <u>60,000</u> |
| | | <u>\$133,500</u> ===== |

Respectfully submitted,

Dick
Richard R. Culbert, PhD, P.Eng.



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3. Results of Laboratory Testing of Samples from the Clay County Mine, Project No. P-950, P-950A and B, Dawson Metallurgical Laboratories, Inc., 27 September, 1983
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5. Economic Geology of the Central City District, Gilpin County, Colorado, by P.K. Sims, A.A. Drake and E.W. Tooker; U.S.G.S. p.p. 359, 1963
6. Evaluation of the Central City Mining District including the Clay County Mine and Mill and Moose Mine by N.L. Bennett, March, 1981

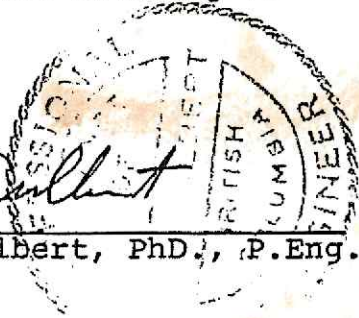
CERTIFICATION

I, Richard R. Culbert, PhD., P.Eng., Consulting Engineer, of the Municipality of West Vancouver, in the Province of British Columbia, do hereby certify as follows:

1. I am a consulting geological engineer.
2. I am a graduate of the University of British Columbia, BaSc. (1966), PhD. (1971).
3. I am a registered Professional Engineer of the Province of British Columbia.
4. I have practiced my profession for seventeen years.
5. I personally supervised evaluation of the Clay County Mine located in Gilpin County, Colorado, at intervals between March 15 and September 20, 1983.
6. I have not received, directly or indirectly, nor do I expect to receive any interest, direct or indirect, in the Clay County Mine or Winstock Mining Corporation.
7. I hereby give my consent to Winstock Mining Corporation to reproduce this report or any part thereof for financing purposes; provided, however, that no portion may be used out of context in such a manner as to convey a meaning which differs from that set out in the whole.

DATED at West Vancouver, British Columbia, this 30th day of July, 1984.

Dick Culbert
Richard R. Culbert, PhD., P.Eng.

A circular professional seal for a Registered Professional Engineer in British Columbia. The seal contains the text "REGISTERED PROFESSIONAL ENGINEER" around the perimeter and "BRITISH COLUMBIA" in the center. The name "Dick Culbert" is written across the seal in cursive.