5110 0002

(343)

Item 2

Denver, Colorado. Oct. 1, 1910.

The Nevada United Mines Co.,

Denver, Colorado.

Dear Sirs:--

In compliance with your report, I have examined your mining property at Ward, Nev., spending ten days actual time on the ground and taking 220 large samples.

The object of this examination, as submitted to me, was to give you an unbiased opinion as to the tonnage and grade of ore already developed, the additional reserves to be expected from further exploration and any advice as to present or future development work.

The two maps herein will I trust aid to a general understanding of the situation.

PROPERTY AND LOCATION.

The main property embraces some 40 odd mining claims and mill sites mostly patented and covering not less than 600 acres, together with adjoining patented land of about 500 acres, taking in timber and old smelter site, and an additional tract of 795 acres with water rights on Willow Creek, 3 miles to the south of the mining area, a total of nearly 1900 acres. The mining property is at Ward, 15 miles south of Ely.

DEVELOPMENT.

Very extensive development work has been done on the property by yourselves and predecessors, the extent of which can be partly realized from Fig. 1, a plan map on scale of 200 feet to the inch.

The lowest working is the old Paymaster Tunnel, 3200 feet in length and at say 8000 feet sea elevation, now inaccessible owing to caving.

400 feet higher than this is the 280 ft. tunnel, so called from its distance below collar of Good Luck Shaft.

This is the present main working tunnel of the mine, and with its various branches covers over 3500 feet in length and develops four known ore bodies.

The old 62 and 162 ft. tunnels were also very extensive, but are now practically inaccessible.

The Definace lower tunnel, 995 feet above the lower Paymaster, is 1045 feet in length and is now being driven for a supposed ore body developed at 450 feet vertically above it, so that a vertical range of nearly 1500 feet is covered by the mine workings, the steep character of the ground permitting most of the work to be carried on through tunnels.

The detailed development on the 75, 130, 180, 230 and 280 ft. levels is shown on Figs. 5 to 9 and a composite plan of them all on Fig. 3.

GEOLOGY.

The geological conditions are rather complex. The general rock of the country is limestone, having a north and south strike and a flat dip to the east of between 20 and 30 degrees.

The uplift of this limestone into its present mountain range position was accompanied by extensive faulting and the intrusion of porphyry (andesite) sometimes in the form of wide and clearly defined dikes but more frequently as great underlying masses which did not always break through the limestone but merely lifted it up in dome shape.

The great fault of the country is the one I have marked "Main Fault" on Fig. 1.

It has a variable dip of 35 to 45 degrees to the east and apparently resulted in a downthrow of the country on the east such that on the 280 level a porphyry hanging wall rock is brought

into contact with a lime foot wall.

This Main Fault terminates the Clay Chamber and Lyons ore bodies, but has nothing to do with the Good Luck deposit. (See Fig. 4). The downward movement of the hanging wall country did not take place as one unbroken mass but was naturally broken up into blocks by cross faults. These cross faults furnished the fissuring which resulted in the formation of the Clay Chamber and Lyons ore bodies, and also had much to do with the formation and present form of the Good Luck ore body.

It is my opinion that most of the mineralization of the various ore bodies occurred after the faulting and porphyry intrusions.

DEFINACE ORE BODY.

The Good Luck deposit is the one of main importance, but to expedite this report I will describe the others first, while waiting for Good Luck assay results.

The Defiance workings are shown on plan and section in Feg. 2. An upper tunnel develops a large area of iron and manganese oxide material, as shaded in brown, but carries no practical values, except it might be for an iron flux,

The tunnel is now caved at the point shown on plan map but somewhere near this cave there is said to have been sunk a winze, 30 years or so ago, which developed good lead carbonate ore. Mr. W. N. McGill's remembrance is that the ore was only 30 feet or so below the tunnel, but he can give no information as to whether the ore lay flat or vertical.

On the strength of this and other reports, you have driven a cross cut tunnel 1045 feet in length at 445 feet below the upper tunnel. The last 200 feet of this tunnel has passed through numerous streaks of iron sulphide material carrying very low values in silver and lead, which may doubtless extend upward and connect with the iron oxide mass in the upper tunnel.

There is always a strong possibility in a limestone country that any ore will conform and lie with the limestone bedding planes, and if this condition should obtain in the present case then your lower tunnel would never encounter any continuation of ore found in the upper tunnel, for the limestone lies too flat. However, the general vertical form of all the other ore bodies developed on the property makes it somewhat presumptive that no such calamity as this has occurred.

The only feature of note that I can see in the vicinity of the rumored ore body is a strong fault fissure indicated on map, which has a steep pitch, and it is my opinion the Definace ore was associated in some way with this fault fissure.

The lower tunnel has now been driven far enough 5o disclose this fissure and it is probably represented by some of the numerous seams containing the iron sulphide.

In my judgment, the lower tunnel should never have been started until the size, character, form and dip of the ore body had been ascertained, which could doubtless have been found out by cleaning out the upper tunnel and winze at moderate expense, and I would suggest this even now before continuing the blind work of driving ahead in the lower tunnel.

This lower tunnel will I believe be found altogether too deep to develop pay ore. It is probably down in the original primary sulphides, far below the secondary action which formed the ore bodies, and the fact that the Clay Chamber, Lyons and Good Luck ore shoots all terminated at less than 300 feet from the surface should have been some watning against a tunnel which attains a depth of 600 feet in the neighborhood of the ore body.

EAST DRIFT ORE BODY.

The position of this is shown on Fig. 1. The ore occurs in a fissure lying parallel with and 10 feet east of the Main

Fault, and is really a miner fault directly associated with the aMain Fault.

The first 50 feet from the main 280 tunnel showed some erratic ore indications, which then opened out into 4 feet of sulphide oew xarrying silver, lead and zinc. This continued for a length of 20 feet, when it suddenly terminated against one of the cross faults previously mentioned. It is evident this ore is subsequent to the Main Fault in age.

A 60 ft. raise has been put up following the ore and a 5 ft. winze below the 280 shows it extends downward.

Four samples gave the following results:

	Width	Oz. Silver	% Lead	% Zinc	% Copper	
#189	3'	2.1	10.9	6.5		In 5' winze
190	5	7.8	10.6	10.8	1.4	30' up raise
191	7	4.8	10.9	11.0	1.7	45' " "
192	5	16.2	4.8	5.2	0.9	Top or raise 60' up.

This is a good grade of ore but would be subject to some zinc penalty.

The serious feature about this ore body is its limited length of but 20 feet on the 280 level, with the probability of a moderate increase as height is gained, owing to the north dip of the cutting off fault.

I do not think it advisable to explore this ore body to any greater height at present, but keep it in reserve and whenever a market presents itself for this kind of ore then begin stoping from the 280 level and clean up the ore as you raise upon it.

CLAY CHAMBER AND LYONS ORE BODIES.

These are the two main ore bodies which gave the mine its noted early history and resulted in the erection of mill and smelter for the treatment of the ore, which is said to have been of very rich character and furnished a large production.

Nothing whatever can now be seen of the old stopes, owing to caving and close timbering, and my only conception of the

geological structure of the ore is obtained from certain maps which, to my mind, indicate the ore occurred in a sort of fissured zone such as would separate the fault blocks I have already referred to. That is to say, the main faulting resulted in breaking up the handing wall country into large blocks and consequent cross fissures separating the blocks extending out from the Main Fault, and the two ore bodies were formed in these cross fissures which have a general east and west course and a steep northerly dip.

From the map the ore bodies appear to have been from 10 to 30 feet in width and a maximum length of 250 feet, both beginning at the surface but extending downward not over 200 feet in depth, the Clay chamber ore extending to the 280 ft. level, while the Lyons, starting higher up on the hill, only went a little below the 162 ft. level.

In their westerly extent both ore bodies appear to have suddenly terminated against the Main Fault, which gave rise to the idea that they were formed prior to it and that a continuation of the ore would be found somewhere in a dislocated position on the west or foot wall side of the fault. This idea has resulted in the expenditure of a very large sum of money looking for the faulted segments of ore, but without results.

Never having seen the ore bodies or the way in which they cutt off against the fault, I do not feel like expressing too strong an opinion, but from the fact that the East Drift ore body was formed subsequent to the Main Fault, I see no reason why the Clay chamber and Lyons might not likewise have had the same age and been formed in fissures which lay to the east of the fault and never did have any extension on the other side, which makes it possible that all this extensive work looking for ore on the west of the fault has been looking for something that does not really exist.

It is easy to conceive that if the foot wall country remained stationary and the hanging wall or east side was moved

downward it would be the moving side that would be broken up into blocks and separating fissures which might afterward become mineralized through solutions coming up in the Main Fault fissure and making out into the hanging wall country, which on the foot wall side there were no fissures existent to receive any mineralization.

I have gone into this matter with considerable detail for the reason it is of prime importance and the hope of picking up the faulted Clay Chamber and Lyons rich ore shoots has always been of the the attractive features of the mine.

I do not say that such work is hopeless, but it does seem to me the work previously donw has not been to good advantage. It has all been in a direction parallel to the ore bodies such as the S. Cross Cut No. 2, the Paul Incline and 130 workings, whicy is much like trying to hit a barn door edgewise in p place of broadside. To look for a continuation of the Lyons ore body, for example, I would suggest a raise from the S. Cross Cut No. 2 at a point of 350 feet in. This raise should be put up 2oo feet with cross cuts driven at the top and at 150 feet, keeping under the fault, the cross cutting to be mainly to the south and at right angles to the plane of the Lyons ore shoot.

This is expensive and somewhat blind work, it must be admitted, but is the only intelligent way of hunting for the Lyons ore shoot on the assumption that it exists on the west side of the fault, which itself is uncertain.

GOOD LUCK ORE BODY.

Three faults marked A, B and C are the distinguishing features bounding this ore body. The ore itself is a replacement of a large wedge of limestone, bounded on the east, south and west sides by porphyry, which latter was brought into contact with the lime by means of the faults mentioned. The north boundary of the ofe body is probably unaltered lime, but no development has proven this absolutely.

The three faults mentioned were the result of the great movement on the hanging wall side of the Main Fault, breaking the country up into fault blocks, and through these minor faults readily came the solutions which permeated the great limestone wedge, bringing in iron and lead sulphides which replaced the lime. Subsequent to this the action of surface waters changed the sulphides to oxides and carbonate and resulted in the formation of the present ore body carrying silver with lead in carbonate form, the ore body occupying the central core of the original iron mass, so that in places the ore body has a clear definite boundary along one of the porphyry fault fissure contacts, while at other points the values merely fade out into barren iron or into limestone impregnated with iron.

Fig. 4 is a good illustration of the geological structure of the ore body bounded on the east by "A" fault, which has a pronounced dip, and on the west by "B" Fault, which is nearly vertical.

These two faults dipping toward each other result in a constantly diminished size to the ore body in depth and a further intrusion of porphyry from below appears to cut the ore body out entirely just above the 280 level.

"C" Fault, which constitutes the southern boundary, has even a still flatter dip than "A", as can be seen from Fig. 6, where the fault lies at the Good Luck Shaft on the 130 level, but 50 feet deeper on the 180 (Fig. 7) has travelled 90 feet farther north.

From the 180 to the280 it steepens up very materially, but the general convergence of the three faults in depth results in a funnel shaped ore shoot having its greatest dimensions upward, while on the 280 (Fig. 9) it will be noticed the three faults A, B and C have come near together and a further intrusion of porphyry from below has squeezed out the ore body altogether, so to speak, unless the following work, which I strongly recommend, shows that the ore body

has been carried farther north.

The work suggested would be to drive a drift northerly on the 280, following "B" fault from sample No. 284 with occasional cross cuts to the east. The fault itself is a strong vertical fissure highly meneralized in this neighborhood and deserves exploration on its own account outside of the main ore body.

Sample 187 from this fault gave the high result of 323.9 oz. silver, while samples 185 and 186 would, I think, have run high but seem to have gone astray, as no assay returns showed up. Fig. 3 it is true would indicate this locality is just north and outside of the main ore shoot and it is my opinion such is the case, and yet the work suggested is desirable to demonstrate whether such is the fact or not.

Samples 168 to 179 on this level have no relation to the main ore body but represent another iron oxice mass shown at the surface at the South Pleiades Shaft. The samples show some value but too low for commercial considerations.

The Good Luck ore body has its greatest development on the 130 level, where it has an oval shaped form 285 feet maximum length by 140 feet width, as shaded in red on Fig. 6.

On Figs. 7 and 8 I have indicated by similar coloring my idea on the probably position and size of the ore on the 180 and 230.

Going upward from the 130, the only development which can give any idea of the ore body is the meager work shown on Fig.5.

Samples 1 to 21 on the 75 ft. level are of heavy iron oxide material and should represent the eastern portion of the ore body, judging from its natural dip, but the absence of any practical values in said samples shows the ore body does not extend upward with the regularity which it has below the 130. At the surface pit 40 ft. in diameter (Fig. 5) shows good values right under the wash around the circumference of the pit, as per samples 201 and 206.

Samples 208 in No. 1 tunnel and 210 are fair, but outside of these, none of the surfaceworkings as yet disclose ore, although samples 207, 208 and 217 to 221 inclusive, taken from Nos. 1, 2 and 3 tunnels and from the 22 ft. shaft, all represent good looking iron oxide material but without silver or lead values. Fig. 4 shows the position of four of these samples.

Tunnel No. 4 was still in limestone when I left the mine. It would appear that the values have been leached close to the surface and probably re-deposited below with the exception of a moderate area at the surface pit where good values extend up to the wash.

Sampling:

Before proceeding farther I will state that all the samples taken were of large size, 40 to 50 lbs. each, and as a general thing were taken with a vertical cut, as the ore occurs in layers conforming to the original flat bedding of the lime. The assaying was done at the mine by Mr. Henry W. Nichols, lead being determined by wet assay. His results on both silver and lead agree very closely in each case with 12 samples with which I checked him up in Denver through Sanford and Warner.

Ore Reserves:

Specific gravity test of the ore gives 11 cubic feet to the ton in place.

The Good Luck ore body gives out in depth in the North Raise at 15 feet below the 230 level (Fig. 4) and this is the only working between the 230 and the 280 which exposes the bottom of the ore body. The ore gives out by changing into hard silicious iron, which shows low values in the intermediate drift, as per samples 180 to 182, but on the 280 level directly below, this iron all disappears and nothing but porphyry is found.

I will assume the ore body has the size shown on Figs.

6, 7 and 8 for the 130, 180 and 230 levels and that it extends 15 feet below the 230. Within the ore boundaries as thus marked on the map, it will be noticed there are various areas which show values below pay, but to provide for cheap mining I shall assume that the wholw ore body as thus marked will be mined and that the rich high grade material found here and there will make up for the inferior grade.

It should be kept in mind too that the ore as stated occurs in rather flat layers and that a very low grade area on any certain level may be supplanted by high grade either a little above or below that point such that it will be necessary to mine it en-masse.

Some of the workings on the 130 extend beyond the ore body, but I include as ore only what lies within the red outline.

The occasional high assays on the map are all included and are not erratic, as evidenced from the fact that you stoped an area of high grade ore 30 x 40 feet in size extending from the 180 to the 130 level, which yielded 2336 dry tons carrying an average value of 9 oz. silver, 25.3% lead (fire assay), 25.4% iron and 10.2% insoluble, in which was one lot of 45 tons carrying 90 oz. silver to the ton, which explains the high silver of sample 51, while 600 tons carried over 30% lead and one lot of 34 tons had 49%, which harmonizes my occasional high lead results.

II endeavored to include in the sampling a proper proportion only of the high grade ore, and this was insured by taking samples as a usual thing at uniform intervals of 10 feet apart.

The hard problem in figuring ore reserves is to know what ground to include above the 130 level, and until further work is done nothing but a crude approximation is possible.

The absence of values in the 75 ft. workings is pretty conclusive evidence that the ore body diminishes in size to some extent above the 130 level.

In the lack of further development above the 130, all that can be done is to make a reasonable assumption as to the extent of the ore upward.

The surfact pit proves the ore comes to the wash in that immediate vicinity, but wither samples previously mentioned show the contrary is the case in other sections.

An ore body of the size demonstrated on the 130 level, however, must have considerable upward extent, and I will assume it to extend an average distance of 75 feet above the 130 and that its size at the top is three-fourths that on the 130 level. This would leave an average of 25 feet barren or leached iron between the top of the ore body and the wash, as per Fig. 4.

On the foregoing assumptions. the ore body would figure 375,000 tons.

My sampling gave the following results:

Level	No. of Samples	Av. Oz. Silver	Av. % Lead (wet).
130	83	4.6	9.6
180	32	3.4	7.4
230	26	3.3	5.6
Gen'l. Av.	141	4.2	8.4

As the 130 level is the only one that develops the full size of the ore body, I should say that greater weight should be given to the results on that level than elsewhere, so that the total average of 4.2 oz. silver and 8.4% lead is conservative and might be slightly increased by further development.

For the determination of iron, insoluble, lime and sulphur, in order to same time, the pulps of every ten samples were combined into one, which gave an average of 38.8% iron, 13.2 insoluble, 0.6% lime and 1% sulphur.

To sum up them, I would estimate the following tonnage and values.

Tons	Oz Silver	% Lead (wet)	% Excess Iron
375,000	4.2	8.4	25.6

This figures $12.17 gross value with silver at 53 cents, lead at $4.40 and iron excess at 10 cents.

Profits on Above Reserves:

As the ore body has already received such extensive development, I conclude that $1 per ton will cover the cost of mining it by the caving system, including necessary development.

If the ore is sold to a custom smelter, I think you ought to get a treatment charge of not over $1 per ton and the market price for lead less 1-¼ cents per lb. on 90% of the lead contents (wet assay).

Your present contract, it is true, would figure out much less than the above, but that contract was made with the knowledge that you had a high grade lot of ore to sell and you were doubtless charged "all the traffic would bear." The contract referred to is based on the "fire assay" of the lead, which according to tests I have had made would be 2% less than the wet assay. You were then paid for only 90% of this fire assay less 1-¼ cents per lb. and treatment was figured at $1 per ton on 30% lead plus 8 cents for each per cent, under 30, which would make $.2.89 per ton treatment with your present grade of ore, which is altogether excessive.

Assuming the figures suggested and that transportation from mine to smelter could be obtained are $3.50 per ton, then the profits on this ore would be as follows:

Mining Cost	$1.00	
Smelting	1.00	
Freight	3.50	
	$5.50	
90% of 8.4% lead at 3.15 (4.40-1.25)		$4.76
95% of 4.2 oz. silver at 53 cents,		2.11
25.6% iron excess at 10 cents		2.56
		9.43
Less Expense,		5.50
Net Profit per ton		$ 3.95

Net Profit on 375000 tons, $1,473,750.00

As to whether the above figures will work out in practice depends upon railroad connections and the terms you can make with railroad and smelter, but the ore is just the kind that a lead smelter needs and should command the best of prices.

Transportation:

Assuming that the Good Luck ore body does not extend below the 280 level as now seems to be the case, there are two feasible methods of getting the ore from the mine to the valley country where R. R. connection would naturally take place; first, by dropping the ore through an incline winze now connecting the 280 level with the Lower Paymaster Tunnel, enlarging the winze for a balanced gravity skip in case it is found the ore would pack too tight in a chute.

The vertical height is 400 feet, which is not an unheard of drop of ore, and considering the way in which this ore body is becoming dried out, I think it quite possible the ore could be handled through a chute.

The lower tunnel would require some cleaning out and repairs, but it would be an obvious advantage to deliver ore by aerial tram from the mouth of this tunnel where all the mine buildings and water supply are located, and especially so if there is any ore to be mined in this tunnel which is rumored to be the case.

The other method would be to complete the "proposed Tunnel" (Fig. 1), which would be an extension of the 280 East Cross Cut to a surfact outlet, which required some 900 feet more rock work at a cost of perhaps $14,000 and brings the outlet in Pleiades Gulch 400 feet higher than the Lower Tunnel and into a country more troubled with snow. An aerial tram of perhaps 1-½ mile would then be required to reach the valley.

I would withhold any fixed opinion on these two methods until it is definitely ascertained whether the Good Luck

.ore body goes below the 280, whether there is any ore to be mined in the lower tunner, which can only be determined by cleaning it out, and it would also be well to determine more definitely just how much tonnage you are likely to handle, which Ilwill discuss under "Recommendations" later on.

Whichever tunnel is adopted for bringing the ore to the surface, an aerial tram to the valley will in my opinion be preferable to attempting railroad construction to the high elevation of the tunnels.

What the mine needs above all things is railroad transportation to Ely in place of a $4 00 haul charge, and this is indispensable whether you ship crude ore or smelt on the ground.

Having no data as to any surveyed line, I can only say that a railroad from Ely up the valley would be of extremely easy construction and probably all earthwork, as it is a typical sage brush country. A narrow gauge line of 3 feet width and 25 lb. rails would not exceed 15 miles in length and less if the Pleiades Gulch putlet is adopted. It is my opinion that such a line could be built and equipped at a cost of less than $150,000, including the necessary aerial tram connection.

Under your present ore contract you paid $3.50 freight from Ely to Murray, Utah, but I understand you have a verbal promise of $2.89 with possible $2.00 rate, so that with R. R. and tram extension to the mine I conclude that a total freight charge of $3.50 or even less may be hoped for, which is the figure I have used previously.

A more competitive market for your ore will be established in case the A. S. & R. Co. should put up a lead stack at McGill, or The International Smelting Co. on at Tooele, Utah.

PLEIADES ORE BODY.

The Pleiades main shaft (Fig. 1) is accessible to a depth of 75 feet and shows a contact vein between prophyry and limestone, standing nearly vertical, the direction of the vein being shown on map by red line.

The ore is an altered porphyry and five samples gave the following results:

No.	Width	Oz.Silver	% Lead	% Copper	Locality
211	2'	3.7	2.1		72 feet deep
212	2'	17.2	24.0	6.5	60 " "
213	2'	7.7	5.4	1.9	30 " "
214	2'	0.2	0.	8.4	30 " "
215	2'	5.3	7.7		On Dump

This vein deserves further exploration and the 280 east cross cut, now being driven, should cut the vein in 200 feet or less.

RECOMMENDATIONS.

The figures I have given you as to tonnage are what may reasonably be hoped for, but should be more definitely ascertained by further work above the 130 level.

The negative assay results on the 75 ft. level where one would naturally expect pay values is a serious feature which should be counteracted if possible by positive evidence, for it must be kept in mind that an ore body in limestone is not like a fissure vein deposit but can take any conceivable shape.

The fact, however, that ore does come clear to the surface wash in the vicinity of the open pit should give confidence in exploring this upper region, and my advice would be to drive No. 3 Tunnel (Figs. 3 and 4) clear through the ore body, which would demonstrate whether as a whole it extends to this elevation, which is about 75 feet above the 130 level.

This work can be done at moderate expense and if the results are satisfactory then the size of the ore body at this height can be further determined by cross cuts from No. 3 Tunnel or by another tunnel still farther north.

If good results should not attend this work, then it

will be necessary to explore the ground from the 75 ft. level.

The work suggested would throw much light on the probable tonnage to be expected and would also demonstrate whether the over-burden is too thick for "Glory Hole" mining, which now looks to be the case, but whether such work is carried on or not, I have no hesitancy in saying that the present development demonstrates you have a hugh tonnage of ore sufficient to warrant railroad connection with Ely.

The question whether your ore cannot be more profitably smelted on the ground by mixture with silicious ores from the district, is one well worth investigation and metallurgical advice.

A railroad from Ely would still be required for hauling in coke and other supplies and would have the back haul on lead bullion at some remunerative rate higher than would pertain to crude ore.

Yours respectfully,

(Signed) EDWIN E. CHASE.

Mining engineer.

ADDENDA.

I find on further investigation that the property embraces not far from 2200 acres in place of the 1900 mentioned on page 1.

I might also add that a large portion of this great acreage has the same geological characteristics of porphyry intrusion in limestone with fault fissure contacts, many of which deserve investigation and generally speaking add much prospective value to the property. I did not take the time to examine the whole territory, but even without such special examination I noticed many places of interest which warrant further exploration, such, for example, as an old tunnel about 700 feet north of the Defiance upper workings, which tunnel showed good iron oxide meterial and some old stopes which had evidently produced ore.

There is also a tunnel on the Silver King which follows a strong fissure contact between prophyry and limestone, with workings below the tunnel now inaccessible, from which ore was apparently extracted, judging from the dump.

Two prominent iron outcrops are also noticeable, one near the old smelter site and one on the Mammoth claim, while a long tunnel on the Welcome Stranger exposes a zincky, iron supphide vein, and at another point a freaky streak of heavy lead sulphide.

All the above, together with other occurrences not necessary to mention, show that the immediate locality of the Nevada United properties was the center of strong mineral action and that other ore bodies may be opened up by intelligent prospecting and developing.

(Signed) Edwin E. Chase.

(C O P Y)

5110 0002

JAN 31 1912

Tonopah Mining Co.

ABSTRACT OF REPORT

Country ..... United States. .....

State ..... Nevada ..... County ..... White Pine. .....

Name of Mine .... Nevada United Mines (Ward District) .....

Kind of Deposit .... Low grade smelting ores (lead) .....

Valuable Metals .... Lead. .....

Extent of Property .....

Reported on by ..... No report; letter ..... Date .....

Financial Proposition:

Control of stock will be secured by pool agreement extending till May 1st or June 1st, 1912.

Mining proposition brought in by ..... Samuel W. Belford, Jan. 22, 1912. .....

Abstract of Report: Date Jan. 29, 1912 By J.E.S. .....

Formerly one of great mines of Nevada. Has 750,000 tons blocked out. Costs $4. per ton to haul ore to R.R. at East Ely, which ore will not stand. Ore has to be shipped to Garfield. To handle these properties, a lead smelter and a branch line 18 m. long should be built, at total cost $600,000. Ore already blocked out should repay all profit and yield substantial profit. This property regarded as most promising in this part of state, except Ely copper mines.

COMMENT: Our policy is against smelting propositions, so doubt if this can be handled. Engineer may pay a day's visit to the property, however, when at Ely.

400 feet higher than this is the 280 ft. tunnel, so called from its distance below collar of Good Luck Shaft.

This is the present main working tunnel of the mine, and with its various branches covers over 3500 feet in length and develops four known ore bodies.

The old 62 and 162 ft. tunnels were also very extensive, but are now practically inaccessible.

The Definace lower tunnel, 995 feet above the lower Paymaster, is 1045 feet in length and is now being driven for a supposed ore body developed at 450 feet vertically above it, so that a vertical range of nearly 1500 feet is covered by the mine workings, the steep character of the ground permitting most of the work to be carried on through tunnels.

The detailed development on the 75, 130, 180, 230 and 280 ft. levels is shown on Figs. 5 to 9 and a composite plan of them all on Fig. 3.

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The geological conditions are rather complex. The general rock of the country is limestone, having a north and south strike and a flat dip to the east of between 20 and 30 degrees.

The uplift of this limestone into its present mountain range position was accompanied by extensive faulting and the intrusion of porphyry (andesite) sometimes in the form of wide and clearly defined dikes but more frequently as great underlying masses which did not always break through the limestone but merely lifted it up in dome shape.

The great fault of the country is the one I have marked "Main Fault" on Fig. 1.

It has a variable dip of 35 to 45 degrees to the east and apparently resulted in a downthrow of the country on the east such that on the 280 level a porphyry hanging wall rock is brought