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✓ COPPER HILL MINE
+ Copper Basin Group

PINAL COUNTY
COTTONWOOD DIST.

See Axel L. Johnson Report 4-4-57 in

✓ AMERICAN EXPLORATION CO. (file)

Approx Sec. 31, T5S, R15E

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Copper Basin Group Date January 21, 1960
District Crozier Peak, Pinal County Engineer Lewis A. Smith
Subject: Conference with Joe & Albert Bidtich of Winkelman, owners.

Address: General Delivery, Winkelman

Location: 2 miles NE of Crozier Peak (S 25, T. 5 S., R. 14 E.)

Property: 6 claims (unpatented) on state land.

Work: Location work not done but planned as soon as access is re-established.

Geology: The country rock is diabase or andesite with quartz blowouts and stringers locally. The mineralized area was estimated by Joe Bidtich to be 600 feet wide and 1400 - feet long. The samples show 0.5 to 1.2% copper and 0.04 silver with high iron. The quartz blowouts assay 88% SiO₂. The minerals observed in the material were cupriferous pyrite, bornite, malachite and chrysocolla. Several siliceous veins up to 2 feet wide traverse the mineralized area and according to Bidtich these run better than the larger mineralized area. It is planned to do further overall testing. The mineralized area trends E-W and has a well shattered congregate fracture pattern. The rock mass dips or plunges to the south. The rock looks like diabase or a coarse andesite. A visit was impossible because of high water in the Gila River, but will be made later. (The rock is not very reactive but the capping material observed shows a very strong pyrite tendency. This capping is not very deep and is in zone 2.)

Tide

DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date 1-23-58

- 1. Mine: Copper Hill Mine
- 2. Location: Sec. Twp. Range. Nearest Town Hayden Distance 9
Direction SW Nearest R.R. Hayden Distance 9
Road Conditions Catapillar Road.
- 3. Mining District and County: Cottonwood Dist Pinal County
- 4. Former Name of Mine: Owensby? (just in)
- 5. Owner: Elaud C. Ormsby, and Woods, Tucson Arizona
Address: Box 805 Hayden, Arizona
- 6. Operator: Tide (Ormsby, agent)
Address:
- 7. Principal Minerals: Copper (Silver Gold) and Chrysocolla
Cuprite Limonite
- 8. Number of Claims: Lode 19 Patented Unpatented ✓
15 Federal
Placer 4 State Patented Unpatented
- 9. Type of Surrounding Terrain: On top of a high hill.

10. Geology and Mineralization: 2' vein, well into ground, shows on top of a ridge of Monzonite (?) porphyry body. Presence of magnetite and some quartz indicates local metamorphism. Part of the porphyry, outside of veins shows low grade oxide mineralization which is well disseminated and partly in veinlets.

11. Dimension and Value of Ore Body: No value at this time 25 to 60 ft. per 2000 ft sample at intersection of Hayden for testing.

Please give as complete information as possible and attach copies of engineer's reports, shipment returns, maps, etc. if you wish to have them available in this Department's files for inspection by prospective lessors or buyers.

12. Ore "Blocked Out" or "In Sight": Not known

Ore Probable: Not known.

13. Mine Workings—Amount and Condition: OK

No.	Feet	Condition
Shafts		
Raises		
Tunnels <u>1</u>	<u>50'</u>	<u>Removed by cat work</u>
Crosscuts		
Stopes		

Bulldozer cut 12-14 Feet deep - (dull & flat) 100' long

14. Water Supply: None other than Gila River 5 miles distant

15. Brief History: 40 tons high grade were shipped to the Hayden Smelter some years ago. 2000 pound test specimen taken from along the bulldozer cut, sent to Hayden Smelter for testing.

16. Remarks: They desire field visit to the mine

17. If Property for Sale, List Approximate Price and Terms:

18. Signature: Claude C. [Signature]

AMERICAN SMELTING AND REFINING COMPANY

HAYDEN PLANT

ASSAY CERTIFICATE

Hand samples.

DATE ASSAYED..... *5-2* 19*57*

MARKED..... *Chenby & Wood*

Lot No.	GOLD Ounces Per Ton	SILVER Ounces Per Ton	LEAD %	COPPER %	Ins. %	SiO ₂ %	Fe %	Mn %	CaO Total %	Ni %	Zn %	S %	Al ₂ O ₃ %	Sb Bi
<i>A</i>	<i>0.02</i>	<i>1.14</i>		<i>6.5</i>										
<i>B</i>	<i>0.01</i>	<i>0.69</i>		<i>4.3</i>										
<i>C</i>	<i>0.01</i>	<i>0.33</i>		<i>2.5</i>										
<i>D</i>	<i>0.01</i>	<i>0.21</i>		<i>3.5</i>										

AMERICAN SMELTING AND REFINING COMPANY

By *Carson* Assayer

..... Chemist

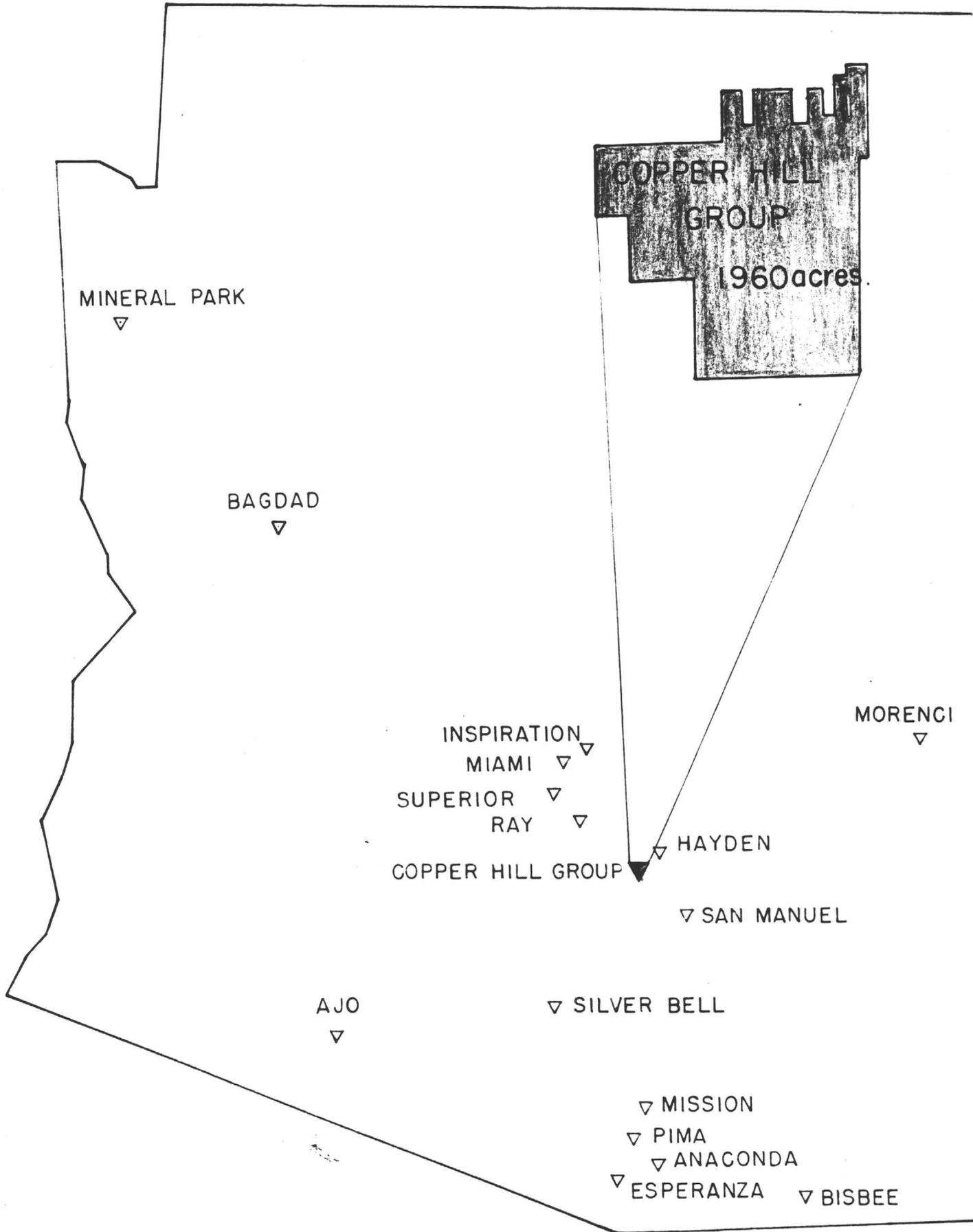
RECEIVED
MAY 17 1966
DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

Lois Pare: -

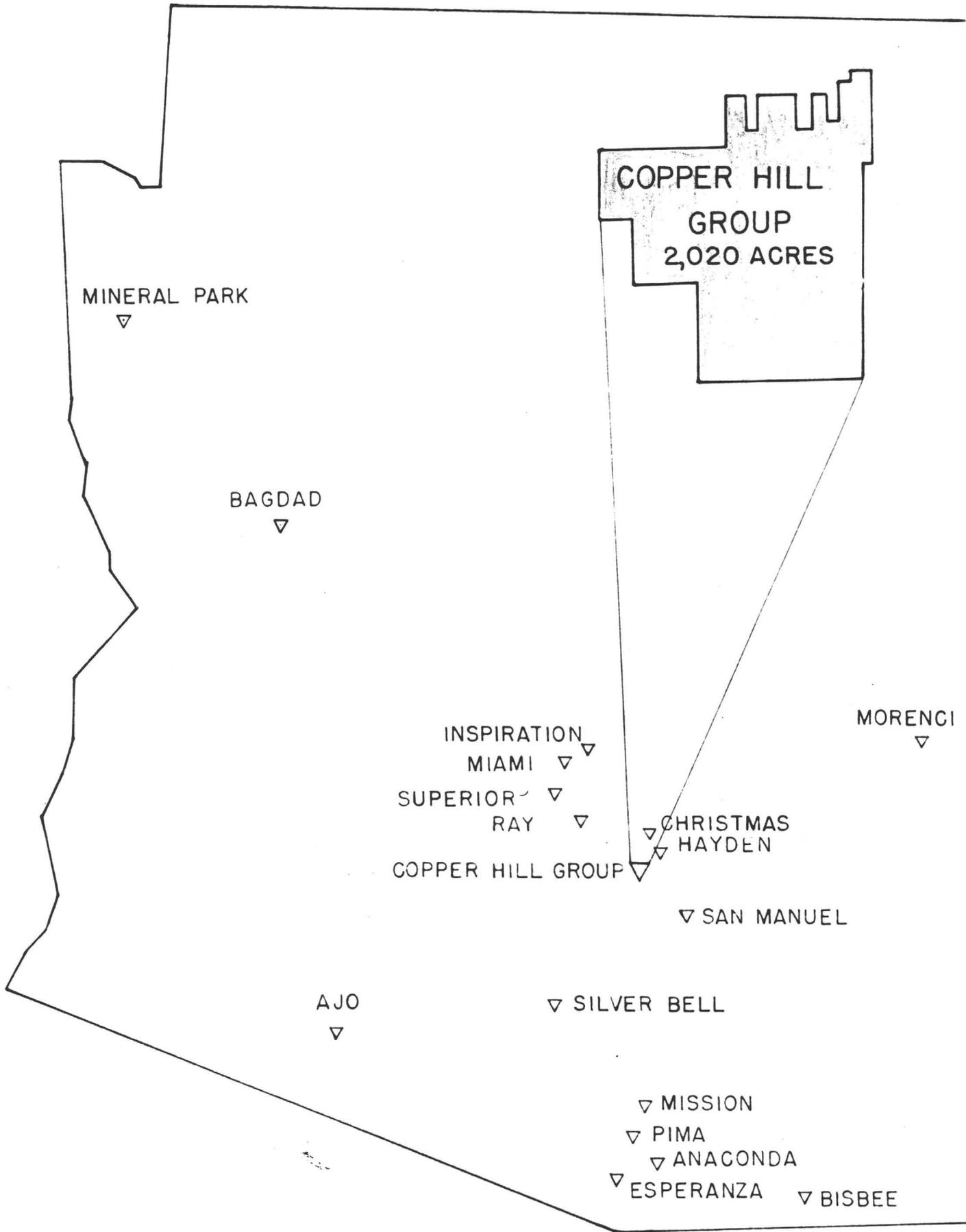
Encl. the new version of the
"Arizona Copper Mine Index"

Please substitute this in place of the
copy we gave you, which had insufficient
acreage of claims and no Christmas holiday
Smauls al

ARIZONA COPPER MINE INDEX



ARIZONA COPPER MINE INDEX



COPPER HILL GROUP

PINAL COUNTY

Axel L. Johnson, P.O. Box 5047, Tucson, Arizona and Robert B. Crist, 3509 N. Treat Avenue, Tucson, Arizona have taken over the Bobbitt and Woods properties and laid out themselves all the Salba and Alba claims surrounding and filling in the other two properties.

Note LP 8/1966

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Page 1.

Mine Wood-Owensby Claims

Date Sept. 26, 1954.

District Ripsey Mining District ---Pinal County.

Engineer Axel L. Johnson

Subject: Field Engineers Report -----Field inspection with Mr. Wood and Mr. Owensby.

Location Sec. 31 -- T 5 S --- R 15 E. Go south from Winkelman about 1/8 mile on the Winkelman-Mammoth road. Turn right(west) about 200 ft. south of the bridge across Gila River, and cross San Pedro River. Drive about 4 miles NW on county road to Smith Wash. Drive SW along Smith Wash for 4.7 miles to the claims.

Number of Claims 9 unpatented claims ---6 located last year, and the remainder this year.

Owners Leslie Wood, 2426 E. Lind Road, Tucson, Ariz.
Claude C. Owensby, Box 805, Hayden, Ariz.

Operators Not in operation.

Principal Minerals and Metals Copper oxides and sulphides. Chrysocolla, malachite, melaconite, cuprite, chalcopyrite, oxides of iron and manganese.

Number of Men Employed None. Assessment work only.

Production Rate No production.

Topography Moderately rolling terrain.

Geology Country rock is aplite and granite. A number of narrow veins, containing some copper showings are found on all the claims. These veins are from 1 inch to 18 inches in width, and contain mostly copper oxides, with a small amount of chalcopyrite, associated with a considerable amount of hematite and limonite. One open cut also shows a copper oxide deposit about 8 ft. wide, occurring in highly altered granitic rock, which may average about 1 % in copper. Near the claims, an outcrop of red arkosic ferruginous quartzite is found, which is about 400 ft. wide, but contain no minerals. However, this formation may have some bearing on the mineralization. None of the copper found on the claims is merchantable, but shows evidence of extensive mineralization. Veins found are from 50ft. to 200 ft. apart.

Ore Values No merchantable ore.

Ore in Sight and Probable Ore None.

Present Mine Workings A number of small prospect holes, none of which are over 5 ft. in depth, except for the location shafts.

Past History None.

Present Operations A small amount of exploration work has been done as assessment work. About one mile of ~~xxxx~~ road has been built into the property.

Samples Taken The following samples were taken during my visit to the property for further study and examination and identification by the Arizona Bureau of Mines.:

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Page 2.

Mine Wood-Owensby Claims Date Sept. 26, 1954.
District Ripsey Mining District ---Pinal County. Engineer Axel L. Johnson
Subject: Field Engineers Report -----Field inspection with Mr. Wood and Mr. Owensby.

Samples Taken (con't)

- (1) On claim # 1----Narrow fissures in an aplite dyke. Fissures 1 inch to 6 or 8 inches wide, and 25 to 50 ft. apart. Minerals are malachite, melaconite (black copper oxide), chalcopryrite, and iron oxides.
- (2) On top of hill ---- Number of small mineralized fissures in an aplite country rock. Width of fissures variable, varying from 1 inch to 12 inches, and 50 to 100 ft. apart. Minerals are chrysocolla, melaconite (black copper oxide), chalcopryrite, and a trace of cuprite, associated with a considerable amount of iron oxides.
- (3) An open cut, containing a concentration of copper oxide about 8 ft. wide, occurring in a highly altered granitic rock. This might average about 1 % in Copper. Mr. Wood reports samples taken in this cut, which ran from 0.9 % to 1.2 % in copper. Minerals are chrysocolla principally, associated with biotite and manganese oxides.
- (4) On claim # 5 ---- (near corners of claims #1 & # 2). In open cut about 5 ft. wide and 5 ft. deep. Oxides of copper found in weathered aplite country rock. Minerals are chrysocolla, malachite, and a trace of melaconite (black copper oxide), associated with manganese oxides.
- (5) On claim # 5 ----- A vein 18 inches wide in brecciated quartz in ~~xxxxx~~ a shear zone. Minerals are chrysocolla, malachite, cuprite, associated with a considerable amount of iron oxides of hematite and limonite.
- (6) On claim # 7 ----- Narrow mineralized fissures a few inches to 12 inches in width found in granite rock. Minerals are chrysocolla, with a trace of cuprite, associated with biotite and manganese oxides.
- (7) On claim # 5 ----- Down in wash. A calcite vein 12 inches in width, with alternate bands of calcite and ankerite, with some mineralization parallel to the bands of calcite. Minerals are limonite, containing traces of chalcopryrite.
- (8) A large vein of arkasic ferruginous quartzite about 400 ft. wide, projecting above the surrounding surface about 50 or 60 ft., and having a bright red color, due to its iron content. No minerals found in the quartzite. This formation is found just outside the claims owned by Mr. Wood and Mr. Owensby.

Proposed Plans Owners would like to sell or lease the property, or give an option for ~~xxxxxxx~~ sale or lease to some company who would diamond drill the property. Mr. Wood reports that another party, who owns about 8 adjoining claims, ~~x~~ would, also, like to dispose of his claims in a similar manner, or join with Wood and Owensby in a sale, lease, or option.

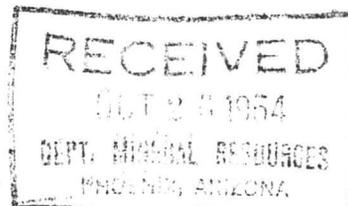
General Remarks The property shows considerable mineralization over a fairly large area. A diamond drilling program could quite possibly show up a large ~~xxxxxxx~~ body of low grade copper ore, suitable for large scale operations.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

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-----Field inspection with Mr. Wood and Mr. Owensby.

Date Sept. 26, 1954.

Engineer Axel L. Johnson

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Remarks

The property shows considerable mineralization over a fairly large area. and drilling program could quite possibly show up a large ~~xxxxxx~~ body of low copper ore, suitable for large scale operations.

GEOL_COMM:
GEOL_ENV:
GEOL_NOTES:
GEN_COMMS:
REFERENCES: W.J. KEITH FIELD EXAM
ALT_NAME:
QUADRANGLE: BLACK MOUNTAIN
SCALE: 24000
ALTITUDE:
YR_FST_PRD:
YR_LST_PRD:
LAST_OPER:
CUM_PROD:
CUM_P_COMM:
COMMENTS:
LATITUDE: 32-48-01N
LONGITUDE: 110-56-34W
UTM_N: 3628945
UTM_E: 505370
UTM_ZONE: +12
COUNTRY: US
INFO_SRCE: 1
REPORTER: KEITH WILLIAM J.
REP_AFFIL: USGS
REP_DATE: 76 04
UPDATE:
REC_TYPE: X1M
REC_NO: M051217

ALT_NAME:
QUADRANGLE: WINKLEMAN
SCALE: 24000
ALTITUDE: 3360 FT
YR_FST_PRD:
YR_LST_PRD:
LAST_OPER:
CUM_PROD:
CUM_P_COMM:
COMMENTS:
LATITUDE: 32-56-55N
LONGITUDE: 110-51-47W
UTM_N: 3645420
UTM_E: 512800
UTM_ZONE: +12
COUNTRY: US
INFO_SRCE: 1
REPORTER: PETERSON JOCELYN A
REP_AFFIL: USGS
REP_DATE: 83 04
UPDATE:
REC_TYPE: X1M
REC_NO: M030480

DEP_NAME: COPPER HILL PROSPECT
STATE_CODE: AZ
COUNTY: PINAL
COMMODITY: CU MO
MINE_DIST: COTTONWOOD DISTRICT
TOWNSHIP: 005S
RANGE: 014E
SECTION: 36
SECT_FRACT: SE
POSITION: BETWEEN N BRANCH OF ROMERO WASH & S BRANCH OF SMITH
WASH
LOC_COMM:
MINE_TYPE: S
PROD_SIZE: N
EXPL_COMM:
DEP_TYPES: PORPHYRY COPPER
DEP_SHAPE:
OBY_STRIKE:
OBY_DIP:
DEP_DESCR:
WKGS_COMM: DRILL HOLES CONOCO 1971
AGE_HOST: PREC CRET
HOST_ROCK: GRANITE GRANODIORITE
AGE_IGN: CRET
IGN_ROCK: GRANODIORITE
AGE_MINER: CRET 68-6
MINERALOGY: LIMONITE CU STAINING
ORE_MATS: PYRITE CHALCOPYRITE MOLYBDENITE
ORE_CONTRL:
SIG_ALTER: QUARTZ-SERICITE-PYRITE IN GRANODIORITE
CHLORITE-EPIDOTE-MONT
FORM_AGE:
FORM_NAME:
GEOL_COMM: THE QUARTZ-SERICITE ALTERATION HAS 5-25 PPM MO
ANOMALY. THE I
GEOL_ENV:
GEOL_NOTES:
GEN_COMMS: THIS REPORT WAS TAKEN FROM RECORD M030480 OF JAN
WILT IN MOLY
REFERENCES: EVENSEN 1961 MS THESIS UNIV OF AZ 45
P. KRIEGER 1974 U

DEP_NAME: OLD SAMPLE MINE
STATE_CODE: AZ
COUNTY: PINAL
COMMODITY: CU AG
MINE_DIST: COTTONWOODDISTRICT
TOWNSHIP: 006S
RANGE: 014E
SECTION: 12
SECT_FRACT: NE
POSITION: 1/2 MILE N.E. OF HORSE HILLS.
LOC_COMM: 1/2 MILE WEST OF SAMPLE WASH. APPROXIMATELY 6 MILES
SW OF WINK
MINE_TYPE: U
PROD_SIZE: S
EXPL_COMM: ROY L BISHOP OPERATED IN 1950 J.ERKLANS IN 1948
DEP_TYPES: VEIN
DEP_SHAPE:
OBY_STRIKE:
OBY_DIP:
DEP_DESCR:
WKGS_COMM:
AGE_HOST: PREC
HOST_ROCK: DIABASE GRANITE
AGE_IGN:
IGN_ROCK:
AGE_MINER: LCRET-TERT
MINERALOGY: QUARTZ LIMONITE
ORE_MATS: CHALCOCITE MALACHITE FREE SILVER
ORE_CONTRL:
SIG_ALTER:
FORM_AGE: PREC
FORM_NAME: RUIN GRANITE
GEOL_COMM: VEIN MINERALIZATION PROBABLY ASSOCIATED WITH
LCRET-TERT INYTR
GEOL_ENV:
GEOL_NOTES:
GEN_COMMS:
REFERENCES: ABGMT-USBM FILE DATA|USBMFILE DATA CLUSTER
#636|USGS GEOLOG
ALT_NAME: SAMPLE MINE
QUADRANGLE: WINKLEMAN (1950)
SCALE: 24000
ALTITUDE: 3520 FT
YR_FST_PRD: 1948
YR_LST_PRD: 1950
LAST_OPER:

GEOL_COMM:
GEOL_ENV:
GEOL_NOTES:
GEN_COMMS:
REFERENCES: W.J. KEITH FIELD EXAM
ALT_NAME:
QUADRANGLE: BLACK MOUNTAIN
SCALE: 24000
ALTITUDE:
YR_FST_PRD:
YR_LST_PRD:
LAST_OPER:
CUM_PROD:
CUM_P_COMM:
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LONGITUDE: 110-56-34W
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UPDATE:
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LONGITUDE: 110-51-47W
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UTM_E: 512800
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GEOL_NOTES:
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SCALE: 24000
ALTITUDE: 3520 FT
YR_FST_PRD: 1948
YR_LST_PRD: 1950
LAST_OPER:

Winkelman Quad

Wash fault (Crozier Peak quadrangle), which is a multiple strand fault. East of the Romero Wash fault either Ruin Granite or Pinal Schist underlies the Apache Group in some areas; elsewhere the Apache Group section is repeated without intervening schist or granite. The Romero Wash fault is now occupied by a Late Cretaceous dike throughout most of its exposed southern part and is presumed to lie within diabase in its northern part where faults are difficult to recognize.

Faults that postdate the San Manuel Formation are west-dipping low-angle gravity slides, high-angle north-northwest-trending faults, at least some of which cut the gravity slides, and a few east-northeast-trending faults. Some high-angle faults, or some of the movement on them, also postdate the Big Dome Formation; a few postdate the Quiburis Formation.

A low-angle, west-dipping gravity slide, the Camp Grant fault, separates Ruin Granite on the east from steeply east-dipping San Manuel Formation in the southeastern part of the Putnam Wash quadrangle. The probable offset portion of this fault extends into the southwest part of the Winkelman 7 1/2-minute quadrangle, where it also involves Precambrian rocks. The Smith Wash fault in the northwest part of the Winkelman 7 1/2-minute quadrangle may be of similar age and origin. Some movement has occurred along the contacts between the San Manuel Formation and bedrock, but the amount of displacement in most places may be small.

MINERALIZATION

The Winkelman 15-minute quadrangle (of which the Winkelman 7 1/2-minute quadrangle is a part) is adjacent to three major copper deposits: the San Manuel to the southeast, the Christmas to the northeast, and the Ray to the northwest. Although no economic deposits have yet been found within the 15-minute quadrangle, numerous prospect pits, shafts, and adits have explored the principal mineralized areas, which are in granitic rocks in the southeast corner and in the north-central and northwestern parts of the 15-minute quadrangle. Some of the mineralization may be Precambrian in age, but most of it probably is related to Late Cretaceous and/or early Tertiary intrusive bodies.

In the Winkelman 7 1/2-minute quadrangle the most extensively mineralized and explored area is between the north branch of Romero and the north branch of Smith Washes, locally referred to as the Copper Hill area (Evensen, 1961). Quartz-sericite alteration is common, and tiny pyrite crystals are widely disseminated accompanied by limonitic alteration and copper staining. In the breccia pipe(?) on the north side of the north branch of Smith Wash (SW 1/4 sec. 25, T. 5 S., R. 14 E.), the granodiorite has been altered to a fine-grained mixture of quartz, sericite, and natrojarosite (hydrous NaFe sulfate), with goethite veining the natrojarosite. A few pyrite cubes, less than 1 cm in size, were noted on the dump. Rounded cobble- and boulder-sized masses of altered rock suggest breccia pipe formation. No copper mineralization was noted in the breccia pipe, but copper mineralization is widespread south of the pipe. Several prospects occur south of Romero Wash. At the Sample mine, east of Horse Hills, mineralization consists of quartz veins and limonitic staining from pyrite; chalcocite and malachite were observed on the dump. A prospect on an east-trending shear zone that cuts diabase and Pinal Schist on the north side of Swingle

Wash, SW 1/4 sec. 17, T. 6 S., R. 15 E., contains small galena crystals, motttramite (CuZn)PbVO₄, and well-crystallized needles of goethite.

DESCRIPTION OF MAP UNITS

SURFICIAL DEPOSITS

Alluvium (0-15 ft exposed).—Valley bottoms, flood-plain deposits, composed of clay, silt, sand, and some gravel; largely unconsolidated. Large areas on gently sloping surfaces are essentially stripped and dissected pediment surfaces cut on gravel and sand of Pleistocene age or on the lake-bed facies of the Quiburis Formation. In these areas alluvium is being carried along each of the innumerable small washes; patches of older deposits and remnants of pediment soil and gravel are exposed locally.

Talus (0 - about 20 ft exposed).—Veneer of rock debris derived from adjacent bedrock. Many talus deposits, not identified on the map, partly cover diabase, upper member of the Dripping Spring Quartzite, and the Pioneer Formation.

Soil and gravel veneer on pediments and younger terraces (0-25 ft).—Subangular pebbles and cobbles in a generally reddish-brown, fine- to coarse-grained matrix. Pediments are developed mostly on gravels and sands of Pleistocene age and on lake-bed facies of the Pliocene Quiburis Formation; many are partly dissected; the intervening slopes and valley bottoms are covered by colluvium and alluvium. The dark red-brown soils were developed during one of the pre-Wisconsin interglaciations.

Undifferentiated gravel.—Small patches of terrace or pediment gravels, talus, and alluvium; includes isolated exposures of older gravels.

SAND AND GRAVEL (0-POSSIBLY 200 FT)

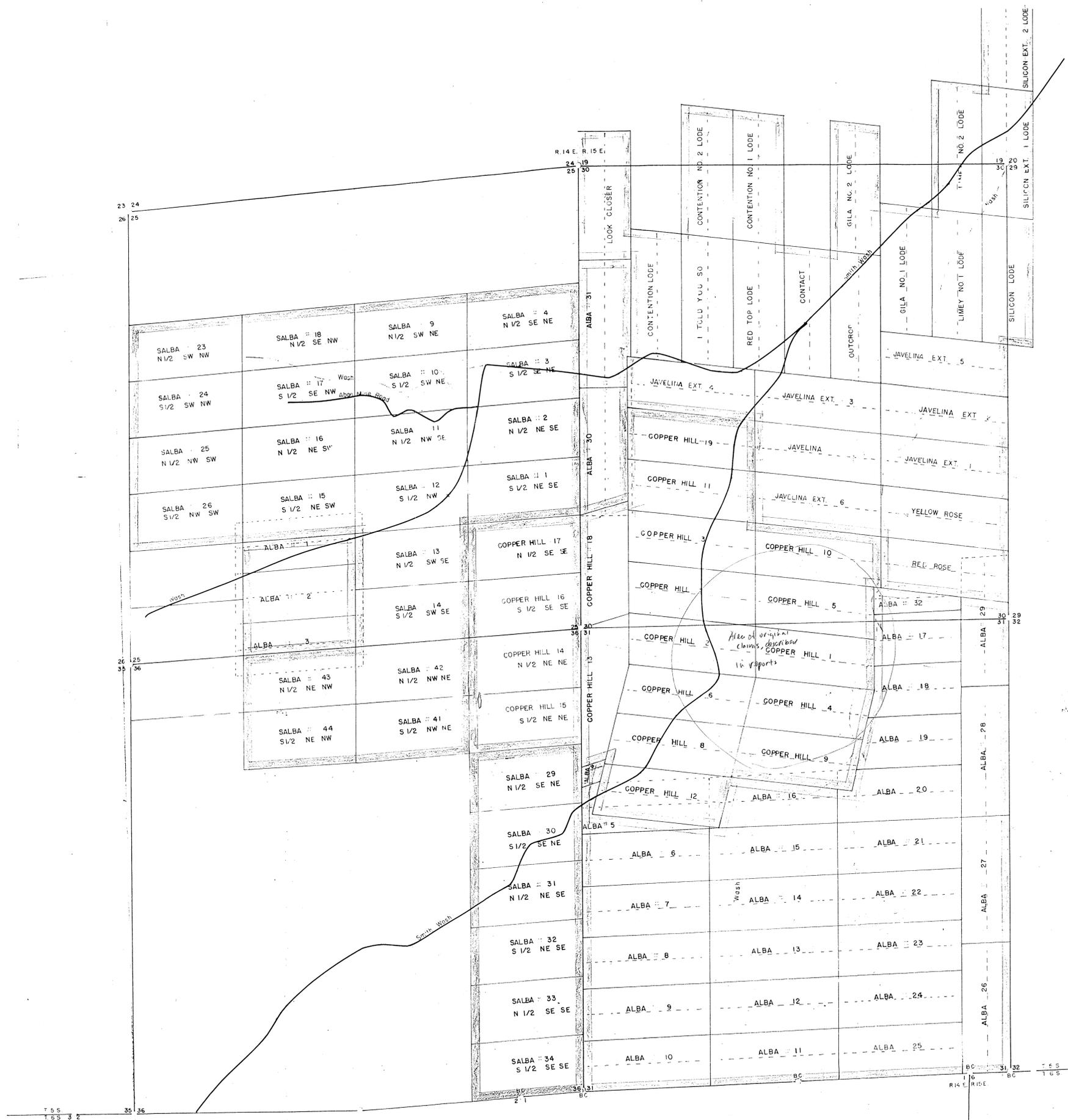
Poorly exposed, light-colored essentially unconsolidated alluvial gravel and sand, largely composed of granitic material, probably thinly covers much of the eastern part of the quadrangle but is concealed in many places by younger alluvium. Includes unmapped exposures of Quiburis and San Manuel Formations. Probably deposited after inception of through-going drainage along the San Pedro and Gila Rivers. The unit is considered early and (or) middle Pleistocene because of its unconsolidated character and stratigraphic position above the middle Pliocene Quiburis Formation and below the red pediment soils.

QUIBURIS FORMATION (0-AT LEAST 600 FT EXPOSED)

Named by Heindl (1963); see also Krieger and others (1973); called Gila Conglomerate by Krieger (1968c, d) and Creasey (1965, 1967). An alluvial and a fine-grained lakebed facies deposited in a long, narrow closed basin. In most places the two facies intertongue through a distance generally of less than a quarter of a mile. The alluvial facies in exposed parts of the basin does not encroach over the lakebed facies, indicating absence of partial drying up of the lake. Very locally, lakebeds extend westward across the alluvial deposits, probably indicating embayments along tributary valleys. Approximate position of the buried contact between the two facies beneath younger gravels is shown on the map. Position of the contact at the north edge of the quadrangle was determined by mapping immediately to the north in the Hayden quadrangle, where both facies are exposed. Considered middle Pliocene in age because of the presence of vertebrate fossils in presumably equivalent lakebeds south of Mammoth. J.F. Lance stated

Copper Hill Group etc.





FEDERAL MINING CLAIMS
 Copper Hill Group - Original Location
 Alba claims - located July 1966
 Javelina Group - located by A.B. Bobbitt
 STATE MINING CLAIMS
 COPPER HILL GROUP - Original Location
 Salba claims - located July 1966

LESLIE M. WOOD, et al
 COPPER HILL GROUP, et al
 State & Federal Mining Claims
 TWP. 5 S., R. 14 & 15 E., GSRBM
 Pinal County, Arizona
 Scale 1" = 500'
 July, 1966

FRK