

# WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

February 1, 1941

H. M. HARTMANN, MANAGER

Mr. Reno H. Sales, Chief Geologist  
Anaconda Copper Mining Company  
25 Broadway  
New York City, New York

Dear Mr. Sales:

I have your letter of January 28th, asking my opinion on the occurrence of chalcocite in the North Piute heading.

Surely, most of the copper value in the ore is due to chalcopyrite, with a minor amount of bornite, the both of which I think, are primary.

There have been occasions when I noticed sooty chalcocite occurring along seams associated with cross fissuring, or shearing and entered it as such on my 20 scale notes, but these are so rare that only a very limited number of assays would be effected. Occasionally, chalcopyrite is coated with the gray chalcocite, which I think is due to alteration of the chalcopyrite and not deposited as a secondary product.

Surface drilling shows that the sub-surface is 200 feet vertically above the 900 level, near the present face and will remain that high for the next 350 feet, to where Diamond Drill Hole No. 51 reached the contact. Hole No. 57 is about 20 feet lower than this and is still in lava. It should be right near the contact at a distance of 500 feet North of Hole No. 51.

I would not be surprised to see a decidedly enriched zone, about half way up the vein to the sub-surface, but could not predict how far. The main Piute Orebody carried values within 50 feet of the surface, but indicated some leaching and oxidation of iron, around 100 feet vertically below the surface. Because the majority of this North Piute mineralization is deposited as a chalcopyrite impregnation into what is now a scaly, chloritic schist with very little quartz, the zone of leaching may be somewhat lower. The amount of primary sulphides is sufficient to furnish an attractive secondary orebody, providing the vein originally extended beyond the present sub-surface.

Respectfully yours,

*S. K. Droubay*  
S. K. Droubay

SKD:DM

cc - Mr. Gidai  
Mr. Lyon ✓  
Mr. Weed

6610

# ANACONDA COPPER MINING COMPANY

Butte, Montana

## Geological Department

RENO H. SALES, Chief Geologist

M. H. GIDEL, Asst. Chief Geologist

New York, N. Y.  
January 28, 1941.

AIR MAIL

Mr. S. K. Droubay,  
Walkermine, California.

Dear Droubay:

Herewith, a letter to Gidel which is self-explanatory.

I wish you would give me your ideas. I did not get the impression that there was any appreciable secondary chalcocite in the north end of the mine except for the higher stopes of the old Plute ore body. However, we must expect a certain amount of secondary chalcocite in the North Plute ore body immediately below the oxidized portions of the vein.

Yours very truly,

RENO H. SALES

RHS:V

Enc.

CC: Mr. C. F. Weed.

Mr. M. H. Gidel

Mr. T. Lyon. ✓

612

# ANACONDA COPPER MINING COMPANY

Butte, Montana

## Geological Department

RENO H. SALES, Chief Geologist  
M. H. GIDEL, Asst. Chief Geologist

New York, N. Y.  
January 28, 1941.

AIR MAIL

Mr. M. H. Gidel, Asst. Chief Geologist,  
Anaconda Copper Mining Company,  
Hennessy Building,  
Butte, Montana.

Dear Murl:

I read your comment, in your letter to Weed dated January 24th, concerning the occurrence of chalcocite in the specimens of Walker mine ore reported to have come from 934C, North Plute ore body.

It has been my impression from ore samples submitted by Droubay, and from other information, that there is very little chalcocite in this ore body and, most certainly, I have had no intimation that there was anything like sooty secondary chalcocite present. Out of the samples sent by Droubay, I found one containing a massive looking gray chalcocite, and I am wondering if your polished section was not made from that particular sample.

The comment in your letter gives the reader the idea that the better grade of the North Plute ore may be, in fact, due to the presence of secondary chalcocite. In such an event, we would expect the ore to become decidedly lower in grade at greater depth. This is the important thing and, to be sure of the facts, I am sending a copy of this letter to Droubay and asking him to write me his opinion as to the possible importance of secondary chalcocite in the ore thus far developed in 934C drift.

Yours very truly,

RENO H. SALES

RHS:F

CC: Mr. C. E. Weed.  
Mr. Tom Lyon.  
Mr. S. K. Droubay.

## WALKER MINING COMPANY

WALKERMINE  
PLUMAS COUNTY, CALIFORNIA

April 1, 1941

H. M. HARTMANN, MANAGER

Mr. Reno H. Sales, Chief Geologist  
Anaconda Copper Mining Company  
Hennessy Building  
Butte, Montana

Dear Mr. Sales:

Mr. Dugan requested that I send you a set of sketches up to date, concerning the proposed mining development discussed in my letters to him, dated February 1, 1941, and again February 12, 1941. Copies of his first letter with sketches, were sent to you, Mr. Weed and Mr. Lyon, but the second was a verbal request, that I send a couple of sections through this country to him, so he and you could check over a point or two you had in mind. It is my understanding that you were in Salt Lake at the time, and just the one copy of sections were sent in.

I have brought the original sketch up to date and it shows a slight change from the proposed lay-out. By turning into the footwall as the sketch indicates, 45 feet of drifting was saved and the operation speeded up, even though the vein was not prospected. Mr. Hartmann felt that this was an operating problem and figured it worth while to make the change and prospect the vein later, by connecting the raise with the Sub-level. We extended a short drill hole, No. 82, into the footwall from 711 as indicated, to test whether or not the mineralization extended this far down, and the raise needlessly driven in waste. The hole was barren.

If the proposed raise from 711E be connected with the 600 Sub-level, then an easy dump will be available for any further prospecting along sub-level mineralization.

Very truly yours,

*S. K. Droubay*  
S. K. Droubay

SKD:DM

cc - Mr. Weed  
Mr. Dugan  
Mr. Lyon

## C O P Y

May 2, 1941.

Mr. S. K. Droubay,  
c/o Copper Canyon Mining Co.,  
Battle Mountain, Nevada.

Dear Mr. Droubay:

I received your letter of April 17th, stating your interpretation of the structural and mineralogical relationships of the ore occurrences in the Walker Mine, and note that you have given the subject serious study, particularly in regard to the matter of recommending adequate prospecting work, to test the possible downward extensions of the more promising Piute and North Piute orezones below present bottom levels.

Do you think the appearance of chloritic alteration at the north end of the mine has any significance? We have noted in many ore deposits that the associated greenish alteration minerals such as fuchsite, mariposite, chlorite, serpentine, cummingtonite, etc., appear to have some relation or indicate an increased gold ratio to other metals occurring in the orebody. Is there an increase in the gold ratio in the North Piute orebody in respect to the other oreshoots?

The implication is, the ferrous iron constituents in the greenish gangue minerals indicate that certain chemical conditions had existed in the mineral bearing solution which deposited relatively more gold (if present) and also reacted to form the associated greenish alteration gangue minerals. For

C O P Y

Mr. S. K. Droubay --- 2

May 2, 1941

example we know that gold is somewhat soluble in ferric salt solutions and that it is precipitated from solution by ferrous salts.

Thanking you for your continued interest in the above matters, I remain

Sincerely yours,

M. H. GIDEL

MHG/aw

cc: C.E.W.  
R.H.S.  
T.L. ✓  
V.D.P.

# WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

May 29, 1941

614

H. M. HARTMANN, MANAGER

Mr. M. K. Gidel, Asst. Chief Geologist  
 Anaconda Copper Mining Company  
 Butte, Montana

Dear Sir:

Mr. Dugan and Mr. Hartmann have raised objections to our method of compiling the monthly analysis sheet on the grounds that it gives a distorted set of figures in regards to the assay and mining widths, and I agree with them. There are several points which need clarification, and I should like to have your opinion on the matter as to how they are handled in Butte.

In cases where a drift angles through the structure, a crosscut is driven across the vein, or a lateral finger driven from a raise at an angle to the structure, we have used the length for the width and the width for the length. Thus from our sheet it appears as if the mining width in many cases, is exceptionally high with regards to the assay width. This is especially true in the crosscuts. How should these situations be handled correctly?

I have been looking through a copy of the analysis sheet from the Belmont mine for the month of September 1940. In going over the drifts and crosscuts in this report, nowhere does it seem that you have used the same procedure as we have in obtaining the mining and assay widths, with the exception of the one heading. That is 3633ECNE where a mining width of 10' is reported against an assay width of 1'.

I am enclosing a sketch of 903BDS in the Piute Orebody, which will illustrate two of the three points I have mentioned. I have marked the mining and assays widths for 903BDS and 943CxcE & W as they would be reported on our sheet. Obviously, this gives the wrong impression as to what is actually the case.

So far we have used a cut off point of 1.00% copper for all of our stopes. However, we are now going to use different points for various sections of the mine in order to cut down the feet of waste being charged as broken in some of our stopes.

I shall greatly appreciate your advice on the matter I have mentioned, and any other suggestions you have to make will be most welcome.

Sincerely yours,



Eldon Lomnes  
 Chief Engineer

EL:E

CC: Mr. Dugan  
 " Lyon

## WALKER MINING COMPANY

WALKERMINE  
PLUMAS COUNTY, CALIFORNIA

October 8, 1941

H. M. HARTMANN, MANAGER

610

Mr. John F. Dugan, Gen. Supt. of Mines  
International Smelting & Refining Company  
818 Kearns Building  
Salt Lake City, Utah

Dear Jack:

SUBJECT: DEVELOPMENT

I have your letter of the 3rd, and also a copy of letter from Mr. Sales, of October 4th, regarding 1086B.

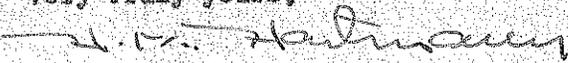
This place is being pushed to the utmost. I am enclosing geological sketch and sample map, which will give you an idea of what we have found so far. We started the drifts sooner than recommended by Mr. Sales, as the showing in the face of the raise was not nearly as good as it was at the time of his visit. At present, we are going ahead with the raise and the South Drift.

The hanging wall is bad, especially that part between the two streaks. Also as you will note, the ore is not at all solid. At present, we are attempting to open it up and in the mean time, get out some ore.

The higher gold values are certainly intriguing, especially for Walkermine, and I perfectly agree with Mr. Sales, that this place should be pushed. However, unless conditions change for the better, the irregularity and bad ground, together with the flat slope, 32 degrees, make extremely bad mining conditions.

I will keep you informed as to progress here.

Very truly yours,

  
H. M. Hartmann

HMH:dm

cc - Mr. Sales (and maps)  
Mr. Lyon (and maps)



ANACONDA COPPER MINING CO.

COPY

617  
October 10, 1941.

Mr. H. M. Hartmann, Manager,  
Walker Mining Company,  
Walkermine, Calif.

Re: Walker Mining Co.,  
Plumas Co., Calif.

Dear Henry:

I am in receipt of a copy of your letter and maps accompanying same to Jack Dugan, dated October 8th.

I was surprised but pleased to see the consistently high gold assays in the raise and workings from 1079-B Crosscut.

I hope you will find it possible to get substantial production from this body of better gold ore lying between the 1000 and 900 levels. I see no reason for thinking that the gold does not continue at a good average, and there is always the chance that you will find a more substantial block of the high grade chalcopryrite ore.

With best regards, I am

Very truly yours,

RHS:K4

cc: CEW  
TL ✓  
JFD

RENO H. SALES

624

# WALKER MINING COMPANY

WALKERMINE  
PLUMAS COUNTY, CALIFORNIA

October 11, 1941

H. M. HARTMANN, MANAGER

Mr. John F. Dugan, Gen. Supt. of Mines  
International Smelting & Refining Company  
818 Kearns Building  
Salt Lake City, Utah

Dear Jack:

SUBJECT: DEVELOPMENT

1086B Raise is up 74 feet on the slope from station 9812. This station shows on the sketch you have. The sketch showed the ore streak thinning as it went up and the face is now waste, so we have discontinued work here, at least for the present, and are confining our efforts in 1091B Drift South. The face here is 25 feet South of station 9815. The last samples I have from here, are West Rib, 4 feet - 4.10% Cu; .60 oz. Ag; .78 oz. Au. East Rib, 4 feet - 2.95% Cu; .60 oz. Ag; .58 oz. Au. Apparently the ore is wider than the drift and we are side-swiping to determine the width and also to get some production.

You will note that on the sill floor, the ore petered out quite rapidly going South. However, the showing here at present is excellent and we are pushing it, both to open it up and get ore.

Very truly yours,

*H. M. Hartmann*  
H. M. Hartmann

EMH:dm

cc - Mr. Sales

Mr. Lyon ✓

COPY

October 15, 1941.

Mr. Virgil R. Chamberlain,  
Walker Mine, Plumas Co., Calif.

Re: Walker Mining Co.,  
Plumas Co., Calif.

Dear Virgil:

I received your letter of Sept. 20th with accompanying prints, showing the geologic features on the surface which you mapped, particularly to the southwest of and in the footwall area of 712 ore zone on the Walker property. After wiring you Sept. 25th, advising that you review such findings with Mr. Reno H. Sales while he was at the mine, I awaited the opportunity to discuss the matter further upon his return to Butte a few days ago.

Mr. Sales, after carefully examining the ridge extending up to 1500 feet or more south and southwesterly from the collar of 4370 Raise, is of the opinion that the area does not warrant the expense of any prospecting by diamond drill. He believes the rusty discoloration on the surface was derived from oxidation of iron-bearing silicates in the schist. I was hoping that some positive evidence could be found by surface study, which would indicate a probable vein existing beneath the southerly edge of the snow cirque immediately north of the rimrock. Possibly this cirque may have developed along the contact of soft altered diorite porphyry, which may extend eastward from the area you have shown as "D Fh" on the map.

I also received your letter of Sept. 22nd, listing low grade assays in 1071B D.N., and in Drill Hole No. 41. I note your statement that the bornite mineralization in this area is more spotty than you at first believed.

COPY

Mr. Virgil R. Chamberlain---2

October 15, 1941.

I hope that future development in the gold-bearing shoot in the Piute on the 1000 level will continue in good ore. The flat dip of this orebody, if continuous to the level above, will give considerable stoping length, likewise tonnage, that will help prolong production.

Thanking you for the information submitted on the subjects we discussed when you were in Butte, I remain

MHG:KM

Yours very truly,

cc: CEW  
RHS  
TL ✓  
JFD

M. H. GIDEL

614

November 13, 1941

Mr. M. H. Gidel, Ass't. Chief Geologist  
Anaconda Copper Mining Company  
Hennessy Building  
Butte, Montana

Dear Mr. Gidel:

Sorry not to have answered your letter of October 15th sooner. I was not surprised to learn Mr. Sales' opinion as to the surface area I mapped, as we discussed it while he was here. I also believe that most of the iron stain came from the alteration of ferro-magn and silicates, as well as magnetite in the schist itself. As we were some distance from the main footwall fissure, (≈ 100 ft.) and as the dike near the turn in our footwall vein has a tendency toward a slight offset to the east, I thought it possible that there might be a chance for further mineralization along its strike which I thought I could trace to the cirque. I believe that Vin Perry also had this idea at first. On checking over the area and maps after Mr. Sales left, I can see now that this fissure could not possibly be where I supposed without a tremendous offset.

Since the Walker closed, we have been very busy getting our monthly and yearly reports in shape. If you have happened to look at the "Available Ore Reserve Sheet" for October, you can see where I tried to wipe off all false ore inventory. The sheet now represents pretty well what is left.

The Ore Reserve Sheet will probably show some changes also, although not so drastic. The North and Central Orebodies are pretty well worked out. A large part of the tonnage shown in the lower portions of 930 and 940 Blocks, as well as the majority of that in 1020, 1030, and 1040 Blocks, has been lost through caving ground. The dilution of the hanging wall with the ore in these low grade blocks makes extraction uneconomical. There is no way of checking the actual amount that has sluffed out, as the stopes are too wild.

I was sorry that Mr. Sales and Mr. Perry didn't have time to take a look at the 934-40G Block in North Flute. There has been a lot of movement exposed through our stopping operations. I will send a sketch of this stope as soon as I get the ore reserves finished. I should be able to wind up all work here around the 1st of December, or the 15th at the latest.

Very truly yours,

*V. R. Chamberlain*

V. R. Chamberlain

VRG:dm

cc - Mr. Sales

Mr. Lyon ✓

Mr. Dugan

614  
COPY

June 11, 1941

AIR MAIL

Mr. Eldon Lomnes,  
Chief Engineer,  
Walker Mining Company,  
Walkermine, California.

Dear Mr. Lomnes:

I received your letter of May 29th, in which you ask certain questions regarding the compilation of assay and mining width grades of ore and the proper summarizing of same on the monthly analysis sheets that are used by the Mine Superintendent and Foreman.

I have reviewed the subject with Mr. George F. Vivian, our Chief Sampler, who has given the desired information in a letter addressed to me, a copy of which is enclosed.

We are unable to reconcile why anyone should figure a so-called mining width for the entire length (50') of 903-B crosscut, as shown on your sketch map. The first 35 feet of this crosscut, apparently is poorly mineralized, none of which would be broken in the stoping operation that will follow on the "ore" as exposed in the drift plus a few feet in either wall in that portion of 903-B which is on a due north course. Possibly it would have been better to have used a different number for the crosscut portion of 903-B, which would have eliminated any reason for using the 35 feet of barren waste in a mining width average. Judging from the geology, as noted on your map, stoping over the last 80 feet of 903-B drift will be confined to the bracketed assay limits as shown. In that case, the mining width of ore in the

C O P Y

Mr. Eldon Lomnes----Page 2

June 11, 1941

future stope will be only slightly greater than the assay width,  
assuming that minimum waste will be broken in the footwall and hanging-  
wall of the ore-bearing portion of the vein.

Trusting that our comments will help clarify the  
items you ask about, I remain

Yours very truly,

M. H. GIDEL

MHG/aw

Encl.

cc: CEW )  
RHS ) and Encl.

CFV

98

TL

98

JFD

98

## C O P Y

June 9, 1941.

Mr. M. H. Gidel,  
Assistant Chief Geologist,  
Anaconda Copper Mining Company,  
Building.

Dear Sir:

This letter should answer the questions which Mr. Eldon Lemnes, Chief Engineer of the Walker mine, wrote to you about on May 29, 1941.

As a general rule vein structure in crosscuts is crossed at an angle of from  $60^{\circ}$ - $90^{\circ}$ . Our rules for calculating assay averages on each side of the crosscut are the same as for face samples in drifts. The two sides are averaged together the same as two ends of a raise or two successive rounds in a drift. In order to calculate a mining width average, the sampler must know the amount of waste that was broken with the ore, eliminating all the waste that was broken and removed before and after the vein was being crossed. In other words, suppose the average round is five feet. When a two foot vein is crossed with one round, three feet of waste is added to make a mining width. If the vein cuts across at an angle so that it required two rounds to cross the vein on both sides of the crosscut, the mining width becomes ten feet.

When the crosscut cuts the vein at an acute angle so that the vein appears in several successive breasts, the averages are calculated the same as in drifts.

## C O P Y

Mr. M. H. Gidel-----Page 2

June 9, 1941

To calculate the volume of ore in the regular crosscut averages, the width of the crosscut becomes the "length" in ore.

Many averages are reported in the "Monthly Stopes and Development Analysis" that are not included in the final average. Only those veins that are "ore" according to our curves are included.

Our rules for calculating assay averages in stopes, drifts and raises may not be practical at the Walker mine or any other mine where the geology and the mining methods are not the same as in Butte. The mining width averages are bound to be the same anywhere in stopes, drifts and raises. In crosscuts the width will be determined by the depth of the rounds and the dividing line between ore and waste. This latter figure is 1.0% copper at the Walker mine and 1.2% in Butte.

Our assay averages are calculated as follows:

1. Waste occurring between bands of ore:

- (a) Under 1.0' in width is included in assay average
- (b) 1.0'-2.9' " " half is " " " "
- (c) Over 3.0' " " none " " " "

2. All waste (under 1.2%) on the outside of the ore is excluded from the assay average.

Trusting that the above information will be of use to Mr.

Lomnes, I am

Yours very truly,

GEORGE F. VIVIAN

GFV/aw

cc: 4 Extras

COPY

614

New York, N. Y.  
June 16, 1941.Mr. J. F. Dugan, Gen. Supt. of Mines,  
International Smelting & Refining Co.,  
Kearns Building,  
Salt Lake City, Utah.

Dear Jack:

I have read your letter to Weed dated June 14th,  
and I have also examined the 200-scale map of the Walker Mine.

I note nothing has been done toward drifting sou-  
therly from 1017 to cut the ore disclosed in drill hole #74. We  
should either extend 1078-B southerly, or put in additional drill  
holes to check the showing in hole 74.

I recommend also that a drift be started south from  
crosscut 932-C to develop the ore showing in drill hole #49.

During my last visit to the Walker Mine, I urged  
that these two pieces of work be carried out.

Yours very truly,

HERO H. SELFS

HHS:F

Air Mail

CC: Mr. C. E. Weed.

Mr. J. O. Elton

Mr. Tom Lyon.

Mr. H. M. Hartmann.

## INTERNATIONAL SMELTING AND REFINING COMPANY

MINING DEPARTMENT

818 KEARNS BUILDING

SALT LAKE CITY, UTAH

SUBJECT:

June 17, 1941

Mr. Reno H. Sales, Chief Geologist,  
Anasconda Copper Mining Company,  
Butte, Montana.

Dear Reno:

This will acknowledge your letter of June 16, 1941, with reference to the drift south from 1017 to cut the ore disclosed in Diamond Drill Hole #74; also the one from 932-G to develop the ore showing in Drill Hole #49.

The reason we have not started drifting southerly from 1017 is that we have been concentrating all our efforts on pushing 1017 north as rapidly as possible to reach the downward extension of the ore developed in the 900 South Plate.

On the map you will note diamond drill hole #84. This was drilled at a 45° angle upward and cut the ore found in hole #75. We plan, as soon as convenient, to run a small raise from 1077B Crosscut to cut this ore, and if it amounts to anything will drift south on it for a short distance. If it shows indications of amounting to anything we can then drift south from 1075B.

A drift south was started last week from Crosscut 932-G to develop the ore showing in drill hole #49. Hartmann says they are following the best streak which assays 1% copper and .03 oz. gold, but that it does not look any too favorable.

Yours very truly,

*John F. Dugan*  
John F. Dugan.

JFD:H

cc: Messrs. Weed  
Elton  
Lyon  
Hartmann

614

## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

March 21, 1941

H. M. HARTMANN, MANAGER

Mr. John F. Dugan, Gen. Supt. of Mines  
International Smelting & Refining Company  
518 Kearns Building  
Salt Lake City, Utah

Dear Mr. Dugan:

The enclosed tabulation is a copy of the regular monthly Sample Analysis Sheet, that is now being prepared by our Sampling Department. A report is made every two weeks, (1st and 16th of the month), for use by the Operating Department and the two are combined to form the monthly sheet.

I am sure these are going to be a real help to Mr. Warren in discussing the ore and waste problems with his Foremen and Shifters, and the whole set-up will have the tendency of reducing waste breakage to a minimum.

We have tried to follow the Butte system in making this report, but one has to be familiar with our working places, in order not to be mis-lead by some of the results as shown. For instance, a period breakage for one particular place may be an irregular section from a large vein extending along the hanging wall and into the waste. The figures as shown should represent the proportions of waste and ore broken, even though the assay and mining widths look peculiar. 1.0% copper is the dividing line between ore and waste.

The assay width is the width of ore broken over 1.0% cu, and does not include waste horses occurring in the vein. Mining width represents the full width of rock broken. Waste from the footwall or hanging wall, is shown in the over-break column, but waste mined as inclusions in the ore, is not shown as over-break. Mr. Warren feels that waste inclusions, or horses, should be used in figuring assay widths, which if done, in all cases, would make the assay width and the mining width be identical, providing mining were kept within the limits of the vein. I had instructed the Head Sampler to exclude waste inclusion assays from the assay width, but not to show it as over-break, because this is my understanding of the way it is done at Butte. However, if I am mistaken, or if Mr. Warren could use it to better advantage the other way, it can easily be changed. I will ask Mr. Vivian to straighten us out on this.

I would appreciate any suggestions that may improve this Analysis Report.

Very truly yours,

*S. K. Droubay*  
S. K. Droubay

SKD:DM  
Encl.

cc - Mr. Sales  
Mr. Lyon ✓  
Mr. Vivian

Salt Lake City, Utah

July 6, 1925

Mr. Wm. Wraith  
25 Broadway  
New York, N. Y.

Dear Sir:

At the request of J. O. Elton I visited the Walker mine on June 29th and 30th in connection with the expected adverse report of Forest Ranger W. H. Friedhoff on some of the claims included in the application of the Walker Mining Company for patent.

On July first I saw Mr. Friedhoff at Yerington and talked over the situation fully. Friedhoff had, however, already sent in his report and recommendations on the Walker claims to the District Forester's office at Quincy so that it was impossible to do anything more than to get first hand knowledge of Friedhoff's attitude regarding the Walker claims.

I found that Friedhoff had a good knowledge of the geological conditions surrounding the Walker mine. He impressed me as holding a friendly feeling toward mining companies, particularly those actively engaged in mine development. Friedhoff has had many years experience in forestry work and particularly in connection with the location and patenting

2- Mr. Wm. Wreith

July 6, 1925

of mining claims within the National Forest boundaries covering Elumas County, California and surrounding territory.

I learned from Friedhoff that the patenting of the Walker claims, included in the present application for patent, had been the subject of much discussion between himself and Mr. V.A. Hart, former manager of the Walker Mining Company, and that he Friedhoff had at all times held an adverse opinion as to certain ones of the group. The views he expressed to me may be better understood after I have explained the geology in the situation.

I am enclosing herewith a geological map for your guidance. It also shows the claims held by the Walker Mining Company. Included within the violet colored boundary are claims already patented. Surrounding these patented claims, and lying within the blue boundary, are the claims included in the present application for patent and which have been approved for patent by Mr. Friedhoff. Claims included in the present application for patent, but which have been reported upon adversely by Friedhoff are bounded in red. Certain additional claims, namely the Summit 1 to 7 respectively, are recent locations made by the Walker Mining Company.

The geology of the situation is well shown on the map. The Walker veins and ore bodies occur in the schist. The course or trend of these ore bodies, as shown by the mine workings, is a northwest southeast direction, generally parallel to the strike of the rather indistinct bedding of the schist.

July 6, 1925

The schist is intruded by an irregular body of granite which appears also to be later in age than the ore bodies. The area of granite exposed at the surface is shown in green color. That its actual volume is much larger than this is shown by the main adit tunnel which discloses granite beneath the lava.

Both schist and granite have been covered in the southerly and easterly portions of the Walker group by a late flow of andesitic lavas, colored brown on the map. There is no question but that these lava flows are relatively recent and that they appeared long after the Walker vein in the schist had been exposed by erosion and considerably oxidized.

We therefore have three geological formations occupying the area under consideration. Of these three the schist is known to be mineral bearing. The granite has not been shown to contain ore bodies. In the mine workings of the Walker mine a small dike, undoubtedly an off-shoot of the main granite mass, cuts through the Walker vein ore indicating the granite to be of later age than the Walker ore bodies. In the Main Adit, however, there are many fissures which cut the granite, but which are mineralized only slightly if at all. In the larger area exposed to the south and west of the Walker Mill extending down into Grizzly Valley no veins have been discovered within the granite. The evidence as to mineralization in the granite, while generally negative in character is not conclusive.

The andesitic lava flows in the vicinity of the Walker mine form a part of an extensive flow covering a large area lying

4- Mr. Wm. Wraith

July 6, 1925

to the east and northeast of the Walker property. These rocks upon weathering change to a dark red brown color with a resulting soil of a similar color. These flows are relatively recent geologically and show absolutely no evidence of mineralization.

Referring now to the patentability of these claims, Friedhoff rejects the claims outlined in red upon the ground of lack of mineral discovery. By reference to the map it will be seen that the great majority of the lode claims rejected lie within the area occupied by lava. The Pacific No. 12, Pacific No. 13, Grizzly, and Grizzly No. 1, lie partly within lava and partly within granite. The Pacific No. 3 appears to be largely within lava although it is probable that schist might be disclosed near its north end line by a small amount of trenching.

The Dolly Gulch Placer covering the basin-like area upon which the mill and town have been built, contains a small area of schist near its western boundary. The remaining area is occupied by lava and granite, but the deep covering of wash prevents an accurate tracing of their respective boundaries.

I examined carefully a large part of the ground covered by these claims. I inspected the 25' tunnel on the Grizzly No. 9 claim, also the small shaft on Grizzly No. 10 and the small pit on the Summit No. 1. I was compelled to conclude from my own personal examination that there is no possibility of a mineral discovery within the lava itself. In the large block of claims covered by lava therefore the only mineral discovery possible is in the rocks underlying the lava flow. Where schist is

July 5, 1925

present mineral indications sufficient for discovery undoubtedly can be found. But in the granite areas beneath the lava, the hunt for a sufficient mineral showing to support a valid lode location might prove costly or even entirely unsuccessful. The depth of the lava is too great, and the possibilities of mineral too slight, to justify sinking shafts on these locations for the purpose of making a mineral discovery.

In the case of the Dolly Gulch Placer location which Friedhoff also rejects, on the grounds of non-discovery of placer gold, the situation is rather peculiar. Within the Dolly Gulch Placer location there is included a Mill Site location made by the Walker Mining Company. Friedhoff's statement is that a mill site location requires from the locator under oath the statement that the ground is non-mineral in character. If this be true there is an apparent lack of consistency on the part of the Walker Mining Company to ask for a mineral patent on the Dolly Gulch Placer and a patent on the Mill Site as non-mineral ground.

Some recent panning tests for gold in a pit sunk along the creek below the mill and within the Dolly Gulch Placer claim, failed to show any gold colors. This work is being carried on in other pits in the hopes of meeting with favorable results.

The situation confronting the Walker Mining Company may be summarized as follows:

- 1.- Of the 40 lode claims included in the recent Patent

July 6, 1925

Application seventeen (17) have been passed and recommended for patent by Friedhoff. These seventeen claims, together with the ten claims already patented protect the Walker on strike for a distance of approximately 9000 feet, or 1500 feet south of the most southerly workings on the tunnel level, and 3500 feet beyond the most northerly drift on the 600 level.

2. The original Mill Site has been recommended by Friedhoff for patent, but the new Walker mill is not on this mill site claim.

3. Twenty-three lode claims have been rejected for patent by Friedhoff on the ground of non-discovery of mineral. Of these twenty-three claims, seventeen lie wholly within the lava area and there is no possibility, in my judgment, that a mineral discovery can be made by trenching or by shallow shafts. Of the remaining six claims, granite is disclosed on the surface or in the Main Adit, within five of them, and on the sixth claim, which is the Pacific No. 3, the surface area is largely lava but a small amount of surface trenching might disclose schist but not necessarily any mineral showing.

4. The Dolly Gulch Placer upon which the new mill and most of the town and surface works have been built, is rejected by Friedhoff on similar grounds, that is of non-mineral discovery.

It remains for the Walker Mining Company to decide upon a course of action in the face of these rejections. My personal views may be summarized as follows:

1.- Claims lying wholly within the lava without mineral

July 6, 1925

showing on surface or in underground workings should be withdrawn from the Patent Application but should be held by assessment as in the past. These include the following:

Grizzly	No. 1
"	" 2
"	" 3
"	" 4
"	" 5
"	" 6
"	" 7
"	" 8
"	" 9
"	" 10
"	" 11
"	" 12
Panama	No. 3
"	" 4
"	" 5
Standard Extension	
Reliable	
Pacific	No. 3
"	" 11

2. Recent locations made wholly within the lava should be abandoned. These include:

Summit	No. 1
"	" 2
"	" 3
"	" 4
"	" 5
"	" 6
"	" 7

Timber is now being cut from these locations. No doubt the government will require the Walker Mining Company to pay for any and all timber cut from such abandoned locations.

July 6, 1925

3. In the case of the following claims, namely, the Grizzly, Pacific No. 10, Pacific No. 12 and Pacific No. 13 which cover the 1350 feet of the Main Adit nearest its portal, the Walker Mining Company should ask for patents, on the ground that the small fissures in the granite disclosed within these claims constitute a sufficient mineral showing, and that adequate assessment work for patent has been performed through the construction of the Main Adit which passes through portions of these claims. These claims stand exactly upon the same footing as the Pacific No. 9 claim which has received the approval of Friedhoff.

This same ground however can be secured by abandoning the claims as lode locations and covering it by Tunnel Site locations following the line of the tunnel, and patents for same can be secured without mineral discovery. As tunnel site locations they carry mineral rights but not surface rights. This would mean an additional expense to the Walker Company sufficient to pay the cost of making re-locations and the mineral surveys for patent.

4. Friedhoff suggests a way out of the difficulty with the Dolly Gulch Placer.

There is now in force what is known as the "exchange grant" ruling of the Interior Department. I do not know at this time whether this ruling is in effect through an Act of Congress or merely a Land Office ruling, but I presume it is the former.

9- Mr. Wm. Wraith

July 6, 1925

Friedhoff suggests that the Walker Mining Company acquire from a fee owner somewhere in Plumas County, title to a tract of equal acreage of cut-over land, and exchange such acquired acreage with the Government for the ground covered by the Dolly Gulch Placer. He is positive that such a plan is feasible and practical and legal, and in fact, he knows of no other way by which the Walker Mining Company can acquire full title to this ground if it is decided to be non-mineral in character since it is within the Forest Reserve. He says cut-over lands can be had for \$2.50 to \$5.00 per acre.

It is apparent that the Walker Mining Company requires, for housing and other purposes, slightly more land than is included within the Dolly Placer. The exact amount needed should be determined so that ample acreage of cut-over land will be secured for exchange.

One element of danger has occurred to me in this situation as it affects the new mill and all surface structures built on ground outside the original mill site location. If, as Friedhoff claims, the Dolly Gulch Placer has no merit or standing as a placer location it certainly would not hold the ground as against a lode claimant who might enter upon the placer, and, finding sufficient mineral showing within the small schist area shown on the map, he could locate a lode claim in such a manner as to include the new mill, and other valuable buildings.

To forestall this possibility I have written Tunnell to make one or more lode locations, placing them on the ground

10- Mr. Wm. Wraith

July 6, 1925

in such a manner as to cover the mill and all buildings or other surface improvements not included in the original Mill Site location.

From Mr. Tannell's letter of a former date you can figure what the Walker Mining Company will owe the Government for timber already cut from claims rejected by Friedhoff. It amounts to about \$7,000 in round figures.

I should add here that I am entirely unfamiliar with any past history of Walker Group of claims. I know nothing of the how, when or why of the location of these claims in the lava area. Friedhoff states that in the past the Walker Mining Company has set its Main Adit tunnel work against the whole group as constituting annual assessment work. He flatly states that this tunnel does not tend to develop the Grizzly claims and therefore is not acceptable as assessment work. My own opinion is that the Adit tunnel does tend to develop all of the group because it is actually the proper method to develop that whole area.

Very truly yours,

RHS/P

(Signed) Reno H. Sales

FILE NO. \_\_\_\_\_

CLASS \_\_\_\_\_

NAME: WALKER MINE

SUBJECT: DEVELOPMENT 1940-1942 *June 27, 1941*

INDEX: \_\_\_\_\_

June 27, 1941

Mr. Eldon Lommes, Chief Engineer  
Walker Mining Company  
Walkermine, California

Dear Sir:

Will you please send us, at your convenience, a white  
print of your tracing, dated February 27, 1940, of the 1200 level,  
Walker mine 200 set.

Very truly yours,

TL:P

Tom Lyon

# WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

August 30, 1941

H. M. HARTMANN, MANAGER

Mr. Tom Lyon, Chief Geologist  
International Smelting & Refining Company  
818 Kearns Building  
Salt Lake City, Utah

Dear Mr. Lyon:

I am mailing you today, a print of our 200 Scale Mine Composite Plan. I have shown the main faults for the 700 and 1000 Levels, and also the Piute 900 Level.

Very truly yours,



E. J. Lommes  
Chief Engineer

EJL:dm

August 28, 1941

Mr. Eldon Lomnes  
Chief Engineer  
Walker Mining Company  
Walkermine, California

Dear Lomnes:

In the future when making recommendations for development work, will you please put the recommendations on sheets headed "Geological Department Walker Mining Company" as the Geological Department of the International Smelting and Refining Company is really not doing the work at the Walker and we would much prefer the geological department there to be designated as the Walker Mine Geological Department.

Very truly yours,

TL:P

Tom Lyon

# ANACONDA COPPER MINING COMPANY

Butte, Montana

August 25, 1941

## Geological Department

RENO H. SALES, Chief Geologist

M. H. GIDEL, Asst. Chief Geologist



Mr. Tom Lyon,  
818 Kearns Building,  
Salt Lake City, Utah.

Dear Tom:

I do not suppose it makes much difference at the moment but I would suggest that recommendation sheets for development work should be from the Geological Department of the Walker Mining Company rather than the International Smelting and Refining Company. Weed agrees with me, so will you please take it up with Mr. Elton?

Yours very truly,

RENO H. SALES

RHS/aw

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## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

July 24, 1941

H. M. HARTMANN, MANAGER

Mr. John F. Dugan, Gen. Supt. of Mines  
International Smelting & Refining Company  
818 Kearns Building  
Salt Lake City, Utah

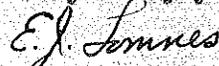
Dear Mr. Dugan:

The following is a list of the development headings going at the present time:

<u>HEADING</u>	<u>OREBODY</u>	<u>STARTS FROM</u>	<u>DATE STARTED</u>
678EsDN	712	692Dsxw	6- 1-41
723EDN	712	711EDN	7- 7-41
947CDS	North Piute	932CxcE	5-29-41
951CxcE	North Piute	940CRs	7-14-41
952CxcE	North Piute	947CDS	7-19-41
1017DN	Piute	1016xcw	3-16-29
1079Exw	Piute	1017DN	5- 9-41

In compliance with your suggestion, we are reviving the practice of sending in Development Recommendation Sheets for new work. I am enclosing several sheets for development work recently started, which includes 678EsDN, 723EDN, 951CxcE, and 952CxcE.

Very truly yours,



E. J. Lonnes  
Chief Engineer

EJL:DM  
Encl.

cc - Mr. Lyon  
Mr. Sales

C O P Y

July 23, 1941.

Mr. John F. Dugan, Gen. Supt. of Mines,  
International Smelting & Refining Company,  
818 Kearns Bldg.,  
Salt Lake City, Utah.

Re: Walker Mining Co.

Dear Jack:

It seems to me that there is still some confusion at Walker with reference to the use of the expression "mining width".

Apparently, Lommes is trying to use the term in connection with crosscuts. I quote from his report of July 15th, "9480 crosscuts east and west are being driven from 9400 Rs to determine the mining width of the vein". By mining width we mean the face width of actual opening made on a vein in drifts and stopes. More particularly, I think it is used in connection with stoping. We do not attempt to pre-determine mining widths in crosscuts, because, as I have just said, we use the term only for openings made in mining or stoping operations.

I am merely suggesting the above, because I do not wish to have "mining width" mean different things at our various properties.

Yours very truly,

HIS:EM

cc: HMM (2)  
TL  
MKS

WESLEY H. SALES

C O P Y

July 12, 1941.

Mr. John F. Dugan,  
Gen. Sup't. of Mines,  
International S. & R. Co.  
518 Kearns Bldg.,  
Salt Lake City, Utah.

Re: Walker Mine,  
Plumas Co., Calif.

Dear Jack:

I have your letter of July 10th, also copy  
of Hartmann's letter of July 2nd, which concerns the ex-  
tension of Crosscut 932, North Plute.

I took the matter up with Weed. We approve  
Hartmann's suggestion of the crosscut from 9470.

Yours very truly,

HHS:KM  
cc: CEW  
TL ✓  
HHS

HERNO H. SAITZ

## INTERNATIONAL SMELTING AND REFINING COMPANY

MINING DEPARTMENT

818 KEARNS BUILDING

SALT LAKE CITY, UTAH

SUBJECT:

July 10, 1941

Mr. Reno Sales, Chief Geologist,  
Anaconda Copper Mining Company,  
Butte, Montana.

Dear Reno:

Attached is a copy of letter from Mr. Hartmann  
and a sketch of the 900 North Piate.

According to Henry, it will be easier to cross-  
cut Northeast from 947 instead of trying to drive 932  
ahead. As an alternative, he proposed a drift Southeast  
from the end of 934C. This would reach the same objective  
for the Diamond Drill set-up to prospect below the 900  
level, and I think this drift can be driven much cheaper.  
It is better from an operating standpoint, as there is  
more room for cars. If this meets with your approval,  
we will drive it in preference to the one from 947C.

Mr. Hartmann told me yesterday that the breast of  
947C was in ore again.

CC: G.E.W.  
Tom Lyon ✓

JFD:fgc

Yours very truly,

*John F. Dugan*  
John F. Dugan

## INTERNATIONAL SMELTING AND REFINING COMPANY

MINING DEPARTMENT

818 KEARNS BUILDING

SALT LAKE CITY, UTAH

July 9, 1941

SUBJECT: WALKER MINING COMPANY  
DEVELOPMENT

Mr. H. M. Hartmann, Manager,  
Walker Mining Company,  
Walkerville, California.

Dear Henry:

I talked with Mr. Weed yesterday relative to further development in 1017 Drift. He says to drive 1017 Drift 150 feet north of the last crosscut from which Diamond Drill Hole #95 was drilled. The Breast will then be at coordinate 19,030 North, or approximately in line with 926 C crosscut on the 900 level. We will then Diamond Drill the footwall again, provided no ore is found in the meantime.

In regard to the raise in the footwall from 1017 to the 900 level for an ore pass, we will defer this for the present until we have more information regarding the downward extension of the ore.

Continue 1072 B crosscut West to develop the ore found in Diamond Drill Holes #86 and #87. If the mineralization amounts to anything, we can raise through to the 900 level.

CC: C. E. W.  
R. Sales  
T. Lyon ✓

Yours very truly,

*John F. Dugan*  
John F. Dugan

Jrd:fgc

ANACONDA COPPER MINING CO.

C O P Y

July 9, 1941.

Mr. John F. Dugan,  
Gen. Supt. of Mines,  
International Smelting & Refining Co.,  
818 Kearns Bldg.,  
Salt Lake City, Utah.

Dear Jack:

I have talked with Weed about the 1200 Walker.  
We concur in the opinion of yourself and Hartmann, that  
this level should be temporarily abandoned. This means  
that you may pull out such tracks, pipes, etc., as is  
deemed advisable, and also stop pumping from that level.

Yours very truly,

RHS:RM

cc: CEW  
JOE  
TL  
HMH

HERNO H. SALES

June 21, 1941

Mr. H. M. Hartmann, Manager  
Walker Mining Company  
Walkermine, California

Dear Henry:

Enclosed you will find a sketch showing the workings  
in the Piute and their relations to the claims that we own.

I suggest that there be seven additional claims  
located in the manner which is shown by the blue dotted line.

Kindest personal regards,

Very truly yours,

TL:P

Tom Lyon

C O P Y

June 6, 1941.

Mr. John F. Dugan,  
General Superintendent of Mines,  
International Smelting & Refining Co.,  
818 Kearns Bldg.,  
Salt Lake City, Utah.

Re: Walker Mine,  
Plumas Co., Calif.

Dear Jack:

Replying to your letter of May 31st, concerning possible further developments on the 1200 level of the Walker Mine, I will discuss this matter with Wood in New York next week, and advise you of our decision.

Yours very truly,

RHS:KM  
cc: J.O.E.  
T.L. ✓  
H.M.H.

RENO H. SALES

May 31, 1941

Reno H. Sales, Chief Geologist  
Anaconda Copper Mining Company  
Hennessy Building  
Butte, Montana

Dear Reno:

I wish you would please let me know if you contemplate any further development on the 1200 level at the Walker Mine; either by drifting, crosscutting or diamond drilling.

If not, we will start salvaging the pipe, rails, etc., as they can be used elsewhere in the mine.

Yours very truly,

J. F. Dugan  
Gen. Supt. of Mines

JFD:E  
CC- J. Elton  
Tom Lyon  
G. E. Weed  
H. M. Hartmann

POSTAL TELEGRAPH

# COPY OF TELEGRAM

March 10, 1941

DAY LETTER

J. F. Dugan  
Walker Mining Company  
Walkersmine, California

Droubay's letter March 8. All right to stop 57 after  
50 feet. Lyon and I feel that showing in 57 commits us to  
drifting that far north. Can see no reason for further drilling  
in 51. If mine management agrees please see that 51 is stopped.

Reno H. Sales

cc: Mr. C. E. Weed

Salt Lake City, Utah  
February 13, 1941

Mr. C. E. Weed, General Manager of Mines  
Anaconda Copper Mining Company  
Room 1726, 25 Broadway  
New York City, N. Y.

WALKER MINE

Dear Clyde:

I have discussed the Walker with Lyon and Dugan. Dugan telephoned Hartmann with respect to the things you and I talked about in New York.

On the 1200, a crosscut will be run following the drill hole near the face. Whether or not we drive on the vein will depend upon its assay and appearance.

Mr. Dugan advises me that he is writing you fully concerning his instructions to Hartmann.

Yours very truly,

RHS:P

Reno H. Sales

cc: Mr. Tom Lyon  
Mr. J. F. Dugan

INTERNATIONAL SMELTING AND REFINING COMPANY  
MINING DEPARTMENT

818 KEARNS BUILDING

SALT LAKE CITY, UTAH

February 13, 1941

SUBJECT:

Mr. H. M. Hartmann, Manager,  
Walker Mine,  
Walker Mine, Calif.

Dear Henry:

This will confirm our various conversations yesterday concerning 900 North Plute:

Please stop 9390 Drift North for the time being, and start a raise from 9340 Drift. While driving the raise we will crosscut to the footwall and hanging wall to prospect the mineralization.

Your suggested location just north of 9360 Crosscut looks all right. However, it might be a better ~~plan~~ to move it farther south (on the south side of the crosscut) as it looks like the raise will have a better chance of being in ore all the way up.

With reference to the diamond drilling which you contemplate at the end of 9390 Drift Mr. Sales suggests that after finishing the footwall hole, you drill another one north 20° east from the same set-up. This hole should cut the 2' of 2% ore which is indicated in diamond drill hole 71.

My telegram to you this morning covered the above.

As I informed you yesterday, Mr. Sales also wishes to drive south from 9340 Crosscut to prospect the mineralization out in diamond drill hole 49. You can start on this work after the raise is underway.

Please get 903B Drift south started as soon as possible on the footwall ore, and push it.

I realize that starting 946 stall stops, also the other work on the south end has prevented you from getting this drift underway sooner, but I know Mr. Weed is very anxious that we push this 900 south development as rapidly as possible now that the 1000 south

Mr. Hartmann - 2

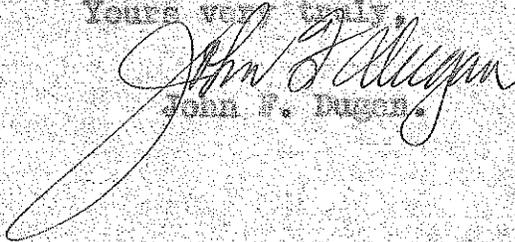
Feb. 13, 1941

development from 1017 drift is beginning to look favorable. So please give it your personal attention and see that the work is kept going and driven as rapidly as possible.

With reference to 1201 Drift North, Mr. Sales wishes us to crosscut to the east following the course of diamond drill hole 78, as indicated on your sketch of December 31, 1940, until we are through the mineralization. If the samples show any promise we shall start drifting north again as this mineralization is on the other side of the fault and might be better ground.

Please have Droubay prepare a geological crosssection through the proposed raise which you wish to drive on 711 Drift east to 5175 crebody.

Yours very truly,

  
John F. Dugan.

JFD:H  
cc:UM  
RS  
TL

C O P Y

WALKER MINING COMPANY  
Walkermine  
Plumas County, California  
January 20, 1941

Mr. Tom Lyon, Chief Geologist  
International Smelting and Refining Company  
818 Kearns Building  
Salt Lake City, Utah

Dear Tom:

In answer to your request of January 9th, as to the total number of feet of development work, drifts, raises and crosscuts, driven during the year 1940, together with a short report on the results obtained, I submit the following report:

Summary of Heading Progress for Mining Development

Mining Development	New Portal	Central	North	712	Piute	Total
Drifts	49	43	75	58		225
Crosscuts		76	73			149
Raises		413	464	683	661	2,221
Total	49	532	612	741	661	2,595
<u>Prospecting Development</u>						
Drifts		717	1,024	3,744	1,488	6,973
Crosscuts		20	260	1,516	486	2,312
Raises		192	418 $\frac{1}{2}$	2,215	44	2,869 $\frac{1}{2}$
Total		929	1,702 $\frac{1}{2}$	7,505	2,018	12,154 $\frac{1}{2}$
GRAND TOTAL	49	1,461	2,314 $\frac{1}{2}$	8,246	2,679	14,749 $\frac{1}{2}$

SOUTH OREBODY

A new portal was started to replace the first 600 to 1100 feet of the old one, where the timber and ditch is in extremely bad condition for spring high water. It is temporarily stopped.

GENERAL OREBODY

A substantial footage of drifts, raises and crosscuts were driven, in an attempt to develop a commercial body of ore in the 720 Block, just North of the Central Shaft. This proved to be too low grade and the ore was written off the reserves.

Mr. Tom Lyon - Sheet 2

Mining Development was carried out to facilitate mining the 880 and the 1080A Blocks, and the sub-level, 1066BDN, was extended North under the 1080A Block.

The main 1200 level was extended to a point about 200 feet south of the shaft and north into the North Ore Body vein. Several crosscuts and drill holes were extended, but no ore was located.

#### NORTH ORE BODY

Numerous raises, stopes, drifts and crosscuts were driven to determine vein conditions, or to facilitate mining, in connection with 420B, 920, 930, 940 and 1020 ore blocks. A fair tonnage of additional Recoverable Ore was developed in the 1020 block, by driving 1062B Raise.

The most extensive work was done along the 1200 level, where the majority of the vein has been opened. It may be too badly broken with faulting for economical mining. Numerous crosscuts and short Diamond Drill holes, in conjunction with the Main 1201 North heading, have exposed the vein quite thoroughly.

#### 712 ORE BODY

Development work has been quite active in this ore body, and has resulted in blocking out 102,025 tons of additional Recoverable ore above the 700 level. Most of this occurred along the footwall vein, where drifts and crosscuts were driven along the 300, 400, 500, 600, and 700 levels, with numerous connecting raises driven at various intervals to prospect the vein and to act as service and transfer raises. The 700 Haulage level has been extended into this country, and it should start yielding a substantial daily tonnage of ore in the near future.

The southerly extension of upper levels has not been explored as yet, and it is likely that additional ore will be developed above the 517D Block.

Development work has also developed ore immediately in the footwall of 605#3 and 605B Stopes, also above the 400 level along the extreme north end of the footwall vein.

Exploration along the 700 and 1000 levels, proved that the footwall vein is too poor to mine between these levels and made it necessary to write off nearly 150,000 tons of low grade, Possible ore.

709E Winze was driven 72 feet down the Main 712 vein, below the 700 level, to test the condition of the ore. The vein has almost pinched in the bottom of the winze, but it may have passed through the ore as it raises to the north with a discus-like cut-off. Drifting to the north will give this information. With the exception of a few fair stringers near the present face of 1017DN, none of the vein has extended to the 1000 level.

#### PIUTE ORE BODY

Piute exploration work was confined to the 900 level, where new ore was developed in the south end, and a new detached block of ore was opened up, several hundred feet to the north of Piute.

Mr. Tom Lyon - Sheet 3.

Work south, along the 900 level, has opened up what appears to be the main ore shoot, along which Piute mineralizing fluids advanced. The shoot is at least 500 feet long, with a maximum thickness of 70 feet near the middle portion, and a taper toward each end. There is a distinct pinch on the north end, but the south end is not yet fully explored. Crosscuts, raises and short diamond drill holes have thoroughly exposed the ore and it should produce at a grade a little better than 1.5% cu. From all indications, this shoot should extend to the 1000 level, where 1017DN is being driven rapidly as possible to explore it.

The North Piute heading was driven out to explore the mineralized zone that was indicated by Surface Diamond Drill Hole No. 21. Several hundred feet of vein has been developed along the level, but the full extent of ore is unknown. The present ore shoot seems to be pinching to the northeast, but further development may expose additional ore to the north.

The ore out here is higher in grade than the average for Piute, with zones that run up to 5.0% cu. These zones occur where the vein is distinctly chloritic and schistose. Other parts of the vein are solid with quartz and run about 2.0% cu.

It is known that the sub-surface is about 100 feet up the dip of the vein, so the vein should be leached near the 800 level.

Crosscuts and short drill holes have exposed several hundred feet of mineralization, which should average at least 2.3% cu. No development up or down the vein, has been started.

I trust that this report is complete enough to serve your purpose. If desired, a more complete summary of the Development Table may be obtained from the Manager's Report, which is being mailed to Mr. Dugan.

Very truly yours,

SKD:DM

(Signed) S. E. Droubay

C O P Y

WALKER MINING COMPANY  
Walkermine  
Plumas County, California  
January 20, 1941

Mr. Tom Lyon, Chief Geologist  
International Smelting and Refining Company  
818 Kearns Building  
Salt Lake City, Utah

Dear Tom:

In answer to your request of January 9th, as to the total number of feet of development work, drifts, raises and crosscuts, driven during the year 1940, together with a short report on the results obtained, I submit the following report:

Summary of Heading Progress for Mining Development

Mining Development	New Portal	Central	North	712	Piute	Total
Drifts	49	43	75	58		225
Crosscuts		76	73			149
Raises		413	464	683	661	2,221
Total	49	532	612	741	661	2,595
<u>Prospecting Development</u>						
Drifts		717	1,024	3,744	1,488	6,973
Crosscuts		20	260	1,546	486	2,312
Raises		192	418 $\frac{1}{2}$	2,215	44	2,869 $\frac{1}{2}$
Total		929	1,702 $\frac{1}{2}$	7,505	2,018	12,154 $\frac{1}{2}$
GRAND TOTAL	49	1,461	2,314 $\frac{1}{2}$	8,246	2,679	14,749 $\frac{1}{2}$

SOUTH OREBODY

A new portal was started to replace the first 600 to 1100 feet of the old one, where the timber and ditch is in extremely bad condition for spring high water. It is temporarily stopped.

CENTRAL OREBODY

A substantial footage of drifts, raises and crosscuts were driven, in an attempt to develop a commercial body of ore in the 720 Block, just North of the Central Shaft. This proved to be too low grade and the ore was written off the reserves.

Mr. Tom Lyon - Sheet 2

Mining Development was carried out to facilitate mining the 880 and the 1080A Blocks, and the sub-level, 1066BDN, was extended North under the 1080A Block.

The main 1200 level was extended to a point about 200 feet south of the shaft and north into the North Ore Body vein. Several crosscuts and drill holes were extended, but no ore was located.

#### NORTH ORE BODY

Numerous raises, stopes, drifts and crosscuts were driven to determine vein conditions, or to facilitate mining, in connection with 420B, 920, 930, 940 and 1020 pre blocks. A fair tonnage of additional Recoverable Ore was developed in the 1020 block, by driving 1062B Raise.

The most extensive work was done along the 1200 level, where the majority of the vein has been opened. It may be too badly broken with faulting for economical mining. Numerous crosscuts and short Diamond Drill holes, in conjunction with the Main 1201 North heading, have exposed the vein quite thoroughly.

#### 712 ORE BODY

Development work has been quite active in this ore body, and has resulted in blocking out 102,025 tons of additional Recoverable ore above the 700 level. Most of this occurred along the footwall vein, where drifts and crosscuts were driven along the 300, 400, 500, 600, and 700 levels, with numerous connecting raises driven at various intervals to prospect the vein and to act as service and transfer raises. The 700 Haulage level has been extended into this country, and it should start yielding a substantial daily tonnage of ore in the near future.

The southerly extension of upper levels has not been explored as yet, and it is likely that additional ore will be developed above the 517D Block.

Development work has also developed ore immediately in the footwall of 605#3 and 605B Stopes, also above the 400 level along the extreme north end of the footwall vein.

Exploration along the 700 and 1000 levels, proved that the footwall vein is too poor to mine between these levels and made it necessary to write off nearly 150,000 tons of low grade, Possible ore.

709E Winze was driven 72 feet down the Main 712 vein, below the 700 level, to test the condition of the ore. The vein has almost pinched in the bottom of the winze, but it may have passed through the ore as it rakes to the north with a discus-like cut-off. Drifting to the north will give this information. With the exception of a few fair stringers near the present face of 1017DN, none of the vein has extended to the 1000 level.

#### PIUTE ORE BODY

Piute exploration work was confined to the 900 level, where new ore was developed in the south end, and a new detached block of ore was opened up, several hundred feet to the north of Piute.

Mr. Tom Lyon - Sheet 3.

Work south, along the 900 level, has opened up what appears to be the main ore shoot, along which Piute mineralizing fluids advanced. The shoot is at least 500 feet long, with a maximum thickness of 70 feet near the middle portion, and a taper toward each end. There is a distinct pinch on the north end, but the south end is not yet fully explored. Crosscuts, raises and short diamond drill holes have thoroughly exposed the ore and it should produce at a grade a little better than 1.5% cu. From all indications, this shoot should extend to the 1000 level, where 1017DN is being driven rapidly as possible to explore it.

The North Piute heading was driven out to explore the mineralized zone that was indicated by Surface Diamond Drill Hole No. 21. Several hundred feet of vein has been developed along the level, but the full extent of ore is unknown. The present ore shoot seems to be pinching to the northeast, but further development may expose additional ore to the north.

The ore out here is higher in grade than the average for Piute, with zones that run up to 5.0% cu. These zones occur where the vein is distinctly chloritic and schistose. Other parts of the vein are solid with quartz and run about 2.0% cu.

It is known that the sub-surface is about 400 feet up the dip of the vein, so the vein should be leached near the 800 level.

Crosscuts and short drill holes have exposed several hundred feet of mineralization, which should average at least 2.3% cu. No development up or down the vein, has been started.

I trust that this report is complete enough to serve your purpose. If desired, a more complete summary of the Development Table may be obtained from the Manager's Report, which is being mailed to Mr. Dugan.

Very truly yours,

SKD:DM

(Signed) S. K. Droubay

January 9, 1911

Mr. S. K. Droubay  
Walker Mining Company  
Walkermine, California

Dear Red:

Will you please, as soon as possible, let me have the total number of feet of development work, drifts, cross-outs and raises driven during the year 1910 together with a short report on the results obtained.

Very truly yours,

TL:P

Tom Lyon

# ANACONDA COPPER MINING COMPANY

Butte, Montana

## Geological Department

RENO H. SALES, Chief Geologist  
M. H. GIDEL, Asst. Chief Geologist

New York, N. Y.  
January 9, 1941.

AIR MAIL

Mr. S. K. Droubay,  
Walkermine, California.

Dear Droubay:

This will acknowledge receipt of your letter of December 31st, together with maps showing portions of the 10th and 12th levels.

Regarding Lyon's letter of November 27th, I recall that in my discussion with Tom our plan was to keep 1201 drift straight as long as we had no ore but to supplement the drift advance with drill holes into the vein, the idea being to get back on the vein any time we found ore.

It has been my most earnest belief in connection with Walker development that, wherever possible, raises and drifts should be driven in ore or at least upon the vein, of whatever grade. In this connection, I am wondering why 1201 turned away from the vein at or about the 16000 coordinate. My recollection of my talk with Lyon was that we did not want to stop 1201 until it had been extended at least as far as there is any ore showing on the 10th level.

If I have not made myself clear in the past, I will do so now and advise that development faces be kept in the vein as far as possible in order that the amount of waste broken be kept at a minimum. Of course, there are occasions where speed is the most important factor and, in such instances, it may be advisable to run laterals with the use of crosscuts or diamond drill holes to determine the position and grade of the vein itself.

Incidentally, we have had no word as to how you are taking care of the situation at the north face of 9340 drift north on the Plute vein. Here is a place where Mr. Weed and I think it important to keep in the vein and avoid breaking waste, if possible. However, that is the mine management's job, to develop the vein and at the same time have a satisfactory haulage way.

Yours very truly,

RENO H. SALES

RHS:F

CC: Messrs. Weed, Dugan, Lyon,  
& Hartmann.

January 10, 1941

Air Mail

Mr. Reno H. Sales  
Room 1726  
25 Broadway  
New York City, N. Y.

WALKER MINE

Dear Reno:

I have your letter of January 8 in which you refer to Droubay's letter and maps of December 31. I have received no letter or maps from Droubay dated December 31 and neither has Dugan's office. However, Mr. Dugan received a telegram from Droubay dated December 31 in which he states:

"1201 is 156 feet beyond 1210 crosscut 20 feet of solid vein assays 1½ percent copper with streak over two percent. Fault on foot and hanging."

Kindest personal regards,

Very truly yours,

TL:P  
cc: C. E. Wood

Tom Lyon

AIR MAIL

January 15, 1913

Mr. Reno H. Sales  
Room 1726, 25 Broadway  
New York City, N. Y.

WALKER MINE

Dear Reno:

I have found the letter from Droubay dated December 31 together with the sketches. This letter evidently arrived during my absence and was mixed up with some other maps.

You will recall our conversation with Droubay regarding the 1201 drift. At the time of the conversation the 1201 drift was in very heavy ground requiring timber and the ore was very low grade. It was decided to drive the 1201 into the footwall for about 50 feet or so and then drill the hanging wall. If the ore was better the drift would then be turned into the vein. This is apparently what happened.

Very truly yours,

TL:P

cc: C. E. Wood  
J. F. Dugan

Tom Lyon

## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

January 16, 1941

H. M. HARTMANN, MANAGER

Mr. Tom Lyon, Chief Geologist  
International Smelting & Refining Company  
818 Kearns Building  
Salt Lake City, Utah

Dear Tom:

Please find enclosed, the geological sketches that were omitted from yesterday's mail.

The Longitudinal projections that go with the Ore Reserves are just about complete and will be in the same mail as this, or possibly a day later.

Your report on drifts, raises and crosscuts for the Year, 1940, will be ready right away. This information has just been compiled for the Annual Report, so is now available.

SKD:DM

Very truly yours,

*S. K. Droubay*  
S. K. Droubay

December 20, 1940

Mr. S. R. Droubay  
Walker Mining Company  
Walkermine, California

Dear Red:

I am in receipt of your letter of December 17 together with the enclosed sketch showing the conditions existing at the north end of 95% C drift north. The mineralization showing in the face of the crosscut east appears to justify a round or so before any drilling is done, as it is quite possible that the main vein is in the footwall as shown in Drill Hole 69.

I saw the same condition on the 600 sub-level in the North ore body where the mineralization appeared to stop against a very small crack which showed no clay gouge whatever. The drift was continued, however, and the vein appeared again in about 50 feet. From the looks of your notes, we may encounter a similar condition in this area. However, the distance from the face of the East crosscut to the projected position of the footwall is so short that I think this crosscut should be run out before anything else is done.

Very truly yours,

TL:P  
cc: Messrs: C. E. Wood  
R. H. Salen  
J. F. Dugan

Tom Lyon

December 21, 1910

Mr. S. M. Drouley  
Walker Mining Company  
Walkersville, California

Dear Ned:

In checking over my letter of December 13 regarding the development of 931, a drift north, I find that a mistake has been made and the "crosscut east" mentioned in Paragraph one, should be "crosscut west". Also, in the latter part of the letter, I mention the "east" crosscut again. This should be the "west crosscut".

Very truly yours,

TLP

cc: Messrs: C. H. Wood  
E. H. Salen  
J. F. Dugan

Tom Igan

## WALKER MINING COMPANY

WALKERMINE  
PLUMAS COUNTY, CALIFORNIA

November 7, 1940

H. M. HARTMANN, MANAGER

Mr. Tom Lyon, Chief Geologist  
International Smelting & Refining Co.  
818 Kearns Building  
Salt Lake City, Utah

Dear Tom:

Please find enclosed, sketches of the Piute 900 Level, North and South and of the North Orebody, 1200 Level.

The streak followed by 903BDS is turning toward the footwall and should meet it in about 120 feet, unless some change takes place. Drill holes NO. 55 and 58 show zones of good ore, much better than the poor grade exposed with the west half of 927C crosscut west. Holes No. 56 and 59 cut no ore, but the hanging wall fissure was indicated in No. 56. Mr. Dugan has let us stop 903B temporarily, so we could prepare a narrow, high grade stope along this streak south of 927C. There is more 900 Level ground opened up now than we can prepare for mining and handle with the shaft, and as 1017BDN is coming in from the south, it seemed more vital to get some of this high grade ore to the Mill, than to rush this heading. Drifting will be resumed as soon as this stope is prepared.

1017B passed from the dark schist containing epidote, to the coarse garnetiferous type. This is an encouraging sign, and I think we should prospect before long, for an extension of the 712 vein, by means of a couple of drill holes. I will send in sketches of this country in a day or two.

The 934CDN is in a crystalline vein zone, that resembles the North Orebody. Although definite strikes and dips can be seen occasionally, it is very hard to follow any particular streak. The quartz streak in the face, seems to dip as flat as 22 degrees in places, but I hardly think the whole vein zone is this flat. There are bands of quartz ore with streaks of almost barren schist.

1201DN does not look any too good. The main No. 1 hanging wall slip is getting weaker, but sprays to the east still seem to keep on the hanging wall side of the ore. A short drill hole will be driven from 1208 crosscut east. Extreme difficulty is being encountered in trying to follow any particular streak of ore, so we will try and run it on N.20 degree W. lines.

I feel that some of these last drill holes were extended a little too far and perhaps drilled a little close together. This was done while I was away.

Very truly yours,

*S. K. Droubay*  
S. K. Droubay

SKD:DM  
Encl. 3

cc - Mr. Sales  
Mr. Dugan

## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

October 10, 1940

Mr. Tom Lyon, Chief Geologist  
International Smelting & Refining Co.  
818 Kearns Building  
Salt Lake City, Utah

Dear Tom:

In line with the discussions that took place while you, Mr. Sales, Mr. Weed, and Mr. Dugan were at Walkermine, it is our understanding that the only development work to be carried out is to be that of immediate vital importance.

With the understanding of Mr. Hartmann and Mr. Warren, the following outline was drawn up and future work will conform as nearly to this as practical:

South and Central Orebodies. None.

North Orebody. The 1200 Level will be continued north with enough crosscuts to get a picture of the vein. The heading will cross and follow along the east side of the fault.

712 Orebody. The 300 Level will be driven by connecting along the tops of 487C, 490C, 496C, and 401D raises. This level is necessary for mining the 517 Fissure ore above the 400 Level.

A prospect heading will be driven from the top of 403D Raise to secure waste for filling 405E Stope. This will be driven north and south along the fissure and will be run on ore where possible. Going north the heading will prospect for possible secondary ore over the extreme north section of 712. Going south it will give us information to guide the progress of 405E Stope and determine whether 605E Stope should continue above 560BDS. 403D Raise will advance as the stope goes up.

The 517BDS will be continued south until it is out of ore and the extent of the vein at this particular place is determined, then the 600 Level directly below this will be prospected south so long as the heading runs in stope grade ore.

The 610F will be continued until it connects with 619E crosscut. This is almost completed, then the 600 Level will be in shape for service. 614F Raise will be driven with branches to connect with 581B and 578B Raises, and 613F Raise will be driven from 609FDS to connect with the extension of 560BDS, providing the ore continues this high. The shape of the ore will determine the connection with 560B. 614F will prospect the vein and act as an ore pass. 613F will service 605E Stope and will give information about the vein. It will be turned according to ore outline.

The 711EDN will be driven about 90 feet more to allow for a connecting raise to 614F Raise, and 713F Raise will be continued to connect with 697E raise. (697E

October 10, 1940

runs from the south end of the 600 Level to the south end of 517BDS) The 716E Raise will be completed to 609FDS and to connect with 613F Raise. This will prospect the vein under 609F and will also act as an ore pass for 605E Stope.

The 1071BDN has been stopped and 1017B is being driven to connect with the Piute Orebody. The present face of 1017B is 19 feet higher than the elevation at the Piute Shaft and 15 feet higher than the present south end of the Piute Level. (track elevations). Short crosscuts will be put into the footwall at various intervals to allow for car sidings and for diamond drill stations to prospect for 712 mineralization.

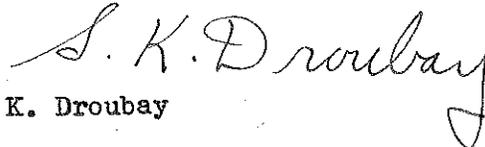
Piute Orebody. 934CDN and S will be extended along the mineralization cut in the end of 932CxcE with crosscuts to the footwall and hanging wall about every 75 feet or often enough to keep a good picture of the vein. Diamond drill hole No. 54 that was drilled to cut any extension of ore back from holes No. 49 and 50 was a blank so we must extend 934CDS rather than try to come in along the vein farther south.

The 903BDS will be extended so long as any ore can be followed with enough crosscutting to keep track of the vein.

In all cases where practical diamond drilling will be substituted for drifts to avoid breaking waste.

This program covers all development which is at present both important and necessary and no additions, excepting headings necessary for stoping, will be made unless ordered or approved by you, Mr. Sales, Mr. Weed, and Mr. Dugan.

Very truly yours,



S. K. Droubay

SKD:SW

cc - Mr. Sales  
Mr. Weed  
Mr. Dugan

C O P Y

November 13, 1940

Mr. S. K. Droubay,  
Walkermine, Calif.

Re: Walker Mining Co.,  
Plumas Co., Calif.

Dear Droubay:

I have in hand copies of your letters and maps forwarded to Tom Lyon on November 7th.

I am pleased to note your recommendation for more sampling at the Walker. This will be an important step and it will be the means of preventing the breakage of a lot of waste.

The 1200 level development is not encouraging. I am glad to see the good use you are making of the diamond drill in prospecting laterally from your drift faces as they advance. I agree that a little care and attention is required to keep these drill holes from going farther than necessary.

Do not forget your promise to send me a small collection of ore specimens showing mineral relationship. I am particularly anxious for a good specimen or two illustrating the occurrence of barite, garnet, and chalcopyrite. Do not be disturbed about the size of a good specimen. I want something showing these later veinlets cutting old vein material. My recollection is that many of the veinlets are composed of barite, garnet, chalcopyrite and possibly magnetite.

Yours very truly,

RHS:KM

cc: Messrs. C.E.W.

T.L. ✓

J.F.D.

RENO H. SALES

November 11, 1940

Mr. Reno H. Sales  
Room 1726  
25 Broadway  
New York City, New York

Dear Sir:

Enclosed are geological sketches of the North,  
712, and Plute ore bodies of the Walker Mine.

Very truly yours,

Tom Lyon

TL:S  
Encl.

# ANACONDA COPPER MINING COMPANY

Butte, Montana

## Geological Department

RENO H. SALES, Chief Geologist

M. H. GIDEL, Asst. Chief Geologist



New York, New York,  
January 8, 1941.

Mr. Tom Lyon,  
820 Kearns Building,  
Salt Lake City, Utah.

Dear Tom:

You no doubt have received copies of Droubay's letter and maps of December 31 date.

I am sure we did not recommend driving 1201 in waste if there was a possibility of it being extended in ore. There is no doubt about the importance of driving Walker Mine openings in ore wherever possible; that is, where there is no conflict of interest with good mining. I am wondering why 1201 diverged from the vein at approximately 16000 coordinate.

The ore segment now being followed by 1201 probably corresponds to the segment between the faults on the 1000 level at 16000 coordinate. Farther to the north on the 1000 the fault crosses the vein and the ore appears on the hanging wall side. I suppose we may expect the two faults to converge and pinch out the ore at some point farther north on the twelfth level. If the geology is consistent, we should then find the vein continuation to the east of the faults.

Yours very truly,

RENO H. SALES

RHS:aw

CC: Mr. C. E. Weed.

## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

December 31, 1940

H. M. HARTMANN, MANAGER

Mr. Reno H. Sales, Chief Geologist  
Anaconda Copper Mining Company  
Hennessy Building  
Butte, Montana

Dear Mr. Sales:

The two accompanying sketches show the present position of 1017DN and of 1201DN, also a December 1, 1940, tabulation of Available Ore Reserves.

Drill Hole No. 65 cut fairly solid vein material, so we were able to advance in the vein, rather than run into the footwall, as was suggested by you and Mr. Lyon several weeks ago. Mr. Warren had the drift turned and into the vein material by the time the recommendation was in. About 30 or 40 more feet will put us in position for the proposed short hanging wall hole, to test whether vein material exists on the East side of No. 1 fault. The present vein is good and solid, but both of the faults are close at hand and bad where exposed.

40 feet more will put 1017 in position for easterly drilling as suggested by your most recent recommendation. Several zones of fairly strong mineralization have been cut, which may be worth while following at some future date.

Very truly yours,

*S. K. Droubay*  
S. K. Droubay

SKD:DM

cc - Mr. Dugan  
Mr. Lyon

# ANACONDA COPPER MINING COMPANY

25 Broadway

New York

OFFICE OF THE  
GENERAL MANAGER OF MINES

November 14, 1940.

Mr. Tom Lyon,

820 Kearns Building,

Salt Lake City, Utah.

Dear Sir:

This will acknowledge receipt of your letter of November 11th, addressed to Mr. Sales and enclosing geological sketches of the North, 712, and Piute ore bodies of the Walker Mine.

Very truly yours,

*Wm Sausak*

F.

# ANACONDA COPPER MINING COMPANY

25 Broadway

New York

OFFICE OF THE  
GENERAL MANAGER OF MINES

December 16, 1940.

AIR MAIL

Mr. Tom Lyon, Chief Geologist,  
International Smelting & Refining Co.,  
Kearns Building,  
Salt Lake City, Utah.

Dear Tom:

Apparently my letter of November 29th regarding Walker development was written prior to the receipt of your letter of November 27th on the same subject. We both agree that 1017 was looking for the downward extension of the 900 south Piute and, therefore, no time should be wasted looking for the 712 ore body.

It makes no particular difference to me whether the hole drilled east from 1017 is drilled at 18,400 coordinate or at 18,500 coordinate. I think you are correct in stating that there would be more chance of striking the ore body at 18,500 than there would at 18,400. When this hole is drilled, and if it should strike ore, the 1017 drift should immediately be made into a crosscut allowing a reasonable curve for hauling in order to get into the mineralization as rapidly as possible.

In regard to 934 North Piute, I would like to discuss this matter with Mr. Sales who is due here tomorrow before I say anything further about it.

With kind personal regards, I am

Sincerely yours,

*Chas. W. ...*

CEW:F

CC: Mr. R. H. Sales.  
Mr. J. F. Dugan.

AIR MAIL

December 10, 1910

Mr. C. E. Weed, General Manager of Mines  
Anaconda Copper Mining Company  
Room 1726, 25 Broadway  
New York City, N. Y.

WALKER MINE

Dear Clyde:

This is in answer to your letter of November 29 regarding the Walker mine. Your letter was probably written prior to the receipt of my letter of November 27 regarding the same subject.

Referring to the second paragraph of your letter regarding a drill hole to the east along coordinate 18,400. A hole at this point could be drilled from 1017 north without slowing down the progress of 1017 materially. However, in looking at the composite map of the Piute ore body, there is but slight indication that the ore shoot would reach that far south. I would suggest that the hole be spotted at coordinate 18,500, as I believe there would be more chance of striking mineralization at this point than farther south.

Regarding the ore now being developed in 951, North Piute, I can see no economical way of testing this ore at depth except by drilling or sinking a winze. If the ore extends to depth, and we decide to drive under it, it will be necessary to drive a raise for ventilation, so that if it is prospected by a winze, the work will not be lost. If it is necessary to drill, we will have to crosscut well into the hanging wall before drilling, as the dips on the various streaks of mineralization seem to vary from 50° to 22° to the east, making it necessary to drive a crosscut at least 100 feet into the hanging wall before much depth could be obtained by diamond drilling.

With kindest personal regards,

Very truly yours,

TL:P

cc: Messrs: R. H. Sales  
J. F. Dugan

Tom Lyon

# ANACONDA COPPER MINING COMPANY

Butte, Montana

## Geological Department

RENO H. SALES, Chief Geologist

M. H. GIDEL, Asst. Chief Geologist



Dec. 3rd, 1940

Mr. Tom Lyon,  
820 Kearns Bldg.,  
Salt Lake City, Utah.

Dear Tom:

I have a copy of Weed's letter to you dated November 29th. It is evident that you did not send him copies of your recent letters on the subject. In the future, please make it a point to see that copies of your letters relating to mine development work at any of the International properties be sent to Weed.

Yours very truly,

RHS:KM  
cc: Mr.C.L.W.

RENO H. SALES

# ANACONDA COPPER MINING COMPANY

25 Broadway

New York

OFFICE OF THE  
GENERAL MANAGER OF MINES

November 29, 1940.

AIR MAIL

Mr. Tom Lyon, Chief Geologist,  
International Smelting & Refining Co.,  
818 Kearns Building,  
Salt Lake City, Utah.

Dear Tom:

Today, I received a copy of Droubay's letter of November 25th together with certain sketches and maps of the Walker Mining Company concerning development. I note that Droubay shows two proposed drill holes to the west from some point along 1017DN. Undoubtedly, one of these drill holes looks like a reasonable prospect in looking for the continuation of the 712. However, this drift is being driven to get under the 900 south Piute, as I feel that this has more prospects than the 712 country. For this reason, I do not feel that this drift should be held up in any way by prospecting for the 712 orebody. If a hole can be drilled and not hold up 1017, and you consider a hole necessary, I would not object to it.

I wish to make the following suggestion. At some point at about 18400 coordinate, we should cut a diamond drill station to the east of 1017 and drill a hole straight east along 18400 coordinate. It seems to me there is a good possibility of the 900 South orebody pitching strongly to the south and at this point a hole might intersect it. If this were true, 1017DN should be turned north straight east and reach the ore as quickly as possible.

I would be very interested in hearing your reaction to this line of development.

I note Droubay states that 1201DN looks pretty sad. I would have no objection to having 1201DN stopped if Sales and you consider the possibilities are rather limited. I am certain, on account of the faults that I saw while I was at Walker, that it would be almost impossible to mine this ore without considerable dilution.

Referring to the ore being developed in 934 north Piute, I am wondering how we are going to test the possible downward extension of this ore. So far, I have not received any information in regard to the dip of the vein, but, I assume that it is probably dipping at 30°, the same as the ore body south of the shaft. To extend 1017 drift over this point would involve

Mr. Tom Lyon - 2.

11/29/40

approximately 2,000 feet of drifting from the South ore body over, which would be a long and expensive job. It might be advisable to consider the possibility of driving a crosscut in the hanging wall at some point to be determined in the near future and drilling some vertical holes below. Even this would require quite a long crosscut if the vein is as flat as 30°.

I would appreciate your ideas on the possibilities of determining this ore at depth. I have a feeling that we are probably close to the top of an ore body which may become much larger on the levels below.

Yours very truly,



CEW:F

CC: Mr. R. H. Sales.

Mr. J. F. Dugan.

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November 27, 1910

Mr. S. K. Droubay  
Walker Mining Company  
Walkermine, California

WALKER MINE

Dear Red:

I am in receipt of your letter of November 25 together with the accompanying maps.

Mr. Sales is in town and we have considered the suggestions you have made.

Regarding the proposed drill holes from 1017, we feel that it is too soon to spot the drill holes which you have suggested and we would like to have the 1017 completed before any further drilling is done. By deferring the drilling until after 1017 is completed, we may decide on a different location for the holes.

Regarding the 1801 drift north, we feel that this drift should be run through No. 2 fault and turned nearly due north in good ground and extended for about 150 feet from the present face. We can then put in a couple of more holes to the hanging wall to prospect the vein. The drift itself should be run on the assumption that the 1017 cuts the Flute ore body, in which case it will probably be necessary to continue the 1800 out beneath 1017. If we do not receive any encouragement from the next 150 feet of drift, together with a couple of drill holes, we will probably suspend this operation.

Kindest personal regards,

Very truly yours,

TL:P

cc: Messrs: R. E. Sales  
C. E. Wood  
J. F. Dugan

Tom Lyon

# WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

November 25, 1940

H. M. HARTMANN, MANAGER

Mr. Tom Lyon, Chief Geologist  
International Smelting & Refining Co.  
818 Kearns Building  
Salt Lake City, Utah

*Prints in file*

Dear Tom:

Please find enclosed, sketches of Walker Mine Development, with respect to 1017DN, 1201DN, 934CDN and 517EDS.

The 1017 heading passed from barren rock, with numerous epidote inclusions, to a highly garnetiferous formation. In some places, the garnet is exceedingly abundant and in one place near the present face, there are two almost horizontal veinlets of it. Although there is not enough chalcopyrite to make the drift assay to any extent, a considerable amount of it seems to be associated with the garnet.

If 1017 does not open up any definite vein before the next crosscut for a car siding is needed, do you think we would be justified in drilling one, or possibly the two, diamond drill holes, as laid out on the plan and vertical cross-section No. D-97. The fissure cutting across the drift, seems to line up fairly well with the 712 structure. By drilling the one hole 650 feet deep, we would test the entire structure, including the vein ahead of 1071BDN and D.D. Hole No. 29.

Because of Hole No. 28, I feel that we should have driven the 1075B Tool Room drift to the west, but this was started before I knew about it.

1201DN looks rather sad. It was necessary to turn west to keep from timbering and it met the No. 2 footwall fault. It looks as though the wisest thing to do, is to continue the drift about 50 feet further, immediately under No. 2 fault, then as a last resort, drill one more hole into the hanging wall. We might try to keep the heading between the two faults, but it would be necessary to timber before we advanced very far. The same situation was encountered on the 1000 Level. Do you think this amount of work is enough to exhaust the possibilities of the 1200 Level? If the footwall Hole No. 66 shows ore, it will change the picture, but this is rather unexpected.

934CDN looks very encouraging. The vein turned into a softer, chloritic formation, without much quartz, and the gold and silver values fell off. There is not so much bornite in the ore. Short drill holes will be driven from the faces of 935CxcE&W, to determine the limits of the vein. This will enable the heading to continue north, without delay for putting in switches and track for mucking the crosscuts.

Mr. Tom Lyon, Chief Geologist  
Sheet 2.

517BDS is in a nice zone of ore. We are driving 621FDS, to see if the ore extends down. I am glad to see this show up, because this is in the old 710 Orebody and shows fair surface indications. It is about 650 feet from 517B to the surface.

We would appreciate any comments or suggestions, especially concerning the 1200 Level. This Level is very expensive to keep going, and Mr. Hartmann would like to shut it down just as soon as possible.

Very truly yours,

*S. K. Droubay*

S. K. Droubay

SED:DM

Encl. 5

cc - Mr. Sales  
Mr. Dugan  
Mr. Wood

## CLASS OF SERVICE

This is a full-rate Telegram or Cablegram unless its deferred character is indicated by a suitable symbol above or preceding the address.

# WESTERN UNION

1201

## SYMBOLS

DL=Day Letter
NT=Overnight Telegram
LC=Deferred Cable
NLT=Cable Night Letter
Ship Radiogram

R. B. WHITE  
PRESIDENT

NEWCOMB CARLTON  
CHAIRMAN OF THE BOARD

J. C. WILLEVER  
FIRST VICE-PRESIDENT

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

FA36 79 NT=WALKER MINE CALIF 23

MAR 24 W 4 54

TOM LYON=

818 KEARNS BLDG SALT LAKE CITY UTAH=

CLAY SEAMS THEN TEN FEET TWO PERCENT ORE CHALCOPYRITE SOME  
BORNITE STARTING 207 FEET TEN FORTY FEET WASTE IN HOLE  
SEVENTY FOUR DRILLED NORTH SEVENTY EIGHT DEGREES EAST REFER  
MR SALES SKETCH DRILLING ORDER REVERSED BY MISUNDERSTANDING  
1017 IS SIXTY FEET BEYOND CROSSCUT HOLE SEVENTY FIVE IN EIGHTY  
FEET NORTH FORTY FOUR EAST IF ENCOUNTERS ORE WILL TURN 1017  
NORTH SIXTY THREE DEGREES EAST DISCUSSED SAME WITH MR LYON BY  
FONE. COPIES THIS WIRE TO DUGAN LYON AND SALES=

DROUBAY.

BO A36

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

September 3, 1940

Mr. Reno H. Sales, Chief Geologist  
 Anaconda Copper Mining Company  
 Hennessy Building  
 Butte, Montana

Dear Sir:

Please find enclosed geological sketches of the 1200 Level of the North Orebody and the 900 Level of the Piute Orebody, vertical section C-3 through the 900, 1000 and 1200 of the North Orebody and a twenty scale assay plan of the Piute 900 Level.

The 1200 has acted rather strangely as the section shows. We intend drifting north along the footwall of the ore, but I am afraid that the two faults will come together and pinch out the vein as they did on the 1000 Level. We may get ore on the hanging wall of the fault farther north. What do you think of extending 1206 or possibly a crosscut further north, far enough to cut the vein at a greater depth with diamond drill holes?

The twenty scale assay plan was made to see if we could segregate the different grades of ore with the possibility of mining the block selectively. Mr. Perry and I roughed the map from broken muck samples and I am now having five foot channel samples taken along all the crosscuts to try and get a more accurate picture. This orebody has grown to quite a size and it is important to know all about it before a mining method is chosen.

Mr. Perry was here for almost a week and I enjoyed going over the Walker Geology with him. We made as thorough a study of the underground and surface geology as the limited time would let us and I am sure Mr. Perry obtained quite a good picture of the Walker Mine.

Very truly yours,

*S. K. Droubay*  
 S. K. Droubay

SKD:SW

cc- Mr. Lyon  
 Mr. Weed  
 Mr. Dugan

# ANACONDA COPPER MINING COMPANY

Butte, Montana

Geological Department  
RENO H. SALES, Chief Geologist  
M. H. GIDEL, Asst. Chief Geologist



August 20, 1940.

Mr. Tom Lyon,  
820 Kearns Building,  
Salt Lake City, Utah.

Dear Tom:-

I have a copy of Droubay's letter to you dated August 10th. Also a letter from Droubay showing proposed developments at the north end of 1201 drift and 923C drift north.

I approve the proposed crosscut easterly from 1201 drift north and suggest that we take another shot at the vein by continuing 1201 northerly from this proposed new crosscut. If the vein has the strike indicated on Droubay's sketch, 1201 should be turned slightly to the right before extending it further. I should say that the next crosscut to the vein should be at approximately 100 feet, depending upon what was disclosed in the first one cutting the vein zone.

You will recall the presence of the wide quartz vein which lies considerably to the west of 923C drift. Might it not be a good plan to give this footwall vein another try with a drill hole opposite the proposed location of #49? Generally it appears to me that this 900 north development has been of a most disappointing nature. Unless the proposed drilling from the surface shows something considerably better than anything we have found, this north end will have to be written off as a failure.

Yours very truly,

RENO H. SALES

RHS:MBS

cc-C.E.W.  
J.F.D.  
S.K.D.

## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

August 12, 1940

Mr. Rene H. Sales, Chief Geologist  
 Anaconda Copper Mining Company  
 Butte, Montana

Dear Sir:

The enclosed sketches show the present positions of 9230DN and 1201DN.

The 1201 heading has been driven along a narrow glassy vein that assays about 1% copper. The vein pinched just before it met No. 3 footwall slip. The drift is now in a position to turn on a fifty foot radius curve which will place the crosscut through No. 1 Fault in a position to locate any ore that may extend from the good showings on the 1000 Level. Where shall we direct, further exploration if nothing is located with the crosscut.

The 9230 has been stopped about seventy feet from surface diamond drill hole No. 21 and it is planned to start drilling Hole No. 49 immediately. Exceptionally bad ground made it necessary to turn toward the footwall, so Mr. Dugan and Mr. Hartmann want to get an idea of the ground before a crosscut is attempted. If nothing worth drifting toward is located with the drilling, then work in this area will cease pending surface drill results as Mr. Weed suggested.

Very truly yours,

*S. K. Droubay*

SXS:ST

S. K. Droubay

Encl.

cc - Mr. Reed  
 Lyon  
 Dugan

# WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

July 12, 1940

Mr. Tom Lyon  
Chief Geologist  
Salt Lake City, Utah

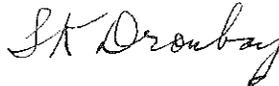
Dear Tom:

The accompanying composite plan and vertical cross section showing the south end of the Piute Ore Body are interesting. From indications, we should resume driving the 1000 Level south, for we should encounter ore a little further on.

There are no skip pockets on the 1000 level as yet, but from the looks of the grade of the ore on the 900 level, it will pay us to go ahead and fix the place up, with the idea of producing from here.

If the 1000 level drifting meets with yours and Mr. Dugan's approval, I would appreciate your recommending this work be started when convenient.

Very truly yours,



S. K. Droubay

cc-Mr. Weed  
cc-Mr. Sales  
cc-Mr. Dugan

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August 9, 1940

Mr. Reno H. Sales  
Room 1726  
25 Broadway  
New York City, N. Y.

Dear Reno:

Enclosed are geological sketches of the Central,  
712, and Plute ore bodies of the Walker mine, dated July  
1, 1940.

Very truly yours,

TL:P  
Encl-5

Tom Lyon

# ANACONDA COPPER MINING COMPANY

Butte, Montana

## Geological Department

RENO H. SALES, Chief Geologist

M. H. GIDEL, Asst. Chief Geologist



July 17, 1940.

Mr. Tom Lyon,  
820 Kearns Bldg.,  
Salt Lake City, Utah.

Re: Walker Mining Company,  
Plumas County, Calif.

Dear Tom:

I am in receipt of a copy of Droubay's letter of July 12th, also a map accompanying his letter showing the south portions of the 800, 900 and 1000 Piute levels.

In view of the ore showings in the southern portion of the 900, I think it important that the 1000 level be immediately extended southerly to get directly beneath the 900 ore. Should this ore be found to extend to the 1000, it will mean a sizable addition to the Walker ore reserve. It may be that this south ore development represents the chief source of mineralization for the Piute Vein in the area of the Piute shaft.

Yours very truly,

RHS:KM

cc: Messrs. Weed  
Dugan  
Droubay

RENO H. SALES

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## INTERNATIONAL SMELTING AND REFINING COMPANY

MINING DEPARTMENT

818 KEARNS BUILDING

SALT LAKE CITY, UTAH

SUBJECT:

July 16, 1940

Mr. C. B. Weed, General Manager of Mines,  
Anaconda Copper Mining Company,  
Butte, Montana.

Plute Orebody  
900 So. Development

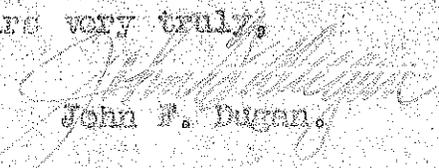
Dear Sir:

With reference to Mr. Droubay's letter of July 12th to Mr. Lyon concerning the 900 Plute Orebody south.

Tom and myself have discussed this piece of development work, and we think it would be in order to do more work on the 900 before opening up the 1000 level.

I think it would be a good idea to sink a winze from the 900 to see if the ore goes down before spending any money on the 1000 level.

Yours very truly,

  
John F. Dugan.

JFD:HL  
cc:TL  
RS

## WALKER MINING COMPANY

WALKERMINE  
PLUMAS COUNTY, CALIFORNIA

June 7, 1940

H. M. HARTMANN, MANAGER

Mr. Tom Warburton, Cashier  
International Smelting & Refining Co.  
618 Kearns Building  
Salt Lake City, Utah

Dear Sir:

Kindly refer to your letter of May 6th. As explained to you in our recent telephone conversation, I have gone over this very carefully with Mr. Hayden and Mr. Droubay and I do not see any reason why the recommendation should not be adopted as far as the mill operation goes. We will, therefore, with your approval, start with this procedure for the month of June.

As far as the mill is concerned, the only point is what to use for an unaccountable loss factor. There is no way of actually determining what this loss is at Walker, for the ore is not weighed, but is figured back from assays and weights of concentrates and assays of tailings. However, we will assume this to be two percent as suggested in Mr. Torreyson's letter. The remaining calculations merely make corrections for errors in estimating for the previous month, which is as it should be. I might add that Mr. Hayden highly approves of this method.

Please refer to the paragraph on page three of the memorandum: "Present tonnage of ore in stopes should be considered wet weight and future figures given in both dry and wet."

If a two percent unaccounted loss is used, and the correction made monthly for the higher settlement copper over the estimate when the tonnage is figured back, it will increase our production figure by about three and one-half percent. Over a period of time this will have the effect of decreasing the broken ore reserves as shown on the books, but the actual amount of broken ore in the stopes would be the same as under the present system. This will be an additional factor in correcting the broken ore inventory, if we continue to use wet tons as at present.

If we consider the ore inventory as dry tons instead of wet tons it will increase our broken ore inventory by approximately one and seventy-five hundredths percent--the average moisture content. However, increasing the production by three and one-half percent will gradually reduce this inventory by  $3-1/3$  minus  $1-3/4$  or 1.75%, so that in the long run we will be bringing the inventory as shown on the cost sheets nearer to the actual by 1.75%.

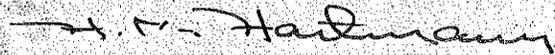
This will overcome Mr. Droubay's objection on page one of the memorandum. With this set-up there would be no objection on his part in carrying the broken ore account as dry tons, which I understand is what Mr. Lyon and Mr. Dugan desire. It would also be more satisfactory as far as the mine is concerned as tending to avoid confusion. There is no reason why both wet tons and dry tons should not be reported; but, on Mr. Droubay's ore reserve sheet, the broken ore would be carried as dry tons instead of wet. The broken ore reserves, on page 40 of the April cost sheets, are taken from Droubay's ore reserve sheet. If this were done, the heading on page 40 would either have to be changed to read dry tons, or the stope reserve figures increased by our average moisture content on that sheet.

June 7, 1940

There is no means of exactly determining the broken ore reserves in the stopes until these stopes are pulled dry. It is often a number of years from the time a stope is started until this is done. The write-off in 1937 of 130,000 tons of ore was an attempt to correct this. However, on going over this with Mr. Droubay, and the records of some of the stopes which have since been emptied, it appears very probable that this write-off was not sufficient to take care of the error of inventory at that time.

With the two percent unaccounted loss and the carrying forward of the copper from month to month, there is no reason at the mine why we should not consider the broken ore in the stopes as dry tons.

Yours truly,



H. M. Hartmann

MMH:CR

cc Mr. Dugan  
cc Mr. Lyon

## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

June 7, 1940

H. M. HARTMANN, MANAGER

Mr. Tom Lyen, Chief Geologist  
International Smelting & Refining Co.  
818 Kearns Building  
Salt Lake City, Utah

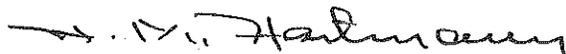
Dear Tom:

This refers to the carrying of broken ore in the stopes as dry ore instead of wet. The way we are now doing is breaking dry tons and subtracting wet tons from them.

Some time ago Mr. Dugan wrote me that he had talked the matter over with you and you both wished that this inventory should be dry tons instead of wet. However, this would require changes in the cost sheet set-up, which would have to be made through Mr. Warburton's office. I have had some correspondence with Mr. Warburton as to how this would apply to the mine and believe he is now in possession of all the facts.

I suggest, in order to put this into effect, that you and Mr. Dugan get in touch with Mr. Warburton, who can issue the required accounting instructions.

Yours truly,



H. M. Hartmann

HMH:GR

Encl.

May 16, 1940

Mr. S. K. Droubay  
Walker Mining Company  
Walkermine, California

Dear Mr. Droubay:

In Mr. Lyon's absence I wish to acknowledge receipt of your letter of May 11, enclosing therein geological sketches and classification sheet for development during the month of April; also prints showing in yellow mining operations with respect to ore bodies; also a report on diamond drilling.

Very truly yours,

Nell E. Preece

C O P Y

April 27, 1940.

Mr. C. E. Weed, Gen. Mgr. of Mines,  
Anaconda Copper Mining Company,  
25 Broadway, Room 1726,  
New York City, New York.

Re: Walker Mine,  
Plumas Co., Calif.

Dear Clyde:

Tom Lyon will send you copy of a letter from Droubay, relative to the north development on the 900 Piute level. Lyon advises me that he is instructing Droubay along the lines I suggested in my letter of April 23rd, of which you have a copy.

It seems to me most advisable to get that north drift on ore, if there is any there. The lateral could be driven later for mining purposes, in case the vein proves to be worth mining.

I received, this morning, a copy of your letter of April 21st, relative to drilling from the surface to cut the vein north of the former drill hole. I recall that we decided on this plan before you left Butte.

Yours very truly,

RHS:RM

cc: T.L.

RENO H. SALES

April 27, 1940

Mr. Reno H. Sales  
P. O. Box 457  
Butte, Montana

Dear Reno:

Enclosed you will find copy of the latest notes on  
development at the Walker.

I am sending these notes to Butte so that you may have  
an opportunity to see them before they go to the New York office.

If you would rather have me forward these notes direct to the  
New York office in the future, please let me know.

Very truly yours,

Tom Lyon

TL:P  
encl.

AIR MAIL

April 27, 1940

Mr. S. K. Droubay  
Walker Mining Company  
Walkersmine, California

Dear Ned:

I am in receipt of your air mail letter of April 25 regarding the 900 development work, and note what you have to say regarding diamond drilling.

I have talked with Mr. Sales regarding this matter. Mr. Sales and I both think that the work in the lateral north should be discontinued until after the diamond drilling is completed. If the drilling discloses ore, a crosscut should then be run and the drift north continued on ore. If not, then the lateral should be continued to the north until there is sufficient distance to either crosscut or diamond drill again.

In the future when you write regarding matters of this kind, in addition to sending a copy to Mr. Sales, please also send one to Mr. Wood at the New York office.

Very truly yours,

Tom Lyon

TL:P  
CC: R. H. Sales  
C. E. Wood

# ANACONDA COPPER MINING COMPANY

Butte, Montana

Geological Department  
RENO H. SALES, Chief Geologist  
M. H. GIDEL, Asst. Chief Geologist



April 27, 1940.

Re: Walker Mine,  
Plumas County, Calif.

Mr. Tom Lyon,  
820 Kearns Bldg.,  
Salt Lake City, Utah.

Dear Tom:

Referring to Droubay's letter of April 25th. Apparently, he had not received my letter of April 23rd before writing you.

My suggestion is that we first find out whether the vein at the position of this crosscut contains ore. If it does, we should drift on it. Whether the crosscut is continued to the vein or a drill hole is driven, is an operating matter for the management to decide.

If it is found that the vein is barren, then the lateral should be continued to the next crosscut point.

Yours very truly,

RENO H. SALES

RHS:KM

cc: C.E.W.  
S.K.D.

## WALKER MINING COMPANY

WALKERMINE  
PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

April 25, 1940

Mr. Tom Lyon, Chief Geologist  
International Smelting & Refining Co.  
818 Kearns Building  
Salt Lake City, Utah

Dear Tom:

In referring to Mr. Sales' recommendation of February 23, 1940, with regards to the heading going north from the Piute 900 Level, Mr. Hartmann has asked if we may substitute diamond drilling for crosscutting. The 923C lateral has advanced far enough to cut the shear zone 100 feet north of where it was opened with 904B and the crosscut will be started right away.

Since the Piute compressor burned down we can advance only one round every other day, which would take about 35 days to complete the crosscut. If drilling will furnish us enough information, we could drive the crosscut in a couple of rounds and then drill it, giving the operators a little better chance to work in the south end. Air is available on graveyard shift only until the Piute compressor is fixed which may take a month or more.

This ground may be badly broken and difficult to drill, but so long as the hole is cased through the fault the core should be in good enough shape to give us fair information. We will keep driving the crosscut unless I hear that the drill hole will be satisfactory. Please wire.

The 1201DN met a fissure crossing over from the footwall side of the drift at a point 480 feet north of the shaft. There is hard glassy vein material on the footwall side of it, but as yet it is hard to tell just what happens. It may be a narrow strip associated with the fissure and the next round or two will pass through it. Around 100 gallons of water per minute flows out of the fissure. The quartz looks like fair ore.

Very truly yours,

  
S. K. Droubay

SKD:SW

cc - Mr. Sales  
Mr. Dugan

C O P Y

April 23, 1940.

Mr. S. K. Droubay,  
Walkermine, Calif.

My dear Droubay:

I am in receipt of a copy of your letter of April 20th addressed to Tom Lyon, together with copy of your ore reserve data for March 1940, also a sketch map showing latest developments in the 517 section.

I believe Mr. Weed has instructed Dugan with reference to surface drilling north of the Plute. In conversation with him, we agreed that some more holes should be drilled north of the one drilled last summer.

I will be interested to learn results of the first cross-cut into the vein from 923RDN. I assume that if the vein has substantial copper and if it is reasonably good ground for drifting, you will extend the drift northerly on the vein rather than carrying on with the lateral. I think it better to find out what the vein is like, and incidentally save costs by getting some ore recovery from the drift.

Yours very truly,

HES:KM

cc: Messrs. Weed  
Lyon ✓  
Dugan.

RENO H. SALES

April 16, 1940

Mr. S. K. Droubay  
Walker Mining Company  
Walkermine, California

Dear Red:

I am in receipt of your report on the development work for the month of March and also the enclosed report on the cost of breaking ore by use of diamond drills at the Walker. This report is very interesting and it seems to me that it is quite possible that a reduction in breaking costs at the Walker can be made by the use of diamond drills throughout the mine.

Very truly yours,

TL:P

Tom Lyon

March 20, 1940

Mr. S. K. Droubay  
Walker Mining Company  
Walkermine, California

Dear Red:

I wish to acknowledge receipt of your letter of March 13 together with the geological sketches and a classification sheet for development during the month of February; also prints showing mining operations with respect to ore bodies.

With kindest personal regards,

Very truly yours,

TL:P

Tom Lyon

# ANACONDA COPPER MINING COMPANY

Butte, Montana

## Geological Department

RENO H. SALES, Chief Geologist

M. H. GIDEL, Asst. Chief Geologist

New York, N. Y.  
March 6, 1940.

Mr. Tom Lyon,  
818 Kearns Building,  
Salt Lake City, Utah.

Dear Tom:

I beg to acknowledge receipt of the Walker maps.

We will keep the maps posted if you send on the advances. Such advances should always be sufficiently tied in with coordinates to enable us to transfer same to our white prints set.

With kindest regards, I am

Yours very truly,



RENO H. SALES

RHS:F

March 5, 1940

Mr. S. K. Droubay  
Walker Mining Company  
Walkerville, California

Dear Red:

In the future on the geological notes you send in monthly, will you please put those of the various ore bodies on separate sheets. When the Central, North and Piute advances are shown on one sheet, filing becomes very difficult.

Very truly yours,

TL:P

Tom Lyon

AIR MAIL

February 26, 1940

Mr. S. K. Droubay  
Walker Mining Company  
Walkermine, California

Dear Red:

Enclosed you will find copy of a letter from Mr. R. H. Sales dated February 23 regarding the development work north of the Piute on the 900 level.

You will note what Mr. Sales has to say regarding the fault which is encountered in 904B crosscut.

Kindest personal regards,

Very truly yours,

TL:P  
Encl.

Tom Lyon

February 21, 1940

Mr. Reno H. Sales  
Room 1726  
25 Broadway  
New York City, N. Y.

Dear Reno:

The Walker maps are being forwarded to you by express today.

If we send you the geological advance, will you be able to have someone keep the set posted?

Kindest personal regards,

Very truly yours,

TL:P

Tom Lyon

# ANACONDA COPPER MINING COMPANY

Butte, Montana

## Geological Department

RENO H. SALES, Chief Geologist

M. H. GIDEL, Asst. Chief Geologist

New York, N. Y.  
February 23, 1940.

AIR MAIL

Mr. Tom Lyon,  
820 Kearns Building,  
Salt Lake City, Utah.

Dear Tom:

I have Droubay's letter of February 20th and his sketch of 904-B crosscut east showing geology.

I have talked with Weed and we think the crosscut should be continued until definitely through the vein zone, then a lateral should be carried along on the footwall side of the vein zone with crosscuts through the vein every hundred feet.

Incidentally, is this strong footwall fault the same as the one we have been dealing with in the vicinity of our main inclined shaft below the seventh level, 706 I think it is. The point I have in mind is the indication that this fault may be mineralized in this north section, and if so, we may find it mineralized at deeper levels in the south end of the mine.

Yours very truly,



RENO H. SALES

RHS:F

CC: Mr. T. Lyon (2 extra)  
Mr. C. E. Weed.

## WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

February 20, 1940

Mr. Tom Lyon, Chief Geologist  
International Smelting & Refining Co.  
818 Kearns Building  
Salt Lake City, Utah

Dear Tom:

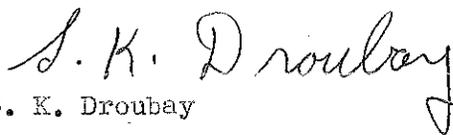
The enclosed geological sketch shows the present face of 904B which is exploring north from the Piute Orebody. The heading has cut fifty feet of badly sheared schist and from information obtained in diamond drill holes No. 21, 24, and 27 it looks as though we will have to drop back to the footwall side of the heavy fault and drift north unless something of a solid vein is cut with the next few rounds.

Hole No. 21 cut vein material about 200 feet up the dip from the 900 and it has been projected down at forty degrees.

Although the drift and drill hole No. 24 indicate that the fault has a general north-south strike, it bears distinctly to the east where exposed in the heading. Drifting in this wet, broken zone necessitates timbering and is slow and expensive. The fault may pinch us into the hanging wall.

We would appreciate advise as to what course of action to take. In the mean time we will continue the heading into the solid ground.

Very truly yours,



S. K. Droubay

SKD:SW

cc - Mr. Sales  
Mr. Dugan

## WALKER MINING COMPANY

WALKERMINE  
PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

February 13, 1940

Mr. Rene H. Sales, Chief Geologist  
Anaconda Copper Mining Company  
Butte, Montana

Dear Sir:

We are sending under separate cover geological composite map and vertical cross sections which represent the information you asked for in your letter of February 7, 1940.

In laying out diamond drill holes No. 41 and 42 the vein was projected down section D-5 and given the same strike as indicated on the 1000 Level. These holes were then directed to intersect the vein at the approximate 1200 Level. Hole No. 42 should have been drilled more westerly, but the drillers made a mistake in measuring offsets and it was drilled a little out of line with your recommendation.

The vein is being silled out in 692E and 4950 headings. 692E has opened up enough ore to lay out a fair sized stope and 4950 exposing some nice bornite-chalcopyrite ore. It looks as though we may have a good block of stoping ground here between the 500 and 300 Levels and it may extend down to the 600 Level where we have a mill hole from 7050 Stope through which to produce it.

The 693ExcW has just entered the vein. As yet there is not much structure exposed but there is considerable disseminated chalcopyrite in a crystalline quartz schist.

The 904DN cut a heavy fault just about in line with where the footwall of mineralization should be as projected from the surface diamond drill hole and the two drilled into the hanging wall from the drift. The fault strikes slightly east of due north and dips forty-five degrees to the east. About twenty feet of badly broken schist has been opened up on the hanging wall side of it and two six inch veinlets of white quartz, fairly well mineralized with chalcopyrite, exposed. No typical vein material has been cut, but the next twenty feet will bring us in line with the projection of the mineralization cut in Holes No. 24 and 27 from the 900 Level and the hanging wall part of the vein from surface Hole No. 21. I will send in a sketch of this after a few more rounds have been put in.

The 1200 headings north and south are going and 1065ExcW has been started.

Respectfully yours,

*S. K. Droubay*

S. K. Droubay

SKD:SW

cc Mr Lyon

February 9, 1940

Mr. Reno H. Sales  
Room 1726  
25 Broadway  
New York City, N. Y.

Dear Reno:

Regarding the Walker maps. I hope to get these maps in the mail to you by the middle of next week. I am sorry they have been delayed so long but the drafting department has been swamped with work and I felt that you would probably want to get Perry's work out before anything else, consequently I have delayed getting the Walker maps in shape until this other work was done.

Kindest personal regards,

Very truly yours,

TL:P

Tom Lyon