

Case 6

Salmon Mountain

Operators: U. S. Chrome Inc, formerly Oregon Chrome & Gold Synd., Powers, Oregon, or 5 So. Wabash, Room 1715, Chicago, Ill.

Location: Secs. 19, 20, 21, & 22, T. 52 S., R 12 W., 10 miles SW of Powers to nearest railroad.

Area: 82 claims located. Their engineer is surveying others for location.

History: The property was discovered ~~in the early 1880's~~ and beginning in 1885 was operated for 13 winters. The reason for closing was due to insufficient water to make it pay as a hydraulic mine. From 1898 to 1936 the property was worked intermittently but without any appreciable production. The present company acquired the property in 1936. Production thought to be between \$75,000 and \$100,000.

Development: One hydraulic cut and 4 tunnels. The tunnels are caved in. 3 of the tunnels are short, being less than 100 ft. each. the west tunnel bears N. 35° E, said to be 870 ft.

Equipment: 1 truck, 2 caterpillar tractors, 1 Gibson #7 Crusher, 1 Telsmith #6 Crusher, 1 36" Trommel Screen, 1 Gibson Rod Mill capacity 100 tons, 2 amalgamating plates, 3 No. 11 Wilfley Tables, Blacksmith shop equipment, track, cars, Mill building, and Bunk House.

Description: Steep Mountain Sides. The country rocks are gabbros. Elevation 2100 ft. Plenty of timber and said to be sufficient water all year to operate mill. Maximum snowfall 4'.

Geology: Diller gave a geological description of the property in the Port Orford Folio. He was there at a time when the hydraulic cut and the tunnels were open for inspection. The only addition to the development work is that the west tunnel has been extended from about 100 ft. to 870 ft. This tunnel is said to have cut a number of quartz stringers. Some of them probably millable ore. About a 1/4 of a mile east of the open cut there is a bird's eye porphyry dyke having a north and south strike. Continuing east there are small bodies of serpentine in the gabbro. Some small kidneys of chromite have been found in the serpentine.

page 5 as indicated

Metallurgy: The ore is softer than the average, and their flow sheet indicates that they intend to plate the free gold and develop a high enough sulphide concentrate to ship to the smelter. Pannings do show some free gold. They expect to plate about \$1 per ton. Their mill is to be 100 ton capacity.

Remarks: It seems to be an experiment in which they hope there will be sufficient values in Salmon Mountain to make it a worth while enterprise. The property is not a developed mine, but a prospect. W. G. Collins of the Denver Equipment Company has been secured to construct the mill and it has been so designed

that changes in the flow sheet can be readily made. The whole plant is powered by old gasoline truck engines which, if experiment proves profitable, will be replaced by a diesel electric plant. Second-hand equipment has been used wherever possible. At the present time there is no road to the property. Their engineer, Bob Morrison, is surveying a right of way to China Flat on the Coquille River where they will connect with the Forestry Road to Powers. After the road is completed, the ore should be mined and milled very economically. Mining is to be done with a gasoline shovel which is yet to be purchased. The gold is fairly coarse.

Informant: J. E. Morrison
11/17/37

Salmon Mountains Chrome-Gold Syndicate
Mining Jour.(Phoenix) v. 21, # 7, p. 58, Aug. 30, 1937.

"The Salmon Mountains Chrome-Gold Syndicate is operating its newly completed saw mill and cutting lumber preparatory to a general building program. A 100-ton rod mill is being installed. The property is located in the Salmon Mountain district in Coos Co., Oreg., south of Powers. William McLaughlin of Denver is superintendent and William M. Muchow of Chicago is general manager."

Oregon Chrome-Gold Syndicate
Mining Jour.(Phoenix) v. 21, no. 5, p. 36, July 30, 1937.

The Oregon Chrome-Gold syndicate, said to be backed by William M. Muchow of Chicago, is reopening the old Coos Copper, also known as the Salmon Mt. mine and is carrying on extensive prospecting work. A brief description of the property, and its history is given.

Cross Co

Mining & Contract. Review ^{Aug.} ~~Nov.~~ 30 193⁸

The Western Consolidated Mining Co. is reopening the Pioneer gold mine near Marshfield, under bond and lease.

26-14 East of Cape Arago

4 Dr^s & Fire company from
Tucuma work

3/4 Tica stand

2-5yd Ticks

2 4" pumps

Electric mounted on pumps

Shifting 40' down nearby

15" black rock in lead alloy

found to be

1. Name of property Salmon MountainOperating company (or individual) U.S. Chrome Inc., formerly Oregon Chrome & Gold Synd.Address Powers, Oregon or 5 So. Wabash, Room 1713, Chicago, Ill.Location of property Secs. 19, 20, 21, & 22, T. 32 S., R. 12 W. 10 miles S.W. of PowersAcreage of holdings At time of visit there were 82 claimslocated. Their engineer was surveying others for location.

2. History of property, past and recent:

The property was discovered in the early eighties and beginning in 1885 was operated for thirteen winters. I was informed by a man who worked on the property the last two seasons it operated, that the reason for closing was due to insufficient water to make it pay as a hydraulic mine. From 1898 to 1936 the property was worked intermittently but with-

3. History of production: out any appreciable production. The present Company acquired the property in 1936. There is no record of the production. A Mr. Henry Hayes of Powers who worked at the mine, thought that the production to be between \$75,000 and \$100,000.

4. Development: Number of levels, lengths of drifts and cross-cuts, raises, etc.:

One hydraulic cut and 4 tunnels. The tunnels are caved in. No definite information could be secured on the length of the tunnels. However, 3 of the tunnels are short, being less than 100 ft. each. The west tunnel bears N. 35° E. was said to be 870 feet.

5. General description and equipment on hand, topography, country rocks, elevation, timber, water, snow fall, climate, power, etc.

Equipment consists of: 1 truck, 2 caterpillar tractors, 1 Gibson #7 Crusher, 1 TelSmith #6 Crusher, 1 36" Trommel Screen, 1 Gibson Rod Mill Capacity 100 tons, 2 amalgamating plates, 3 No. 11 Wilfley Tables, Blacksmith Shop equipment, track, cars Mill building and Bunk House.

Steep Mountain sides. The country rocks are gabbros. Elevation 2100 ft. Plenty of timber and said to be sufficient water all year to operate mill. Maximum snowfall four feet. Work year round.

6. Geology - General and local. Ore geology - type of deposit, i.e., vein, mineralized zone, bed; contact relations, attitude and orientation, vein minerals, gangue, type of mineralization, alteration, enrichment, etc.

Dillar gave a geological description of the property in the Fort Orford Folio. He was there at a time when the hydraulic cut and the tunnels were open for inspection. The only addition to the development work is that the west tunnel has been extended from about 100 ft. to 870 ft. This tunnel is said to have cut a number of quartz stringers. Some of them producing millable ore. About a $\frac{1}{4}$ of a mile east of the open cut there is a bird's eye porphyry dyke having a north and south strike. Continuing east we find small bodies of serpentine in the gabbro. Some small kidneys of chromite have been found in the serpentine. At present none of these are exposed.

7. Metallurgy - nature of ore, hard or soft, free-milling, base, direct shipping, etc. Kind of mill and equipment in use or planned, current daily tonnage of ore or concentrates, approximate value, freight rates to smelter, etc.

The ore is softer than the average, and their flow sheet indicate that they intend to plate the free gold and develop a high enough sulphide concentrate to ship to the smelter. Fannings do show some free gold. Just what their concentration ratio and value will be they do not know. From what one of the miners said, they expect to plate about \$1.00 per ton. Just where they got this figure I was unable to find out. Their mill is to be 100 ton capacity.

8. Remarks - economics: High or low cost, principal drawbacks, reasons for success or failure, apparent life of operation based on apparent quantity of ore available.

From what information I could gather the whole thing is an experiment in which they hope there will be sufficient values in Salmon Mountain to make it a worth while enterprise. Dr. W. M. Muchow, the President, and Billy McLaughlin, the Superintendent, were not at the mine at the time of my visit, and those present were unable to give me very much authentic information. However, Dr. Muchow had a report made by Mr. Etienne A. Ritter of Denver who must have reported favorably on the property or they would not have decided on the mill. The property is not a developed mine, but a prospect. However, it must be admitted that it is in a mineralized region and has paid as a hydraulic mine. They have secured the services of W. G. Collins of the Denver Equipment Company to construct the mill and it has been so designed that changes in the flow sheet can be readily made. The whole plant is powered by old gasoline truck engines which, if experiment proves profitable, will be replaced by a diesel electric plant. Second hand equipment has been used wherever (over)

R E P O R T
ON THE PROPERTIES OF
U S CHROMIUM
located in
COOS COUNTY, OREGON.

BY

ETIENNE A. RITTER,
Mining Engineer & Geologist,
607 Empire Bldg.,
Denver, Colorado,

CONTENT:

INTRODUCTION	Page 1.
LOCATION OF ORE DEPOSITS	2
GENERAL GEOLOGY	2 -3
THE GOLD DEPOSIT	4
THE MINING CAMP - the ORE MILL	5
THE TIMBER ON THE PROPERTIES	5-6
CHROMIUM DEPOSITS	6-7
THE CHROMITE FEPOSITS IN THE UNITED STATES	7
UNSES OF CHROMIUM AND STATISTICS OF PRODUCTION	8
THE CHROMIUM ORE DEPOSITS OF THE PROPERTY	9
CONCLUSIONS	10

REPORT ON THE PROPERTIES OF U S CHROMIUM

located in

COOS COUNTY, OREGON.

607 Empire Building,
Denver, Colorado
September 23, 1937.

Dr. W. M. Muchow,
1713 Mallery Bldg.,
Chicago, Illinois.

Dear Sir:-

I studied the geology and ore deposits of the properties of the U S Chromium on the ground from September 9 to September 15, 1937 and I beg to submit the following report:

INTRODUCTION

The properties of the U S Chromium cover a large gold and chromium deposit, located on Salmon Mountain, in Coos County, Oregon.

The size of the deposit makes its thorough study a long and expensive one. In the short time at my disposal, I have accepted as correct the results of the work done previously by Mr. Wm. F. Hayden, of Grants Pass, Oregon, specially as to the values of the gold deposit. Mr. Hayden has made two reports, of which you gave me copies. The first one is dated June 25, 1931, from Gold Beach, Oregon and the second one is dated November 9, 1933, from Grants Pass, Oregon.

On my return journey to Denver from my stay at your properties, I stopped at Grants Pass and had an interview with Mr. W. F. Hayden. He confirmed the various statements contained in his reports and he told me that he spent many months - the best part of one year in fact - with a staff of five men in making the examination. He had with him a geologist, a metallurgical engineer, a civil engineer for the surveying and two expert miners to do the trenching, the sampling and the panning for gold. All the samples were taken directly under his personal supervision.

I studied Mr. Hayden's report carefully before going over the ground, as well as those of several other engineers, Messrs. H. G. Kleinschmidt, V. N. Kassandroff and H. F. Collins.

LOCATION OF THE ORE DEPOSIT

The properties of the U S Chromium are located in sections 19, 20, 21, 29 and 30, in Township 32 South, Range 12 West of the Willamette Meridian, in the Salmon Mountain Mining District.

It is in the county of Coos and in the Siskiyou National Forest. Besides the claims already in your possession, you are yet carrying on the work of locations on new claims, doing the work and surveying them and you will extend the area held by your company into sections 22, 26, 27, 28 of the same township.

The headwaters of Salmon Creek drain the northern part of the property on sections 19 and 20, but most of the area is drained by Johnson Creek and its tributaries. Johnson Creek flows into the Coquille River and empties into it in the northeast quarter of section 26.

The outfitting locality nearest your properties is Powers, a village of about 300 inhabitants. It has a station on the Coquille Branch of the Southern Pacific Railroad. A logging road, about 10 miles long has a stop at the Powers Ranch, from which a three miles road reaches your mining camp. A State highway, from Powers to Agnes follows the Coquille River south and at a point about 12 miles from Powers, reaches China Flat, where a CCC Camp, has been constructed by the Federal Government. There is a bridge there on the Coquille river, and the beginning of an auto road, located on Section 23 and about a mile north from the place where Johnson Creek empties into the Coquille river. That road will be continued and will connect with the road built by you eastward from your camp, by the sawmill. It will eventually be the best way of ingress and egress for your properties.

GENERAL GEOLOGY

The topography of the area is quite rugged. The village of Powers, located at the Junction of Salmon Creek and of the Coquille River is at an altitude of 200 feet above sea-level. Powers Ranch, on the logging railroad is 821 feet high. Your mining camp, the mill and the sawmill are at slightly different elevations, but all approximately 2000 feet above sea-level, more or less. The top of Salmon Mountain reaches 3234 feet and that of Bray Mountain 3251 feet.

The topography of the area reflects the results of the erosion of a old plateau, called the Klamath Plateau, which covered all of southern Oregon. It has occurred in two stages, the first one carving the upper part of the valleys and the second one the lower parts. The upper part of the valleys are broad, with gentle slopes, while lower down the creeks and rivers flow through deep valleys with steep slopes and even in places form regular canyons.

The rock found on the properties of the U S Chromium are both of sedimentary and of igneous origin. The first ones are represented by the Myrtle Formation of Cretaceous Age and the Arago Formation of the Eocene. The second ones are represented by serpentines, gabbros and dacite porphyry.

THE MYRTLE FORMATION:

It is formed by sandstones, shales and conglomerates; the sandstones are the most common. On Salmon Creek, near the southwest corner of Section 23, occurs a mass of reddish shales.

THE ARAGO FORMATION:

It is formed by yellowish sandstones, with a large proportion of shales, but only little conglomerate. Coal has been **found** in it and generally, but not always, close to the base of the formation.

After the deposition of the Myrtle Formation, the rocks of the area were greatly folded and crushed and the volcanoes became active in the region.

THE IGNEOUS ROCKS: the serpentine is distinct from the gabbro, but the gabbro and the basalt are closely related; the dacite porphyry has relations to the gabbro, but is yet a distinct rock.

THE SERPENTINE.

It is **derived** from a rock composed originally mostly of olivine, which made it a peridotite, while locally there is enough pyroxene to make it pass into a pyroxenite. Analyses show that even outside the places where local concentration of the mineral chromite has made it an ore deposit of chromium ore, the whole mass of the eruptive serpentines carries half of one per cent of chromium. It shows how rich in that metal ~~was the deep original magma.~~

THE GABBRO:

It is composed of feldspar, pyroxene and amphibole, with a **granitic** texture.

THE DACITE-PORPHYRY:

It varies much in composition and appearance. Large crystals of quartz and feldspar are at places found in the groundmass and give it the appearance of a bird's eye porphyry. Quartz, orthoclase, oligoclase and a minor amount of ferro-magnesian minerals, mostly hornblende form the groundmass.

The ore deposits are of two natures, the gold deposits and the chromium deposits. They have been formed in complemently different ways, at different times. The chromium deposits were formed at the time of the ascent of the basic eruptive rocks and are a type of ore bodies that owe their origin to magmatic segregation. The gold deposits were formed by hot ascending mineralizing waters, at a later period, and accompanied by a quartz, which filled all the possible fractures. There are no well defined quartz veins, but a large amount of quartz veinlets all through the rock.

THE GOLD DEPOSIT

The gold belt to which the deposit of the U S Chromium belongs has long been the most active mining region of the Oregon Coast. The total production has probably been over a million dollars.

The belt runs approximately north 70 to 80 degrees west from the mouth of Johnson Creek to the costal plain south of Danmark. There the Myrtle formation has been penetrated by the igneous rocks and the gold deposits are connected genetically with them. The most prominent operation has been the hydraulicing of the large open cut at the head of the mill you are now building.

There is at that place and to the west of it an area of fragmental material of volcanic origin - most dacite-porphry - which appears to be due to a slide. This is located immediately below a belt of dacite-porphry and it is that dyke which has been mineralized by the gold bearing hot ascending mineralizing waters. It has formed in that manner a low grade gold deposit of tremendous extent.

It is practically impossible to sample correctly such a deposit, except at a prohibitive cost. It is likely that the gold values are scattered in innumerable small quartz seams, some of which may be exceedingly rich. An average value of such a deposit is not the value of one ton of rock or ten tons, or even a hundred tons, but of one or several thousands of tons. In a lot of one thousand tons, a small percentage of the whole tonnage, if rich enough will give to the whole mass an average value per ton which will make the deposit commercially profitable, provided that the cost of mining and milling the whole mass by the most modern wholesale methods will be less than the total gold recovery.

In a deposit of this nature, it is not possible to do any selective mining. It has to be mined and milled as a whole, or not at all. However considerable sampling has been done by Mr. Wm. F. Hayden, to whose reports I have already referred in the introductory chapter of this report. The results of Mr. Hayden's sampling show that the combination of the gold and the chromium in the ore are sufficient to make the deposit commercially profitable, when it is mined and milled as it should be.

As a result you have decided to construct a pilot mill to both ends of carrying regular operations of a commercial nature and at the same time of testing the values in the deposit in a manner adequate with its enormous size. I think this was a sound policy. I do not know of a better method or a method more economical to prove the worth of a deposit as extensive as the one owned now by the U S Chromium, as a core drilling campaign extensive enough to give really certain results would cost almost as much as the building of the pilot mill; and you would not have any really large scale tests on lots of one thousand tons by that method.

THE MINING CAMP - THE ORE MILL.

When it is taken into consideration that you had to do everything from the beginning up; to build roads, to start a camp with bunk and boarding house, and then other houses; to install a saw-mill to mill your own timber, to build the ore treating mill, to locate a large number of new mining claims, survey them and do the location work on them, you can be congratulated on all what you have accomplished up to the time of my examination of your property.

I am an old engineer now, with thirty-five years of past experience in that sort of work; in the light of that experience I consider that you have used your time to the best advantage and that your work has been pushed up with energy.

You have only one way to get to your property now; it is by way of the Powers ranch on Salmon Creek. You can either take the logging railroad from Powers to the Powers Ranch, and then by three miles of a rather winding mountain road reach your camp. Or you can use a road passable to automobiles, but not good, from Powers to the Powers Ranch.

Eventually your easiest automobile road will be by way of China Flats, as I have already mentioned. I understand that you plan to construct that road as soon as possible. I will advise you to construct it on a well surveyed grade line, according to the Government regulations. I was told that in such a case, the government would take care of one-half of the expenses. Your share of one-half of such a road would not be more than the cost of the whole construction if this work was done entirely on your own account, but not so expensively and not according to the government regulations.

Your camp is well located, not far from a good spring with a large flat area completely cleared and around which you are gradually building many houses.

You have a good saw-mill fully adequate for all your needs. There is a large amount of good timber close to it.

The ore-mill is located immediately next to the place where you will start your mining operations. You will use a steam-shovel, I understand and start a cut about 30 feet lower than the one now in existence and made by the placer mining method. The mill was in process of erection at the time of my examination. The work has been carried to a point where it was possible to visualize what the plant would be when completed and the work was carried on actively.

THE TIMBER ON THE PROPERTIES OF THE U S. CHROMIUM

While I have seen the timber mentioned in this chapter, I have to rely on Mr. R. M. Harrison of Myrtle Point, who has had a wide experience as a surveyor and a timber expert for the figures given in this chapter.

Some of the land owned by you is not much valuable for the timber on it; but some of it is very valuable, specially the area covered by the mining claims Chrome No. 6 to Chrome No. 15 and by Chrome No. 6 South to Chrome No. 15 south. This area covers approximately 400 acres; it will be increased because you are now locating a number of other claims to the east of it.

On that area the timber has been estimated by Mr. Harrison to have an average of eight trees per acre and with an average of 5000 feet of lumber per tree. This means 40,000 feet of timber per acre. Of this amount a one-half is white cedar and a one-half is fir.

White cedar is an exceedingly valuable wood, as it is the only kind of wood which is not attacked by insects in Japan. As a result, the Japanese trade absorbs all what the United States can produce and I was told that the amount of white cedar timber privately owned now is being cut so fast that it will nearly be exhausted in about half a dozen years.

White cedar sells at \$7.00 per thousand feet on the stump and fir sells at \$3.00 per thousand on the stump. The logging and the sawing of the timber can be contracted at the rate of \$15.00 per thousand.

White cedar sells at \$60.00 per thousand and with a cost of \$5.00 per thousand for the transportation to tide-water, you would make a profit of \$40.00 per thousand feet of white cedar. The fir sells at \$18.00 per thousand, so that it would be best to sell it to the firm contracting the logging and sawing of the white cedar on a stumpage basis. According to these figures, you would get for the fir for the 400 acres \$24,000 and for the white cedar \$320,000 or a total of \$344,000.

RESERVOIR

While I was at your properties, the State Water Engineer came to survey the dam sites and the reservoir sites on Johnson Creek, located a short distance below your saw-mill and which will be used to furnish an adequate supply of water to your ore treating mill.

THE CHROMIUM ORE DEPOSITS.

Before describing the chromium ore deposits on your properties, I think it might be useful to give some general information regarding the mineral and its ores.

I believe firmly in the future of chromium as a steel alloy and I think that you have started a most valuable enterprise in devoting your energies to the mining and metallurgy of chromium ores.

While 11 different minerals containing chromium are known; only chromite is of importance as an ore of this metal. Chromite ($\text{Cr}_2\text{O}_3 \cdot \text{FeO}$) has a theoretical composition of 68% of chromium sesquioxide and 32% of ferrous oxide, but in the mineral, as found in nature, some of the iron has usually been replaced by varying amounts of magnesium, or some of the chromium has been replaced by alumina or ferric iron, or both.

Chromite is usually found in ultra-basic igneous rocks of their metamorphic equivalents such as serpentine. It occurs disseminated or in compact masses, lenses or stringers. Its origin has generally been ascribed to magmatic segregation.

Chromite is black to bronish, sometimes yellowish red in color; it has a brown streak, is translucent to opaque, has a submetallic luster and is sometimes feebly magnetic. The hardness of chromite is 5.5 and its specific gravity 4.32 to 4.57.

The usability of chromite is usually determined by the ratio between iron and chromium in the ore. Iron increases the fusibility of chromite, making it less desirable for refractories, whereas a high iron content renders chromite less usable for ferrochromium. The usual ratio of chromium to iron in commercial chromite is about two and half to one.

FERROCHROMIUM.

Ferrochromium is an alloy of iron, chromium and carbon and is the basic alloy used in the manufacture of most chrome alloys. For the manufacture of ferrochrome chromite, mixed with anthracite coal, is reduced in the electric furnace at a temperature of about 1,185 degrees centigrade.

THE CHROMITE DEPOSITS IN THE UNITED STATES

The deposits of chromite in the United States are found in Alaska, California, Georgia, Montana, Oregon, Pennsylvania, Maryland, Wyoming and Washington.

ALASKA: There are 49 known deposits. The most important are located in the Kenai peninsula.

CALIFORNIA: Chromite is widely distributed in the serpentine areas of the Sierra Nevada foothills, Coast Range and Klamath Mountains, but most of the deposits can not be mined profitably under normal conditions.

MONTANA: A large chromiferous serpentine belt, one half to three-quarters of a mile wide and thirty miles long has been reported in Sweet Grass and Stillwater counties.

OREGON: Two large serpentine areas containing chromite deposits have been found in Oregon, one in southwestern Oregon, in Jackson, Josephine, Douglas, Curry and Coos Counties, and the other in eastern Oregon along the flanks of the Blue Mountains in Grant, Wheeler, Baker and Malheur counties.

PENNSYLVANIA-MARYLAND: The belt extends from south of Baltimore into southwestern Chester County, in Pennsylvania.

WASHINGTON: The deposits are located on Cypress Island in Skagit County.

WYOMING: The deposit is in Converse County.

However, the United States do not produce their own chromium ores and by far the largest amount used is imported from foreign countries. These in order of importance of production are: Southern Rhodesia, New Caledonia, Turkey, Russia and India.

USES OF CHROMIUM AND STATISTICS OF PRODUCTION.

Leaving aside the uses of chromite for refractories and other uses, the main output of the mines goes to the making of ferrochromium.

The special steels are chrome-nickel steel, chrome-tungsten steel, chrome vanadium steel and stainless steel. The chromium steel alloys harden rapidly; they have a fine grain. They are used for guns, for armor-plate, automobile parts, burglar proof safes, crushers-jaws and cutlery.

The building industry uses stainless steel for decorative purposes and great quantities of chromium-plated plumbing fixtures. The publication steel has listed 300 concerns supplying alloys and alloy-steel for industrial use. Although the actual figures are not available, it is estimated that the tonnage of stainless steel in 1936 was twice that of the tonnage in 1935.

The production of chromite in the world in 1935 was 794,000 tons, the highest tonnage ever produced. The production of 1936 was a large increase on that figure.

In 1936, the United States produced 269 long tons and they imported 324,258 tons. The production of various countries, in percentage for 1936 was as follows:

Rhodesia and South Africa	63%
Cuba	15%
Greece	9%
New Caledonia	6%
Other countries	7%

In the statistics the productions of Russia and Turkey are not given; both are large, specially that of Russia, but they are entirely, or nearly so, consumed at home and have no influence on the United States Market.

Among the chief importers of chromite to the United States is Cuba, its imports in 1936 were 71,086 metric tons, compared with 48,509 tons in 1935. Cuba ores are low grade and used principally in refractories.

The Phillipine Islands have developed a considerable reserve of chromium ores; the imports from there in 1936 were 5.066 metric tons containing 50% of chrome.

At the present time the quotations for chromium ore containing 48 to 50% chromium are \$25.00 to \$26.00 per ton. However, the aim of your company should be to make ferrochromium and to dispose of its output on that form at a much higher price.

THE CHROMIUM ORE DEPOSITS ON THE PROPERTY.

The chromium ore deposits I am going to describe in this chapter are found there, on your properties, in addition to the chromium ores found in the large low grade gold deposits located on the Headquarters, Brown Porphyry and adjoining lode mining claims.

As a matter of course, you will recover the chromite of this deposit as a by-product of your milling operations for the recovery of the gold.

But outside of this large low grade ore body, there are a number of important lenses of high grade chromium ore located further to the east and as far as the junction of Johnson Creek with the Coquille River. I do not think that these higher grade chromium deposits will carry any gold, but their chromium content will be great enough to warrant their exploitation.

These deposits of chromium ore are found in a serpentine rock, which is the metamorphic product of a former peridotite. They show at the places where the sedimentary formations which covered them have been sufficiently eroded to allow them to outcrop at the surface.

These higher grade chromium deposits are a series of lenses; from what I have been told about them by Mr. R. M. Harrison, who has studied them and from what I have seen myself. Three of them are located in the southeast quarter of section 21 and on most of section 26; there are probably others yet to be found.

Mr. Harrison tells me that the lens at the mouth of Johnson Creek is several hundred of feet wide and probably over 2,000 feet long; that it averages at least 10%. Mr. Harrison made a study of it in 1935.

Besides the locating of the claims to cover these deposits, I think that a sum should be set aside for their thorough prospecting by open cuts, dug from 4 to 5 feet deep into the bedrock, by blasting where necessary, so as to cross-cut the lens of ore clear across its width at four or five different places. It would also be useful to drill some drill-holes to depth of from 100 to 200 feet to ascertain the richness of the deposit downwards, as well as in width and in length.

Eventually the exploitations of these chromium deposits will require not only their mining by themselves, but also their own metallurgical treatment. It is likely that the best place for the location of a concentrating mill and eventually of an electric smelter will be in the valley of the Coquille River, at a point between the mouth of Johnson Creek and China Flats.

I was told by Mr. R. M. Harrison that there are several coal beds located on Sections 33, 34, and 35 of Township 32 South, Range 11 West of the Willamette Meridian and in sections 2, 3, and 4 of Township 33 South, Range 11 West of the Willamette Meridian. One of the beds of coal is five miles from the place where you would locate the metallurgical plant to treat the chromium ore and only eight miles from your present mining operations. You could create your own electricity right at that coal mine and send it by your own transmission line to your own plants. Power thus obtained should be the cheapest you could possibly get.

CONCLUSIONS.

U S Chromium has acquired a very important mining properties in Southwestern Oregon, containing an enormous deposit of low grade gold ore, accompanied by chromite. It is the ore body for the exploitation of which you are now building your pilot mill.

Besides this deposit there are a number of chromite deposits of a good concentrating grade of ore. Their development should lead to important chromium mining and metallurgical operations, which would prove a great addition to your gold mining operations.

Respectfully submitted,

ETIENNE A. RITTER.

*7 am
Spencer*

*Billy McLaughlin
Powens*

U S CHROMIUM, INC.
(A New Corporation - State of Oregon)

Owns outright approximately 3000 acres - Coos County, surrounding OR,
Salmon Mountain on which a large low grade ore body exists containing gold,
chromium and several other metals.

The entire tract is heavily timbered with Fir and White Cedar
(Lawson Cypress - Port Orford,) Only place where white cedar abounds. Uses
are intersections in storage batteries, and venetian blinds - large imports
by Japan.

The mine, or ore body is in the form of a large "Slide" with millions
of tons already available without tunneling or shaft sinking. A power
shovel can pick up this loose rock or ore ready for the crushing plant of
the mill. The mine is therefore fully developed to furnish unlimited tonnage
immediately.

Some sixty years ago, a large open cut was made into the side of the
mountain with hydraulic water-stream pressure. From this Cut approximately
\$200,000 in loose gold was washed. One single piece "Dumbar Boulder" yield-
ed nearly \$5000 in gold. A model of this Nuggett-quartz-specimen was made
at the time and placed on display in San Francisco, where it is still being
shown. No attempt to crush rock was made during that operation, and appar-
ently only a part of the available gold was recovered, whereas grinding
would liberate all of the gold and chrome.

Total mining and crushing costs estimated to be less than 25¢ per ton
on a certain system and scale to be employed by U S Chromium, Inc. Crush-
ing to only 1 inch is planned and then screening through 1/2 inch mesh,
thereby discarding hard waste, reduce grinding costs and mill the fines which
contain best values.

The Company has already built a 150 ton pilot mill - complete and
ready except for a power plant to run it. The mill building however is
finished large enough to house an additional 1000 to 3000 ton daily capacity
equipment.

Milling costs are estimated to fall below 25¢ per ton on a 1000 to 2000
ton daily capacity basis. The metallurgy and flow sheet has been determined.
Total mining and milling costs 50¢ per ton, (lowest in mining history) Alaska
Juneau, now largest tonnage successful gold operation on American Continent,
capacity 10,000 tons daily. Recoveries \$1.26 per ton.

It is expected that sufficient gold will be recovered daily from the
immense tonnage to pay for all costs - mining, milling, administration and
amortization, plus a profit. While chrome is a by-product, it is conceded
that it will become the main product of this mine. To begin with, while min-
ing and milling for gold, the chrome will be recovered as a concentrate ready
for shipment at little extra cost.

Practically all of the chromium used today comes from Rhodesia,
Turkey, Phillipines and other foreign lands.

It appears that U S Chromium, Inc. will become the pioneer in Chrome
production of the U.S.A. and a 5000 ton daily operation is to be looked for-
ward to in the very near future. A plant of that size should earn approximat-
ly \$2,000,000 annually - net.

The uses for chrome are almost universal. The word chrome means color and is therefore a basic constituent in paints, pigments and fast dyes. Its use in chemistry is extensive, and in leather tanning a necessity. The high fusing or heat resisting factor makes chrome the important constituent in fire brick and for smelting furnaces. Perhaps 50% of its use is in the Steel Industry, as a plating, tool steel hardening, and the making of stainless rustless steel. The standard formula for stainless steel is 18% chrome - 8% nickel and balance iron. New uses are, cutlery, store fronts, coffins, aeroplanes, trains, war ships, war-fare implements, store fixtures, furniture, refrigerating plants and sanitary food containers.

U S Chromium, Inc. does not claim a large reward for its White Cedar timber holdings at this time, but will in a few years have a very large asset in that field.

According to Engineers, the Chrome content ranges from 1% to 5% in the ore. NOTE - other large successful mining enterprises operate on 1% and less per ton, to wit: - Climax Molybdenum - less than 1% - Utah Copper - approx. 1% copper.

The ore bodies of U S Chromium, Inc. are fully as large and extensive and contain gold as a commercial safety. Engineers findings and estimates on gold from 50¢ to \$15.00 per ton. Hayden quotes \$1.80 average.

FINANCIAL STRUCTURE OF U S CHROMIUM, INC.

Capital Stock authorized	75000	shares	No	Par	Value	Common
Issued for Properties	<u>35000</u>	"	"	"	"	"
In Treasury - - - - -	40000	"	"	"	"	"

The 35000 shares are distributed amongst pre-organization members paid for at \$5.00 per share. Of this 35000 shares remain 5000 shares unsold.

The 40000 shares remaining in the Treasury are to be sold for not less than \$10.00 per share when qualified.

Of the 35000 shares - 15000 shares are issued to W.M. Muchow for organization and services.

A total of \$65,000 cash has been used in acquiring all of the properties, the construction and equipping of a 150 ton pilot mill, and a complete saw mill capable of turning out finished commercial lumber.

The potential value of the above, in my estimation, represents a very large sum of money. Properly equipped this property can earn big dividends and the ore body is sufficiently large to supply a 5000 ton daily capacity mill for several hundred years.

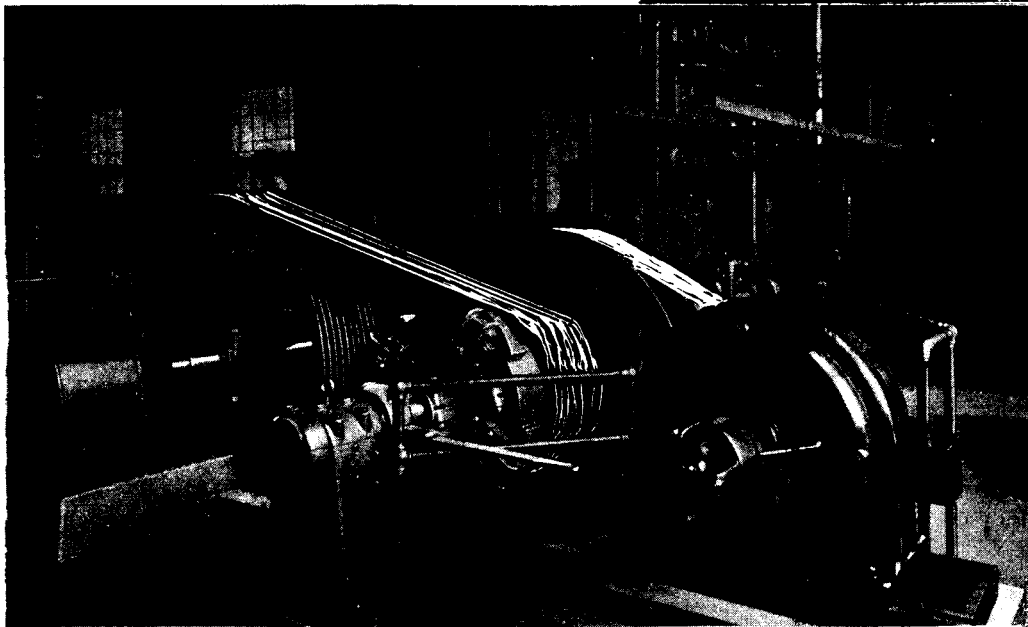
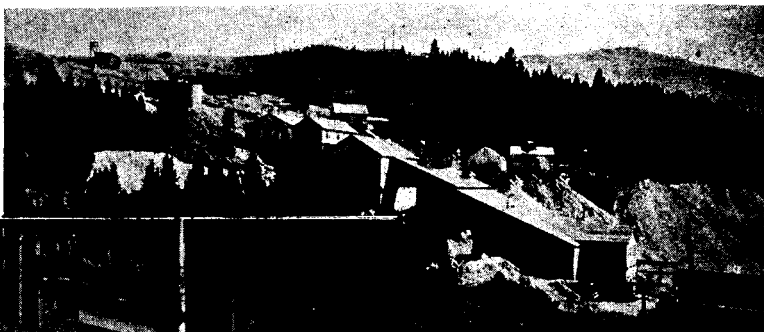
At this writing the lands and mill are fully paid, except for "3 Needs" which total \$10,000 for a diesel engine, shovel and 2 mile road to bring the present plant into immediate production.

The U.S. Government may then make the customary 20 year-10% repayment Bullion loan for enlarging the present mill to 1000 or 5000 ton daily capacity.

SUBMITTED BY

W. M. MUCHOW, PRES.
U S CHROMIUM, INC.

U. S. CHROMIUM, INC.
PRODUCERS OF CHROME FOR STAINLESS STEEL
POWERS, OREGON



DIESEL ENGINE AND ELECTRIC POWER GENERATING UNIT

EXACT DUPLICATE
of our MILL

CAPACITY
150 tons daily
NOW finished as
shown above



LET'S GO

LAST

3

NEEDS-

PRIVATE ROAD
to reach highway
1 1/2 mile
COST \$2,000



(1) Diesel
Power
Plant

(2) ROAD

(3) Steam
Shovel

BOTH
Mine and
Mill are
ready NOW

MALLERS BLDG.
5 SO. WABASH AVE.
CHICAGO



STEAM SHOVEL \$2,000

OLD SALMON MOUNTAIN MINE BEING OPERATED AGAIN

THE Salmon Mountain mining district in the southern part of Coos county, Oregon, is again showing activity. This area is considered the extreme northern boundary of that extensive mineral belt which runs through Curry and Josephine counties in Oregon and Del Norte and Siskiyou counties, California. The Oregon Chrome-Gold Syndicate, said to be backed by William M. Muchow of Chicago, is re-opening the old Coos Copper, also known as the Salmon Mountain mine, and is carrying on extensive prospecting work. A small Gibson ball mill has been installed as a pilot plant and later a 10-ton plant will be put in. Road building and other permanent improvements have been in progress for some time.

Salmon Gulch is steep and narrow and about 1½ miles long, coursing along through sedimentary formations and heading in a large spring at the foot of Salmon Peak. The district has an interesting history. In the middle '60's John Stahl, an old prospector and miner, went into Salmon Gulch to look for steelhead, Salmon Creek having acquired local fame for its fishing. While pursuing this sport Stahl found a gold nugget and upon closer examination discovered that there were plenty of colors scattered around.

This started the growth of a lively mining camp in the gulch. As the gold was associated with quartz the accepted theory was that a fabulously rich quartz vein must exist in the vicinity feeding these placers. For several years prospectors roamed the territory in search of the mother lode, but no source of the gold was found.

On the side of Salmon Peak was a massive pile of breccia and gabbro, apparently a blowout, which showed copper stain. It was in this broken mass that two old prospectors, Burke and Martell, had

dug a hole, but finding a large boulder in the bottom, gave up the search and moved away. After a few years a man named Dunbar came by and seeing the old digging with the copper-stained rock, began cleaning out the workings. Instead of stopping when he came to the boulder, Dunbar broke it up and found gold. From this boulder, which weighed possibly 200 pounds, he is said to have realized \$3,200.

A company was later organized with local capital and a 600-foot tunnel driven into the mountain. The entire length of the adit was in breccia which ran from \$1 to \$3 a ton. Owing to the low grade of the ore, however, nothing more was done and quartz mining was abandoned. A water flume was brought in 4½ miles from the head of Johnson Creek and placer mining was started. A No. 1 giant was operated under a 300-foot head and during the rainy season an increased yardage was handled. For several years this placer mining was carried on with good results, during which time an open cut was mined out about 100 feet wide, 400 feet long, and up to 150 feet deep. But it was found that because of the associated quartz, most of the gold values were running out in the tailings and down Salmon Gulch, which resulted in more rich placer diggings down there.

In 1900 a forest fire swept through the region burning the mill, flume, and some of the company buildings, and doing a great deal of other damage. This discouraged the stockholders and operations were suspended. And this property has remained idle until the Oregon Chrome-Gold company was formed to reopen the mine and investigate the district.

THE MINING JOURNAL for JULY 30, 1937
