

CONTACT INFORMATION

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Arizona Department of Mines and Mineral Resources Mining Collection

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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: I.X.L. GROUP

ALTERNATE NAMES:

K.P. MINE LONG**S**TREET GUVOTS-WRIGLEY-SULPHIDE SILVER KING

MOHAVE COUNTY MILS NUMBER: 114B

LOCATION: TOWNSHIP 23 N RANGE 17 W SECTION 33 QTR. SE LATITUDE:N 35DEG 19MIN 57SEC LONGITUDE:W 114DEG 05MIN 36SEC TOPO MAP NAME: STOCKTON HILL - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

LEAD-PRIMARY SILVER-COPRODUCT ZINC-BYPRODUCT GOLD-(M)LODE-BYPRODUCT LEAD-(M)SULFIDE-BYPRODUCT COPPER-(M)BORNITE-BYPRODUCT COPPER-(M)SULFIDE-BYPRODUCT BIBLIOGRAPHY: USGS KINGMAN MAP USGS STOCKTON HILL QUAD ADMR MOHAVE CARD FILE

ADMR MOHAVE CUSTOM MILL PROJ. CARD FILE SCHRADER, F.C., USGS BULL 397, P. 115-116 ADMR I.X.L. CONSOLIDATED MINE FILE ADMMR WRIGLEY GROUP FILE AZ MINING JNL. Feb. 1920, p. 36; April 1920, p. 18, 43, May 1920, p. 29; June 1920, p. 28



NAME: I.X.L. MINES GROUP R 17 W SEC. 35 SECONNEY 37 ${\tt T}_{\rm CRS}\,{\tt N}$ Mineralization: PDZN,2019 Geology: Qtz ven pault jussice

COUNTY: MOHAVE

DISTRICT: WALLAPA(HED STOCKTON HILL

Type Operation:

Production:

AEC Microfilm, cuppingfile References: 5362 397 12-115 K. O 4 C. S. T. SIMOS

mhv. Mun & Pros. File Ordert May (# 353)

Mohave Cty Card File

I.X.L.

MOHAVE COUNTY

NJN WR 7/13/84: Ed Huskinson (c) with Gamin Resources (c) reported that they had a 7' drill intercept which ran 28 oz/ton Ag on their IXL Mine (f) Mohave Co. Their drilling to date was summarized as finding only a small ore body.

NJN WR 9/27/85: Ed Hiskinson (c) reported that geological mapping continues at the IXL (f) Mohave County.

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PROPERTY OF THE

I. X. L. MINING COMPANY

of

MOHAVE COUNTY, ARIZONA.

D.E. Blake, Mining Engineer

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PROPERTY OF THE

I. X. L. MINING COMPANY *flec 3, 22N, 17W* of

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MOHAVE COUNTY, ARIZONA.

By

D. E. Blake

Mining Engineer

This report consists of 7 typewritten pages, 1 blue print and 3 photos.

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Property of the I.X.L. MINING COMPANY

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The I. X. L. Mining Claims are located in the Wallapai Mining District, Mohave County, Arizona, about 15 miles from Kingman, the County seat of Mohave County, and about 10 miles from Berry Station, both places being on the main line of the Santa Fe Railroad.

Kingman, a town of 2500 inhabitants, is the distributing point for nearly all the mining regions of Northern Arizona. Stores in the town carry a full line of supplies for mine and mill. The road from the town to the mine is in good condition for automobile and truck travel. With the exception of a very few stormy days during the winter months, outside work can be carried on throughout the entire year.

The property is situated on the eastern slope of the Cerbat Range in I.X.L. Basin, at an elevation of 4500 feet. Enough water for domestic purposes has been developed, and with depth, the mine will provide enough water for milling operations.

No timber is available on the property for mining purposes. The sparse desert vegetation furnishes a scant supply of wood for domestic purposes.

DEB.

304

The country rock of the Cerbat Range is the pre-Cambrian granite-gneiss-schist, intruded in places by later aplitic granite, or basic dikes. The trend of schistosity is in general about N.30° E. with a vertical dip Northeast at generally a steep angle. The jointing strikes northwest with the dip to the East. This is also the trend and dip of the veins.

The rocks have been materially altered in regions of intense movement, so that the granites have been changed beyond recognition.

Water level is from 10 to 60 feet from the surface and the oxidized zone, in some of the veins, extends to a depth of 300 feet.

From the records beginning about 1860, the mines of the Cerbat Range produced large quantities of silver ore from surface deposits. About the time the surface deposits of secondary ores were exhausted, the drop in the prices of the base metals and the further depreciation of silver, caused many of the properties to close down.

Recently, owing to the increase in the price of base metals and the demand for silver, properties long idle are now receiving attention and the so-called "low-grade" ore bodies, which are continuations of the surface shoots, are valuable on account of improved metalurgical methods, and new ore bodies have been developed in depth below permanent M. F. 10

waterlevel.

These new ore bodies are found at the intersection of a generally unrecognized but important east-west vein system, whose veins, in many instances, are not encountered on the surface, contribute handsomely toward the enrichment of the main veins on the deeper mines.

The I.X.L., located in 1873, is now known as the Longstreet, and while the records of the production are not available at the present time, it is claimed that about \$200,000.00 worth of lead-silver ore has been shipped from the surface workings.

The group consists of 5 claims, known as: "Longstreet" "Comet" "Possibility" "Bell" "Hyson"

The group has a total area of 90.12 acres.

The I.X.L. vein can be traced throughout the length of the three claims, and beyond, a distance of more than one mile. The general trend of the vein is N. 24⁰ W. and has a slight dip to the east. On the east side of the vein is a dark basic dike, locally called "Diorite", which appears to form the hanging wall of the vein. The mineralized zone is from 30 to 100 feet in width. Small veins of the east-west system

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are found joining the I.X.L. vein. A series of step-faulting is observed at different points along the vein. A typical fault is shown in the south drift of the Longstreet. On the surface, the throw is 12 feet, while in the drift the throw is about 3 feet. In no instance is the throw, as seen on the surface, more than 20 feet.

The main workings are on the Longstreet claim and consist of a well-timbered, 6'x 4'inside the timbers, shaft 157 feet deep. Drifts have been run from the 108 foot level 228 feet south and 160 feet north from the shaft.

In the North drift, an ore shoot is developed 120 feet long by the drift and a raise to the surface and a winze 30 feet deep. From the raise and from a small stope ore has been shipped. The bottom of the winze shows the continuation of the ore shoot vertically. As the ore shoot approaches the fault, it is badly shattered and broken. On the surface there are indications of another ore shoot about 50 feet beyond the fault, as the mineralized croppings show the junction of a smaller vein with the main I.X.L. vein.

In the South drift, inspection was not possible on account of caves. It is said that in driving this drift a stope from the old workings was encountered and the drift was abandoned,

The indications are that the ore deposition is from great depths by hot waters, after the intrusion of the graniteporpbrphyry and basic dikes. These dikes have, beyond ques-M&B. 608 10

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tion, a great influence on the genesis of the ore deposits.

The ground generally stands well, no large amount of timbering being necessary.

The Comet and Possibilaty claims cover the I.X.L. vein north, the vein being easily traced by float and the different shallow shafts and cuts on the vein.

The ore can be treated by hand sorting and by milling the lower grade material. The ore from the North drift will concentrate about 12 into 1 and a saving of 70% of the values can be made by water concentration.

Assay samples from this ore, on the dump, show returns from \$6.50 to \$10.60 per ton.

The Hyson-Bell vein is from 4 inches to 30 inches in width and can be traced from beyond the end line of the Hyson claim to the Comet claim, where it undoubtedly forms a junction with the I.X.L. vein. This junction can be found by trenching.

From the Hyson it is claimed leasers have taken out about \$45,000.00 in high grade silver ore. Most of the workings are caved at the present time and no inspection of the underground workings was made.

The mine equipment consists of 6 H.P. Fairbanks-Morse gasoline hoist with 300 feet of 1/2 inch cable, water and ore buckets, rails, ore car, hand steel, a small blacksmith AF.B. 70+10

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shop, cook-house 12x36 with equipment for 12 men and a store room 12x14. (See Photos).

Other properties in the Cerbat range have practically the same geological conditions as obtain on the I.X.L. Group, which leads me to believe that large and permanent bodies of ore will be found in this vein on development.

I should recommend the enlargement of the shaft from the first level to 4'x 8' in the clear, and that the shaft be sunk to a depth of 500 feet. Drifts should be run from the 300-foot and 500-foot levels, both north and south on the vein, to further develop the ore bodies known to exist.

In order to accomplish this, it will be necessary to install new machinery, as the present plant is inadequate and it will be necessary to make improvements in the camp.

To accomplish the work outlined will cost approximately \$30,000.00., and will take about six months of active operation.

With the expenditure of this amount of money, enough ore should be developed to warrant the erection of a mill to treat the lower grade ores of the mine. There a splendid site for a mill on the hillside, northeast of the shaft, where slope of the hill will permit of the erection of a mill, through which the ore can pass by gravity.

Considering the easy accessability of the mine and that the I.X.L. vein has produced a large amount of ore; that the $A = \frac{1}{2} \frac{1$ origin of the ore is undoubtedly deep-seated; that the vein is so well defined and persistent and that ore shoots in the vein are proven, the writer regards the I.X.L. Group as possessing large possibilities with reasonable assurance, and believes the property amply justifies the expenditure of the amount mentioned for development.

Enginéer.

Kingman, Arizona, September 10, 1917.

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157-ft. Shaft on I.X.L.-Longstreet Claim.



Looking South on the Longstreet Claim.

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I. X. L. Cook House.

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File Name J. X. L. Group MILS Number <u>114</u> B **Object Replaced:** Oversize Plate(s) Number Stored in "Jacket" **Report Dividers:** Number if Appropriate Photographs to Chief Engineer Office: Number if Appropriate_____ Old Fragile Paper Document: Document Dated April 12, 1917 Other <u>Engineers Report</u> Exhibit"L" Bpages Page Number

EXHIBIT "L".

ENGINEER'S REPORT.

The following is a report of E. Martin Thorniley, Mining Engineer, on all the property owned by the Company, and held by it under Option.

Attached to said report is also a blue print plat, showing the relative positions of all the mining property aforesaid.

Chloride, Mohave County, Arizona. April 12th.1917.

Mr.George F.Beveridge, Chloride, Arizona.

Sir:

Pursuant to your direction, I have made an examination of the property known as the "L.X.L." Consolidated Mines", containing eleven claims of approximately two hundred and twenty acres and described as follows:

the property is situated about ten miles N.E. from Kingman in what is known as the Stockton Hill Mining District in the Cerbat Range of Mountains, Mohave County, Arizona, the location of the group being and and one half miles N. of the crest of Stockton Hill.

ACCESSIBILITY

The property may be reached by rail on the Santa Fe R'road system, with the Town of Kingman as a base of supplies, from thence there is an excellent wagon road direct to the property, this road has recently been built by the "Wrigley Sulphide Company"which property adjoins that of the "I.X.L. Cons" immediately on the West.

There is however an alternative road built by the original "I.X.L.CO" which cuts off some two miles of mountain grade and joins the "C.O.D." wagon road at a point one half mile from the property in the I.X.L.Wash.this road can be put into thorough repair for about \$500 and is a preferable route to the aforementioned one, see map.

WATER

The water problem, always an important one, is already solved as there are numerous springs breaking out on the Mountain slopes, most of them from the veins which outcrop along the face of the Mountain - with the development of the vein itself sufficient water is released for all purposes.

GEOLOGY

The formation in which the veins on this property occur is Granite on both the Foot and Hanging walls, however there is evidente of Pre - Cambrian Gneiss complex together with Pegmatite and Diorite Dykes parrelling the Lode system.

In the vicinity of the main vein the Feldspar of both walls is muchkailinised and in the fissure itself streaks of Talc are of frequent occurrence the result of movement and consequent crushing of the rock and its subsequent alteration.

The veins of the "I.X.L."are fissures - just how many of these fissures occur in the system I am unable to say as the mine workings have not as yet demonstrated this - but there are at least four and probably more. The main vein system is persistent in length, the strike being in a N.W.and S.E.direction and has a defined width of from thirty to seventy five feet, whilst the dip appears to the Easterly.

The former is indicated by the frequent outcrop of the fissure at the surface for upwards of seven thousand feet within the horizon of the property - the latter by the extent of the mine workings. The fissure appears to be of high inclination, probably some

75° to the E.though the present shaft work shows the vein to stand practically vertical with a slight inclination Westerly, this is probably due to shearing and crushing near the surface.

The vein has been found to be highly mineralized wherever exposed, carrying Gold, Silver and Galena, with traces of Zinc.

The mine workings accessible to me showed workable vein widths of high grade shipping ore from four to sixteen inches and carrying milling values in second class ore of three to eight feet in thickness - this was at a depth of one hundred and eight feet vertical.

Above this level and within what is known as the Oxide zone very considerable mining has been done, the contents of the vein were invariably very rich both in gold and silver and were worked by means of Arastras in the early seventies - the old Arastras are still in evidence within a few hundred feet of the workings.

I have spoken to some of the men connected with the mine at this period and they state that between \$200.000 and \$300.000 was extracted in this manner.

I sampled the only Dump left from this work that was not too much scattered and still contained some hundred tons of screened ore,this sampling gave a return of \$29.38 in Gold and Silver per ton.

MINING *** LONG STREET CLAIM.

Mining has been carried on here in the early days with small regard to future contingences, each of the several Chloriders striving to produce the greatest profit with the least possible amount of devlopment work, the result is that that portion of the mine in the vicinity of the old Stopes, which were worked through an abandoned shaft, has been subjected to the process known as "gutting", that is the best ore has been removed up to the limit of safety to the mine workings, and often to the immeninent risk of the miners themselves.

While considerable ore can still be won by continuing this practice, it should be confined to that portion of the property already opened in this manner.

The drift now runs from the new shaft at the 108 feet level may be continued and a considerable tonage obtained, but mining in this manner should be discontinued.

It is my opinion that ultimately more satisfactory results will be quickly secured at a lower cost per ton of ore extracted by at once sinking this new shaft to a depth of 300 feet.

NEW SHAFT WITH LATERALS ETC.

This shaft which is $4 \ge 7$ feet in the clear and properly timbered, equipped with manway etc has already been sunk to a depth of 157 feet vertical.

It has been sunk in the Granite footwall country, thus ensuring a permanent shaft.

I would recommend the cutting of a station when the 2 00

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foot level is reached and Crosscutting the Lode - this shaft should be continued without interruption to the 300 foot level where I should expect to find the vein properly stratified and well below the Zone of crushing and brecistion.

LEVEL 108 FEET SOUTH DRIFT.

Drifts have been extended for 160 feet N.W. and 228 feet S.E.

The S.E.drift shows a mass of milling ore for some 30 fect in length and extending upwards apparently, however I was unable to get into the adjacent old stopes from this level.

From this point to the end of the drift everything appears to have been extracted as this was the portion of the mine that was worked for its highgrade and there is even now evidence of the richness of the ores taken out.

This shoot of rich ore appears to be some 150 feet in length, terminating within a few feet of where the commencement of a second shoot is in evidence at some 20 feet South of the Shaft in this drift.

LEVEL 108 FEET NORTH DRIFT.

This drift has been extended 160 feet - at a point 90 feet N.of the shaft connection has been made with a second shaft.

At a depth of 60 feet in this shaft laterals were driven both N.and S.respectively 8 and 10 feet - a good deal of chambering has been done here which shows up considerable ore.

I was able to sample a streak of high grade galena in the N.drift at this level fourteen inches in width,from which two cars had recently been taken,this sampling assayed \$66.96 per ton.

The balance of the vein in both N.and S.drifts at this 60 foot level showed up a good grade of milling ore which extends upwards as disclosed by the shaft to within some 20 feet of the surface and is uniform in quality down to the 108 foot level.

Whilst this ore has not been properly crosscut at any one point I found it to be from four to eight feet by measurement with indications of a greater width as no wall was found.

The drifts have not been run to any uniform width - quite

a little chambering has been done in hunting for highgrade and it was by this means that I was able to get a line on probable thicknesses on milling ore in sight.

Returning to the 108 foot level proper,I found a streak of high grade one one foot in width at a point 60 feet N.of the main shaft,this streak gave a return by assay of \$100.51 per ton this streak appears to carry Antimonial silver in addition to its high lead contents.

At a point 40 feet N.of the main shaft a separate streak of high grade ore running from four to eight inches in thickness traverses the footwall portion of the Lode.

Sampling and assay of this streak gave a return of \$86.76 per ton.

Apart from these two enriched streaks of shipping ore I found a varying width of from four to eight feet of good grade milling ore having a hard quartz gangue - the galena being dissaminated right through the quartz with no particular stratification.

The probable length of this shoot will be 160 feet N.of the shaft and about 20 feet to the S.

There was evidence in the face of the N.drift that the termination of this shoot was near as it had tapered down to about three feet in width.

WINZE.

At a point 90 feet N.of the main shaft a winze has been sunk for thirty feet and shows six feet of milling ore of the same character as the levels above, there was evidence however of a more pronounced stratification.

I took a comprehensive sample from various points throughout the upper levels - along the 108 ft.level and then a proportion from the Winze workings, being careful to eliminate what might be high grade ore from either streak encountered - or from any other sources.

The assay return from this bulk sample gave \$24.90 per ton.

I am of the opinion that it would be safe to estimate an available tonnage of several thousand tons of this character and grade of ore to at least 138 ft but there was insufficient work done to enable me to measure up these ore reserves or to systematically sample the same.

The ore body as disclosed at this level, shows the characteristics of the district inasmuch as the Vein is crushed and brecciated.

At a point on the surface some 300 feet N.of the shaft there is evidence of faulting - immediately beyond this point the outcrop is very pronounced with strong indication of other shoot of magnitude awaiting development - the lode here is from 30 to50 feet in thickness.

HYSON CLAIM.

This claim lies to the S.and E.of the "Long Street" claim and carries a strong vein several feet in thickness throughout its length - the vein intersects the main Lode at a point on the "Comet"claim as indicated on the map.

Considerable work was done on this vein in the early days by means of Adits and Shafts and I understand that \$45.000 was taken out in high grade ore.

COMET AND POSSIBILITY.

The main lode traverses these claims, it has been trenched in several places and shows the same character and persistence of this immense fissure - the "Hyson"vein system intersects on this claim as previously stated.

A recent washout at the southern end of the "Comet" claim shows up the vein very prominently in place with a width of thirty feet, the lodevconsists of the usual banded quartz with guage fillings between - on the Eastern wall side there is evidence of a Diorite Dyke. On the "Possibility" claim the lode stands up vey boldly, the outcrop being impregnated with manganese - cuts have been made across the lode and a crosscut has been comenced to intersect the vein at a shallow depth.

The hanging wall portion is parrelled with a Pegmatite Dyke for a considerable distance.

BELL AND RUSTLE.

The "RustleNo.l"shows a massive Porphry Dyke traversing its length, the location work has been done on the Dyke.

The "BELL" claim shows the "Hyson" vein diagonally crossing the property, the vein has been opened up in three places and shows good minerlisation.

RUSTLE AND RUSTLE NO.2

There is evidence of a vein on the "Rustle"claim but there has not been sufficient work done here to denomstrate its value.

"Rustle No.2" claim shows a third vein system running diagonally across the claim and intersecting with the main lode on the "A.B." claim, as shown on the map.

The location work has been done on the "Rustle No.2"claim on this vein.

A.B.CLAIM.

This claim traverses the saddle of the divide and the continuity of the main lode is disclosed by three outs - the lode maintains its permanence and general characteristics in every way.

The "Rustle No.2" vein intersects on this claim as per map.

B.A. CLAIM.

This is the North end of this estate and shows up the "I.X.L"lode in a very marked manner - at a point as indicated on the map the main vein appears to split - one portion maintaining its course, with the other leg bearing away to the West - both vein systems finally junctioning with the vein system of the "C.O.D."

A shaft has been sunk near the side line (N)of the "B.A." to a depth of 90 feet, this shaft has caved in but there was evidence of increased surface mineralisation both at the shaft and again in cuts further up the hill - these showed high grade galena in bands with a Porphyritic filling.

An Adit has been commenced on the Westerly vein and is now in ten feet, it shows streaks of galena across the face up to six inches in thickness.

I took a sample from this streak which gave a return by assay of \$52.32 per ton.

From another point where the vein has been opened I sampled a four inch streak on the wall portion which returned by assay \$102.62 per ton.

In another cut I sampled the streak showing the assay

return from this gave \$21.68 per ton.

CONCLUSION.

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The property is some ten miles from the nearest railroad is easy of approach, water is available in sufficient amount for metallurgical operations on a **sea**le commensurate with the quantity of ore that awaits development - there are no difficult metallurgical problems to be worked out, the climate is good and the mining operations should be conducted at this property without unusual difficulties.

A glance at the accompanying sketch map of the principal mine workings indicates that the "I.X.L.Cons."is not unlike other mines in the occurrence of its ore shoots.

It is clearly evident that an ore shoot of undetermined extent, striking somewhat W.of N.has been penetrated by the mine workings.

The ore in this shoot, owing to the shallowness of the workings, showsevidence of crushing and brecciation, this undoubtedly will be replaced by stratification as depth is attained.

It is my belief that if mining be carried on under the supervision of a competent Engineer, very large reserves of high grade milling ore can be blocked out at an early date, these ore reserves will be apart from segregated portions of the vein system that are known to carry high grade ores as demonstrated by the various samples 1 have taken.

Whilst most of the work has been confined to the "Long Street"claim there's ample evidence of the opening up of a mine of magnitude and richness on the B.A. property at the North end of the Estate.

This claim is so close to the famous "C.O.D." property, from which many hundreds of thousands of dollars have been taken out by primitive menas of mining, that I find a difficulty in being conservative in my estimate of the future possibilities of the "I.X.L.Cohs" group.

I find that this district is traversed by two mother lode systems known as the I.X.L. lode system and by a parrellel lode to the West now known as the "Wrigley Sulphide"lode system.

In order to thoroughly study the characteristics of the "I.X.L" lode I have made three separate examinations of the property and an satisfied that a mine of magnitude, containing every essential for the making of ore at great depths is in evidence - this is indicated by the length of the shoots at the surface - the persistence and character of the guage accompanying the lode, and especially the comtents of this guage which still contains small particles of ground up and altered rock - these characteristics are very marked on the mother lode of California and elsewhere and are invariably an indication of depth and permanency.

The actual values in the ore as opened up is more than encouraging and indicates that even with a 300 foot depth there should be enough ore actually blocked out to warrant a Mill on the property - this apart from shipping grades. The "I.X.L." property has every indication of becoming one of the most prominent and permanent mines of the district - far greater than the owners of the property have even demonstrated.

I have no hesitation in recommending this property as being one of high merit.

The present equipment on the mine consists of three houses one six H.P.Hoisting Engine, and general mine tools etc, with car and tracks, the engine is about to be replaced with a 25 H.P. Hoist, Compressor etc.

Yours respectfully alla 619 1m

Member Australian Institute Mining Engrs. "Victorian Chamber of Mines "Fellow Geological Society of Australia "Americam Mining Congress

This report is issued in duplicate.

COUNTY: MOHAVE NAME: I.X.L. MINES GROUP R 17 W SEC. 33 SECONNEY 37 DISTRICT: WALLAPA(T₂₃N Met D STOCKTON HILL Mineralization: PbBnAuAg Geology: at ven i fault jusine

Mohave Cty. Card File

Type Operation:

Production:

References: 6352 397 P.115 AEC MUCIQUEM; CUPPINGfilles h. D. 4 V. F. T. Marias

mhv. Mun & Pros. File Ordert Map (# 353)

I.X.L.

MOHAVE COUNTY

NJN WR 7/13/84: Ed Huskinson (c) with Gamin Resources (c) reported that they had a 7' drill intercept which ran 28 oz/ton Ag on their IXL Mine (f) Mohave Co. Their drilling to date was summarized as finding only a small ore body.

NJN WR 9/27/85: Ed Hiskinson (c) reported that geological mapping continues at the IXL (f) Mohave County.

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PROPERTY OF THE

I. X. L. MINING COMPANY

of

MOHAVE COUNTY, ARIZONA.

D.E. Blake, Mining Engineer

on the

PROPERTY OF THE

I. X. L. MINING COMPANY *Pec 3, 22N, 17W*

of

MOHAVE COUNTY, ARIZONA.

By

.

D. E. Blake Mining Engineer

This report consists of 7 typewritten pages, 1 blue print and 3 photos.

on

Property of the I.X.L. MINING COMPANY

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The property is situated on the eastern slope of the Cerbat Range in I.X.L. Basin, at an elevation of 4500 feet. Enough water for domestic purposes has been developed, and with depth, the mine will provide enough water for milling operations.

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The country rock of the Cerbat Range is the pre-Cambrian granite-gneiss-schist, intruded in places by later aplitic granite, or basic dikes. The trend of schistosity is in general about N. 30º E. with a vertical dip Northeast at generally a steep angle. The jointing strikes northwest with the dip to the East. This is also the trend and dip of the veins.

The rocks have been materially altered in regions of intense movement, so that the granites have been changed beyond recognition.

Water level is from 10 to 60 feet from the surface and the oxidized zone, in some of the veins, extends to a depth of 300 feet.

From the records beginning about 1860, the mines of the Cerbat Range produced large quantities of silver ore from surface deposits. About the time the surface deposits of secondary ores were exhausted, the drop in the prices of the base metals and the further depreciation of silver, caused many of the properties to close down.

Recently, owing to the increase in the price of base metals and the demand for silver, properties long idle are now receiving attention and the so-called "low-grade" ore bodies, which are continuations of the surface shoots, are valuable on account of improved metalurgical methods, and new ore bodies have been developed in depth below permanent NEB.

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waterlevel.

These new ore bodies are found at the intersection of a generally unrecognized but important east-west vein system, whose veins, in many instances, are not encountered on the surface, contribute handsomely toward the enrichment of the main veins on the deeper mines.

The I.X.L., located in 1873, is now known as the Longstreet, and while the records of the production are not available at the present time, it is claimed that about \$200,000.00 worth of lead-silver ore has been shipped from the surface workings.

The group consists of 5 claims, known as: "Longstreet" "Comet" "Possibility" "Bell" "Hyson"

The group has a total area of 90.12 acres.

The I.X.L. vein can be traced throughout the length of the three claims, and beyond, a distance of more than one mile. The general trend of the vein is N. 24⁰ W. and has a slight dip to the east. On the east side of the vein is a dark basic dike, locally called "Diorite", which appears to form the hanging wall of the vein. The mineralized zone is from 30 to 100 feet in width. Small veins of the east-west system

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DEB.

are found joining the I.X.L. vein. A series of step-faulting is observed at different points along the vein. A typical fault is shown in the south drift of the Longstreet. On the surface, the throw is 12 feet, while in the drift the throw is about 3 feet. In no instance is the throw, as seen on the surface, more than 20 feet.

The main workings are on the Longstreet claim and consist of a well-timbered,6'x 4'inside the timbers, shaft 157 feet deep. Drifts have been run from the 108 foot level 228 feet south and 160 feet north from the shaft.

In the North drift, an ore shoot is developed 120 feet long by the drift and a raise to the surface and a winze 30 feet deep. From the raise and from a small stope ore has been shipped. The bottom of the winze shows the continuation of the ore shoot vertically. As the ore shoot approaches the fault, it is badly shattered and broken. On the surface there are indications of another ore shoot about 50 feet beyond the fault, as the mineralized croppings show the junction of a smaller vein with the main I.X.L. vein.

In the South drift, inspection was not possible on account of caves. It is said that in driving this drift a stope from the old workings was encountered and the drift was abandoned.

The indications are that the ore deposition is from great depths by hot waters, after the intrusion of the graniteporpbrphyry and basic dikes. These dikes have, beyond ques-

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tion, a great influence on the genesis of the ore deposits.

The ground generally shands well, no large amount of timbering being necessary.

The Comet and Possibilaty claims cover the I.X.L. vein north, the vein being easily traced by float and the different shallow shafts and cuts on the vein.

The ore can be treated by hand sorting and by milling the lower grade material. The ore from the North drift will concentrate about 12 into 1 and a saving of 70% of the values can be made by water concentration.

Assay samples from this ore, on the dump, show returns from \$6.50 to \$10.60 per ton.

The Hyson-Bell vein is from 4 inches to 30 inches in width and can be traced from beyond the end line of the Hyson claim to the Comet claim, where it undoubtedly forms a junction with the I.X.L. vein. This junction can be found by trenching.

From the Hyson it is claimed leasers have taken out about \$45,000.00 in high grade silver ore. Most of the workings are caved at the present time and no inspection of the underground workings was made.

The mine equipment consists of 6 H.P. Fairbanks-Morse gasoline hoist with 300 feet of 1/2 inch cable, water and ore buckets, rails, ore car, hand steel, a small blacksmith

DE.13.

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shop, cook-house 12x36 with equipment for 12 men and a store room 12x14. (See Photos).

Other properties in the Cerbat range have practically the same geological conditions as obtain on the I.X.L. Group, which leads me to believe that large and permanent bodies of ore will be found in this vein on development.

I should recommend the enlargement of the shaft from the first level to 4'x 8' in the clear, and that the shaft be sunk to a depth of 500 feet. Drifts should be run from the 300-foot and 500-foot levels, both north and south on the vein, to further develop the ore bodies known to exist.

In order to accomplish this, it will be necessary to install new machinery, as the present plant is inadequate and it will be necessary to make improvements in the camp.

To accomplish the work outlined will cost approximately \$30,000.00., and will take about six months of active operation.

With the expenditure of this amount of money, enough ore should be developed to warrant the erection of a mill to treat the lower grade ores of the mine. There a splendid site for a mill on the hillside, northeast of the shaft, where slope of the hill will permit of the erection of a mill, through which the ore can pass by gravity.

Considering the easy accessability of the mine and that the I.X.L. vein has produced a large amount of ore; that the $\Delta \in B$. origin of the ore is undoubtedly deep-seated; that the vein is so well defined and persistent and that ore shoots in the vein are proven, the writer regards the I.X.L. Group as possessing large possibilities with reasonable assurance, and believes the property amply justifies the expenditure of the amount mentioned for development.

EBlak Mining Engineer.

Kingman, Arizona, September 10, 1917.



157-ft. Shaft on I.X.L.-Longstreet Claim.

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Looking South on the Longstreet Claim.

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I. X. L. Cook House.





