CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
520-770-3500
http://www.azgs.az.gov
inquiries@azgs.az.gov

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Granted

Mine ALPHA Pb., Zn., Cu., Ag. Date February 23, 1943

District Wallapai (Cerbat) Engineer Earl F. Hastings C

Subject: Reconstruction Finance Corporation
Preliminary Development Loan

Docket No. Phoenix C - 140
Date Application Received February 15, 1943
Date of Report February 22, 1943

1. Name and address of applicant (correspondent):
S. J. Langley, 1045 S. Bedford Street, Los Angeles, California.

2. Character of project and estimated cost thereof:
Unwater 100 foot shaft and lateral workings west of main tunnel portal and unwater winze 800 feet from portal of 1200 foot tunnel. Sample all workings. $5000.00.

3. Location of property:
Wallapai Mining District, Sec. 32, T 23 N, R 17 W, G & S R M., Mohave County, Arizona.

4. Applicant's interest in or ownership of property:
Applicant holds 30 year lease at 10% royalty dated January 22, 1943.

5. Loan requested:
$5000.00.

6. Loan recommended:
$5000.00.

7. Comments:

(A) The Sanderson and Perrill statements indicate the occurrence of commercial lead and zinc ores in the areato be made accessible. The values they estimate conform to personal knowledge of the ores encountered in the main tunnel stoped areas.

Both the Alpha and Omega veins will be made accessible at a depth of 100 feet by rehabilitating the vertical shaft.

(B) The stoped area near the face of the 1200 foot tunnel produced ore which was milled by the Keystone Mines Co. at Mineral Park. The value of this ore is not stated, but the assayer at the Keystone Mine verbally communicated to the writer that the ore was "extremely profitable." The Keystone mine was otherwise in financial difficulty and apparently did not account for, or pay royalty on, ores mined from the Alpha property.

Other than the above production only surface high grade shipments are of historical record.

(C) The writer visited the property and examined all accessible workings, prior to the above production, with T. N. Slaughter, now Superintendent of the La Luz Mine, a subsidiary of Ventures Mines in Nicaragua. Following this visit Slaughter sampled the property and the results were most favorable even when computed on 1936 metal prices. A copy of the assay map is not available but it is recalled that the combined metallic content (pb., zn., cu.) of the area between the raise from the lower to the upper tunnel

and the face of both tunnels was approximately 1½%. West of the raise values gradually diminished with proximity to the surface and other factors.

This area offers favorable development possibilities and contains a possible 7500 tons of ore already exposed above the lower tunnel.

(D) The applicants anticipation of ore as indicated by the colored section of the map is quite optimistic; although along the 2,000 feet of vein there are undoubtedly ore shoots at frequent intervals and certainly indications worthy of investigation.

The property is similar in many respects to the adjoining Summit mine which is developing with Reconstruction Finance Corporation aid.

(E) Ralph R. Langley, brother and partner of the applicant, is owner of the Gem mill which, with some alteration, will be suitable for the reduction of Alpha ores. This is of significance in the marketing problem of the district.

(F) Equipment requirements are minimum as major items are either already on the premises or are owned by the partnership. Loan funds can consequently be applied to operational activities rather than capital investment.

(G) The Alpha property, including the Alpha, Omega and Silver-Copper veins, offers one of the foremost production possibilities of copper, lead and zinc in the area. Under intelligent management a small production should be quickly realized and conditions are favorable for the development of an ore body of importance. This loan is therefore recommended.

ARIZONA DEPARTMENT OF MINERAL RESOURCES

Earl F. Hastings
Projects Engineer

Re: S.D. Lawley
Docket No 8110

Mr. Tully

Herewith enclosing herewith my Supp Eng's report upon the above captioned project, together with two copies of application for loan etc.

T. P. L.
Supp Eng.

Enclosures

2 Copies Application for loan with supporting Data
2 Copies Supplemental Engineer's Report
2 Sketches
4 Assay Certificates
2 Copies of letter to Applicant

Docket No. ND8110

Date of Examination July 26, 27, 1943

Date of Report Sept. 1, 1943

P. 455

Note:

The above-captioned project has been operating under a preliminary development loan in the amount of $5600 which was granted to the project in May, 1943. The loan funds have been largely expended. The purposes of the loan were accomplished only in part and cash on hand, amounting to $ 808.58, is not sufficient to continue the work. The applicant believes that he has demonstrated the presence of sufficient ore to justify granting an additional loan to the project. Following receipt of this application for an additional loan the mine was examined with results as noted in the following report:

(1A) Summit Mine.

1 Name and Address of Applicant

Name: S. J. Langley.

Address: 1045 So. Bedford Street, Los Angeles

Correspondent:
Ralph R. Langley
Box 455
Kingman, Arizona

2. Character of Project

Development of zinc-lead-copper-silver-gold deposit.

3 Location of mine

The mine is located in sec. 32, T23N., R17W., G&SRM Mohave County, Arizona, in the Wallapai Mining district. The nearest rail point and supply center is at Kingman, Arizona, 18 miles southwest from the mine. The first 13 miles of the road from Kingman is paved highway and the balance is good dirt road. The last mile of road near the mine is very steep. The road is accessible at all seasons except during rare short periods of heavy storm.

4 The applicant is a limited partnership composed of members of the Langley family. Ralph R Langley is the General Partner and is the only member of the family who takes an active part in the conduct of the partnership affairs of the

partnership. The original loan (30 year term) was obtained from the owner by Ralph R Langley ~~who assigned it~~ and was assigned by him to the partnership. The preliminary development loan was applied for and granted in the name of S.J. Langley one of the limited partners. Ralph R. Langley has been operating as an individual another property (Docket No. GND-7799) several miles distant under a preliminary development loan. The two operations have been conducted concurrently with some interchange of mining crews, equipment etc.

The group which is interested in the present project applied for and was declined a loan (in the name of Langley) on another project in the district several months ago.

Mr. Ralph Langley is a middle-aged man. He has been connected with mining development for the past 15 years. Apparently this activity has been promotional rather than operational. In the present instance however the operations have been conducted in an efficient mining-like fashion. ~~He is in his employ~~ foreman, a Mr. Larsen is a competent practical mining man of recognized ability.

The loan application with maps and supporting data is presented in a clear business like manner.

The papers relating to the mining operations are included with the application.

Loan Requested

The application carries a request for a loan in the sum of $30,000, inclusive of the $5000 preliminary development loan which has already been granted to the project. In a recent telephone conversation and letter, the latter dated August 25th and enclosed herewith, the applicant modifies his program and requests a disbursement of only $7,500.

6. Description of Project

A. General Features

1. There are no mine workings, mill, or other necessary appurtenances which are not confined within the applicant's ownership.
2. The proposed project would comply with State compensation and safety-first statutes.
3. There are no apparent legal discrepancies in the project.
4. There are no impeded right-of-way facilities.
5. There is no likelihood of surface or sub-surface trespass during the project.

B. Existing Development

The mine is opened by tunnels, shafts and inclines

a. The applicant furnishes essentially complete maps of the workings, and the sketches which accompany this report are based upon these maps and upon local compass bearings and tape ~~and compass~~ measurements.

b. Samples were cut with pick and moil and gathered ~~in a box~~ upon canvas.

c. The principal workings were generally accessible and in fair condition, except in some of the stopes and in the ~~50 ft~~ winze near ~~in~~ the end of the main tunnel. The No 1 shaft northwest of the main tunnel was inaccessible.

d. General Features of deposit, etc.

The deposits in the Alpha mine, ~~mine~~ is located ~~in~~ a region of rugged topography ~~on the~~ southwest edge of the Cerbat mountains. The rocks of the region are a complex mixture of granite and gneiss with occasional bands of schist and numerous pegmatite dikes. Many quartz fissure veins cut the formation in a general NW-SE direction ~~and~~ with steep northeasterly dips.

The summit mine which recent operations suspended, operated under R.F.C. loan (El Dorado Mining Co. Docket No. B-ND-4511) Lies about 2500 feet northwestward from the Alpha mine. The veins are approximately parallel.

~~Three veins are exposed~~ upon the surface of the subject property, These are known as the Silver-Copper Dike, the Alpha and the Omega veins.

¶ ~~The~~ Silver-Copper Dike Vein, is a siliceous dike which is recognizable by bold outcrops on the hillside ranging from a few

(5)

(This vein converges, on strike, toward the north with the alpha and the Omega vein)

feet to 30 or more feet in width. ~~Develop-ment of the dike has been small and consists of a few surface cuts and~~ ~~pits.~~ Occasional pockets of copper-silver ore have been found and it is said that some shipments were made. No development beyond shallow surface pits ~~cuts~~ has been done ~~apparently~~ however and the amount of ore shipped could not have been large. No body of ore has been ~~seen~~ opened and none is indicated ~~by gossan~~ on the surface. ~~Another vein known as~~

¶ The Omega vein has been ~~somewhat~~ developed to some extent by a 50 foot shaft and by a 240 ft. crosscut from the bottom of a 100 ft. shaft which was sunk to ~~develop the alpha vein.~~ The vein parallels the Alpha vein and is less well defined on the surface. The applicant presents two letters containing statements by parties who were in the workings many years ago, regarding the presence of galena in the Omega vein where it is opened by the [illegible] crosscut. One of these parties shipped a small quantity (of high grade galena ore from here.) The applicant commenced unwatering the 100 ft. shaft ~~but found it badly~~ under the preliminary development loan but found when the workings were ~~the workings~~ badly caved ~~and development~~ work ~~at that point~~ was suspended. There is no ore exposed ~~visible~~ ~~on the~~ in the ~~copper~~ Omega vein on the surface and the mineralized dump material at ~~contains only~~ each of these shafts contains only small amounts of metal. ~~content.~~ (see Cazier's Progress Report, dated July 21, 1943)

The Alpha vein is a strong persistent fissure vein which is readily traceable on the surface for a distance of ~~over~~ 3000 feet.

670 / 750

~~Most~~ The major portion of the development of the property has been done upon this ~~Alpha~~ vein. This development consists of a lower tunnel and an upper tunnel drift with connecting raises, a raise and stope to the surface from the upper tunnel, and a 50 Ft winze from the lower tunnel. Also, a 100 Ft. shaft with crosscut to the vein has been sunk at a point some 600 ft northeasterly from the portal of the lower tunnel. Following is a more detailed description of the principal workings on the Alpha vein, and the sampling. (see sketch)

The main or lower tunnel is driven for a distance of some 1200 feet on the vein in a southeasterly direction into a steep mountain slope. The vein in the tunnel is fairly regular until it enters ~~encounters~~ an area of faulted broken ground at approximately 1100 feet from the portal and from this point to the face the ground ~~drift follows~~ continues irregular and shows nothing of interest.

There is no mineralization of consequence in the vein until at about 500 feet from the portal. From this point to the area ~~break~~ of broken ground ~~vein~~ some scattered galena and sphalerite accompanied by pyrite occurs in ~~form of~~ thin quartz seams and occasional small lenses.

At 700 ft from the portal the back of the drift has been broken out ~~~~ for a length of 10 ft and a height of 15 feet from the floor of the drift. Samples Nos 1, 2 and 3 were cut at 10 foot intervals ~~at this place~~ represent ~~average~~ the ~~important~~ mineralization at this

point. The assays are as follows:

width	Oz Au	Oz Ag	% Cu	% Pb	% Zn
34"	.061	6.50	1.51	.27	2.15

Sample No. 9 was cut across a sulphide band on the hanging wall near the bottom end of a 10 ft winze just east from the above sample. The sample represents the hanging wall portion of the vein, which at this point is 50 inches wide. The hanging wall portion of the vein is poor material showing only occasional spots and seams of sulphide. The opposite end of the winze shows a full width (4 feet) of white and brown stained quartz with no significant content of sulphide minerals. There was no ore above this point nor in the drift immediately west of here.

Samples Nos. 4, 5, 6, 7 and 8 were cut across a lens of ore which is exposed in the floor under an old stope. There are three shallow winzes close together at this place. The lens begins a few feet west of sample No 5. The average value through a length of about 50 feet is as follows:

width	Oz Au.	Oz Ag	% Cu	% Pb	% Zn
15"	.08	9.4	1.1	2.3	6.6

There were no other showings on the level which merited sampling.

The large stope near the end of the main tunnel is approximately 300 ft long and averages about 60 feet in height above the level. ~~Most of the back of the stope above the fill could be examined.~~ No record is available regarding the amount of ore

which was removed nor the grade. It is known however that it was mined for its silver (and some gold) content and that the operation was not financially satisfactory. The mining ~~work~~ was done several years ago and the ore was milled at the ~~nearby~~ Keystone mill several miles distant from the mine. The ~~back of the~~ stope was partially accessible and ~~the back was~~ ~~exam~~ it was possible to examine the back throughout most of the length of the stope. The vein material mined was a tenuous quartz band ~~and a~~ which contains little or no ~~or~~ sulphide mineralization. ~~Small lenses~~ ~~Occasional galena can be seen~~ Galena is present in occasional ~~some~~ random stringers or lenses up to 2 or 3 ~~several~~ inches thick and having a maximum length of 2 or 3 feet.

A winze below the east end of the above stope was inaccessible.* The applicant had begun unwatering the winze but suspended work when it was found ~~that it was~~ to be filled with gob at 50 feet with no level as yet uncovered.* The mining here was done in

1928 by a leaser who stoped both sides of the winze and apparently left much of the waste material in the ~~workings~~ upper stopes and the lower workings. The leaser is reported to have ~~taken out~~ realized $7,000 from the winze workings. The ore assayed 50 to 60 oz Ag and around 1% Cu. ~~Silver~~ Lead and zinc were not assayed and presumably were not present in significant amounts.

*It is said to be 50 feet deep with a level at that depth.

At 650 feet from the portal a raise connects with a sub-level 178 ft. above the lower tunnel. The sub-level connects with an ~~[illegible] level~~ and ~~with~~ the upper tunnel at 198 feet above the ~~lower level~~ lower tunnel. A ~~Some stoping has been~~ ~~A small amount~~ small amount of stoping has been done between the sub-level and the upper tunnel and on each side of a raise connecting the upper tunnel with the surface. No record is available regarding the production from here.

The vein in the raise above the lower tunnel shows nothing of interest until near the floor of the sub-level where lead and zinc sulphide (~~[illegible]~~) ~~[illegible]~~ with ~~some oxidization [illegible] mineralization~~ ~~appear~~ oxidization appear is present in lenses in the west wall of the raise and in a small stope above the sub-level. The ore minerals occur in ~~[illegible]~~ ~~form~~ small disconnected lenses. Samples Nos 10, 11, and 12 were cut at the more favorable ~~[illegible]~~ points here across parts of the vein and show only low values. ~~which do not~~ They do not check either the widths or values ~~the~~ shown by the applicant's sampling. ~~samples which the applicant took at in this part of the mine.~~ These latter appear to have been cut ~~[illegible]~~ across the better parts of the small lenses and do not represent a body of ore as the

applicant's map would seem to imply. In any event a prohibitive amount of barren ground would have to be handled in selecting a worth while grade of ore ~~[illegible]~~ from this place. The sub-level shows only low grade material, largely oxidized.

The upper level has been stoped for a length of approximately 145 feet beyond the raise. The stopes do not carry them to the surface except ~~for a~~ ~~small~~ in small extent near the top of the raise. The raise is more properly speaking a shaft through which the mine was worked many years ago before the deeper tunnel development was undertaken. The vein material removed from the stope was largely oxidized and apparently carried more copper, judging by the fairly abundant staining, than elsewhere in the mine. ~~The vein on the level and above is almost completely oxidized.~~ Samples Nos 13, 14 and 15 were cut in pillars under the stope. The material sampled contained some sulphides but was for the most part oxidized.

Proposed Development

~~The~~ applicant proposes to ~~and~~ continue sinking winze No 4 and ~~to~~ sink a winze on the lens showing in the vicinity of winzes Nos. 2 and 3, also to continue cleaning out the No 1 shaft and ~~further~~ explore the reported galena showing in the Omega vein from the bottom of the shaft. ~~as the presently inaccessible No 1 shaft.~~ His further plan, ~~assuming~~ assuming that the proposed developments result favorably, envisages applying ~~for~~ additional funds with which to rehabilitate a near-by mill to handle his own ~~and~~ ore, and other local ores on a custom basis.

Comments of Supervising Engineer

~~The~~ Alpha mine ~~has made by~~ ~~development~~ some early day production ~~was made~~ from the upper part of the mine many years ago, and more recently (several years ago) a considerable amount of quartz-silver ore was stoped above and, in lesser amount, below the lower tunnel ~~near~~ in the eastern portion of the mine. The chief value of the past production was in silver and the metal content of the ore other than silver was unimportant. The recent mining operation is said to have been unprofitable.

MP Lead and zinc sulphides occur ~~at a number of points in the mine~~ in ~~part~~ small scattered lenses at a number of points in the mine.

P My sampling and inspection of the vein above the lower tunnel did not reveal any ~~body of~~ worth while body of ore in this part of the mine.

~~Tunnel~~, ~~although~~ ~~It is~~ although it seems possible that a limited ~~amount of~~ tonnage might be obtained by selective ~~handling of~~ mining of the vein ~~west~~ in the west wall of the raise and small ~~and~~ stopes ~~in the~~ ~~in the west of the raise~~ between the upper and lower tunnels. Mining cost would be high and it is doubtful whether the small lenses here could be handled at a profit even with generous premium prices for metals. The ore does not continue into the upper level floor and referring to the applicant's samples ~~the~~ in the raise and in the lower tunnel ~~level~~ below this place, the bottom of the production area is ~~would be quite close to the~~ just under the horizon of the sub-level.

The lens of ore ~~below the large~~ in the floor of the lower tunnel below the large stope is quite narrow and since it represents only a portion of the vein width a certain amount of unavoidable dilution would ~~mining would be~~ occur in mining it. The value, before premiums, is chiefly gold and silver and the lead plus copper content of the shipping product would probably fall below the 30% minimum ~~amount~~ paid for in the usual custom mill ~~schedule~~ schedules. It seems likely that with ~~premium~~ a high zinc premium price a small amount of profitable

material could be gouged out here and it is possible that the showing might represent the top of an important ore body.

Mr P. The showing is small however and the performance of the vein elsewhere in the fairly ~~extensive~~ mine development does not lend encouragement to the belief that a substantial body of ore ~~will be opened result from deeper development here is indicated here~~ will result from deeper development ~~here~~ at this point.

~~The evidence regarding ore in the [illegible] vein does not appear to be sufficiently authoritative to justify the rather costly proposed cleanout job in the shaft and crosscut, which would be required.~~

An additional loan to the project is not recommended.

T. P. Lane

P ~~I believe that~~ ~~The most interesting feature of the~~ mine lies in the possibilities of the Omega ~~vein development from the No 1 shaft.~~

Mr R I am personally acquainted with ~~the~~ both of the parties who attest ~~assert~~ the existence of high grade galena here. One of these men, Mr. Def. Sanderson ~~has~~ acted as foreman of the operations ~~(recently suspended)~~ of the Summit Mine which until quite recently ~~operated under~~ R.F.C. loan (El Dorado-Rom Mining Co., Docket B-ND-4511 . The other man, Mr. Pete Vukoye, is operating the Cutler mine under R.F.C. loan (Docket No. ND-8309). Both men are miners ~~men~~ of long experience and each is respected for his ability and trustworthiness.

P I am not favorably impressed by the possibilities in the ~~main~~ tunnel working on the Alpha vein. I believe however ~~that~~ the development of the Omega vein from the No 1 shaft offers attractive possibilities.

~~If it is possible to grant an additional loan for the somewhat exploratory development of the possibilities in the Omega vein I would recommend doing so.~~

P If it is possible to grant an additional loan for the exploratory development of the Omega vein I would recommend doing so. $5000 ought to be ~~sufficien~~ ample for this work and might also permit of some further testing of the lens in the floor of the lower tunnel.

T. P. Lane
Sup. Eng.