

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland 5, Oregon

Surprise Mine (Gold) Lower Burnt River District
Baker, County

Supplemental report No. 1000 replacing the original report in its entirety

Owner: Palmer Estate, Baker, Oregon, James G. Werschkul, manager.

Location And Area: This property is on part of a very large acreage of grazing land.

The occurrence itself is of relatively limited size, however, and is situated in portions of sections 11 and 12. It is adjacent to some of the Brazos Mine claims. A two mile access road connects the property with US highway number 30 at Pleasant Valley.

History and Development: The history of these claims can best be described by first mentioning the fact that the gold occurs in a rather vaguely defined horizon of clayey material which blankets the bedrock on the lower slopes of a rather steep hill otherwise covered by a minimum of soil. The gold-bearing potentialities of this horizon was first discovered and worked by W.D. Rick. The discovery was made in 1942 at a time when Rick was looking for a manganese occurrence reportedly existing in the vicinity. The gold was first encountered high on the slope of the hill at a point where the soil (including an increment of lake-bed silts) blanketing the lower portion of the hill tapered off to expose bedrock. Hand mining with the ore being transported to the creek below and washed, resulted in a hole roughly 15 x 20 feet on a side by 8 feet deep at this point. From this pit an incline was run on bedrock and down the hill to the south for a distance of 70 feet. This incline was carried about 4 feet

wide and just high enough to crawl in. A windless shaft for ventilation purposes and easier extraction of ore was situated at about the mid-point of the incline. The slope of the hillside and of the bedrock surface was such that the depth to bedrock at the ventilation shaft was 12 feet and the depth at the face of the incline, 18 feet. Another shaft was started to intersect the projection of the incline at a point about 15 feet distant from the face. Depth to bedrock at this point appeared to be between 23 and 33 feet as indicated by an increased pitch of the bedrock surface revealed in the bottom of the incline. Connection between this shaft and the incline never was made. Another irregular shaped excavation about 15 feet on a side and 7 or 8 feet deep was situated to the southeast of the incline at about the midpoint of the incline's length.

These original workings have been completely obliterated by subsequent dozing operations which will be described later. The detailed description of these workings just presented, was presented because all production made on this property was reportedly recovered from the material extracted from these excavations. A map of these workings is attached to this report.

The foregoing work was done by Rick between 1942 and 1946, the occurrence being held by claims (Surprise, taken 1942; Bernice, taken in 1946). In 1947, Rick entered into a partnership with Frank Carl and Frank Moore, both of them residing in Baker. The dozing which obliterated the original workings was done at this time. The objective was to strip overburden and ship ore from various points for test purposes. Only one such shipment was made before the partnership broke up and work was abandoned. At the time of the forming of this partnership investigation into the title disclosed the true ownership status of the mineral rights as set forth at the outset of this report and the invalidity of the claims claimed

previously by Rick. The partnership development work was done on a lease basis accordingly. 721 acres were involved in a 10 year lease on a 10 percent royalty or a \$1000. year payment. It is understood this lease is gone by default. No subsequent work has been done on the occurrence.

It is reported that the dozing was carried out in a rather indiscriminate manner to the extent that barren overburden and value-bearing material was substantially intermixed. How true this may be is not known, but the test shipment to the Tacoma Smelter proved valueless. The dozing was nowhere carried to bedrock.

A small amount of early day placering was done on the creek in the valley below the occurrence under discussion here. This placering was done on normal, or conventional placer materials. Several bedrock pits and inclines were likewise dug in the early days on the hillside in the vicinity of the present occurrence. In fact, several of these pits were situated in the area that was subjected to the dozing. No information is at hand concerning the early placering, but the pits on the hill clearly suggest efforts on the part of the earlier operators to trace placer and float gold to a source vein.

Geology: On the geologic map of Baker Quadrangle, Gilluly shows a belt of Tertiary lake bed sediments about 1½ to 2 miles in width and extending some 12 miles along a northwesterly-southeasterly course, parallel to and just north of U.S. highway 30. These lake beds are separated by a fault contact from The Elkhorn Ridge argillite which is exposed to the north for the entire length of the lake bed belt. This fault dips to the southwest, and in the vicinity of the occurrence under discussion here, co-incides with the trend of a small creek occupying a local valley between the lakebeds and the argillite.

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The occurrence is situated on the southern flank of a hill a few hundred yards to the north of this fault (and of the lakebeds) as mapped. From this, these workings would expectably be found to occur in the argillite. As is, a veneer of detrital material (including a skim of lakebed silts and gravels) covers the lower portion of the hill slope, and it is from this material that the values have been recovered.

The value-bearing material is primarily clayish. It directly overlies fresh bedrock and contains small-sized angular and subangular fragments thereof. In addition it contains concentrations of iron and manganese in the form of soft, clayed seams and nodules. Likewise to be found are small fragments of chalcedonic quartz. Nowhere in the original workings were highly rounded wash pebbles observed, but such are to be seen elsewhere on the hillside in close proximity to the workings. In other words, a skim of lakebed silts and gravels overlies the value-bearing horizon. The lakebed members rarely pan values, and as stated before, all values recovered were recovered from the material extracted from the underground workings run directly on bedrock.

The exact identification or classification of this gold-bearing material is open to question. It has been classed as a detrital soil by some who have seen it, and such it may be. The contained argillite bedrock fragments are not present in great numbers, however, and all seen by the writer were small in size. To the extent that this is so the entire appearance of the material is dis-similar to the sort of detrital-talus-soil accumulation to be expected on the flank of a rubble-covered argillite hillside as steep as the existent hill is. In many respects the material in question resembles fault gouge. To be sure, the usual country rock hanging wall is absent, but it is to be remembered

that the dip of the lakebed-argillite separation fault mapped by Gilluly, the is in a direction comparable with/horizon under discussion. The sub-angular nature of many of the small contained argillite fragments reflects abra~~sive~~ grinding, and the increased steepness in pitch of the bedrock surface in the bottom portion of the incline is also suggestive of relationship of said surface to the fault. Of additional significance in this connection may be the report that the principal values recovered from the nearby Brazos mine, were recovered not from the bedrock-walled quartz vein on which there are extensive workings, but from a mineralized clay capping of such extensiveness that it was excavated ^{by} a room and pillar ^{system} basis. This portion of the Brazos workings has long since caved, but those who have seen the present occurrence and also the Brazos workings, report the value-bearing material to be identical in appearance. Assuming the relationship between these occurrences to be real, the presumption is that the gold values originated at least in part from waters which ascended through normal fault and vein fissures till they encountered the clay capping barrier which forced them to spread out laterally.

On the occurrence under discussion, no systematic sampling was ever done to demonstrate ^{the} to upper limit, or break-point between the value-bearing horizon and the overburden. Figures on its thickness cannot be given accordingly, nor has adequate work been done to demonstrate its lateral extent. Of the material mined, some has been sluiced on the property and the rest shipped to the Tacoma smelter. Most significant of the shipments is one of 33 tons (dry weight) consisting of bulk ore from the incline. A small amount of ore representing quartz-manganese-iron seam material had been sorted from this bulk tonnage and was shipped separately. Smelter returns on the 33 tons show a gold content of 0.71 ounces/ton and 65.2 percent silica. One of the shipments of selected material weighed 6508 pounds and assayed 2.21

ounces/ton in gold. The other selected shipment weighed 1176 pounds and assayed out at 12.22 ounces/ton in gold. Additional production was made from sluicing operations carried out on the property but the gold recovered was sold in small lots to local gold buyers and receipts confirming the total amount thus sold are not available.

Economics: Although the shipment records provide interesting evidence of values, the property will have to be systematically prospected and sampled before any conclusions concerning the worth or extent of the occurrence are warranted.

* * * * *

Report by: N.S. Wagner

Date of exam: Several occasions in 1947 and 1948

References: U.S.G.S. Bull. 879

Informants: Wm. Rick, Frank Carl, operators; D. A. Sommerville and Manning W. Cox
U. S. S. & R. Co.

Miscell.: Shipment receipts to Tacoma Smelter
Dogami samples GB-115 - 1 and GB-116 - 2

Surprise Mine

Gold

NAME			OLD NAMES	PRINCIPAL ORE	MINOR MINERALS
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10 S	41 E	11 & 12
T	R	S

PUBLISHED REFERENCES

..... Baker..... COUNTY

..... Lower Burnt River..... AREA

..... ELEVATION

MISCELLANEOUS RECORDS

2 miles to U. S. Highway 30..... ROAD OR HIGHWAY

..... DISTANCE TO SHIPPING POINT

PRESENT LEGAL OWNER (S) .. W. D. Rick

Address .. 2811 12th St., Baker, Oregon

OPERATOR

Name of claims	Area	Pat.	Unpat.
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Surprise	full		X
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Barnice	"		X
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Name of claims	Area	Pat.	Unpat.
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EQUIPMENT ON PROPERTY

Surprise Mine

Gold

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Name of claims	Area	Pat.	Unpat.
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EQUIPMENT ON PROPERTY

REPORTS

Surprise Mine by N. S. Wagner Oct 28, 1946 (CONF)	X	X	X
Surprise Mine by N. S. Wagner, June 13, 1946 (Confidential)	X		

SHIPMENT AND ASSAY RECORDS

Smelter receipts included with above report (CONF)	X	X	X

MAPS

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702 Woodlark Building
Portland, Oregon

SURPRISE LINE (Gold)

Lower Burnt River Dist.
Baker County

Temporarily, at least, lets keep this report confidential.

CONFIDENTIAL

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

Report by N. S. Wagner
Date of Examination
June 13, 1946
Date of Report, October 28, 1946

SURPRISE MINE (Gold)

Lower Burnt River District

Baker County

OWNER:

Mr. W. D. Rick, 2811 12th Street, Baker, Oregon

LOCATION:

T. 10 S, R. 41 E, Sections 11 and 12. This is adjacent to part of the Brazos Mine claims and two miles north of U. S. Highway 30 at Pleasant Valley.

AREA:

Two full quartz claims, the Surprise, taken June 1942, and the Bernice, taken May 1946.

HISTORY:

A small amount of placering has been done on the creek running through the Bernice claim and a few bedrock pits have been sunk on the hill on the Surprise claim to the north. Similar patches of small workings are common and rather widely distributed over the hills in this general area. No information is at hand concerning the work done on these claims, but the bedrock pits on the hill suggest efforts to trace placer and float gold to a vein. The gold values discovered by Rick were found while prospecting for a manganese occurrence reportedly existing in the vicinity.

DEVELOPMENT:

Gold was first discovered high on the slope of a hill at a point where a thin veneer of so called lake bed silts and gravels margined and exposed a bedrock of the Elkhorn Ridge argillite series. The gold occurred in the so called lake bed sediments and hand mining with the ore being transported to the creek

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SURPRISE MINE (Gold)-----Page 2

and washed, resulted in a hole roughly 15 x 20 feet on a side and 8 feet deep. From this pit an incline was run in the "gravel" on bedrock and down the hill to the south, a distance of 70 feet. This incline was carried about 4 feet wide and just high enough to crawl in.

The initial course of this incline is S 43 W on a -19° pitch for 40 feet at which point there is a windlass shaft from the surface for ventilation purposes and easier extraction of ore. From this shaft the incline continues S 38 W on a -23° pitch for a distance of 23 feet at which point the pitch of the bedrock surface increases to -32° . The incline continues on this -32° pitch for a distance of 9 feet to the face.

The slope of the hillside is such that the depth of the incline below the surface at the ventilation shaft is 12 feet and at the face is 18 feet.

A pit was started to intersect the projection of the incline at a point about 15 feet distant from the face. The distance to bedrock at this point could be between 23 and 35 feet based on the indicated increase of the bedrock surface as revealed in the bottom of the incline. This pit is about 10 feet deep. The only ^{other} work on the claim consists of an irregular shaped excavation about 15 feet on a side and 7 or 8 feet deep situated about 50 feet to the southeast of the incline at about the midpoint of the incline's length.

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GEOLOGY:

On the geologic map of Baker Quadrangle, Gilluly, shows a belt of Tertiary lake bed sediments about $1\frac{1}{2}$ to 2 miles in width and extending some 12 miles along a north westerly-south easterly course, parallel to and just north of U. S. Highway 30. These lake beds are separated by a fault contact from the Alkhorn Ridge argillite which is exposed in the north margin for the entire length of the lake bed belt. This fault dips to the south west.

The Surprise and Bernice claims are located on the southern flank of a hill a few hundred yards to the north of this fault (and of the lake beds) as mapped. From this, these workings would expectably be found to occur in the argillite. As is, a veneer of clayish material covers the slope of the hill, and it is from this material that the values have been recovered. Nowhere in the workings described were highly rounded wash pebbles observed, but such is to be seen elsewhere on hill and also in a pit on the Bernice claim. This pit is on the south side of the creek below the workings in the Surprise claim and it is essentially on the mapped contact of the lake beds. This pit shows the same clayish matrix found in the main workings. This matrix pans gold in a manner similar to that which is found to prevail in the area of the main workings,

SURPRISE MINE (Gold)-----Page 4

but here the pit shows this clayish matrix to grade into typical lake bed silts containing highly rounded pebbles. This pit doesn't expose the matrix to bedrock, but near by outcrops indicate that the depth to bedrock in the pit is not great. The lake beds containing the wash pebbles do not pan values.

Apart from the lack of clear-cut stratification and rounded pebbles the gold bearing matrix does contain scattered sub-angular chunks of what appears to be fragments of the silicified bedrock. Concentration of iron and manganese in soft, clayey, red and black spots are to be seen together with occasional small fragments of chalcedonic quartz.

The exact identification or classification of this gold bearing horizon is open to question. Although/similar to the lake beds basically and blending with them, important differences do exist. It could possibly be drag material from the fault, the indicated dip of which is such that the fault plane could correspond with the slope of the hill. However, the writer is inclined to regard it tentatively as a mud flow associated with the rhyolitic and andesitic volcanics, numerous small patches of which exist in the district at large. Such an interpretation would account for the presence of the scattered fragments of bedrock included in the matrix, and would account also for the absence of bedding and rounded pebbles.

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Of the material mined, some has been sluiced on the property and the rest shipped to a smelter. Most significant of the shipments is one of 33 tons (dry weight) consisting of ore from the incline. The smelter returns on this 33 tons show a gold content of 0.71 ounces/ton and 65.2 % SiO₂. Two other small shipments of selected ore from the incline were; 6508 lbs. assaying 2.21 oz./ton Au and 1176 lbs. assaying 12.22 oz./ton. Gold washed from ore on the property was sold in small lots to local gold buyers and the mint and receipts for the total amount are available.

These shipment records are the best indications of value available. Panning on the property indicates the gold to be very spotty. While Rick reports having obtained sizeable nuggets from some of the iron nodules, much of the gold is very fine. Values are not limited to the bedrock horizon followed by the incline as recovery from the surface pit lying to the east of the incline and assays and pannings of this higher horizon samples indicates.

ECONOMICS:

Although the shipment records provide interesting evidence of values, the existant workings will have to be sampled systematically to demonstrate the vertical range of values there-----that is, whether values are contained in the section from the surface to bedrock as indicated by desultory sampling and panning, or whether values are limited to the bedrock horizon followed by the incline.

SURPRISE MINE (Gold)-----Page 6

The present workings are too closely spaced to prove any great tonnage. However, surface indications suggest that this formation revealed by the workings may have considerable lateral extent along the hillside. Systematic prospect-development will have to be done to establish this.

Prospecting will also have to be done at lower elevations along the hillside to establish the continuity of the ore bearing matrix there, its depth, and the presence of and thickness of any overburden.

If values are demonstrated to blanket the hillside, working conditions would favor use of low cost, large capacity earth moving equipment for mining.

Water for a washing plant is scant but could probably be developed and ditched to the property from several nearby springs.

However, the feasibility of a washing plant is open to question.

Due to both the fineness of much of the gold and to this clayey nature of the matrix, an appreciable loss might be experienced with a conventional washing plant. Thus, if values comparable to these shipped are found to prevail over a large area shipping direct to the smelter as has been done of the ore as mined or after only partial concentration, might prove preferable to washing in the last analysis. Certainly careful preliminary washing tests should be conducted before any large plant is designed.

Other aspects of the property such as location with respect to transportation, moderate snowfall, etc. favor operation.

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REFERENCES: U. S. G. S. Bull. 879

INFORMANT: Wm. Rick, Baker, Oregon

OTHER DATA: Shipment receipts to Tacoma Smelter
Samples GB 115-1 and GB 116-2

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Portland, Oregon

SURPRISE MINE (Gold)---Lower Burnt River Dist., Baker County
----confidential report accompanying report with
above title by W. S. Wagner, June 13, 1946

SURPRISE MINE SHIPMENT RECORDS

Copied from original Smelter Reports, June 13, 1946
by Pat Conro

Tacoma Smelter

Bought of : W. E. Rick (Surprise Mine) Route 9, Box 885 Portland, Oregon	Bought of: W. E. Rick (Surprise Mine) Route 9, Box 885 Portland, Oregon	Bought of: W. D. Rick (Surprise Mine) Route 9, Box 885 Portland, Ore.
Date: June 3, 1943	Date: July 22, 1943	Date: July 29, 1943
Material: Boxes, Sacks H. G. Ore	Material: Bulk Ore	Material: Bulk Ore
Smelter Lot: 1637	Smelter Lot: 2185	Smelter Lot: 2188
Date Rec'd: May 27, 1943	Date Rec'd: July 16, 1943	Date Rec'd: July 16, 1943
Lot No.: 1637	Lot No.: 2185	Lot No.: 2188
Net Wgt: 1253	Net Wgt: 6960	Net Wgt: 70940
H ₂ O: 6.13	H ₂ O: 6.50	H ₂ O: 6.73
Dry Wgt: 1176	Dry Wgt: 6508	Dry Wgt: 66166
Au Assays: 12.22	Au Assays: 2.21	Au Assays: .71
Ag Assays: 1.95 (Less 1/2 oz. Ag)	Ag Assays: .54 (Less 1/2 oz. Ag)	Ag Assays: .20
Ni Assays: .04	Fe: 2.9	As: .20
	S ₁ O ₂ : 73.0	Fe: 3.6
		S ₁ O ₂ : 65.2
Gross Value: \$228.98	Gross Value: \$228.85	Gross Value: \$747.34
Net Value: \$215.27	Net Value: \$214.85	Net Value: \$405.34

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DOGAMI assays of samples taken by N.S. Wagner from the Surprise Mine, June, 1946

GB 115-1 Sample of matrix from the face of the incline, Au 0.23 oz/ton.

GB 116-2 Sample of bedrock (silicified argillite series) from
bottom of incline and from fresh rock dug 6 inches
below skidway Au trace

taken

The writer has seen an estimated 20 pannings from ore/at various places on these workings. These pannings were divided between four different visits and the pannings were made by as many different individuals. The results of some of these pannings were astounding, yet others were a complete blank.

This reversal of indicated value has been seen on duplicate samples taken from the identical same spot. This situation was experienced by Rick when he was digging and sampling the incline, and it was a spur of the moment impulse based on the good pannings which led him to ship this material to the smelter ---- meaning the 33 tons bulk of material taken from the incline.

The possibility that this property has been salted is one not to be overlooked and the writer has not overlooked it. If it is salted, then the ore in the shipment receipts must necessarily have come from some other property. In this respect, there are no dumps on the property to correspond with the excavations. The small shipment which ran 12 oz/ton exists as one of the most questionable points as far as any consideration of salting goes. Although Rick claims to have sorted it while digging the incline, and even pointed out the "vein" on the walls of the incline, the writer could see no vestige of a vein or stringer or in fact any difference whatsoever from the spot pointed out and any other portion of the walls.

Mention of salting here should not be considered as wholly damaging to the property as the consideration is based only on supposition that such could be. Many other things point to the complete genuineness of the values and the writer heartily endorses the property as worthy of prospect-sampling money.----- for if it is salted a relatively small expenditure of time and money would demonstrate the fact, and if not, a truly remarkable and worthwhile deposit may occur there.