FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY
WALKERMINE
PLUMAS COUNTY, CALIFORNIA

April 17, 1941

H. M. HARTMANN, MANAGER

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

Dear Mr. Gidel: Re: Geology of Walker Mine.

I have given considerable thought to the questions you asked in your letter of March 17, 1941, and will give you my interpretation of conditions as I have found them. There is still considerable doubt in my mind, and for this reason I have tried not to form any definite opinions that may later be proved to be entirely wrong.

1. Do we consider the No. 1 Main hanging wall Fissure to be pre-mineral or post-mineral? (We are now almost certain this ties in with the footwall clay of the Piute Orebody.)

The relation between our Main Orebody mineralization and this fissure, has been one of the important geological problems since the opening of the lower levels, and it has not yet been fully determined. Development work along the North Orebody 900 and 1000 Levels, shows that the fissure weaves in and out of the vein, without any apparent displacement of quartz which suggests little, if any, post-mineral movement. From this, we should not consider the Orebody strike faulted, and should not expect a displaced portion on the East side of the fissure lower down. The gradual diminishment in size and grade of the vein with depth, before coming in contact with the fissure also supports this line of thought. We could explain the presence of brecciated quartz along the fissure on the 900 and 1000 Levels, as due to the slight post-mineral adjustments that resulted from the cooling of the granite and the surrounding rocks. This brecciated quartz is found only in places where the vein is right against the fissure. The present clay and breccia zone of the fissure, (including broken vein quartz), would in this case, be the result of the same adjustment. In other words, the pre-mineral fissure zone has been roughly transversed by a post-mineral adjustment. This passed from the fissure zone into the wall rock at points of weakness where the vein flattened and where it changed direction in strike. Thus, our No. 1 hanging wall fault would be a post-mineral adjustment which followed the original channel of the advancing ore fluids, until a change of dip was encountered at the approximate 1000 Level, and a change of strike was encountered North of the 712 Orebody. The fracture took the line of least resistance, which carried it into the hanging wall of the main orebodies and along the footwall of Piute.

There is quartz and mineralization in association with this fissure on the 1200 Level under the Central and North Orebodies, also on the 900 Level at Piute, which suggests bottle necks through which ore fluids passed.

On the other hand, there is evidence in favor of considering the possibilities of ore at lower levels under the present orebodies, but in my estimation, these are not too sound. The fact that we have vein segments on the hanging wall side of the No. 1

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

fissure along the North Orebody 900 and 1000 Levels, suggests a possible fault throw, however 1200 Level developments directly under this area are not very promising. There exists some streaks of footwall mineralization, that may get better at depth, also there is the possibility of favorable conditions having existed along the fissure at lower depths, that have caused ore depositions of a different type than we have developed and mined above. Perhaps some Diamond Drilling to cut the fissure at lower depths should be done from the 1200 Level. I think Mr. Sales and Mr. Lyon have given considerable thought to such a plan.

Since development work along the 900 Level of Piute and especially North of Piute, has indicated a zoning condition that may give us a better grade ore in the Northern regions along our vein zone at greater depth, it is my belief that it is in this country that rests the future of Walker Mine.

2. Is there anything significant about the probable zoning of schist and vein minerals?

There is a marked decrease in the relative amount of pyrrhotite in association with chalcopyrite, progressively North from the granite contact at the South end.

From my observation, there seems to be considerably more garnet progressively North with the exception of the North Piute Orebody, which is considerably different from Piute. At least, the garnet is much more conspicuous in lower Piute, where it occurs as veinlets cutting through the vein quartz as well as a dissemination throughout the schist and the vein. The dissemination of garnet is rather common throughout the Mine, especially in the wall rock where there are zones that are more highly concentrated than usual. I have generally believed that the garnet as well as the magnetite, are your so-called schist minerals, and are residual within the vein. However, the coarse garnet as it occurs in the veinlets of the lower Piute ore, seems to have been introduced during a later surge of mineralization in association with Barite, Magnetite, Chalcopyrite, also some Zeolites and Calcite.

Magnetite is abundant in all orebodies, both in the vein and in the wall rock. Some is coarse and some is fine grained, and local concentrations may be found in any orebody. I imagine a microscopic study would reveal a number of generations of magnetite.

I would not say that the relative amounts of garnet or magnetite has any bearing on the grade of ore.

With the exception of the North Piute Ore, where chalcopyrite is deposited along the structure of chloritic schist, I would say that the deposition of copper minerals is usually accompanied by silicification. It appears that veins were formed by more than one stage of mineralization, starting with the typical glassy quartz vein, containing some sulphides, that was later fractured and enriched by chalcopyrite being deposited along the fractures. It is not uncommon to see lighter colored quartz veinlets of a later stage, cutting through the glassy quartz vein, and these veins as a rule, carry coarse chalcopyrite, chlorite, micas and possibly, other minerals.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Primary chalcocite is very rare, and what I have seen, comes from areas that carry bornite. Bornite is quite common and occurs principaly as localized disseminations along shoots in the 712, Piute, and North Piute Orebodies. These minerals do not seem to be associated with the extreme silicification that accompanies most of our ore, but is accompanied by a chloritic alterations of the host rock that leaves it distinctly green in color. Very often the bornite occurs intergrown with approximately an equal amount of chalcopyrite, and the combined minerals form small isolated masses disseminated in the vein. Bornite and chalcocite are not associated with the barite, garnet and magnetite, as they occur in lower Piute, although there is some bornite in this country. I think the bornite is earlier than these minerals.

3. Does the strike of our vein conform <u>generally</u> with the banding of the schist?

From my observations, the strike and dip of the Walker Vein to the 712 Orebody, conforms very closely with the banding of the schist, which averages about North 25 degrees West. North of the point where the footwall vein of the 712 Orebody intersects the Main vein; the Piute and North Piute Orebodies are off-set to the East, and their strike changes to practically due North. However, the banding of the schist still remains roughly North 25 degrees West, and carries normal dip, (plus - minus 55 degrees), even though the orebodies flatten to 40 degrees or less.

The hanging wall of the South, Central, and North Orebodies is very often banded with parallel quartz veinlets for a few feet into the massive wall rock, which suggests a direction of shear before mineralizing fluids were introduced. This banded structure is often apparent throughout the full width of the vein, presenting parallel layers of quartz and schist that make up the vein. This is generally referred to as "horses" of waste within the vein. On the other hand, in Piute especially, this parallel banding of quartz and schist angles to the strike of the orebody and usually dips steeper than its footwall. This banding has the normal North 25 degrees West, strike and roughly the normal 60 degrees to the East dip, but the footwall of the orebodies, (Piute and North Piute), are approximately North and South.

These conditions suggest that the original schist was banded with a North 25 degrees West shear, but the ore fluids came in along a later fissure that followed the banding to the 712 Orebody, but cut across it where Piute and North Piute was formed. The quartz banding and schist structure of these two orebodies, are very pronounced and definitely make an angle with the footwall (strike) of the orebodies.

These conditions suggest that the banding of the schist was developed at an earlier date than the vein was deposited.

In conclusion, I might say that it is very possible that a favorable zoning condition exists in conjunction with Walker Mine Ore, and that lower temperature orebodies of better than average grade may be found at intervals along the strike to the North.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

I trust that these opinions are not too far from right, and that future developments at Walker Mine will disclose something worth while.

Very truly yours,

S. K. Droubay.

S. K. Droubay

SKD:DM

cc - Mr. Wood
Mr. Sales ✓
Mr. Lyon
Mr. Perry

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

ANACONDA COPPER MINING CO.

COPY

May 2, 1941.

Walker

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

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

ANACONDA COPPER MINING CO.

COPY

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.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Salt Lake City, Utah
May 8, 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 visited the Walker mine last week. The 1017 drift beneath the Piute doesn't look as well as I had hoped. It looks as if the various bands of ore developed on the 900 Piute south might, because of steeper dips, hit a clay footwall before reaching the 1000 level, in which case the 1000 might be a blank or at least show much less mineral than the 900.

In discussing ore developments with the mine management there, it appears that a critical period will be reached in about 60 days. The old pillars are pretty well cleaned up which may mean a marked falling off in ore production. You will readily understand the importance of finding something on the 1000.

I have urged that a drift be turned to the south on the 1000 to cut the ore disclosed in Drill Hole No. 74. The sludge assay from this section showed an exceptionally good gold content.

The North Piute ore body is holding up in width and grade. A second raise started in the curving part of the ore body to the north showed a rapid decrease in width of ore at 20 feet up. It looks as if a little diamond drilling below the 900 to show the behavior of the North Piute ore, would be advisable, and I shall suggest something along that line in a later letter.

Very truly yours,

Reno H. Sales

RHS:P
CC: Mr. C. F. Kelley
Mr. J. R. Hobbins

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

June 21, 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 sending you a Geological Composite of the 900-1000 Levels of the Piute Ore-body, as well as a sketch through Diamond Drill Holes No. 84 and 88A, and a sketch of 947CDS.

The Composite shows all workings and Diamond Drill Holes todate, as well as five proposed Diamond Drill Holes. A discussion of the work done and being done, appears below.

On the 900 Level: Work on 903BDS has temporarily been suspended, in order to drive 949CDS to prepare block for stoping. This drift is to follow the footwall under Diamond Drill Holes No. 55, 58, and 63 and will hole back into 903BDS. Whenever it is convenient, a slab round is taken in 903BDS, to get and prospect ore shown on the hanging wall side of the drift.

On the 1000 Level: The main heading, 1017, is being driven ahead with crosscuts and Diamond Drill Holes every 80 or 100 feet. Outside of a few sulfide specks, there has been no mineralization in the 1017. There were, however, some 6"-2' veins of quartz, plus disseminated chalcopyrite, found in 1079B and 1080BxcW, and Diamond Drill Holes from 1079, showed a small mineralized zone in that area.

Diamond Drill Holes Completed: Hole No. 84 and 88A were up holes, driven to check mineralization found in Holes No. 74 and 75. A five foot vein was found, which carried plus-minus 1.75% Cu and high gold. The assays of these holes can be found on accompanying sketch.

Hole No. 85 was driven from 1079BxcW, to peg the fault and to find if the mineralization from 1078EDN came any further North. A good mineralized zone was found to extend from the collar to the fault, with the rest of the hole a blank.

Holes No. 86 and 87 were then driven to the fault, to check the vein as to assay value and width. The results were favorable, but Hole No. 89, driven from 1080BxcW, showed a complete blank.

Hole No. 90, from 1080BxcW at an angle of plus-minus 45 degrees, to Hole No. 89, also showed no ore.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Core assays of the ore in the above holes, appear below.

Hole No.	Footage	% Cu	Oz.Ag.	Oz.Au.
85	0-7	0.65	Tr.	Nil
	7-15	1.65	0.30	0.04
86	0-5	0.15	Tr.	Nil
	5-10	0.75	Tr.	Nil
	10-14	0.55	Tr.	Nil
	14-19	3.95	0.50	0.24
	19-24	1.70	0.36	0.17
	24-28	1.25	0.26	0.05
87	0-7	0.60	Tr.	Nil
	7-11	1.55	0.22	0.05
	11-15	1.70	0.30	0.11
	15-20	0.60	0.15	0.03
	20-25	1.70	0.33	0.10

Proposed Diamond Drilling: The ore so far encountered on the 1000 Level, seems to be in isolated lenses, that angle to the fault and rake toward the South. A somewhat similar pattern appears on the South end of 903BDS. More Diamond Drill holes than usual are necessary to prospect this type of deposit. The following holes are the tenative holes, layed out after a discussion with the Operating Department.

Hole 91, to be driven from 1081BxcW, to check the decided swing in the footwall shown in Hole No. 90 and to prospect for possible mineralization.

Hole No. 92 will be an up hole (plus-minus 58 degrees), approximately normal to the footwall fault. As we have done no prospecting in the hanging wall, I believe this Hole necessary to check any possibility of the ore raking over the top of the drift. This Hole should be driven at least 50 to 60 feet.

Hole No. 93 will angle plus-minus 45 degrees, to Hole No. 91 and its length will be governed largely by information obtained in that Hole. This Hole might give us some indication as to mineralized zones lying ahead and missed by Hole No. 91. I realize that perhaps Hole No. 91, if angled slightly, could possibly suffice for both Holes No. 91 and 93, but we could miss mineralized zones.

Hole No. 94 is a hole to be driven parallel to 1017DN. This Hole has been discussed by Mr. Hartmann and Mr. Dugan, and while it is still tenative and both realize its duplication of information obtained in 1017, they believe it would facilitate the driving of 1017, if they knew in advance what they might encounter.

Hole No. 95 is a proposed hole to be driven from 1077B, to check information obtained from Holes No. 74, 75, 84, and 88A, in line with Mr. Sales' letter of June 16th. At the present time, there is no way of drifting South without discontinuing work on the main heading, due to operating difficulties.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

In the North Piute (Red) Orebody, 947CDS has been started South from 932xcE, to develop ore shown in Drill Hole No. 49, as Mr. Sales recommended. This drift will swing and be driven approximately due South. Crosscuts will be driven at intervals, to check for mineralization. The present face, shows one foot of good vein, with sheared chloritized schist, plus some mineralization throughout the face.

Very truly yours,

VRC:DM

Virgil R. Chamberlain
Chief Geologist

cc - Mr. Sales
Mr. Dugan

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

F. 423 1-22-41 2M

INTER-DEPARTMENTAL CORRESPONDENCE

INTERNATIONAL SMELTING AND REFINING COMPANY
MINING DEPARTMENT
818 KEARNS BUILDING SALT LAKE CITY, UTAH

June 28, 1941

SUBJECT: WALKER MINING COMPANY
DIAMOND DRILLING

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

Dear Sir:

This morning, Mr. Sales, Mr. Lyon and myself discussed the future Diamond Drilling at Walker. Attached is copy of Mr. Sales' letter which is self-explanatory.

One reason for the down holes at minus 65° from 1079B and 1081C crosscuts, is that Reno thinks there is a possibility of some other faulting which has complicated matters.

You will note that Reno recommends that we drive 932C crosscut on a course N.55° E. for 150 feet into the hangingwall. We will then cut a Diamond Drill Station and drill to prospect for the downward extension of the orebody developed by 934C Drift. You can arrange your work so you can drive this crosscut in connection with 949C Drift South.

Yours very truly,

John F. Dugan

CC: C.E.Weed
Tom Lyon
Wm.Warren
Reno Sales

Enc.

JFD:fgc

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Salt Lake City, Utah
June 28, 1941

Mr. J. F. Dugan, Gen. Supt. of Mines
International Smelting and Refining Company
O f f i c e s

WALKER MINE

Dear Jack:

Confirming our conference this morning with Tom Lyon on the Walker.

We agreed on the following work to be prosecuted at the mine, named in order of preference:

(1) After completing Hole 93, drill No. 95 horizontal from near the south face of 1077 E crosscut, as shown on the sketch accompanying Chamberlain's letter dated June 21.

(2) Drill down hole at -65°, course due East, from east face crosscut 1079 E. If hole finds no ore above the fault, continue to 25-50 feet below the footwall of fault.

(3) Drill down hole -65°, course due East, from drill station 1081 C.

(4) It was agreed that we should prospect the downward continuation of the ore body developed by 934 C drift. To do this it will be necessary to extend 932 C crosscut N 55° E for 150 feet. At 150 feet a station should be prepared to allow drilling downward to cut the dip of the ore body. The lay-out of these holes will be given when the station is ready for drilling.

Very truly yours,

Reno H. Sales

RHS:P
cc: Mr. C. E. Weed
Mr. Tom Lyon
Mr. H.M. Hartmann

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

C
O
P
Y

WALKER MINING COMPANY

June 30, 1941

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

Dear Jack:

RE: 1200 Level

I am wondering if you have heard any more in reply to your letter of May 31st to Reno Sales, regarding the possible further development work on the 1200 Level. As you realize, we are tying up a good deal of equipment on this Level, which could be used elsewhere in the Mine and if this were available, it would save us in some instances, purchasing new material.

It would be very nice and helpful, and save us money, if Mr. Weed and Mr. Sales could decide shortly whether there was any use of keeping this Level open or not.

Very truly yours,

H. M. Hartmann

HMH:DM

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

INTERNATIONAL SMELTING AND REFINING COMPANY

Salt Lake City, Utah

J. F. DUGAN
General Supt. of Mines

July 12, 1941

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

Walker

Dear Reno:

This will acknowledge receipt of your letter of the 9th inst., relative to the abandonment of the 1200 level at the Walker Mine.

I have written Mr.Hartmann instructing him to discontinue all work on this level and to salvage all materials and equipment.

Yours very truly,

John F. Dugan

CC:C.E.W.

JFD:fgc

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY
WALKERMINE
PLUMAS COUNTY, CALIFORNIA

July 25, 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:

I told you yesterday that we thought we could get started in 1017 with the drilling Friday, it will probably be Saturday. In the meantime, the drill crew decided they could drill through the fault in the down hole No. 98 and are down some 80 feet, which brought them through the fault at 69 feet. We will continue this for some 30 feet more and then move to the hole from the end of 1017.

During the time we are drilling there, we will work in 1079B. So far, we have not exposed anything startling there. However, there is some ore. I have had Lohse and Chamberlain make you a large scale sketch of this, which will show samples and geology. It will be out in Monday's mail at the latest.

One objection that I see to a raise from 1079B, is that the 900 above is a long way from being solid ore. While we encountered good streaks of ore in this area, they do not seem to go anywhere and it is doubtful if this area is mineable. If you will refer to the Map, "Piute Orebody 900-1000 Levels", you will see what I mean. In order to give you a better picture of this, I am having a sketch prepared of this area which will show samples as well as geology. In order to find out more about what we have here, as opportunity offers, we are slabbing on the best streaks. From present information, it is my opinion that after the area is opened, we will obtain a very limited tonnage of good grade ore, but I very much doubt that taken as a whole, including development work, it will be very profitable.

We had some conversation about a diagonal hole from the end of 1017, in addition to the one approximately due West to the fault. The geology of the 900, shows the tendency for the ore to have a Northwest strike, hence such a hole should have a direction at a considerable angle from this strike, in order to cut this formation and avoid the possibility of following its entire length in one of the wasty streaks. If we drill a hole approximately North 10 degrees West from the end of 1017, it would fullfill these requirements. It does seem to me, that if the 900 ore is on the 1000 in any worthwhile size, one of these two holes is bound to give us an indication. The North 10 degrees West hole, would be about 200 feet to the projected position of the fault. I would appreciate your reaction to this.

Very truly yours,

H. M. Hartmann

HMH:DM

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

August 10, 1941

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

Dear Mr. Lyon:

Please find enclosed geological sketches and classification table for development during the month of July, prints showing in yellow mining operations with respect to orebodies, monthly analysis sheet, and a report on Diamond Drilling for the month. The following is a resume of the classification table and of Prospect Diamond Drilling.

South, Central and North Orebodies None

712 Orebody

325CR is a chute and manway raise, being extended above the 300 level to determine the extent and condition of the footwall vein. It will later service the 317C Block for stoping. The ore appears to be pinching out and this raise is now 160' from the surface, up the dip.

330CDN&S are being driven from 325CR to prospect the extent of the vein.

597HR & 598HR are finger raises being driven preparatory to mining 517C Stope.

678E$_s$DN is a development heading being driven from 692D$_s$cW to prospect the sub-level of the 517 footwall fissure zone.

679EsscE&W were driven from 678EsDN to determine the mineable width of the ore. 4' of low grade quartz exposed in east crosscut.

723EDN is being driven from 711EDN to prospect the downward extension of ore developed in 678EsDN. Later on a raise will be driven from this heading through to the 600 Level in the heart of the ore.

Piute Orebody

946CDN is being driven from 941CR, to serve as a slusherway for 915 Block. This drift has holed 915A Stope and is being continued on through to 915B Stope.

949CDS was driven from 903BDS to prospect and open up the footwall of the vein for stoping. This drift has now been holed into 903BDS. A short raise slot to provide room for a chute has been holed from this drift into 946A Stope, immediately above.

1017DN is being driven to connect 706AW with the Piute Orebody. This heading is now within 270' of holing through.

1079BxcW was extended to the footwall fault to prospect the ore exposed in DD Holes

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Nos. 85, 86 and 87. The last 12½' of crosscut adjacent to the fault averages 1.60% Cu.

1083BDS is being driven from 1079BxcW to determine the southward extension of the ore.

1084BxcW was driven from 1017DN to provide room for a diamond drill station.

North Piute Development

942CR is a development raise from 934CDN at the north end of the orebody to determine the upward extension of the ore.

947CDS is the main level heading being driven from 932CxcE to determine the southward extension of the orebody. The ore has pinched out just beyong DD Hole No. 49.

948CxcE was driven from 940CR to determine the width of the vein. The last 16' of crosscut next to the hanging wall averaged 1.75% Cu.

950CxcE&W were driven from 947CDS to explore the mineralization encountered in DD Hole No. 49. The east crosscut showed 4' of ore assaying 1.25% Cu.

951CxcE is being driven from the 3rd floor of 940CR to prospect the hanging wall. The first 25' of crosscut averaged 1.86% Cu and very good in gold, being 0.10 oz. The next 3' were waste and the last 5' averaged 1.50% Cu.

952CxcE is being driven from 947CDS to provide a drill station from which the downward extension of the orebody can be explored.

953CDS is being driven from 942CR to prospect the vein on the 5th floor above the sill and will be driven to connect with 940CR. It will later serve as a slusher drift.

Prospect Diamond Drilling

Hole No. 93, drilled N 51°18'W from 1082BxcW, was completed from 77-159'. Fault encountered from 83 to 89'. Very little mineralization exposed for length of hole.

Hole No. 95 was drilled S 39°07'W from the end of 1077BxcE, at co-ordinate 10974E, to further peg the mineralization showing in Holes Nos. 74 and 75. The hole at present has been drilled to a depth of 94' and requires casing before drilling can be resumed. The fault was encountered at 89'. The following are split core assays on this hole:

	Cu.	Ag.	Au.
44½-47'	0.80	0.20	0.03
47-50'	0.45	0.50	0.05
50-55'	1.15	0.30	0.01

Hole No. 97, drilled up from 939CDN at 43°30', S 41°51'E from co-ordinate 21082N to determine the upward extension of the ore on the north end of the North Piute Orebody, was completed from 50' to 72'. The following are split core assays on this hole.

	Cu.	Ag.	Au.
44'-50'	1.60	0.12	0.01
50'-53'	2.65	0.30	0.04

Scattered specks of sulfide from 0' to 44'.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Hole No. 98 was drilled at -62°30', N 85°22'E from 1079BxcE for 103' to determine the downward extension of the ore. Very little mineralization showing for length of hole. The fault showed at 66'.

Hole No. 100 was drilled S 76°25'W from the face of 948CxcW for a distance of 60' to prospect the footwall of the North Piute Orebody. Specks of native copper showing up to 12'. Very poor core recovery. Fault encountered at 33'.

Hole No. 101 was drilled up at 45°34', N 73°54'E from 948CxcW for a distance of 99' to determine the upward extension of the orebody. The following are split core assays on this hole.

	Cu.	Ag.	Au.
19½'-27'	1.80	0.30	0.01
27' -31'	2.05	0.10	0.01
33' -37'	1.35	0.10	0.01
37' -41'	1.70	0.10	nil
44½-47'	2.85	0.25	0.03
47 - 52'	3.90	0.29	0.02
52 - 56'	2.35	0.50	0.05

The hole was barren from 56' to 99'.

Hole No. 103 was drilled N 23°15'E from 939CDN at co-ordinate 21269N for a distance of 90'. Occasional specks of sulfide from 0'-30'. Vein material showed from 60' to 65' with good disseminated sulfide, from 61' to 62½'. Remainder of hole is practically barren.

Hole No. 104 was drilled N 88°40'W from 1084BxcW for a distance of 137' to prospect for the vein. Fault was encountered at 90'. Scattered specks of sulfide from 49' to 80'. ±6" of quartz and bornite at ±101'. Remainder of hole barren.

Hole No. 105 was drilled N10°27'W from the face of 1017DN at co-ordinate 19020N for 80' to prospect for the vein ahead of 1017 heading. It has since been completed at a depth of 226'. Fault encountered at 189', about 6" of good sulfide at ±77', good sulfide from 97½' to 99½', and 1' of sulfide at ±108'. Vein begins at 110½' and ends at 116½'. Core assay from 110 to 117 ran 1.40% Cu, 0.52 oz. Ag, and 0.02 oz. Au. Occasional specks of sulfide from 129 to 201'. Remainder of hole barren shhist.

Very truly yours,

E. J. Lomnes

E. J. Lomnes
Chief Engineer

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

F. 423 1-22-41 2M

INTER-DEPARTMENTAL CORRESPONDENCE

INTERNATIONAL SMELTING AND REFINING COMPANY
MINING DEPARTMENT
818 KEARNS BUILDING SALT LAKE CITY, UTAH

August 16, 1941

SUBJECT:

Mr. C. E. Weed, General Manager of Mines,
Anaconda Copper Mining Company,
521 Hennessy Building,
Butte, Montana.

Dear Sir:

Reference is made to your letter of the 6th inst., attaching letter from Mr.Sales concerning drifting South to develop the disclosures in Diamond Drill Hole #74.

This is to advise that this work has been started and will be pushed all possible. A new drift has been started South from 1077B crosscut East at a point approximately 50 feet South of 1078B Drift. This new Drift will be East of and beyond the Piute footwall fault and should find any ore between 1077B crosscut and Diamond Drill Hole #74. Operating difficulties prevented starting this Drift sooner.

1017 Drift North is also being driven ahead.

Diamond Drill Hole #105 cut 5 feet of mineralization at coordinate 19,120 N, 10,900 E. The core assay of the 5 feet of mineralization ran 1.40 Cu., .50 Ag and .02 Au. What they think is the footwall fault was intersected at coordinates 19,200N and 10,880E.

We have also started another Diamond Drill Hole Southeast from 1076B crosscut to intersect the mineralization at a point 100 feet South of where it was encountered in Diamond Drill Hole #74.

Yours very truly,

John F. Dugan

CC:R.Sales

JFD:fgc

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

August 19, 1941

Walker

Mr. C. E. Weed, Gen. Manager of Mines
Anaconda Copper Mining Company,
Building.

Dear Clyde:

Relative to Dugan's letter of August 16 on the Walker.

If anything is to be done toward getting the Government to allow a better copper price, it should be done as early as possible in order that there would be a substantial tonnage of the better grade ore left ready to mine. You can readily see that, even with a 16¢ price, the daily tonnage would have to be increased a great deal and unless there was something of the better grade to work with it, the 16¢ price would not keep any mine out of the red.

Regarding propositions 1 and 2 set forth in Dugan's letter, I cannot quite see any advantage in continuing the operation with the net losses per month there indicated. I do not see any immediate hope of developing enough ore within the next few months to help the situation. Nothing but a long range development of more important ore bodies will do any good for that property, and long range developments for such a purpose look extremely speculative.

The Walker is in a position where there is no chance of it getting on its feet within a reasonably short period. A high price

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

for copper might help for a time during which period it might be possible to undertake additional chances of finding better ore through drilling at greater depths or the extension of the North Piute workings into unexplored territory.

Yours very truly,

RENO H. SALES.

RHS/aw

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

ANACONDA COPPER MINING COMPANY

25 Broadway

New York

OFFICE OF THE
GENERAL MANAGER OF MINES

Butte, Montana
August 21, 1941

Walker Mine

Mr. J. R. Hobbins, President,
Anaconda Copper Mining Company,
25 Broadway,
New York, New York

Dear Sir:

As you know the Walker Mining Company has lost money steadily for the last year and a half. This loss was carried as we were doing certain exploration work which we were in hopes would develop additional orebodies or extensions of the present orebodies. The main development consisted of the 1017 drift, which was to explore the orebody under the 900 level showing of the Piute section. This showing on the 900 level was exceptionally good for the Walker mine. 1017 drift has now reached under at least one-third of the orebody shown on the 900 level, and to date has not opened up any ore of importance; in other words the 900 orebody does not extend to the 1000 in appreciable quantities.

We have known for a long time that the ore in the North and Central orebodies would be exhausted about this time, but had hoped that the 1017 would come into ore to replace this production. On account of the failure of this drift the production at Walker Mine will drop very rapidly in the next few weeks. The production has dropped from approximately 1500 tons of ore per day to 980 tons, and after October will drop still lower. Copper production has been 700,000 to 800,000 pounds per month. This has now dropped to 600,000, and the months of September and October will not exceed 500,000.

On July first we had 459,000 tons of ore developed averaging 1.41% copper. We could mine this for the period of a year at some figure around 500 tons of ore per day at a cost in excess of 15¢ per pound. This small production would have to carry all the overhead of the Walker Mining Company.

Under present conditions existing in the United States it is doubtful that they would wish to lose this much copper. While the amount is small nevertheless every little bit helps, and it would seem advisable to place the Walker situation before the proper authorities in Washington before closing down the mine.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

ANACONDA COPPER MINING CO.

COPY

There is certain development work in the Walker mine which could be carried on, but judging from results we have obtained from our rather extensive campaign to develop additional orebodies it is my judgment, which is concurred in by Messrs. Sales and Lyon, that we could not anticipate any discoveries of ore which would help the situation in the near future. Any long range development is extremely speculative and even if an orebody is found there is no reason to believe it would be of better grade than the ore which we have found to date. This is not commercial at 12¢ copper.

Taking all of the information and advice which we have at the present time into consideration I would recommend that the Government be approached with a view to determine whether they wish to continue the operation at Walker merely as a clean up operation at considerable additional cost for the copper or whether they would prefer to see the property close down. If they are not interested in keeping the property operating I recommend that it be closed. This matter is of extreme importance to the Walker Mining Company and some definite action should be taken on it as soon as possible.

If this property was entirely owned by the Anaconda Copper Mining Company we would have a different situation than we have to face at present. However, as we own only 51% of the stock of the Company we have minority stockholders to consider.

Yours very truly,

C. E. Weed

CEW/gf

cc: C. F. Kelley
J. O. Elton
R. H. Sales
Frederick Laist

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

International Smelting & Refining Co.
818 Kearns Building
Salt Lake City, Utah

(COPY)

August 23, 1941

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

Dear Sir:

The attached memorandum regarding Walker Mine has been prepared by Mr. Hartmann and me. It gives the estimated production, expenditures and income at the Walker mine for one year, starting September 1, 1941. No development work, except stope preparation considered.

Sheet No. 1 is a condensed summary of Sheet No. 2, which gives a break down of labor, supplies and expenses.

The estimated production is 475 dry tons of ore per day of 1.32% copper, .55 oz. silver and .035 oz. gold, which will produce 599 tons of concentrates containing 291,940 pounds of recoverable copper.

The estimated income is $36,539.00, at 12¢ copper, and the expenditures, $60,890.54, leaving a net operating loss of $24,351.54 per month.

The estimated cost per pound of recoverable copper is 20.0448¢ before depreciation.

There is a possibility that there may be a slight increase in tonnage and grade, especially in the gold. After operations are stabilized some reduction in operating expenses can be made, however, it now appears that a reduction of 1¢ per pound of recoverable copper is all that can be hoped for.

The following is the anticipated production schedule:

Place	Tons Per Day	Total	
North Orebody	65	20,280	
712 "	205	63,960	
Piute 900	205	63,960	
Total:	475	148,200	-1.32% Cu

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

At the end of the year the tonnage would drop to 300 plus tons per day, owing to the exhaustion of the production of the North Orebody, and 605E, 617D, and 705A Stopes in 712 which will amount to a total of 190 tons per day.

There are still available some 10,000 tons in pillars above 830 Stopes on the tunnel level which will be removed. This production has not been taken into consideration as it will be used as make up tonnage in case the tonnage from some of the stopes should be less than anticipated.

At the end of the year, there will be some 300,000 tons left according to the Ore Reserve sheets. Part of this is locked up in pillars and not mineable; the remainder could be mined at a lower daily tonnage and increased costs.

Present wage scale of $5.25 per day for miners was considered in figuring the estimate. An increase of 50¢ per day would increase the expenses $3,380.00 per month, or 1¢ plus per pound of copper.

No pumping or hoisting through 706 Shaft was considered. This meant a reduction of approximately $4,000.00 per month.

The estimated cost of 20.0448¢ per pound is very high and seems out of line until one considers that Walker, with its present production of low-grade copper (1/3 normal tonnage) cannot be considered a profitable producer.

The only hope for Walker is to develop a large ore body of higher grade north of the present Piute.

Yours very truly,

John F. Dugan

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

(Copy)

Memo. Re. Walker Mine

Estimated Monthly Production, Expenditures,
Income & Cost Per Pound of Recoverable Copper
For Year, Beginning September 1, 1941

PRODUCTION:

599	Tons Concts.	25.50% Cu.	52Ag	.52 Au
302,000	Lbs. Copper			
291,940	Lbs. Recoverable.			

INCOME:

599	Tons Concts.	$61/Ton F.O.B.Spring Garden	$36,539.00

ESTIMATED EXPENDITURES PER MONTH:

Labor	$44,154.04	
Supplies & Expenses	14,736.50	
General:		
Salt Lake Office, Taxes, ins.,Etc.	2,000.00	$60,890.54
Operating Loss Per Month:		$24,351.54

Estimated cost per lb. recoverable copper	20.0448¢
Depreciation	1.3390¢
Total Cost:	21.3838¢

8-23-41

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

(Copy)

Walker Mining Company

Estimated Monthly Production And Expenses
For One Year, Beginning September 1, 1941.
No Development Work Except Stope Preparation
Considered.

PRODUCTION:

475	Dry Tons Per Day	1.32% Cu	.55Ag	.035 Au
12,450	" " " Month (26 day month)			
599	Tons Concts.	25.50% Cu	.52Ag	.52 Au
302,900	Lbs. Copper (291,940 Lbs.Recoverable)			

INCOME:

599	Tons Concts. @ $61/Ton F.O.B. Spring Garden	$36,539.00

EXPENSES:

Labor	Men		
Mine	157	$25,601.07	
Mill, Surface & Tram	25	3,654.67	
Shops, Compressor & Hoistmen	23	3,555.30	
Office-Management, Engr., Hospital, Etc	34	6,789.00	
Total:	239	$39,600.04	
Soc.Sec. & Other Taxes		4,554.00	$44,154.04
SUPPLIES & EXPENSES:			
Mill Supplies & Heating		$ 3,610.50	
Electric Power		4,500.00	
Mine		5,478.00	
Incidental		498.00	
Tram		650.00	$14,736.50
GENERAL:			
Salt Lake Taxes, Insurance, Etc.			2,000.00
TOTAL EXPENSES:			$60,890.54
INCOME - 12¢ Copper			36,539.00
Operating Loss Per Month:			$24,351.54

Cost Per Lb. of Copper	20.0448¢	per lb.
Depreciation	1.34	" "
Cost Per Pound:	21.38¢	" "

8-23-41

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

ANACONDA COPPER MINING COMPANY

25 BROADWAY

NEW YORK

OFFICE OF THE
GENERAL MANAGER OF MINES

Butte, Montana
August 25, 1941

Walker Mine

Mr. J. R. Hobbins, President,
Anaconda Copper Mining Company
25 Broadway
New York, New York

Dear Mr. Hobbins:

Supplementing my letter of August 21st in regard to Walker Mining Company. I have today received an estimate prepared by Messrs. Dugan and Hartmann of the expected production of the Walker mine for one year. They are more pessimistic about the situation than I am, but I would not care to enlarge on their estimate. They estimate that the Walker Mining Company will produce 300,000 pounds of copper per month at a cost of 20 cents per pound, without any exploration work. Attached you will find a copy of Mr. Dugan and Mr. Hartmann's estimate.

Yours very truly,

CEW/gf
enc.

cc: C.F. Kelley
J.O. Elton
F. Laist
R.H. Sales

COPY

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.