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July 15. 1930.

TUNGSTEN

Mr. Frenk R. Dravo, c/o Dravo Contracting Company, Dravo Building, Pittsburgh, Pennsylvania.

Dear Mr. Dravo:

Since writing you yesterday, I have looked over my notes concerning some mining properties, and particularly the TIP TOP MINE, located about fifty giles north of Phoenix. I find that according to the report of an engineer whom I employed for several years, and whosis generally very reliable, there are at this mine 50,000 tons of tailings from an old mill which carry 11 ozs. silver per ton, and .4% tungstate acid (WO_3). Also there are 10,000 tons of fills in the mine workings averaging 40 ozs. silver and .8% WO3, and a very considerable tonnage of ore in place of somewhat higher but rather uncertain grade.

A company which leased this property last year have worked out a method of treatment whereby they expected to recover about 90% of the silver and 60% of the tungsten, but they abandoned operations by reason of the falling price of silver and the fact that the market for tungsten was very uncertain and no definite contract could be obtained. I believe that the mine could be secured, either by lease or purchase, on very reasonable terms at the present time, although I have not Mr. Frank R. Dravo - 2

Alta

July 15, 1930.

personally investigated its present status, but will be glad to obtain further information if you think it worthwhile to have me do so.

Very truly yours,

GMC : EBH.

Tip Top Mine September 9, 1935.

PRELIMINARY SURVEY



Within a radius of three miles of the Tip Top mine there are six groups of mining claims that are in shape to supply milling ores in varying quantities. On the topographical map I have shown the location of these groups using different colors to show each group. A description of these groups is not possible in detail but the following will give an idea of the milling ore available from each.

FOURTH OF JULY GROUP

OSCAR WAGER, OWNER

Distance from Tip Top	Name of Claim	Type of ore	Average per ton	Possible Production per day
3/4 mile	' 4 July	' Silver	20-30 oz.	25 tons (Stopes must be put
1/2 "	⁴ ** 76**	Silver	20-50 oz.	25 tons
1/2 m	• Water Witch	Silver		(no development)
l "	· El Dorado	Silver	20-50 oz.	25 tons
1 *	⁴ Arizona	Silver	15-40 oz.	25 tons (needs development)

There are two other claims in this group that are undeveloped. This

group could be relied uponto supply a minimum of 25 tons of 25 oz. silver milling ore per day. The ore from this group would be 'almost identical in character to that of the Tip Top, and so would present no difficult metallurgical problem.

OSCAR WAGER GROUP

' OSCAR WAGER, OWNER

2 m	iles	Wisconsin (Silver	20 oz.	25 tons	(Stopes need develop-
2	n	' Arnold	Silver	<u>11</u>	-	(no development)
2불	n	¹ Williams	Silver	-	-	(no development)
2쿨	n	' Marks	Silver	_	_	(no development)

These ores are very similar to those of Tip Top so there would be no problem in their handling. This group could not be relied upon for steady production as it isnot opened up sufficiently to have any ore blocked out.

From workings on the veins it appears that good bodies of mill ore can be developed.

FOY GROUP

LESTER AND HERRON, OWNERS

Distance from Tip Top	Name of Claim	Type of ore	Average per ton	Possible Production Per Day
2 ¹ / ₂ miles	* Carbonate	Silver	15-50 oz.	25 tons (Needs some
3 * .	*5 in number)	Silver Silver	15-50 oz. 15-50 oz.	25 tons 25 tons

* (On these five claims there are numerous workings many caved in and considerable work would be required to put them in shape).

This group has produced some \$140,000 in high grade shipping ore. It is estimated that there are 700 tons of 25 oz. silver ore on the dump. The claims of this group are located on the midway vein.

This group could be depended upon to supply a minimum of 20 tons of mill grade ore daily.

The ore is the same type as Tip Top.

		SILVER MU	SEUM GROUP	
		OWNED BY JOHNSON A	ND BESSIE MORGAN	
	<u>0</u>	OPTIONED TO GRAHAM AND	SHERRARD OF LOS	ANGELES
Distance from Tip Top	Name of Claim	Type of	Aver. per ton	Possible pro- duction per day
$2\frac{1}{2}$ miles	<pre>Gold Coin #</pre>	1 Silver	20-40 oz.	10 tons
2글 *	* w n #	₽ 2 π	20-40 oz.	10 "
2 11	⁴ Swilling		20-10 07-	10 "

The Swilling is one of the oldest mines in the district and together with the Gold Coin #1 and #2 are now under lease to and are being developed by a Los Angeles Company. They are sinking a shaft and are getting ready for production.

The ores are the same type as those of Tip Top so present no problem.

This group could be relied upon to supply a minimum of 20 tons of mill grade ore daily. Past production \$250,000, mainly silver.

LITTLE JOE GROUP

MRS. BERGER, OWNER

from Tip Top	Name of Claim	Type of ore	Average per ton	Possible Production Per Day
3 miles	Little Joe	Gold & Silver	\$20.00	25 tons

....

daily.

This property is shipping a car load of ore each week and have so far shipped seven cars. They are building up a large tonnage of mill grade ore.

The ores from this mine are of the same type as Tip Top and do not present any problem.

This property could be relied upon to produce 15 tons of mill ore

¢ SULLIVAN GROUP

BAUER AND JOHNSON, OWNERS

3	miles	Sul	Livan -	Gold &	Silver	\$ 15.00	-	
3	**	DeGe	andt	& blod	Silver	\$25.00	-	25 tons
2		· _ /		cora a	~11/01	\$25.00	-	uncertain
2		Baue	r	Gold &	Silver	\$15.00	-	
						\$25.00		Uncertain

These ores differ from the Tip Top ores considerably. The values are mainly in gold. They present no problem as the free gold could be plated and the sulphides, gold and sliver, floated.

This group could probably supply 15 tons of mill grade ore faily.

SUMMARY OF

MILLING ORES AVAILABLE

Fourth of July	25 1	tons	
Foy Group	20	W	
Silver Museum	20	Ħ	
Little Joe	15	W	
Sullivan Group	15	W.	
	95	Ħ	

The above shows that the district is now capable of producing 95 tons of mill grade ore daily, after a period of 60 days. With some months of development this tonnage estimate would probably be materially increased. - It is my opinion that within six months from the time a mill is put in operation a constant supply of 100 tons per day of good grade mill ore will be assured.

In addition to the foregoing there are four groups of claims that are owned by Mr. J. B. Johnston. These were not considered with the foregoing because of the difference in the type of ores and the metallurgical problems involved. A brief description of the Johnson group follows:

JOHNSTON GROUPS

OWNED BY J. B. JOHNSTON

- 1. Antimony group. Has had some silver production. Good virgin ground. Ore same type as Tip Top.
- 2. <u>Tungsten group</u>. Shipped tungsten during war. Has good undeveloped showing of gold and silver.
- 3. Great Cross-Cut Group. Will furnish 50 tons per day at present of gold and silver mill grade ore.
- 4. <u>Gold Hill Group.</u> Has produced gold ore of mill grade can furnish 25 tons per day now by extension of exposed ore breasts in tunnels by development only. With six months development work would be in shape to produce 100 tons daily. This group would add materially to the tonnage of mill grade ores available in the section. -- The problem of handling these ores should not be too difficult.

CONCLUSION

There can be no doubt but that the custom milling ores available in this district are sufficient in quantity and value to warrant the installation of milling equipment to handle them.

To equipment to handle custom ores at the mill under consideration for the Typ Top mine would, in my opinion, be worthy of mature consideration.

Respectfully,

(Signed) S. A. Shappell

the ne in the damp till run 83 y & 0,25% h. 6.3 I that there is much little grade are left them the sto level, - althe this hap indicates that This has finding. Says that the hime forduced 4,000,000 hutte I he fin & 1892 and ho useful tink a derelopment dme since that date. Tim is my almos 21/63' hile had by nich he thirt is consistent a continuous à le claims it Is my good down & the 800'lerel. a. S. & R. have recently been instructing, probably hearing the trugston control. A ridle thinks that the Whole district muit a throw hunstigation & upplanation & a laye Company con And the lip by him is the my printent kin in the district, breating is bod of fature balane defondent in the mentan course of the site marked.

TIP TOP MINES:

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The original Tip Top Mines consisted of the east and west Tip Top claims and the Joker claim, but now included six claims. The original discoverers of the Tip Top Mines (Gorning & Moore) made quite a shipment of ore to San Francisco, along in the late 70's that brought them \$10,000.00 per ton. It is said that this shipment of ore (from the Tip Top South) caused the first sale of the Tip Top property. On the Tip Top there is a shaft following the vein down at an angle or pitch to the north of about 68 degrees to a depth of 830 feet. Down as far as the 700 foot level the ore was frozen to both walls, however, on the 800 level a fine showing of gangus is found with the ores. The Tip Top mines have yielded to date over \$4,000,000 worth of silver, and today there remains between 300,000 and 400,000 oz. of silver in their dumps, besides many hundreds thousands of dollars worth of ore in the stopes and in place in the mines.

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THE ORE:

Tip Top ground and quartz is usually exceedingly hard but brittle. This quartz at the surface contained, as a base, hemetite of iron, a small percent of zinc(blackjack); also a small percent of antimony, the latter in the form of brittle silver (antimonial silver), usually assaying around 3,000 oz. per ton, and often ruby silver was had. Also tungsten, usually ferberite or iron tungsten, is frequently found in these mines.

THE SILVER:

Silver at the surface was found in the form of chloride of silver, horn silver, and red oxide of silver. In the lower workings the silver was found with iron pyrites, antimony and black jack. The black jack are usually carrying from 200 to 400 oz. silver.

The antimonial silver and the black jack is usually found interspaced throughout the iron pyrite ores, also often the brittle silver carry the ore values up to 3,000 oz. silver per ton. However, I have seen pieces of ruby silver, brittle silver, blackjack and iron pyrites combined ores as large as an ordinary water bucket that carried an assay value of 5,800 odd oz. silver per ton. In this camp, the ores of this series of veins carry but very little or no gold. <u>THE TIP TOP MILL</u>:

Two batteries of 5-1,060# stamps each, a White & Allen revolving roaster, 4 pans, and two settlers, and accessories, was erected on the banks of the Agua Fria River 9½ miles distant from the mines, to which the ores were first transported by pack animals, later about half way by pack and the balance of the way by wagons, then ultimately by wagon the whole distance of name and one-half miles. The management contended that owing to the high cost of extracting the ore (mostly single jack work with miners at \$4.00 mper 8 hour shift and there <u>never</u> has been a power drill in these mines), and owing to the high cost of salt, etc., anything less than \$250 would not pay them. Hence the rich dumps and stopes and ores left in place in the Tip Top Mines. The tungsten ores usually lays in lenses throughout the silver ore chute, and very little of it was extracted for its silver content.

I am mentioning Tip Top Mines in particular to show that these ore veins of high grade ores <u>go down</u>. This series of veins are very persistent, and some of them can be traced several miles. As one Mining Engineer of large experience (who was in this District for several months, sampling for tungsten) said, "I have been in many mining districts, I have been in districts where the veins ran in all points of the compass; every which way, but I never was in a district before where the veins were so d--ed persistent as they are in this district."

To return to the Mill, along in 1886-7, the Tip Top Mine (then known as the Conquerer), and the Mill on the Agua Fria River were acquired by a Company known as the St. Louis Yavapai Mining & Milling Company and the Mill entoto moved to the Tip Top Mines, where it was installed on their property and concentrators were added thereto. This Company extracted about \$235,000.00 worth of ore from the dumps of which they saved about one-third of the values. Some of the richer dumps, containing the oxidized ores, they could not

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handle to a profit at all. It has since been found that all these ores are highly susceptiable to cyanide treatment.

I am satisfied that there are at least 40,000 tons of dumps remaining on the Tip Top and on the Tip Top South, from which mass at least 20,000 tons of ore and matrix can be had that will average better than 15 oz. silver per ton.

I, O. A. Ensign, came into this mining camp in the year 1878 and have been intimately interested in the mines of Tip Top Mining District ever since and know whereof I speak.

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TIP TOP MINE

Note by G. M. Colvocoresses, October, 1937.

Shappell seemed to have dropped out of this picture by the end of 1935 and Coupal took it back again in 1936, built a mill and operated until about the middle of 1937.

He shipped quite a tonnage of high grade ore and concentrates but has now quit and operations have been discontinued. Apparently he was working on a shoe string and could never quite pay for his equipment or meet operating expenses.

DeCamp once made a careful investigation of this mine (for other parties) and told me that he believed that further development was warranted.

I do not think that any of the attempts which have been made to operate this mine since 1917 have been properly financed or had the benefit of good technical management, and I think that it merits further attention in view of the favorable outlook for both silver and tungsten and recent advances in metallurgical practice.

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Statement made & J. M. C.

TIP TOP MINE hote by J. He. Jeet Gray - 1-21-30. (Iray has Suppo for the greating. Co. to the time. Huy has bruke

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Sim afternander. 1 Has 50,000 tons toils @ 11 oz. Ag. and 0.4% W.O3 (Tungsten), and fills 10,000 tons with @ 4 oz. Ag. and 0.8% W.O.3 and some ore in place which has not been measured. Gray and Sill had planned to concentrate the

ore to a product which should give 10% W.O, and 200 oz. ag. and then cynaide the ag. and reconcentrate the tailings from the cyanide process on vanners which should give a 60% conc. of W.O.3 in which the NO3 sells @ \$15.00 per unit (75¢ per $WO_3 @ #12.00$ per unit in ore (nominal). pound).

Recovery from test = 90% ag and 50-60% WO₃ but total recovery not any good with ag $\frac{20}{3}$ for free q it result. that the margin is too small.

Might be treated by volatilization for the ag and au-(?)-ore/concentrate at the smelter for 103, but it is not a very attractive proposition.

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C. J. Confal (adams latel, Phury) called to say that he had how succeeded in financing this propriation in A Louis & hould ad ma proceed & huild a so ton hule. Alow that ite has yes determined has expect to use de-

fective flotation and to make a separate tingeter con-Centrate & about me ton for day f silve conc. with 500 g J ag pu ton. One contains say little an I ho cu. Some other homes in the hanty are how being worked by leasers who are shipping a small fondustion of hi-grade we & prospects for incremed actinty sum to be good. S. G. Shappele 130. 221 h. 8 th St. M. . Phu . When Bajida This to the So the 30,000 tim & hysteric with a ang of 12.24 Jag & 0.32/h. 6.3/ Profine & hate het allergist terts in the ships if satisfaiting my fond in a small hill. the o

TIP TOP MINE

Tip Top

DISTRICT:

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PROPERTIES:

Tip Top Heath, Tip Top Consolidated. Carlisle & Ensign.

LOCATION:

34 miles south of Turkey Creek R. R. Siding by wagon road of which several miles have been destroyed by cloud bursts. Now accessible by 12 mile trail, mostly rough, from Canon. Elevation of camp 2600. Domestic water from wells & Creek.

OWNERS & OPERATORS:

Tip Top Heath Mining & Milling Co. owns 3 claims; Tip Top Consolidated Co. 7 claims; Ensign & Carlisle, 2 claims and 2 fractions. Carlisle holds mortgage on Tip Top Heath property for about \$20,000.00. All interests are consolidated in an option to W. V. DeCamp. Idle except for two men doing assessment work on Tip claim.

DATE VISITED: October 26-29, 1917.

NOTES:

Country rock is pegmatite, sometimes gneissic in structure, which has intruded pre-Cambrian mica schist. Blocks and bands of schist are included in the pegmatite, and some have been more or less completely absorbed. The pegmatite in contact with the schist is generally of finer texture than the main mass, no doubt as a result of cooling more rapidly. Local miners speak of "porphyry" in the ore bodies, but this appears to be the finer grained pegmatite and not a separate intrusion. A fractured zone with a general strike N E -S W and dipping N W has followed lines of least resistance between pegmatite and shist and the narrow fissures have been filled with silver and tungsten bearing quartz, the schist appearing on either wall, so that local miners consider schist favorable for ore. Two parallel narrow quartz filled fissures, about 20' apart on the surface are called the hanging and foot wall veins, respectively, They are said to come together in depth on the 400' level. The vein quartz is distinguished from the quartz in the main mass of the pegmatite by its banded structure and cavities sometimes filled with quartz crystals. In the bands and seams of the vein quartz antimonial silver, stephanite and pyrargyrite (brittle & ruby silver), occur in association with tungsten minerals, chiefly wolframite. Bunches of zinc blende show up as crystals in quartz occasionally. Native and horn silver are said to have been found on the surface. While there are no authentic records available, there is some evidence that the mine produced nearly two million dollars worth of silver between 1875 and 1883.

The Original workings were on the South Top claim, but the pay ore appears to have extended only a few feet from the portals of the adits on this, the S W side, of the gulch and to have also ceased indepth in an untimbered shaft, said to be 80' deep, at the mouth of the lowest adit. On the N E side of the gulch, the mine workings are reached by an adit called the 200' level, 1275' long, and connected with the main shaft, which is located about 400' from the North end of the Tip Top claim and is said to be 800' deep. Water stands in the shaft a little below the 200' level. Dumps probably aggregating 20,000 tons of waste, with some ore mixed in, stand at the mouths of the 200' level and the main shaft. From a point 200' from the portal of the 200' level, more or less stoping has been done and some ground left for a length of 600'. This six hundred feet is all called a pay shoot, but my impression is that the ore occurred in high grade bunches, and that the vein did not average over a foot in width, although I saw one place where the vein was three feet wide.

At various times "Chloriders" have worked over the stopes from the 300' level up, as well as the surface dumps and it may be presumed that most of the obviously high grade accessible ore has been removed. A sample across 16" of quartz in the breast of the 200' level assayed (H 351) silver 0.38 oz; Tungstic Acid, trace. A sample across 26" in the stope, 10' S W of No 4 chute (one of two chutes now open) assayed (H 352) Silver 4.50 oz; Zinc 0.7%; Tungstic Acid, Trace. The manway here leads to the 100 foot level, above which the ore has been mostly stoped. At the mouth, a sample across the whole 5 feet belt of intercalated quartz pegmatite and schist assayed (H350) Silver 3.70 oz; Zinc 1.1%; Tungstic Acid, nil. It is hardly possible to estimate the amount of unbroken ground or stope filling as even the ground above water is only partly accessible.

It is said that no ore was found in the main shaft above the 200 foot level. The dump from this shaft must also contain considerable waste from development work. Only vein quartz was taken for assay

-2-

from this dump. Sample 354 assayed Silver 13.40 oz; Tungstic Acid, Trace.

The dumps below the 100 foot and 200 foot adits have a width of about 150 feet, a slope distance of about 130 feet and an average depth of about 10 feet say 10,000 tons. On the surface of the dumps, at least, the vein quartz appears to be in very small proportion to the pegmatite and schist material. The mixed surface material was sampled by stretching tape lines across the dumps and taking chips off the coarse lumps and hand grab samples of fines every two feet. The bottom of the East dump, across 42 feet, mostly fines assayed (355) Silver 7.40 oz; Zinc, trace; Tungstic Acid, Trace. 20 feet up, across 150 feet of both East and West dumps, chips off coarse rocks assayed (356) Silver 5.44 oz; Zinc 0.08%; Tungstic Acid, nil. 40 feet up, across 150 feet, both fines and coarse, assayed (357) Silver 2.08 oz; Zinc, Trace; Tungstic Acid, nil, 60 feet up, across 150 feet, both fines and coarse assayed (358) Silver 6.12 oz; Zinc 0.5%; Tungstic Acid, Trace.

The top of the West dump, mostly fines, across 30 feet assayed (359) Silver 2.84 oz; Zinc, Trace; Tungstic Acid, Trace.

Hand grabs every two feet around a 50 foot semicircle under the track of the East dump assayed (H 361) Silver 4.10 oz; Zinc, Trace; Tungstic Acid, Trace.

As an indication of what the carefully sorted vein quartz would run, sample selected from all over these dumps assayed (H 360) Silver 19.48 oz; Zinc, Trace; Tungstic Acid 0.56.

Various shallow shafts and cuts on outlying claims appear to be of little importance. On the Tip claim two men are doing assessment work in exchange for the ore they take out of two shafts close together, 25 feet deep, and connected by a short drift. The ore was said to run 60 oz in Silver and high in Tungstic, but a chunk I took as an indicator assayed (H 353) Silver 0.16 oz; Zinc 1.2%; Tungstic Acid 23.80%.

The main shaft is timbered only part of the way, but is provided with guides for a bucket. The steam hoist is in good condition, but fuel would be very costly. It could be remodeled as an electric

-3-

hoist. The mill contains two small gas crushers, a revolving screen, a Denver Roller Mill, whose capacity was 7 tons of the ore in 24 hours; a Callow cone; a Richards Classifier; a Wilfley Table and a Deister Slimer. The mill is driven by a Fairbanks Morse 16 H. P. engine using "tops", and there is a 10 K. W. Westinghouse D. C. Generator for lighting, etc. There are the remains of an old roasting plant, and pan amalgamators, used in the early days.

L. F. S. Holland.

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CT	PROPERTIES	LOCATION	OWNERS & OPERATORS	DATE VISITE
đ	Tip Top Heath Tip Top Con- solidated. Carlisle & Ensign.	34 m. south of Turkey Creek R.R. Siding by wagon road of which several miles have been de- stroyed by cloud bursts. Now ac- cessible by 12 mile trail, host- ly rough, from Canon. Elevation of camp 2600. Domestic water from wells & Creek.	Tip Top Heath Mining & Mill- ing Co. owns 3 elaims; Tip Top Consolidated Co. 7 claims; Ensign & Carlisle, 2 claims and 2 frac- tions. Carlisle holds mortgage on Tip Top Heath pro- perty for about 20,000.00. All interests are com- solidated in an option to W V De Ca Idle except for two men doing assessmen work on Tip claim.	Octobe 26 - 2 1917

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Tip Top Continued -

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Tip Top Continued

dollars worth of silver between 1875 and 1883. The Original workings were on the South Top claim, but the pay ore appears to have extended only a few feet from the portals of the adits on this. the 8 W side, of the gulch and to have also ceased in depth in an untimbered shaft, said to be 80' deep, at the mouth of the lowest adit. On the N 2 side of the gulch, the mine workings are reached by an adit called the 200' level, 1275' long, and connected with the main shaft, which is located about 400' from the North end of the Tip Top claim and is said to be 800' deep. Water stands on the shaft a little below the 200' level. Dumps probably aggregating 20,000 tons of waste, with some ore mixed in, stand at the mouths of the 200' level and the main shaft. From a point 200' from the portal of the 200' level, more or less stoping has been done and some ground left for a length of 600'. This six hundred feet is all called a pay shoot, but my impression is that the ore occurred in high grade bunches, and that the vein did not average over a foot in width, although I saw one place where the vein was three feet wide.

At various times "Chloriders" have worked over the stopes from the 300' level up, as well as the surface dumps and it may be presumed that most of the obviously high grade accessible ore has been removed. A sample across 16" of quarts in the breat of the 200' level assayed (H 251) silver 0.38 oz; Tungstic Acid A sample scross 26" in the stope, 10' S W of No 4 chute (one of two chutes now open) assayed (H 352) Silver 4.50 oz; Zine 0.7%;

The Top Continued

and connected by a short drift. The ore was said to run 60 os in Silver and high in Tungstic. but a chunk I took as an indicator assayed (H 253) Silver 0.16 os; Zine 1.25; Tungstic Acid 1.3.80% The min shaft is timbered only part of the

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way. but is provided with guides for a bucket. The steen hoist is in good condition, but fuel would be very costly. It could be remodeled as an electric hoist. The mill contains two small gas crushers, a revolving screen, a Denver Holler Mill, whose capacity was 7 tons of the ore in 24 hours: a Callow come, a Michards Classifier; a wilfley Table and a Deister Miner. The mill is driven by a Mairbanka Morse 16 H. F. engine using "tops", and there is a 10 E. W. Westinghouse D. C. Generator for lighting, etc. There are the remains of an old reasting plant and pan analgemators, used in the early days.

L.F.S. Aread

TIP TOP

DISTRICT: Tip Top Mining District, Yavapai County, Arizona. STATEMENT BY: A. O. Ensign. DATE: About 1917.

NOTES:

This district is in the Southern foothills of the Bradshaw Mountains and borders on the Southern boundary of the County and West of the Black Canyon thoroughfare from which it is accessible, most of the year, by vehicles.

CLIMATE:

The general trend of the South Bradshaw range is easterly and westerly, while ranges forming its southern bases extend southerly. Among these latter and lower ranges nestles the Tip Top Mining District that is protected from north winds in winter. Our atmosphere is so clear, light and dry that the heat of our long summers is not so oppressive as to cause "sunstroke" and like ills, to those working in the open.

THE FORMATION:

In this mineral zone the rock is practically granite, altered granite or schists, interrupted or crossed by several large and continuous dykes of ryolite (so large that they are easily traced throughout the District) that have a course or strike almost true northeast and southwest. In this District are three series of veins known as the Tip Top series, the Great Cross Cut series and the Gold series of veins.

THE TIP TOP SERIES OF VEINS:

In this series of veins are very many rich silver ore veins ranging from one inch to four feet in width, and their usual trend or strike is north of east and south of west. Of these veins there are an untold number, and of which the Tip Top mine is on one of the veins. <u>THE TIP TOP CAMP AND MINES</u>:

At one time this camp was the trading center of the District and numbered about 600 men, of which about one-half were "chloriders" either working their own ground or leasing from others. Most of the other 300 men were employed by the Tip Top Company.

STATEMENTS MADE TO G.M.C.

ON

TIP TOP

Note by J. D. Gray 1-21-30. (Gray was Supt. for the operating Co. at that time. They went broke soon afterwards.)

Has 50,000 tons dump @ 11 oz. Ag. and 0.4% W.O3(tungsten) and fills 10,000 tons with 4 oz. Ag. and 0.8% W.O3, and some ore in place which has not been measured.

Gray and Sill had planned to concentrate the ore to a product which should give 10% W03 and 200 oz. ag. and then cyanide the ag. and reconcentrate the tailings from the cyanide process on vanners which should give a 60% concentrate of $W0_3$ in which the $W0_3$ sells @ \$15.00 per unit (75¢ per pound) W0_3 @ \$12.00 per unit in ore. (nominal).

kecovery from test---90% ag. and 50-60% WO3, but total recovery not any good with ag. at low price and it results that the margin of profit is too small.

8/26/35 A. J. Coupal (Adams Hotel, Phoenix) called to say that he had now succeeded in financing this proposition in St.Louis and would at once proceed to build a 50 ton mill. Flow sheet, etc. not yet determined but expects to use selective flotation and to make a separate tungsten concentrate and about one ton per day of silver concentrate with 500 oz. of ag. per ton. Ore contains very little au. and no copper. Some other mines in this vicinity are now being worked by leasers who are shipping a small production of hi-grade ore and prospects for increased activity seem to be good.

9/30/35 S. A. Shappell, 221 North 8th St. Phoenix holds option on this property for the La Bajada Min ng Co. of St. Louis and has sampled the dump and fills which he finds to contain about 30,000 tons of material with an average of 12.24 oz. ag. and 0.32 WO₃. Proposes to make metallurgical tests in this and if satisfactory may put in a small mill.

Statements By A.O. Ensign. about 1917

Mine: TIP TOP

District: Tip Top Mining District, Yavapai County, Arizona.

Notes:

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The Formation: In this mineral zone the rock is practically granite, altered granite or schists, interrupted or crossed by several large and continuous dykes of ryolite (so large that they are easily traced throughout the District) that have a course or stryke almost true northeast and southwest. In this District are three series of veins known as the Tip Top series, The Great Cross Cut series and the Gold series of veins.

The Tip Top Series of Veins: In this series of veins are very many rich silver ore veins ranging from one inch to four feet in width, and their usual trend or stryke is north of east and south of west. Of these veins there are an un-told number, and of which the Tip Top mine is on one of the veins.

The Tip Top Camp and Mines: At one time this camp was the trading center of the District and numbered about 600 men, of which about one-half were "chloriders" either working their own ground or leasing from others. Most of the other 300 men were employed by the Tip Top Company.

Bip Top Mines: The original Tip Top Mines consisted of the <u>Wip Top Mines</u>: The original Tip Top Mines consisted of the east and west Tip Top claims and the Joker claim, but now included six claims. The original discoverers of the Tip Top Mines (Corning & Moore) made quite a shipment of ore to San Francisco, along in the late 70's that brought them **X** \$10,000.00 per ton. It is said that this shipment of ore (from the Tip Top South) caused the first sale of the Tip Top property. On the Tip Top there is a shaft following the vein down at an angle or pitch to the north of about 68 degrees to a depth of 830 feet. Down as far as the 700 foot level the ore was frozen to both walls, however, on the 800 level the ore was frozen to both walls, however, on the 800 foot level a fine showing of gangus is found with the ores. The Tip Top mines have yielded to date over \$4,000,000 worth of silver, and today there remains between 300,000 and 400,000 oz. of silver in their dumps, besides many hundreds thousands of dollars worth of ore in the stopes and in place in the mines.

Tip Top ground and quartz is usually exceedingly The Ore: hard but brittle. This quartz at the surface contained, as a base, hemetite of iron, a small percent of zinc (blackjack); also a small percent of antimony, the latter in the form of brittle silver (antimonial silver), usually assay-ing around 3,000 oz. per ton, and often ruby silver was had. Also tungsten, usually ferberite or iron tungsten, is fre-quently found in these mines. TIP TOP MINE (Cont.)

The Silver: Silver at the surface was found in the form of chloride of silver, horn silver, and red oxide of silver. In the lower workings the silver was found with iron pyrites, antimony and black jack. The black jack are usually carrying from 200 to 400 oz. silver.

The antimonial silver and the black jack is usually found interspaced throughout the iron pyrite ores, also often the brittle silver carry the ore values up to 3,000 øz silver per ton. However, I have seen pieces of ruby silver, brittle silver, blackjack and iron pyrites combined ores as large as an ordinary water bucket that carried an assay value of 5,800 odd oz. silver per ton. In this camp, the ores of this series of veins carry but very little or no gold.

The Tip Top Mill: Two batteries of 5-1,060# stamps each, a White & Allen revolving roaster, 4 pans, and two settlers, and accessories, was erected on the banks of the Agua Fria River 9½ miles distant from the mines, to which the ores were first transported by pack animals, later about half way by pack and the balance of the wayby wagons, then ultimately by wagon the whole distance of nine and one-half miles. The management contended that owing to the high cost of extracting the ore (mostly single jack work with miners at \$4.00 per 8 hour shift and there never has been a power drill in these mines), and owing to the high cost of salt, etc., anything less than \$250 would not pay them. Hence the rich dumps and stopes and ores left in place in the Tip Top Mines. The tungsten ores usually lays in lenses throughout the silver ore chute, and very little of it was extracted for its silver content.

I am mentioning Tip Top Mines in particular to show that these ore veins of high grade ores <u>go down</u>. This series of veins are very persistent, and some of them can be traced several miles. As one Mining Engineer of large experience (who was in this District for several months, sampling for tungsten) said, "I have been in many mining districts, I have been in districts where the veins ran in all points of the compass; every which way, but I never was in a district before where the veins were so d--ed persistent as they are in this district."

To return to the Mill, along in 1886-7, the Tip Top Mine (then known as the Conquerer), and the Mill on the Agua Fria River were acquired by a Company known as the St. Louis Yavapai Mining & Milling Company and the Mill entoto moved to the Tip Top Mines, where it was installed on their property and concentrators were added thereto. This Company extracted about \$235,000.co worth of ore from the dumps of which they saved about one-third of the values. Some of the richer dumps, containing the oxidized ores, they could not handle to a profit at all. It has since been found that all these ores are highly susceptible to cyanide treatment.

I am satisfied that there are at least 40,000 tons of dumps remaining on the Tip Top and on the Tip Top South, from which mass at least 20,000 tons of ore and matrix can be had that will average better than 15 oz silver per ton.

I, O.A.Ensign, came into this mining camp in the year 1878 and have been intimately interested in the mines of Tip Top Mining District ever since and know whereof I speak. Mr G.M. Colvocoresses.

They will give 150,000 shares of the stock in Escro to parties taking it up.

They will give option on 350,000 shares of treasury stock at twenty five cents per share.

They will give voting control of balance of stock in Escro and will give management and entire operation. They will agree to pool practically all of the 150,000 shares that are outstanding and will keep stock in escro tied up as long as desired.

To the above proposition there is only one bad feature and that is that the parties taking up same should have a furthur option on at least 260,000 shares of the treasury stock which would give absolute voting control, since that would mean a total of 760,000 shares out of the total issue.

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I believe that even a better deal could be arranged provided **sa** good company would care to option everything.

Brief outline of Condition of Property and history, is shown in the accompanying report. You can take this report for what it is worth as you will note that much of the information is hearsay. The property in my mind hower has splendid possibilities but should be examined thoroly by some competent mining men. This has been done recently(Wingfield of Nevada returned a favorable report) and Long and Mc Iver also returned a favorable report and would have taken the entire property provided all of the treasury stock was optioned at twenty five cents.

Personally I am in no position to do anything on this and am too deeply interested in the future of the Consolidated to take an interest in outside matters but I think enough of this property to withstand half of the cost of examination , same examination to be made by any good man you might suggest provided you yourself would stand the other half of the cost of same. I imagine a thorough examination would cost about \$1000.00

I hope you will take this in the spirit in which it is sent and not assume that I am interesting myself in matters outside my work here, but you have honored me in the past by asking my advice about certain properties in this section and I feel that that this old property is the only one of value sufficient to interest me to the extent of spending my own money for part of the examination, and also if it is good would like to see you get hold of same. In the event that you consider the possibility of the Consolidated making the examination I would of course consider myself an outsider, as no

Mr G.M. Colvocoresses.

comission has been offered me nor am I interested in any way with the outfit but have written this letter entirely with the view of putting you or the company in the way of getting hold of a property which I consider would make a paying proposition.

In the event that you are interested or not I should appreciate a wire from you regarding same and in the latter case would telephone Davis what you say, as there is very little time left for examination.

Conditions here at Blue Bell are the same as when you left and ore shipments are going ahead as you outlined, we are making good headway on the 900 north but the 800 north is extremely hard altho we are working there steadily and may get softer ground before long.

With kind regards and hoping you are having a pleasant trip, I remain,

Yours very truly Sup't

CONSOLIDATED ARIZONA SMELTING COMPANY

HUMBOLDT, ARIZONA

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO THE COMPANY

Blue Bell Mine. Mayer Ariz. July 14. 1916.

Mr G.M. Colvocoresses. G.M. Con's Ariz. Smelt, Co. Humboldt, Ariz.

Dear Sir:-

Mr C.W. Davis a cattle man of Prescott and who recently acquired an option on the old Tip Top Heath property near Castle Hot Springs, came out here the day after you left and wanted some advice concerning his Tip Top property which he has incorporated for 1,500,000 shares. He has been trying to turn this property to Long & Mc Iver of the United Eastern but is dissatisfied with the deal which they wish to make with him. He asked my advice and wanted to know if I could turn the property for him. This of course was impossible considering my position here but since I have been familiar with this old property for years and with its past production and history I consider that same is well worth considering or at least making an examination of, therfore I am writing to you to ask if you would be at all interested or care to have an examination made of same, for the Consolidated or for yourself.

The conditions at present are as follows.

Three patented claims owned by original Tip Top Heath Co. and optioned to the Tip Top Consolidated Co. of which Mr Davis is President. Also seven claims taken up by Mr Davis and associates on which ore has been opened.

Option price on 3 claims is \$60,000.00 and payments to be made as follows. Oct. 9, 1916- \$20,000. April 9 1917- \$20,000.00 and Oct. 9 1917- \$20,000. This option takes care of all the old stock in the company and delivers the entire property with surface buildings etc, free of indebtedness.

Stock in the new company is distributed as

follows.

Total Capitalization, 1,5000000 shares par \$1.00 In Escro with Corporation Comission 600,000 shares. In Treasury 750,000 shares. Sold and outstanding 150,000 " The stock in escro is held by Davis and his two pardners.

The proposition they offer is as follows.

NOTE RE TIP TOP - 1938

Coupal financed this company to a certain extent and started operating in 1936. He purchased, moved and installed the mill from the San Marcos near Wenden and for a time claimed to be doing very well but property shut down in 1937 so that it is evident that it was a losing venture.

Coupal next interested Neal Clark and others in another tungsten property in this vicinity from which they made a few small shipments of good grade ore but the deposit proved to be very pockety and work here was also discontinued in '37.

In '36, a man named Stockdale worked claims in Carpenter Gulch just above the Tip Top and shipped 4 or 5 carloads of \$40 gold ore. He was working a very narrow vein and quit when he failed to secure money for a plant and larger scale operations.

G.M.C.

8/18, 43

Claude Findley I haberly the has intersted in the

Compil operation tell me that the failed larger because of

lark of Capital & junk equipments with no adaptate hater.

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