OREGON CHROME MINES

(ILLINOIS CHROME MINE) Illinois River Josephine Co.

Owners: Max E. Kruger, 4642 N. E. Halsey
Jim McClung, Selma

Area: 4 unpatented olde claims.

Location: Sec. 7 (or8) T. 37 S., R. 9 W., on S. side of Illinois River, opposite Oregon Chrome Mine.

History: Worked during last war by Ed Cox, who is reported to have removed several hundred tons. Idle until restaked by McClung in 1941.

Development: 80 tons removed from open cut in 1941 by Sherman Smith. 4 foot face of ore now open 100 feet south of this cut. 50 tons now mined and in chute. Smith built road down to river. 30' tunnel on 6" vein lying 100' to W. of cut, and uphill. (10-12 tons taken out from this tunnel).

Geology: Peridotite and dunite country rock. Lenses 4-8 feet wide; average dip 45° towards N. Assays average around 47-48% Cr_2O_3. Ore said to be in place on upper claims. Large float boulders present.

Owners plans for future: To get underground on 1st lens - bulldoze off loose material and then go in on 8' face said to remain in old cut.

Informant: Max Kruger, July 25, 1942

OREGON CHROME MINE

Illinois River area
Josephine County

W. S. Robertson, Grants Pass, has resumed shipping chromite from the Oregon Chrome Mine on the Illinois River, Josephine County, after more than a year's development work. He has driven a 700-foot crosscut for a haulage tunnel which has tapped the ore body at a depth of approximately 500 feet below the surface. Shipments are being made to the Ohio Ferro Alloys Company in Tacoma at the rate of about 500 long tons per month. Twelve men on two shifts are now employed at the property.

Taken from the ORE.-BIN issue of February 1948.

OREGON

~~ILLINOIS~~ CHROME MINE Illinois River area

John Robertson is shipping a good grade of chrome ore from the ~~Illinois~~ OREGON chrome mine, on the Illinois River, 18 miles west of Salem. The ore is trucked to the Metals Reserve Corp. purchasing depot at Grants Pass. About 700 tons is produced each month. SELMA

....from the Engineering and Mining Journal,
September 1944.

OREGON

~~ILLINOIS~~ CHROME MINE Illinois River district

W. B. Robertson has resumed diamond drilling at the Oregon chrome mine, on the Illinois River, following announcement that MRC will continue to purchase chrome ore until the end of 1945.

From Engineering and Mining Journal
Vol. 146, No. 9
September 1945
Page 130

A 10 per cent dividend has been declared by the Oregon Chrome Mines, Inc., Garfield Voget of Hubbard, Oregon, president. The company's property, located in the Oak Flat district near Selma, is being operated under lease by William Robertson, 629 North Eighth Street, Grants Pass.

From Mining World
Vol. VIII no. 8
July, 1946
Page 26

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

SHIPMENTS OF CHROME ORE FROM OREGON CHROME MINE

1946*

Shipped To	Gross Wt. - Long Tons		Selling Price
Ohio Ferro-Alloys Corp. Canton, Ohio	738.56	(Cr_2O_3 - 45.34% FeO - 11.0%)	$33.90 (Less freight)
	749.94	(Cr_2O_3 - 43.74% FeO - 10.93%)	
Total	1,488.50		
Bethelehem Pacific Coast Steel San Francisco, Calif.	866.34		30.00 (At mine)
Bradley and Ekstrom 320 Market St. San Francisco, Calif.	27.85		30.00 (At mine)
Total Shipments	2,382.69		

*Mine operated until August 1, 1946

1947

No shipments of chrome ore made during the year.

Schafer report rough draft of original
May 1955

GEOLOGY OF THE OREGON CHROME MINE

Introduction

The Oregon Chrome Mine is composed of a block of 7 unpatented lode claims in sec. 21, T. 37 S., R. 9 W. of Josephine County, Oregon. The mine is operated by the Robertson Chrome Mine Company headed by William S. Robertson of Grants Pass, Oregon.

The mine has consistently been the largest producer of chromite in the state. Mining was begun by the California Chrome Company in 1917 and 1918 when about 5000 tons of chromite were mined. (DOGAMI File Report, unpubl.). Operations were begun again in 1940 by the Oregon Chrome Mines, Inc. headed by S. Dilsheimer. W. S. Robertson operated the mine beginning in 1942. Chrome was mined consistently from 1942 to 1946. For several years, mining was sporadic, mainly because of development work done and several layoffs. Since 1952 the mine again has been a consistent producer.

The surrounding area near the mine is rough with steep slopes and sheer canyon walls near the Illinois River. The relief is about 2000 feet.

Purpose and Acknowledgment

This project was undertaken for several reasons: to assist in a regional chromite commodity report being prepared by Len Ramp of the DOGAMI; to bring mapping of the mine workings up to date; and to provide detailed structural data on the serpentine.

The author wishes to acknowledge the help of Len Ramp who provided most of the material on regional geology of the area and who assisted in the mapping and interpretation of data. William and Louis Robertson and the miners extended every courtesy to the field workers. The

writer wishes to acknowledge the use of unpublished maps prepared under the direction of Fred W. Cater of the U. S. Geol. Survey assisted by Elton Youngberg of the DOGAMI. These maps were used to obtain the position of mined and back-filled orebodies. This information was available from no other source. The maps are dated 1944.

The emphasis of this report is on the structure and ore deposits of the Oregon Chrome Mine. Detailed data on other phases of geology was omitted because of lack of time and a resulting duplication of material of the forthcoming report by Ramp.

Geology

Rock Types

The principal rock type cut by the mine workings is serpentinized peridotite. No distinction was made between the serpentinized dunitic and saxonitic varieties of peridotite in the mapping of the mine. Briefly, serpentine minerals have replaced the olivine and the rare enstatite of the peridotite to a great degree, leaving only small cores of the original minerals in a mesh of antigorite and talc.

Dikes of quartz-dioritic and granodioritic composition are exposed on the surface near the mine and small offshoots of these dikes are cut by the mine workings (see Fig. 1). The principal concentration of these dikes is in the main haulage level from approximately 350 feet to 550 feet from the adit. Very few of these dikes are seen in the other workings mapped. At one point, about 15 feet of the serpentine has been so thoroughly invaded by the dike material as to render it a true injection gneiss with a highly contorted appearance and with variable foliation. The dikes range in thickness from 1 inch to 3 feet. The trend is generally N-S

with variable dips to the west ranging from nearly flat to vertical.

Alteration of these dikes to lime-silicate rock, principally rhodingite, has taken place, especially in the thinner dikes. Diopside and the calcic garnet, grossularite, are the main final alteration products but all variations between quartz-diorite and rhodingite are seen.

Structure

The dominant apparent structural feature of the serpentine is jointing and shearing. Most of the serpentine is divided into 6 inch blocks by these fractures. In limited areas the blocks are larger and may be 18 inches to 24 inches on a side. This probably reflects a change in composition of the original peridotite. The "joints" appear to grade into "shears", or fractures along which there has been perceptible movement. The "joints" may be filled with up to 1/8 inch of gouge which probably is a sign of later adjustment. Since there has been so much evidence of movement or adjustment along these fracture surfaces, a clear-cut distinction between "joints" and "shears" must rest on their structural relationships and not on the appearance of an individual fracture.

The mine workings cut several strong shear zones or faults. The strongest is a strangely brecciated zone trending N-S and is 330 feet from the adit on the main drift (See Fig. 1). The zone is 8 feet wide. A 6 foot shear zone is cut at the end of the cross-cut off the main drift. This fault apparently cuts off ore to the N.E. Exploration beyond this shear by diamond drill methods failed to discover any extensions of the orebodies to the west. This zone trends N. 60° W. and dip 75° NE. Seventy feet towards the adit from the hoistroom on the main level, a 5 foot shear zone which trends E-W is cut. These shear zones are marked usually by a zone of gouge up to 6-8 inches and several feet of highly brecciated

serpentine on each side.

Structural data were collected in the mapping of the workings and separate readings on joints and shears were taken throughout the drifts at 33 foot intervals. Thus a total of about 250 readings were plotted on a stereographic net (See Plate 1). The results were as follows: there appeared a very strong concentration of fractures trending N. 36° E. and dipping 60° SE. Two other concentrations trend N. 30° E. and N. 48° E., and dip 65° NW and 35° SE respectively. These three concentrations were taken to represent tension fractures opened along the axis of a fold. Additional evidence for such a fold has been collected by Ramp during his detailed mapping of the surface. An isoclinal fold with the limbs of at least 4000 feet apart is probably present. Four other concentrations were apparent. The trends were N. 73° E., 50° SE; N. 50° W., 35° SW; N. 10° W., 45° NE; and N. 60° E, 50° NW. The interpretation of these concentrations made by the writer is as follows: Two conjugate shear systems were formed at an early stage of the folding of the region. One system composed of the two sets, N. 73° E., 50° SE. and N. 10° W., 45° NE., were caused by the initial force that started the folding. This force acted from the NW and SE. The other sets, N. 50° W., 35° SW. and N. 60° E., 50° NW., were caused by a secondary force that caused the plunge of the structure.

These latter four trends are true shears. They show acute angles facing two forces which were at right angles from each other. It is realized that this interpretation of the data rest on very little evidence. One serious question arises as to the emplacement of the acid dikes. The dikes do not readily conform to the joints but to the shears. In spite of this, the dikes are not seriously jointed.

A tentative sequence of events would be: the beginning of folding with the formation of at least four directions of shearing. During the folding some, or all, of the dikes were intruded. As folding progressed, tension joints were opened parallel to the strike of the fold axes. Relatively minor adjustment took place along all of these fractures as folding progressed. The strong shears appear to be a later feature. There has undoubtedly been movement that is younger than that described. Numerous adjustments have probably taken place along the sets of shears and joints and possibly it is these later movements which formed the strong faults and shear zones mentioned previously. Wells (Kerby Quad; 1949) shows the main body quartz-diorite cut by a prominent fault trending N. 50° W. Off-shoots of this body are the acid dikes which are present in the mine workings.

Chromite Deposits

The chromite bodies are tabular and lens-shaped in profile. They have occurred in the Oregon Chrome Mine in several belts trending N. 60° E. and S. 30° E. These separate lenses lie in a fairly continuous plane which trends approximately N. and NE. and dips 35° to the E. and SE. The individual bodies vary slightly from this attitude but the variation is not serious. It appears that the plane is curved slightly with a strike of N-S in the older higher workings and the strike turning towards the east in the more recently mined ore-bodies. Still the conclusion that the single plane contains all the bodies is inescapable. It follows that the separate lenses are stretched and sheared apart by shears at small angles to the chrome layer.

The individual body mapped is a tabular body, roughly ellip-

tical in plan trending N. 30° E. and dipping 30° SE. The rake may be approximately S. 45° E. but the deviation from a circular plan has not been well established by the present stage of mining of the ore-body.

The present body has been sheared and many separate stringers and layers make up the whole (See Fig. 2). The contacts of the chromite and the serpentine country rock are almost always sheared, but several are gradational contacts showing within a space of 8-10 inches the gradation between the massive crystalline chromite layer through disseminated crystals to unmineralized serpentine. It was thought to be impossible to attempt to reconstruct the original position of the chromite stringers from the meager evidence of this type available. The separate stringers are generally parallel to the general attitude of the whole body. The largest thickness of a single body has been about 11 feet, but the average has been nearer 3 feet. Mining is usually discontinued when the chromite "pinches" to about 1 foot near the edge of the body.

The present body has contained an abnormal amount of waste interlayered with the chromite stringers. This may possibly indicate more shearing but this is not supported by any other evidence.

The chromite layers are composed of massive crystalline chromite. The chromite is very dark brown to black, has a submetallic luster, a brown streak and a specific gravity of about 4.5. The individual crystals appear to be from 1/8 to 1/4 inch ir diameter. There are, in a few places, chromite crystals disseminated in a groundmass of talc or serpentine minerals. The chromite crystals usually make up at least 90% of this rock. The chromite throughout the mine has averaged approimately 46% chromic oxide with about a 2.7 to 1 cr:fe ratio.

Mining Methods

The present ore-body is reached by the main drift, an 80 foot inclined winze and the lower drift. The chromite lens is mined by square-set methods with a series of chutes to drop the ore. The attitude of the body, the lack of detailed knowledge of the position of the separate chromite layers which make up the body and the large amount of waste have made mining of this body difficult.

The ore is drilled with an air leg drill, shot and hand-sorted by the miners in the stope. The chromite is then sent down a system of chutes to the lower level. The chute is drawn into the hoist bucket, trammed about 50 feet to the hoist and drawn up and dumped. This chute is drawn and the car is trammed about 750 feet to the outside dump. There has been a large amount of waste handled in this same manner as there was not sufficient room to back-fill in the stope. As mentioned previously irregularity of the individual layers within the body and lack of detailed knowledge previous to stoping have increased mining costs tremendously.

Production

The total production of the mine to the present date has been estimated by W. S. Robertson at about 32,000 long tons. About 25,000 tons has been mined since 1942 when the operation of the mine was taken over by Mr. Robertson.

Reserves

The terms, "measured", "indicated" and "inferred" are used here. Measured will mean ore which is visible on one or two sides, and has been drilled. Indicated ore will be an extension of the measured ore-bodies which have been drilled or those bodies calculated from drill data alone.

Inferred ore will be that which is extended or postulated by geologic evidence alone.

An arbitrary figure of 10 cubic feet to the long ton unit was used in the calculation of reserves. Chromite will run about 8.2 cubic feet but a 20% waste factor is postulated for these calculations.

Measured ore in the body presently being mined (May 1955) are 40 tons. Inferred ore is put at 250 tons in the extension to the NW of the present orebody.

A new orebody has been discovered just below the level of the lower level. Diamond drill data gives a length of at least 60 feet. W. S. Robertson estimates a tonnage in excess of 3000 tons will be present. One thousand tons of additional ore can be inferred.

The previously mentioned "plane" containing the presently known chromite bodies has an unexplored distance of 500 feet in length and from 100 to 300 feet in width lying above the main haulage drift. This block of ground should contain several extensive orebodies. Inferred reserves in this block are 10,000 tons. Additional ore in the block of ground down-dip from the previously mentioned block and on a level with the lower limits of the orebody just drilled should total an additional 3000 tons.

Totaling the three classes: Measured, 40 tons; Indicated, 3000 tons; Inferred, 14,250 tons. Total tonnage in all catagories is 17,290 tons.

The small amount of measured ore is a characteristic of the mining and development methods of the chromite mines of this region. After a large orebody has been explored by drilling, it is entered by a mine opening. The irregularity of the chromite stringers usually prohibits

planned development of a body for more than a few days ahead. Long steel is used in the air-leg drill to explore the rock near the openings and this method usually fills in the rock between the diamond drill exploration holes.

Conclusions and Recommendations

The conclusions drawn are as follows: a complex history of folding has faulted, sheared and jointed the serpentine. Isoclinal folding is assumed with two conjugate shear sets formed and a set of joints formed by tension along the axis of the fold. According to evidence that Ramp has collected on the surface, the mine is near the axis of a NE plunging anticline or a SW plunging syncline. Not enough evidence has yet been collected to make a committment on either structure.

The chromite was originally a layer in the peridotite formed by the early crystallization of the chromite crystals and their sinking to the floor of the chamber. Thus the shape of the original layer is subject only to the irregularities of the surface upon which the crystals settled. During intrusion of the peridotite (or serpentine) and subsequent deformation the layer was stretched and sheared by low angle shears into separate bodies. The bodies mined all show a remarkable conformity to a plane which generally strikes in a northerly and NE direction and dips to the east and SE.

It is very strongly recommended that the portion of the "plane" containing the known chromite bodies, which lies above the level of the main drift, be explored by drifts and by diamond drill methods. No evidence was found that would account for any great displacement of chromite lenses in this area. The area to be explored lies above and to the SE and S. of the main drift. It is the author's firm belief that several extensive lenses remain in this by-passed area.

* * * * *

The Oregon Chrome Mine, Oregon's largest producer of chromite has been temporarily closed. Early in March the last equipment was removed from the underground workings and mine area. The mine in the rugged Illinois River country about 35 miles southwest of Grants Pass, has been operated continuously since 1950 by Bill Robertson and associates of Grants Pass. During this period almost 12,000 tons of metallurgical-grade chromite has been produced with a value of well over a million dollars. All of the developed ore has been removed and owing to an unfavorable open market price for chromite and the near end of the stockpile purchase program of the General Services Administration no new extensive exploration or development work is planned.

The Oregon Chrome Mine has a history of production since 1917 and during World War I yielded about 6,000 tons of chromite. The mine was acquired by Bill Robertson in 1942 and during the period from 1942 to 1948 showed a production of about 14,000 tons. Between 1948 and 1952 extensive development work was done but no appreciable production until 1952, and since then chromite has been mined consistently and from 1952 until the closedown another 12,000 tons have been sold.

Lower Level

0+66 – N 25° E, 75° NW
N 60° E, 75° SE
N 50° W, 45 NE
N 30° E, 65° NW
N 20° W, 25° NE
N 55° E, 40° NW
0+25 – N 70° E, 70° NW
N 25° W, 25 NE
N 30° W, 60° NE
N 45° W, 75° SW

Main Lower Level
0+66 – N 30° E, 80° SE
N 40° E, 50° SE
N – S 55 W
N 75° E, 50 S
N 70° W, 40° NE
0+100 – N 60° E, 40 SE
N 35° W, 60 NE
N 65° W, 65 SW
N 60° E, 45 NW
0+33 N 30° E, 45 NW
N 5° W, 55° SW
N 85° E, vert
N 25° W, 55° NE
N 60° E, 40° NW
N 85 E, 25° SE
N 35° E, 55 SE

1+66 – N 35° W, 85 S
N 85 W, 70° S
N 55° E, 50° NW
N 30° E, 85° NW
2+0 N 65° E, 55 SE
N 10° W, 40 SW
N 40° W, 45 SW
N 50° E, 20 NW
N 85 E, 50° NW
2+35 N 50° E, 80° NW
N 30° E, 70° NW
N 35° E, 30° NW
N 65° E, 60° SE
N 50° W, 25° SW

~~Left ha~~

Nov. 8 7 9

Winze in lower level @ ~~0+00~~
1+33.5' ore haulage 25' manway

Winze 123' on 75° E? dip. at 1+L
to drift.

2" talc shear filled with white
rib. Calc-silicate rock. Sample.
Rhodingite. This shear cuts
under side of chrome stringer.
Other shear cuts W side of str.

Drilling sta. on 1st lower level
2+04 & 1+62

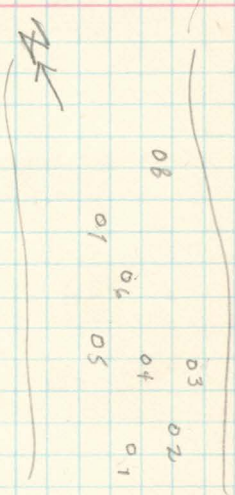
1+62

1 ~~N~~ S22E, 25
2 S0S35E
3 45S43E
4 S0S45E
5 55-S60E
6 60S80E
7 45S80E
8 40 N80E

sketch of 0.01 ft
pattern @ 1+62 on
lower level

2#04

1 60 S 50 E
2 55 S 45 E
3 50 S 65 E
4 55 S 65 E
5 70 S 75 E
6 50 S 80 E
7 50 N 75 E
8 45 N 65 E



Ore in shaft @ 80' 10-15'

Oregon Chrome

Get more structure in stope. Carry mapping up to present. Ask miners about gradational contact vs. sheared contacts.

See about joints in the dikes

4/6 Wednesday

Setting up new drilling station about 60' back from other station. Station 30' SW from 5+0 and under set. Chrome in back NE of timber set.

Beven & Nielson Hydraulic.

On old channel above Galice Ck.
Dozing ground into riffles then
cleaning up with hose on
bedrock.

Down private road ~~to~~ .4 mile
Down Galice Ck 1.5 mi. past 2
bridges.

$1/ ground - 100 ounces.
Finish this week 20-30 more
ounces.

Joints Left hand drift haulage level

0+33 - N55°W, 80°NE
N5°W, 75 NE
N15°W, 55 NE
N-S, 50°W

0+66 - N80°E, 85 SE
N20W, 65°SW
N54°W, 50°NE
N8°E, 80° ~~E~~S
N15°E, 85°NW

1+00 ~~25~~ N40W, ~~N~~65°NE
N25°E 65°SE
N45°W, 65°NE
N40°W, 25°NE
N10°E, 45SE

Fault at end drift
N60°W 75° NE
movement = Normal
upto 6" gouge 3' shear

6466 N05E 70 SE –
N60W 65 NE –
N35E 65 NW –
N80W 65 SW –
N60W 65 NE –

7460 N65W 60 SW –
N75E 15 NW –
N45E 85 AE N10E 85 SE –
N15E 65 NW –
N75W 75 SW –

7463 N15W 25 SW –
N10W out –
N35E 75 NW –
N20W 75 SW –
N35W 30 SW –
N30E 15 SE –
N30W 45 NE –

Thursday

2+2-6	N15E	N45E	—
	N65E	20NW	—
	N20W	60NE	—
	N80W	40SW	—
3+00	N25E	65NW	—
	N60W	70SW	—
	N43W	54SW	—
	N40W	70SW	—
3+33	N70W	68SW	—
	N65W	25NE	—
3+66	N-S	75W	—
	N-S	05E	—
	N55W	55SW	—
4+00	N05E	64SE	—
	N60W	68SW	—
	N10E	62NW	—
	N75W	75NE	—

sheared into place. There seems to be no apparent pattern to emplacement of chrome stringers. Very detailed structural data of chrome bodies needed to reconstruct at least some of the movement. Not enough data present now. Movement offsetting chrome in seventh set stops is normal. When taking joints see if one set (older) shows reverse shearing and younger set shows normal movement. Are these movents separate from that from alteration to serp.

Draw up stopes (section) at both directions (NE-SW)

4-33 N70W 55 SW –
N45W 65 SW –
N65W 45 SW –
N65W 85 NE –

4-64 N20E 30 SE –
N20W 40 NE –
N70W 23 NE –
N20E 50 SW –

5+00 N80W 80NE –
N10E 80NW –

5+33 N15E 30NW –
N15W 85SE –
N50E 80NW –

5+66 N75E 30SE –
N15W 40NE –
N30W 65SW –
N10E 20SE –
N15E 30NW –
N75E 45SE –

6+00 N60W 55SW –
N15W 80NE –
N75E 30SE –
N25E 55NW –
N55W 55SW –
N15W 55NE –

6+33 N10E 60NW –
N05W 10SW –
~~N35E 60~~
N45E 55NW –
N05W 80E –
N30E 75NW –

Oregon Chrome May 10? Wed

Winze - from 5 to 15' SW of chute on lower level.

Chrome stringers off 8th & 9th set levels. Extension of upper ore-body or lower body. To SW of Hoist room. May be 10' below level. 3-4' of chrome - some 2' wide. ~~Trenching~~ Dipping to W & SW.

Lower chrome body below lower level. Extension of other chrome body drilled. 60' in length. 4' below level where ~~raise~~ winze will be.

505E

Raise on right before bend on main level. Raise 50'-55°-up in S to S15E. 20' higher to large room-(Stope?). 90° turn to right then up 35'-over 40' to other large room. Draft coming down raise to right. Timbered rooms

Monday, March 12?

Lower Level Dragon Chrome

Chrome stringers seem to be on "flats."
Shearing is stronger and wider also.
Joints probably will do nothing but
maybe give sequence of folding (shearing
Is difference in serp. ~~cause~~
cause or effect of more intensive
shearing?

Get data on drill holes.

Sinking going to be done ~~at~~
near face of drift where
chrome stringers are.?

Tuesday

Chrome on flats - many shears
show reverse ~~folding~~ faulting or drag
relationship. Squeezing might
accomplish chrome emplacement
same as faulted vein. Folding
taking place on alteration to
serp. Can chromite be "squeezed"
or does it have to happen on
solidification or before.
How to prospect!

Miners confirm flat chrome. Pod made on flat parts of shears. Several generations of folding have taken place. The shears that cut off chrome and "chrome shears" are products of later folding. Try to find out sequence of movement.

Pit in highly sheared zones

Wednesday

Slips above 7th set in SW corner N20W - 75SW drop chrome down 1½ twice to NW. Normal movement 4" talc on slips. Moved 11' of chrome with some waste.

Some chrome shows gradation with country rock. Mostly sharp sheared contact. In most places chrome is without gradational contact. Must have been sheared out of middle of original chrome body. All present chrome stringers may have come from one or few chromite ~~st~~ layers and

CRIB MINERAL RESOURCES FILE 12

RECORD IDENTIFICATION
- RECORD NO..... MO60541
- RECORD TYPE..... XIM
- COUNTRY/ORGANIZATION. USGS
- DEPOSIT NO..... ODGMI 100-249
- MAP CODE NO. OF REC..

REPORTER
- NAME..... JOHNSON, MAUREEN G.
- DATE..... 76 05
- UPDATED..... 81 03
- BY..... FERNS, MARK L. (BROOKS, HOWARD C.)

NAME AND LOCATION
- DEPOSIT NAME..... OREGON CHROME MINE
- SYNONYM NAME..... ROBERTSON

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

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

- COUNTY..... JOSEPHINE
- DRAINAGE AREA..... 17100311 PACIFIC NORTHWEST
- PHYSIOGRAPHIC PROV..... 13 KLAMATH MOUNTAINS
- LAND CLASSIFICATION..... 41

QUAD SCALE	QUAD NO OR NAME
1: 62500	PEARSOLL PEAK

LATITUDE	LONGITUDE
42-20-38N	123-46-08W

UTM NORTHING	UTM EASTING	UTM ZONE NO
4688021.1	436658.6	+10

- TWP..... 39S
- RANGE.... 09W
- SECTION.. 21 16
- MERIDIAN. W.M.

- ALTITUDE.. 1500 FT

- POSITION FROM NEAREST PROMINENT LOCALITY: 5 MILES NE PEARSOLL PEAK

COMMODITY INFORMATION

OCCURRENCE(S) OR POTENTIAL PRODUCT(S):
POTENTIAL.....
OCCURRENCE..... RH

COMMODITY SPECIALIST INFORMATION:
PGM OCCUR

ORE MATERIALS (MINERALS,ROCKS,ETC.):
CHROMITE

ANALYTICAL DATA(GENERAL)
RH 0.015 PPM

MINERAL ECONOMICS FACTORS

ECONOMIC COMMENTS:
AT THE END OF U.S. STOCKPILING PROGRAM ALL PROVEN ORE RESERVES, MINING EQUIPMENT & TRACK WERE REMOVED; SEE J7

EXPLORATION AND DEVELOPMENT
STATUS OF EXPLOR. OR DEV. B
YEAR OF DISCOVERY..... ABOUT 1917
PRESENT/LAST OPERATOR.... WM. ROBERTSON & J.G. GALLAHER

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:
MASSIVE CHROMITE; DISSEMINATED
FORM/SHAPE OF DEPOSIT: TABULAR; LENS

SIZE/DIRECTIONAL DATA
SIZE OF DEPOSIT..... MEDIUM

PRODUCTION
YES
LARGE PRODUCTION

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

ITEM		ACC	AMOUNT	THOUS.UNITS	YEAR	GRADE,REMARKS
15	ORE	ACC	4.110	TONS	1917-1918	
16	ORE	ACC	14.124	TONS	1937-1948	45% CR2O3
17	ORE	ACC	13.684	TONS	1951-1958	46% CR2O3
21	TOTAL		31.918	TONS		44.54 % CR2O3 (WEIGHTED AVERAGE GRADE)

SOURCE OF INFORMATION (PRODUCTION).. STATISTICS PREPARED BY MRS. WM. ROBERTSON ; THAYER RECORDS AGREE

PRODUCTION COMMENTS.... LARGEST PRODUCER IN OREGON

SOURCE OF INFORMATION (POT RESOURCES).. RAMP, 1961

GEOLOGY AND MINERALOGY

AGE OF HOST ROCKS..... JUR
HOST ROCK TYPES..... SERPENTINIZED DUNITE

GEOLOGY (SUPPLEMENTARY INFORMATION)
REGIONAL GEOLOGY
MAJOR REGIONAL STRUCTURES.. NEAR AXIS OF A SW-PLUNGING SYNCLINE

LOCAL GEOLOGY

SIGNIFICANT LOCAL STRUCTURES:
SHEARING & STRETCHING OF ORIGINAL LAYER

GENERAL COMMENTS
HIGHLY SHEARED & JOINTED - RAMP (1961) CONTAINS STRUTURAL DATA. RECORD NUMBER (WO17043) HAS BEEN MERGED WITH TH
RECORD AND DELETED FROM THE OREGON FILE. . RECORD NUMBER (WO17043) HAS BEEN MERGED WITH THIS RECORD AND DELETED
FROM THE OREGON FILE.

GENERAL REFERENCES
1) RAMP, LEN, 1961, CHROMITE IN SOUTHWESTERN OREGON: OREGON DEPT. GEOLOGY AND MINERAL IND. BULL. 52, 169 P.
2) THAYER, T. P., 1974, UNPUBL. DATA
3) PAGE, N.J, JOHNSON, M.G., HAFFTY, JOSEPH, AND RAMP, LEN, 1975, OCCURRENCE OF PLATINUM GROUP METALS IN ULTRAMAFIC ROCKS OF THE MEDFORD-COOS BAY 2 DEGREE QUADRANGLE, SOUTHWESTERN OREGON: U.S. GEOL. SURVEY MISC. FIE STUDIES MAP MF-694
4) RAMP, L. AND PETERSON, N.V., 1979, GEOLOGY AND MINERAL RESOURCES OF JOSEPHINE COUNTY, OREGON; ODGMI BULL. 100 45P

Hoperated – minor development – by S. Dilzheuer

on Chrome Mines, Inc
. Robertson – Oregon Chrome
o Box 475

	Av. Cr_2O_3	Av. Cr-Fe	
1942			
139.40	43.4	2.59:1	stockpile
1943			
586.24	36.55-47.01	2:33:1 to 2.80:1	stockpile
1944			
5101.82 long ton	42.17-48.43	2.49:1 to 3.11:1	5177.46 ton
1945			
2,148.40	42.56-47.04	10.55 to 11.85 Fe	stockp
1946			

586
139
725

5101
2148
2382
2755
12,386
725
13,111 Long to

2382

through 1948
749.50 long tons
o 45.00% Cr_2O_3
11.27. Fe

1947 – no shipment

1948 Approx. 2,755.19 long ton – av. 44.74 Cr_2O_3
2.71:1 Cr:Fe 11.73 Fe
closed in August 1948

1949 not operating

1950 – Began development operations in October 1950

1951 – no shipments

1952 Development – diamond drilling etc.

Oreg. Chrome Mine Notes

From: Fred W. Cater Report

1943 (~~date in~~) — new ore beyond the dike against which operations of World War I had ceased; and ~~from~~ from 1941- till this discovery only about 200 long tons of chromite had been mined.

World War II Mining

Has exposed 3 main ore bodies in main or central group of underground workings. They are tabular and elongate; their longer axes exposed in the workings now accessible trend and plunge in a N. 40° E direction and dip from 25° to 30° SE.

1563 level (No #2 orebody?)

Above No 2 orebody was No. 1 orebody It extended from a pocket in upper workings down to 1512 level

Confidential

The Old Oregon Chrome Mine, Josephine County, Oregon

Introduction

The Old Oregon Chrome mine is located on the east slope of the Illinois River Canyon, about 600 feet above the river and about 1,500 feet above sea level, in the NW¼ of sec. 21, T. 37 S., R. 9 W., Josephine County, Oregon. The ore is hauled 15 miles over a graded, Forest Service road to the paved highway U. S. 199 and thence 23 miles to the Metals Reserve Company's stockpile at Grants Pass, Oregon. The region surrounding the mine is rugged and mountainous and has a relief of about 2,000 feet. Slopes are steep and in the canyons cliffs are common.

The mine was formerly named the Florida Mine and was operated by the California Chrome Company from 1917 through 1918. According to Diller[1] it produced 4,600 long tons of ore during this period. In early

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[1] Diller, J. S., Chromite in the Klamath Mountains, California and Oregon: U.S. Geol. Survey Bull. 725, p. 33, 1922.

1941 the property was acquired and reopened by Wm. Robertson. Later that year the Oregon Chrome Corporation was organized and took over the property, but Mr. Robertson remained as operator. Until late in

1943 when new ore was discovered beyond the dike against which the operations of the first World War had ceased, only about 200 long tons of ore had been produced. Since that discovery, however, over 5,500 long tons of additional ore has been mined. Total production through 1944 thus exceeds 10,000 long tons of ore and the mine is the largest producer in Oregon.

Field work on which the present report is based was started in September 1944 by F. W. Cater, assisted by E. T. Wood, and then carried on intermittently by Cater, with the able assistance of Mr. Elton Youngberg of the Oregon Department of Geology and Mineral Industries until November 1944. A topographic and geologic map was prepared of an area 300 feet wide and 800 feet long (see figure 1) by transit and plane table methods and a map was made of the accessible underground workings by transit methods (see figure 2).

Figure 1. Geologic map and sections of the Old Oregon Chrome Mine, Josephine County, Oregon.

Figure 2. Plans of underground workings and sections of the Old Oregon Chrome Mine, Josephine County, Oregon

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The information and courtesies extended the field party by Mr. Robertson are deeply appreciated.

Geology

The deposit is near the western contact of a large peridotite massif which has a maximum length of 65 miles and a maximum width of 15 miles. Near the mine this massif is known to be an eastward dipping tabular body 1½ miles wide. Hence the deposit is located near the floor of this massif. Much large scale faulting has taken place in this region and in many places the peridotite is crushed to slickentite, but in the vicinity of the mine it is relatively unsheared. The peridotite is largely saxonite though irregular masses of dunite are scattered at random through it. Both varietal types are serpentinized. Contrary to the conditions found at most chromite deposits the dunite is not intimately associated with the chromite. Because of the irregular nature and distribution of the dunite and the time consuming requirements of such a task, no attempt was made to differentiate the serpentine into saxonitic and dunitic facies.

A system of discontinuous, irregular diorite and quartz-diorite

dikes intrudes the serpentine. In the vicinity of the mine the earlier intrusions are of quartz-diorite which trend about N. 70°W. Only one of these dikes was found on the mapped area, but others were noted near by. The quartz-diorite dike shown on the southern part of the map is cut off and intruded by a diorite dike striking about N. 10° E. and dipping about 35° SE. This diorite dike appears to belong to a system of similar dikes which on the average strike about N. 30° E. Many of these diorite dikes are altered, especially in their thinner portions, to hard, fine grained, white rodingite, a highly calcic rock composed largely of grossularite and diopside. All degrees of alteration from apparently fresh diorite to rodingite showing no dioritic characteristics are to be seen in and around the mine.

A system of joints striking from N. 15° E. to N. 35° E. and dipping 45° SE is prominent, especially in the vicinity of the upper portal of the main underground workings. Small faults and shear zones are numerous.

Chromite deposits

Mining during this war has exposed three main ore bodies numbered 1, 2, and 3 (see figure 2) in the main or central group of underground workings. It is possible, however, that the lowest or No. 3 may be a faulted segment of either of the other two. They are tabular and elongate; their longer axes exposed in the workings now accessible trend and plunge in a N. 40° E. direction and dip from 25 to 50° SE. Apparently the bodies mined during the First World War had a similar orientation, for Diller states that the largest of them trended N. 10° E. and dipped 45° SE. It has been impossible to verify this or to ascertain the attitude, shape, and in many cases even the location of the other ore bodies mined at that time. In June 1918 Caldwell[/] reported 8 bunches or kidneys of chromite spaced at intervals over a distance of 200 feet and along a line which trended northwest. The largest ore body was rudely spherical and about 30 feet in diameter. Two others gave promise of being as large according to Caldwell's

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[/] Caldwell, F. B., Unpublished report in the files of the U.S. Bureau of Mines.

report and a third which had been mined out and the workings caved at the time of his visit were reported to have been 30 feet long and to have yielded 600 long tons.

As most of the ore bodies mined during this war had been stoped out and as most of the stoped areas in both the old and the new workings had been filled by the time the mine was examined, it was impossible to determine their actual dimensions. If the old filled area on the 1,563 level is part of the number 2 ore body--and this is a logical assumption--then the number 2 lens was at least 185 feet long, had a probable width of 50 feet and a maximum thickness in one of the "swells" of about 15 feet. Directly above the No. 2 body and separated from it by 2 to 12 feet of serpentine was the Upper of No. 1 ore body. It extended from a pocket in the upper workings where it is too thin to be mined profitably down to the 1,512 level where it has been faulted off. It has a length of 165 feet, a probable maximum width of 40 feet, and a thickness similar to the No. 2 ore body. The lowest or number 3 tabular body has a length of 75 feet between the faults that terminate it, and an average thickness of 7 feet. The width is

CHROME REPORT NO. 8.

OUTLINE OF METAL MINE REPORT

for use by

THE ENGINEERS OF THE U.S. BUREAU OF MINES.

1. Reported by F. B. Caldwell — June 16, 1918.

2. Name of Mine: Florida Claim — Office Address:

3. Operator or Owner: California Chrome Co. — Kohl Bldg., San Francisco.
   (a) Mr. Hufford, Mgr.
   (b) Mr. McBride, Supt. or foreman. — Mine Address:

4. Location: — Selma, Josephine Co., Oregon.
   (a) State — Oregon.
   (b) County — Josephine
   (c) Mining Dist. — Illinois Valley T. 37 S., R. 9 W., Willamette Meridian on the east side of Illinois River below Six Mile Creek.
   (d) Shipping point — Water Creek end of C. & O. C. R. R.
   (e) What railroad — California and Oregon Coast R.R. to S.P.R.R. at Grants Pass.
   (f), (g). Supply point and what railroad. — Grants Pass on S.P.R.R.

5. General Description of Property:
   (a) Number of claims and area of group. — Two claims.
   (b) Title to property, by location, patent, fee. — Ten year lease was informed by Atty. Oddie.

6. Transportation Facilities:
   (a) Distance from railroad. — 22 miles to Water Cr. on C.&C.O.R.R.
   (b) Character of road — 8 ft. wagon road of which 14 miles is newly built by the Co. Cost $32,000.
   (c) Kind of haulage — 6 and 5 ton White trucks.
   (d) Cost — 35¢ to 40¢ per ton mile (was informed).

7. Ore Deposit:

   (a) Type; cavity filling, replacement, etc.

   The ore occurs in Peridotite and is a precipitation and aggregation when magna cooled. Several deposits.

   (b) Form; tabular, lenticular, etc.

   Has form of more spherical than any other shape, or perhaps like an egg.

(c) Extent; length, width and depth.

The ore occurs in 8 bunches or kidneys and one cropping, 6 of them extending in more or less straight line striking N.E. and S.E. over a distance of about 200 feet; along this 200' lineas developed about 140' is ore, some cropping. A smaller bunch partially mined occurs along same line but 250 ft. more or less to the southeast.

Another cropping of chrome 25 ft. long by 2 ft. wide (information) was covered up by ore dump) lay to S.E. a few feet of main line of chrome and at a right angle to main line (this may be a large piece of float).

A ninth outcrop occurs on the road also to S.E. to main line of ore a short distance, no work done. The largest body mined and open is more or less spherical 30 ft. diameter, two others now being mined promise to be as large, another mined caved appeared to be 30 ft. long said to have produced 600 tons of 45% chrome.

The others are smaller but still contain some ore in place.

(d) Attitude; dip, strike, pitch, etc.:

As stated, generally the ore bodies appear to form in a N.W. and S.E. line dipping to the N.E. into the hill.

8. Character of Ore:

(a) Appearance. Black massive, heavy, hard both coarse and fine-grained.
(b) Homogeneous or disseminated. Mostly homogeneous, saw but little low grade ore.
(c) Ore minerals, in order of probable importance. Chromite with some asbestos & magnesia.
(f) Analyses of Ore. 45% and up in Cr_2O_3 (Information).
(g) Number of samples or specimens taken. One sample of ore and specimen of country rock taken.

9. Associated Rocks:

(a), (b), (c), (d). Kind, dip, strike, and general structure and relation to ore.

The ore is associated with, I believe, peridotite (specimen taken for analyses), and appears to strike N.W. and S.E. In completely surrounds the ore except on the outcrop of ore bodies.

10. Kind and Thickness of Overburden:

Overburden from nothing to 4 or 5 ft. usually thin; consists of soil and loose rocks.

11. Conditions affecting Mining, Milling & Marketing:

(a)	Topography	Deposits lay on 25 to 35 degrees sloping mountain side.
(b)	Sites for Mine structures	Favorable sites for all mine structures required.
(c)	Water supply	Water abundant for domestic purposes close by as well as milling on the river below.
(d), (e)	Timber, fuel, and power supply.	Timber and fuel abundant. Water power available on the river. No electric power near.
(f)	Labor supply, amount, efficiency & cost.	Labor is scarce, insufficient, and inefficient. They are paying $4.25 per 8 hrs. & charging $1 a day for board.

12. Estimated Quantity of Ore Available:

(a)	Blocked out.	1550 tons broken at the mine and at the railroad station at Waters Creek.
(b)	Probable	1200 tons believe can conservatively place in sight in place in mine. 2750 tons total. 1000 tons probable.
(c)	Possible	Considerable ore possible.

13. Production:

(a)	Present day production per day.	20 tons plus average daily production (mined).
(b)	Present production per month.	No data available; all depends on number & class of miners obtainable, very short of men, could work many more.
(c)	Production per year.	Shipped in 1917, 1340 tons (Information). Could produce all available ore and more in 1918 season with more men; questionable with present force.
(d)	Shifts worked - per (24 hours) day.	Working 1 shift per 24 hours (11) men working.

14. Distance to Markets:

(a), (b). Rates and routes. Shipping to Electric Met. Co., Niagara Falls.

15. Mining:

(a) Development; shaft, tunnel, drifts, raises and winzes. Development consists of surface pits and small adits to ore kidneys.

(b), (c) Methods; filling, caving, timbering, draining, ventilating, etc. Working overhead stoping when possible timbering close up to working faces, ground won't stand.

(d) Efficiency Apparently working as efficiently as possible with the class of labor obtainable.

(e) Costs They expect to get 3 tons per man. I estimate $2.00 per ton plus mining costs.

16. Milling: No mill.

17. Underground Equipment:

(a)	Pumps, hoists, machine drills	Hard drilling entirely, bar and pick work.
(b)	Haulage; mechanical, animal, man.	Wheelbarrow and small cars by man, dump into loading chutes for tracks.
(c)	Lighting and signaling	None; only surface workings.

18. Surface Equipment:

(a) Power plant, hoists, compressor, tramways, machine and blacksmith shops. Blacksmith shop, loading chutes, and storage bins sufficient for mine.

19. Critical discussion of mining and ore treatment with suggestions for ore treatment.
Several times as many men could be used to advantage if obtainable both in the extraction of ore, and in the uncovering of other ore bodies and prospecting for more, thus insuring increased production of chrome ore.

20. Reasons for estimate of probable and possible ore.

My estimate of 1000 tons of probable and more possible ore is based on the indicated showings of partially opened ore bodies compared to size of those stoped and amount of ore broken and shipped and to undeveloped surface showings, both those pointed out, and the presence of float ore both ways from the present workings.

Another property (Happy Thought) ½ mile down the road, in line with the various kidneys more or less shows considerable ore, very possibly many new ore deposits will, on prospecting, open much more ore.

Float is found along the side hill between this mine and the Happy Thought, indicating the possibility of ore. The ore bodies are large and frequent, it's a good country to prospect for more, where float and overburden. The regular prospector should be utilized in looking up new deposits, instead of mining out ore.

They are running 6-5 ton trucks over a rough road, two shifts per 24 hours, expect to move on an average of 40 tons per day. (One trip per shift).

The season for both mining and hauling is short, June to October 15, hence the urgency of more men to mine, if trucks average 40 tons (3 of the 6 were in the repair shop the day I visited mine).

CHROME REPORT NO. 9.

OUTLINE OF METAL MINE REPORT

of use by

THE ENGINEERS OF THE U.S. BUREAU OF MINES.

1. Reported by F. B. Caldwell — June 15, 1918.

2. Happy Thought No. 1 and Happy Thought No. 2, Names of Mines. (1400 ft. apart connected by sled road).

3. Operator or Owner: Union Chrome Company.
   (a) President — E. A. Willsea, San Francisco, Calif.
   (b) Manager — William Scott, Selma, Oreg.
   (c) Mr. Ede, Superintendent

4. Location: N.E. side Illinois River 15 miles from Selma and 22 miles from Waters Creek.
   (a) State — Oregon.
   (b) County — Josephine County.
   (c) Mining district — Illinois River mining district.
   (d) Shipping point — Waters Creek station.
   (e) What railroad — C.&O.C.R.R.
   (f) Supply point — Grants Pass, Oregon.
   (g) What railroad — S.P. and C.&O.C.R.R.

5. General Description of Property:
   (a) Number of claims and area of group- Two full lode claims.
   (b) Title to property, by location, patent, fee, etc. Working under lease, royalty basis from original locator

6. Transportation Facilities:
   (a) Distance from railroad- 22.3 miles from Waters Cr. on the C.&O.C.R.R. 15.3 miles to town of Selma by new graded truck road built by the Cal. Chrome Co. in 1917; other 7 miles over main county road.
   (b) Character of road — 15 miles is new road and requires constant repairing for trucks.
   (c) Gasoline trucks, for haulage.
   (d) Cost — $9.50 per ton; 43¢ per ton mile.

7. Ore Deposit:
   (a) Type; cavity filling, replacement, etc. Ore occurs in several small kidneys of various shapes and sizes, usually small, and no particular strike or dip.

8. Character of Ore:
   (a) Appearance (Physical characteristics) Ore is black, heavy, some massive & hard; part, however, is sandy and crumbles in the hand but is fairly clean.

(b) Homogeneous or disseminated — Little disseminated or low grade ore.

(d) Gangue minerals — The only impurities are magnesia and some serpentine.

(f) Analyses of ore — Said to average 43% Cr_2O_3.

(g) Number of samples or specimens taken-
Took one sample for assaying, No. 10c, sent to Berkeley and one specimen C. Rock for analysis, sent to Berkeley, No. 9¢.

9. Associated Rocks:

The associated rock is serpentine, in Happy Thought No. 1 badly shattered and broken up, in Happy Thought No. 2 more in place and compact. The fractures are usually N.W. and S.E. and dips 45 to 60 degrees easterly.

10. Kind and Thickness of Overburden:

The overburden is from nothing to 3 or 4 ft., usually thin.

11. Conditions affecting Mining, Milling, & Marketing:

(a) Topography — The topography is precipitous, making for expensive road construction and moving of ore.

(b) Site for mine structures — All required mine structures are easily obtained.

(c), (d), (e). Water, timber, fuel and power supply.
Sufficient water, timber, fuel is obtainable close by.

(f) Labor supply, amount, efficiency and cost.
Labor is scarce, insufficient, and inefficient as a rule, with subsequent high costs. Paying $4.50 for 8 hours, and charging $1.00 for board.

12. Estimated Quantity of Ore Available:

(a) Blocked out. — 51 tons ore shipped June 15-18. 150 tons ore broken at two mines and believe safely 50 tons in sight in place.

(b), (c) Probable and possible
The probable and possible ore is indeterminable, but not very favorable at two points opened; other ore bodies will no doubt be found on the claims as float occurs. Possible ore would say would be 100 tons.

13. Production:

(a), (b). Present production per day and per month-
Production varies, and could get no exact data.

(c) Production per year — They expect to produce 300 tons plus in 1918; looks favorable.

(d) Shifts worked per (24 hours) day — 8 men working one shift.

(f). No data. Union Chrome Company, San Francisco, has data, in regard to price received for ore or conc. at mine.

14. Distance to Markets: — Ore received F.O.B. cars Waters Creek C.&C.O.R.R. to Grants Pass thence by S.P.R.R. east.

15. Mining:

(a) Development and methods - Mining consists of pits sunk in ore, then drifts to extracts from which ore is followed down with more lower drifts when warranted.

(c) Timbering, draining, ventilating — Timbering needed throughout.

(d) Efficiency — Efficiency is as good as possible under the circumstances of irregular ore occurance and the class of men.

(e) Costs — Cost of mining must be in excess of $5.00 per ton.

16-17. Milling and Underground Equipment:

No milling or equipment except loading bins, blacksmith's shop and camp.

19. Critical discussion of mining and ore treatment with suggestions for ore treatment.

With more men the ore would be extracted.

20. Reasons for estimate of probable and possible ore.

Reasons for possible ore are continuance of the seams of chrome in present workings and the indications of other possible bodies by the presence of float.

NOTE: They are sleding 1400 feet from upper claim, Happy Thought No. 2, 22% grade, 5 ft. road, 3000 lb. per trip, 8 trips per shift, one man and two horses, loading and unloading by hand, cost 70¢ per ton.

Notes - Oreg. Cr. Mine

1. From Mineral Yearbook, 1944

1) Conducted development program as well as production; reference is "Mining Journal (Arizona) vol 28, No. 9, Sept. 30, 1944, p

2. From Minerals Yearbook, 1945

1) Began diamond drilling; reference is "Mining World, vol 7, No 4, April 1, 1945, p. 84

3. * E MJ vol 146, No. 9, Sept. 1945, page 130

"W.B. Robertson has resumed diamond drilling exploration

4. Ore-bin, Feb. 1948

"Has driven a 700-foot crosscut for a haulage tunnel which has tapped the ore at a depth of approx. 500' below surfa

EMJ; 1945 (Sept)

WB Robertson has resumed DD at Oreg. Chr. Mine, on Del. R., following announcement that MRC will continue to purchase chrome ore until the end of 1945.

Mining Journal (Sept 1944) Wm S. Robertson

The 5th 20% dividend since Jan 1, 1944 has been declared by the Oreg. Chrome Mines, Inc., which is headed Garfield Voget of Hubbard, Oregon. ...

Besides maintaining regular production, Robertson is conducting a development program.

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

OREGON CHROME MINE

Owner: OREGON CHROME MINES, INC., P. O. Box 475, Grants Pass, Oregon.

Operator: W. S. Robertson, 1225 NW Washington Blvd., Grants Pass, Oregon.

Location: Sections 16 and 21, T. 37 S., R. 9 W., on the east side of Illinois River at about 1500 feet elevation. The property is reached from Grants Pass via highway U. S. 199 to Selma (23 miles) thence northwest on the Oak Flat road about 15 miles to the mine.

Area: 7 claims.

History: The mine, which is the state's largest producer of chromite, was operated by the California Chrome Company from 1917 through 1918.

Diller (1921:33) reports:

"The largest body of ore found in the county was on Illinois River (3), and the mining of this body was begun in 1917 and completed in 1918, yielding a total of about 4600 tons of shipping ore. The orebody was made up of a number of parallel lenses, one of which was 65 feet in length N10°W. and 20 feet thick and dipped about 45°E. The ore generally contained 50 percent or more of chromic oxide, and but little lower grade ore was found. No purple chrome chlorites or green chrome garnet, such as are commonly seen elsewhere, was noted at this locality. The country rock, dunite, is completely changed to serpentine."

Allen (1938:43) states:

". . . According to Ed Cox, who was in charge of operations for the California Chromite Company during the war, there were three kidneys (now almost completely mined out) which yielded over 5000 tons of ore, averaging 47 percent chromic oxide."

The mine was inactive from 1918 through 1940. In 1941 The Oregon Chrome Mines, Inc. was organized by S. Dilsheimer. The mine was reopened, but there was little if any production during that year. Operation of the mine was assumed by W. S. Robertson, present operator, in 1942. The property was a consistent producer from 1942 through 1946. In 1947 an 800 foot haulage tunnel was driven but there was no production. In 1948 the mine resumed production but operations were discontinued in August. The property remained inactive until October

History: (continued)

1950 when development operations were resumed. These operations continued for several months into 1951 but there was no production. Early in 1952 development operations were resumed.

Department records show the following production for the mine from 1942 through 1948:

year	long tons	% Cr_2O_3	Cr:Fe Ratio
1942	139.40	Average 43.4	2.59:1
1943	586.24	36.55 to 47.01	2.33:1 to 2.80:1
1944	5,101.82	42.17 to 48.43	2.49:1 to 3.11:1
1945	2,148.40	Average 44.87	2.69:1
1946	2,382.69	_____	_____
1947	no production	_____	_____
1948	2,755.19	Average 44.74	2.71:1
Total =	13,113.74		

History: (continued)

The foregoing figures are believed to be incomplete in some respects therefore represent a minimum production figure for this period. W. S. Robertson estimates the production for

History: (continued)

the 1942 - 1948 period at 14,000 long tons and a total production for the mine at about 20,000 long tons.

The mine is the state's largest producer of chromite ore.

Informant: W. S. Robertson

References:

Allen, J. E.
1938 Chromite deposits in Oregon: Oregon State Dept. of Geol. and Min. Ind., Bull. 9.

Diller, J. S.
1921 Chromite in the Klamath Mountains California and Oregon: U. S. Geol. Survey, Bull. 725.