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Boundary Red Mt. Mine

Boundary Red Mt. Mine.

Whatcom Co., Washington.

Bought by Wingfield from Judge Elmon Scott of Bellingham, in 1916. Operated by Wingfield in 1916, 17, closed down in 1918 due to war-time costs & scarcity of labor. Showed fair profit in '16, '17. Reopened fall of 1920 (?) Operated since then with interruptions due to winter conditions, burning of power plant, & burning of upper tramway terminal & blacksmith shop. That Jus. Phoby of S.F. & Vancouver took an option on prop, summer of 1922; price was \$600,000⁰⁰; organized present company & started selling stock at 50¢ a share ~~on~~ on S.F., Seattle (?), Spokane & Vancouver exchanges. Wingfield to retain management until ^{balance due} rep. paid out of profits. Do not know how much paid him to date. ^{certainly nothing out of profits} Sherwood Aldrich, who formerly lost his license & was associated with Loring in the dubious Nevada Silver Hills ~~for~~ stock propos; had charge of the campaign. Devel. was stopped, & the mine pretty well gutted to show a monthly profit during the campaign. The stock soon rose to 66-70¢, but a series of bear raids on it, assisted by an "investigation" of Aldrich &

his methods by the B. of Govs. of the
S.F. Exchange, broke the price & it dropped
as low as 15¢ in Dec-²² Jan-23.

30¢ ± - in Feb., 1923. Aldrich was cleaned
& dropped the thing. Phoby in east raising
additional capital - Feb. 1923. Financial support
for the operating was satisfactory - Oct. 1922 -
Feb. 1923. Bills always paid promptly.

Dist. to Chilliwack - 35 mi. Fair wagon road to Hipkoe's ranch, 15 mi., thence pack trail to mine. After leaving Silesia Creek, trail gains 2000' in \leq 2 miles.

Packing Season - June - Nov. Contract price $3\frac{1}{2}$ ¢ per lb. For dragging machinery weighing $>$ 300 lb., 7 ¢ per lb.

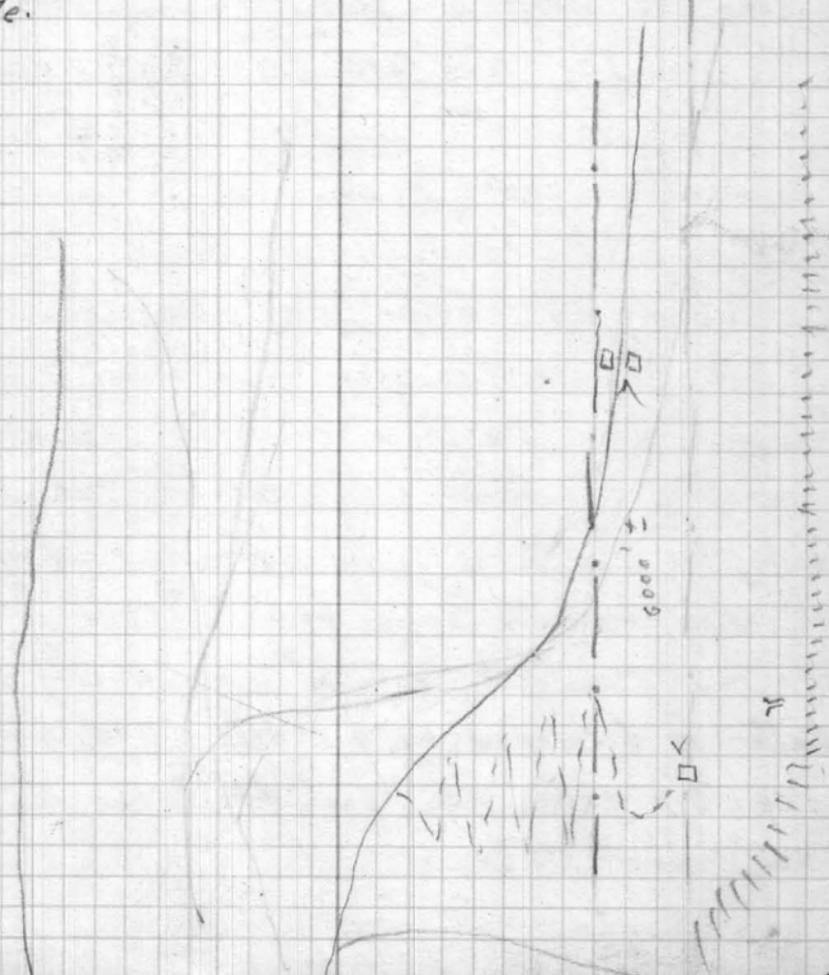
Patented claims cover about 4000' along the strike of the Red Mt. Vein, & the country for 2000' on either side of the lode is pretty well covered by patented & unpatented claims.

Geological Features - The lower slopes of Red Mt. are composed of a schist-limestone complex, while the main mt. mass consists of a grano-diorite; this is the country rock of the vein; the diorite is in the form of a long, narrow intrusion, ~~the vein being now~~ extending roughly NW-SE, while the vein is more nearly N-S. Latter is developed on 3 levels - 100, 200 & 500. Dip above 200 about 60° to the E; below 200, about 75° .

Boundary Red. 177.
Sardis, B.C.

Location, Etc.

The prop. is approx. $\frac{1}{4}$ mi. S of international boundary, in the Mt. Baker Mining District of Wash. A Mt. range, aver. 7000' in height, cuts off the U.S. to the south, so that communication is thru Canada, via Silesia Creek, the Chilliwack River, to Sardis & Chilliwack, ^{BC by trail & road} & down the Fraser River valley to Sumas, Wash by B.C. Electric or C.N.R., thence by N.P. to Bellingham or Seattle.

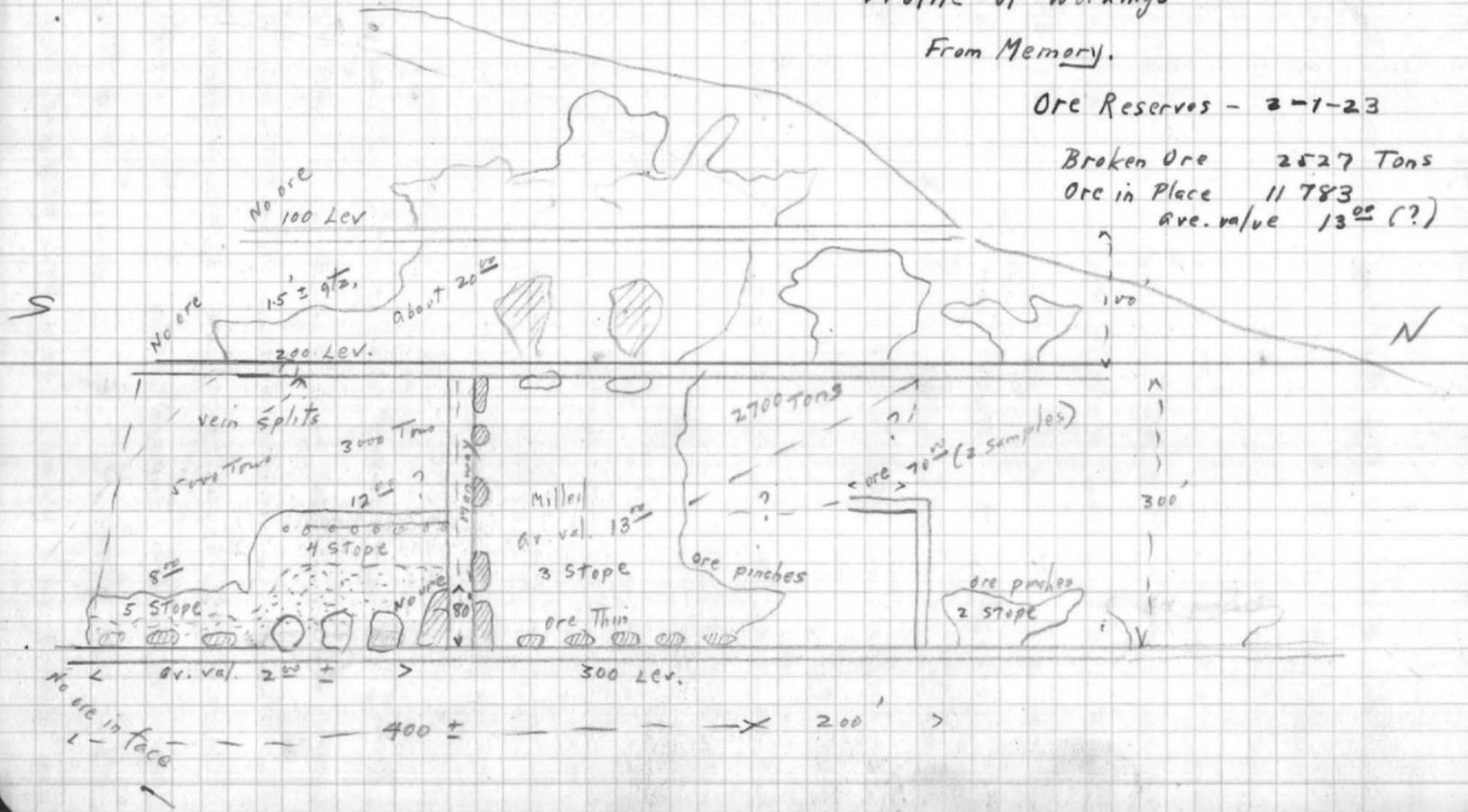


Profile of Workings

From Memory.

Ore Reserves - 2-1-23

Broken Ore 2527 Tons
 Ore in Place 11783
 ave. value 13⁰⁰ (?)



400 ±
 200 ±
 No ore in face

Both walls are very distinct, & the width of the fissure is fairly uniform, ave. 5'. Ore bodies are lenticular, starting from a few inches of quartz, often on the FW, which widens out until the qtz is from wall to wall. Much of this qtz is of the "bull" variety, white, amorphous & "dead" or china-looking; the high-grade streak is generally fine-crystalline & carries fine seams of limonite, whose direction tends to || the wall. This streak is more often next the FW than the hanging; & more often next the hanging than in the center; it is often next a horse of diorite



Bismuth Telluride occurs as an indicator, but not a carrier, of gold. Visible gold is often seen app. deposited on the telluride. J. Rowley, an experienced prospector, says the whitish telluride, more common on the lower level, is less favorable than the steel-black. (?) While the telluride & pyrite occur, ^{latter} esp. in the walls, the vein is as a whole fairly well oxidized, the ore

crushing to a red pulp, altho at first glance the ore often looks perfectly white. No other gangue minerals except qtz. were noted. Vugs lined with crystals are fairly common. The walls show considerable alteration, the minerals in the diorite being nearly indistinguishable; some pyrite in the walls, ~~but~~ & the latter are highly silicified, but the exact nature of the alteration was not determined. The "HW" has a tendency to slab, revealing more qtz. above it, & this has several times been discovered after the stope was put up, & the ore pulled out. The "FW" likewise has in at least one place been found to be a false one. This condition is similar to that at El Tigre, Nayarit.

As no stope samples were taken, nor any car samples, it is difficult to determine the ^{assay} value of the ore as at present exposed. A reasonable estimate, based on average mill heads, is \$12⁰⁰-12⁰⁰ for 394 stopes, \$7-8⁰⁰ for 5 stopes. This is clean ore; dilution varies from 10-30%. From records, the ore above the 200 averaged 15⁰⁰; this condition may be a serious diminution in value with depth; oxidation seems to me no more advanced above the 200 than below it; as many or more sulfides were found above as below, & due to the climatic conditions, the zone of residual enrichment

is probably very shallow. Another significant feature is the fact that the ore decrease greatly both in width & value in the 500 drift below 5th stope; it looks as if the 500 dr. were below the bottom of the ore-shoot; however, a flat rake would explain this, but if so, the 500' drift should enter stopable ore within 50'.

Possibilities - Above 200 Lev. there is very probably considerable ore remaining here in the main ore shoot, prob. about 2000 tons, as the last stope in on the 200 has 2' of gtz. in the back over at least 200'; & other stopes also have a showing. 3 Stope, with a capacity of 5000 Tons, will make a good "bin" for this; all levels are open, as practically no timber is reqd. in the mine.

To the N - Possibilities are limited here, for 2 reasons - ① Topography - vein reaches surface at portal, 100 lev., & in short dist. on other levels; ② Contact with schist will be crossed in rather short dist., & fissure will probably split on entering schist.

To the S - Here lies the best possibilities to my mind; the fissure is strong in the drift faces, & the diorite continues indefinitely to the S; there is no evidence against the possibility of

finding other ore-shoots to the S. The present workings appear to have disclosed one large ore-shoot only.

In depth - ~~then~~ Here chances look dubious - the face of the 500 dr. is close to 1000' from the surface (about 800'); there appears to be a serious diminution in value with depth; \$7⁰⁰ is the minimum working value with present equipment. It is planned to drive a "1200 Tunnel," to strike the vein after 1600' of X-cut 700' below the 500'; this devel. is unwarranted.

Recommendations - Drive the 500 drift at least 200' farther; if this discloses the main ore-shoot, of suitable width (>2') & value (>9⁰⁰) then sink at the face, in the H.W. to avoid water; 300' of shaft, ~~in or~~ with X-cuts showing ore, & a level at the bottom in ore of good grade & quantity, would warrant the driving of the 1200 tunnel. Or possibly less development, on following reasoning:

Cost of Tunnel, @ 30⁰⁰ per foot, 2000' @ 30⁰⁰
\$ = 60,000

Assume width of ore = 2.5' & length = 500'

$$5^{\text{00}} \times \frac{2.5 \times 500 \times A}{14} = 60,000$$

$$A = \frac{5 \times 60,000 \times 14}{5 \times 2.5 \times 500} = 134' \text{ to pay for Tunnel,}$$

5^{no} being net profit per ton, 10^{no} gross value
minus 5^{no} mining & milling cost. The shaft
level should about pay for themselves; they will
not, quite, as the diorite is extremely hard, but
this has been neglected.

Mining & Milling

Mining - By shrinkage stoping; about 7-8 tons broken per machine shift; 3 173 cu. ft.

IR singlestage compressors, driven by 25 HP induction motors (15 HP?) supply air at 80^{\pm} for 1 IR sharpener, 1 Drednaught water lines, & about 2 ~~4~~ DRD stopers, solid steel type. Chutes at 25' intervals. About 20-25' of holes requ. to break the 7 tons. Stopes extremely wet in summer. Trimming - horse pulls 7 .75-ton cars; 4 trimmers. Tram on contract @ 35¢ a car; ave. cars 70 with ave. tram about 1200' (?) Compressors at mill, 1600' from portal; 2 2" pipe lines; 3 receivers at compressors, popping at 125^{\pm} ; 2 near 2 stope. Drop in P, compressors to U.G. receivers, about 20^{\pm} .

Tramway - Two-bucket (.45 Ton cap) Leschen tram with power for hauling men & material. Cap. upper bins about 50 tons. Duty, 8 hours, about 100 buckets under best conditions

Milling - Coarse Crushing - 8x10^(?) jaw crusher.
Ore hand sorted on inclined chute; about 20%
diorite removed.

Stamping - 10 1050th stamps,
knock-down type of mortar; discharge - ?
drop 6-7"; 94 to minute; driven by 2 10-HP(?)
mortars. About 12 mesh screens; knock blocks used.
About 50% of gold recovered in mortars, 40% on
plates, 10% in tube mill.

Tailing from plates goes to drag-classifier;
coarse from class. to Marathon Rod Mill,
2 & 1 1/2" rods; tails from mill returned to
class.; tails from class. (launder higher than
tube mill launder) to tail plate & tail trap.
Extraction averages 85%. Tails \$1.60; heads vary
from \$8.00 - 15.00.

Quick fed in mortars & at disch. of tube-mill.
Plates kept to putty-like consistency - with \$12.00
heads, about 40 oz. quick fed in 24 hours to 50 tons
ore; recovery \$12.00 to \$50.00 in gold per oz.
quick fed. Amalgam averages 40% Au, when
well cleaned. Soda used to dress plates.

Clean-up 1st & 15th. Drop adjusted, dies turned
& new rods put in mill at this time.

Screen Tests on Tailings

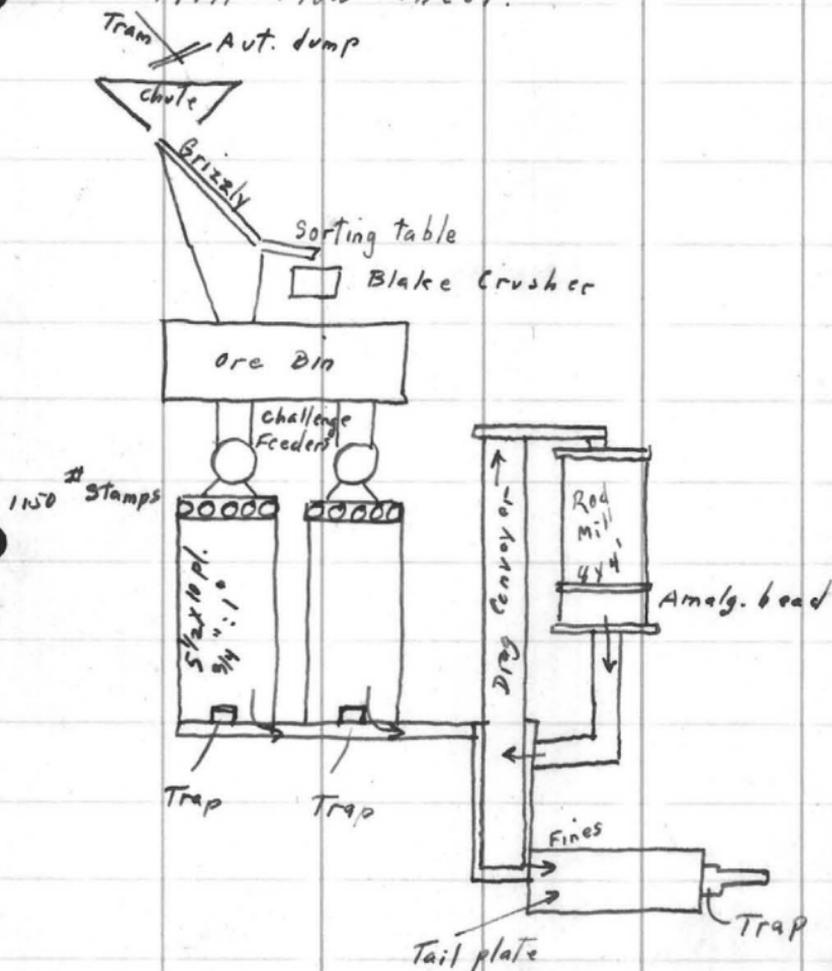
	Grams	%	12-7-22
On 60	31.40	13.6	Open circuit - Tube mill disch. to tails
On 100	112.90	50.2	
Thru 100	78.71	35.2	

	Grams	%	12-28-22
On 60	13.1	6.6	closed circuit
On 100	84.8	42.8	
Thru 100	101.3	50.6	

	Grams	%	1-17-23
On 80	15.41		Closed Circ.
On 100	140.66		
Thru 100	133.70		

EMJ-P 5-26-23

Mill Flow Sheet.



Rec. 85-90?

Boundary Red Mt. Mine
Costs

Year 1922

Costs - 1922 - Nov. (Per Ton)

Mining

	Labor	Materials	Power	Total	
Breaking	.298	.558	.144	1.000	2.323
Mucking	.112	.011		.123	.369
Tramming	.619	.093		.712	.810
Timbering	.054	.075		.129	.240
Track-Pipe		.004		.004	.024
Sampling-Surv.	.022	.011		.033	.055
Foreman-Shifters	.102	.013		.115	.443
Mt R. Mine	-	-		-	.002
Misc.	-	-		-	.027
Total				2.116	4.293

Development

Breaking	.418	.156	.054	.628	.391
Mucking	-			-	.104
Tramming	.043	.006	0	.049	.044
Timbering	.418	.040		.458	.105
Track-Pipe					.025
Samp-Surv.					.009
Foreman-Shift.					.064
Total				1.135	.742

Tramway

Tram. Oper.	.131	.014	.004	.149	.183
Mt R. Tram.					.015
Total	.131	.014	.004	.149	.200

Milling

Sorting	.085	.023		.108	.100
Crushing	.139	.015	.018	.172	.214
Stamping	.204	.144	.065	.413	.467
Requid.	.085	.380	.065	.530	.603
Athalg.	.080	.038		.118	.130
Assay-Retort	.046	.016		.062	.079
Foreman					.041
M-R Mill	.062	.067		.129	.148
Misc.	.025	.001		.026	.018
Totals				1.558	1.800

	Labor	Materials	Power	Tot.	Year 1922
<u>Administrative</u>					
Superintendence	.193	.244		.437	.607
Office Ware-House	.156	.063		.219	.321
Legal	.011			.011	.020
Reno Office		.317		.317	.244
Travelling		.016		.016	.051
Total				1.000	1.243

<u>General</u>					
Boarding House	.272	.286		.558	.782
Bunk House	.025	.040		.065	.107
M&R Teleph.	.007	.003		.010	.019
M&R Trans's	.016	.011		.022	.174
M&R Svct. Bldgs.	.065	.038		.103	.022
Misc.	.034	.010	.011	.055	.057
Medical					.009
Taxes. Int. Ins.					.264
S&T Bullen	.015	.089		.104	.081
Totals				9.17	1.515

	Summary				
Mining	1.198	.765	.144	2.107	4.293
Develop.	.875	.203	.054	1.132	.742
Tramway	.131	.014	.004	.149	.200
Milling	.729	.685	.148	1.562	1.800
Administ	.361	.640		1.001	1.243
General	.430	.478	.011	9.17	1.515
Totals				6.870	9.793

Note - 1

Charges.

Administration - Superintendence

Boarding House

Bullion Receipts

Blacksmith Shop Expense

Bank House Expense

Commissary

C & E Mine

Mine Bldgs.

Compressor Plant

Surface Bldgs

Power Plant Dwellings

Compressor Plant Expense

Development - Breaking
mucking

Tramming

Timbering

Tracks - pipe

Sampling - Surveying

Foreman & Shift Bosses

Exchange Premium

General Office

Legal Expense

(Mine office Cash acc't.)

Miscellaneous

M & R - Telephones

Surface Bldgs.

Trails

Medical and

Mining - Breaking

mucking

Tramming

Timbering

Tracks pipe

Sampling - Surveying

Foreman - shift bosses

Misc.
M & R mine
Milling - Mine Tools
Sorting.
Crushing
Stamping
Regrinding.
Amalgamating
Assaying - retorting
Foreman
M & R Mill
Misc.

Office - Warehouse
Payroll
Petty Cash
Poll Tax
Power Plant operators
Reno Office Expense
Stores
S-T Bulkion
Tramway operation
M & R Tramway
Taxes - Interest Insurance
Traveling
Wingfield Revolving Fund
gen. Wingfield

How Cheaply Can Chilean Nitrate Be Produced?

Department of Commerce Will Find Out—Export Duty on Chilean Copper Suggested as Possible

The Department of Commerce plans to survey the nitrate situation. It is anticipated that information will be sought as to the exact cost of nitrate production in Chile. Since it is fairly well established that no other natural deposits of nitrate of soda can be developed so as to compete with the Chilean product, the only hope of developing other sources of supply is the encouragement of fixation of atmospheric nitrogen. Before private industry can be induced to undertake nitrogen fixation, it must have exact information as to how low the price of the Chilean nitrate might go if forced to the lowest possible price by competition.

At present a substantial factor entering into the delivered cost of nitrate of soda is the export duty which is exacted by the Chilean Government. It is recognized that that duty could be lowered or even removed altogether if necessary to the continuance of the Chilean industry. Incidentally such a suggestion gives rise to the thought that the Chilean Government, if forced to abandon the revenue it is securing from nitrate of soda, might turn to copper exports to recoup itself. Such a plan would affect American mining interests adversely.

Duty Collectible on Zinc in Lead Ore

Immaterial Whether Zinc Is Recovered or Not, According to Ruling of Treasury Department

The Treasury Department has handed down a ruling that duty must be paid on the zinc content of lead ores imported under bond for smelting if the lead produced is sold in the United States, regardless of whether or not the zinc is recovered. The effect is expected to be a further reduction in the price of foreign lead ore containing low percentage zinc for export to this country. If the lead produced from such ores at the domestic smelters is exported, the ruling will have no effect, as neither the lead nor the zinc in such cases is dutiable.

Under the former tariff, the duty on zinc was on an ad valorem basis and a ruling of this character was not necessary because if the zinc was not recovered it possessed no value and there was nothing to tax.

In the tariff act of 1922, however, zinc was placed on a specific basis, ore containing less than 10 per cent of zinc being free; ore containing 10 to 20 per cent zinc being assessed a duty of $\frac{1}{2}$ c. per pound on the zinc content; ore containing 20 to 25 per cent zinc being taxed 1 c. per pound on the zinc content, and ore containing more than 25 per cent zinc being assessed $1\frac{1}{2}$ c. per pound on the zinc content. The duty on lead-bearing ores is $1\frac{1}{2}$ c. per pound on the lead content.

No "Dumping" of Ferrosilicon, Says Treasury Department

Acting under the anti-dumping law of 1921, the Treasury Department has issued an order affecting ferrosilicon from Canada. Under this order, collectors of customs are instructed to investigate each entry of ferrosilicon from the Dominion, and if it can be established that the price at which it was sold for delivery in the United States is less than the price of delivery to purchasers in Canada, a sum shall be added to the duty sufficient to equalize the two prices.

Under the 1922 tariff, the duty on ferrosilicon containing 8 per cent or more of silicon and less than 60 per cent is 2c. per pound on the silicon content; containing 60 to 80 per cent silicon, 3c. per pound; containing 80 to 90 per cent silicon, 4c. per pound; containing 90 or more per cent silicon, 8c. per pound on the silicon content.

Arsenic Production Exceeds Manufacturing Capacity

Arsenic production has responded to higher prices more rapidly than manufacturers of calcium arsenate had anticipated, with the result that manufacturing capacity appears to be slightly less than the present rate of raw-material production. It is that situation, more than any decline in demand, which has resulted in the recent slight price recession.

While active steps are being taken to expand manufacturing capacity, none of the manufacturers apparently is willing to undertake large-scale additions to plants. This hesitation is caused by the uncertainty as to the requirements of the country. During a period of shortage, it is recognized that the demand apparently is larger than actually is the case due to inquiries from a single source going to various manufacturers and dealers.

News by Mining Districts

By Special Correspondents in the Field

London Letter

New Maneuver in Burma Mines Finance—R. Tilden Smith Has Smelting Scheme

By W. A. DOMAN

London, March 16—Some time during last year I wrote concerning the efforts that were being made by the Northern Corporation Co. to raise additional capital. The annual report covering the period to Oct. 31 last has now been issued, and while it contains certain interesting points it cannot be described as altogether a cheery document. To some extent the present condition of the company is attributable to adverse financial conditions, in consequence of which the directors have been unable to sell or lease other parts of the company's properties, but with returning confidence and improvement in trade, they anticipate favorable developments. The property was originally exploited for coal and iron, but copper and zinc deposits of some importance have been found.

I have already referred to the arrangement by which the Sub Nigel Co. (South Eastern Rand) was extending certain of its workings into the Nigel company's property in order to test it at depth. For a time distinctly encouraging values were encountered and hopes that the reef would prove capable of being profitably worked were raised. Now a shock has come in the shape of a cablegram from the mine stating that further driving has proved that values are unpayable. Something over 200 ft. of payable ore have been driven upon, with an average of 11.3 dwt. over 42 in. In itself this would be workable, but as there is so little of it, operations have again ceased and it is questionable whether the directors will consider it wise to spend further money on the

property, which has lain dormant for about five years.

Several months ago the Burma Corporation removed its offices from London to Rangoon, partly that the management should be nearer the property, and partly to avoid taxation. Since that time, although the company has done well and the value of the property has improved, interests in the shares on the London market has been much less keen. It is now announced that a deal has been arranged by which the Imperial and Foreign Corporation, Ltd., has acquired a large block of Burma Corporation shares. A holding company is being formed, the capital of which will be, I understand, something in the neighborhood of £1,000,000, of which about £400,000 will be in 7 per cent seven year notes, redeemable at 103 $\frac{1}{2}$ per cent and the balance in ordinary £1 shares to be issued at par. The number of Burma Corporation shares involved is something like 4,000,000, and the principal contributor to the new company will be R. Tilden Smith, one of the earliest financiers to be interested in the great Burma mine. The idea—Mr. Smith informs me—is to have a kind of holding syndicate similar to the old Bawdwin Syndicate which proved so successful. In connection with this scheme, Baldwins of South Wales will take over the Swansea Vale and Avonmouth Smelting Works erected under the control of R. Tilden Smith and forming the largest smelting works of their kind in this country, if not in the world. The capacity of the works at present is 32,000 tons of metal annually; it is being increased to 40,000 tons and the object is to attain 70,000 tons per annum. Although the works have been idle for some time, a contract has been entered into for the purchase of 150,000 tons of Broken Hill concentrate yearly.

PROPERTIES
BOUNDARY RED MOUNTAIN MINING CO
MT BAKER MINING DIST. WASH.
SEPTEMBER 1909

SCALE 1"=500'

