

(EXCERPTS)

REPORT ON STOCKWELL RANCH PLACER GROUND ++ GRANT COUNTY, ORE.

AREA+ Approximately 1920 acres on a high bench on south bank of river and west bank of Canyon Creek.

HISTORY:

Placer gold was first discovered in Canyon Creek, Oregon 1864. From then on to present time there has been a continual procession of miners engaged in mining gold in Canyon Creek or its tributaries. Total production per records at Salem, passes a gross of thirty-three million \$33,000,000.00 dollars in gold alone. This is coarse gold and averages about \$16. per ounce.

Many large nuggets of gold have been found from time to time.

Pay values in Canyon Creek were found within a distance of 8 miles up the creek, from its junction with the John Day River - and a distance of 4 miles down the John Day River from the mouth of Canyon Creek. No values were found above the mouth of Canyon Creek along the John Day River.

Since discovery, the gravel in Canyon Creek has been worked 3 times - 1st, by the early miners- 2nd, by chinese who followed the miners - 3rd, by a large electric dredge owned by a Portland man and operated under the supervision of the United States National Bank for several years until owner's debt to bank was paid. When dredge was operating in the richer ground it earned dividends as large as \$20,000.00 dollars per month. There the gravel had only 10 cents per cubic yard the dredge paid a small profit. Dredge was moved away in the fall of 1928 after finishing the ground the company owned.

PLACER GROUND:

Of the total of 1920 acres, so far only 800 acres have been prospected and proves to be valuable dredge ground. All of the 800 acres lie on top of the bench above mentioned and about 500 feet above Canyon Creek - balance of the are, although admitted to be as rich in gold, has not been prospected as extensively. The reason is that it is under the break of the bench and is rough- but this is good paying ground. Method used in prospecting ground is shown in plates IV and VI.

TESTS were made by taking a measured box hauled to the spring of water near the house, where gravel was washed in rocker, a long Tom or moneer's pan.

Plates III and V show the average lay of 800 acres of more or less level land which comprise the known dredge ground on top of bench, and which has been proven to have been at one time the bed of Canyon Creek. The dredge operators claimed that the gold and gravel which came out of the John Day River opposite north end of the ranch, is exactly the same as the gold and gravel which they dug out of the Canyon Creek. This creek was dredged for a distance of two miles only, because the authorities in Canyon ~~bank~~ City would not permit the dredge to pass thru the town, consequently the richest part of Canyon Creek for a distance of 4 miles was worked only twice.

Pay ground on the 800 acres has been found to extend from the grass roots down to where bedrock is ordinarily found. In many places a thick layer of clay was found in place of bedrock. A shaft was sunk in two places to a depth of 20 feet into the clay, but did not penetrate it. There are no boulders larger than a bucket in the 800 acres of dredge ground.

There is no way yet to tell how much of this area is underlaid with clay and how much with rock. The average depth of the gravel was from 20 to 25 ft. This would indicate from 25 to 30 million cubic yards of gravel in the tract of 800 acres.

The other 480 acres of rough ground on the same two sections are all hydraulic ground, and can be counted on to contain from 15 to 18 million cubic yards of gravel, equally as rich as the 800 acres - (see plate IV).

This would total from 40 to 48 million cubic yards of gravel, which will average close to 50 cts. per cubic yard of gravel on sections 27 and 34.

Did not copy - taken from Stockwell report which was made

In all of the prospecting done on this land in several years, the only dirt which paid less than 25 cts. per cubic yard was several loads which were loaded into an ordinary wagon box and hauled down to the creek and washed. All of the finest material, including some of the gold, was lost by sifting through the cracks in the wagon box.- balance of samples averaged 23 cts. per cubic yard.

Many samples from near bedrock and clay bed, gave returns of \$1.00 per cu. yard. Samples from a few places below the break, and in gulches where natural concentration had taken place, gave a maximum of \$3.50 per cubic yard.

The largest nugget found during the prospecting weighed \$3.50- but a good many others have been taken out of lesser value. In the many hundreds of samples taken none showed any flour or fine gold. All of the gold was coarse and was easily saved.

WEATHER CONDITIONS:

In summer weather is mostly warm and dry - in winter is mostly mild. About January there may be a spell of two weeks when temperature will go down to 10 below zero. Each winter a heavy fall of snow is experienced in the mountains, but does not last long at the ranch, where altitude is little above 3000 ft. above sea level.

Plate VII shows a tunnel driven into the side of the hill, following a bedrock- in this instance many \$1.00 samples were found.

The owners of this ranch have several claims ~~XXXXXX~~ to water flowing in Canyon Creek and its tributaries. Total is forty-three and thirty one one hundredths ~~XXXXXX~~ (43.31) cubic feet per second.

THE DITCH

Total length of ditch necessary to carry water from Canyon Creek to ranch is 8 miles - see plate 11.

The ditch is constructed within a right-of-way owned by the Stockwell's- the width varies from 30 to 60 feet. This allows the proper construction of the ditch and the berm on the low side.

About \$40,000.00 has been spent on the construction of the ditch to date. This amount of money has built only 7-1/8 miles. \$10,000.00 more will build the remainder 7/8 ~~XXXXXX~~ of a mile, and the head-gate., and \$2000.00 more will clean and repair the ditch which has been built and un-used for so long. Some of the portions have stood 8 years since construction was first started. The earliest portion of the ditch was built to carry only 20 cubic feet of water per second before the owners appropriated the amounts, since which time the ditch was built to the larger dimension. (See plate VIII). \$5,000.00 is enough to enlarge the narrow section or portions. All amounts of money quoted here are considered by the writer to be very liberal.

ADDITIONAL VALUES:

Intake of ditch is located about 2 miles or more above the gold bearing gravels. Between ditch and bed of canyon are several high benches of pay gravel which can be hydrauliced. The added expense to wash these benches would not exceed \$600.00 per setting. Benches vary from a few acres to 1/2 of a mining claim, and will produce more than \$10,000.00 each. It will pay to sluice much of the mountain side below the ditch.

In addition there are 200 (?) acres of Gov't land adjoining the ranch which is just as good as any inside the ranch boundaries, either for placer or ranch purposes.

(Signed) L.G. Skeels)

REPORT ON THE STOCKWELL RANCH.

PLACER GROUND

This Ranch is Composed of Sections Twenty-Seven Thirty-Three, and Thirty-Four, (27, 33) and (34) In Township Thirteen S.R. Thirty one E. in Grant County Oregon .

The Surface area is Approximately Nintee Hundred and Twenty (1920) Acers. Situated on A high bench on the south bank of the John Day River, and the west bank of Canyon Creek. The Ranch Lies one and one-half (1 1/2) miles west of Canyon City and John Day, Oregon.

HISTORY

Canyon City is the County Seat of Grant County Oregon, and the First Settled (Started) as A Mining Camp About 1864. When Placer Gold was First Discovered in Oregon, in Canyon Creek, from the time of the Discovery of Gold Down to the Present time has Been Continual Procession of Miners Engaged in Mining Gold in Canyon Creek, or some of Its Tributaries .the Total Production, as now Recorded at Salem in the Records at the State House. Passes A Gross of Thirty-Three Million \$33,000,000.00. Dollars in Gold alone. This Gold is Coarse and Averages About (\$16.00) Sixtee Dollars Per ounce.

In thme Past Many Large Nuggats Have Been Found Also Fine Gold and From time to Time Some of them are now Encountered .sa the Deposites of the Precious Metals are found close to the Orilinal Scourse of it.

The Pay Valies in Canyon Creek wea found within A Total Distance of Eight (8) Miles up the Creek from its Junction with the John Day River and A Distance of four (4) Miles Down thr John Day RiverFrom the Mouth of Canyon Creek. No Valus wer found in the River Sands Above the Mouth of Canyon Creek.

Since the Discovery the Gravel in Canyon Creek has been worked three (3) times, vis; First bythe earley miners;second ,by the chñnees who followed the miners;Third,by a large electric dredge owned by a Portland Oregon man;and operated under the supervision of the UNITED STATES NATIONAL BANK,of Portland,Oregon,for several years untilthe owners debt to the bank was paid.

When the dredge was operating in the richest ground,it earned dividends as large as Twenty Thousand(\$20,000.00)dollars per month. where the gravel had onlyten(10)cents per quibic yard the dredge paid a small profit. The dredge was moved away in the fall of 1928 after finishing the ground the compamy owned.

PLACER GROUND

Of the total of nineteen hundred and twenty(1920)acres,so far only eight hundred(800)acreshave been prospected and proven to be valuable dredging ground. All the eight hundred(800)acres lies within sections twenty seven and thirty four(27& 34)and on top of the bench above mentioned,about five hundred (500)feet above CanyonCreek.

The balance of the eraea in these two sections,although tthought to be as rich in gold,have not been prospected as extensively. The reason is that it is under the break of the bench and is rough,but this part is good piping ground; the method used in prospecting the ground is shown. See Plat IV & VI.

The tests were made by taking ameasured box mounted on a sled,or "go-devil",and hauled by a team of horses to a spring of water near the

house, where the gravel was washed in a rocker, or long tom, or miners pan. Plats III and V show the average lay of the eight hundred (800) acres or more, or less; level land which comprises the known dredge ground on top of the bench, and which has been proven to have been at one ~~xx~~ time the bed of Canyon Creek.

The dredge operators claim that the gold and the gravel which they dug out of the bed of the John Day River, opposite the north end of the ranch, is exactly the same as the gold and gravel as they dug out of Canyon Creek. This Creek was dredged for a distance of two miles only, because the authorities of Canyon City, would not permit the dredge to pass through the town, consequently the richest part of Canyon Creek for a distance of four miles was only worked twice.

The pay ground on the eight hundred (800) acres has been found to extend from the grass roots down to bed rock where the richest pay is ordinarily is found. In many places a thick layer of clay was found in place of bed rock. ~~xxxxxxx~~ a shaft was sunk / In two places of twenty (20) feet into the clay, but did not penetrate it. There are no boulders larger than a bucket in the eight hundred (800) acres of dredge ground.

There is no way yet to tell how much of this area is underlaid with clay, and how much with rock. The average depth of the gravel was found to be from twenty (20) to twenty five feet, this would indicate from twenty-five to thirty million cubic ~~xxxx~~ yards of gravel in the tract of eight hundred (800) acres; the other four hundred and eighty (480) acres of rough ground on these two sections are all hydraulic ground, and can be counted on to contain from fifteen (15) to eighteen (18) million cubic yards of gravel. Equally as rich as the eight hundred (800) acres.

See Plat IV. This would total from forty to forty eight (40 to 48) million cubic yards of gravel which will close to fifty (50) Cents for each cubic yards of gravel on sections twenty-seven &

and thirty four(27 & 34)

~~All~~all the prospecting done on these lands in several years, the only dirt which paid less than less than twenty-five(25) cents per cubic yard, were several lodes, which were loaded into an ordinary wagon box and hauled down to the creek near Canyon City and washed.

all of the finest materials, including some of the gold was lost by sifting through the cracks in the wagon box. The balance of these averaged twenty three cents per cubic yard.

Many samples of gravel from near bedrock ~~at~~ and the clay bed gave returns of one(\$1.00)dollar per cubic yard. Samples of a few places below the break and in little gulches, where natural concentration had taken place, gave a maximum of three and one-half dollars per cubic yard.

The largest nugget found during the prospecting, weighed three and one-half(\$5.50)Dollars, but a good many others have been taken out of less value. In the many hundred of samples taken, none showed flouer or fine gold .All the gold was coarse and easily saved?

WEATHER CONDITIONS

In summer the weather is warm and dry, and in the winter it is mostly mild About in January there may be a spsll of two weeks when the temperture will go as low as ten(10)degrees below Zero. Each winter a heavy fall of snow is experienced in the mountains, but does not last long at the ranch, where the altitude is a little above three Thousand (3,000.)feet above sea level.

Plat VII shows a tunnel driven into the side of the hill, following the bedrock; in this instance, many one(\$1.00)dollar samples were found?

The owners of this ranch have several claims to water flowing in Canyon creek and its tributaries. The total is forty-three(43)and thirty one(31)hundredths cubic feet per second; as followes : Twenty cubic feet

(20) per second from canyon Creek, for mining purposes; Twenty two and eighty one hundredths (22.81) cubic feet per second, from Canyon Creek, for irrigation purposes; One-half cubic (1/2) cubic feet per second from four (4) tributaries of Canyon Creek and crossed by the ditch, known as Blue Gulch, Cold Creek, Rodabusch Creek, and overholt creek, for irrigation purposes.

In the County Engineers Office are records of the annual run-off Canyon Creek which shows that Canyon Creek will provide this amount of water during the driest months of the year, July & August. See plate IX.

These photographs were taken in August, and show a man standing in the water at the point of intake of the ditch. These water rights together with all others pertaining to the John Ddy River System, are now being adjudicated by the State Engineer. There are no contests filed against either of the rights so far.

THE DITCH

The total length of the ditch necessary to carry the water from Canyon Creek is eight (8) miles. SEE plt/ 11,

This ditch is constructed within a right of way owned by the Stockwells the width of which varies from thirty (30) to sixty (60) feet this allows the proper grade of the ditch and the berm on the lower side.

About forty thousand (40,000.) dollars have been spent on the construction of the ditch to date. This amount of money has built only seven and one-eighth (7 1/8) miles. Ten thousand (\$10,000.00) dollars more will build the remainder, seven-eighths (7/8) of a mile, and the head gate, and Two thousand (\$2,000.) more will clean and repair the ditch which has been built and unused for a long time. Some of the portions have stood eight years, since the construction was first started/. The earliest portion of the ditch , was built to carry only twenty (20) cubic feet of water per second

Before the owners appropriated the other amounts, since which the ditch was built in the larger dimensions SEE PLAT VIII/

Five thousand(\$5,000~~00~~)dollars is enough to enlarge the narrow portions. All amounts of money quoted here, is required to put the ditch in operation, are considered by the writer to be very liberal. under some of the would not be used.

ADDITIONAL VALUES

The intake of the ditch is located about two(2)miles or more above the gold bearing gravel. Between the ditch and the bed of Canyon Creek are several high benches of pay gravel, which can be hydraulic as soon as the water is turned into the ditch.

The added expense of preparing to wash these benches would not exceed six hundred(\$600)dollars for each setting.

these benches vary in size from a few acres to one-half of a mining claim, and will produce more than ten thousand(\$10,000.00)dollars each, as some of them are known to be quite rich.

It will pay to sluice much of the mountain side below the ditch. In addition there are three hundred acres of government land adjoining the ranch boundaries, either for placer mining or ranch purposes.

Signed

L . G . Skeels

EXCEPRTS +++ RE STOCKWELL RANCH MINING PROPERTIES

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Clatskanie, Ore.
Aug. 31, 1926.

A few weeks ago I made an examination of your entire property, including the water ditch. I also prospected the property some.

I spent over six years at Nome, Alaska, in placer mining, hydraulicing and sluicing- most of the time I was with the Pioneer Mining Co., and did considerable advance prospecting for them. Also had considerable experience with management of ditches in connection with mining enterprises. For this reason I was particularly anxious to make an examination of your property. I selected my own places for samples and passed two or three pans of dirt from each place, and in every pan obtained good showings of gold colors, many of which could be picked up with the fingers. I am satisfied you have a large area of valuable gold placer diggings, and that all that is required is to complete your ditch for very profitable mining.

I should also mention the fact that your property lies in an excellent position for placer mining in an economical manner, and well adapted to the sluice box. You have ample room for tailings and debris. You have a splendid ditch and at this time most of same is completed. I predict that when you get water on your property that it will be profitable from the start and increase rapidly in value.

Yours very truly
(Signed) O.K.Olson.

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Vancouver, Wash. Sep. 23rd 1926.

At the request of several parties interested in your holdings of 1920 acres in Grant Co. Ore., I submit the following data and findings from numerous personal inspections and prospectings extending over a long period of years.

I was born and raised at John Day, Ore., Sep. 10, 1878 and have known this property all my life - Have always known this property held rich deposits of gold, but from its elevation it was considered impossible for mining, being from 500 to 600 feet above Canyon Creek, which parallels the East Side at the base of the hill, and John Day River and valley on the north side.

During 1906 I visited the U.S. Mint at San Francisco and was informed that about \$16,000,000.00 of gold had come to the mint from towns of Canyon City and John Day, all taken from Canyon Creek since the gold strike in the 60s- all of which was placer mining.

Bed and channel of Canyon Creek was first mined, and many years later the Humboldt Mining Co., built a ditch and operated by hydraulic for many years along the side hill under the East side of the property at an elevation of 100 to 200 feet.

About 10 years ago, the Empire Gold Mining and Grudge Co., Portland, built a dredge at John Day and re-mined the channel bed of Canyon Creek from John Day to Canyon City and return. I was in their employ for 3½ years, operating the dredge, resigning May 12, 1922. This dredge is now mining bottom lands of the valley near the River, about 2 miles west of John Day. It is my opinion the gold they are getting was washed down from the Stockwell property.

About 7 or 8 years ago application was made by Millard Stockwell for approximately 1,600 inches (miners) of water- this to be used for irrigation and mining. Application specified a ditch, from the in-take of Canyon Creek

to a point on the Stockwell property, would be built and ready when this water was adjudicated. This filing of water rights has been kept alive by the completion of about 7 miles of ditch 3 ft. high 4 ft. wide, and outer wall 2 ft. thick, at an expense of about \$40,000.00. Entire distance of ditch necessary, 8-1/2 miles. I have personally inspected the completed ditch, know that it is substantially constructed, and has the capacity area, and I estimate \$25,000. to \$30,000.00 should complete the ditch and furnish the necessary pipe etc., to mine this property by hydraulic pressure.

I would estimate approximately one hundred million (100,000,000) yards of gold bearing gravel on the 1920 acres at a conservative average of twenty-six cts. (26 cts) per yard, and I believe it will take 20 to 25 years to mine it all.

The ditch running full capacity could operate 4 hydraulic pipes. Ditch and water would be very valuable for irrigation after mining was completed, or to use for further mining on adjacent properties on a royalty basis.

All tailings can be held on the property by bulkheads.

Yours truly,

(COPY)

(Signed) Frank C. Hanchev.

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Also see Government reports on Stockwell Ranch for further information:
Page 163 - 1914 - No. 5.

CONCLUSION

The values in gold per cubic yard found in the testing and resampling of previously dug shafts and tunnels were much higher than the average placer property. There is a marked uniformity of values which indicates a very equal distribution of the gold thruout the gravel and also conversely, the absence of alternate rich pay streaks and barren areas. This, however, is to be expected in a deposit of this type which was laid down by comparatively slow stream action.

The untested areas were prospected by panning small samples. Colors were found in every pan except two, indicating that the entire body of gravel is gold bearing.

The water, when brought to the property by the Stockwell Ditch, will control several additional valuable hydraulic properties outside the limits of the Stockwell Ranch. The gravel is well rounded and will wash easily. No difficulty should be encountered in the saving of the gold as it is generally heavy although of medium size.

If the indicated increase in the price of gold is made final, the value of the property will be enhanced by half.

INTRODUCTION

The Stockwell Ranch is situated in Grant County, Oregon, approximately two miles by road from Canyon City, the county seat. Canyon City is three hundred and fifteen miles from Portland, Ore. and can be reached by way of the Oregon Trail to Arlington and the John Day Highway from Arlington to the property. The area consists of three full sections as shown on the accompanying sketch map, namely twenty-seven, thirty-three and thirty-four, all in Township Thirteen South, Range Thirty-one East, Willamette Meridian, or Nineteen hundred and twenty acres more or less, all held in fee.

The Stockwell Ranch is located on a bench five hundred feet above the John Day Valley, which slopes gently towards the northwest on a grade slightly less than one percent. The mean elevation is three thousand five hundred and twenty feet above sea level.

The climate of the John Day valley is not as extreme as most of the adjacent territory. There is a short period of sub-zero weather during the winter but snowfall is seldom in excess of three feet. Summers are usually very dry and hot. There should not be more than three weeks during the year in which operations will be hampered by weather conditions.

HISTORY

The Stockwell Ranch lies within the most important and historically productive placer mining area in the State of Oregon. Gold was first discovered in Canyon Creek, which flanks the Stockwell property on the east, in the year 1862 and production within a radius of five miles of Canyon City has exceeded Twenty Million Dollars to date. (See U.S.G.S. Twenty second Annual Report - W. Lindgren). This gold was all won from Canyon Creek and its tributaries. The rich placers that were found on the northern flank of Canyon Mountain are an exception.

The gravels on the Stockwell Ranch have never been exploited. After the hydraulic mines and smaller hand operations were presumably worked out in Canyon Creek, the remaining ground was dredged, including a section of the John Day valley for four miles below the mouth of Canyon Creek. Records of dredge production are not obtainable, but it is evident that the operations were profitable. Historical record of the first operations along Canyon Creek and on the terraces above the creek and just under the east rim of the Stockwell property, indicates that the ground was very rich.

GEOLOGY

The geology of the Stockwell ranch and the adjoining country is very interesting. The basaltic lavas which, at intervals over a period of several thousand years in the Middle Neocene age, flowed over much of Eastern and Central Oregon, dammed what is now the upper John Day valley and formed a long narrow lake. The Strawberry Mountains directly south were above the level of this flow.

After the effusive lavas had quieted, there followed a long period of stream building and erosion which has continued uninterrupted to date. There has been no major geologic activity since the lava flows. The general drainage from Canyon Mountain and the surrounding mountains was towards the west and north.

The gravel which lies on the Stockwell Ranch was deposited by streams flowing northwesterly from Canyon Mountain into this lake. Later erosion gradually cut away the dam and formed the John Day valley. In a similar manner, the canyon in which Canyon Creek now flows, was formed. This left the segment now known as the Stockwell Ranch isolated as a bench five hundred feet higher than the present elevation of the stream courses. These gravels were all gold bearing. The terraces left along Canyon Creek as erosion deepened the valley, have all produced much gold. They are remnants of the immense area of gravel of which the Stockwell Ranch alone remains intact. It is necessary to explain generally the geology of Canyon Mountain and the adjoining hills to properly describe the origin of the gold in the gravels.

These mountains are generally basic igneous rocks, gabbros, diorites, peridotites and the alteration product, serpentine. They have been subjected to a major earth shattering which opened countless cracks and minor fissures without regard to strike or dip. During a later period, ascending mineralizing solutions forced their way upward and deposited gold along the many tiny weakness planes. This mountain has long been famous for its "pockets", many of which have produced several thousand dollars in gold. These pockets are areas of local enrichment where gold, due to favorable chemical conditions, has been precipitated hit or miss. The erosion of these rocks with their con-

tained gold bearing seams and pockets, is responsible for the rich placer gravels below.

CHARACTER OF GRAVEL AND BEDROCK

The gravel which lies on the Stockwell Ranch was deposited over a wide area and by moderately slow stream action. There is reason to believe that no boulders of large size will be found anywhere within the deposit. In all places examined, the gravel is very uniform in size and gradation. Plate No. 1, which is a photograph of the gravel at the portal of Number Two tunnel, shows the relative size and character of the wash. Fine and coarse wash are intermixed from surface to bedrock in all sections inspected.

The gravel is tight in a mining sense, but it is bound with fine sand and very little clay. It was reported that clay seams were to be found interbedded with gravel but none were observed. There is no overburden on the property - the gravel extends to the surface. Bedrock on the east half of Section Thirty-four is serpentine, slightly oxidized, and comparatively soft. On the western area, bedrock is composed of a light colored rhyolitic tuff which directly overlays the basaltic lava. This tuff is quite soft and will clean readily.

SAMPLING METHODS AND DATA

There are five short tunnels along the east rim of the ground as shown on the sketch. Measured samples were taken from the tunnels and the material from each was concentrated by using a rocker. In like manner, the four shafts were generally sampled and the gold recovered by rocking and panning. Test pits were sunk in Founds Gulch as also shown on the sketch and the measured material rocked to recover the gold. The number of milligrams of gold in each sample was calculated to cents per cubic yard.

Results of tests are as follows - gold at \$20.67 per troy ounce.:

Tunnel No.	1	- - - - -	38.6	¢	per	cu.	yard
"	"	2	- - - - -	25.6	¢	"	"
"	"	3	- - - - -	15.4	¢	"	"
"	"	4	- - - - -	11.8	¢	"	"
"	"	5	- - - - -	28.6	¢	"	"
Arithmetical Average	-	- - - - -	24.0	¢	"	"	"
Shaft No.	1	- - - - -	36.8	¢	"	"	"
"	"	2	- - - - -	28.6	¢	"	"
"	"	3	- - - - -	25.2	¢	"	"
"	"	4	- - - - -	17.1	¢	"	"
Arithmetical Average	-	- - - - -	26.9	¢	"	"	"

ROUNDS GULCH

Test Pit No.	1	- - - - -	46.0	¢	"	"	"
"	"	2	- - - - -	45.7	¢	"	"
"	"	3	- - - - -	52.8	¢	"	"
"	"	4	- - - - -	14.4	¢	"	"
"	"	5	- - - - -	49.4	¢	"	"
"	"	6	- - - - -	52.2	¢	"	"
"	"	7	- - - - -	75.4	¢	"	"
"	"	8	- - - - -	11.7	¢	"	"
Arithmetical Average	-	- - - - -	43.7	¢	"	"	"

There is a channel which runs westerly across the lower end of the property. This channel is approximately three hundred feet wide and appears to be the westerly extension of the Humboldt series. Two shafts were sunk in the gulch on this channel.

Shaft Number 1 was sunk thirty-two feet to bedrock; Shaft Number 2 was not sunk to bedrock but was abandoned at a depth of ten feet. The gravel in this channel was barren at this point but further exploration in the nature of a cross-cut at bedrock should be pursued to determine whether or not a pay streak exists.

GRADE - VOLUME OF GRAVEL - DUMP - ETC.

Water can be brought to Rounds Gulch through the Stockwell ditch at a head of four hundred feet near the lower end of the gulch. The wash in this gulch is shallow and probably will not average more than three yards in depth. However, at the upper end of the gulch, the gravel is deeper and much of the spill from the main body above can be hydraulicked. In all there will be approximately One million five hundred thousand yards of gravel which can be mined by hydraulic means in Rounds Gulch over a distance of six thousand feet. The grade is five and five tenths percent. This is ample for any hydraulic operation. It will be necessary to build a series of impounding dams for tailings near the mouth of the gulch and also to flume the waste water across the highway below the property.

The main body of gravel lies upon the bench which comprises the Stockwell Ranch property. The gravel varies from twenty to thirty feet in depth along the eastern limit and, due to the nature of the deposit, no great variation in depth may be expected. There is at least seven hundred acres of this ground which is practical to dredge and which contains between eighteen and twenty-five million cubic yards of gravel.

CHARACTER OF GOLD

The gold in the Stockwell gravel is coarse, well rounded and generally heavy. Such fine particles as were recovered were 'thick'. No nuggets were recovered in the testing larger than fifteen cents. The fineness is .925 which makes the gold worth Nineteen Dollars and Twelve cents per troy ounce calculated at Twenty Dollars and Sixty-seven Cents per fine ounce, the present mint value of gold in the United States.

WATER SUPPLY

The Stockwell ranch owns a water right to twenty cubic feet per secon (One Thousand miner's inches) from Canyon Creek. The ditch ^{which} will bring this water to the property is incompleated at the present date. An estimate of the cost to complete this ditch has been prepared by Mr. U. Ernest Nelson, a consulting Civil Engineer of Portland, which is included in this report.

RECOMMENDATIONS

Complete the Stockwell ditch to carry the full twenty second feet permitted in the water right as recommended in the report of Mr. U. Ernest Nelson.

A program of drilling should be started on the Stockwell Ranch to determine not only the value of the balance of the gravel in gold, but also to ascertain the maximum and average depth of the entire body of gravel, as well as to eliminate any uncertainty of bedrock conditions in the untested area.

Make a complete survey of the entire holdings together with a contour map with contour intervals of two feet on the bench proper.

After the survey is completed, set up a hydraulic operation on Rounds Gulch.

REPORT

on the

STOCKWELL DITCH.

Grant County, Oregon.

By
U. Ernest Nelson,
Civil & Irrigation Engineer

431 Commerce Building,
Portland, Oregon.

The Stockwell ditch located near Canyon City, Oregon, is an incomplete ditch about $8\frac{1}{2}$ miles in length, upon which probably \$40,000 has been spent over a period of years in an attempt to bring water for irrigation and mining purposes to Sections 27, 33 and 34, T. 15 S. R. 51 E. W.M. in Grant County, Oregon, which lies on the high bench just west of the towns of John Day and Canyon City. Lack of funds was the reason for the ditch being unfinished.

The ditch was never completely finished at any point, although at certain sections very little clearing of the ditch will be necessary to put it into shape.

Through certain of the rocky portions it is evident that the work was not done with close engineering supervision with the result that the ditch section was not set far enough into the side hill to provide tight material for the outer section of the ditch. It will be necessary to bench out these sections and install flumes.

At the time the work was first started, provision was made for diverting Canyon Creek at a certain point about 5 miles south of Canyon City and considerable earth work excavation was done on the end of the ditch. Recent changes in the highway which has just been constructed from John Day to Burns has caused a change in the channel of Canyon Creek which

is now diverted from its old position east of the old highway to east of the new highway. This has made it necessary to provide a new diversion point about $6\frac{1}{2}$ feet higher in elevation than the old intake and about 400 feet up stream. Due to this creek and highway change, approximately 2000 feet of pipe will be necessary.

WATER RIGHTS:

The water rights all appear to be in good standing with time until October 1, 1933 within which to begin work. I have examined the records in the State Engineer's office and found but few filings and all for small quantities on Canyon Creek prior to the Stockwell filings. I would say therefore that the water rights are secure.

I constructed a weir in Canyon Creek near the proposed intake on July 25, 1933, and found a flow of 6.5 sec. ft. Readings in previous years that I have taken on Canyon Creek in the fall months convince me that for a period of about 3 months that 6 sec. ft. would probably be our maximum diversion. For that reason I have computed a 2 acre storage on the property to conserve the night flow which would amount to about 6 acre feet. This, with the direct flow would allow 12 sec. ft. for a 12 hour daylight operation through about 3 months of the year. The balance of the year the flow would be ample for 24 hour operation.

A general summary of construction shows that there are no serious problems. The ditch section as a whole was formerly of such size that it closely conformed to the computed section for the proposed ditch. In some places, due to improper engineering supervision, the grade of the ditch is high and a rock section will have to be excavated and in most

sections of the earth excavation, the embankment side is low. Where the flume sections are inaccessible to truck, I have estimated on the basis of delivering the flume materials on the highway and transporting them by highline up the mountain side to the place of assembly. This distance should not exceed 1000 feet at any place with exception of possibly 500 feet of the ditch line. All of the flume will be without extensive trestle work. A few sections will require 20 to 30 foot posts in trestle bents but the amount of timber used in trestling will be small. Most of the timber needed will be for stringers and hangers and I have included this in the price per foot.

In estimating the flume lengths I have taken most of the rock sections and computed for flume to save extensive seepage although as construction proceeds numerous economies may be effected with considerable saving of flume which will probably result in lower cost throughout.

Timber prices for dimension lumber various from \$15 to \$45 per thousand according to the grade of timber, but I have estimated we should be able to contract lumber No. 2 Common or better for not to exceed \$30 per M.

In making this estimate I have calculated only to the end of the ditch as now constructed which is well on the property. About a mile of additional earth construction will be needed to carry water to the penstock at lower end of Rounds' Gulch for beginning of hydraulic operations. This would all be V.-ditcher work and should not exceed \$400 per mile including structures.

WASTEWAYS:

It will be necessary to provide wasteways at various places along

the ditch, preferably in rock sections. I have not set up separate costs for these as the amount will be negligible and favorable places can be determined as work progresses.

I have also provided for blow-off valves in the pipe section near the intake at the low point to clear of sand and silt and to drain pipe section in sub-zero weather to prevent bursting of pipe.

REMARKS:

Wells in the application for diversion of water, the plans call for timber crib diversion dam, I have calculated on concrete structure with removable timber central section. The intake is to be properly screened and a protection against floating debris and for the protection of fish life.

SEEPAGE AND EVAPORATION:

Seepage and evaporation losses in this section can only be determined by experience. I am of the opinion that, due to the high content of fine clay, after a few months' operation this seepage loss will not be high. In the rock sections all of the seams are tight and well packed with ~~slightly~~ ^{slightly} ~~granulated~~ material. However, I have estimated flume for one-quarter of the distance where there would be no seepage loss and a very inexpensive covering of 1 x 12 lumber would eliminate most of the evaporation for the flume sections. As the operation proceeds and should seepage and evaporation be high, it should be easy to install yearly additional flume sections at not to exceed \$3000 per mile at present prices until a metal conduit from intake to outlet was provided with no loss in flow. This is only mentioned as an extreme possibility.

WATER SUPPLY FOR INCREASED OPERATION:

As before stated the water supply is ample throughout nine months of the year for continuous operation for during most of the time, 20 second feet would be available and this is the computed size of the ditch. Periodically in probably 8 to 10 year periods, an unusual dry year might cause a shut down for two or three months. To offset this, there is a considerable portion of each year, possibly 3 months, in which large quantities of water would flow in Canyon Creek and an additional mining operation might be carried on the property. Assuming that the ditch was constructed for 40 sec. ft., additional flume section #98 of at least a mile would be necessary at around \$ 7,500

Increased size of 2 miles of flume	10,000 increase
2000 ft. 32" pipe at intake	2,000 "
Enlarging ditch section 10,000 cu.yds. @ 40¢	<u>4,000</u>
Total.....	\$23,500

This figure represents the cost above that of a 20 sec. ft. ditch, the estimate of which is as follows:

ESTIMATE, 20 SEC. FT. DITCH:

Headgate, dam and intake	\$ 200.00
1980 lin. ft. 26" - 12 gauge pipe @ \$2.75 in place	\$1,445.00
Stilling basin	75.00
Sta. 19-38+80. 10 yds per sta. trimming 198 cu. yds. @ 40¢	87.20
38+80 -41 - 220 lin. ft. flume #72 Reclamation type @ \$1.50 in place	330.00
41-45 - 400 lin. ft. trimming 50 cu. yds @ 40¢	20.00

Unexcavated 45-54 Earth excavation 1700 cu.yds. @ 40¢	680.00
54-59+50 flume 550 lin. ft.	825.00
100 ft. trestle up to 24 ft; 100 ft. on short radius curve in place	150.00
Excavation for flume	60.00
250 lin. ft. trimming - 60 cu. yds. @ 40¢	24.00
62-64 - 200 lin. ft. flume	300.00
64-81 - 420 lin. ft. flume	630.00
1300 ft. earth trimming - 20 yds. 260 yds. @ 40¢	104.00
81-107 - 2600 ft. earth trimming 500 cu. yds. @ 40¢	200.00
Sta. 110 unexcavated 375 ft. flume around point	562.50
50 ft. flume near tunnel	75.00
80 ft. tunnel @ \$5.00 per ft.	400.00
70-180 - 1000 cu. yds. earth @ 40¢	400.00
50 cu. yds rock	50.00
2500 ft. excavation to 214 350 cu. yds. @ 40¢	140.00
Near 204 - 150 ft. flume	225.00
Near 218 - 50 ft. flume	75.00
204-221 excavation 250 cu. yds. @ 40¢	100.00
221-223 - 250 ft. flume (Blue Gulch	300.00
100 ft. trestle up to 30 ft.	150.00
223-229 - 800 lin. ft. flume	900.00
229-237 - 800 lin. ft. flume	1,200.00
100 ft. trestle to 30	125.00
237-240 - 50 yds. solid \$75.00	
50 yds. debris 20.00	95.00

240-262	- 2200 ft. flume	3,300.00
Excavating	110 cu. yds	56.00
262-265	50 cu. yds. solid	75.00
265-268	300 ft. flume to 24 trestle	450.00
Trestle		150.00
268-272	Excavation 75 cu. yds.	30.00
50 lin. ft. flume		75.00
272+50-79+50	700 l-100' cu. yds. 60 solid rock \$90 40 earth 16	108.00
79+50-80+50	100 ft. flume	150.00
81-83+00	250 ft. flume around rock	375.00
Excavation for flume		75.00
286-286+50	Rock excavation 100 cu. yds. @ 1.50	150.00
286+50-324	(3750 lin. ft.) 750 lin. ft. rock = 150 cu.yds. 225.00	
	3000 ft. flume	4,500.00
324-24+60	Rock 180 yds. @ \$1.50	270.00
324+60-333	840 lin. ft. = 150 yds. rock	225.00
333-336	Flume 300 lin. ft.	450.00
336-336+60	Rock cut 180 cu.yds.	270.00
336+60-343	640 ft. flume	960.00
Footing excavation		100.00
343+70-345	Rock excavation 200 cu.yds.	300.00
Tunnel enlargement	@ \$1.00 per ft.	65.00
100 stations	@ 7.5 cu.yd. per sta. = 750 cu. yds @ 40¢	300.00
350 ft. serpentine excavation	@ 70¢	245.00
200 cu. ft. solid rock	@ \$1.50	300.00

Impounding reservoir		350.00
Reservoir gates		75.00
Grade crossings for roads; trimming ditch for flume section (labor)		1,000.00
22 Concrete transitions	@ \$35.00	770.00
Rental - Hoist and lines; and labor taking flume from highway to ditch		<u>500.00</u>
	Total.....	<u>\$27,825.70</u>
Plus 10% for Engineering and contingencies		<u>2,782.57</u>
	Grand Total...	<u>30,608.27</u>

In making this estimate I have attempted to keep within reasonable latitude of price changes. On certain items, such as pipe line and flume the figures used are good for 60 days from date and with prices for excavation all well above current prices, I am of the opinion that careful supervision during construction will effect substantial economies.

Respectfully submitted,

U. Ernest Nelson
Reg. Engineer #406

July 31, 1933.

IRRIGATION REPORT

STOCKWELL RANCH

The Stockwell Ranch of 1920 acres consisting of Sections 27, 28 and 24, T. 15 S. R. 21 E. W.M., lies on a plateau about 2600 feet in elevation immediately west of the towns of Garyon City and John Day in Grant County, Oregon.

The land was farmed for a few years and produced phenomenal crops of grain.

In an attempt to provide moisture for a wider crop range water fillings were made several years ago and kept in good standing and a diversion from Garyon Creek was made about 6 miles south of Garyon City. About \$20,000 was expended over a period of several years in constructing a ditch from the diversion point about 8 1/2 miles in length and following the side hill most of the way to a point in the easterly part of Section 34.

At various places there are uncompleted sections and flume sections not built and it is now necessary to reconstruct portions of the ditch where work was done and to construct the balance of the project.

I have made an inspection of the property and a survey and estimate of cost of constructing the ditch to supply water to the property and have made an analysis of the climatological records for that section.

I also constructed a weir in Garyon Creek to determine the flow in the dry period of the year as a check against what few official gauges that were available. I have also taken readings on several gauges in the fall months in Garyon Creek during the past five years and am satisfied as to the quantity of water available for the irrigation of the property.

SOIL:

The soil on this land is a fine silt basically of eroded basalt mixed with fine gravel and averaging about $2\frac{1}{2}$ feet in depth. It is underlain by about 30 feet of clayey gravel which rests on serpentine bedrock. The slope for the major portion is slightly to the north with easterly and westerly slopes to the drains that traverse the property. Approximately 1500 acres are suitable for cultivation, 1000 acres of which is practically level east and west with about a 1% slope to the north. The character of the soil and subsoil together with the natural drainage precludes any danger of waterlogging. The soil is not alkaline and with proper water supply should provide a wide crop range.

DUTY OF WATER:

By comparing similar soils and climates I have estimated $1\frac{1}{2}$ acre feet as ample for this property.

RAINFALL:

Average rainfall over a period of 24 years (1891-1914) shows a precipitation of 15.83 inches per year with only two months, July and August, with less than one inch precipitation. Average for April 1.62; May 2.01; June 1.20; July 0.44; August 0.22 and September 1.26. This shows the uniform precipitation thru the year with 6.75 inches of rainfall thru the growing season. This favorable feature was taken into consideration in arriving at the water duty.

TEMPERATURE:

Mean temperature at Canyon City is 51.1 for the year with monthly means as follows:

	April	49.1	May	56.1	June	61.0	July	69.5	Aug.	70.9	Sep.	61.2
Mean Max. temp.	"	65.1	"	70.2	"	76.7	"	86.8	"	89.4	"	76.1

Mean Min. temp. 35.0 for the year with monthly means as follows:

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
	22.7	24.3	28.4	33.7	39.4	44.3	49.2	41.9	41.9	35.	29.2	22.7

The highest recorded temperature over a 13 year period was 109 in August. High temperatures by months are as follows:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
69	70	78	97	98	104	107	109	102	94	79	64

Lowest temperature over 13 years period -14. Lowest temperature by months as follows:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
-14	-12	-5	20	21	28	33	28	22	15	1	-10

GROWING SEASON:

A verage length of growing season, frost to frost - 179 days with average date of last killing frost in spring - April 23.

" " " " First " " " fall - Oct. 24

The latest date of last killing frost in spring - May 18

" earliest " " first " " " Fall - Oct. 15

The latest date with temp. below 32 in spring - June 13, 1894

" earliest " " " " 32 in fall - Sept. 20, 1896

An analysis of the foregoing with due regard for all extremes shows that thru the growing season the climate is mild for this section of the country. The prevailing winds for March to September are westerly. The

temperature range is such that only a casual inspection will show that all grains, hay crops with especial emphasis on alfalfa, root crops, beans and other legumes can be raised profitably here.

Within the past week I have observed excellent crops of various vegetables growing luxuriantly in this section where water was beneficially used.

The water permit in good standing covers about 22 sec. feet from Canyon Creek. Reading made by the writer and supported by evidence furnished by residents of Canyon City and John Day convinces me that during the period from July 15 to September 15 available water supply would average about 6 sec. feet on the property. This would mean that for alfalfa, root or leguminous crops about 480 acres could be intensively irrigated and farmed but grains and annual hay crops would have had their full supply of water, would have matured and been harvested before this slack period. This in itself is not a handicap as it merely forces a natural rotation of irrigated crops to the great advantage of the land. Where one is confined to one-third of the tillable land being intensively farmed with the soil all identical a natural rotation follows.

IMPOUNDING RESERVOIR:

Thru the drier portion of the year I have estimated for an impounding reservoir of 6 acre feet to conserve the night flow so that daylight irrigation over 12 hour periods would give a constant 12 sec. feet. With this increased head land can be covered in a shorter time and more economically both as to labor and proper conservation of water. The writer has observed on various projects that where large heads are made available

the farmer will cover the same area in one-third of the time that he would with half the head as the tendency under low flow is to use too much water per acre.

DITCH LINE:

I have made a survey and estimate of the ditch line computed to carry 20 sec. feet of water. Condensed into a short statement it requires a concrete headgate and diversion dam with screened intake, 2000 feet of 24" pipe with a fall of 5 ft. per thousand, about 10,000 feet of metal flume, new construction in excavation and reconstruction of other portions with necessary wasteways and stilling basins at

a cost of	\$27,825.70
Added 12% for engineering and contingencies	<u>3,477.96</u>
Total -	\$31,303.66

This would amount to approximately \$20 per acre for the water on the land, an absurdly low figure when compared with any of the well known projects in our arid and semi-arid lands.

MAINTENANCE:

The character of construction contemplated which has been considered from the standpoint of excellence and permanence makes the maintenance cost very low. I should say that \$1.00 per acre would carry over any period of years and provide all replacements necessary.

SEEPAGE AND EVAPORATION:

Seepage and evaporation losses in this section can only be determined by experience. I am of the opinion that, due to the high content

of fine clay, after a few months' operation this seepage loss will not be high. In the rock sections all of the seams are tight and well packed with clayey cemented material. However, I have estimated flume loss one-fourth of the distance where there would be no seepage loss and a very inexpensive covering of 1 x 12 lumber would eliminate most of the evaporation for the flume sections. As the operation proceeds and should seepage and evaporation be high, it should be easy to install yearly additional flume sections at not to exceed \$3000 per mile at present prices until a metal conduit from intake to outlet was provided with no loss in flow. This is only mentioned as an extreme possibility.

SUMMARY:

I believe the property to be an excellent ranch, soil, climate, drainage, water supply and low cost of development leading themselves to make it an attractive development.

I can recommend it highly for agricultural development.

Respectfully submitted.


U. Ernest Nelson
Reg. Professional Engineer #406.

July 31, 1933.

REPORT OF THE STOCKHILL RANGE PLACER GROUND.

This ranch is composed of Sections twenty-seven, thirty three and thirty-four in Township Thirteen South of Range thirty-one East in Grant County, Oregon.

The surface area is approximately 1920 acres, situated on a high bench on the South bank of the John Day River and the west bank of Canyon Creek. The ranch lies one and one-half miles west of Canyon City and John Day, Oregon.

History

Canyon City is the County Seat of Grant County, Oregon, and the first settlement started as a mining camp about 1864 when placer gold was first discovered in Oregon, in Canyon Creek. From the time of discovery of gold down to the present there has been a continual procession of miners engaged in the mining of gold in Canyon Creek or some of its tributaries. The total production as now recorded at Salem in the records at the State House passes a gross of thirty-three million dollars in gold alone.

The gold in course and averages about Sixteen Dollars per ounce. In those part many large nuggets have been found, also fine gold and from time to time some large nuggets are still found as the deposits of the precious metals are found close to the original source of it.

The pay values in Canyon Creek were found within a total distance of eight miles up the creek from the junction with the John Day river and a distance of four miles down the John Day river from the mouth of Canyon creek. No values having been found in the river sands above the mouth of Canyon creek. Since the discovery, the gravel in Canyon creek has been worked three times, first by the early miners, second by the Chinese who followed the miners, and third by the large electric dredge owned and operated by Portland people, and operated under the supervision of the United States National Bank of Portland for several years until the owners due to the bank was fully paid. When the dredge was working the richest ground it earned large dividends as large as twenty thousand dollars per month, and where the gravel had only ten cents per cubic yard, the dredge paid a small profit. The dredge was moved away in the fall of 1928 after finishing the ground the company owned.

Placer Ground

Of the total of nineteen hundred twenty acres, thus far, only about eight hundred acres have been prospected and proven to be valuable dredge ground. All of the eight hundred acres lie within Sections twenty-seven and thirty-four and on top of the bench above mentioned, about five hundred feet above Canyon creek. The balance of the area in these two sections altho thought to be as rich in gold have not been prospected as extensively, the reason being that it is under the break of the bench and is rough but this part is good plying ground. The method used in prospecting the ground is shown in plates four and six.

The tests were made by taking a measured box mounted on a sled, or "God-davil" and hauled by a team of horses to a spring of water near the house

where the gravel was washed in a rocker, a long-pan or miners pan. See plates (3) and (5) as to the average lay of the eight hundred acres more or less, level land which comprises the known dredge ground on top of the bench and which has been proven to have been at one time the bed of Canyon creek.

The dredge operators claimed that the gold and the gravel which they dug out of the bed of Canyon creek and John Day river opposite the north end of the ranch is exactly the same as the gold and gravel which they dug out of Canyon creek. This creek was dredged for a distance of two (2) miles only because the authorities of Canyon City would not permit the dredge to pass through the town. Consequently, the richest part of Canyon creek, for a distance of four miles was only worked but twice.

The pay ground on the eight hundred acres has been found to extend from Grass roots down to where bed rock is ordinarily found. In many places a thick layer of clay was found in place of bed rock. A shaft was sunk in two places of twenty feet into the clay but did not penetrate it. There are no large boulders larger than a bucket in the eight hundred acres of dredge ground. There is no way as yet to determine how much of this area is overlaid with clay and how much with rock. The average depth of the gravel was found to be twenty to twenty five feet. This would indicate from twenty-five to thirty million cubic yards of gravel in the tract of eight hundred acres, the other four hundred and eighty acres of rough ground on these two sections are all hydraulic ground, and can be counted on to contain from fifteen to eighteen million cubic yards of gravel equally as rich as the eight hundred acres. See Plate (4). This would total from forty to forty eight million cubic yards of gravel on Sections twenty-seven and thirty-four. In all the prospecting done on this land in several years, the only dirt which did not show twenty five cents per cubic yard was several loads which were loaded into an ordinary wagon box and hauled down to the creek near Canyon City and washed. All of the finest material including some of the gold was lost by sifting through the cracks in the wagon box, the balance of these samples averaged twenty-three cents per cubic yard.

Many samples of gravel from near bed rock and the clay bed gave returns of One dollar per cubic yard. Samples from a few places below the break and in little gulches where natural concentration had taken place gave a maximum of three and one half dollars per cubic yard.

The largest nugget found during the prospecting weighed three and one half dollars, but a good many others have been taken out of less value. In many hundreds of samples taken none showed flower gold, all of the gold being coarse and easily saved.

Weather Conditions

In the summer the weather is warm and dry, in the winter is is mostly mild, they usually have a few weeks during January when the temperature will go as low as ten degrees below zero. Each winter a heavy fall of snow is experienced in the mountains but does not last long at the ranch where the altitude is a little above three thousand feet above sea level.

Plate No. (7) shows a tunnel driven into the side of a hill and following bed rock; in this instance many one dollar samples were found. The owners of this ranch have several claims to water flowing in Canyon creek and its tributaries.

The total is forty three (43) and thirty one (31) hundredths cubic feet per second as follows: Twenty second feet per second from Canyon creek for mining purposes, twenty-two and eighty-one hundredths (22.81) cubic feet per second from Canyon creek for irrigation purposes, one half ($\frac{1}{2}$) cubic feet per second from four (4) tributaries of Canyon creek and crossed by the Stockwell ditch and known as Blue gulch, Rodabusch creek and Overholt creek for irrigation purposes. In the County engineer's office are records of the annual run-off for Canyon creek which shows that Canyon creek will provide this amount of water during the driest months of the year, July and August. See Plate No. (9). This photograph was taken in August and shows a man standing in the water at the point of in-take of the ditch. These water rights, together with all others pertaining to the John Day river system are now being adjudicated by the State Engineer.

There are no contests filed against any of the rights thus far.

Ditch

The total length of the ditch necessary to carry the water from Canyon creek to the ranch is eight (8) miles. See Plate No. 11.

This ditch is constructed within a right of way owned by the Stockwell, the width of which varies from thirty (30) feet to sixty feet. This allows the proper slope of the ditch and berm on the lower side. About forty thousand dollars have been spent on the construction of the ditch to date. This amount of money had built only seven and one eights ($7\frac{1}{8}$) miles. Ten thousand dollars more will build the remainder of same, seven eighths of a mile and the head gate, and two thousand dollars will clean and repair the ditch which has been built and unused for so long. Some of the portions have stood eight (8) years since the construction was first started. The earliest portions of the ditch were built to carry only twenty cubic feet of water per second before the owners appropriated the other amounts, since which time the ditch was built to dimensions. See Plate (8). Five thousand dollars is enough to enlarge the narrow portions. All amounts of money quoted here as required to put the ditch in operation are necessary considered by the writer to be very liberal.

(Signed) Lee E. Sheels.

John Day, Oregon
Sept. 16, 1932

Mr. Roy Wallace,
704 Catherine Street,
Walla Walla, Washington.

Re STOCKHILL RANCH TESTS

Dear Mr. Wallace:

I have just completed sampling your 1920 acres at Canyon City, Grant County, Oregon, Sections 27-33 and 34 in Township 31 East. I have found the sampling to run on an average of fifty (50) cents per yard.

These samples were taken from fifty eight (58) test holes, all of which were in river gravel. Altho I did not reach bed rock in all of these holes I feel if bed rock could have been reached in all the holes my samples would have showed a considerably higher test. A number of test holes on the project are in serpentine and lava rock. From these holes I did not take any samples as I was satisfied they contained no values.

A part of the Southwest quarter of Section 34 and all of the South half of Section 33 contains no gravel. According to my measurements as near as can be figured, one thousand acres in the project are river gravel, ranging from eight to sixty five feet deep to bed rock, averaging over the one thousand acres twenty seven feet deep. For your convenience I quote the following figures:

4,840 square yards to one acre
x 1,000 acres in project
<u>4,840,000 square yards in 1000 acres</u>
9 yards or 27 feet deep, average over 1000 acres
<u>43,560,000 cubic yards in entire 1000 acres</u>
50 cents per cubic yard.
<u>\$21,780,000 in the project.</u>

Thanking you for the employment and hoping I may be of further assistance to you in the enterprise. Sincerely hoping the above meets with your approval.

Very truly yours,

Gordon E. Jern

GBJ-10