

## DOUGLAS COUNTY

Geology:

Only part of the county has been systematically studied: Diller (98) and Diller and Kay (24) in the Roseburg and Riddle Folios give a complete description of the central and southern parts. In addition to these some small districts, particularly in the eastern part, have been described by Wells and Waters (34), and Calaghan and Buddington (38). There is little descriptive material<sup>available</sup> relating to the geology of the western part of the county, with the exception of the extreme southwest corner which was mapped by Diller (14:47). The extreme eastern part of the county is in the High Cascades where the surface is covered by recent glassy, highly vesicular lavas. In the Western Cascades there are older basaltic, andesitic and rhyolitic flows and intrusives, together with small areas of dioritic intrusives.

In the central portion of the county the oldest rocks are pre-Cretaceous radiolarian cherts which occur in relatively small bodies south-west of Roseburg. In the southern part of the Roseburg quadrangle are large areas of the Myrtle Formation (Cretaceous) containing some isolated small bodies of probably older amphibole schist and limestone. The Myrtle, as in Coos and Curry counties, is made up of conglomerates, sandstones, and shales. The central part of the quadrangle contains large areas of Miocene basaltic lavas. The northern and western parts of the quadrangle are covered by Eocene sandstone and shales, mainly of the Umpqua Formation.

The southern part of the county as described in the Riddle Folio contains extensive areas of Jurassic rocks. Exposures of greatest extent are of so-called greenstones—the general name given to those dark-colored, altered, igneous rocks occurring widely in southwest Oregon. Within the greenstones are extensive bands of rhyolite. Next in order of areal extent are the sediments of the Galice and Dothan formations which consist of slates, shales, sandstones and conglomerates.

Knoxville (Cretaceous) and Umpqua (Eocene) sediments occupy relatively small areas in the northwest part of the quadrangle. Here also is a large serpentine band of interest because it contains a deposit of garnierite (nickel silicate) on Nickel Mountain, the only nickel known in Oregon.

Of the various metallic minerals occurring in the county, cinnabar is by far the most important commercially. Several occurrences of cinnabar are known. The only producer is the Bonanza, which at this time (early 1940) is producing at a higher rate than any other quicksilver mine in the country. Wells and Waters: (34) page 40, state that at the Bonanza Mine "The ore occurs in beds of altered tuffaceous sandstone of the Umpqua formation, which are inter-stratified with layers of shale".

B Douglas County has been divided into four general areas as follows:

1. The Nonpariel-Bonanza area includes that portion of Douglas county lying within T. 23, 24 and 25 S., R. 3 and 4 W.

2. The Riddle area includes that portion of southwestern Douglas county, mostly within the drainage of Cow Creek, lying south of T. 23 S., and bounded on the east by the west line of R. 4 W. and the divide between Upper Cow Creek and the South Umpqua.
3. The Tiller-Brew area includes that part of the southeast portion of Douglas County lying south of T. 23 S., west of the Willamette meridian (R. 1 E.) and including the Umpqua drainage east of R. 5 W.
4. The Umpqua area, includes all of Douglas county not otherwise classified.

#### NONPAREIL-BONANZA DISTRICT

This quicksilver area is in the northern part of the county in Ts. 23, 24, and 25 S., Rs. 3 and 4 W. Part of its northern boundary borders Lane county, and the district adjoins the Black Butte quicksilver district of that county.

Schuetz: 38 ( pp 128-129) describes the district as follows:

"This quicksilver mining district lies in northern Douglas county and the two most important mines, namely, the Nonpareil and the Bonanza are 3.2 and 7.9 miles east from Sutherlin respectively. Sutherlin is a station on the Southern Pacific Railroad and is on U. S. Highway 99. The road from Sutherlin to the mines is good and the mines are accessible the year round.

"The geology of this general area is covered in the U. S. Geological Survey's No. 49, or Roseburg Folio. The topography in the vicinity of the mines is fairly old with smooth well-rounded hills rising to elevations of some 2,000 feet above the valley floor which is some 800 feet above sea level in elevation. Relief is due to differential erosion.

"Both mines are in the Umpqua (Eocene) formation which here consists mainly of shales and sandstones with some conglomerate. The general strike of these shales and sandstones in the mines is N.E. and the dip is S.E. The mineralized strata, mostly sandstones, are marked by alteration of the rocks probably caused by the mineralizing solutions. Roughly paralleling the mineralized strata a short distance on the S.E. the Roseburg Folio shows a large mass of "diabase" supposed to be partly intrusive and partly extrusive in origin. U.S.G.S Bulletin 350 however maps this "diabase" as basalt flows, beds of palagonite tuff and breccia, and conglomerate, and places these in the Umpqua formation.

"Some three miles northwest of the mines are diabase dikes having a strike parallel to that of the mineralized zone. They are definitely post Umpqua and stand almost vertically. It is possible that the mineralization was associated with similar dikes deeper down along the zone of rock alteration. This zone of rock alteration extends from the Sutherland Mine in Sec. 20, T. 25 S., R. 4 W., northeast into Sec. 6, T. 24 S., R. 4 W. for a distance of over seven miles. This latter location is known as the Butte prospects. A little work has been done both on the Sutherland and Butte prospects but no production has been recorded from either one. Another quicksilver prospect has been reported to be at Glide some eight miles S.E. of the Nonpareil-Bonanza Area."

## BONANZA MINE (quicksilver)

Nonpareil-Bonanza district

Owners: Bonanza Mines, Inc., Sutherlin, Oregon

Location: 9 miles east of Sutherlin in Sec. 16, T. 25 S., R. 4 W. 22 miles N.E. of Roseburg.

The following quoted from Schuette (38:130-137) describes the history, geology, and development:

"This mine lies in Sec. 16, T. 25 S., R. 4 W. Bulletin 850 (Wells and Waters-34) shows a contour map of the hill in which it lies and shows the location of the prospect tunnels in existence in 1930.

"Since that time two additional adits, Nos. 10 and 11, have been driven to the ore zone.

"In 1928 the Bonanza mine was held by J. W. Wenzel, F. S. Skiff, and C. Scherer. The existing workings were sampled and disclosed a considerable tonnage of low-grade ore.

"In 1931 control passed to the Northwestern Quicksilver Company of which Wenzel became the manager. Development work was done but construction of a plant was held in abeyance probably due to the depressed state of the industry.

"In 1934 it was reported that H. W. Gould & Company had optioned the property and were doing development work. No plant was built, however.

"In 1935, J. W. Wenzel sold out his interest to H. C. Wilmot. Early in 1937, H. C. Wilmot bought two Herreshoff furnaces that had been used in experimental work by the Santa Cruz Portland Cement Co. A reduction plant using some of this equipment was designed for the Bonanza mine by C. N. Schuette of San Francisco. It was erected during the summer and began operation in October, 1937.

"The outcrop of the mine is not prominent. It strikes a little east of north and runs along the east sidehill slope of a ridge having a north and south trend. The dip of the ore zone is about 40° east. The ore is found in a bed of altered tuffaceous sandstone, formerly mistaken for an altered andesite, overlain by shale. In places at least this has the appearance of being a fault contact and a fault gouge forms the hanging wall at these points. At other places shale forms the hanging and evidence of movement is not so clear. The footwall is not distinct in that it is a commercial footwall that must be determined by assay. From the hanging wall, cross fractures run out approximately at right angles to the strike; running from these to the south are small fractures roughly parallel to the strike of the hanging wall.

"The ore deposition is governed by this fracture pattern, the ore being better close under the hanging and close to the cross fractures and grading off from the hanging to the west and from the cross fractures to the south.

"Development has been by drift and crosscut adits. The early production in the 1870's came from the Glory Hole in the outcrop. No. 1 adit develops over 200 feet of backs and the hanging and foot are just outside of the drifts near the end of the adit. Assays show the full 90-foot width of the ore zone to average 3 lbs. quicksilver per ton. A 17-foot width on the hanging wall ran 6.5 lbs. per ton and a 6-foot width on the footwall averaged 9.3 lbs. per ton according to the assay maps made in 1928. The hanging wall drift averaged 11 lbs. and the footwall drift ran 9.3 lbs. of quicksilver per ton. No. 11 adit has cut the hanging wall but has not yet crosscut the ore zone. No. 10 adit has crosscut the ore.

"The South Cut assayed 6.8 lbs. across the west face, but floor samples from 14 to 60 lbs. were taken in this cut which gave the highest samples in the mine.

"The present production is coming from No. 7, 8, and 9 workings where stoping is in progress on the sides of the raises. The levels are being extended north, then raises are run up and stoping follows on stulls and headboards. The rock is fairly "tight" so that in general only low-grade ore could form but occasionally rich seams of high-grade ore are found when the mineralizing solutions found open fractures in which to deposit their load.

"In No. 7 tunnel, the ore assayed 14 lbs. per ton for four feet under the hanging wall. The next six feet ran 5.5 lbs. per ton.

"The ore is mined with C-P-8 machines using auger bits and some five men in the mine were getting out 40 tons of 5 lb. ore per day. Since the dip of the ore zone is with the hill, the crosscut tunnels and tramming distances are short. The mine is fairly dry, and draft through the raises provides natural ventilation. Compressed air is furnished by a C.P.T. 9 3/8 x 4 1/2 by 5 1/2 cog belt driven compressor. This is run by a 50-H. P. motor. Power is furnished by the California-Oregon Power Company over a 11,000 volt line and stepped down to 440 volts at the mine.

"From the mine the ore is trammed to a 1-inch grizzly set over a 24-ton bin. The oversize from the grizzly goes through an 8 by 10 inch roll jaw crusher. No sorting can be done on this ore. From the ore bin a 16 inch by 6 foot belt feeder delivers the ore to a conveyor belt which carries it to, and drops it on the outside edge of, the drying hearth of the furnace. A head sample of the ore is taken from this conveyor belt. Furnace tails are also sampled and cut samples are taken in the mine. The distillation-titration method of assay is used.

"The furnace has five hearths and is 14 feet 2 1/2 inches in outside diameter. It is built on a cast-iron circular girder supported by five 10-foot legs which give ample clearance below the furnace.

"Having an odd number of hearths, it has center feed. The ore is delivered into the top or drying hearth by being dropped there from a conveyor belt and is then raked inwards to the feed hole.

"The speed of the furnace can be controlled by variable speed motor and is usually from 1 R. P. M. to 1 revolution in 40 seconds.

"Firing is done by two low-pressure oil burners on hearths 2 and 3

respectively. An 11 by 11 inch Sirocco Dust Collector is attached directly to the furnace and removes practically all the dust from the gases before they enter the condenser system. The furnace makes only some 200 lbs. of dust per 24 hours and this assays from 1 to 3 lbs. of quicksilver per ton, so the loss from this source is negligible.

"The discharge of the burned rock from the furnace is by means of a balance gate in the lower hearth. This discharges into a hopper from which it is drawn into cars and trammed to the dump. The plant has been in operation only a short time when visited in November, 1937, so that long range average operating figures were not yet available. It was treating some 36 to 40 tons of ore per day having a moisture content of some 14 per cent with a fuel consumption of some nine gallons per ton.

"The condenser system is of sheet-iron and tile pipe construction. The gases pass from the dust collector through three strings of U-bends to the exhauster. At the bottom, the U-bends are connected by inclined pipes which are sealed by dipping into a water-filled concrete trough.

"This type of condenser system, which was originated by the author at the Red Elephant Mine in 1930, is easy to erect and easy to clean. It has also been adopted at two plants in Texas and five plants in California and one plant in Nevada.

"Ten-inch glazed tile pipe was used for this condenser system and the stack flue and stack are 12-inch tile pipe. The covers at the top of the vertical and inclined pipes have 1-inch holes in them which are closed with corks. The pipes are washed down daily by hosing them out through these small holes.

"White enameled pans are submerged in the trough under each pipe and after the daily wash-down these pans holding the days product are lifted out, the water is decanted, and the floured mercury is placed on the soot pan. This is heated by waste heat from the furnace and the dried, clean quicksilver is then drawn off and bottled in the usual manner.

"Draft for the furnace is provided by an American Blower Company No. 30 Type E fan. Since this fan works in the acid gases on the cold end of the condenser system it is completely rubber covered on the inside. It operates at 2,200 R. P. M. With the fan at this end the entire condenser system is under suction at all times. Any leaks in the condenser system may let air leak in but will not let hot quicksilver laden gases leak out and thus cause a loss. The cleanup-man is in no danger of breathing quicksilver vapors when washing down.

"The plant has a neat clean appearance and was operating smoothly with a green, but intelligent crew, who were showing all the earmarks of rapidly becoming seasoned quicksilver operators.

"The property has living quarters for the superintendent, but the crew of 12 to 14 men lives on neighboring ranches or in Sutherlin so that no

boarding house is necessary. Wages are \$3.20 for roustabouts, \$4.00 for muckers and furnace men and \$4.50 for miners. Haulage and fuel costs are low and with such generally favorable conditions the Bonanza Mine should become one of the steady producers of Oregon."

Ref: Schuette, 38:130-137 (quoted)

During 1939, new ore of good grade was developed and unit value of furnace heads was raised; also the value of indicated ore available was increased materially. In the latter part of the year, a Gould rotary furnace with a reported capacity of 75 tons of ore per day was installed to supplement the Herrshoff furnace. Reported production in February and March, 1940 is at the rate of more than 500 flasks a month, with the possibility of further increase.

Ref: Wells and Waters, 34: 40-41

#### ELKHEAD MINE (quicksilver)

Nonpariel-Bonanza district

Owner: A. G. Hovey and association, in care of Blaine Hovey, 722 Lincoln Street, Eugene, Oregon.

Schuette (38: 145-147) describes the property as follows:

"This mine is located in the NE $\frac{1}{4}$  of sec. 21, T. 23 S., R. 4 W. about ten miles east of Yoncalla. It was discovered in 1870 and is said to have produced in those early days although there is no record of such production. In 1895 a small Scott furnace was built but again there is no record of any production. U. S. G. S. Bulletin 350 on Plate 12 shows a plan and section of the mine, and Plate 13 shows the geology of the mine area.

"The rock alteration along the ore zone is similar to that at Black Butte forming the typical iron ribs. The formation strikes northwest and the dip is southeast. The lowest formation is an amygdaloidal basalt. On this lies a tuffaceous sandstone and this is overlain by shales. The alteration and mineralization of the rock occurred along the basalt-sandstone contact. Cinnabar is disseminated throughout the altered amygdaloid near the contact. The fractures which permitted mineralization must have been localized along the amygdaloid-sandstone contact by a differential movement on flexing. The sandstone must have been too "tight" and "soft" at the time of mineralization to permit of open fractures in it. If it had been a hard open-textured sandstone it would have fractured and let the mineralization concentrate in it under the overlying shale cap rock. As it was, the sandstone itself was a semi-permeable cap rock on the poorly-fractured basalt and only low-grade ore could form.

"This mine also has been the scene of recurrent activity for many years. In 1931 J. W. Wenzel was in charge of development work at the property and considered repairing the old 20-ton Scott furnace on the property. Then C. O. White of Seattle optioned the property in 1931 and installed his patented retort.

"A satisfactory test run was reported in 1934. Despite all this activity the production in all those years is reported as being only 16 flasks."

Ref: Schuette, 38: 145-147 (quoted)

Wells and Waters 34:34

Informant: J. E. Morrison, 39

## NONPAREIL MINE (quicksilver)

Nonpareil-Bonanza District

Location: The mine is in secs. 3 and 10, T. 25 S., R. 4 W., about 9 miles by road east of Sutherlin.

History: Wells and Waters: 34 ( p. 38) write as follows:

"The Nonpareil mine was discovered some time prior to 1870, when the New Idria Co. was formed to work the property. The Oregon Cinnabar & Silver Mining Co. was incorporated in 1882, and the property remained in its hands until acquired by the Nonpareil Quicksilver Co., which started work in the fall of 1928. Nothing concerning production prior to 1928 could be learned, although the old workings and the ruined remains of a Scott furnace indicate that considerable ore was mined and treated."

Concerning later history, Schuette 38:p 129 states:

"Production from the work in the 1870's was not large. In 1928 the Nonpareil Quicksilver Co. began development work, and in 1929 and 1930 crosscut adits were driven N.W. into the hill some 2,000 to 3,000 feet north of the old mine. Some of these are reported to have shown good ore but as usual the ore was very irregular. As early as 1928 the claim was made that some 5,000 tons of 5 lb. ore were broken in the old mine and that 25,000 tons more had been exposed on three sides and that 25,000 tons more were exposed on one side, all of this being the old mine!

"In any case development work was reported as being done by the C. M. Everett Company of Seattle in 1929, by the Sutherlin Cinnabar Company in 1930, and in 1931 it was reported that the Nonpareil Quicksilver Corporation was about to build a furnace. At this time it was reported that 20,000 tons of ore were blocked out.

"This plant which was built late in 1931 shipped its first quicksilver to market early in 1932.

"The plant was a 4-hearth 10-foot diameter Herreshoff furnace with cast-iron pipe condensers and practically identical with that erected at Maury Mountain and later moved to the Horse Heaven mine.

"Apparently the grade of ore developed had been over-estimated and this in addition to the low prices of 1932 and 1933 did not allow of operation at a profit.

"The plant was sold and moved to a southern California mine, and no work has been done on the property since then.

Geology: Wells and Waters: 34 (pp 38-40) describes mine working and ore occurrences as follows:

"The old workings are all at the south end of the ridge, but during 1929 and 1930, eight short adits were driven into the east slope of the ridge from 1,800 to 3,200 feet northeast of the old mine and at altitudes of 1,000 to 1,200 feet, thereby extending the prospected area to a belt about 3,600 feet long.

"The old mine comprises about 2,000 feet of workings and consists of three adit levels which have explored the mineralized area to a depth of about 175 feet.

"The deposit occurs in a bed of arkosic sandstone of the Umpqua formation. The sandstone is about 155 feet thick and is overlain and underlain by shale. Within this bed is a tuffaceous variant which was probably originally of andesitic composition but is now too badly altered to permit precise determination. The formation strikes N. 35° E., dips about 41° SE., and contains at several places what appear to be bedding-plane faults.

"With the exception of adit 3 north all the adits northeast of the old mine are in altered tuffaceous sandstone. Adit 3 north, however, passes from shale into altered sandstone and back into shale; the sandstone bed is 60 feet wide and dips 41° SE. The shale that formerly covered the sandstone at the other adits has been removed by erosion, and the sandstone crops out in very steep slopes and crags. Evidence of the usual type of alteration is found in all the adits. Bedding-plane faults also occur.

"Rock alteration and mineralization.--The arkosic sandstones have been profoundly altered, and the shales were locally affected. There is no essential difference in the character of the alteration from that shown at Blackbutte and Elkhead, except that relatively more siderite and less calcite and silica may have been introduced. Veins of siderite almost free from silica or calcite cut the rock in all directions. They are especially conspicuous in the upper part of the mine, where oxidation has converted them to the characteristic iron ribs. The relatively smaller amount of silica caused the outcrop to be less resistant and the rubble derived from it to be thinner than at Black Butte. Craggs comparable to those at Black Butte are found only at the outcrop above the Nonpareil mine."

Ref: Wells and Waters, 34: 38:40 (quoted)  
Schuette, 38: 129 (quoted)

## RECORD IDENTIFICATION

RECORD NO..... M055186  
 RECORD TYPE..... X1M  
 COUNTRY/ORGANIZATION. USGS  
 MAP CODE NO. OF REC..

## REPORTER

NAME..... BERGQUIST, JOEL R.  
 DATE..... 73 08  
 UPDATED..... 81 03  
 BY..... FERNS, MARK L. (BROOKS, HOWARD C.)

## NAME AND LOCATION

DEPOSIT NAME..... NONPAREIL MINE  
 SYNONYM NAME..... NEW IDRIAN

MINING DISTRICT/AREA/SUBDIST. BONANZA AREA

COUNTRY CODE..... US  
 COUNTRY NAME: UNITED STATES

STATE CODE..... OR  
 STATE NAME: OREGON

COUNTY..... DOUGLAS  
 DRAINAGE AREA..... 17100~~303~~ PACIFIC NORTHWEST  
 PHYSIOGRAPHIC PROV..... 13 COAST RANGE  
 LAND CLASSIFICATION..... 00

QUAD SCALE            QUAD NO OR NAME  
 1: 62500            GLIDE ( 1954 )

LATITUDE            LONGITUDE  
 43-24-49N            123-09-47W

UTM NORTHING        UTM EASTING        UTM ZONE NO  
 4806550.            486800.            +10

TWP..... 025S  
 RANGE..... 004W  
 SECTION.. 03 10  
 MERIDIAN. WILLAMETTE

ALTITUDE.. 880 FT

POSITION FROM NEAREST PROMINENT LOCALITY: 9 MILES EAST OF SUTHERLIN

LOCATION COMMENTS: TWO GROUPS OF WORKINGS ABOUT 2000 FT APART, THE NORTH NONPAREIL IN THE NW/4 SEC. 10 AND THE SOUTH NONPAREIL IN THE SW/4 SEC. 3. REFERENCE POINT IS AN ADIT ON SOUTH NONPAREIL

COMMODITY INFORMATION

COMMODITIES PRESENT..... HG

PRODUCER(PAST OR PRESENT):  
MAJOR PRODUCTS.. HG

COMMODITY SPECIALIST INFORMATION:  
HG

DRE MATERIALS (MINERALS, ROCKS, ETC.):  
CINNABAR, NATIVE MERCURY

MAIN DRE MINERALS:  
CINNABAR, NATIVE MERCURY, METACINNABAR, CALOMEL, SIDA C32

LIMONITE, MARCASITE

EXPLORATION AND DEVELOPMENT

STATUS OF EXPLOR. OR DEV. 6  
PROPERTY IS INACTIVE  
YEAR OF DISCOVERY..... 1865-1870  
NATURE OF DISCOVERY..... B  
PRESENT/LAST OWNER..... NONPAREIL QUICKSILVER CO., 1963

WORK DONE BY OTHER ORGANIZATIONS

YEAR WORK TYPE ORGANIZATION AND RESULTS  
1) 1944 DIREXPL USBM, EXPLORATORY DRILLING, FOUND NO DRE

EXPLOR. AND DEVELOP. COMMENTS:

DMEA CONTRACT RECOMMENDED DENIED IN 1956

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:

MINERALIZED FAULT ZONES  
FORM/SHAPE OF DEPOSIT: IRREGULAR

SIZE/DIRECTIONAL DATA

SIZE OF DEPOSIT..... SMALL  
STRIKE OF DREBODY.... NONPAREIL FAULT STRIKES N25W, DIPS 70S; CRAG FAULT STRIKES N45W, DIPS 70SW TO VERTICAL

COMMENTS(DESCRIPTION OF DEPOSIT):

SPARINGLY AND IRREGULARLY DISSEMINATED CINNABAR. LORE IS IN A ZONE THAT TRENDS NE 50 TO 100 FT. WIDE.

DESCRIPTION OF WORKINGS

DEPTH OF WORKINGS BELOW SURFACE. 175 FT  
LENGTH OF WORKINGS..... 2700 FT

COMMENTS(DESCRIP. OF WORKINGS):

2000 FT OF WORK ON 3 ADIT LEVELS AT SOUTH NONPAREIL: 12 SHORT ADITS

CUMULATIVE PRODUCTION (DRE, COMMOD., CONC., OVERBUR.)

ITEM	ACC EST	AMOUNT 0000.	THOUS. UNITS	YEAR	GRADE, REMARKS
15 HG		0000.340	FL	TO 1963	FROM ABOUT 3000 TONS OF DRE

PRODUCTION YEARS..... 1870 , 1880 , 1882 , 1925 , 1932

SOURCE OF INFORMATION (PRODUCTION).. BROOKS

PRODUCTION COMMENTS..... MOST OF THE PRODUCTION WAS FROM THE SOUTH NONPAREIL

COMMENTS (RESERVES).. NO RESERVES.

GEOLOGY AND MINERALOGY

AGE OF HOST ROCKS..... EOCENE  
HOST ROCK TYPES..... TUFFACEOUS SANDSTONE

AGE OF MINERALIZATION..... LATE TERT

PERTINENT MINERALOGY..... CALCITE, CHALCEDONY, SIDERITE, LIMONITE, MARCASITE, REALGAR

IMPORTANT DRE CONTROL/LOCUS.. ZONES OF BRECCIATION AND HYDROTHERMAL ALTERATION OF SANDSTONE ALONG FAULT ZONES AND INTERSECTING BEDDING PLANE SHEAR ZONES

GEOLOGICAL DESCRIPTIVE NOTES. UMPQUA FM. SEDIMENTS, TUFF, BASALT DIP SE.

GEOLOGY (SUPPLEMENTARY INFORMATION)

REGIONAL GEOLOGY

MAJOR REGIONAL STRUCTURES.. MINES ARE ON THE EAST LIMB OF A BROAD ANTICLINE STRIKING N25E AND DIPPING 45SE

LOCAL GEOLOGY

NAMES/AGE OF FORMATIONS, UNITS, OR ROCK TYPES

- 1) NAME: UMPQUA
- AGE: EO

SIGNIFICANT LOCAL STRUCTURES:  
LOCAL FAULTS

SIGNIFICANT ALTERATION:  
SILICA, CARBONATE, AND CLAY ALTERATION/IMPREGNATION OF ROCKS IN FAULT ZONES; SUPERGENE LIMONITIZATION OF SIDERITE AND MARCASITE

GENERAL REFERENCES

- 1) WELLS, F. G. AND WATERS, A. C., 1934, QUICKSILVER DEPOSITS OF SOUTHWESTERN OREGON: USGS BULL. 850
- 2) BAILEY, E. H., USGS PERSONAL FILES
- 3) BROOKS, H. C., 1963, QUICKSILVER IN OREGON: ODGMI BULL 55 , 223 P.

Nonpareil Bonanza District  
Douglas County

Name: Nonpareil Mine

Ownership: Mrs. Thomas Thornburg and Miss Phillis Manning of Sutherlin, Oregon own 764 acres of patented land in Sections 3, 4, 9 and 10, T. 25 S., R. 4 W., except for the mineral rights on 427 acres owned by Alonzo F. Brown, Estate, F. A. Brown, Executor, 1501 St. Albano Road, San Marino, California and W. E. Robertson, 286 1st Street, Portland, Oregon.

The Nonpareil Mine is located on the ground on which Messrs. Brown and Robertson hold the mineral rights.

Location: The property is located 8 miles east of Sutherlin. Elevation 800 feet. Nothing has been done with the property within the last few years.

Other than the above, there is no correction in your write-up.

Informant: J. E. Morrison. July 12, 1939.

Nonpareil.

Non-Boxed  
Dreyfus Co.

See 38/10 T 255 RHW.

Alice & Phyllis Manning Sutherland.

In U.S. G.S. Bull 850 pp 38 & plate 15  
also SDBM Bull no 4. pp 179