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KIRKLAND PLACER & Further South

Evidence of a buried Tertiary Channel, - the same that was uplifted to the top of Rich Hill was found in '29 by R. W. Hess who made an examination and drilled the Weaver Placers for the Pardners Mines Corp. of N. Y.

This channel seemed to pass between Rich Hill and Antelope Peak and samples ran $1.60 and $1.80 per cu yard (old price)

Eugene Upton knows the location of this work.

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RESULTS OF SAMPLING OF THE A. B. LEE PLACER PROPERTY IN THE COPPER BASIN MINING DISTRICT ADJOINING FORBACH AND EASTON PROPERTY ON THE EAST.

By W.R. Shanklin, E.M.

SAMPLING:--

Results of sampling the property follow. The area sampled covers approximately 80 acres. Samples were taken in groups and are referred to as Block Nos. 1-2-3-4, and other miscellaneous samples not included in the blocks, location of which is shown on plat.

In general the method of sampling was to dig holes or pits in the sand and gravels to a certain layer of gravel called a false bedrook. Two sides from which the sample was taken were channelled from top to bottom, and a full gold pan of material cut out for a sample, equivalent to 15 pounds of material. These samples were panned down so the values could be obtained and they were given as follows:

Samples in Block #1 commencing at Southside:

Sample No.	Depth Feet	Gold Value
1	6	$ 1.70
2	3	.90
3	5½	1.10
4	4½	1.10
5	4	.55
6	3½	1.80
7	4	1.40
8	7	.45
9	8	1.10
10	4	.50
11	4	1.30
12	7	.90
13	4½	.90
14	9	1.10

Samples in Block #1 Commencing at Southside: (Continued)

Sample No.	Depth Feet	Gold Value
15	3	---
16	4	$ 1.20
17	5½	3.00
18	3	1.00
19	4	.50
20	2½	.90
21	6	1.05
22	1½	1.20
23	20 inches	.50
24	12 "	1.10
25	12 "	1.70
26	18 "	2.00
27	8	1.80
28 Spl. #1	6	5.50
29 " #2	3 ft. above #1	2.70
30 " #3	18 in. above #2	2.80
31 " #4	8 in. above #3	1.40

Samples from Block #2:-

32	4½ ft.	4.25
33	5	.50
34	4	.40
35	6	.55
36	6	1.10
37	5	1.20
38	6	.35
39	6	.55
40	4	.--
41	4	2.10
42	5	---
43	3	1.10
44	6	1.20
45	4	.95

Samples from Block #2 (Continued)

Sample No.		Depth Feet	Gold Value
46		8	$ 1.30
47		6	1.40
48	Special #1	Bedrock	2.40
49	" #2	"	5.50
50	" #3	"	1.70
51	" #4	"	3.50

The area covered by this sampling is only a very samll portion of the property and material available.

Samples from Block #3, Northside of Hill:

Sample No.	Depth Feet	Gold Value
52	2	$ 1.90
53	5	---
54	4	.40
55	2	.65
56	3	.75
57	2	.90
58	4	1.60
59	2	1.10
60	3	2.10
61	2	1.10
62	3	.80
63	2½ inches	.75
64	14 inches	1.40
65	4 ft.	2.00
66	2	1.35
67	3	---
68	2	3.30
69	3	1.70
70	4	---
71	2	1.20
72	1	1.60
73	2	1.80
74 Spec'l 1	Bedrock	20.50
75 " 2	Bedrock	15.00
76 " 3	Bedrock	12.00
77 " 4	Bedrock	10.00

Samples from Block #4, northeast of Block #2:

78	18 inches	3.60
79	2 feet	1.10
80	4 "	1.20
81	2½ "	1.85
82	5	1.00
83	3	1.20
84	3½	1.40
85	3	1.65
86	--	---

Following were checkup samples over the entire area from places known to have good values, and not given as average samples.

Sample No.	Depth Feet	Gold Value
1	Bedrock	$ 9.50
2	"	3.50
3	"	4.25
4	"	4.60
5	"	5.10
6	"	3.90
7	"	3.50
8	"	6.60
9	"	3.00
10	"	4.10
11	"	6.30
12	"	7.40
13	"	5.70
14	"	4.20

Only about 80 acres were sampled, averaging only about 5 feet in thickness, yet show an estimate of over 645,000 cubic yards of material averaging better than $1.25 per cu. yard.

(NOTE) By G. M. Colvocoresses, June 19th, 1945

In my opinion none of this sampling was properly carried out and the results are worthless. I took a few check samples along the sides of some of these pits and in other portions of the gravel and altho there may be a few rich pockets I am satisfied that the yardage which Shanklin described will not average more than 10¢ per yd.,-probably not over 6¢.

Report was not dated but probably made in the ~~1950~~ 1920's so that old value of gold is applied. Have never seen Shanklin's map if any was made.

REPORT ON
FORBACH EASTON PLACERS
IN
COPPER BASIN PLACER DISTRICT
Kirkland, Arizona.

During the time from November, 1933 to May, 1934 I have examined the Forbach Easton Placers and upon your request I submit this report, mentioning that I made this investigation at that time for myself.

Signed _____
Hugo A. Carl
PH.D. D.C.

CONCLUSION:--

My testing made on the property consists of 48 samples from surface to bedrock in washes and 154 samples taken from g high bars, showing that both washes and high bars carry values to warrant very profitable operation. Pay dirt from washes is confined to enrichments from high bars. Sampling washes showed an average of $0.6434 per yard. The average of samples taken from high bars showed a value of $0.7655 per yard. There is over one million yards of pay dirt in these washes running thru the property. There are several million yards of pay dirt in high bars.

The result of my investigation and sampling shows that this property can be operated profitably, requiring not more than $25,000.00 capital to be used for installation of simple and efficient equipment and common sense management.

LOCATION:--

The Forbach Easton Group of placers are located five and one half miles east of Kirkland, Arizona, in the Copper Basin District of Yavapai County, 21 miles southeast of Prescott. Roads are good practically all year and the property is easily accessible from any point.

GENERAL INFORMATION:--

The topography is mountainous, the placers are a sloping plain disected by a great number of gulches. Elevation is 4600 feet. The ground semi-desert, used for grazing; healthful climate, summer days are hot, but nights cool, the air is very pure, the water good, sanitary camp buildings on the property. The winters are moderate, working conditions such that a 11-month operation is possible, a dry climate, very little rain, except July. Mining supplies of every kind, can be bought in Phoenix or Prescott or Los Angeles.

The group of Placer claims consists of 1168.3 acres of unpatented placer claims. The name and acreage of each claim or group of claims is shown on the map, a copy of the survey map or claims made by H. M. Whitaker, Reg. Engineer in October, 1931. The claims are all clear and held in accord with the law. The present lease on the property is lawful, giving the party holding the same, full use of all equipment on the property. A straight royalty of 10% of all gross output.

HISTORY:--

This district has been worked for the last century, mostly from small scale operations. Estimated yield of placers, the year prior to 1933 was $33,000.00 of which $26,000.00 came from larger scale operations, starting that year.

The Forbach Easton property has been in operation before, close to $15,000.00 in gold and silver was taken from the property by Mr. Forbach and no doubt had Forbach been in possession of the right type of equipment, this lease would not be on the market today.

Water has to be developed and according to my findings is sufficient in underground channels, however there is a well pumping 95 gallons per minute.

RELATION TO OTHER DISTRICTS:--

The district in which this property is situated is traversed by a chain of mountains known as the Bradshaws on the east, and a parallel chain of mountains on the west. Between these two is a large valley of which is called "Skull Valley". It is from these two chains of mountains that much of the gold in the state originated.

Recorded production of the most important gold properties that were operated in the 80's and for some years before is shown in the following table:

Name of property:	Reported Production:
Vulture	$ 84,000,000.00
Rich Hill	80,000,000.00
Congress	125,000,000.00
Betty Lee	22,000,000.00
Harquehala	18,000,000.00

On account of the arid condition of the localities immediately adjoining the district in which this property is situated very little development has been done. Although water was available in sufficient quantities to toperate on a commercial scale it was not possible, however, to acquire a large enough area to justify the expense of developing a water supply. The area of the property in question is large enough to justify this expense and for this reason the present intended development is of paramount importance to the adjoining districts. Where substantial production is recorded from small areas it will be possible to group these large areas under one management for proper development.

GEOLOGY AND ORIGIN:--

After formation of the mountains, erosion, oxidation and weathering was rapid and helped to break up and disintegrate the solid rock. Broken up roch was carried by stream action to form the present plain. Mechanical breaking down of rocks generally keeps ahead of rock decay, when solid rock is eroded from steep slopes.

but when an uplift occurs so that the plain at the foot of a mountain is uplifted to have sufficient gradient for erosion, gold concentration begins and is still carried on whenever rain falls.

The gold bearing gravels are made up of granitic sands containing various amounts of clay, boulders and black sands, magnetite and hematite, the gold bearing gravels in washes range in thickness from a few inches to 18 feet, most of the gold is at the bedrock.

The gold is 900 to 950 fine and silver constitutes the greatest impurities. The gold ranges from small colors up to nuggets having a value from 5 cents to several dollars. The size and angularity of the gold increases towards the mountains, a great amount of iron is found associated with the gold as well as cinnabar and oxidized copper minerals.

SAMPLING:--

To sample washes a great number of holes have to be cut close together in order to get an average per yard, and plenty of sampling has to be done to keep within the pay channels. My samples have been taken in an orderly way, carefully washed and assayed. My estimate of pay-yardage is, I believe, very conservative and amounts to three million yards.

ENGINEERING ADVICE:--

The present plant has a capacity of about 200 yards per 8 hour shift, but should not be used as such, but good equipment should be taken out and whenever possible used for the new installation. I am sure that a 400 yard per shift plant can be operated for not more than $65.00 per shift including overhead.

PRESENT EQUIPMENT:--

There are a few good motors, six or more tables, belts, and other equipment, in fact a completer plant to wash dirt and operate the placer on hand, but I would suggest to build a new place and use whatever possible. A very good Universal shovel which the writer has used on an adjoining property is on hand for the lessee. A 4 room hourse, two 2 room houses, one 1 room house, water tanks, one 50 h.p. Buda motor, electric motors, one 150 ft. belt conveyor, belts, one amalgamater and a pumping plant in perfect condition with 7800 ft. of 4 inch pipe leads to 25,000 gal. storage tanks, also several 1000 ft. of other pipes. The equipment in this plant I believe could not be replaced for less than $25,000.00.

The above report and investigation has been made truthfully.

Signed _____

Hugo A. Carl, PH.D., D.C.

NOTE: By G. M. Colvocoresses, June 19th, 1945

I knew something of Carl and his work and do not hesitate to say that this report is completely worthless in so far as estimates of yardage and value are concerned; these being vastly different from those which I obtained.

Note Carl's estimate of production of other gold properties on page three which are respectively from 5 to 20 times the value given by the Government reports and all other reliable data.

GEORGE M. COLVOCORESSES
MINING AND METALLURGICAL ENGINEER
1102 LUHRS TOWER
PHOENIX, ARIZONA

December 19th, 1938

REPORT ON FORBACH-EASTON PLACER

Mr. Robert L. Frost
1731 East Mendocino Street
Altadena, California

Dear Sir:

I beg to submit the following report on the Forbach-Easton Placer Mining Claims which I have investigated and sampled in accordance with your instructions during the past two months, being assisted in this work by Mr. George J. Harbauer, an experienced Mining Engineer and a small crew of men. Our general examination covered the entire property but the sampling was of necessity confined to certain sections believed to contain the highest values, located in Gold Bar and Jackson Washes.

LOCATION AND GENERAL DESCRIPTION:

According to the map and statements made by Mr. Wm. Forbach, his claims are or were 21 in number,- all unpatented and they cover 1163 acres of ground. The names of these claims are as follows:

Copper Head	Marie
Gold Block Group	Corse Gold 1 & 2
Lincoln	Corse Gold 3 & 4
Mint	1921
Gold Mint	Gold Bar
Gold Mint #1	Milwaukee
Gold Mint #2	Dorothy
Imogine	Van Dyke #2
Tom Cat	Van Dyke #3
	Acker

Certain of these claims have recently been relocated and it is not clear whether the list as given exactly conforms to the present status of the County Records but I am advised that all of the ground covered by those claims as shown on the map is now held by Forbach and that these are all in good standing with proper assessment work duly performed and recorded.

The claims are located in Yavapai County, Arizona; Township 13 North, Range 3 West and the camp and former washing plant are reached by 5 miles of road from the town of Kirkland on the Prescott-Phoenix Branch of the Santa Fe Railroad or by 23 miles of road from Prescott, the side road taking off from the White Spar paved highway at Wilhoit.

The elevation is from 4300 to 4600' above sea level,- climate is mild and generally favorable to working at all seasons of the year; the average precipitation is about 15" of which very little falls as snow. Freezing weather is infrequent and of short duration.

The surface is composed of low ridges lying between numerous gulches or washes, it is semi-desert in character with no useful timber and rocky or sandy soil partly grown over with desert shrubs and grasses.

These claims lie in the foothills at the western foot of the Sierra Prieta Range of the Bradshaw Mountains and are drained by gulches tributary to Copper Basin Wash which lies

a short distance to the south; the principal gulches which cross the claims are known as Gold Bar, Jackson and Telegraph, sometimes respectively referred to as the East, Middle and West Gulches; see Claim Map - Exhibit A.

GEOLOGY:

The Sierra Prietas are mainly composed of Pre-Cambrian schist and granite with later intrusions of diorite and other basic volcanic rocks. At a more recent epoch there were further intrusions of rhyolite and other porphyries and finally in Tertiary times flows of tufa and basaltic lava.

Erosion carved out a pediment in the granite and schist at the base of the mountain range and this, together with the sloping plain to the Westward, is now floored with gravel, sand and clay mixed and interbedded with tufa, rhyolite and basalt through which the more recent streams have cut many gulches both large and small, trending in a southwesterly direction and filled down to the true or underlying bedrock with successive layers of conglomerate, clay, caliche, and sand or coarse gravel,- all products of recent erosion.

While the course of the drainage appears to have been altered a number of times since the early Tertiary Period, the placer gold was undoubtedly originally derived from the gold bearing quartz veins of the Sierra Prieta Mountains and later from the erosion and destruction of some of the intrusives, notably the rhyolite which near Copper Basin and elsewhere

often carries an appreciable content of disseminated gold and cinnabar.

One of the main features of this placer and others in its vicinity, and because of which they are essentially different from most of the Tertiary deposits which have been extensively studied and worked in the Sierra Nevadas, is the fact that there have been several epochs of gold concentration with pay streaks lying on layers of false bed rock which for the most part are composed of a lime cemented conglomerate locally known as a "caliche".

With the gradual washing away of the original tops and sides of these ancient mountains, which were once many thousand feet higher than at present, the gold, silver and base metals contained in the veins were mechanically removed and the more insoluble metals were distributed among the sand and gravels on the pediments and alluvial plains to be washed away and redeposited by the rivers and streams which drained these slopes during various periods of their geological history.

While complete evidence is distinctly lacking yet we have every reason to believe that a system of Tertiary or pre-Tertiary rivers and creeks once flowed along the west slopes of the Bradshaws and formed the ridges, benches and flats through which now flow the Hassayampa River, Copper Basin Wash, Kirkland, Antelope and Weaver Creeks and various smaller tributaries.

The true bed rock of these ancient channels has never yet been explored. It appears to lie at a varying depth below the present surface and false bed rock and theoretically the richest and most extensive concentration of gold in this district will be found in the deep pay-streak directly above it but the search for such "deep leads" would be difficult and expensive and results at best very uncertain.

During the period of intensive vulcanism which corresponded with the late Tertiary, the contours of much of the surface of this area was substantially altered, flows of lava and tufa blocked and dammed many of the ancient water courses, intrusions and uplifts changed the direction and rate of flow and new systems of drainage succeeded one another although in the main these seem to have followed the general trend of those which had existed in the latter part of the Tertiary Period.

The recent rivers and streams, unlike the Quaternary rivers of California, which cut through and below the old Tertiary channels, flowed more slowly and at a higher relative elevation depositing immense quantities of detrital material and sorting and re-arranging this upon strata of clay or conglomerates which formed the false or modern bed rock. As a result of these processes nearly all of the more easily soluble metals and minerals were removed from the original debris leaving concentrations and fragments of quartz and harder rock in the gravels with the gold and black sand (mostly magnetic and non-magnetic iron oxide) in layers on the uppermost layer

of the caliche or false bed rock. Even today this process is still going on with new gulches and arroyas forming throughout the superficial areas causing a redistribution of the gold and a recurrent surface concentration which permits local miners or snipers to operate in the draws or gulches after each heavy rain and often to make good wages for several days with pans, rockers, or long-toms. But no substantial placer operations can ever be based upon such digging or scraping of the surface and the placer ground in which we are at present interested comprises the sand and gravel from the present surface to the upper layer of caliche which is generally to be found at a depth of 4' to 30' all of which gravel must be mined and washed even where the best values are concentrated in a one to two foot pay-streak directly above the caliche.

HISTORY:

Gold placers in this district have long been known and it is said that some work was done here nearly 50 years ago, but serious attempts to operate seem to have only begun about 1930.

In 1931, Forbach and Easton started work on a small scale and in 1933, after having increased their holdings and obtained financial backing from the Van Dykes of Milwaukee, they installed a washing plant at their camp on Jackson Wash and mined with a small power shovel some 16,000 yards of gravel mostly along upper Jackson a short distance above the camp. This

gravel was trucked to the washing plant where it was disintegrated by trommels and the fines concentrated on Deister-tables after which the gold in the black sand concentrate was amalgamated in a barrel.

Water for this operation was obtained from a 214' well sunk 1⅛ miles distant from the plant on the Copper Head Claim and near Copper Basin Wash. The supply furnished by the pumps was about 90 gallons per minute and might have been somewhat increased by larger pumps and especially through deepening the well which appeared to have tapped a strong underflow at a depth of about 123 feet which continued to increase as depth was gained.

The results of this operation do not appear to have been accurately recorded but they seem to have covered a period of about 5 months. The plant was designed to treat over 200 yards per day but mechanical difficulties are said to have reduced this about 120 yards. The recovery of values is reported to have been about 90% and the actual gold recovered was stated to have had a value equivalent to about $10,500.00 at present price of gold or say 65¢ per cubic yard washed. Since nearly all of this material was carefully mined from the richest section of Jackson Wash, I am quite prepared to accept these statements but would add that I do not believe that they maintained the high grade of the feed up to the end of the run or otherwise they would have continued to operate. This opinion is confirmed by the fact that two subsequent operations by other parties ended in complete failure.

Adjacent to or in the vicinity of the Forbach holdings there are a number of other properties with entirely similar geological conditions and presumably of similar value. From several of these a certain amount of rich gravel has been mined in the past but in every case the pay streaks were quickly exhausted and claims that a large yardage of $1.00 or even 50¢ gravel would be found have never been substantiated in practice. Other claims as to high values found in deep wells and buried channels have never been reliably confirmed. The record shows that every one of the many attempts to operate on even a medium scale have failed with financial loss and recent activities have been confined to working on a very small scale conducted by a few experienced men who make good wages,- for a limited time,- by selective mining in narrow pay-streaks along the center of the washes or from small pockets of the richest ground found along the benches and ridges.

Many of these failures I attribute to improper sampling when small selected samples from the pits or cuts have been washed in pans and the value of the gold estimated by eye. This method, in my experience, has invariably proved to be misleading and generally results in estimates of value that are greatly exaggerated.

Subsequent to the Forbach operation a number of brief examinations of the property were made by various engineers, mainly with a view to determining whether it might

be feasible to install machinery and equipment on a much larger scale in order to reduce the unit costs of operation and to cheaply mine a very large yardage of gravel from the deeper sections of the washes and from large sections of the benches and ridges where it was claimed that the gravel would carry values of from 50¢ to over $1.00 per yard. Aside from the serious doubt as to the value of much of this yardage it was the opinion of Mr. Wimmler, myself and others that the physical character of these deposits, limitations of water supply and shallow depth of gravel on the ridges positively precluded the possibility of large scale mining. Therefore, this last investigation was undertaken for the purpose of ascertaining whether a somewhat smaller operation could be carried on with profit; the mining being confined to the richer and more easily worked areas in the beds of the recent gulches where all parties agreed that the best values were found and which as measured by survey might have contained a total yardage in the order of one million.

For this purpose it was decided to thoroughly sample the most promising sections of Gold Bar, Jackson and, if possible, Telegraph Wash and our sampling work was accordingly confined to these areas, which could later have been extended if satisfactory values had been found and appeared likely to extend beyond the limits of the areas first investigated.

SAMPLING THE GRAVEL:

By reference to the three accompanying maps, the lay of the ground and location of the sampled sections may be noted while the exact position and depth of the pits is posted on the larger scale maps of Gold Bar and Jackson Washes and their numbers correspond to the numbers listed on the assay record in which the average value of each pit from surface to bed rock is given in cents per cubic yard.

The gravel in the washes was sampled by pits which theoretically should have been put down at regular intervals similar to the corners of the squares on a checkerboard. Neither the contour of the surface nor the accessibility for truck haulage permitted any such regular spacing and moreover there were a number of pits already dug or partly dug and from which samples could be obtained with much less expense than when digging from surface was necessary. Accordingly these old pits were cleaned out and new pits dug at suitable locations between them and beyond the area which they had covered and I am satisfied that our samples are accurately representative and that if the entire sampled area should later be mined its average recoverable value would not differ from our results to any extent which could possibly alter the conclusions of this report.

All of the pits except in Telegraph Wash were dug down to the false bed rock (generally caliche) and from 6" to 12" into this rock depending on its hardness. The depth of the pits

varies from 3' to 27' and the samples were cut from the sides in vertical sections not exceeding 7' in height except in a few cases where as much as a 10' section was taken from the surface down.

Most of the pits had a width of 2' and therefore a side section 2' wide by 6' deep and slightly over 1 foot thick was carefully measured and shovelled out representing 13.5 cu. ft. (one half cubic yard in place) and just filling a box in the pick-up truck holding the corresponding volume of loosely broken gravel, i.e. 18 cubic feet. The deeper pits had to be laid off in benches and the lower samples obtained by hositing the dirt in buckets with use of a windlass and obviously these samples were much more expensive to take and obtained much more slowly than those which came from near the surface.

The washing plant in which each sample was treated was located near the camp and water tanks and comprised:
(1) A steel bin with capacity of about 20 cu. ft. into which the sample was unloaded from the truck and in which it was soaked for a short time when necessary (which was rarely the ease) in order to dissolve the clay.
(2) A shaking trough with screen, which took the place of a trommel, disintegrating the lumps of dirt and clay and separating the finer material from the rocks and pebbles which, after being thoroughly washed, passed over the 1/2" mesh screen and to waste.

(3) A steel sluice box or launder with punched screens lying along the bottom and acting as riffles in which a large part of the black sand and heavy minerals such as galena and cinnibar were caught together with the gold.

(4) A Denver pan with rubber mats designed to catch the very fine gold which might have gotten by the riffles. In practice we determined that only a trivial amount of fine gold was present in any of the samples and the clean-up from the Denver Pan in many cases was a complete blank or at the most contained colors weighing less than two milligrams. The character of the gold made the use of quicksilver quite unnecessary.

The above described equipment was designed to reflect as nearly as possible the conditions which might be expected to maintain in a commercial washing plant and its recovery of values was certainly as good and possibly a trifle better than could be expected in actual washing practice on a large scale.

After each sample was run, the entire plant was carefully washed out and the clean-up from the sluices and Denver pan was panned by hand down to a very small concentrate composed of gold and the heaviest portion of the black sand. This concentrate was taken to an assay office in Prescott where a fusion assay was made and the weight of the gold accurately determined. This weight multiplied by two gave the recoverable gold content per yard of bank in the material samphed.

The average fineness of the gold was determined by composite bullion assays to be almost exactly 900 per 1000 and the gross value of the fine gold was then figured on the United States Government price of $35.00 per ounce.

In cases where more than one sample was taken from a pit the weighted average was calculated and the average grade of each section of the deposit has been computed in the final table as accurately as possible from the location of the pits as determined by transit-survey. The probable error in these calculations ~~either~~ resulting from the irregular spacing of the pits and the irregular contour of the bed rock between them should not exceed 10 per cent either in the yardage or in the estimated average value and no such error could possibly change the conclusions of this report.

A composite sample representing the heaviest of the black sand washed from the pans was assayed and found to contain gold to the value of $1.75 per ton based upon which I calculate that the recovery in our sampling plant was about 90% of the total gold content of the gravel and I do not believe that any lesser tailing loss could be expected in commercial operations.

CONCLUSIONS:

The conclusion of my investigation of the Forbach-Easton Placer may be summed up as follows; based on the well established premise that the cost of mining and washing any gravel in this area will not be less than 20¢ or more probably 25¢ per yard.

(1) Natural conditions limit the areas of gravel which could be worked at any such cost to the beds of the three larger washes and short sections near the mouths of the smaller washes which are tributary to them.

(2) Our sampling of what was considered to be the best portions of Gold Bar gave an average value of 10¢ per cubic yard and thus eliminates Gold Bar Wash from further consideration.

(3) The gravel in Telegraph Wash proved to be too deep to be sampled to bed rock without prohibitive expense but such sampling as we did, coupled with all other available data, indicates that the average values here are also far too low to support any commercial operation.

(4) The lower and larger portion of Jackson Wash is also non-commercial and the portion above the camp has been mined out except for small scattered sections and side benches in which the yardage is too limited to justify any attempt at mining.

(5) Pay gravel occurs in a narrow channel below the dams in Jackson Wash which may roughly be given a length of 700 yds., a width of 50 yards and a depth of 2 yards. Deducting from the total yardage those sections which have already been mined or washed out by the creek and adding in a small area extending up into two tributary washes, there remain approximately 60,000 cubic yards of gravel which has an

average recoverable value of 50¢ per yard. Assuming a working cost of 25¢ per yard, the net working profit which might be realized from mining and washing this gravel is $15,000 excluding royalty.

From a physical standpoint this material in Jackson Wash is well suited for placer mining, it is mainly composed of granitic sand and coarse and fine gravel, the percentage of rocks and boulders is low and such clay as is found in relatively small quantities is easily disintegrated by water and screening. The digging by shovel should therefore be cheap and the washing comparatively inexpensive and efficient.

There is very little fine or flour gold but practically all the values are in small grains ranging in size from a pin head to a pin point; no nuggets with diameter larger than 1/8" were found during the sampling and almost all of the values were recovered in the riffles of the sluices, very little being left for the mats in the Denver pan. Some of the grains were fairly well rounded on the edges but the majority were sharp and angular indicating that it had only travelled for a short distance.

The bed rock of this wash gravel consists generally of a compact caliche on which there is sometimes found a few boulders or medium sized rocks and generally speaking the gold does not appear to have penetrated more than 6" into the softer bed rock.

While the wash gravel in itself could be cheaply mined per yard, yet the physical character of the deposit is entirely unfavorable to any type of operations which would permit a low over-all cost since such a condition obviously involves the use of portable digging and washing equipment with frequent changes in location and alterations in water lines and mechanical stacking of tailings.

(6) Obviously such a situation is not attractive as a mining venture except under special conditions and on a small scale. It entirely precludes the possibility of using any large plant or working in this locality for any extended period of time. It rules out all justification of attempting to increase the water supply or installing any expensive equipment since no large capital expense could be returned from this particular operation.

However, given the facts that a limited water supply is already available, also good roads, living quarters and other conveniences, it is my opinion that a small operation should prove attractive provided that a suitable plant can be purchased or rented on favorable terms and my recent investigations show that this can be done.

The returns from mining the pay gravel sampled in Jackson Wash should repay the initial investment and leave some profit over the working expenses and these operations could then be transferred to some of the other washes in this vicinity which, even although not included in the Forbach claims, present

similar conditions and values and could doubtless be worked on lease with reasonable royalty payment to the owners. I believe that such an operation can be carried on over a period of many years and the returns should not only return the small capital investment but yield a very substantial net profit to the investors.

On this basis only, I recommend further operation at the Forbach Placer and a tabulated estimate of the probable results follows below:

SUGGESTED PLAN OF OPERATING:

Since the very limited yardage of pay gravel found in the Forbach Claims does not justify any substantial purchase of digging and washing equipment it is suggested that portions of such equipment might be rented and the balance of the plant might be constructed largely from old material now on the ground.

As a preliminary to any such program I estimate that a minimum expenditure of $3000 will be required to provide for the construction of the washing plant, moving and installation of a shovel and proper arrangement of pipe-lines, pumps, launders, sluices, etc.

In addition and to cover expected alterations and adjustments a further sum of $1000 must be available during the construction period together with a working capital of $1000 making a total investment of $5000 of which $4000 will properly be capital expense. From that time forward the operations should be more than self-supporting and digging and washing should pro-

ceed at the rate of about 200 cubic yards per day, say 5000 yards per month;- allowing for shut downs, repairs, moving plant, etc.

My estimate of monthly costs and returns is as follows assuming that the Nelson shovel can be rented or some other shovel on similar terms:-

Rent of shovel with operator 30 days =		$360.00
Washing plant operator @ $5.00 =		150.00
2 general labor & pump @ 4.00 =		240.00
1 Superintendent		225.00
Fuel & other supplies, repairs, and camp expense		275.00
General & office expense		150.00
Insurance & taxes & misc.		100.00
		$1500.00
Credit sale of gold from 5000 yds. mined @ 50¢ per yard.	$2500.00	
Less 10% royalty to Forbach	250.00	
	$2250.00	
Net Profit per month		750.00
Net Profit from Jackson Wash (60,000 yds. in 12 mos.)		9000.00
Net gain after repayment of capital		5000.00 plus salvage on equipment probably not over $500.00

Alternative plan which is considered preferable:
Detailed estimated cost of working Jackson Wash with purchased second-hand equipment, involving total capital expenditure of $7000.00. + 3 mo hth Cy

Per Month

1 shovel operator @ $6.00 =	$180.00
1 plant " @ 5.00 =	150.00
2 general labor & pump @ $4.00 =	240.00
1 superintendent	225.00
Fuel & other supplies, repairs, etc.	205.00
General & office expense	150.00
Insurance & taxes & misc.	100.00
	$1250.00

Credit

Sale of gold		
5000 yd. @ 50¢	$2500.00	
Less royalty to Forbach	250.00	
	$2250.00	
Net Profit per month		$1000.00
" " on Jackson Wash (60,000 yds.)	$12,000.00	
Less repayment of capital investment	7,000.00	
	5,000.00	
Plus salvage value of equipment	3,000.00	
Net gain from Operation	$8,000.00	

Attached hereto are three survey maps, Exhibits A, B, and C; also, Exhibit D, being a tabulated record of the samples taken from the pits followed by a brief comment on the yardage and value of the gravel sampled or examined.

Yours very truly,

S. H. Colcord

GMC:MF

Revised after conference with Mr. Ford on Jan 12th. 1934.

"Exhibit D"

RECORD OF PIT SAMPLES

Gold Bar Wash:

No. of Pit as shown on map.	Depth in feet	Number of samples taken	Average value in cents per cu. yd.
1	14.5	2	18.40
2	8.5	1	5.56
3	17.5	3	6.70
4	18.5	3	7.24
5	27.0	4	24.67
6	25.5	4	0.84
7	21.	3	10.81
8	22.5	4	3.18
9	17.7	2	12.90

Lower Jackson Wash:

10	4.0	1	61.26
11	5.4	1	81.48
12	4.5	1	78.00
13	6.0	1	21.23
14	5.0	1	71.16
15	5.0	1	14.48
16	4.0	1	1.35

Lower Jackson Wash, continued:

No. of Pit as shown on map.	Depth in feet	Number of samples taken.	Average value in cents per cu. yd.
17	5.5	1	55.51
18	4.5	1	30.12
19	7.0	1	18.35
20	3.5	1	11.34
21	5.5	1	42.14
22	5.0	1	9.06
23	6.0	1	10.05
24	5.0	1	8.09
25	5.0	1	4.72
26	5.5	1	87.30
27	6.0	1	24.77
28	5.5	1	32.47
29	9.5	1	5.63
30	7.0	1	15.61
31	8.5	1	50.00
32	8.0	1	18.65
33	7.0	1	3.65
34	9.0	1	7.55
35	8.0	1	1.87
36	9.5	1	1.14
37	13.0	2	23.49
38	10.0	1	8.90
39	3.	1	6.62

Lower Jackson Wash, continued:

No. of Pit as shown on map.	Depth in feet	Number of samples taken.	Average value in cents per cu. yd.
40	5.	1	0.66
41	5.5	1	0.60
42	2.5	1	0.19
Upper Jackson Wash:			
44	6.	1	4.41
45	5.5	1	1.26
46	4.	1	26.54
47	4.	1	2.31
48	4.5	1	2.82
49	4.	1	7.07
50	4.	1	11.25
51	5.5	1	24.00
52	4.5	1	19.08
Telegraph Wash:			
43	25.5	3	0.24
Ridge by Water Tanks:			
53	7.0	1	5.66

COMMENT

Calculations based on the sampling as recorded above indicate that:-

(1) The sampled section of Gold Bar Wash contains approximately 250,000 cubic yards of gravel which averages 10¢ per yard. Examination of all other sections of this wash included in the Forbach Claims makes it appear quite certain that the average grade is substantially lower. There is reason to believe that a better grade of gravel will be found further up Gold Bar Wash but most or all of this will be beyond the eastern limit of Forbach's ground and the yardage of such material appears to be small.

(2) The Forbach gravel in Telegraph Wash is all very deep and attempts to reach bed-rock in several pits were unsuccessful. The upper gravel is practically barren of values as shown by panning and samples taken from the one pit (#43) from which large samples could be taken and even should good values be found for a short distance above bed-rock, it is reasonably certain that the great volume of worthless overburden would prohibit profitable mining. Again it is probable that higher values will be found near the head of this wash but only a long distance east of the Forbach Claims.

(3) Jackson Wash heads on the Forbach property and the richest gravel from near its head down to the camp has already been mined out yielding,- according to report,- some 16,000 cubic yards with recoverable value of 65¢ per yard;

Below the camp and the dams there is a stretch of gravel which for a length of some 700 yards will average in the channel about 50¢ per yard and which I estimate to have a total volume of about 60,000 yards.

Further down the wash (southwest of pits #33-32) the value of the gravel rapidly decreases and, with the possible exception of a narrow channel near the center, the wash will not average more than 5¢ per yard so that the lower section in which it widens and becomes deeper is entirely non-commercial.

(4) Nowhere else on the property could we find any areas of pay gravel which were of sufficient size to justify any attempt at mechanical mining.

The small tributary washes are too narrow to permit economical digging except for very short stretches. Samples and panning from the ridges and benches indicated little or no gold except in a few scattered spots where remnants of old channel gravel remained or where these had been reconcentrated in small pockets many of which had already been dry-washed or hauled away to some of the small washing plants that have operated at intervals in this vicinity.

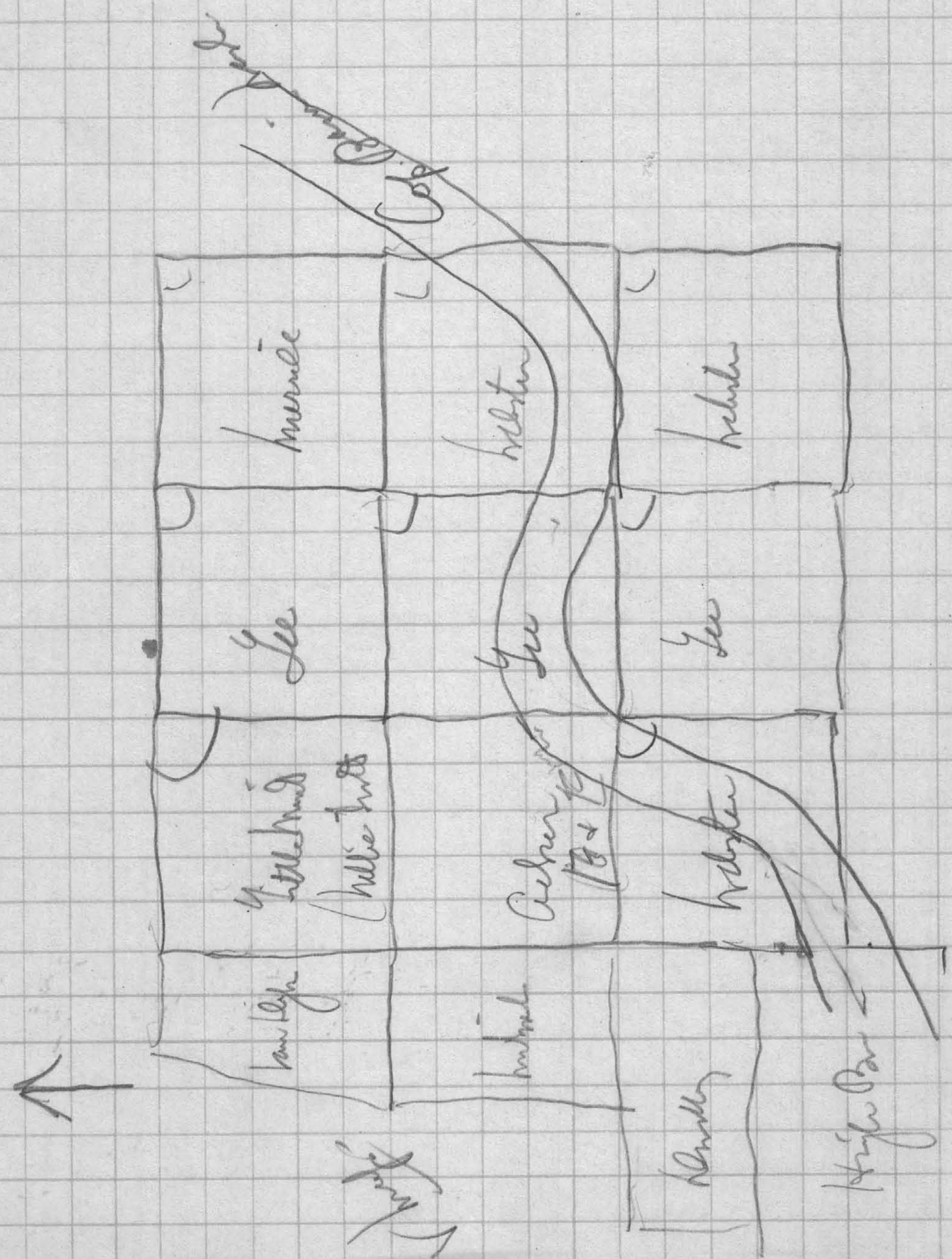
Yours.

Office Copy

Maps

Topo maps U.S.G.S. maps & Township maps of
Can be gotten & State Report

Kirtland Plan



DOCUMENT NO. 3

THE FORBACH - EASTON PLACER PROPERTY

YAVAPAI CO., ARIZONA

To the -

A. O. Smith Corporation,
Milwaukee, Wisconsin

GENERAL INFORMATION:

The Forbach-Easton gold placer property is located in the Copper Basin Mining District in Yavapai County, Arizona. It lies 4½ miles northeasterly via road from the Town of Kirkland, the nearest railroad point, which is on the Ash Fork-Phoenix branch of the Santa Fe. It is about 25 miles from the property via side road and highway, or 13 miles in a northeasterly air line, to Prescott, Arizona.

The elevations on the property generally range between 4200 to 4400 ft. above sea level. The normal annual precipitation is about 16 inches, most of this falling during July, August and September and the winter, when the rainfall is often so heavy as to fill the otherwise dry washes and gulches to torrential stages. Winter brings some light snow falls and freezing weather altho these are usually of short duration.

HISTORY:

The gold placers of the Copper Basin area have long been known but until the past five years or so have only been worked intermittently in a very small way because of their general and relatively low gold content and the general lack of flowing water within the area. In recent years, more interest has been given the area for besides a number of individuals who mined with rockers and dry washing machines, four or five relatively small mechanical operations, using water pumped from nearby wells, have been conducted with more or less success. Three or four plants are still more or less active or making preparations to resume operations.

Forbach and Easton conducted mechanical operations during 1933, mainly in a small wash lying between the so-called East and West washes on this property. The ground worked varied up to about 50 ft. in width, and from a few inches to about 6 ft. or averaging about 4 ft. in depth. The placer was excavated with a 3/8 cu.yd. gasoline driven shovel, the material being transported to the treatment plant by two light trucks. Washing, disintegration and sizing was accomplished in a series of two revolving trommels from which the oversized material went to two conveyor belts and the dump. The minus 1/4 inch material from the first trommel went to a coarse gold trap and thence to the second trommel from which the minus 1/8 inch material went to three concentrating tables where the principal gold recovery was made in the black sand concentrate. This product was treated in an amalgam barrel for the recovery of the gold.

The total gold recovered is stated to have been worth $6000 at the former price of gold. Due to various causes, the capacity of this plant was reduced to an average of about 100 to 120 cu. yds. per 8 hr. shift as worked. The total yardage mined and treated is not known, altho Mr. Easton reports the ground to have yielded an average gold recovery of about 40¢ (old price) per cu. yd.

This operation was suspended in August, 1933. The property was later leased to some Los Angeles people who surrendered it after one year without doing anything on the property. It was then leased to some Minnesota people, who sank a few test pits and withdrew in December, 1934.

THE PROPERTY:

This property embraces 1168.3 acres of contiguous mining claims, first located and held by various individuals, from whom Forbach and Easton purchased and consolidated them in 1932. A clear title to the present ownership is contended. Adjoining this property on practically all sides are properties held by various claimants. Copper Basin Wash practically forms the southern boundary of this property.

THE WATER SUPPLY:

Copper Basin Wash carries some surface water during the rainy periods and otherwise has a subsurface water level stated to be at about 55 ft. This basin has a considerable drainage area and should support wells of nominal capacities; An apparent fairly heavy subsurface water flow occurs in the Skull Valley Wash where a number of wells exist, one of which is located about 4 miles west of this property and where an apparent artesian flow comes to the surface. The Copper Basin Wash drains the Forbach - Easton and adjoining properties and drains into Skull Valley Wash and Kirkland Basin.

Forbach and Easton put down a well in 1932 near the most westerly part of their property on the Copper Head Claim. This well is 214 ft. deep and is cased with 5-inch casing to a depth of 156 ft. The water level is said to rise to within 60 ft. of the surface and below a depth of 185 ft. a heavy flow of water was indicated. Water from this well was pumped through a 4-inch pipe line for a distance of 8,000 ft. to the plant located about 200 ft. higher in elevation. Due to the position and size of the casing, the available equipment and other limiting factors only 90 gallons of water per minute could be delivered to the plant. The owners, however, contend that at least 500 gals. per minute could otherwise be obtained.

GEOLOGY:

The Copper Basin Wash and its tributaries drain a dissected mesa in this vicinity which is characterized by various comparatively narrow dry gulches or arroyas, with the tops of the ridges separating them rising to heights up to 150 ft. or so above the main gulch levels. A few miles to the northeast of the property is the base of the Sierra Prieta Mts. from which the mesa slopes southwesterly. A pediment of granite and some schist beginning there conforms more or less with this slope and at its western margin is covered by a complex of volcanic flows and tuffs with

interbedded conglomerate or consolidated gravel, sand and clay. This mesa or plain originally had a drainage other than the present, whereby gravel and sand, containing some gold derived mainly from the gold bearing granite and schist formation, was deposited in bars, channels or gulches in various localities and under various conditions. A probable uplift, or tilting, changed the drainage to that of the present system whereby the mesa was dissected as were its gold bearing placer deposits to a large extent.

The gold in the present main gulches and their tributaries is largely a product of the destruction, resorting and concentration of these older placers during the development of the new drainage system. Most of the gold in the present gulches is worn and partly rounded showing considerable transportation from its original bedrock source at least considerably further than the length of the gulches originating in or crossing this property. Some gold is less worn and at times quite sharp which indicates a nearby bedrock source.

There is evidence of an old gravel channel which trended northwesterly from the vicinity of the southeasterly portion of the Acker claim at the Copper Basin Wash, over the Acker and Van Dyck No. 2 claims and outside of the property, thence westerly and southwesterly to where it is again apparently exposed in the top of a ridge to the west of the adjoining former Smith property. There were apparently also some tributaries to this channel within the limits of the Forbach-Easton property. The dissected portions of these older gravels, now mainly conglomerate, exist as comparatively small isolated areas at the tops of some of the ridges.

THE PLACER DEPOSITS:

The tops of some of the ridges contain some gold bearing placer usually ranging from about 1 to 5 ft. in depth. On the Acker Claim, as mentioned, there may be a depth to 20 ft. or so in places. These placers may contain some gold in the first upper foot

or so, but the principal gold content is generally confined to 1 to 3 ft. of cemented, rather well rounded gravel, and overlain by stiff red clay and rather large angular boulders of local bedrock. These placers have been but little prospected but where prospected are considered to be considerably lower grade in average than those in the gulches. There may be present some spots containing a high gold content but the major portion can be expected to occur in small isolated areas and to be of a character which will not support profitable operation, except probably on a very small scale. For this reason my attention was given mainly to the gulch placers.

GULCH PLACERS:

Within the limits of this property are two main dry gulches referred to as the West and East Gulches, and a smaller shorter gulch with two short tributaries located between them. These gulches all drain southwesterly into the Copper Basin Wash.

The West Gulch is from 100 to 250 ft. in width between rims, its average depth to bedrock is probably not over 15 ft., altho one pit put down in its center was 30 ft. deep. Three shorter, narrower and shallower side gulches are tributary to it. This main West Gulch heads to the east of the property and swings outside of its boundaries at two localities on adjoining ground before it finally leaves the property near Copper Basin Wash. Its total length within the property limits is about 10,000 ft.

The East Gulch also heads to the east of the property, but continues within it for a distance of about 8600 ft. It ranges from 75 to 200 ft. in width. In its central part it is from 15 to 25 ft. deep, at one pit 38 ft. but its average depth is probably less than the West Gulch, or not over 15 ft. Three small tributary gulches drain into it.

The Central Gulch, on which most of the mining has been done, and of which a brief account has been given, is about 5,000 ft. long and has two tributary side gulches. The main gulch ranges from about 30 to 75 ft. in width and a few feet to about 10 feet in depth.

The main small tributary gulches to these main gulches range from about 500 to 5000 ft. in length, or a combined length of about 17,500 ft. They range from 4 to 10 ft. in average depth, and from 35 to 100 ft. in width.

The placer material is very similar in all of these gulches, being mainly of granitic sand and some clay. There is probably not over 10 per cent which is over 5 inches in maximum size. Occasional boulders up to a ft. or so in size are present but the large angular rocks which have rolled or been washed down from the sides and from the ridge tops are confined mainly to the sides of the gulches. Most of the material is angular altho mixed with it is more rounded wash. There has been no defined sorting and what sorting has been done occurred under torrential water conditions. The bedrock is mainly a cemented gravel and sand, or conglomerate, or a clay and sand layer.

While some gold is distributed from the top down, the major concentration is on, or a foot or so above, bedrock. In general, the gold distribution appears to be erratic and spotty. The richer placer can be expected just below the point where older higher lying gold bearing gravels have been cut and resorted in the gulch. The gold is generally fine but mainly of good weight. Some pieces up to 10 or 15 cents in value are found at times. The gold averages over 925 in fineness.

Much magnetite or black sand is present as is a little cinnabar and native mercury. The moisture in these placers varies with the season and the depth. The presence of clay does not materially handicap disintegration in the washing plant.

PROSPECTING:

Numerous prospect shafts are reported to have been sunk and sampled at the time mining operations were under way. There are, however, no available records of the results or how systematically and carefully it was done. Some pits were also dug and sampled by some of those who had a lease on the property after that time, but there is only very vague information concerning it. I am, however, informed that much of the sampling done was by panning and the wieght of the gold estimated, not weighed. Mr. Easton informs me that their prospecting indicated an average content of 35 to 40 cents in gold per cubic yard. Most of this prospecting was apparently done in the Central and East Gulches. Very little prospecting has been done in the West Gulch, one hole there toward the head is said to have been 20 ft. deep and averaged 35 cents per cubic yard.

Judging by the character of these gulch placers and their apparent source of gold an erratic or spotty distribution of the gold can be expected whereby the main gold content will be limited mainly to certain localities in those gulches which have dissected the older and higher level placers where they contained a fair gold content, or where the gulches head in or drain an area where the bedrock formation is a contributory source of gold. This infers the East Gulch and its tributaries and a portion of the Central Gulch to contain the better average grade placer within the property limits.

ESTIMATE OF POSSIBLE YARDAGE:

The length and the average width of the placer bearing gulches and their tributaries can be closely estimated altho the average depth of the placer to bedrock is not definitely known. Figures as to the average depth have been estimated from the prospecting pits still open and such confirmation as Mr. Easton could provide. Based upon such information, the possible available placer in the main gulches and their main tributaries is estimated as follows:

West Gulch (main) (Telegraph	1,200,000	cu. yds.
West Gulch (tributaries)	100,000	cu. yds.
Central Gulch and Tributaries (Jackson	60,000	cu. yds.
East Gulch (main) Gold Bar	750,000	cu. yds.
East Gulch (tributaries)	90,000	cu. yds.
Total	2,200,000	cu. yds.

This estimate can be considered as closely indicative of the possible placer within the limits of the property which is adaptable to some form of mechanical operation. Theeconomic features must, however, still be definitely determined by close, careful prospecting and sampling and when this has been done it is very probable that the volume of commercial gold placer will be found to be less than the above estimated possible yardage.

CONCLUSIONS:

The general indications are that the available gulch placer within this property is relatively low in average gold content for the existing conditions.

The scale of operation would be limited to a relatively small one and would probably be one which would not return a sufficient profit under a company operation.

The placers would first have to be systematically and carefully prospected to determine their gross economic value and this would probably eliminate some of the estimted possible yardage of 2,200,000 cu. yds. as being too low grade to be profitable. It probably would, however, determine a smaller yardage of ground which could apparently be worked at a profit on a small scale.

The indications are that a water supply could be developed by a well on the property and pumped to the plant, which would probably be ample for the scale of operation which these placers could support.

The limitations of such a supply must, however, still be definitely determined.

I examined this property mainly to gauge its possibilities for large scale operation. The size and position of the placers and other limiting features and conditions are adverse to any reasonably large scale operation. This property is therefore not recommended for your further consideration.

Respectfully submitted,

/s/ Norman L. Wimmler,

Norman L. Wimmler,
Mining Engineer.

San Francisco, Cal.
April 27, 1935

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NOTE: By G. M. Colvocoresses, June 19th, 1945

Wimmler was an engineer of wide placer experience and excellent reputation and his opinions deserve most careful consideration.

I am almost completely in accord with his conclusions, especially the last paragraph. The forecasts made in the first three paragraphs of his Conclusion were largely borne out by my examination in 1938. The available water supply is still somewhat in doubt, but I feel confident that it could be made sufficient for small scale operations.

In this report Wimmler speaks of the West Gulch, which was commonly termed Telegraph Wash; of the Central Gulch which elsewhere is called Jackson Wash and the East Gulch, which in other reports is termed the Gold Bar Wash.

OTHER PLACERS IN VICINITY OF COPPER BASIN & KIRKLAND

By G. M. Colvocoresses

My notes in reference to these are not very complete, but I and were made on various occasions have set down below the data which I believe to be of some importance.

(1) Mexican Gulch

Many pits were sunk in the wash and along the benches and according to old reports they showed some very rich gravel said to average better than $1.00 per cubic yd.

In the early 1930's a Girand Barrell for washing this gravel was installed about 2.5 miles above Skull Valley and according to the Arizona Bureau of Mines Bulletin #142 a recovery of $5000 was obtained from the treatment of 6000 yds of gravel. However, my own observation of this operation did not tend to confirm this statement nor did the report of Mr. Girand who informed me that in most of the area which they tested they found a depth of 8' or more of recent surface wash material carrying only 2¢ to 5¢ per cu. yd. and below that there was a stratum of pay dirt lying above the bed rock for a depth of only one to three feet which he estimated would average 60¢ per yard.

In a few sections only they found small benches of richer gravel and perhaps the treatment of these only may have resulted as stated by the Bureau of Mines Bulletin. My rough panning tests made in a number of pits confirmed Girand's unfavorable opinion altho there are certain sections of this wash where further exploration would very likely disclose some small benches of high grade gravel. In some places I noted much black sand but made no tests of its value. Some of the wash was owned by a man named Lyda who claimed that in one area he had pay gravel to a depth of 35'.

(2) Lower Kirkland Creek

An area of gravel near the camp of the American Kirkland Mine was said to have been partially tested and to average 47¢ per cu. yd. I did

not consider this information reliable and made no personal investigation.

(3) Old Camp Claims

(Owned in '31 and later by Smith and Roby)

Elevation 4400'. These are on a flat with the gravel 4' to 8' deep down to the false bedrock. They have been developed by several pits which the owners claim to show values in the order of $2.00 per yard. If bench is figured to have an average depth of 4' there might be 240,000 yds. in this ground which could be sampled without much difficulty. There is a lot of clay in this deposit, also a quantity of black sand which in some cases is said to average 7% by weight or say 200 lbs. to the cubic yd. excavated. Assays of the black sand said to vary from $4.00 to $30.00 per ton. These claims were worked several years ago and the dirt was hauled to water in trucks and it is claimed that a small profit resulted.

These claims are located only 4 miles from Kirkland and the channel has a length of 2500', and a width of about 100' plus the benches on the sides which might make it possible to mine in places for a width of 1000'. The depth is shallow to the false bedrock. In this wash water should be found at about 200' since two miles away at the Davis Goat Ranch, where the elevation is 4300' water is found in wells at a depth of 108'.

In 1932 two deep wells had been drilled on this property, one located near their water tank and the other 2250' to the northeast. A third hole was soon to be started about 1 mile north, i.e. near Casa Negra Wash. Holes were sunk with churn drill of 9" diameter and the ground stood up well without casing as they pass mostly through a gravel and clay with hardly any boulders.

First hole is 338' deep and Jones sampled 16' with average grade of $3.87 per yard.

Second hole is 447' deep and drilling and sampling supervised by Stoddard, Engineer for the Inspiration Company, gave average grade for

entire distance of $3.27 per yard.

Allowing for concentration in the churn drilling Roby thinks that all of the dirt penetrated will average over $1.00 per yard, and in neither case did they reach bedrock.

Note: Subsequent investigation of these deep holes by the Inspiration Copper Co. entirely failed to substantiate these values or to show any pay gravel and it was concluded that the first samples had been salted by the owners.

(4) Casa Negra Wash

Heads close to the Mexican Wash and Lyda has a group of claims covering this ground which might be worked in conjunction with the claims on Mexican Wash. These terminate close to the old McNary Mine.

Casa Negra Wash seems to contain clean gravel with very little clay and a small percentage of boulders. A road can easily be built down this wash for three or four miles thru to Skull Valley and water pumped through a pipe line for the same distance. At the Boone Ranch on Mexican Wash, water is found at a depth of 100' and there is said to be a heavy flow of water at the Logan Mine and the Frank Kester Mine which are some distance to the East.

Lyda claims that there are 4,000,000 yds in Casa Negra Wash to a depth of 20' on his claims and thinks that this represents about one-half the yardage on Casa Negra, the balance belonging to Boone who purchased the Gist holdings. Lyda's claims are located on Sections 1, 11 and 14, of Township 12, North, Range 4 West. All this ground would be suitable for dredging but could not be hydrauliced because of the gradient.

(5) Copper Basin Wash

This contains a very large yardage of gravel extending in places over a width of well over 1000' and to an unknown depth. A great many test pits have been sunk in various locations especially on the claims held in '35 by A. B. Lee and those held by a man named

Webster. Most of the work had been done on the west side of the wash and in the benches, and the owners claimed to have tested large areas to a depth of as much as 50' which would average $2.00 per yd. while at the junction of Gold Bar and Copper Basin Wash pits sunk some 40' to bed rock were said to have sampled 41¢ per yd. Some deep wells had been sunk in this wash one of which was reported to have gone thru gravel with good gold values to a depth of 141' after which it passed thru 59' of red clay (without gold values) until it reached the granite at a depth of 200'. The best values were found at 43' below the surface.

While I never attempted to sample or thoroughly examine Copper Basin Wash I did obtain a number of samples from benches, pits and wells and calculated very roughly that the great bulk of the large area would not average as much as 6¢ per cu. yd. nor did it appear that any of the higher grade benches was likely to contain any substantial yardage that would average over 25¢ per yd., and therefore Copper Basin does not appear to me to be attractive from the standpoint of either large or small scale operations.

(6) Deep Channel or Buried Placer

Several engineers who have made investigations in this district have thought that an old River channel (formed by the Hassayampa River during the Tertiary Period) might be found to exist to the east of the Kirkland Placers and that the local uplifting of a small section of this channel might have been responsible for the rich gold ore found in the early days on top of Rich Hill.

One engineer representing a very reliable company is reported to have claimed that he had traced this old channel between Rich Hill and Antelope Peak and lower down stream had put down deep bore holes from which he obtained samples that ran better than $3.00 per yard, but I was never able to satisfactorily confirm this story.

This is a very interesting theory and the search for such a channel (similar to the so-called "Deep Leads" which have been worked very profitably in Victoria, Australia) would be an extremely attractive mining gamble for anyone who was prepared to risk a great deal of money on a very, very long shot.

EXTRACT FROM BRIEF REPORT BY G. M. COLVOCORESSES TO A. O. SMITH CORPORATION IN JULY 1935

In reference to the Forbach property generally speaking I can say that there is no probability that any large scale placer operation treating 8000 or 10,000 cu. yds. per day could be conducted on this land or in its vicinity.

The deposits of gravel divide themselves into two classes (A) the very shallow gravel on the ridges and near the heads of the gulches such as have been worked to date and (B) the larger and deeper deposits of gravel in the principal washes namely lower Jackson, Gold Bar, Telegraph and Copper Basin.

While the gravel classed as A is apparently quite rich and from previous sampling may well run in places up to $1.00 per yd yet the mining and washing of this material is bound to be very expensive.

The principal deposits of the B Class gravel lie in Jackson Wash below the present treatment plant and down as far as its junction with Copper Basin Wash, and in this area I figure that there are approximately 200,000 yards with an additional 100,000 which might be picked up in mining the side washes which run into it. The value of this gravel should be pretty well known since a great many sample pits have been sunk but I was entirely unable to find any record of the sampling of these pits altho Forbach tells me that they average better than 50¢ per yd. (Later sampling indicated only about 60,000 yds that would average 50¢ and balance of gravel became lower grade as area increased. Could never obtain any reliable data or results of previous sampling).

Much larger deposits of gravel are found in Gold Bar Wash and its tributaries and if these could be worked from Copper Basin Wash up to the shallow ground I believe that upwards of 1,000,000 yds could be recovered here. The sampling of this gravel has not

been properly done but there are a number of test pits and again Forbach told me that the average was better than 50¢ altho I could find no records and have no means of verifying this statement.

The largest body of wash gravel on the property is found in Telegraph Wash but practically no sampling has been done here and the value is uncertain and probably much lower than in either Jackson or Gold Bar Washes.

If mining is to be undertaken it would be my suggestion that the first location should be Jackson or Gold Bar Wash depending on the values which may be found in these respective locations but before spending any money for additional sampling or mine equipment it is very important to collect the data which has already been obtained by various engineers and I understand that much of this is in the possession of the Van Dykes who should turn it over to you and which I would want to examine before making any definite recommendation. (Records could never be found).

The quantity of water which may be available will determine and limit the scale of operations. Forbach has a well from which approximately 100 gals. of water per min. has been pumped fairly continuously; so he tells me and he is of the opinion that a larger well at the same locality equipped with a 20 inch casing would furnish up to 500 gals per min but on this point I am very doubtful. However I understand that water conditions have already been investigated for you by F. L. Ransome and I should like to see Mr. Ransome's report before commenting further on this matter. A well-drilling rig is now in the locality and I believe that Mr. Zimmers discussed a contract with the operator.

The total cost of operating by approved mechanical method and washing plant should not in my judgment exceed 20¢ per cubic yd. on the Class A Ground, and the scale of operations would depend primarily upon the quantity of water that could be made available at moderate expense and this might very likely exceed an average of 200 gals. per minute or more if Forbach's opinions are correct.

In connection with this work it might also be possible to mine and treat with profit some of the Class B gravel, but this need not be considered for the moment since the value of these larger areas is entirely problematical.

Even though the claims belonging to Webster may not be available and are of doubtful value there is considerable additional gravel in this district which can probably be secured on a 10% royalty basis and I would especially mention the large holdings of Smith-Roby and the patented land of Matt Lee which takes in the large portion of Copper Basin Wash where there is a tremendous yardage but probably very low grade and below the critical value.

To sum up I cannot recommend the Forbach Placer for any large scale operation but if his statements of the values are substantiated I believe that it may have considerable merit if worked by one or more moderate sized units.

DOCUMENT NO. 5

December 19th, 1938

REPORT ON FORBACH-EASTON PLACER

By G. M. COLVOCORESSES

I beg to submit the following report on the Forbach-Easton Placer Mining Claims which I have investigated and sampled in accordance with your instructions during the past two months, being assisted in this work by Mr. George J. Harbauer, an experienced Mining Engineer and a small crew of men. Our general examination covered the entire property but the sampling was of necessity confined to certain sections believed to contain the highest values, located in Gold Bar and Jackson Washes.

LOCATION AND GENERAL DESCRIPTION:

According to the map and statements made by Mr. Wm. Forbach, his claims are or were 21 in number,-all unpatented and they cover 1163 acres of ground. The names of these claims are as follows:--

Copper Head	Marie
Gold Block Group	Corse Gold 1 & 2
Lincoln	Corse Gold 3 & 4
Mint	1921
Gold Mint	Gold Bar
Gold Mint #1	Milwaukee
Gold Mine #2	Dorothy
Imogine	Van Dyke #2
Tom Cat	Van Dyke #3
Acker	

Certain of these claims have recently been relocated and it is not clear whether the list as given exactly conforms to the present status of the County Records, but I am advised that all of the ground covered by those claims as shown on the map is now held by Forbach and that these are all in good standing with proper assessment work duly performed and recorded.

The claims are located in Yavapai County, Arizona; Township 13 North, Range 3 West and the camp and former washing plant are reached by 5 miles of road from the town of Kirkland on the Prescott-Phoenix Branch of the Santa Fe Railroad or by 23 miles of road from Prescott, the side road taking off from the White Spar paved highway at Wilhoit.

The elevation is from 4300 to 4600' above sea level,-climate is mild and generally favorable to working at all seasons of the year; the average precipitation is about 15" of which very little falls as snow. Freezing weather is infrequent and of short duration.

The surface is composed of low ridges lying between numerous gulches or washes, it is semi-desert in character with no useful timber and rocky or sandy soil partly grown over with desert shrubs and grasses.

These claims lie in the foothills at the western foot of the Sierra Prieta Range of the Bradshaw Mts. and are drained by gulches tributary to Copper Basin Wash which lies a short distance to the south; the principal gulches which cross the claims are known as Gold Bar, Jackson and Telegraph, sometimes respectively referred to as the East, Middle and West Gulches; See Claim Map - Exhibit A.

GEOLOGY:

The Sierra Prietas are mainly composed of Pre-Cambrian schist and granite with later intrusions of diorite and other basic volcanic rocks. At a more recent epoch there were further intrusions of rhyolite and other porphyries and finally in Tertiary times flows of tufa and basaltic lava.

Erosion carved out a pediment in the granite and schist at the base of the mountain range and this, together with the sloping plain to the westward, is now floored with gravel, sand and clay mixed and interbedded with tufa, rhyolite and basalt through which

the more recent streams have cut many gulches both large and small, trending in a southwesterly direction and filled down to the true or underlying bed-rock with successive layers of conglomerate, clay, caliche, and sand or coarse gravel,-all products of recent erosion.

While the course of the drainage appears to have been altered a number of times since the early Tertiary Period, the placer gold was undoubtedly originally derived from the gold bearing quartz veins of the Sierra Prieta Mts. and later from the erosion and destruction of some of the intrusives, notably the rhyolite which near Copper Basin and elsewhere often carries an appreciable content of disseminated gold and cinnabar.

One of the main features of this placer and others in its vicinity and because of which they are essentially different from most of the Tertiary deposits which have been extensively studied and worked in the Sierra Nevadas, is the fact that there have been several epochs of gold concentration with pay streaks lying on layers of false bed rock which for the most part are composed of a lime cemented conglomerate locally known as a "caliche".

With the gradual washing away of the original tops and sides of these ancient mountains, which were once many thousand feet higher than at present, the gold, silver and base metals contained in the veins were mechanically removed and the more insoluble metals were distributed among the sand and gravels on the pediments and alluvial plains to be washed away and redeposited by the rivers and streams which drained these slopes during various periods of their geological history.

While complete evidence is distinctly lacking yet we have every reason to believe that a system of Tertiary or pre-Tertiary rivers and creeks once flowed along the west slopes of the Bradshaws and formed the ridges, benches and flats thru which now flow the Hassayampa River, Copper Basin Wash, Kirkland, Antelope and Weaver Creeks and various smaller tributaries.

The true bed rock of these ancient channels has never yet been explored. It appears to lie at a varying depth below the present surface and false bed rock and theoretically the richest and most extensive

concentration of gold in this district will be found in the deep pay-streak directly above it but the search for such "deep leads" would be difficult and expensive and results at best very uncertain.

During the period of intensive vulcanism which corresponded with the late Tertiary, the contours of much of the surface of this area was substantially altered, flows of lava and tufa blocked and dammed many of the ancient water courses, intrusions and uplifts changed the direction and rate of flow and new systems of drainage succeeded one another altho in the main these seem to have followed the general trend of those which had existed in the latter part of the Tertiary Period.

The recent rivers and streams, unlike the Quaternary rivers of California, which cut thru and below the old Tertiary channels, flowed more slowly and at a higher relative elevation depositing immense quantities of detrital material and sorting and re-arranging this upon strata of clay or conglomerates which formed the false or modern bed rock. As a result of these processes nearly all of the more easily soluble metals and minerals were removed from the original debris leaving concentrations and fragments of quartz and harder rock in the gravels with the gold and black sand (mostly magnetic and non-magnetic iron oxide) in layers on the uppermost layer of the caliche bed rock. Even today this process is still going on with new gulches and arroyas forming throughout the superficial areas causing a re-distribution of the gold and a recurrent surface concentration which permits local miners or snipers to operate in the draws or gulches after each heavy rain and often to make good wages for several days with pans, rockers, or long-toms. But no substantial placer operations can ever be based upon such digging or scraping of the surface and the placer ground in which we are at present interested comprises the sand and gravel from the present surface to the upper layer of caliche which is generally to be found at a depth of four feet to thirty feet; all of which gravel must be mined and washed even where the best values are concentrated in a one to two foot pay-streak directly above the caliche.

HISTORY:

Gold placers in this district have long been known and it is said that some work was done here nearly 50 years ago, but serious attempts to operate seem to have only begun about 1930.

In 1931, Forbach and Easton started work on a small scale and in 1933, after having increased their holdings and obtained financial backing from the Van Dykes of Milwaukee, they installed a washing plant at their camp of Jackson Wash and mined with a small power shovel some 16,000 yards of gravel mostly along upper Jackson a short distance above the camp. This gravel was trucked to the washing plant where it was disintegrated by trommels and the fines concentrated on Deister-tables after which the gold in the black sand concentrate was amalgamated in a barrel.

Water for this operation was obtained from a 214' well sunk 1½ miles distant from the plant on the Copper Head Claim and near Copper Basin Wash. The supply furnished by the pumps was about 90 gallons per minute and might have been somewhat increased by larger pumps and especially through deepening the well which appeared to have tapped a strong underflow at a depth of about 123 ft. which continued to increase as depth was gained.

The results of this operation do not appear to have been accurately recorded, but they seem to have covered a period of about 5 months. The plant was designed to treat over 200 yards per day, but mechanical difficulties are said to have reduced this to about 120 yards. The recovery of values is reported to have been about 90% and the actual gold recovered was stated to have had a value equivalent to about $10,500.00 at present price of gold or say 65¢ per cubic yard washed. Since nearly all of this material was carefully mined from the richest section of Jackson Wash, I am quite prepared to accept these statements, but would add that I do not believe that they maintained the high grade of the feed up to the end of the run or otherwise they would have continued to operate. This opinion is confirmed by the fact that two subsequent operations by other parties ended

in complete failure.

Adjacent to or in the vicinity of the Forbach holdings there are a number of other properties with entirely similar geological conditions and presumably of similar value. From several of these a certain amount of rich gravel has been mined in the past, but in every case the pay streaks were quickly exhausted and claims that a large yardage of $1.00 or even 50¢ gravel would be found have never been substantiated in practice. Other claims as to high values found in deep wells and buried channels have never been reliably confirmed. The record shows that every one of the many attempts to operate on even a medium scale have failed with financial loss and recent activities have been confined to working on a very small scale conducted by a few experienced men who make good wages,-for a limited time,-by selective mining in narrow pay-streaks along the center of the washes or from small pockets of the richest ground found along the benches and ridges.

Many of these failures I attribute to improper sampling when small selected samples from the pits or cuts have been washed in pans and the value of the gold estimated by eye. This method, in my experience, has invariably proved to be misleading and generally results in estimates of value that are greatly exaggerated.

Subsequent to the Forbach operation a number of brief examinations of the property were made by various engineers, mainly with a view to determining whether it might be feasible to install machinery and equipment on a much larger scale in order to reduce the unit costs of operation and to cheaply mine a very large yardage of gravel from the deeper sections of the washes and from large sections of the benches and ridges where it was claimed that the gravel would carry values of from 50¢ to over $1.00 per yard. Aside from the serious doubt as to the value of much of this yardage, it was the opinion of Mr. Wimmler, myself and others that the physical

character of these deposits, limitations of water supply and shallow depth of gravel on the ridges positively precluded the possibility of large scale mining. Therefore, this last investigation was undertaken for the purpose of ascertaining whether a somewhat smaller operation could be carried on with profit; the mining being confined to the richer and more easily worked areas in the beds of the recent gulches where all parties agrees that the best values were found and which as measured by survey might have contained a total yardage in the order of one million.

For this purpose it was decided to thoroughly sample the most promising sections of Gold Bar, Jackson and, if possible, Telegraph Wash and our sampling work was accordingly confined to these areas, which could later have been extended if satisfactory values had been found and appeared likely to extend beyond the limits of the areas first investigated.

SAMPLING THE GRAVEL:

By reference to the three accompanying maps, the lay of the ground and location of the sampled sections may be noted while the exact position and depth of the pits is posted on the larger scale maps of Gold Bar and Jackson Washes and their numbers correspond to the numbers listed on the assay record in which the average value of each pit from surface to bed rock is given in cents per cubic yard.

The gravel in the washes was sampled by pits which theoretically should have been put down at regular intervals similar to the corners of the squares on a checkerboard. Neither the contour of the surface nor the accessibility for truck haulage permitted any such regular spacing and moreover there were a number of pits already dug or partly dug and from which samples could be obtained with much less expense than when digging from surface was necessary.

Accordingly these old pits were cleaned out and new pits dug at suitable locations between them and beyond the area which they had covered and I am satisfied that our samples are accurately representative and that if the entire sampled area should later be mined its average recoverable value would not differ from our results to any extent which could possibly alter the conclusions of this report.

All of the pits except in Telegraph Wash were dug down to the false bed rock (generally caliche) and from 6" to 12" into this rock depending on its hardness. The depth of the pits varies from 3' to 27' and the samples were cut from the sides in vertical sections not exceeding 7' in height except in a few cases where as much as a 10' section was taken from the surface down.

Most of the pits had a width of 2' and therefore a side section 2' wide by 6' deep and slightly over 1 foot thick was carefully measured and shovelled out representing 13.5 cu. ft. (one half cubic yard in place) and just filling a box in the pick-up truck holding the corresponding volume of loosely broken gravel, i.e., 18 cubic feet. The deeper pits had to be laid off in benches and the lower samples obtained by hoisting the dirt in buckets with use of a windlass and obviously these samples were much more expensive to take and obtained much more slowly than those which came from near the surface.

The washing plant in which each sample was treated was located near the camp and water tanks and comprised:

(1) A steel bin with capacity of about 20 cu. ft. into which the sample was unloaded from the truck and in which it was soaked for a short time when necessary (which was rarely the case) in order to dissolve the clay.

(2) A shaking trough with screen, which took the place of a trommel, disintegrating the lumps of dirt and clay and separating the finer material from the rocks and pebbles which, after being thoroughly washed, passed over the 1/2" mesh screen and to waste.

(3) A steel sluice box or launder with punched screens lying along the bottom and acting as riffles in which a large part of the black sand and heavy minerals such as galena and cinnibar were caught together with the gold.

(4) A Denver pan with rubber mats designed to catch the very fine gold which might have gotten by the riffles. In practice we determined that only a trivial amount of fine gold was present in any of the samples and the clean-up from the Denver Pan in many cases was a complete blank or at the most contained colors weighing less than two milligrams. The character of the gold made the use of quicksilver quite unnecessary.

The above described equipment was designed to reflect as nearly as possible the conditions which might be expected to maintain in a commercial washing plant and its recovery of values was certainly as good and possibly a trifle better than could be expected in actual washing practice on a large scale.

After each sample was run, the entire plant was carefully washed out and the clean-up from the sluices and Denver pan was panned by hand down to a very small concentrate composed of gold and the heaviest portion of the black sand. This concentrate was taken to an assay office in Prescott where a fusion assay was made and the weight of the gold accurately determined. This weight multiplied by two gave the recoverable gold content per yard of bank in the material sampled. The average fineness of the gold was determined

by composite bullion assays to be almost exactly 900 per 1000 and the gross value of the fine gold was then figured on the United States Government price of $35.00 per ounce.

In cases where more than one sample was taken from a pit the weighted average was calculated and the average grade of each section of the deposit has been computed in the final table as accurately as possible from the location of the pits as determined by transit survey. The probable error in these calculations resulting from the irregular spacing of the pits and the irregular contour of the bed rock between them should not exceed 10 per cent either in the yardage or in the estimated average value and no such error could possibly change the conclusions of this report.

A composite sample representing the heaviest of the black sand washed from the pans was assayed and found to contain gold to the value of $1.75 per ton based upon which I calculate that the recovery in our sampling plant was about 90% of the total gold content of the gravel and I do not believe that any lesser tailing loss could be expected in commercial operations.

CONCLUSIONS:

The conclusions of my investigation of the Forbach-Easton Placer may be summed up as follows, based on the well established premise that the cost of mining and washing any gravel in this area will not be less than 20¢ or more probably 25¢ per yard.

(1) Natural conditions limit the areas of gravel which could be worked at any such cost to the beds of the three larger washes and short sections near the mouths of the smaller washes which are tributary to them.

(2) Our sampling of what was considered to be the best portions of Gold Bar gave an average value of 10¢ per cubic yard and thus eliminates Gold Bar Wash from further consideration.

(3) The gravel in Telegraph Wash proved to be too deep to be sampled to bed rock without prohibitive expense but such sampling as we did, coupled with all other available data, indicates that the average values here are also far too low to support any commercial operation.

(4) The lower and larger portion of Jackson Wash is also non-commercial and the portion above the camp has been mined out except for small scattered sections and side benches in which the yardage is too limited to justify any attempt at mining.

(5) Pay gravel occurs in a narrow channel below the dams in Jackson Wash which may roughly be given a length of 700 yards, a width of 50 yards and a depth of 2 yards. Deducting from the total yardage those sections which have already been mined or washed out by the creek and adding in a small area extending up into two tributary washes, there remain approximately 60,000 cubic yards of gravel which has an average recoverable value of 50¢ per yard. Assuming a working cost of 25¢ per yard, the net working profit which might be realized from mining and washing this gravel is $15,000 excluding royalty.

From a physical standpoint this material in Jackson Wash is well suited for placer mining, it is mainly composed of granitic sand and coarse and fine gravel, the percentage of rocks and boulders is low and such clay as is found in relatively small quantities is easily disintegrated by water and screening. The digging by shovel should therefore be cheap and the washing comparatively inexpensive and efficient.

There is very little fine or flour gold but practically all the values are in small grains ranging in size from a pin head to a pin point; no nuggets with diameter larger than 1/8" were

found during the sampling, and almost all of the values were recovered in the riffles of the sluices, very little being left for the mats in the Denver pan. Some of the grains were fairly well rounded on the edges but the majority were sharp and angular indicating that it had only travelled for a short distance.

The bed rock of this wash gravel consists generally of a compact caliche on which there is sometimes found a few boulders or medium sized rocks and generally speaking the gold does not appear to have penetrated more than 6" into the softer bed rock.

While the wash gravel in itself could be cheaply mined per yard, yet the physical character of the deposit is entirely unfavorable to any type of operations which would permit a low over-all cost since such a condition obviously involves the use of portable digging and washing equipment with frequent changes in location and alterations in water lines and mechanical stacking of tailings.

(6) Obviously such a situation is not attractive as a mining venture except under special conditions and on a small scale. It entirely precludes the possibility of using any large plant or working in this locality for any extended period of time. It rules out all justification of attempting to increase the water supply or installing any expensive equipment since no large capital expense could be returned from this particular operation.

However, given the facts that a limited water supply is already available, also good roads, living quarters and other conveniences, it is my opinion that a small operation should prove attractive provided that a suitable plant can be purchased or rented on favorable terms and my recent investigations show that this can be done.

The returns from mining the pay gravel sampled in Jackson Wash should repay the initial investment and leave some profit over the working expenses and these operations could then be transferred to some of the other weshes in this vicinity which even though not included in the Forbach claims, present similar conditions and values and could doubtless be worked on lease with reasonable royalty payment to the owners. I believe that such an operation can be carried on over a period of many years and the returns should not only return the small capital investment but yield a very substantial net profit to the investors.

On this basis only, I recommend further operation at the Forbach Placer and a tabulated estimate of the probable results follows below:

SUGGESTED PLAN OF OPERATING:

Since the very limited yardage of pay gravel found in the Forbach Claims does not justify any substantial purchase of digging and washing equipment it is suggested that portions of such equipment might be rented and the balance of the plant might be constructed largely from old material now on the ground.

As a preliminary to any such program I estimate that a minimum expenditure of $3000 will be required to provide for the construction of the washing plant, moving and installation of a shovel and proper arrangement of pipe-lines, pumps, launders, sluices, etc.

In addition and to cover expected alterations and adjustments a further sum of $1000 must be available during the construction period together with a working capital of $1000 making a total investment of $5000 of which $4000 will properly be capital expense. From that time forward the operations should be more than self-supporting and digging andwashing should proceed at the rate of about 200 cubic yards per day, say 5000 yards per month;-allowing for shut downs, repairs, moving plant, etc.

My estimate of monthly costs and returns is as follows, assuming that the Nelson shovel can be rented or some other shovel on similar terms:

Rent of shovel with operator 30 days =		$360.00
Washing plant operator @ $5.00 =		150.00
2 general labor & pump @ $4.50 =		240.00
1 Superintendent		225.00
Fuel & other supplies, repairs, and camp expense		275.00
General & office expense		150.00
Insurance & taxes, & Misc.		100.00
		$1500.00
Credit sale of gold from 5000 yds. mined @ 50¢ per yard	$2500.00	
Less 10% royalty to Forbach	250.00	
	$2250.00	
Net Profit per month		750.00
Net Profit from Jackson Wash (60,000 yds. in 12 mos.)		9000.00
Net gain after repayment of capital		5000.00 plus salvage on equipment probably not over $500.00.

Alternative plan which is considered preferable:

Detailed estimated cost of working Jackson Wash with purchased second-hand equipment, involving total capital expenditure of $7000.00 plus $3000.00 working capital.

Per Month

1 shovel operator @ $6.00 =	$180.00
1 plant " @ 5.00 =	150.00
2 general labor & pump @ $4.50 =	240.00
1 superintendent	225.00
Fuel & other supplies, repairs, etc.	205.00
General & office expense	150.00
Insurance & taxes & misc.	100.00
	$1250.00

Credit

Sale of gold 5000 yd. @ 50¢	$2500.00	
Less royalty to Forbach	250.00	
	$2250.00	
Net profit per month		$1000.00
" " on Jackson Wash (60,000 yds.)	$12,000.00	
Less repayment of capital investment	7,000.00	
	$ 5,000.00	
Plus salvage value of equipment	3,000.00	
	$ 8,000.00	

Attached hereto are three survey maps, Exhibits A, B and C; also Exhibit D, being a tabulated record of the samples taken from the pits followed by a brief comment on the yardage and value of the gravelsampled or examined.

Yours very truly,

G. M. Colvocoresses

"Exhibit D".

RECORD OF PIT SAMPLES

Gold Bar Wash:

No. of Pit as shown on map.	Depth in Feet	Number of Samples taken	Average value in cents per cu. yd.
1	14.5	2	18.40
2	8.5	1	5.56
3	17.5	3	6.70
4	18.5	3	7.24
5	27.0	4	24.67
6	25.5	4	0.84
7	21	3	10.81
8	22.5	4	3.18
9	17.7	2	12.90

Lower Jackson Wash:

10	4.0	1	61.26
11	5.4	1	81.48
12	4.5	1	78.00
13	6.0	1	21.23
14	5.0	1	71.16
15	5.0	1	14.48
16	4.0	1	1.35
17	5.5	1	55.51
18	4.5	1	30.12
19	7.0	1	18.35
20	3.5	1	11.34
21	5.5	1	42.14
22	5.0	1	9.06
23	6.0	1	10.05
24	5.0	1	8.09
25	5.0	1	4.72

Lower Jackson Wash (Continued):

No. of Pit as shown on map	Depth in Feet	Number of samples Taken	Average value in cents per cu. yd.
26	5.5	1	87.30
27	6.0	1	24.77
28	5.5	1	32.47
29	9.5	1	5.63
30	7.0	1	15.61
31	8.5	1	50.00
32	8.0	1	18.65
33	7.0	1	3.65
34	9.0	1	7.55
35	8.0	1	1.87
36	9.5	1	1.14
37	13.0	2	23.49
38	10.0	1	8.90
39	3.	1	6.62
40	5.	1	0.66
41	5.5	1	0.60
42	2.5	1	0.19
Upper Jackson Wash:			
44	6.	1	4.41
45	5.5	1	1.26
46	4.	1	26.54
47	4.	1	2.31
48	4.5	1	2.82
49	4.	1	7.07
50	4.	1	11.25
51	5.5	1	24.00
52	4.5	1	19.08

Telegraph Wash:

No. of Pit as shown on Map	Depth in Feet	Number of Samples Taken	Average Value in Cents per cu. yd.
43	25.5	3	0.24

Ridge by Water Tanks:

53	7.0	1	5.66

COMMENT

Calculations based on the sampling as recorded above indicate that:-

(1) The sampled section of Gold Bar Wash contains approximately 250,000 cubic yards of gravel which averages 10¢ per yard. Examination of all other sections of this was included in the Forbach Claims makes it appear quite certain that the average grade is substantially lower. There is reason to believe that a better grade of gravel will be found farther up Gold Bar Wash but most or all of this will be beyond the eastern limit of Forbach's ground and the yardage of such material appears to be small.

(2) The Forbach gravel in Telegraph Wash is all very deep and attempts to reach bed rock in several pits were unsuccessful. The upper gravel is practically barren of values as shown by panning and samples taken from the one pit (#43) from which large samples could be taken and even should good values be found for a short distance above bed rock, it is reasonably certain that the great volume of worthless overburden would prohibit profitable mining. Again it is probable that higher values will be found near the head of this wash but only a long distance east of the Forbach Claims.

(3) Jackson Wash heads on the Forbach property and the richest gravel from near its head down to the camp has already been mined out yielding,-according to report,-some 16,000 cu. yds.

with recoverable value of 65¢ per yard.

Below the camp and the dams there is a stretch of gravel which for a length of some 700 yards will average in the channel about 50¢ per yard and which I estimate to have a total volume of about 60,000 yards.

Further down the wash (southwest of pits #33-32) the value of the gravel rapidly decreases and, with the possible exception of a narrow channel near the center, the wash will not average more than 5¢ per yard so that the lower section in which it widens and becomes deeper is entirely non-commercial.

(4) Nowhere else on the property could we find any areas of pay gravel which were of sufficient size to justify any attempt at mechanical mining.

The small tributary washes are too narrow to permit economical digging except for very short stretches. Samples and panning from the ridges and benches indicated little or no gold except in a few scattered spots where remnants of old channel gravel remained or where these had been reconcentrated in small pockets many of which had already been dry-washed or hauled away to some of the small washing plants that have operated at intervals in this vicinity.

NOTE BY G.M. COLVOCORESSES
(June, 1945)

To the best of my knowledge no work has been done on this property subsequent to the date of my report except that in '39 or early 1940, a lessee named Donley took over a portion of the ground and installed a small washing plant with a drag line for excavating the gravel.

When I visited the property during the course of their operations they were working above the dam in Jackson Wash and in fact directly north of the camp buildings and Forbach's old mill. This area had been practically worked out of pay gravel with the exception of a few small pockets that were left in the side washes and it happened that the heavy rains had washed in a lot of surface material filling up most of Forbach's previous diggings so that it was natural that the material which was being mined should have been practically worthless and the Donnelly people became so discouraged with the result of these operations that they did not go any further down the wash. It is needless to comment upon the stupidity of such a procedure as they carried on and Forbach expressed to me his extrame disgust with the way in which they had worked and the results of same which really neither proved nor disproved anything of importance nor did they mine any of the gravel that I had classed as pay dirt.

DOCUMENT NO. 6

MAGNETIC MANUFACTURING COMPANY

MAIN OFFICE AND WORKS

MILWAUKEE, WIS.

May 26, 1932

Mineral Mining Company
902 Wells Building
Milwaukee, Wisconsin

Attention: Mr. W. D. Van Dyke, Jr.

Gentlemen:

We wish to submit herewith our formal report to cover laboratory test conducted on your material yesterday.

We dried the material carefully after you left, and Mr. Segnitz, the chemist, called for the same this morning. We understand he will quarter the sample carefully, and forward it for analytical test immediately. He states that he will communicate with us as soon as results are available, which he expects on or about June 1 or 2. As soon as we hear from him we will get in touch with you, and report on his findings, which we assume will be satisfactory.

We feel satisfied, from the preliminary test conducted on your material, that we can be of considerable benefit on your problem, and we hope the above analysis will confirm the same. Of course, as stated, the tests were entirely of a preliminary nature, and can be carried further if not entirely satisfactory. We believe especially the feed could be improved, which in turn would allow for a better distribution of the particles on the belt, and would reflect in the final results.

You will note that we have removed approximately 80% by weight of the material, which is considerably more than we anticipated from appearances. Consequently, if the analysis proves as we hope it will, the separation should be very satisfactory.

We will be very glad to discuss this matter further with you as soon as we get the above information, and will be prepared at that time to submit figures on capacities, costs, etc., for your further consideration and decision.

Thanking you again for this opportunity, and awaiting your further orders, we are

Yours very truly,

MAGNETIC MANUFACTURING COMPANY.

/s/ R. N. Stearns

* *

Name	Mineral Mining Co.	Date	May 26, 1932
Material	Black Magnetic Sand	Sample	# 656

REPORT

Sample of black gold bearing sand received via express. (Representing black sand concentrated from treatment of gravel washed at the Forbach Placer).

These conducted in presence of Mr. W.D. Van Dyke, Jr., and Mr. Douglass Van Dyke, on Type "MW" Magnetic Separator with the following results:

Magnetic Product	80.60%
Non-Magnetic Product . . .	19.40%

Purpose of above test to eliminate magnetite and other magnetic properties, without disturbing gold values. Believe further improvements possible, altho large percentage of magnetic product removed, as will be noted from the above percentages.

Sample record available on belt speed, current consumption, incline setting for further tests and experiments if necessary.

PITTSBURGH TESTING LABORATORY

PITTSBURG, PENNA.

Report #154327

Client's order # Mi.2740

February 11th, 1932

Analysis of ORE

Reported to Mineral Mining Co., 902 Wells Building, Milwuakee, Wisconsin

* * * * * *

Chemical Analysis

IRON OXIDE, FeO	9.80%
IRON OXIDE, Fe_2O_3	78.79%
SILICA	3.37%
ALUMINA	5.60%
TITANIUM OXIDE	.50%
ZIRCONIUM OXIDE	1.88%
COPPER	.01%

Assay for Precious Metals

GOLD	11.08 oz. per ton
SILVER	2.18 oz. per ton
PLATINUM	None

Spectographic Examination

In addition to the above elements determined by the usual analytical means a spectographical examination reveqled the presence of the following elements in amounts too small to be of commercial interest. The absence of all other elements is also quite definitely demonstrated.

MAGNESIUM	CHROMIUM
ZINC	LEAD
VANADIUM	BARIUM
NICKEL	STRONTIUM
CALCIUM	SODIUM
MANGANESE	GERMANIUM

PITTSBURGH TESTING LABORATORY
By H. H. Craven
Manager Chemical Dept.

LABORATORY REPORT

PAUL H. SEGNITZ

CONSULTING CHEMICAL SERVICE.

Milwaukee, Wisconsin

May 31st, 1932

To: Mr. George D. Van Dyke
c/o Magnetic Mfg. Co.
Milwaukee, Wisconsin

Laboratory No. 1487-1488 Date Received May 26, 1932

Material: Magnetically Separated Gold Ores.

Our No.	Mag.Mfg.Co.No.	Gold Troy oz./ Ton Av.	Value/ Ton Gold @ $20.00 Oz.
1487	656 - Magnetic	0.12	$2.40
1488	656 - Non Magnetic	2.92	58.40
			$60.80 =
			$106.40 @ $35.00 per oz.

(Analysis by fire-assay, done by our correspondents).

NOTE BY G. M. COLVOCORESSES

June, 1945.

Since the average weight of black sand concentrate in a cubic yard of gravel has never been accurately determined these reports are not very enlightening.

Forbach once told me that, as the gravel went thru his washing plant, about 3% by weight was separated from the tailings and that this material was concentrated in the ratio of about 20 to 1 before samples were sent away for testing. However, it will be noted that the sample, which on this basis would have amounted to about .0015 of each yard, had a gold value of over 11 oz. per ton ($385.00) which would have represented a ridiculous value per yard of gravel.

It is my recollection that other calculations including some which we made while sampling the property indicated that the gold lost with the black sand,-after thorough washing represented not more than 4¢ per cubic yd. In any regular operation it should pay to collect this sand and eventually to sell it to one of the local copper smelters.

DOCUMENT NO. 8

GENERAL CONCLUSION

The Forbach-Easton Placers and some others around Kirkland and Copper Basin had been presented prior to 1935 to the A. O. Smith Corp. of Milwaukee by the owners and by various promoters who furnished data which, if reliable would have made these properties appear very attractive. My own opinion after casually inspecting the ground and examining such reports and records as were then available was on the whole rather favorable, altho I could never visualize the probability of mining upwards of 2,000,000 yds. of gravel as was claimed.

The objects of the investigations which I subsequently undertook were (1) to determine if any of this ground might be profitably worked on a large scale, say 8,000 - 10,000 cu. yds. per day to which I was forced to give a definitely negative answer and (2) to determine if smaller areas could be profitably washed with portable plants at a rate of from 200 to 400 yds. per day.

To explore this last possibility it was decided to thoroughly test an area of gravel along Jackson Wash where Forbach had previously worked and where there appeared likely to be as much as 200,000 cu. yds. that would average over 50¢ per yd. This yardage as noted in my report of Dec. 19, 1938 had to be reduced to about 60,000.

The disappointing result of the sampling in Jackson Wash and of the partial sampling made in other near-by areas did not encourage any active operations but a subsequent review of all of the data in conjunction with Mr. Frost and parties whom he represented made the prospects appear somewhat more favorable since it seemed that, in the case of anyone who had or could rent or cheaply acquire a suitable washing plant, the gold to be recovered from Jackson Wash would probably repay the investment with some profit and at the same time

afford an opportunity to check up at small expense on some of the other similar deposits of gravel in that vicinity to which the washing plant could later be moved, and the water supply extended in each case where the yardage and value of the gravel appeared to justify such a procedure. Altho this plan was not put into effect, it is still my opinion that there exist in this locality and especially near to the head of the main washes and along their tributaries several comparatively small areas of 50¢ gravel each one containing from 20,000 to perhaps as much as 100,000 yds. and that the mining of these successively with limited water supply might yield a modest profit to the operators over a period of several years and on this basis only I think that the Copper Basin-Kirkland placers merit further consideration.

I do not believe that operating costs should be figured today at less than 25¢ per yd. or that there is any reasonable chance of finding any large deposit of gravel (1,000,000 yds. or more) that will approach that value or even carry as much as 10¢ per yd. while any large supply of water, if obtainable at all, would probably have to be brought in from Skull Valley at very considerable expense. But I think that further study should be given to the small areas of the district several of which have never been thoroughly explored or sampled.

To be more specific, I believe that there is a good chance that such gravel can be worked in the upper sections of Gold Bar and Telegraph Washes, which we did not sample, also at or near Casa Negra, Old Camp and Mexican Gulches. Some similar gravel probably exists along other gulches farther to the east and the aggregate pay gravel in this area should be sufficient to keep a small plant in operation for several years. An optimistic forecast would be that a small but well designed and efficient digging and washing plant with capacity

of 200 yds. per 8 hr. shift or more if water permitted might be operated for several years at carefully chosen locations and,- while the price of gold remains at $35.00 per oz. and other conditions about as at present,-that the net profit which might be derived from an initial investment of say $10,000 should be in the order of $6000 - $8000 per annum on a one-shift basis which chances that this might be substantially increased whenever richer gravel in banks or large pockets should be encountered on a more plentiful water supply permitted the work to be carried on during two or three shifts.

G. M. Colvocoresses
June, 1945.

GEORGE M. COLVOCORESSES
MINING AND METALLURGICAL ENGINEER
1102 LUHRS TOWER
PHOENIX, ARIZONA

December 19th, 1938

ABRIDGED REPORT ON FORBACH-EASTON PLACER

Mr. Robert L. Frost
1731 East Mendocino Street
Altadena, California

Dear Sir:

I beg to submit the following report on the Forbach-Easton Placer Mining Claims which I have investigated and sampled in accordance with your instructions during the past two months, being assisted in this work by Mr. George J. Harbauer, an experienced Mining Engineer and a small crew of men. Our general examination covered the entire property but the sampling was of necessity confined to certain sections believed to contain the highest values, located in Gold Bar and Jackson Washes.

LOCATION AND GENERAL DESCRIPTION:

According to the map and statements made by Mr. Wm. Forbach, his claims are or were 21 in number,- all unpatented and they cover 1163 acres of ground. The names of these claims are as follows:

Copper Head	Marie
Gold Block Group	Corse Gold 1 & 2
Lincoln	Corse Gold 3 & 4
Mint	1921
Gold Mint	Gold Bar
Gold Mint #1	Milwaukee
Gold Mint #2	Dorothy
Imogine	Van Dyke #2
Tom Cat	Van Dyke #3
	Acker

Certain of these claims have recently been relocated and it is not clear whether the list as given exactly conforms to the present status of the County Records but I am advised that all of the ground covered by those claims as shown on the map is now held by Forbach and that these are all in good standing with proper assessment work duly performed and recorded.

* *

* *.

HISTORY:

Gold placers in this district have long been known and it is said that some work was done here nearly 50 years ago, but serious attempts to operate seem to have only begun about 1930.

In 1931, Forbach and Easton started work on a small scale and in 1933, after having increased their holdings and obtained financial backing from the Van Dykes of Milwaukee, they installed a washing plant at their camp on Jackson Wash and mined with a small power shovel some 16,000 yards of gravel mostly along upper Jackson a short distance above the camp. This gravel was trucked to the washing plant where it was disintegrated by trommels and the fines concentrated on Deister-tables after which the gold in the black sand concentrate was amalgamated in a barrel.

Water for this operation was obtained from a 214' well sunk 1½ miles distant from the plant on the Copper Head

Claim and near Copper Basin Wash. The supply furnished by the pumps was about 90 gallons per minute and might have been somewhat increased by larger pumps and especially through deepening the well which appeared to have tapped a strong underflow at a depth of about 123 feet which continued to increase as depth was gained.

The results of this operation do not appear to have been accurately recorded but they seem to have covered a period of about 5 months. The plant was designed to treat over 200 yards per day but mechanical difficulties are said to have reduced this about 120 yards. The recovery of values is reported to have been about 90% and the actual gold recovered was stated to have had a value equivalent to about $10,500.00 at present price of gold or say 65¢ per cubic yard washed. Since nearly all of this material was carefully mined from the richest section of Jackson Wash, I am quite prepared to accept these statements but would add that I do not believe that they maintained the high grade of the feed up to the end of the run or otherwise they would have continued to operate. This opinion is confirmed by the fact that two subsequent operations by other parties ended in complete failure.

Adjacent to or in the vicinity of the Forbach holdings there are a number of other properties with entirely similar geological conditions and presumably of similar value. From several of these a certain amount of rich gravel

has been mined in the past but in every case the pay streaks were quickly exhausted and claims that a large yardage of $1.00 or even 50¢ gravel would be found have never been substantiated in practice. Other claims as to high values found in deep wells and buried channels have never been reliably confirmed. The record shows that every one of the many attempts to operate on even a medium scale have failed with financial loss and recent activities have been confined to working on a very small scale conducted by a few experienced men who make good wages,- for a limited time,- by selective mining in narrow pay-streaks along the center of the washes or from small pockets of the richest ground found along the benches and ridges.

Many of these failures I attribute to improper sampling when small selected samples from the pits or cuts have been washed in pans and the value of the gold estimated by eye. This method, in my experience, has invariably proved to be misleading and generally results in estimates of value that are greatly exaggerated.

Subsequent to the Forbach operation a number of brief examinations of the property were made by various engineers, mainly with a view to determining whether it might be feasible to install machinery and equipment on a much larger scale in order to reduce the unit costs of operation and to cheaply mine a very large yardage of gravel from the deeper sections of the washes and from large sections of the

benches and ridges where it was claimed that the gravel would carry values of from 50¢ to over $1.00 per yard. Aside from the serious doubt as to the value of much of this yardage it was the opinion of Mr. Wimmler, myself and others that the physical character of these deposits, limitations of water supply and shallow depth of gravel on the ridges positively precluded the possibility of large scale mining. Therefore, this last investigation was undertaken for the purpose of ascertaining whether a somewhat smaller operation could be carried on with profit; the mining being confined to the richer and more easily worked areas in the beds of the recent gulches where all parties agreed that the best values were found and which as measured by survey might have contained a total yardage in the order of one million.

For this purpose it was decided to thoroughly sample the most promising sections of Gold Bar, Jackson and, if possible, Telegraph Wash and our sampling work was accordingly confined to these areas, which could later have been extended if satisfactory values had been found and appeared likely to extend beyond the limits of the areas first investigated.

SAMPLING THE GRAVEL:

By reference to the three accompanying maps, the lay of the ground and location of the sampled sections may be noted while the exact position and depth of the pits is posted on the larger scale maps of Gold Bar and Jackson Washes

and their numbers correspond to the numbers listed on the assay record in which the average value of each pit from surface to bed rock is given in cents per cubic yard.

The gravel in the washes was sampled by pits which theoretically should have been put down at regular intervals similar to the corners of the squares on a checkerboard. Neither the contour of the surface nor the accessibility for truck haulage permitted any such regular spacing and moreover there were a number of pits already dug or partly dug and from which samples could be obtained with much less expense than when digging from surface was necessary. Accordingly these old pits were cleaned out and new pits dug at suitable locations between them and beyond the area which they had covered and I am satisfied that our samples are accurately representative and that if the entire sampled area should later be mined its average recoverable value would not differ from our results to any extent which could possibly alter the conclusions of this report.

All of the pits except in Telegraph Wash were dug down to the false bed rock (generally caliche) and from 6" to 12" into this rock depending on its hardness. The depth of the pits varies from 3' to 27' and the samples were cut from the sides in vertical sections not exceeding 7' in height except in a few cases where as much as a 10' section was taken from the surface down.

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The washing plant in which each sample was treated was located near the camp and water tanks and comprised:

(1) A steel bin with capacity of about 20 cu. ft. into which the sample was unloaded from the truck and in which it was soaked for a short time when necessary (which was rarely the case) in order to dissolve the clay.

(2) A shaking trough with screen, which took the place of a trommel, disintegrating the lumps of dirt and clay and separating the finer material from the rocks and pebbles which, after being thoroughly washed, passed over the 1/2" mesh screen and to waste.

(3) A steel sluice box or launder with punched screens lying along the bottom and acting as riffles in which a large part of the black sand and heavy minerals such as galena and cinnibar were caught together with the gold.

(4) A Denver pan with rubber mats designed to catch the very fine gold which might have gotten by the riffles. In practice we determined that only a trivial amount of fine gold was present in any of the samples and the clean-up from the Denver Pan in many cases was a complete blank or at the most contained colors weighing less than two milligrams. The character of the gold made the use of quicksilver quite unnecessary.

The above described equipment was designed to reflect as nearly as possible the conditions which might be expected to maintain in a commercial washing plant and its recovery of values was certainly as good and possibly a trifle better than could be expected in actual washing practice on a large scale.

After each sample was run, the entire plant was carefully washed out and the clean-up from the sluices and Denver pan was panned by hand down to a very small concentrate composed of gold and the heaviest portion of the black sand. This concentrate was taken to an assay office in Prescott where a fusion assay was made and the weight of the gold accurately determined. This weight multiplied by two gave the recoverable gold content per yard of bank in the material sampled. The average fineness of the gold was determined by composite bullion assays to be almost exactly 900 per 1000 and the gross value of the fine gold was then figured on the United States Government price of $35.00 per ounce.

In cases where more than one sample was taken from a pit the weighted average was calculated and the average grade of each section of the deposit has been computed in the final table as accurately as possible from the location of the pits as determined by transit-survey. The probable error in these calculations resulting from the irregular spacing of the pits and the irregular contour of the bed rock between them should not exceed 10 per cent either in the yardage or in the estimated average value and no such error could possibly change the conclusions of this report.

A composite sample representing the heaviest of the black sand washed from the pans was assayed and found to contain gold to the value of $1.75 per ton based upon which I calculate that the recovery in our sampling plant was about

90% of the total gold content of the gravel and I do not believe that any lesser tailing loss could be expected in commercial operations.

CONCLUSIONS:

The conclusion of my investigation of the Forbach-Easton Placer may be summed up as follows, based on the well established premise that the cost of mining and washing any gravel in this area will not be less than 20¢ or more probably 25¢ per yard.

(1) Natural conditions limit the areas of gravel which could be worked at any such cost to the beds of the three larger washes and short sections near the mouths of the smaller washes which are tributary to them.

(2) Our sampling of what was considered to be the best portions of Gold Bar gave an average value of 10¢ per cubic yard and thus eliminates Gold Bar Wash from further consideration.

(3) The gravel in Telegraph Wash proved to be too deep to be sampled to bed rock without prohibitive expense but such sampling as we did, coupled with all other available data, indicates that the average values here are also far too low to support any commercial operation.

(4) The lower and larger portion of Jackson Wash is also non-commercial and the portion above the camp has been mined out except for small scattered sections and side benches in which the yardage is too limited to justify any attempt at mining.

(5) Pay gravel occurs in a narrow channel below the dams in Jackson Wash which may roughly be given a length of 700 yds., a width of 50 yds., and a depth of 2 yds. Deducting from the total yardage those sections which have already been mined or washed out by the creek and adding in a small area extending up into two tributary washes, there remain approximately 60,000 cubic yards of gravel which has an average recoverable value of 50¢ per yard. Assuming a working cost of 25¢ per yard, the net working profit which might be realized from mining and washing this gravel is $15,000 excluding royalty.

From a physical standpoint this material in Jackson Wash is well suited for placer mining, it is mainly composed of granitic sand and coarse and fine gravel, the percentage of rocks and boulders is low and such clay as is found in relatively small quantities is easily disintegrated by water and screening. The digging by shovel should therefore be cheap and the washing comparatively inexpensive and efficient.

There is very little fine or flour gold but practically all the values are in small grains ranging in size from a pin head to a pin point; no nuggets with diameter larger than 1/8" were found during the sampling and almost all of the values were recovered in the riffles of the sluices, very little being left for the mats in the Denver pan. Some of the grains were fairly well rounded on the edges but the majority were sharp and angular indicating that it had only travelled for a short distance.

The bed rock of this wash gravel consists generally of a compact caliche on which there is sometimes found a few boulders or medium sized rocks and generally speaking the gold does not appear to have penetrated more than 6" into the softer bed rock.

While the wash gravel in itself could be cheaply mined per yard, yet the physical character of the deposit is entirely unfavorable to any type of operations which would permit a low over-all cost since such a condition obviously involves the use of portable digging and washing equipment with frequent changes in location and alterations in water lines and mechanical stacking of tailings.

(6) Obviously such a situation is not attractive as a mining venture except under special conditions and on a small scale. It entirely precludes the possibility of using any large plant or working in this locality for any extended period of time. It rules out all justification of attempting to increase the water supply or installing any expensive equipment since no large capital expense could be returned from this particular operation.

However, given the facts that a limited water supply is already available, also good roads, living quarters and other conveniences, it is my opinion that a small operation should prove attractive provided that a suitable plant can be purchased or rented on favorable terms and my recent investigations show that this can be done.

The returns from mining the pay gravel sampled in Jackson Wash should repay the initial investment and leave some profit over the working expenses and these operations could then be transferred to some of the other washes in this vicinity which, even though not included in the Forbach claims, present similar conditions and values and could doubtless be worked on lease with reasonable royalty payment to the owners. I believe that such an operation can be carried on over a period of many years and the returns should not only return the small capital investment but yield a very substantial net profit to the investors.

On this basis only, I recommend further operation at the Forbach Placer.

Yours very truly,

G. M. Colcleugh

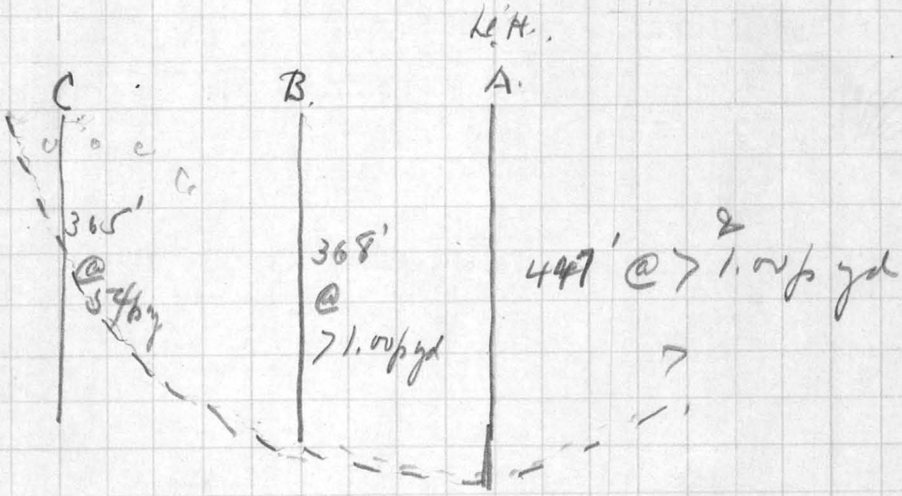
GMC:MF

The complete report from which this abridgment is made had been slightly revised after conference with Mr. Frost on January 12th, 1939.

The three copies which were then delivered to Mr. Frost contained a somewhat lengthy description of the location and geology of this property, a more detailed outline of the suggested plan of operation with estimates of costs, also record of all of the pit samples taken during our investigation with comment. Attached to each of these complete reports were three maps showing the limits of the claims, location of the washes and areas sampled and position of the pits.

G. M. C.

Robie & Smith (near Kirkland) 1/21. 33

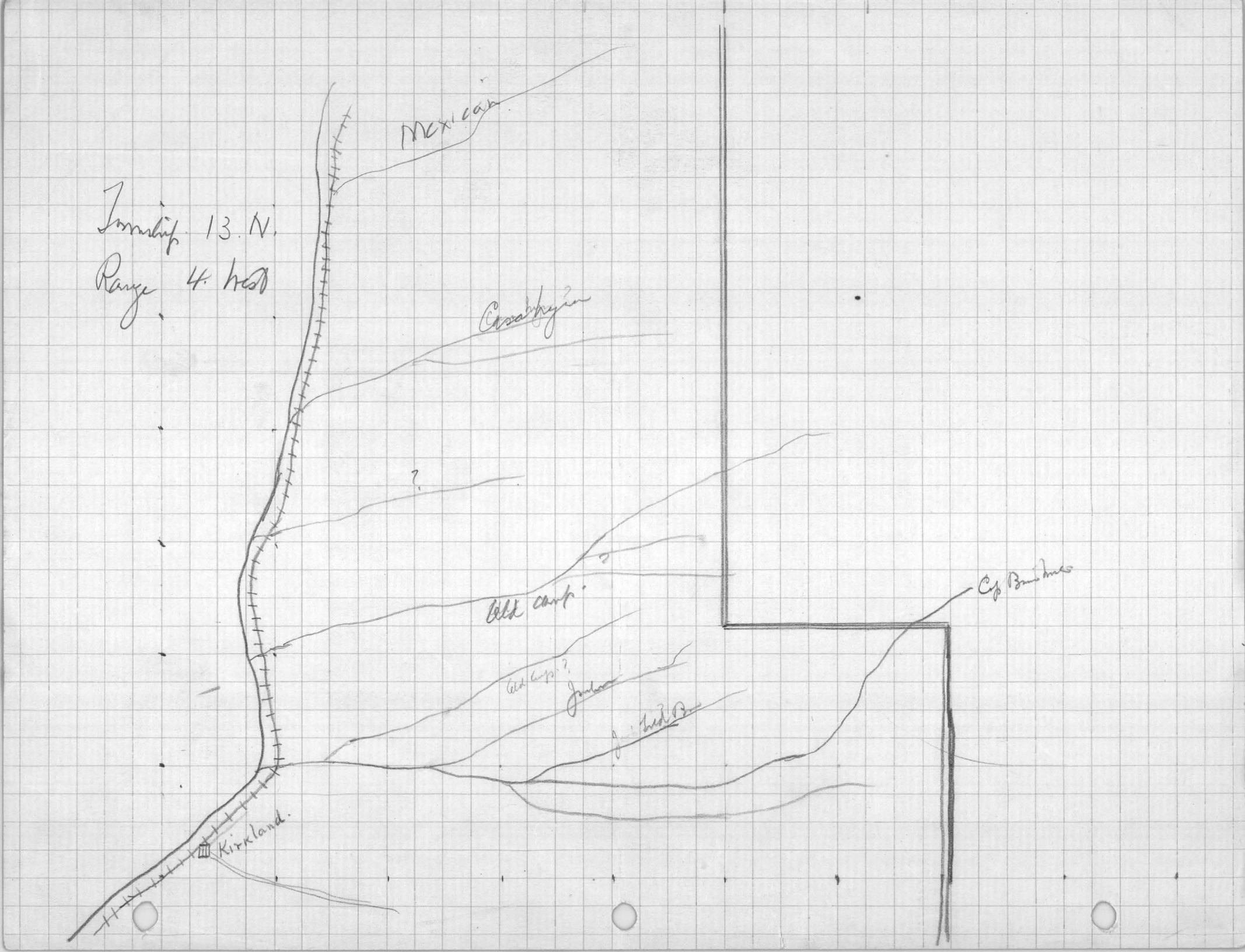


Apparently A & B. were sunk in the old tertiary gravel while C. was in the same or out of the pay streak.

Smith & Robie were sinking a shaft to water level in the hope of determining the ~~present~~ average grade of gravel & that depth & the percentage of error in sampling the drill hole.

~~They want to bond & lease the property & retain an interest.~~

Fairbanks & the two Hughes have sold their property to P. C. Hammon a broker of N.Y. & Canada who has taken possession on Jan 20. '33 & made a substantial cash payment.


Township 13. N.
Range 4. West
Mexican
Cascade
?
Old camp.
Cp Bridge
Old Camp?
Junction
Kirkland.

RESULTS OF SAMPLING
of the
A B LEE PLACER PROPERTY IN THE COPPER BASIN MINING DISTRICT
adjoining Forbach and Easton Property on the east.

By W.R.Shanklin, E.M.

SAMPLING: Results of sampling the property follow. The area sampled covers approximately 80 acres. Samples were taken in groups and are referred to as Block Nos 1-2-3-4, and other miscellaneous samples not included in the blocks, location of which is shown on plat.

In general the method of sampling was to dig holes or pits in the sand and gravels to a certain layer of gravel called a false bedrock. Two sides from which the sample was taken were channelled from top to bottom, and a full gold pan of material cut out for a sample, equivalent to 15 pounds of material. These samples were panned down so the values could be obtained and they were given as follows:

Samples in Block #1 commencing at Southside; Samples from Block #3, North side of hill.

Sample No	Depth Feet	Gold Value
1	6	$ 1.70
2	3	.90
3	5½	1.10
4	4½	1.10
5	4	.55
6	3½	1.80
7	4	1.40
8	7	.45
9	8	1.10
10	4	.50
11	4	1.30
12	7	.90
13	4½	.90
14	9	1.10
15	3	--
16	4	1.20
17	5½	3.00
18	3	1.00
19	4	.50
20	2½	.90
21	6	1.05
22	1½	1.20
23	20 inches	.50
24	12 "	1.10
25	12	1.70
26	18	2.00
27	8	1.80
28 Spl.#1	6	5.50
29 " #2	3 ft above #1	2.70
30 " #3	18 In " #2	2.80
31 " #4	8 " #3	1.40

Samples from Block #2

32	4½ ft	$ 4.25
33	5	.50
34	4	.40
35	6	.55
36	6	1.10
37	5	1.20
38	6	.35
39	6	.55
40	4	--
41	4	2.10
42	5	---
43	3	1.10
45	6	1.20
44	4	.95

Sample No	Depth Feet	Gold Value
52	2	$1.90
53	5	--
54	4	.40
55	2	.65
56	3	.75
57	2	.90
58	4	1.60
59	2	1.10
60	3	2.10
61	2	1.10
62	3	.80
63	2½	.75
64	14 inches	1.40
65	4 ft	2.00
66	2	1.35
67	3	---
68	2'	3.30
69	3	1.70
70	4	---
71	2	1.20
72	1	1.60
73	2	1.80
74 Spec'l 1	Bedrock	20.50
75	2 Bedrock	15.00
76	3 Bedrock	12.00
77	4 Bedrock	10.00

Samples from Block #4 N.E. of Block #2

78	18inches	3.60
79	2 feet	1.10
80	4 "	1.20
81	2 1/2	1.85
82	5	1.00
83	3	1.20
84	3 1/2	1.40
85	3	1.65
86	--	---

Following were checkup samples over the entire area from places known to have good values, and not given as average samples.

1	Bedrock	9.50
2	"	3.50
3	"	4.25
4	"	4.60

Results of Sampling, continued

46		8	1.30	5	"	$5.10
47		6	1.40	6	"	3.90
48	Specl	#1 Bedrock	2.40	7	"	3.50
49	"	#2 "	5.50	8	"	6.60
50	"	#3 "	1.70	9	"	3.00
51	#	#4 "	3.50	10	"	4.10
				11	"	8.30
				12	"	7.40
				13	"	5.70
				14	"	4.20

The area covered by this sampling is only a very small portion of the property and material available.

Only about 80 acres was sampled, averaging only about 5 feet in thickness, yet show an estimate of over 645,000 cubic yards of material averaging better than $1.25 per cu.yd.

Sold @ 20. per

TENTATIVE PLAN OF PROCEDURE AND PLANT REQUIRED
TO SAMPLE FORBACH PLACER

- - - - - - -

EQUIPMENT:

Small truck, - should hold at least 0.65 cu. yds. of broken gravel = to 0.5 yds. in place, weight about 1400#.

A good stout pick-up truck should be satisfactory and might be rented or bought 2nd hand for not over $500.

- - - - - - -

A coarse screen with 4" openings might be built with an inclined frame and placed on the truck but this may not be necessary as the boulders could be thrown out by hand.

- - - - - - -

Truck would haul gravel to the washing plant where a small pump and tank must be installed. Those which were formerly used by Forback might be utilized.

A platform must be built on which the trucks would dump the samples and from which the dirt would be shovelled into a small cement mixer to break up the clay and loosen the dirt from the pebbles (The trommel formerly used by Forback might serve for this purpose).

Samples should next be screened through 1½" screen or smaller and oversize consisting of larger pebbles sent to waste.

Undersize from large trommel to go to smaller trommel with 1/4" screen from which the oversize should go to a sluice

box in which any nuggets would be caught on the riffles and then to waste.

Undersize to some form of gold saving equipment such as rubber shaking tray where much of the coarse and medium sized gold grains would be caught and then to a Denver Mechanical Amalgamating Pan or similar device with quicksilver in the tray and two rubber mats.

Discharge from the above to go to sluice box in case any coarse gold had escaped and blanket table or corduroy might be added.

Black sand to be kept as a separate concentrate for later testing and assay,- most of this would be recovered on the rubber shaking screen (B.G. Shaker).

The cleanup from the shaking tray and Denver Pan to be panned and amalgamated by hand and bottled for refining, retorting and weighing at assay office.

Plant to be run by small gas engine.

ESTIMATE OF EXPENSES:

Say 100 samples taken of which 2 ~~and~~ or 3 should be run per day.

(next page)

Assaying 100 samples		$100.00
Crew, for 40 days:		
1 shoveller in pit @	$4.00	
1 truck driver	5.00	
1 washing plant attendant	4.50	
1 panner	5.00	
1 foreman	7.50	
	$26.00	
	x 40	
	$1,040.00	1,040.00
Deficiency on board		60.00
Gas for truck, fuel for engine and pump, quicksilver & other supplies		200.00
G.M. Colvocoresses - fee		1,000.00
Expenses & office & travel		100.00
Comp. premium, Soc. Security and other taxes		200.00
		$2,700.00
Truck	$500.00	
Plant equipment and installation	800.00	
	$1300.00	1,300.00
		$4,000.00

Note: My old 7 passenger Cad. can be fixed up as pick-up for about $250.00
It is assumed that the Forback water well, pump, pipe line and engine are still in good condition and can be utilized after some minor repairs have been made.
Can probably use my Workmen's Compensation policy and thus save at least $100 over new policy.

March 2, 1939

PROPOSED MINING AND WASHING PLANT FOR FORBACH PLACER

Washing plant equipped with Ainley Bowls, trommel, pumps, piping, etc., now located at French Gulch, about 20 miles from Forbach Placer. Can be purchased for about $2500 or rented for $250 per month with option to purchase and rental to apply on purchase price.

Most suitable power shovel now located at Walnut Grove, about 25 miles from Forbach Placer, Ohio Shovel 3/8 yard with engine. Can be purchased for about $3000 or rented for $400 per month for first three months and $300 per month thereafter. With option to purchase and rental to apply on purchase price.

Believe that better prices than above indicated can be made on a cash transaction.

Cost of moving shovel and plant to Forbach location, making slight repairs and alterations and installing additional piping and sluices will come to between $1500 and $2000.

If cash available am confident that total initial capital expense can be kept down to maximum of $7000 in addition to which $3000 should be available for working capital. Plant should be operating in less than 3 weeks after purchase or rental closed.

Capacity of plant 200 - 250 cubic yards per 8 hour shift and operating expenses and results should be in line with the forecast in my report.

Other shovels and plants are or may become available but these mentioned above are in my opinion the most suitable for our proposed operation and can be obtained on the most favorable terms. It is important to take action on this matter as quickly as possible since there is always a chance that this equipment may be sold to other parties and owner of shovel proposes to move it to Phoenix in near future if no sale or rental is effected.

G. M. Colvocoresses

Subject to Revision

GENERAL NOTES RE SMALL SCALE PLACER GOLD OPERATIONS AT FORBACH AND ELSEWHERE IN ITS VICINITY

Jan 1st. 1939

So far can find no one who has suitable plant and would consider leasing and operating at Forbach.

Parties who have plants are either (1) Operating themselves on their own land or land already leased; or (2) Dead broke in which case plants have generally been seized by creditors or reverted to sellers or manufacturers, none of whom will consider operating.

Search might be continued but would involve more time than I can well spare at the moment and chances for a favorable outcome do not appear good, particularly since all operators so far interviewed consider Forbach yardage too small to be interesting and in any event would not consider paying more than 10% royalty plus some small rental for camp facilities and water supply.

PLANTS VISITED TO DATE:

(1) On Turkey Creek near Bumble Bee. Idle. Drag line Equipment with sluices and tables. Wholly unsuitable and now being partly scrapped and partly moved back to California by owner.

(2) Two plants on Big Bug near Mayer, both much too large with one cu. yd. shovels. One plant in fair shape is operating on Shanks Ranch. Other plant in bad shape and could be bought cheap but not at all suitable.

(3) Two plants on Big Bug above Poland Junction. Both good plants but too large and both now operating and claim to have plenty of 50¢ gravel ahead of them. Often forced to shut down for long periods for lack of water but owners not likely to move elsewhere. The Black plant might be purchased or leased but price would be around $10,000 or more.

(4) Power shovel at Iron King Mine. An old 1/3 cu. yd. shovel, very light but might work and deliver up to 200 yds. per day.

Not available at present but may be so in March or April in which case owner, Walter Nelson, would rent shovel and operate it himself for $12.00 per day, which is very reasonable. Cost of moving about $200. No washing plant with this outfit.

Frame for washing plant at Forbach is much too heavy but might be altered.

(5) Egeland plant,- power shovel 3/8 yd. at Walnut Grove and washing plant at French Gulch. Most suitable plant so far inspected.

Obtained some data concerning a number of other plants which have not yet had time to inspect. Some might prove suitable but locations are more remote.

ALTERNATIVE PROPOSALS RE EGLAND EQUIPMENT:

RENT: (Minimum of six months rental to apply on purchase price of $6000)

Shovel @ 350 for 3 mos. then 300

Plant @ 250 " " " " 200

550 x 3 = 1650
500 x 3 = 1500
3150

500 x 6 = 3000

Total rental for one year = 6000 and Company would own plant.

Cost of moving shovel and plant to Forbach Property; Repairs, alterations & installation. $2000.00

Credit for sale of 2 Ainsley Bowls, pumps, and pipe about $500.00

If plant purchased for cash $5000, total cost erected and ready to operate and with credit for bowls and pipe not required for use should be about 6000.00
(or somewhat less)

Resale value at end of 1 yr. operation, say 3000.00

Net cost of plant $3000 = 5¢ per yard; which is less than could be expected on any rental that could probably be obtained.

If Egeland Equipment not desired think that it might be possible to rent the Nelson shovel and construct a washing plant from material and equipment now at Forbach Placer with some additions to be purchased from Smith Robie property and other claims in that vicinity. Would require new engine and probably pumps, etc. A Denver jig would be desirable but cost is high and I think that sluices will do but before making this

statement positive, I desire to visit plant on lower French Gulch which I propose to do very soon.

More study of details will be required before estimate of cost of such washing plant can be made but think it will probably run to between $2500 & $3000 installed.

My present recommendation would be to purchase for cash the Egeland shovel and washing plant as outlined above, for which purpose a ~~working~~ capital of $10,000 should be made available to cover purchase, moving and erecting plant and working costs until operations are put on a self supporting basis through returns from bullion produced.

On this basis the working cost of the 60,000 yards of 50¢ gravel in lower Jackson Wash might give the following result:

Initial investment ~~and working capital~~	$7000.00	
Cost of digging & washing gravel @ 25¢ per yard.	15,000.00	
Royalty 10% to Forbach	3,000.00	
	25,000.00	
Sale of gold recovered		30,000.00
" " plant after operation discontinued.		3,000.00
Net profit to operators	8,000.00	
	$33,000.00	$33,000.00

Operations will require about one year.

If additional 50¢ gravel is found on Forbach claims or in their vicinity it would be advisable to move the plant and continue to operate but the net profit on such mining would probably not exceed 15¢ per yd. after deducting the royalty and the cost of moving the plant providing water supply, replacements, etc.

I believe that there is a good chance that such gravel can be worked as above in the upper sections of Gold Bar and Telegraph Washes, also at or near Casa Negri and Mexican Gulches further north then might provide an aggregate of 100,000 yards with profit of say $15,000. I also believe that similar gravel can be worked in somewhat larger quantity in French Gulch, Placeritas and other gulches east of Kirkland and that the aggregate gravel in these washes should be sufficient to keep such a plant in operation for several years and perhaps to permit 2 shift or even 3 shift operations.

As a general proposition then it seems to me probable that a small but well designed and efficient digging and washing plant with capacity of 200 yds. per 8 hour shift can be operated for many years at carefully chosen locations and, - while the price of gold remains at $35.00 per ounce and other conditions about as at present,- that the net profit which may be derived from an initial investment of $10,000 should be in the order of $9000 per annum on a one shift basis with chances that this might be increased up to a maximum of $27,000 per annum whenever larger gravel banks and more plentiful water supply will permit the work to be carried on during 2 or 3 shifts.

L. H. C.

SUGGESTED PLAN OF OPERATING

Since the very limited yardage of pay gravel found in the Forbach Claims does not justify any substantial purchase of digging and washing equipment it is suggested that portions of such equipment might be rented and the balance of the plant might be constructed largely from old material now on the ground.

As a preliminary to any such program I estimate that a minimum expenditure of $3000 will be required to provide for the construction of the washing plant, moving and installation of a shovel and proper arrangement of pipe-lines, pumps, launders, sluices, etc.

In addition and to cover expected alterations and adjustments a further sum of $1000 must be available during the construction period with a working capital of $1000 making a total investment of $5000 of which $4000 will be capital expense. From that time forward the operations should be more than self-supporting and digging and washing should proceed at the rate of about 200 cubic yards per day, say 5000 yards per month;- Allowing for shut downs, repairs, moving plant, etc.

My estimate of monthly costs and returns is as follows assuming that the Nelson shovel can be rented or some other shovel on similar terms:-

Rent of shovel with operator 30 days =	$360.00
Washing plant operator @ $5.00 =	150.00
2 general labor & pump @ 4.00 =	240.00
1 Superintendent	225.00
Fuel & other supplies, repairs, and camp expense	275.00
General & office expense	150.00
Insurance & taxes & misc.	100.00
	$1500.00

Credit sale of gold from 5000 yards mined @ 50¢ per yard.	$2500.00	
Less 10% royalty to Forbach	250.00	
	$2250.00	
Net Profit per month		$750.00
Net profit from Jackson Wash (60,000 yds. in 12 mos.)		9000.00
Net gain after repayment of capital		5000.00 plus salvage on equipment probably not over $500.00

Alternative Plan

Detailed estimated cost of working Jackson Wash with purchased Equipment:-

Per Month

1 shovel operator @ $6.00 =	$180.00
1 Plant " @ 5.00 =	150.00
2 General labor & pump @ $4.00 =	240.00
1 Superintendent	225.00
Fuel & other supplies, repairs, etc.	205.00
General & office exp.	150.00
Insurance & taxes & misc.	100.00
	$1250.00

Credit

Sale of gold 5000 yd. @ 50¢	$2500.00	
Less royalty to Forbach	250.00	
	$2250.00	
Net Profit per month		$1000.00
" " on Jackson Wash (60,000 yds.)	$12,000.00	
Less repayment of capital investment.	7,000.00	
	5,000.00	
Plus salvage value of equipment	3,000.00	
Net Gain From Operation	$8,000.00	

July 23, 1945

Mr. Ralph H. Pfeffer
P. O. Box 574
Wickenburg, Arizona

file

Re: Forbach Placer

Dear Mr. Pfeffer:

Since writing you last in regard to the above, I have seen Bill Forbach and was surprised to learn that he is no longer interested in the Placer claims described in reports which I recently turned over to you. Apparently Forbach abandoned these so that the Van Dykes who had given him financial assistance could write off the loss on their income tax and Forbach told me that he thought they might be re-staked by Dave Byers, the County Assessor for Yavapai County, whom you can easily contact in Prescott.

Insofar as I could learn, no work has recently been done on these claims so that their condition should be as represented in my reports and as shown on the maps.

Yours very truly,

Bly Byl Bills

GMC/d

FORBACH PLACER EXAMINATION

Preliminary Statement of Account -- December 20th, 1938

	Credit	Debit
By checks from R. L. Frost, Agent.	$4000.00	
A - Principal Equipment - Denver Pan, Pick-up truck, ore bin, sluices and screens.		693,69
B - Regular wages paid for digging pits, sampling, etc.		1175.55
C - Camp Supplies, food, fuel, etc. hire big truck and shaker, etc.		454.44
D - Assaying samples		57.25
E - Repairs and maintenance equipment including Forbach pump		85.00
F - Office & engineering expense, insurance, etc.		224.30
G - Travel expense & transportation material and special service		270.90
H - Fee of G. M. Colvocoresses		1000.00
		3961.13
BALANCE ON HAND		38.87
	$4000.00	$4000.00

FORBACH PLACER ACCOUNT
(Subject to Revision) May 1939

G. M. Colvocoresses to R. L. Frost, Agent

	Credit R. L. Frost	Debit
By checks to G. M. Colvocoresses	$4000.00	
Expenses of Examination:		
1 - Principal Equipment & repairs & maintenance		778.69
2 - Wages in diggin pits & washing samples		1175.55
3 - Camp supplies & food for crew		454.44
4 - Assaying, office & engineering expenses & insurance on car		302.58
5 - Premium on policy with Industrial Comm.		101.13
6 - Social Security Tax		23.51
7 - Professional fee of G. M. Colvocoresses		1000.00
8 - Travel exp. & transportation equipment & special services		270.90
9 - Charges subsequent to close of examination & Completion of report:		
Expense of trip to inspect Placer Equipment		24.00
Cash repaid to R. L. Frost		75.00
Office exp. & extra copies of maps, postage, etc.		36.75
Time of G.M.C. for trips & conferences with Uihleins, etc. & in preparation of special reports & re sales equipment		100.00
10 - Sale Denver Pan (balance of $20 due less $5.00 commission	25.00 X	
11 - Sale Chevy Pick-up	315.00 X	
12 - Sale small tools & camp equipment	10.00	
	$4350.00	$4342.55
Check to R. L. Frost 5/31/39		7.45
	$4350.00	$4350.00

X Subject to adjustment

MAGNETIC MANUFACTURING COMPANY
Main Office and Works
MILWAUKEE.WIS.

May 26, 1932

Mineral Mining Company
902 Wells Building
Milwaukee, Wis.

Attention: Mr W.D.Van Dyke,Jr.

Gentlemen,

We wish to submit herewith our formal report to cover laboratory test conducted on your material yesterday.

We dried the material carefully after you left, and Mr Segnitz, the chemist, called for the same this morning. We understand he will quarter the sample carefully, and forward it for analytical test immediately. He states that he will communicate with us as soon as results are available,which he expects on or about June 1 or 2. As soon as we hear from him we will get in touch with you, and report on his findings, which we assume will be satisfactory.

We feel satisfied, from the preliminary test conducted on you material,that we can be of considerable benefit on your problem, and we hope the above analysis will confirm the same. Of course, as stated, the tests were entirely of a preliminary nature, and can be carried further if not entirely satisfactory. We believe especially the feed could be improved, which in turn would allow for a better distribution of the particles on the belt, and would reflect in the final results.

You will note we have removed approximately 80% by weight of the material, which is considerably more than we anticipated from appearances. Consequently, if the analysis proves as we hope it will, the separation should be very satisfactory.

We will be very glad to discuss this matter further with you as soos as we get the above information, and will be prepared at that time to submit figures on capacities,costs, etc., for your further consideration and decision.

Thanking you again for this opportunity, and awaiting your further orders, we are

Yours very truly,

MAGNETIC MANUFACTURING COMPANY
SIGNED R.N.Stearns

MAGNETIC MANUFACTURING COMPANY

Name	Mineral Mining Company	Date	May 26,1932
Material	Black Magnetic Sand	Sample	#656

, REPORT ,

Sample of black gold bearing sand received via express.

These conducted in presence of Mr W.D.Van Dyke,Jr.and Mr Douglass Van Dyke, on Type "MW" Magnetic Separator with the following results:

Magnetic Product 80.60%
Non-Magnetic Product . . 19.40%

Purpose of above test to eliminate magnetite and other magnetic properties, without disturbing gold values. Believe further improvements possible, although large percentage of magnetic product removed, as will be noted from the above percentages.

Sample record available on belt speed, current comsumption, incline setting for further tests and experiments if necessary.

(Representing black sand Concentrates from treatment of gravel washed at the Forbach Plant)

PITTSBURGH TESTING LABORATORY
PITTSBURG.PENN

Report #154327
Client's Order # Mi. 2740

CERTIFICATE

February 11, 1932

Analysis of ORE

Reported to Mineral Mining Company
902 Wells Building
Milwaukee, Wis.

Chemical Analysis

IRON OXIDE, FeO	9.80%
IRON OXIDE, Fe2 03	78.79%
SILICA	3.37%
ALUMINA	5.60%
TITANIUM OXIDE	.50%
ZIRCONIUM OXIDE	1.88%
COPPER	.01%

Assay for Precious Metals

Gold	11.08 oz. per ton
Silver	2.18 oz. per ton.
Platinum	None

Spectographic Examination

In addition to the above elements determined by the usual analytical means a spectographical examination revealed the presence of the following elements in amounts too small to be of commercial interest. The absence of all other elements is also quite definitely demonstrated.

MAGNESIUM	CALCIUM	BARIUM
ZINC	MANGANESE	STRONTIUM
VANADIUM	CHROMIUM	SODIUM
NICKEL	LEAD	GERMANIUM

Pittsburgh Testing Laboratory
By H.H.Craven
Manager Chemical Department

LABORATORY REPORT

PAUL H. SEGNITZ
CONSULTING CHEMICAL SERVICE

610 MICHIGAN STREET
MILWAUKEE, WISCONSIN

COPY

Mr. George D Van Dyke — DATE May 31, 1932.

c/o Magnetic Manufacturing Co., Milwaukee.

LABORATORY NUMBER 1467-1468

ORIGINAL SAMPLE MARK #656, Mag. and Non-Mag. — DATE RECEIVED May 26, 1932.

MATERIAL Magnetically Seperated Gold Ores.

Our No.	Mag. Manfg. Co. No.	GOLD Troy Oz/ Ton Av.	VALUE / TON Gold @ $20.00 Oz.
1467	656 - Magnetic	0.12	$ 2.40
1468	656 - Non Magnetic.	2.92	58.40
			60.80

$106.40 @ 35.5%

(Analysis by fire-assay, done by our correspondents.)

We certify the above to be correct copy of the original report submitted by our correspondents.

(C/C for Magnetic Manufacturing Co.)

PAUL H. SEGNITZ
CONSULTING CHEMICAL SERVICE
BY PHS

Forbach Placer
(2 copies)

July 15th, 1935.

Robert L. Frost
Box 288
Duncan

Mr. L. R. Smith
5357 Alta Canyada Road
La Canada, California

Dear Mr. Smith:

I returned last evening from the Forbach property near Kirkland where I spent some days going over the situation quite carefully with Forbach and his partner Easton. I also saw Hugh Webster as requested by Mr. Zimmers, but I learned from Webster that during the last few days his property has been optioned to parties who claim to represent the Yuba Dredging Company and since this land will be tied up for the next three months or so, I did not attempt to make any investigation. I return herewith Webster's letter to Frost of June 27th, and also the report by Dr. Carl of which I have had a copy made in my office.

In reference to the Forbach property ~~I shall not attempt to send you any complete report today since this would require some little time for preparation, but~~ generally speaking I can say that there is no probability that any large scale placer operation treating 8000 or 10,000 cubic yards per day could be conducted on this land or in its vicinity.

The deposits of gravel divide themselves into two classes: (A) the very shallow gravel on the ridges and near the heads of the gulches such as have been worked to date, and (B) the larger and deeper deposits of gravel in the principal washes, namely lower Jackson, Gold Bar and Telegraph Wash. Copper Basin

While the gravel classed as A is apparently quite rich, and from previous sampling may well run ~~better than~~ $1.00 per yard in ~~average value~~, yet the mining and washing of this material is bound to be very expensive, ~~and I do not consider that it would be worthwhile to attempt to conduct such an operation except in conjunction with larger scale work as mentioned below.~~ in places up to

The principle deposits of the B class gravel lie in Jackson Wash, below the present treatment plant, and down as far as its junction with Copper Basin Wash, and in this area I figure that there are approximately 200,000 yards with an additional 100,000 which might be picked up in mining the side washes which run into it. The value of this gravel should be pretty well known since a great many sample pits have been sunk, but I was entirely unable to find any record of the sampling of these pits, although Forbach tells me that they average better than 50¢ per yard. (Later sampling indicated only about 60 000 yards that would average 50¢. Balance of gravel becoming lower grade as yardage area increases. Could have obtained any reliable data and results of previous sampling

#2--L.R.S.

Much larger deposits of gravel are found in Gold Bar Wash and its tributaries, and if this could be worked from Copper Basin Wash up to the shallow ground, I believe that upwards of 1,000,000 yards could be recovered here. The sampling of this gravel has not been done ~~so thoroughly as on Jackson Wash~~, but there are a number of test pits and again Forbach told me that the average was better than 50¢, although I could find no records and have no means of verifying this statement.

The largest body of wash gravel on the property is found in Telegraph Wash, but practically no sampling has been done here, and the value is uncertain and probably much lower than in either Jackson or Gold Bar Washes.

If mining is to be undertaken, it would be my suggestion that the first location should be Jackson or Gold Bar Wash, depending on the values which ~~have been found or~~ may be found in these respective locations, but before spending any money for additional sampling or mine equipment, it is very important to collect the data which has already been obtained by various engineers, and I understand that much of this is in the possession of the Van Dykes, who should turn it over to you, and which I would want to examine before making any definite recommendation. [Records could have to be found]

The quantity of water which may be available will determine and limit the scale of operations. Forbach has a well from which approximately 100 gallons of water per minute has been pumped fairly continuously; so he tells me, and he is of the opinion that a larger well at the same locality equipped with a 20 inch casing would furnish up to 500 gallons per minute, but on this point I am very doubtful. However, I understand that water donditions have already been investigated for you by F. L. Ransome, and I should like to see Mr. Ransone's report before commenting further on this matter. A well-drilling rig is now in the locality, and I believe that Mr. Zimmers discussed a contract with the operator.

The total cost of operating by approved mechanical method and washing plant should not in my judgment exceed 20¢ per cubic yard on the class B ground, and if as much as 200 gallons of water per minute is available, it should be possible to operate on the basis of 2000 yards per day or on a larger scale if more water can be developed.

In connection with this work, it should also be possible to mine and treat with profit some of the class A gravel, but this need not be considered for the moment.

#3--L.R.S.

and is of doubtful value

Even though the claims belonging to Webster may not be available, there is considerable additional gravel in this district which can probably be secured on a 10% royalty basis, and I would expecially mention the large holdings of Smith-Robie and the patented land of Matt Lee which takes in the large portion of Copper Basin Wash where there is a tremendous yardage but probably very low grade and below the critical value, ~~which I would tentatively place at 50¢ per yard~~.

To sum up I cannot recommend this statement of the Forbach placer for any ~~very~~ large scale operation, but if the values are substantiated, I believe that it may have ~~substantial~~ considerable merit if worked by one or more moderate sized units.

Copy Stye

I acknowledge your letter of July 13th, and am trying to obtain as much information as possible regarding the present status on the Port Wine Ridge in northern California, but it will be difficult to make any thorough investigation of this matter without a personal visit to the district, which would require a week or ten days to properly cover the ground. I do not think that there is much possibility of securing any property which would be suitable for large scale dredging operation until after a substantial amount of money and time had been expended for a thorough sampling of the ground, but I do know of attractive properties which would be suitable for part hydraulic and part mechanical mining, and some of those which I recommended two years ago are already in active and successful operation. I am advised that some of the other areas are still open for lease or purchase and if you feel that these might prove interesting, I think that a more thorough investigation, expecially of the Loftus claims should be made without further delay.

I find a letter from Borchert telling me of progress in examining the Lewis Placer, and I am sorry to note that the values so far seem to be rather erratic, although this is not surprising. I shall write him some domments on the work which he has done to date, and which I understand is still in progress. Assuming from your letter that you do not desire me to make any further trips for the moment, I am arranging to complete some other examinations but shall be free by the end of this week or a few days later.

Personal regards.

Yours very truly,

G. M. C.

Enc-2

GMC:MW

C O P Y

Not Valuable

REPORT

Forbach Easton Placers

IN

COPPER BASIN PLACER DISTRICT

Kirkland Arizona.

During the time from November 1933 to May 1934 I have examined the Forbach Easton Placers and upon your request I submit this report, mentioning that I made this investigation, at that time for myself.

Signed

Hugo A. Carl
PH.D. D.C.

Conclusion

My testing made on the property, consists of 48 samples from surface to bedrock in washes and 154 samples taken from high bars, showing that both, washes and high bars carry values to warrant very profitable operation. Pay dirt from washes is confined to enrichments from high bars. Sampling washes showed an average of $0.6434 per yard. The average of samples taken from high bars showed a value of $0.7635 per yard. There is over one Million yards of pay dirt in these washes running thru the property. There are several million yards of pay dirt in high bars.

The result of my investigation and sampling shows that this property can be operated profitably, requiring not more than $25,000.00 Dollars of capital to be used for installation of simple and efficient equipment and common sense management.

Location

The Forbach Easton Group of placers are located five and one half miles east of Kirkland, Arizona, in the Copper basin District of Yavapai County, 21 miles southeast of Prescott Roads are good practically all year and the property is easily accessible from any point.

General Information

The topography is mountainous, the placers are a sloping plain disected by a great number of gulches. Elevation is 4600 feet. The ground semi-desert, used for grazing; healthful climate, summer days are hot, but nights cool, the air is very pure, the water good, sanitary camp buildings on the property. The winters are moderate, working conditions such that a 11 month operation is possible, a dry climate, very little rain, except July.

Mining supplies of every kind, can be bought in Phoenix or Prescott or Los Angeles.

The group of Placer claims consists of 1168.3 acres of unpatented placer claims. The name and the acerage of each claim or group of claims is shown on the map, a copy of the survey map or claims made by H. M. Whitaker, Reg. Engineer in October 1931. The claims are all clear and held in accord with the law. The present lease on the property is lawful, giving the party holding the same, full use of all equipment on the property. A straight royalty of 10% of all gross output.

HISTORY

This district has been worked for the last century, mostly from small scale operations. Estimated yield of placers, the year prior to 1933 was $33,000.00 of which $26,000.00 came from larger scale operations, starting that year.
The Forbach Easton property has been in operation before, close to $15,000.00 in gold and silver was taken from the property by Mr. Forbach and no doubt had Forbach been in Possession of the right type of equipment, this lease would not be on the market today.

Water has to be developed and according to my findings is sufficient in underground channels, however there is a well pumping 95 gallons per minute.

RELATION TO OTHER DISTRICTS

The district in which this property is situated is traversed by a chain of mountains known as the Bradshaws on the east, and a parallel chain of mountains on the west. Between these two is a large valley of which is called "Skull Valley". It is from these two chains of mountains that much of the gold in the state originated.

Recorded production of the most important gold properties that were operated in the 80's and for some years before is shown in the following table:

Name of Property	REPORTED PRODUCTION
Vulture	$84,000,000.00
Rich Hill	80,000,000.00
Congress	125,000,000.00
Betty Lee	22,000,000.00
Harquehala	18,000,000.00

10 times as high

On account of the arid condition of the localities immediately adjoining the district in which this property is situated very little development has been done. Although water was available in sufficient quantities to operate on a commercial scale it was not possible, however to acquire a large enough area to justify the expense of developing a water supply. The area of the property in question is large enough to justify this expense and for this reason the present intended development is of paramount importance to the adjoining districts. Where substantial production is recorded from small area it will be possible to group these large areas under one management for proper development.

GEOLOGY AND ORIGIN

After formation of the mountains, erosion, oxidation and weathering was rapid and helped to break up and disintegrate the solid rock. Broken up rock was carried by stream action to form the present plain. Mechanical breaking down of rocks general keeps ahead of rock decay, when solid rock is eroded from steep slopes, but when a uplift occurs so that the plain at the foot of a mountain is uplifted to have sufficient gradient for erosion, gold concentration begins and is still carried on whenever rain falls.

The gold bearing gravels are made up of granitic sands containing various amounts of clay, boulders and black sands, magnetite and hematite, the gold bearing gravels in washes range in thickness from a few inches to 18 feet, most of the gold is at the bedrock.

The gold is 900 to 950 fine and silver constitutes the greatest impurities. The gold ranges from small colors up to nuggets having a value from 5 cents to several dollars. The size and angularity of the gold increases towards the mountains, a great amount of iron is found associated with the gold as well as cinnabar and oxidized copper minerals.

SAMPLING

To sample washes a great number of holes have to be cut close together in order to get an average per yard, and plenty of sampling has to be done to keep within the pay channels, my samples have been taken in an orderly way carefully washed and assayed.
My estimate of pay-yardage is I believe very conservative and amounts to 3 Million yards.

ENGINEERING ADVICE

The present plant has a capacity of about 200 yards per 8 hours shift, but should not be used as such, but good equipment should be taken out and whenever possible used for the new installation. I am sure that a 400 yard cer shift plant can be operated for not more than $65.00 per shift including overhead.

16¢ per yd. ? does this include mining

PRESENT EQUIPMENT

There are a few good motors, six or more tables, belts, and other equipment, in fact a completer plant to wash dirt and operate the placer on hand, but I would suggest to build a new place and use whatever possible. A very good Universal shovel which the writer has used on an adjoining property is on hand for the leasee. A 4 room house, two 2 room houses, one 1 room house, water tanks, one 50 H.P. Buda motor, electric motors, one 150 feet belt conveyer, Belts, one amalgameter and a pumping plan in perfect condition with 7800 feet of 4 inch pipe leads to 25,000 gallon storage tanks, also several 1000 feet of other pipes. The equipment in this plant I believe could not be replaced for less than $25,000.00.

The above report and investigation has been made truthfully.

Signed _____

Hugo A. Carl PH.D. D. C.

Important Results as far as it goes

V

Summer Report 1935

THE FORBACH - EASTON PLACER PROPERTY

YAVAPAI CO. ARIZONA.

(2 Copies)

To the -

A. O. Smith Corporation,
Milwaukee, Wis.

GENERAL INFORMATION:

The Forbach - Easton gold placer property is located in the Copper Basin Mining District in Yavapai County, Arizona. It lies 4½ miles northeasterly via road from the Town of Kirkland, the nearest railroad point, which is on the Ash Fork - Phoenix branch of the Santa Fe. It is about 25 miles from the property via side road and highway, or 13 miles in a northeasterly air line, to Prescott, Arizona.

The elevations on the property generally range between 4200 to 4400 feet above sea level. The normal annual precipitation is about 16 inches, most of this falling during July, August and September and the winter, when the rainfall is often so heavy as to fill the otherwise dry washes and gulches to torrential stages. Winter brings some light snow falls and freezing weather although these are usually of short duration.

HISTORY:

The gold placers of the Copper Basin area have long been known but until the past five years or so have only been worked intermittently in a very small way because of their general and relatively low gold content and the general lack of flowing water within the area. In recent years, more interest has been given the area for besides a number of individuals who mined with rockers and dry washing machines, four or five relatively small mechanical operations, using water pumped from nearby wells, have been conducted with more or less success. Three or four plants are still more or less active or making preparations to resume operation.

Forbach and Easton conducted mechanical operations during 1933, mainly in a small wash lying between the so-called East and West washes on this property. The ground worked varied up to about 50 feet in width, and from a few inches to about 6 feet, or averaging about 4 feet in depth. The placer was excavated with a 3/8 cu. yd. gasoline driven shovel, the material being transported to the treatment plant by two light trucks. Washing,

disintegration and sizing was accomplished in a series of two revolving trommels from which the over-sized material went to two conveyor belts and the dump. The minus 1/4 inch material from the first trommel went to a coarse gold trap and thence to the second trommel from which the minus 1/8 inch material went to three concentrating tables where the principal gold recovery was made in the black sand concentrate. This product was treated in an amalgam barrel for the recovery of the gold.

The total gold recovered is stated to have been worth $6000 at the former price of gold. Due to various causes, the capacity of this plant was reduced to an average of about 100 to 120 cu. yds. per 8 hour shift as worked. The total yardage mined and treated is not known, although Mr. Easton reports the ground to have yielded an average gold recovery of about 40 cents (old price) per cu. yd.

This operation was suspended in August, 1933. The property was later leased to some Los Angeles people who surrendered it after one year without doing anything on the property. It was then leased to some Minnesota people, who sank a few test pits and withdrew in December, 1934.

THE PROPERTY:

This property embraces 1168.3 acres of contiguous mining claims, first located and held by various individuals, from whom Forbach and Easton purchased and consolidated them in 1932. A clear title to the present ownership is contended. Adjoining this property on practically all sides are properties held by various claimants. Copper Basin Wash practically forms the southern boundary of this property.

THE WATER SUPPLY:

Copper Basin Wash carries some surface water during the rainy periods and otherwise has a subsurface water level stated to be at about 55 feet. This basin has a considerable drainage area and should support wells of nominal capacities. An apparent fairly heavy subsurface water flow occurs in the Skull Valley Wash where a number of wells exist, one of which is located about 4 miles west of this property and where an apparent artesian flow comes to the surface. The Copper Basin Wash drains the Forbach - Easton and adjoining properties and drains into Skull Valley Wash and Kirkland Basin.

Forbach and Easton put down a well in 1932 near the most westerly part of their property on the Copper Head Claim.

This well is 214 feet deep and is cased with 5 inch casing to a depth of 156 feet. The water level is said to rise to within 60 feet of the surface and below a depth of 185 feet a heavy flow of water was indicated. Water from this well was pumped through a 4 inch pipe line for a distance of 8,000 feet to the plant located about 200 feet higher in elevation. Due to the position and size of the casing, the available equipment and other limiting factors only 90 gallons of water per minute could be delivered to the plant. The owners, however, contend that at least 500 gals per minute could otherwise be obtained.

GEOLOGY:

The Copper Basin Wash and its tributaries drain a dissected mesa in this vicinity which is characterized by various comparatively narrow dry gulches or arroyas, with the tops of the ridges separating them rising to heights up to 150 feet or so above the main gulch levels. A few miles to the northeast of the property is the base of the Sierra Prieta Mountains from which the mesa slopes southwesterly. A pediment of granite and some schist beginning there conforms more or less with this slope and at its western margin is covered by a complex of volcanic flows and tuffs with interbedded conglomerate or consolidated gravel, sand and clay. This mesa or plain originally had a drainage other than the present, whereby gravel and sand, containing some gold derived mainly from the gold bearing granite and schist formation, was deposited in bars, channels or gulches in various localities and under various conditions. A probable uplift, or tilting, changed the drainage to that of the present system whereby the mesa was dissected as were its gold bearing placer deposits to a large extent.

The gold in the present main gulches and their tributaries is largely a product of the destruction, resorting and concentration of these older placers during the development of the new drainage system. Most of the gold in the present gulches is worn and partly rounded showing considerable transportation from its original bedrock source at least considerably further than the length of the gulches originating in or crossing this property. Some gold is less worn and at times quite sharp which indicates a nearby bedrock source.

There is evidence of an old gravel channel which trended northwesterly from the vicinity of the southeasterly portion of the Acker claim at the Copper Basin Wash, over the Acker and Van Dyck No. 2 claims and outside of the property, thence westerly and southwesterly to where it is again apparently exposed in the top of a ridge to the west of the adjoining former Smith property. There were

apparently also some tributaries to this channel within the limits of the Forbach-Easton property. The dissected portions of these older gravels, now mainly conglomerate, exist as comparatively small isolated areas at the tops of some of the ridges.

THE PLACER DEPOSITS:

The tops of some of the ridges contain some gold bearing placer usually ranging from about 1 to 5 feet in depth. On the Acker Claim, as mentioned, there may be a depth to 20 feet or so in places. These placers may contain some gold in the first upper foot or so, but the principal gold content is generally confined to 1 to 3 feet of cemmented, rather well rounded gravel, and overlain by stiff red clay and rather large angular boulders of local bedrock. These placers have been but little prospected but where prospected are considered to be considerably lower grade in average than those in the gulches. There may be present some spots containing a high gold content but the major portion can be expected to occur in small isolated areas and to be of a character which will not support profitable operation, except probably on a very small scale. For this reason my attention was given mainly to the gulch placers.

GULCH PLACERS:

Within the limits of this property are two main dry gulches referred to as the West and East Gulches, and a smaller shorter gulch with two short tributaries located between them. These gulches all drain southwesterly into the Copper Basin Wash.

The West Gulch is from 100 to 250 feet in width between rims, its average depth to bedrock is probably not over 15 feet, although one pit put down in its center was 30 feet deep. Three shorter, narrower and shallower side gulches are tributary to it. This main West Gulch heads to the east of the property and swings outside of its boundaries at two localities on adjoining ground before it finally leaves the property near Copper Basin Wash. Its total length within the property limits is about 10,000 feet.

The East Gulch also heads to the east of the property but continues within it for a distance of about 8600 feet. It ranges from 75 to 200 feet in width. In its central part it is from 15 to 25 feet deep, at one pit 38 feet, but its average depth is probably less than the West Gulch, or not over 15 feet. Three small tributary gulches drain into it.

The Central Gulch, on which most of the mining has been done, and of which a brief account has been given, is about 5,000 feet long and has two tributary side gulches. The main gulch ranges from about 30 to 75 feet in width and a few feet to about 10 feet in depth.

The main small tributary gulches to these main gulches range from about 500 to 5000 feet in length, or a combined length of about 17,500 feet. They range from 4 to 10 feet in average depth, and from 35 to 100 feet in width.

The placer material is very similar in all of these gulches, being mainly of granitic sand and some clay. There is probably not over 10 per cent which is over 5 inches in maximum size. Occasional boulders up to a foot or so in size are present but the large angular rocks which have rolled or been washed down from the sides and from the ridge tops are confined mainly to the sides of the gulches. Most of the material is angular although mixed with it is more rounded wash. There has been no defined sorting and what sorting has been done occurred under torrential water conditions. The bedrock is mainly a cemanted gravel and sand, or conglomerate, or a clay and sand layer.

While some gold is distributed from the top down, the major concentration is on, or a foot or so above, bedrock. In general the gold distribution appears to be erratic and spotty. The richer placer can be expected just below the point where older higher lying gold bearing gravels have been cut and resorted in the gulch. The gold is generally fine but mainly of good weight. Some pieces up to 10 or 15 cents in value are found at times. The gold averages over 925 in fineness.

Much magnetite or black sand is present as is a little cinnabar and native mercury. The moisture in these placers varies with the season and the depth. The presence of clay does not materially handicap disintegration in the washing plant.

PROSPECTING:

Numerous prospect shafts are reported to have been sunk and sampled at the time mining operations were under way. There are, however, no available records of the results or how systematically and carefully it was done. Some pits were also dug and sampled by some of those who had a lease on the property after that time but there is only very vague information concerning it. I am, however, informed that much of the sampling done was by panning and the weight of the gold estimated not weighed. Mr. Easton informs me that their prospecting indicated an average content of 35 to 40 cents in gold per cubic yard. Most of this prospecting was apparently done in the Central and

East Gulches. Very little prospecting has been done in the West Gulch, one hole there toward the head is said to have been 20 feet deep and averaged 35 cents per cubic yard.

Judging by the character of these gulch placers and their apparent source of gold an erratic or spotty distribution of the gold can be expected whereby the main gold content will be limited mainly to certain localities in those gulches which have dissected the older and higher level placers where they contained a fair gold content, or where the gulches head in or drain an area where the bedrock formation is a contributory source of gold. This infers the East Gulch and its tributaries and a portion of the Central Gulch to contain the better average grade placer within the property limits.

ESTIMATE OF POSSIBLE YARDAGE:

The length and the average widths of the placer bearing gulches and their tributaries can be closely estimated although the average depth of the placer to bedrock is not definitely known. Figures as to the average depth have been estimated from the prospecting pits still open and such confirmation as Mr. Easton could provide. Based upon such information, the possible available placer in the main gulches and their main tributaries is estimated as follows:

West Gulch (main)	1,200,000 cu. yds.
West Gulch (tributaries)	100,000 cu. yds.
Central Gulch and Tributaries	60,000 cu. yds.
East Gulch (main)	750,000 cu. yds.
East Gulch (tributaries)	90,000 cu. yds.
Total	2,200,000 cu. yds.

This estimate can be considered as closely indicative of the possible placer within the limits of the property which is adaptable to some form of mechanical operation. The economic features must, however, still be definitely determined by close, careful prospecting and sampling and when this has been done it is very probable that the volume of commercial gold placer will be found to be less than the above estimated possible yardage.

CONCLUSIONS:

The general indications are that the available gulch placer within this property is relatively low in average gold content for the existing conditions.

The scale of operation would be limited to a relatively small one and would probably be one which would not return a sufficient profit under a company operation.

The placers would first have to be systematically and carefully prospected to determine their gross economic value and this would probably eliminate some of the estimated possible yardage of 2,200,000 cu. yds. as being too low grade to be profitable. It probably would, however, determine a smaller yardage of ground which could apparently be worked at a profit on a small scale.

The indications are that a water supply could be developed by a well on the property and pumped to the plant, which would probably be ample for the scale of operation which these placers could support. The limitations of such a supply must, however, still be definitely determined.

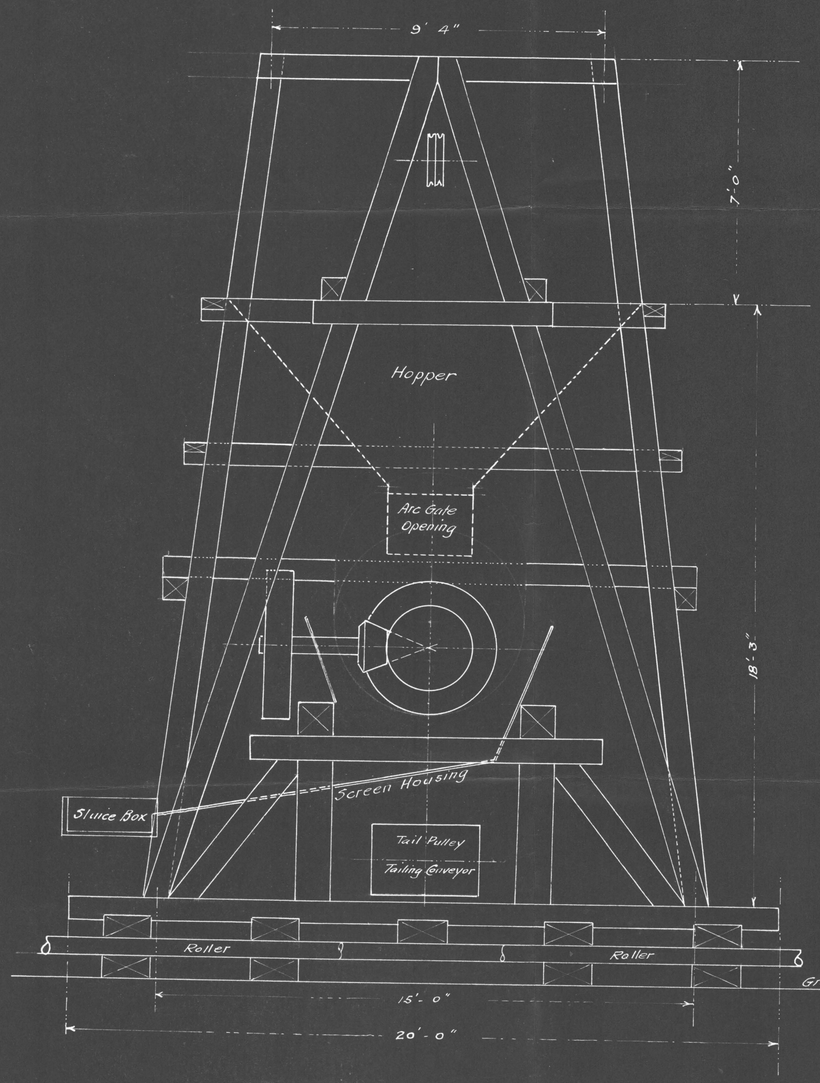
I examined this property mainly to gauge its possibilities for large scale operation. The size and position of the placers and other limiting features and conditions are adverse to any reasonably large scale operation. This property is therefore not recommended for your further consideration.

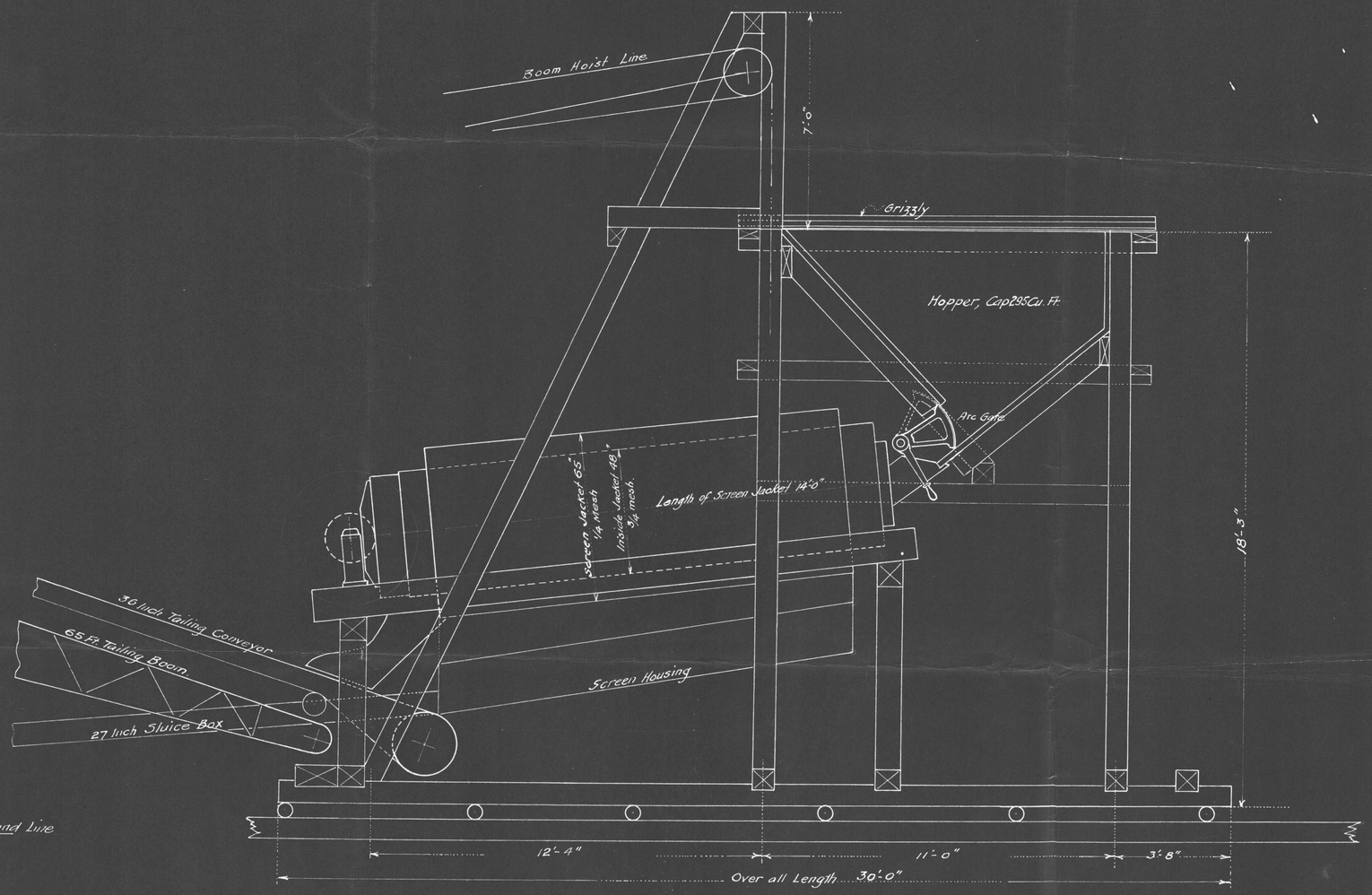
Respectfully submitted,

(Signed) Norman L. Wimmler,

Norman L. Wimmler,
Mining Engineer.

San Francisco, Cal.
April 27, 1935.





Out Line Sketch of Portable Gravel Washing Plant

Capacity 250 Tons per Hour

Scale 1/2 inch Mar. 1936

C. Baur

PLAT
of the
FORBACH EASTON GROUP
of
PLACER MINES

COPPER BASIN MINING DISTRICT
Yavapai County Arizona

SCALE 1 IN = 500 FT

Surveyed Oct 1921
H M Whelpley
Reg Engineer 320

TOTAL acreage = 1162.3

LONE CEDAR
Kinnison et al

VAN DYKE No 3
14A

LINCOLN
S½ - NE¼ - NW¼ Sec 24 20A
S½ - NW¼ - NE¼ Sec 26 20A

MINT
N½ - SE¼ - NW¼ 20A

GOLD MINT
N½ - SW¼ - NE¼ 20A

GOLD MINT No 1
S½ - SE¼ - NW¼ 20A

CORSE GOLD No 3
S½ SW¼ - NE¼ 20A

GOLD MINT No 2
N½ - NE¼ - SW¼ 20A

1921
N½ - NW¼ - SE¼ 20A

IMOGINE
S½ - NE¼ - SW¼ 20A

CORSE GOLD No 4
S½ NW¼ - SE¼ 20A

S.E¼ - S.W¼ 40A
IMOGINE

CORSE GOLD No 1 & 2
N.E¼ - SE¼ Sec 26
40A

TOM CAT
10
W½ - W½ - SW¼ - SE¼

10
E½ - W½ - SW¼ - SE¼

MARIE
E½ - SW¼ - SE¼ 20A

10A
W½ - E½ - SE¼ - SE¼

W½ - E½ - SW¼ - SE¼ 10

S½ - NE¼ - SW¼ Sec 27 20A

S½ - NW¼ - SW¼ Sec 26 20A

E½ SW¼ - SE¼ 20

GOLD BLOCK GROUP

SE¼ - SE¼ Sec 27 40

SW¼ - SW¼ 40A

18½ A

COPPER HEAD

33

Tank
Smith et al

a well

FENCE

LADY BIRD

GOLD BAR
E½ - NE¼ Sec 26 80A
W½ - NW¼ Sec 25 80A

VAN DYKE #2
121.2 A

MILWAUKEE
E½ - NW¼ Sec 25 80A

LITTLE MINT
LYDA et al

ACKER
N.E¼ Sec 25 160

DOROTHY
N½ - SW¼ 80A

HIGH BROW
Kinnison et al

D Cabin
a well

FENCE

24

25

26

27

¼ Cor
Sec 31 T13NR3W
Sec 19 T13NR3W

Sec 24 Sec 19
Sec 25 Sec 30
T13N R4W G&SRM

T13N R4W G&SRM

Note: See Line - Re-Established Cors Sec 24/19 & 25/30 as starting Point

Abbott
Brunfels

GOLD BAR

MILWAUKEE

ACKER

DOROTHY

HIGH BROW
Kinnison, et al

Old Pit #2

Old Pit

9A-B / 17.7'

4A-B-C / 18.5'

2 / 8.5'

1A-B / 14' — Old Trench

3A-B-C / 17.5'

8A-B-C-D / 22.5'

5A-B-C-D / 27'

6A-B-C-D / 25.5'

7A-B-C / 21'

MAP OF
GOLD BAR WASH
ON THE

FORBACH & EASTON PLACERS

Copper Basin Mining District, Yavapai Co, Ariz.

Showing Location of Samples Taken by
G.M. Colvocoresses Nov. & Dec. - 1938

Scale - 1 inch = 200 ft.

G.J.H.

PLAT
of the
FORBACH EASTON GROUP
of
PLACER MINES

COPPER BASIN MINING DISTRICT
Yavapai County Arizona

SCALE 1 IN. = 500 FT

Surveyed Oct 1931
[illegible] Eastman
Reg Engineer 320

TOTAL Acreage = 116.3

0 Rel Mill

Rel Well

Tank Smith et al

LONE CEDAR
Kinnison et al

VAN DYKE No 3
14A

LADY BIRD

VAN DYKE "2"
121.8 A

LITTLE MINT
Lyda et al

¼ Cor

Sec 31 T 13 N R 3 W
Sec 19 T 13 N R 3 W

Sec 24 Sec 19
Sec 25 Sec 30
T 13 N R 4 W G & S R M

LINCOLN
S½-NE¼-NW¼ Sec 24 20A
S½-NW¼-NE¼-SE¼ 20A

MINT
N½-SE¼-NW¼ 20A

GOLD MINT
N½-SW¼-NE¼ 20A

GOLD MINT No 1
S½-SE¼-NW¼ 20A

CORSE GOLD No 3
S½-SW¼-NE¼ 20A

GOLD MINT No 2
N½-NE¼-SW¼ 20A

1921
N½-NW¼-SE¼ 20A

CORSE GOLD No 4
Mill
S½-NW¼-SE¼ 20A

IMOGINE
S½-NE¼-SW¼ 20A

GOLD BAR
E½-NE¼ Sec 26 80A
W½-NW¼ Sec 25 80A

MILWAUKEE
E½-NW¼ Sec 25 80A

ACKER
N.E¼ Sec 25 160

CORSE GOLD "1" "2"
N.E¼-SE¼ Sec 26 40A

DOROTHY
N½-SW¼ 80A

HIGH BROW
Kinnison et al

2 7

2 6

2 5

T 13 N. R 4 W G & S R M

SE¼ NW¼ SE¼ 10

S½-NE¼-SE¼ Sec 27 20A

S½-NW¼-SW¼ Sec 26 20A

18½ A

E½ SW¼-SE¼ 20

GOLD BLOCK GROUP

SE¼-SE¼ Sec 27 - L T N E 40

SW¼-SW¼ 40A

SE¼-SW¼ 40A

IMOGINE

TOM CAT

W½-W½-SW¼-SE¼ 10

E½-W½-SW¼-SE¼ 10

MARIE

E½-SW¼-SE¼ 20A

W½-SE¼-SE¼ 20A

10A

W½-E½-SE¼-SE¼

Cabin

Well

COPPER HEAD 33½ T W A T E R

Fence

Note: Sec Line - Re-Established Cors Sec 24/19 & 25/30 as starting Point