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PRINTED: 10-21-2009

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: HERMOSA

ALTERNATE NAMES:

SANTA CRUZ COUNTY MILS NUMBER: 17D

LOCATION: TOWNSHIP 23 S RANGE 16 E SECTION 4 QUARTER SE
LATITUDE: N 31DEG 27MIN 21SEC LONGITUDE: W 110DEG 42MIN 32SEC
TOPO MAP NAME: HARSHAW - 7.5 MIN

CURRENT STATUS: UNKNOWN

COMMODITY:

MANGANESE
SILVER
LEAD
ZINC

BIBLIOGRAPHY:

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p99

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G. H. B.
CREATE FILE Hermosa mine
Santa Cruz Co.

PROSPECTUS

OF

The Harshaw Mining Company,

ARIZONA.

WITH

REPORT OF L. GILSON,

AND

SYNOPSIS OF REPORTS OF OTHERS.

TEMPORARY OFFICE,

No. 48 BOREEL BUILDING.

No. 115 BROADWAY, NEW YORK.

MY DEAR SIR:

You desire my estimate of Mr. L. Gilson as an expert and practical worker in Mines.

I have known him for a number of years, and followed with interest his mining career. I have absolute confidence in his integrity, and every reliance in his good judgment and skill in Mines. Were I to require a report on a Western property, I should turn to Mr. Gilson at once, and feel secure in his conclusions.

Sincerely yours,

CLARENCE KING

J. W. GASHWILER, Esq.

FEBRUARY 10, 1879.

SAN FRANCISCO, *April* 30, 1879.

J. W. GASHWILER, Esq.,

Dear Sir:

We take pleasure in certifying that we consider Mr. Livingston Gilson, of this city, a very reliable and experienced mining expert, and one with special qualifications in the direction of Gold Quartz, Milling and Mining. Any report upon Mining properties from Mr. Gilson would command our respect and confidence.

HENRY JANIN,
WM. ASHBURNER,
LOUIS JANIN,
THOMAS BELL,
JAMES D. HAGUE.

The Harshaw Mining Company.

REPORT OF L. GILSON.

SAN FRANCISCO, August 30th, 1879.

E. G. DE CRANO, ESQ., Sec'y Harshaw M'g Co.:

Dear Sir.—Having returned from Arizona where I remained six weeks examining the Harshaw mining property and surroundings; and also in examining the titles and completing the purchase under a certain working bond (see Gillette's report), I beg leave to submit the following report:

The report of Mr. Gillette, on file in your office, gives so correct and detailed a description of the various cuts and shafts, that I refer you to that report, endorsing the same as correct, instead of going over the same ground. Wherever reference is made to cuts and shafts by number, please refer to the diagrams in Mr. Gillette's report. I will make my own report reflect,

mainly, my opinion as to the financial prospects of the property.

An important development has been made in the Harshaw ground since I left, in the discovery of a new vein.

About this and other points of interest which have come up since I left, I am well informed by the official advices on file in your office, and will make use of the information in this report. I was frequently on the ground where this discovery was made, and had strong reasons to expect it. It enhances greatly the value of the mine.

Upon my arrival at the mine, I devoted several days to a thorough examination and sampling of the many cuts and openings on the Hermosa or Harshaw ground.

My instructions from the company were to telegraph my report, as it was desired without loss of time—if it should prove to be favorable—to anticipate payment for the mine before the expiration of the working bond, which course, for many reasons, appeared to be the best, and was adopted. My telegraphic report, which I now confirm and make part of this, was as follows:

TELEGRAPHIC REPORT.

TUCSON, June 24th, 1879.

E. G. DE CRANO, Esq., Sec'y Harshaw M'g Co., San Francisco—Average assay value of ore from five (5) openings on main chimney or ore body, one hundred and thirty-three dollars (\$133) silver, and some gold

per ton. Average width of ore, seven (7) feet. Length of ore body, five hundred and seventy (570) feet. Formation very favorable for permanency in depth. Ore body strong in bottom of shaft and retaining its quality. Footwall, red quartzite. Hanging wall, porphyry. Ore should mill free to ninety (90) per cent. of its assay value. This would give milling results on above assays of over one hundred dollars (\$100) per ton. Cut down this result to seventy dollars (\$70) per ton for safety, and for actual results on large scale and in large quantities. Unusual facilities for cheap mining, milling, and hauling. Liberal estimates of all expenses, including dead work, would be twenty dollars (\$20) per ton. Ore soft. Twenty (20) stamp mill with corresponding pan capacity, would crush two thousand (2,000) tons monthly, yielding gross one hundred and forty thousand dollars (\$140,000); less discount on bullion, say one hundred and twenty thousand dollars (\$120,000); expenses, forty thousand dollars (\$40,000), and net monthly profit eighty thousand dollars (\$80,000). Allowing ten (10) per cent. off for office and contingent expenses, I estimate monthly net profit at seventy-two thousand dollars (\$72,000). Four months energetic working will place mine in condition to produce above results. By end of that time mill would be ready to run, if commenced within one month, which I advise.

[Signed]

L. GILSON.

I examined the mine twice since the date of the above, employing the interval at Tucson in settling titles and payments for the property. For my own

notes of the progressive and rapid development, made since above report principally, and from information received at the office since my departure, I can now make an estimate of ore, which, if not absolutely in sight, is sufficiently developed to warrant my presuming that its continuity from No. 1 to No. 5 cuts, covering a total length of 595 feet, is unbroken.

This is on the front ledge only. The vein at the narrowest point opened, viz.: in No. 5, is five feet wide, and at its widest point in No. 4 it is 16 feet wide; therefore I am perfectly safe in placing the average width of ore at seven (7) feet.

Shafts No. 3, No. 4, and No. 5, are now down respectively, 72 feet, 40 feet and 60 feet. With these shafts in ore, and as the vein has every evidence of permanency, I feel warranted in basing my estimate on a depth of at least 65 feet, especially as the surface of the ground at shafts Nos. 4 and 5 is 28 feet higher than at No. 3.

Out of an abundance of caution, I will cut the length of ore body down from 595 feet to 500 feet, and take 65 feet as the depth, and seven (7) feet as the width. This will produce in ore, $500 \times 65 \times 7 = 227,500$ cubic feet of ore, which, at 15 cubic feet per ton, will give $227,500 \div 15 = 15,166$ tons of ore in sight.

The average assay value of samples taken by Mr. Gillette and myself (these being all large and taken as the work progressed) was \$130 per ton. With this assay value from our samples, I am safe in estimating the assay value of the ore, as it would be taken out in large quantities in regular work and to supply a large

mill, at \$100 per ton, making a gross valuation as follows:

Tons of ore, 15,166: at \$100.....	\$1,516,600
Less loss in milling, 10 per cent.....	\$151,660
Less discount on bullion, 15 per cent.....	204,741
Less cost of mining, milling, and hauling 15,166 tons, at \$20 per ton.....	303,330
	659,721

Leaving a *net profit* from the front ledge to a depth of only 65 feet of..... \$856,879

This estimate, large as it may seem for so young a mine, is in my judgment fully warranted by the developments and assays made. It must be increased by the ore to come from the middle and back ledges.

The tunnels now being driven will intersect the veins at a vertical depth of 179 feet. The dip of the ledge gives nearly three feet of vein to two feet of vertical depth. The tunnel, therefore, at point of intersection will cut the vein at a depth of about 250 feet on the slope.

Should the vein hold its present strength and quality to this depth, and there is no good reason to doubt it, but every reason from present openings to assume that it will, then the *ore yield* and *net profits* will be more than trebled.

MIDDLE LEDGE.

In addition to the above, another ledge has been discovered and prospected at three points, showing a large ore vein in place. No. 6 cut shows the vein 20 feet wide. The average assay value of this entire width was \$54 per ton. No. 7 cut shows six feet of

vein—all ore—and the hanging wall not yet reached. It is reasonable to assume that as great a width of ore will be found here as at No. 6, viz.: 20 feet.

The distance between Nos. 6 and 7 is 150 feet on the line of vein, which is traceable the entire distance by the float and outcrop.

No definite estimate can be made of the amount and value of the ore in this ledge, but enough is shown to make it fair to presume that a very large amount of ore may be anticipated which can be safely set down as worth \$50 to \$60 per ton. This grade of ore will leave a net profit of from \$20 to \$30 per ton, as it can be mined, milled and hauled for \$15 per ton. Therefore this ledge should enter largely into any calculation of the future profits of the mine.

BACK VEIN.

This name is now given to the *new vein* lately discovered. About this vein your Superintendent, Mr. Gillette, writes as follows to this office :

“ You have been already advised by telegraph of
“ the discovery of a new ore vein on the Harshaw
“ mining claim. This vein had no distinct outcrop, the
“ surface being entirely covered with soil and boulders,
“ and was discovered at different points by tracing the
“ *float ore* up the hill to its source. Having thus estab-
“ lished the general direction of the upper limit of the
“ line of float, the vein was discovered by cross-cutting
“ north and south, and is now opened by five (5) cuts, all
“ of which show the vein in place and carry pay ore.

" This discovery adds largely to the value of this property. This vein and the front vein are now traceable nearly into the Scotia ground, and I would advise driving a tunnel on the Scotia parallel with the Protection tunnel. This would thoroughly prospect these veins in depth on this claim, which I consider prospectively very valuable."

This sustains the opinion I formed after a thorough examination of the ground and formation, namely: that the entire mountain is ribbed with strong veins of ore, the full value of which explorations alone can determine, and these are being pushed forward with all possible speed. This new vein not only adds to the amount of ore and profit in sight, but also increases the productive capacity of the mine. I am confirmed in my opinion by the discovery of this new vein, that as the tunnel advances from either side of the mountain it will discover and cut other new and valuable veins that will add still more to the value of the property and increase the amount of ore reserves.

OTHER MINES.

I have made my report almost without reference to the other mines bought with the Hermosa, this being the all-important one.

The other properties bought at the same time, and owned by the same parties, are the "Fagan," "South King," "Scotia," and "Salvador."

The first two are without ascertained value as yet; but the Salvador, which is west of the Hermosa and

covers the extension of the same formation and vein, has considerable value. It has three cuts in *ore* with assay values ranging as follows for large average samples: \$134, \$74, \$39, \$67 and \$73 per ton (for further details see Gillette's report and diagrams).

The "Scotia Mine," which is the eastern extension of the Hermosa, has as yet no ore body exposed; but as it is adjacent to the richest end of the Hermosa it is fair to assume that when more explored it will develop pay ore. It is promising ground, worthy of being vigorously prospected, and of value for the chances of finding ore therein, as is fully explained in Mr. Gillette's report. It is difficult to discover the veins on this line of mining ground, as the outcrops are not bold, and the veins are covered with soil, as was the case with the vein last discovered.

MONTHLY PROFIT.

The amount of montly profit will depend upon the reducing capacity of the mill to be erected. In my telegraphic report I estimated the monthly profit at \$72,000, on a basis of 2,000 tons monthly production. But the developments and openings made upon the mine, and to be made, will be sufficient to insure a steady production of 100 tons daily by the time a mill can be built, say in four months' time.

The average net profit upon which it is safe to estimate would be \$40 per ton after deducting all expenses for mining, hauling and milling, with all other contingent expenses. This profit, on the basis of 100 tons of ore daily, allowing 25 working days in a month,

would give a monthly net profit of one hundred thousand dollars (\$100,000).

It was also a part of my mission to examine into titles. The titles to all of the mines are *perfect*.

In conclusion, I would say that it is rarely the case that a property has improved so rapidly under development, or shows such an abundance of ore at the immediate surface. The facilities for cheap mining and milling are all that can be desired. Wood is cheap and to be had in abundance, and the mill can be erected in the immediate vicinity of the mines. The present developed value of the property is great, and the promise for the future adds largely to any estimate based on the developments.

Yours, very truly,

L. GILSON.

ESTIMATES OF J. W. GASHWILER.

The following estimates were made by me during my examination of the Harshaw mining property at a date some five weeks later than the examination of Mr. Janin, and at a much longer period of time after the examination of Mr. Gilson, and I am therefore able to include all subsequent developments.

There is now in sight over 18,000 tons of ore in the three veins of the Hermosa claim. This is the best developed of all the ten claims of the Harshaw mining property. Of the remaining nine claims there is a strong development of ore in the Scotia and in the Salvador, and a considerable quantity of good milling ore will undoubtedly be produced therefrom. The other claims are too little developed to form any estimate of their value.

Eight large samples were taken by myself from eight different points along the front vein and at the various openings, and these were intended to represent a fair average of all the ore exposed. These samples were carried to San Francisco and were assayed at the establishment of Mr. Thos. Price, with the following result :

No. 1.....	\$541.18		No. 5.....	\$265.35
2.....	118.95		6.....	607.18
3.....	145.58		7.....	62.32
4.....	238.98		8.....	74.47

Of the above assays, No. 1 and No. 6 represent fairly the value of the ore at the points taken, and where the vein was exposed from six feet to ten feet in width ; but to obtain a conservative average of all the ore, I omit these from my calculation. The average of the remaining six assays is somewhat more than \$150 per ton.

As an additional assurance of the value of the ore in this front vein, I obtained from the assay office of Professor Rickard, at Tucson, the record of all the assays made for the agents of the company prior to the purchase of the property, and on the strength of which this purchase was finally consummated. These assays, omitting all samples of selected ore, and

taking only those which represented large lcts. were 46 in number, and the general average was \$132 per ton of ore.

In my estimates of the amount of ore now available for milling—say 18,000 tons—I allow 3,000 tons to be contained in the middle and back vein, and 15,000 tons to be contained in the development of the front vein. These 15,000 tons have an average assay value of \$150 per ton, or a gross value of \$2,250,000.

The assays of the ore in the middle and back veins made by various parties and now on record, would give an average per ton of \$100, or a gross value for the 3,000 tons of \$300,000. Therefore the gross assay value of all the ore now available is \$2,550,000.

The net yield of these 18,000 tons of ore in a well appointed mill ought to reach a high percentage, as it can be very easily reduced. But, to cover contingencies, I will follow the estimates of Mr. Janin, and allow a reduction of 30 per cent as loss in milling and discount on bullion. I will also allow a cost of \$15 per ton for mining and milling.

On this basis the 15,000 tons of ore would give a *net profit* of \$90 per ton, or.. \$1,350,000
And the 3,000 tons of ore will give a *net profit* of \$55 per ton, or..... 165,000

Making a total *net profit*..... \$1,515,000

This represents the value of the ore now available. The promise for the future is most brilliant, and the reserve will be rapidly augmented.

NEW YORK, Nov. 6, 1879.

J. W. GASHWILER.

SYNOPSIS OF THE VARIOUS REPORTS.

[NOTE.—The property of the HARSHAW MINING COMPANY has been examined by a great many "Experts," and other mining men, and without a dissenting opinion as to its great present, and immense prospective value. The mines are open to the inspection of all subscribers, or their agents, upon application. In addition to the report of L. Gilson and of J. W. Gashwiler, the printed reports of D. B. Gillette, Jr., and of the mining expert, Louis Janin, can be seen at the office of J. W. Gashwiler, together with a map of the property.]

The property consists of ten (10) mining locations, of which three (3) have already been developed to a considerable extent, and show up very large bodies of ore of chloride of silver.

The "Hermosa" claim alone has fully 18,000 tons of ore now available for milling, of a gross assay value of \$2,550,000. Allowing for all contingencies this body of ore will alone yield a net profit of \$1,515,000.

The large bodies of ore in the Scotia and the Salvator claims will add greatly to the above profit.

All the other claims carry ore of undetermined value.

As the shafts and cuts in the Hermosa claim are all in splendid ore, and the veins are strong at every point, it is evident that the reserves may soon augment to double or treble the amount now available.

The situation of the mines is most admirable. The climate is healthy, and there is an abundance of wood and water. The proposed mill will be within three-quarters of a mile of the mines, and of easy access.

The Southern Pacific Railroad will soon be within 45 miles of the mines. The cost of freighting on supplies will be comparatively small.

The reducing capacity of the proposed mill will be fully 2,000 tons per month. The plans are already prepared, and the mill is so arranged that

additions can be made thereto as fast as the developments of the property will warrant.

The total amount of working capital required for cost of mill and out-buildings, etc., is estimated at \$100,000.

To cover this cost, and to provide for other expenses, the Company has in its treasury, from proceeds of the first shares sold, the sum of \$150,000.

The high grade and the large quantity of ore now "in sight," as well as the surplus that will remain in the treasury after erection of the mill, preclude the idea of any further call for working capital.

Dividends may be confidently anticipated to commence with the end of the first monthly run of the mill—say 6 to 7 months from date.

The ore now available for milling can produce a net profit of over \$100,000 per month.

At no time, for years to come, are the earnings likely to fall below \$75,000 per month.

Before the mill is ready to start, the reserves will be greatly increased.

Title pronounced perfect by competent Attorneys.

The following telegram has just been received from Judge S. Heydenfeldt concerning the title of the Harshaw Mining Company:

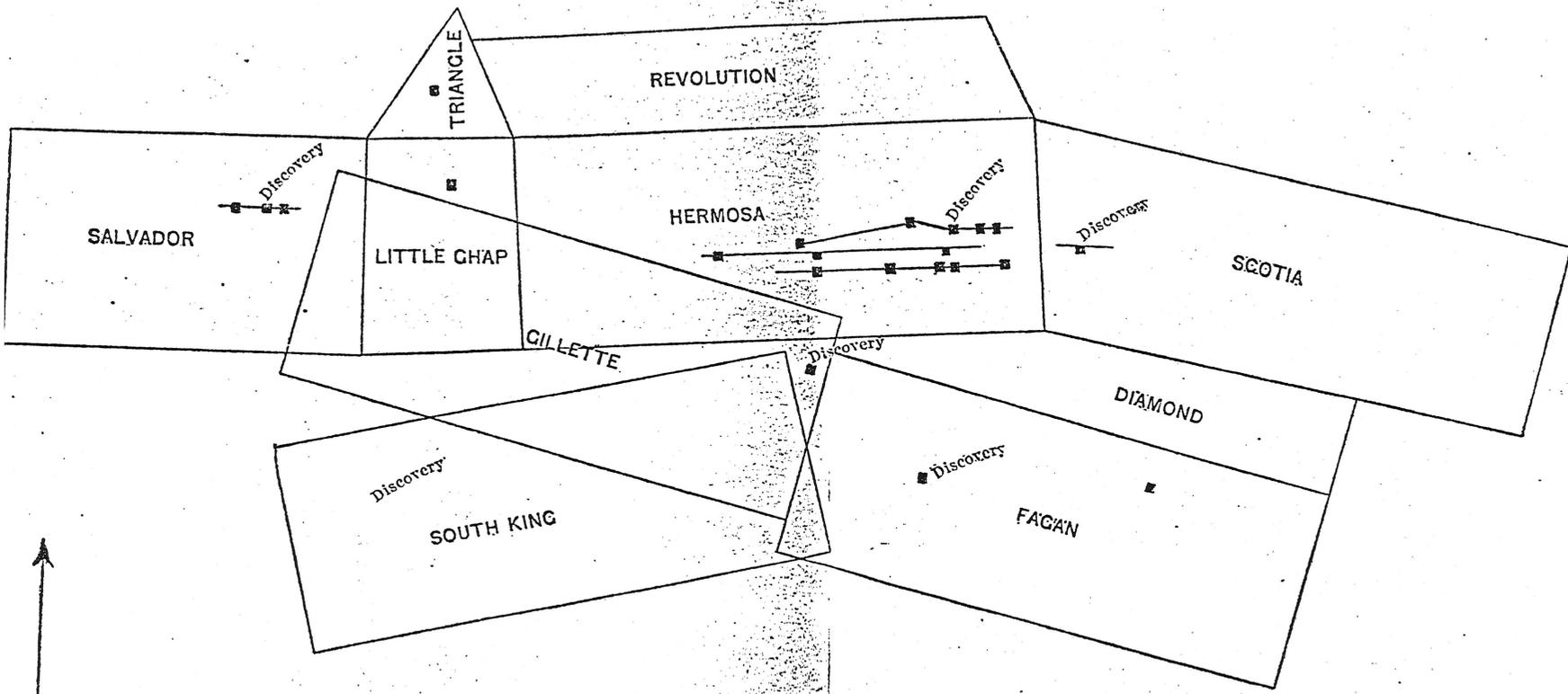
SAN FRANCISCO, CAL., Nov. 25, 1879.

I have carefully examined the Abstracts of title prepared from the Records of Pima County, Arizona, by the law firm of Farley and Pomroy, of the following mines, to wit: The Hermosa, Salvador, South King, Fagan, Scotia, Triangle, Diamond, Gillette, Millsite mines, Bird and Kohinoor and Hermosa mine Millsite, and report by the said Abstracts the title to all of said mines, and the title to an undivided half of the Revolution mine, and to all of the Hermosa Millsite, is vested in the Harshaw Mining Company, a corporation of the State of California; all of said properties are situated in the Harshaw Mining District, Pima County, Arizona. The Abstracts are brought down to the 20th November, 1879. No incumbrances.

(Signed),

S. HEYDENFELDT.

HARSHAW MINING CLAIMS.



SCALE—500 Feet to 1 Inch.