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Item 1

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COPY

Wapiti, Colorado, Aug. 4th, 1894.

Messrs. Kellar & Foster,
Consulting Engineers, Anaconda Mining Co.,
Mills Bldg., New York City.

Gentlemen:

After a month spent on the ground of THE ISLAND MOUNTAIN MINING & MILLING COMPANY, situated in Elko County, Nevada, per telegraphic instructions received from you, we now submit the following as a result of our investigations:

PROPERTY:

The alluvions owned by The Island Mountain Mining & Milling Co., are situated in the Island Mountain Mining District, Elko Co., Nevada, 75 miles North of Elko, the nearest railroad point on the Southern Pacific Railroad system, and about 15 miles from the southern boundary line of Idaho, reached by a fairly good wagon road, being at an elevation (determined by our aneroid) of 6,500 feet, consisting of 5,000 acres. As shown by the accompanying blue print to cover about 6-1/2 miles along the sinuous meandering of Penrod Creek, a tributary of the Owyhee River, and a mile and a half along Hope Gulch, embracing also the high shallow bars and the lateral ravines on the east and west side of the main reaches of Penrod Creek. The property having a general northeasterly and southwesterly direction. The wagon road from Elko to Mound City crosses the lower end of the property, six miles distant from the mouth of Hope Gulch opposite to which is located the company's office. On making the drive from Elko to the mine, one is struck with the entire absence of all kinds of timber or vegetation excepting sage brush, soap weed, and

greese-wood. As you will notice yourselves from the photographs taken on the ground.

On our arrival at the property, we saw that the extremely shallow ground consisting of over 4,500 acres was of but little value to the Company by itself, unless some definite knowledge could be obtained of the value of the deposit in Penrod Creek. We therefore deemed it expedient to make the attempt of sinking shafts to bottom the bed of Penrod in order to ascertain the value contained therein, bedrock never having been reached at any point in the main creek much below the mouth of Hope Gulch. Finding neither tools or men to do such work, we at once sent to Elko for the same and built a China pump with such material as we had at hand, for handling the water which we knew we would be likely to encounter, the result being that by working day and night we succeeded in reaching bedrock with four shafts (a fifth having to be abandoned). Our work during the first week being materially retarded by very cold and disagreeable weather, which followed by a warmer spell enabled us to prosecute our inspection with all possible vigor and diligence and complete the same on June 28th, when we found upon our arrival in Elko that Mr. Debs had tied up the Southern Pacific Railroad System for nearly three weeks.

OCCURRENCE OF GOLD IN THE ALLUVIONS.

From the geological structure (Cambrian) consisting of black slate and a capping of lime, black iron, quartzite and porphyry dykes the gold quartz ledges shown on the blue print at the head of Hope Gulch, crossing the country at #45 Deg. E. paralleling the main area of the property, have undoubtedly been comminuted and broken down by the mechanical agency of water or ice, freeing and carrying the values contained

therein down the line of drainage to the shallow bars, small lateral ravines into the main reaches of Hope Gulch, Patterson Gulch, Slate and Penrod Creeks, covering the gentle slopes with a thin layer of drift wash, varying from 12 inches to 6 feet, and a heavier deposit at the heads of Scanlon, Hope and Patterson Gulches, with 11 feet of wash as determined by the four shafts sunk in the main creek Penrod. The gold contained in the vein matter of the lodes being almost identical in fineness with the gold in the alluvial drift on the shallow bars, ravines and in the main gulch, evidencing the source from which it has been derived.

HISTORY OF THE PROPERTY.

In 1874, Mr. E. Penrod, one of the original locators of the celebrated Comstock Lode, discovered and by location took up the property, and in the fall of 1874 the Owyee Company of Minneapolis, after sinking shafts and testing ground, constructed the present small ditch system and a reservoir hauled in sheet iron, pipe stakes, punch bars, two small giants, and constructed 400 feet of 15 inch and 11 inch pipe, and commenced hydraulicking near the mouth of Hope Gulch, and while working under the most favorable conditions that could be at any time found anywhere on the property, viz.: 250 feet hydrostatic pressure and four inches grade with 12 feet sluice box, only gleamed $6,000. in gold as the result of their best month's work. Being confident from the prospecting that they had done would realize $50,000 per month instead of the $6,000. obtained, they stopped operations and sold out their plant and interest to Mr. E. Penrod who has continued to work in a desultory manner the property ever since, up to its acquisition in 1892 by the Island Mountain Mining & Milling Company, and as he informed me himself, his best seasons out-

put on the main pay channel, In Hope Gulch and China Town flats was $10,000. Chinamen have also rocked, drifted and ground sluiced on a small scale in Scanlon, Hope Patterson, Sing Sing and Crevice Gulches under lease for many years, from Mr. Penrod.

As indicated on the map, French's claim, consisting of 40 acres on the main channel of Hope Gulch, has been continuously worked for twenty years by French and his partner Green in the most desultory manner, having only a limited water supply, with the result that for about an area of 6 acres by 9 feet deep they have cleaned up as they are prepared to show by mint memorandum and certificates in their possession, the sum of $30,000., the pay streak being confined in a narrow channel as shown on photograph #2. In 1892 French and N. Massenberg took out $1,015. in 71 days on the main channel 45 feet wide, 150 feet long and 7 feet deep; in 1878, Prof. Price of San Francisco, is said to have examined the property for purchasers, being satisfied with the values contained, but could not endorse the proposition on account of entire lack of grade and requisite dumpage, the state of the arts at that time not being up to their present standard and nothing being known of the possibilities of working by present known methods of hydraulic elevators, dredges, steam shovels and amalgamators with which to successfully combat with such unfavorable conditions. In 1878 or 1879, Mr. E. Penrod made a crude elevator on the mine that he might the better handle his tailings at the mouth of Hope Gulch. But for lack of grade and dumpage area requisite for the disposition of tailings, there is not the slightest doubt from the values contained, but the main channel in Penrod Creek would have been worked out years ago as it has been in Hope Gulch from the mouth up to French's claim where the grade was heavy.

WATER SUPPLY.

Owing to the topographical contour of the country to the north, east and west of the property the drainage catchment area is exceedingly limited, and not to exceed four square miles, nor do any of the creeks tributary to the property tap any permanent stream, the water supply being entirely dependent upon the winter snows and rain precipitation, which for four years in the past twenty has absolutely failed. In the early spring when the snows are melting there is from 10,000 to 15,000 inches of water coursing down Penrod Creek and covering the bottoms on either side, this gradually dwindling down to 300 miners inches in 2-1/2 months; at that time of the completion of our work amounting to about 800 inches; thus making the construction of storage reservoirs necessary for permanent water supply, the sites for which, fortunately, nature has admirably designed and provided.

As shown on the blue print, at the head of Slate Creek, about 2-1/2 miles Northwest from the office, there is a large depression known as "Sunflower Flats", which has been taken up by the company for a reservoir site. By the construction of a dam on the southwestern edge of the same, the permanent water supply can be very considerably augumented as a dam 10 feet high would impound 43.67 acres or 9,512,500 cu. ft. of water; raised to 20 feet it would impound an area of 91.42 acres or 38,937,500 cubic feet of water, and a dam 30 feet high by 360 long would require about 35,550 cubic yards of filling and would impound 126 acres, or 86,287,500 cubic feet of water. Owing to a depression on the northwest corner of the flat if raised on this height a second dam would require to be built 17 feet high in the centre and about 1,000 feet

long. Auxiliary dams could also be constructed at the head of Penrod Creek to store the surplus water of the early springs, with sufficient capacity to make an available supply for the most vigorous operations, one being indicated on the blue print and two others equally good sites being further up the gulch.

We made a rough reconnoisance with a viewof examining the possibility of bringing in the Bruno Rover, which is a permanent water supply of from 30,000 miners inches to about 5,000 in the dry season, but found it to be too low to be diverted, and even though it were practicable the cost of in stallation would be enormous from the rough nature of the ground.

While making such examination on June 4th, we discovered about 500 inches of water coursing down the water shed tributary to the Bruno, from the divide at head waters of Penrod, and as this water could easuly be turned into Penrod Creek by the constru ction of a rude dam and a few hundred feet of ditch, we staked and appropriated it in the name of the Island Mining & Milling Companym and it will form an admirable adjunct to the present water system.

As already stated in 1874 the Owyhee Company surveyed and constructed a ditch having its initial point 500 yards above Martin's Ranch, turning it into the natural dry channel of Slate Creek; the alignment of the ditch following the contour of the country on a grade of 7 feet to the mile, crossing Hope Gulch at the head of French's claim. This ditch has recently been extended across Crevice Gulch into Sing Sing; it is of a small capacity and is badly filled up with dirt from the cuttings and erosions in Slate Creek, which should have been eliminated by properly constructed sand gates. The

entire system is of little service at present, as it is too low to work the ground advantageously. As indicated on the blue print, a preliminary line was run from the end of the present ditch at the head of Slate Creek on the established grade, with a view to making connection with the proposed reservoir site in Sunflower Flats, but it was found that it was be 50 feet below the outlet gate of the reservoir if constructed. Another survey was therefore made from the proposed reservoir site on Penrod Creek about two miles above Martin's Ranch at an elevation of 6,750 feet, which as shown on the blue print would fill the proposed reservoir on Sunflower Flats, being carried on a grade of 8 feet per mile to the Star Lode at the head of Scanlon Gulch, from which point it could be made to cover the entire area of the property, either being carried over the Divide into Poorman's Gulch or to the shallow bars and main bed of Penrod Creek proper, giving an attainable hydrostic pressure opposite the office at the mouth of Hope Gulch of 450 feet, with which the greater portion of the entire area could be successfully operated.

The cost of the construction of the proposed new ditch has been estimated at $1,000 per mile, but from the close proximity of bedrock at all points on Penrod and Big Bend Creeks and below the Sunflower Flats reservoir and the exceedingly shallow deposit of wash above and below Hope Gulch, we are of the opinion that it will cost at least double this amount, as banks in many instances will require to be built on both the upper and lower sides; the entire alignment, however, with these exceptions, being free from all other obstacles.

TITLE.

While there is an acreage of 4,934.89 acres embraced in the property, patents have not yet been issued on the same, but the Receiver's receipt has been taken on U. S. Surveys #37, 38 and 39, making an acreage of about 480 acresp but the rest of the ground requiring at some future time to be patented or the necessary legal assessment having to be annually performed.

CLIMATE.

The winters are exceptionally cold and severe with very heavy snows; the thermometer getting down to 30 and 40 degrees below zero, and the weather remaining cold until late in the spring. In an average year preliminary work of fitting up can be started in April the average working season as near aswe could ascertain being about 150 days, though night work cannot be carried on for much more than one-half of this period, owing to the coolness of the nights.

TIMBER AND SUPPLIES.

As already stated, we were struck with the entire absence of timber, nothing being visible for miles except willows fringing the various streams, sage brush, greese-wood soap weed, although timber is said to abound in the mountain skirting the Bruno River, some 16 miles distant from the property. Whenever lumber is required it is shipped by rail from Truckee to Elko, from which point it is freighted at a cost of 1-1/2 to 2 cents per pound, making lumber for construction purposes cost from $45. to $50. per 1,000 feet B.M. laid down at Island Mountain. About 8 miles from the property a bastard growth

of mahogany is obtainable for fuel purposes at a cost of about $5. per cord laid down on the grounds; poles and logs for mining timbers, construction of reservoirs, etc., costing about the same.

All provisions, ammunitions, tools, etc., have to be purchased at Elko where there is practically no competition but a fair market, and have to be freighted at a cost of 1-1/2 to 2 cents per pound.

TESTS OF GROUND.

As shown on the blue print, about 4,500 acres of the area embraced in the property is exceedingly shallow, varying from eight to ten inches on the high bar lying between Slate and Penrod Creeks; 18 inches to 2 feet on the following:

The bars lying between Hope Gulch, Sing Sing, Hardscrabble, Dutch Flat, Gold Hill and Knob Hill.

On either side of Dora Gulch, Willow Creek, North Allen Gulch, Poorman's Gulch and on the bars west of the falls.

Prospects taken varying from a trace on some of the bars near the foothills and bars between Slate and Penrod, to as high as $2 and $3 per cubic yard in Crevice Gulch and on the knolls around old workings at Dutch Flat, Knob Hill, Sing Sing and Gold Hill, and the little narrow draws at Willow Creek above Dora Creek and Willow Creek below North Allen Gulch.

Admirable facilities for testing shallow ground is afforded by such old workings. Also in Hope Gulch, which is worked from Hardscrabble up to French's claim, considerable rocking also having been done on the ground in Patterson Gulch, Scanlon, the mouth of Hope above French's, Chinatown Flats, and several small ravines running into Hope Gulch on the south.

Taking an average of the entire area of shallow ground we consider 60¢ would be a fair estimate, as for a larger portion of the area it would take from two to three superficial yards of bedrock to make one cubic yard of gravel. In Penrod Creek proper where we consider the bulk of the value to lay, four shafts were sunk.

#1 shaft, as shown on blue print on the east side of Slate Creek opposite the office at the mouth of Hope Gulch; 14 feet deep; the cubical contents 14-1/2 cubic yards being washed into sluice boxes yielded $5.60 in gold, or only 40¢ to the yard, evidently being to the east of the old channel of the gulch.

#2 shaft, sunk on the west side of Slate Creek having to be abandoned owing to no timber being at hand with which to hold the loose ground; pannings taken from same showing an average of $1 per yard in the lower strata of gravel.

#3 shaft, as shown on blue print about 300 feet west from #1 shaft 18 feet by 8 feet by 5 feet, or 26.66 cubic yards run through sluice boxes yielded $16.42 in gold, or 62¢ per cubic yard. In this clean up two nuggets valued at about $6 were found.

#4 shaft, sunk in Penrod Creek below confluence of Slate and Penrod opposite Island Mountaun, 11-8-5-1/2 feet, or 17.93 cubic yards yielded $10.82, or 60¢ per cubic yard.

#5 shaft, sunk in Penrod Creek below Penrod Falls and bridge, 11-8-5 1/2 feet, or 17.93 cubic yards yielded $10.62 or an average of 59¢ per cubic yard.

In all of these shafts heavy water was encountered which could be barely handled by steady running of the China pump. The five shafts all showed about 6-1/2 feet of heavy loam and clay containing no values. The gravel from there to bedrock being an angular quartzite and black slate free from large boulders. The gold in all our samples was extracted by being

fused and each button weighed separately, then run together in a small bar so that an average firmness of the entire area sampled might be obtained; the result being as shown by memorandum of gold bullion enclosed, fineness of gold 939, fineness of silver 58.

Making the value of bullion per ounce $19.30 upon which basis the detail value of samples were computed.

We are able to agree with the owners estimate of value per cubic yard, but are unable to agree the total yardage claimed and per se the aggregate estimated value of property.

CHARACTER OF GOLD.

The gold obtained in all our samples was of a coarse nature, easily saved, and as shown by mint memorandum of gold bullion is of exceptionally good quality.

METHODS OF WORKING.

Penrod Creek, so far as we are able to determine with the means at our command, has only a grade of about 30 to 35 feet to the mile from the mouth of Hope Gulch down to the Owyhee Canon, a distance of about ten miles, at which there is a heavy fall for many miles below. It has been proven conclusively in the debris fight in California that where the grade is less than 42 feet to the mile, coarse detritus will not be carried offeven when subjected to freshets. We have seen, however, sluices working successfully in California where the grade was only one inch per box of 12 feet, the increased volume of water used compensating for lack of fall, but at the exit of the sluice there were deep ravines into which the tailings were dumped and disposed of for all time. Were it possible to carry the tailings in a sluice to a more precipitous grade of the Owyhee Canon they could be disposed of at once and for all time, but any such method of dealing with

the proposition is entirely out of the question, and would doubtless have been done years ago had it been feasible.

Owing to the entire lack of grade and dumpage below the main reaches of Penrod Creek it can only be handled by the adoption of some mechanical device; the three best known methods being:

FIRST: The hydraulic elevator, where all tailings are driven by the impact of water under heavy pressure through an upraise pipe on an inclined plane into an outer flume, in some instances of 60 and 80 feet on the vertical, and an articifial storage dump made. About one cubic yard of gravel, according to the height elevated, being raised per miner's inch of water. The only disadvantage being the amount of water required to work successfully.

SECOND: The use of steam shovel with an amalgamator and chain elevator with which to dispose of the tailings on an artificial dump. With such a plant 1,500 to 2,000 cubic yards per day of 24 hours could be handled, accordingto the capacity of the machine. The disadvantage of this plan being the heavy top clay which would be likely to clog the screens and grizzlies, and sudden freshets caused by the freeing of a large volume of water which might sweep down and bury the plant.

THIRD: A floating dredge which would cut a channel to bedrock, elevating the gravel into sluices suspended on cables or trestles, by which means sluices could be carried as with a bedrock flume, an artificial grade made and the tailings dumped behind, refilling the worked out area.

One or other of these methods will have to be resorted to by any company attempting to work the main bed of the creek. Had it not been for the cost and delay of getting

lumber on the ground we should have liked to have constructed a boom-dam with an automatic gate, as we were of the opinion that possibly with the enormous volume of water discharged by a 9 - 12 feet gate that bedrock could be reached, and possibly the tailings swept to such a distance below as not to interfere with the workings above, the gold values being caught in a wide sluice constructed of rock, the cost of such method being nominal.

As there is 6-1/2 feet of heavy top loam and clay containing but little value, we are of the opinion that a boom-dam could be used to great advantage in stripping off this waste material to the auriferous bearing gravel below, after which one or the other of the mechanical devices named would have to be resorted to handle the gravel and make an artificial dump. One thing is certain, that the main creek will have to be worked out first, and then such grounds as will pay on the high bars and lateral ravines can be piped to the worked out area. The engineer in charge being able to determine the better plan to proceed after careful survey and detailed estimate of cost had been made.

A plant necessary to handle 2,000 cubic yards per day can, we are satisfied, be put on the ground at a cost not to exceed $100,000, including reservoirs, proposed new ditch, boom-dam and other hydraulic elevator, steam shovel amalgamator or floating dredge with sluices whichever may finally be found best to be adopted.

ESTIMATE OF VALUES.

From prospects taken on the shallow ground many of which showed nothing, while the general average would show 60¢ per cubic yard, an enormous percentage of the same would cost that amount in our opinion, to work and clean the ground; the

bedrock while not uniformly bad, being in many instances very rough and hard to clean. We therefore adhere to our first impression of the shallow ground except in the lateral ravines is of no great value to the property except as a necessary adjunct to the whole. We estimate the yardage in the main reach of Penrod Creek from mouth of Hope Gulch to Penrod Falls on main channel, 6 miles by 150 feet by 11 feet, or 110 acres, 2,000,000 cubic yards at 60¢ per yard, per cubical contents of shafts washed and pannings taken during progress of sinking, $1,200,000. The yardage in the bottom of Penrod Falls from mouth of Hope Gulch to Penrod Falls, including the mouths of lateral gulches and up the edge of boundary slopes being estimated at 6 miles by 300 feet by 6 feet, 2,000,000 cubic yards at 60¢ per yard, $1,200,000. 1,500,000 cubic yards containing in Scanlon Crevice, Sing Sing, Mrs. Johnson's Crevice, Anti-Comstock, Willow Creek and other shallow ground, which we believe can be made to pay under the proposed water system at a $1 per yard, $1,500,000, making a total of

4,000,000 cu. yds. at 60¢		$2,400,000.
1,500,000 " "	$1.00	1,500,000
		3,900,000.

Which amount we have no hesitancy in saying is in the property and can be got out, though we should not care to place a mugh higher valuation on it without further exploitation.

SEASON'S OUTPUT.

While t he proposition is by no means an easy one to handle and everything will depend upon the executive ability, practical experience and resource of the management, we con-

sider that 2000 cu. yds. of gravel can be handled per day at a cost not exceeding 50% of the gross output, as Chinamen can be employed at from $1.50 to $2.00, a few skilled laborers at $3.00 per day only being required to work by any of the above-named mechanical methods; 2,000 yards per day at 60¢ for the season would make a gross yield of $180,000 per season. If not overburdened with a heavy capitalization, in the hands of a practical and economical manager, we are satisfied the property can be made to pay from 40% to 50% of the gold yield.

In conclusion, we wish to be as fair as possible to all concerned, and are prepared at any time to stand by this statement.

Should any further information be desired, we will cheerfully furnish the same at any time we may be called upon to do so.

Yours faithfully,

(Signed) BEN STANLEY REVETT.