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TWO DAY INSPECTION OF LOST BASIN, AZ

The tour is primarily to points related to the long breccia zone, the adjacent eluvial fossil placer bench (which was believed to have been deposited mainly from the erosion of the breccia zone), and to the suggested buried episyenitic gold pipe. It is the opinion of several professionals that the gold veins in the Lost Basin Range as well as the alluvial gold placers hold far less potential for economical development than the breccia zone and the buried pipe, but that the surrounding country rock and the distribution patterns of gold and other minerals in the veins and the alluvium are excellent "periphery indicators" of the potential and for the exploration of the breccia zone and the buried pipe.

The following refers to the accompanying copies of 4 stereo aerial photos (9-004 to 007) and 2 transparent overlays. The symbols on the two overlays signify the following:

Prospects and mines (adits and shafts). **Color indicates:**

X = Lode gold (visible gold).
X = Lode silver.
X = Lode copper.
X = Eluvial, or alluvial.

/ = Cuts, dikes, or other linear structures.

• = Other points of interest.

Inspection of the following points in alphabetical sequence (letter symbols on the photo overlays) is suggested, as well as reference to the pages and figures in the yellow brochure, "LARGE ARIZONA GOLD PROPERTY":

Starting at the "Roadrunner" (old gasoline station and store in the southern center of Section 27, T30N, R17W, on the paved highway between Meadview and Mead City) drive to:

A: (Roadrunner vein). Park and walk to the vein in the bottom of the gulch which contains galena, silver, copper, and gold in quartz. An ore sample assayed 39.1 oz. gold/ton and 35.4 oz. silver/ton. (See page 8, "E"). Walking further west (A1) up the canyon, observe outcrops of the quartz breccia zone. Note that there are four outcrops further west on the N-S ridge in a line (4 blue "x") of silver, galena, and copper (and probably gold). This line of outcrops and the Roadrunner vein appear to continue southerly about two miles to intersect the suggested buried episyenitic gold pipe. (See Figure 8).

AA: (Major fault). Much of the placer gold in Lost Basin is believed to have originated from a highly mineralized fault (N-S red lines on overlay) buried under the pediment gravels. The fault extends from the Road Runner vein (A), to behind the King Tut, through the canyon to the south at point (I), to the obvious N-S fault between Pai Mountain and the west flank of the southern Lost Basin pediments. A recent study of five different sets of

stereo aerial photos (1958 to 1986), plus a comparison of assays of pediment gravels from former placer drill holes, plus many years of on-the-ground observations of the pediments, all suggest such a buried structure from which much of the eluvial and alluvial placer gold has eroded.

B: (Bulldozer cut). Note this cut which was believed to be into the northern extension of the Northern breccia zone of the Climax Mine. (See page 5, "5B" and "6B").

B1: (Harmon saddle). At the turn-around spot on the saddle, note the steel cable to the Harmon prospect at **B2**. Also note the prospect-cut (about 100 feet west of the turn-around) that contains free-gold with chalcopyrite.

B2: (Harmon prospect). If you have time, you might hike along the foot trail to the Harmon prospect; however, you will be driving to the Golden Gate Mine (**D6**) where the dump has gravels with mineralization identical to that of the Harmon prospect as well as most other gold veins in the northern gold halo. Several hundred quartz rocks with visible free-gold in vugs of hematite after chalcopyrite have already been collected from the Harmon tailings. **Note that**, as observed by the USGS, the chalcopyrite in the northern gold-rich halo of the mineral-zoning pattern contains, or contained (before erosion), most of the gold originally deposited, unlike much of the gold in the southern halo that was formed in association with abundant pyrite. The USGS age-dating of the Harmon gold showed a different date than the gold at the nearby Climax Mine, or that of the alluvial placer gold in the eastern fanglomerates.

C: (Climax Mine). Recorded mill production from the 105 foot shaft averaged 6.0 oz. gold/ton. Subsequent nearby drilling in this quartz breccia zone indicated probable reserves of 12,800 tons of 0.5 oz. gold/ton, and more recent drilling about 500 feet further north showed comparable values. (See page 5, "6B"). In the cut on the bank just west of the road turn-around, several rock samples have been found that contained patches of fine particles of visible gold. A report, "CLIMAX GOLD MINE," giving the drilling assays, a description of the shaft's wallrock and quartz veining, the surrounding geology, and a description of the paralleling ankerite pipe is available for loan from Warren Mallory.

C1: (Climax saddle). Walk to the saddle (about 400 feet south of the Climax road turn-around) and note the white onyx which contains anamolous gold. Also note to the south, the iron-staining in Red Basin. (See page 5, "6B"). It is believed that the Northern breccia zone extends southward underneath the pediment gravels and is about 600 feet east of Red Basin's eastern ridge and exposed bedrock further south. Abundant quartz pediment float appears to have eroded from this north-south trending quartz breccia zone presently covered by gneiss and schist pediment gravels from the Lost Basin Range.

C2: (Ankerite dike, or pipe). About 300 feet southwest on the road from the Climax wooden house, chunks of ankerite float can be found. This ankerite was from a north-south dike, or pipe, up to 30 feet thick, just under the loose gravel on the bank along the western side of the road. The dike, or pipe, was exposed by a backhoe cut several years ago, but was subsequently covered by tailings from bulldozing above. (See page 5, "6B", and "CLIMAX GOLD MINE").

C3: (Quartz hill). As you drive up Quartz Hill note the abundant quartz float (mineralized and bull), some of which show visible gold when broken. Note that the quartz float was probably not only derived from a north-south breccia zone cutting this ridge on the west, but also was a result of radial deposition from the suspected buried gold pipe. Four percussion drill holes (20 to 40 feet deep) and about 100 feet apart half-way up the hill averaged from 0.015 to 0.44 oz. gold/ton. (See page 8, "QH", and "CLIMAX GOLD MINE").

D: (Shear zone). Channel chip sampling over a distance of about 50 feet along the red-stained fracture zone on the east side of the road showed an average of only 0.01 ppm gold.

D1: (Copper outcrop). If you have the time, you might walk about 400 feet up the trail to a leveled spot where a quartz vein with secondary copper was found by a prospector many years ago. He mistakenly named the red basin as "Copper Basin," and as a result a couple of mining companies sampled and drilled the basin for copper with discouraging results. About 30 feet northwest of the leveled spot is a small banded-iron formation outcrop.

D2: (Drill hole). At the junction of the road down the gulch and the road to the south, an 86-foot percussion drill hole averaged 0.02 oz. gold/ton which is believed to have been caused by secondary enrichment from the quartz breccia zone and/or buried gold pipe to the east.

D3: (Muddy Creek Formation). At the leveled turn-around spot an 86-foot percussion drill hole averaged 0.05 oz. gold/ton which also is believed to have been enriched from bedrock sources to the east. From this spot walk east up the ridge about 350 feet where a large exposure of the Muddy Creek formation fills a gulch cut into the red-stained wall rock. A study of the formation indicated that original drainage through the gulch was westerly. It is suggested that the red-iron staining of the Precambrian rock complex in Red Basin may have resulted from a sudden break down of ferromagnesian silicate minerals in the rock complex due to intense heat, or chemical action from the intrusion of the buried pipe to the east. If this break down of ferromagnesian silicate minerals had occurred as a normal geological event over a long period of time, as some geologists believe, and not accelerated as a result of some catastrophic effect, such as an adjacent intrusive, why are many like rock complexes several miles to both the north and south in the Lost Basin Range not red-stained like Red Basin? Channel sampling of the lower part of the Muddy Creek assayed 0.009 oz. gold/ton. Pieces of the red-stained country rock (removed from the Muddy Creek channel samples) assayed less than 0.001 oz. gold/ton. (See page 5, "4B" and page 8, "X", and Figure 8, "x").

D4: (Houses and cable). As you approach this spot, note the various white quartz veins on the surrounding mountain slopes. Stop at the Spanish house which is on the right (smooth walls), and "lazy-man's" house is on the left (rounded rocks piled on top of each other). In looking eastward up the canyon, the Ford Mine dump is visible. Also, a steel cable for hauling ore during the 1930's was run from the mine, over an A-frame half-way down the canyon, and across the road to an anchor in front of "lazy'man's" house. A

few years ago the cable was removed and hauled over to the Harmon prospect at B2.

D5: (Ford Mine). If you can take the time, you might hike about 1/4 mile up the gulch to the Ford Mine, which is a northerly trending drift 350 feet long with three stopes and a winze. Mineralization is basically the same as the Harmon prospect and the Golden Gate mine. (See pages 2 and 3, "4A").

D6: (Golden Gate Mine). Drive to and park in front of the Golden Gate Mine adit. This southerly-trending drift is about 1,100 feet long with several stopes. Mineralization is the same as the Harmon prospect and the Ford Mine. It is suggested that you spend at least a 1/2 hour on the dump looking for free gold with a 10-power magnifier in the vugs of quartz rock particles about 1" diameter, or less. Normally, one can find 6 to 8 during this time. (Over 1,000 rock particles with visible gold have recently been found on this dump). On the photo overlay, about 600 feet southeast of the Golden Gate Mine, the green "x" is where green beryl crystals, 1/2" diameter and 1 1/2" long have been found.

D7: (Building). Another Spanish building with smooth walls is alongside the road on the right.

D8: (Half-Way Mine). Drive to the turn-around spot just east of the Half-Way Mine dump. Note that essentially no mineralized quartz was left behind on the dump by the miners. Note the Spanish burro trail on the north side of the canyon about 200 feet to the east. In looking further up the canyon to the skyline, note the saddle at B1. (See pages 2 and 3, "4A").

D9: (Scanlon Mine). It is suggested that you park at an easy turn-around on the right which is about 150 feet down the canyon from the Scanlon Mine (now called the Empire and Manhattan adits). The mineralization is very similar to the other gold quartz veins in the northern gold halo (such as the Harmon, Ford, and Golden Gate), except occasional small vanadinite crystals are present.

After returning to D: Continue on the southerly road along the crest between Red Basin and the eastern fanglomerates. Note the contrast between the down-dropped Lost Basin mountains to the west and the eastern fanglomerate mesa. Undoubtedly, because the majority of the Lost Basin gold veins were lower in altitude than this mesa, the old timers did not look for placer gold in these eastern fanglomerates until 1931---when a rancher's wife picked up a golf-ball size gold nugget! (See page 16).

E: (Drill holes). Alongside the road four percussion holes were drilled several years ago. A 100 foot hole a few feet south of E averaged 0.13 oz. gold/ton and the other three (two 20 foot deep and on 50 foot deep) averaged 0.08 oz. gold/ton. (See "CLIMAX GOLD MINE").

E1: (Andesite dike). Along the ridge to the northwest between the road and the knob, a Post-Precambrian NE-SW andesite dike was identified by Krish in his comparison of Lost Basin with some other porphyry copper deposits and prospects in the U.S. and Mexico (See page 11, "9E", and page 23, "Krish).

E2: (Northern edge of copper-zone). To the left (at the turn in the road) is the most northerly exposure of highly altered bedrock (which some call "burnt rock") with secondary copper similar to the Copper Blow-Out. This outcrop appears to be on the north edge of the copper-zone of Lost Basin's mineral-zoning pattern. (See page 10, "1E", and Figure 2). Similar outcrops occur at prospect holes about 200 and 400 feet from this spot to the southwest on the left and right hand slopes from the road (2 green "x").

E3: (Look-Out). From this point (just west of the top of the knob) note that you look down onto the tops of several peaks of the down-dropped Lost Basin Range. You can see the N-S ridge behind the adit of Golden Copper. This mine drifts about 1,200 feet eastwardly, crosscutting the Precambrian bedding dipping steeply to the west. In addition to abundant copper minerals in the quartz, considerable iron pyrite is disseminated in the schist and gneiss wall rock. This mine and the Bluebird Mine are the only spots in the Lost Basin Range where abundant pyrite has been found to be disseminated in the country rock. Since both mines crosscut the steeply dipping bedding of the Range, the drifting (in effect) was toward the deep original source of the intrusive (before the mountains down-dropped and dipped to the west). Therefore, because Lost Basin is high on the intrusive system and has not eroded appreciably (like Mineral Park and Oatman), alteration of the wall rock and mineral deposition should become more prevalent with depth (as previously observed by the "old-timers" in mining vein out-crops down Lost Basin's mountain sides). (See pages 1 and 2, "1A"). The Golden Mile silver and uranium mine to the southwest is hidden from view at this Look-Out due to an intervening E-W ridge.

E4: (Copper Blow-Out). In driving from the Look-Out east to the shafts of the Copper Blow-Out, immediately after crossing the road where you turned to the Look-Out, note the small prospect-cut on the left that contains chalcopyrite and secondary copper minerals in quartz and schist. Further east about 200 feet on the left near the summit of the knob is a prospect-cut (red "x") on a quartz outcrop that contains the only visible gold found in the copper-band of the zoning pattern (except for a small visible gold outcrop at the red "x" on the overlay, down the canyon to the west from the Golden Copper Mine). Further east, the tailings on the surface surrounding the two shafts, several years ago contained abundant blue and green secondary copper minerals, but "rock-hounds" have since cleaned them out. Assays of channel sampling of the "burnt rock" give an average of 0.006 oz. gold/ton. Note the additional prospect-cuts on this ridge, such as the adit with azurite tailings (down the hill to the east of the shafts), as well as the second cut (southwest of the southern shaft and east of the trench) where the USGS found several chunks of opal. A magnetic-low envelops this general area, suggesting a possible copper porphyry core at depth. (See page 4, "3B", pages 10 and 11, and Figures 2 and 10).

E4A and **E4B:** (Old drill holes). These are the only holes in Lost Basin's alluvial gravels that have hit bedrock. The bedrock chips were reported by the driller (in 1969) to be "blood-red". The holes were located in the bottom of the two gulches and bedrock was hit by the placer cable-tool drill at 25 feet. Since sampling was for placer only, no "blood-red" bedrock chips were saved, or assayed. It is believed that these two points are on a highly mineralized N-S fault that extends through the canyon to the south between points G1, G2, G3, and G5.

E5: (Core hole). On the leveled ground (trenches to the west and north), sludge from a 240 foot core drill hole was collected by the USGS and assayed 0.083 oz. gold/ton. (The mineralized sections that crumbled had been thrown out into the trash away from the sludge by the inexperienced driller, so only the sludge was assayed). The two long trenches show the highly fractured bedrock at this spot. (See page 4, "3B").

E6: (Exposed bedrock). This scraped-off area and the adjoining trench also shows copper mineralization and "burnt rock".

E7: (Southern edge of copper-zone). This shaft prospect (to the north of the road) with copper-zoning minerals is near to the southern edge of the copper-zone.

E8: (Detector Vein). The trench on this vein (or lens, or faulted structure) shows little visual evidence of gold mineralization, especially on the southern sloping bank which produced chunks of breccia with gold filling seams up to 1/4 inch wide. (See page 4, "3B", and photo of gold in breccia). This spot was explored two years ago with a metal-detector by a claim-jumper who hauled out about $25,000 of ore to a smelter in Las Vegas before he was caught. Eluvial and alluvial gold drainages to the east from this spot as well as many other spots along the 7 mile-long fault breccia zone are directly related to the breccia zone and, therefore, strongly suggest rich bedrock gold deposits underneath the thin gravel ground-cover in this zone.

E9: (High-Voltage Shaft). Most of the mineralized surface tailings have been recently removed by "rock-hounds". Even though visible free-gold and secondary copper minerals are occasionally found in this dump, the abundance of galena and silver indicates this quartz vein to be in the southern silver-lead-zinc band of Lost Basin's mineral-zoning pattern. Also, occasional tiny vanadinite crystals are seen. Note the small prospect on the vein about 200 feet up the hill to the north. (See page 3, "2B"). It is believed that the N-S breccia fault zone divides into two arms somewhere east of this vein, one arm going directly south along the base of the ridge through, or near to points G, G2 and G5, and the other arm to the southeast through points H and I. Also, note the white plastic pipe of a claim-jumper, "Mina de Oro", which covers the steel post (originally with American Heavy Minerals' yellow warning sign which "Mina de Oro" tore off a few weeks ago. You will see several of these pipes on our claims. "Mina de Oro" has been notified of their trespass and is going to be held responsible by appropriate law-enforcement agencies for their damage and/or theft of at least 14 signs.

F: (Vanadium Mine). From the turn-around at the summit look about 20° north of west across the basin and you will see the road going around a hill to the Golden Mile silver and uranium mine. Walk southwest on a foot trail about 200 feet to the Vanadium dump and adit. On top of the dump and on the rock-wall on the east, look for 1/2 inch diameter, or smaller pieces of rock with vanadinite crystals and other rocks with black oxidized silver and galena.

G: (Carl prospect). This is a cut in the southern bank (narrow hump in road) that contains visible free-gold with galena, native silver, vanadinite, and some chalcopyrite and pyrite. (See page 3, "2B", and photo).

G1: (Episyenitic Pipe). In driving west from the Carl prospect, note the Wall Street Mine shaft and dump on the right. From the turn-around at the end of the road to the west, walk about 100 feet south to a highly fractured exposure of a small episyenitic pipe as identified by USGS. (See page 6, "3C" and page 7, point "E" on satellite photo). Also, note to the southeast the several prospect holes on the slope of the mountain across the gulch.

G2, G3, G4 and G5: (Various Mines). In driving up the ridge, note the prospect-shaft along the west side of the road and other prospects in the small basin immediately to the east. At the turn-around at the end of the road, note the three Wall Adits (G3) on the steep mountain slope directly west. On this same E-W structure (cross-cuts the Precambrian bedding) over the saddle and down on the west side about 200 feet from the top are two old prospect-diggings (G4) of quartz with free-gold and chalcopyrite. Directly south of where you are parked, there are a series of prospect holes in a N-S line where free-gold was found. The most southern prospect is the Mercury Mine (G5), a drift about 10 feet deep on a quartz vein and a narrow 1" wide vein of rare mercury sulfide as identified by the USGS as having several times the amount of mercury as contained in cinnabar. (See page 1, "1A"). Also, it should be noted that most gold and copper veins in Lost Basin, as well as the top soil and placer gold, all contain anamolous amounts of mercury.

H: (Mineralized ~~breccia~~ shear zone). The road crosses over a mineralized ~~brecciated~~ zone. Visible free-gold has been found in quartz-stringers in this zone.

I: (Quartz-stringers). Drive to where a yellow sign of American Heavy Minerals stands just to the west of the road (assuming claim-jumpers have not torn it down in the past few days). On the north bank a few feet from the road, a brown highly-altered bedrock outcrop contains quartz-stringers (about 1/2" wide). Visible free-gold has been found in several of these stringers. About 100 feet further up the gulch on the north slope is a prospect-cut where visible free-gold and chalcopyrite have been found. Further east up the gulch, you will see an exposure of white bedrock near to the crest of the ridge.

I1: (Volcanic-ash bedding). Note the up-turned white volcanic-ash with several distinct layers of water-cemented ash with included rock and gravel particles.

I2: (Standing volcanic-ash). In driving about 50 to 200 feet west from I1, two other up-turned volcanic-ash formations which stand about 10 feet above the ground surface, come into view to the southeast.

I3: (Syenitic dike). Note two small prospects that contain free-gold and pyrite in quartz. Somewhere near to these prospects is a syenitic dike as identified by the USGS. (See page 6, "3C", and page 7, "S" on satellite photo).

J: (Pyrite). At this prospect note the abundant pyrite. Visible free-gold has been found in association with the pyrite.

J1: (Pyrite and banded-iron). At these two prospects note the abundant pyrite which is associated with occasional visible free-gold. Unusually high assays of gold in these two prospects and the prospect at **J**, encouraged Santa Fe Mining in 1986 to lease the claims. However, six months later, after they had barely started their exploration, they were forced to withdraw the lease (as well as several other exploration projects in the western U.S.) due to severe financial problems caused by the ICC's blockage of their merger with Southern Pacific Railroad. Also note at the eastern prospect the formation of banded-iron which is quite magnetic. A percussion drill hole on the pad at the mouth of the gulch (between the two prospects) showed anamolous platinum/palladium and gold. Before leaving, note high-up on the north slope of Pai Mountain, the prospects at **J4**. These prospects and several others are on the SE-NW long (1 1/4 mile) structure of the Bluebird veining system that extends to the eastern foot of Pai.

J2: (Scheelite). Tungsten in the form of scheelite was found at this prospect.

J3 and J4: (Bluebird Mine). The drift is about 1,200 feet long. Note the pyrite that is disemminated in the schist and gneiss on the dump. At the stope opening about 30 feet above the adit, considerable free-gold associated with chalcopyrite has been found in rock samples. As mentioned previously, the Bluebird veining structure extends to the east through **J4** to the foot of Pai Mountain. In returning eastwardly up Bluebird Canyon, note the extensive down-dropping and dipping of the Lost Basin Range in relation to the ridge of the eastern fanglomerate mesa.

K: (Pink granite). Note the large exposure of Laramide pink granite in Migmatite Valley.

K1: (Gneiss). Note the altered Laramide gneiss surrounding the foot of Pai Mountain.

K2: (Sulphur vent). Secondary copper was found at this prospect. Somewhere within about a 1,000 foot radius of this point, a gas vent, at various times, spews out foul-smelling sulphur gas.

L: (Ridge drive). After returning to Wall Street Basin, drive on the road to the south along the top of the ridge which gives an excellent view of Pai Mountain, Migmatite Valley, and the eastern fanglomerates. At the end of the road in looking to the north, consider that sizeable rough gold nuggets have been found in the fanglomerates from where you are standing to beyond Tut Mountain (about 4 miles to the north), as well as 3 miles to the south (from where you are), which suggests a 7 mile long gold breccia zone as the source.

M: (Eluvial cut). Drive to the 10 foot deep N-S cut through the E-W fanglomerate ridge. This area is on the east half of Section 16, which is a State of Arizona lease to the Garritsons. Note that the cut is through the caliche layer immediately below the contour of the ridge which exposes the eluvial fossil bench gravels that are believed to have been eroded from a nearby buried breccia zone to the west. Note the red and brown clay layers

in the banks that contain disseminated free-gold as well as gold attached to hematite and quartz, and even silver. The heavy sands under a 30-power microscope appear to be similar to rough, jagged eluvial particles from a freshly crushed ore vein. One hundred tons of these eluvial sands were successfully leached after treatment with caustic soda to clean off the desert varnish (manganese, iron oxide, and organic). (See pages 14 and 15).

M1: (Eluvial drill-holes). Up the E-W ridge (south of cut), six rotary holes were drilled (most 50 feet deep). Every 5 foot section of chips was blown onto the ground in separate piles. Instead of assaying, the Garritsons wet-panned a pan of chips from each pile and found visible gold (under a 30-power field-microscope) in nearly every pan sample. Of significance, is that the quantity of gold increased in each hole to the west, with the most gold in the most western hole. In an eluvial placer deposit, such would usually be expected as the source is approached. (See pages 14 and 15, "1F").

N: (Lone Jack). This is the old placer mine shown on the USGS topag maps.

N1 and N2: (Placer diggings). In driving down the old Pierce Ferry Road, note the various placer diggings. Also, unusually large Joshua trees cover a circular area about 1 mile in diameter, centered between **N1** and **N2**, and extending into Mead City to the east. A circular red spot on an infrared satellite photo coincides with, and is the same size as the circular pattern of the large Joshua trees, suggesting a buried desert aquifer.

N3: (Placer trenches). This area was one of many trenched by the King Tut operation in the eastern fanglomerates during the early 1930's. Alluvial gravels in the bottoms of the gulches, just above the first caliche layer, were trucked to behind the King Tut tailings pile and wet-sluiced, and the tailings carried off by a conveyor-belt. Since that time many small placer operations in these and many other gulches (above the caliche bottom) have been conducted by various groups. (The gold nuggets shown in the bottom photo on page 13 and the 0.71 lb. nugget on page 14 were found in this general area). (See pages 12 through 19).

O: (Water well). This 1,340 foot water well is entirely in alluvial gravels, bedrock not being reached. (See page 19). A buried PVC pipe-line runs from the well along the road to a collapsed galvanized-iron water tank southwest of the old RIP leaching pad near **O1**, and a branch line to the tailings ponds northeast of the pad.

O1: (Fossil gold channel). On the south slope of the ridge near to the foot (just east of a recent gravel-fill in the gulch), an exposed brown and red clay layer contains considerable gold nuggets averaging about 1 mm diameter. (See page 12). Also, in this area note the abundant quartz float which is believed to have originated from the buried pipe, **P**, to the north, as well as from the quartz breccia zone to the west. Free-gold has been found in some freshly broken quartz rocks in the area.

P: (Buried pipe). In driving through this spot, the only indicators (which are very subtle) of a possible buried pipe at depth, are abundant small quartz gravels, and the Joshua trees are somewhat larger than the surrounding area (suggesting a buried aquifer). Also during the Spring, desert ground plants are noted to grow faster and the spot more "alive" due to the presence of more water than in surrounding areas. Remember that the pipe was first suggested from surrounding large, jagged gold nuggets and both mineralized quartz float (some with visible gold when broken) and bull quartz, all of which appear to have been distributed to both the south and the north, as well as to the east. Also, lineaments in the pediments as shown on aerial photos, as well as several known faults, shear zones, and veins in the exposed bedrock of the Lost Basin Range (when drawn as extensions into the fanglomerates), intersected in the area of the suggested pipe. Subsequently, a color-enhanced infared satellite photo showed a distinct circular-form exactly where the pipe had been suggested. (See pages 5 to 9, especially the satellite photo on page 7).

P1: (Quartz piles). Drive past the old prospector's rock cabin (visible free-gold in one of the rocks) to the north side of the old placer trench where there is a small pile of quartz rocks and gravels. Note that many are somewhat mineralized. Free-gold has been found inside a couple of freshly broken rocks. Similar abundant quartz float is found radiating out from the buried pipe (such as described previously at point **O1**). (The gold nuggets shown in the upper photo on page 13 were recovered from a gulch about 1,000 feet north of this point).

P2: (Crushing mill site). In the vicinity of an old concrete pad, many years ago, a crushing mill processed mineralized quartz gravels hauled from surrounding pediments to liberate the free-gold in the quartz. It is believed that the crushed material was then dry gravity-concentrated and hauled to a Colorado River mill (in the canyon below the present Lake Mead) for final recovery. Of significance, is that this spot is in the primary north-eastern drainage from the buried pipe, **P** (about 3/4 mile to the west).

P3: (Yellow sign). The sign on a brightly colored post is of a claim-jumper who recently died. He had been officially notified of his trespass, as well as having been convicted in court for other infractions of the law.

P4: (Northeastern drainage). This ridge is a continuation of the primary northeastern drainage (almost 2 miles from the buried pipe, **P**). Note the abundant quartz float on this ridge.

P5: (Dry riverbed). At this point, leave the road and drive down the dry riverbed to the N-S main graveled road through the northeast corner of Section 26, continuing on directly north to Meadview.

Future exploration: It is believed you will agree that effective geochemical and geophysical surveys should be conducted before any drilling, inorder to delineate the targets in the gold bearing long breccia fault zone and the suggested buried episyenitic gold pipe, as well as the buried eluvial bench placer.

Questions?: After your tour, if you have any questions, please telephone Warren Mallory at:

November to May:	April to October:
Oceanside, CA (619) 966-2689	Laramie, WY (307) 742-6668

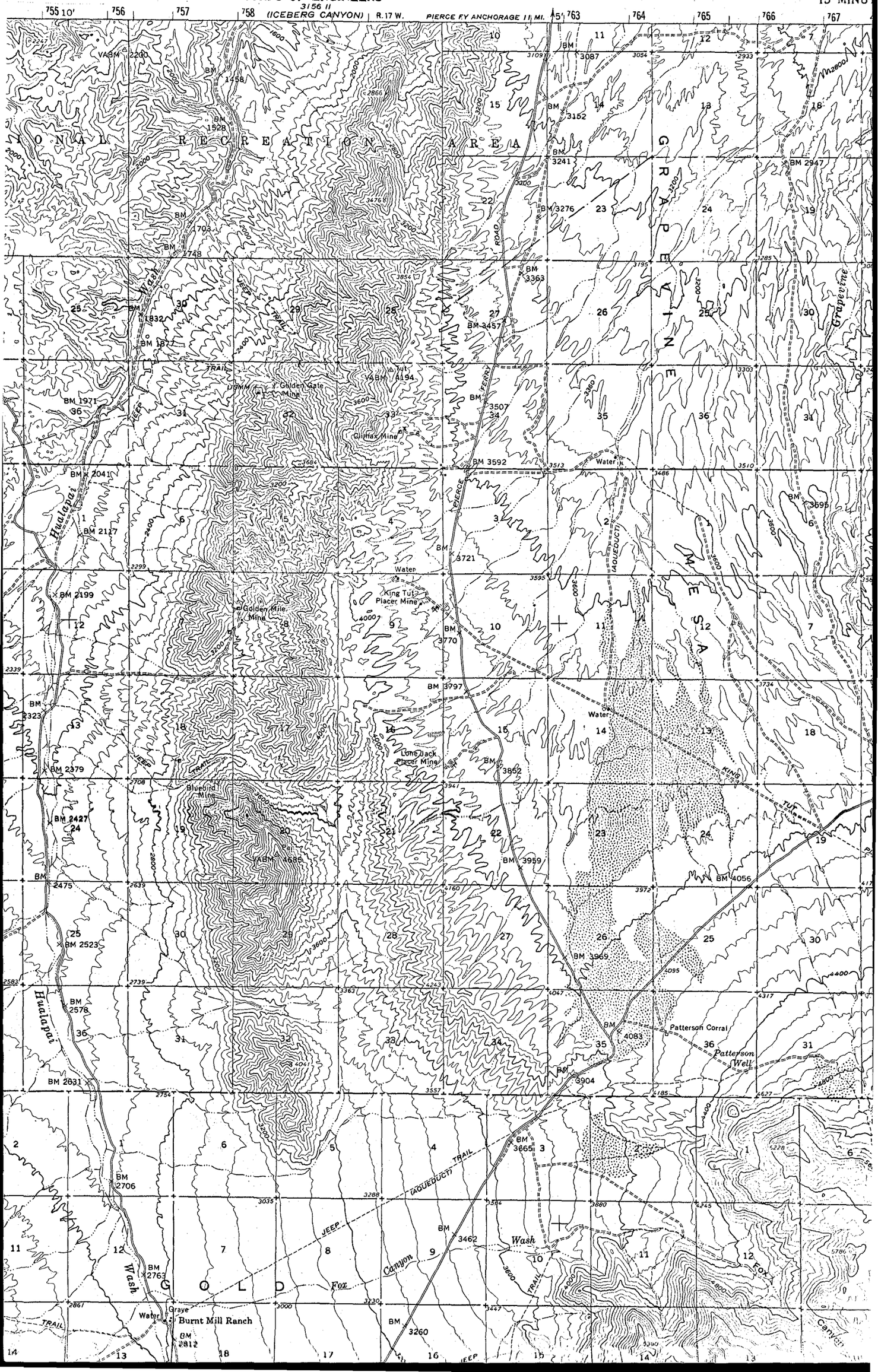
Ore samples: If you desire to further inspect typical ore samples, gold nuggets, or eluvial mineral concentrates from Lost Basin, please contact Warren mallory. Also, American Heavy Minerals has in storage thousands of cataloged ore samples whose locations are marked on large aerial photos, as are Lost Basin's aerial magnetics and scintillation contours, and mineral zoning indicators.

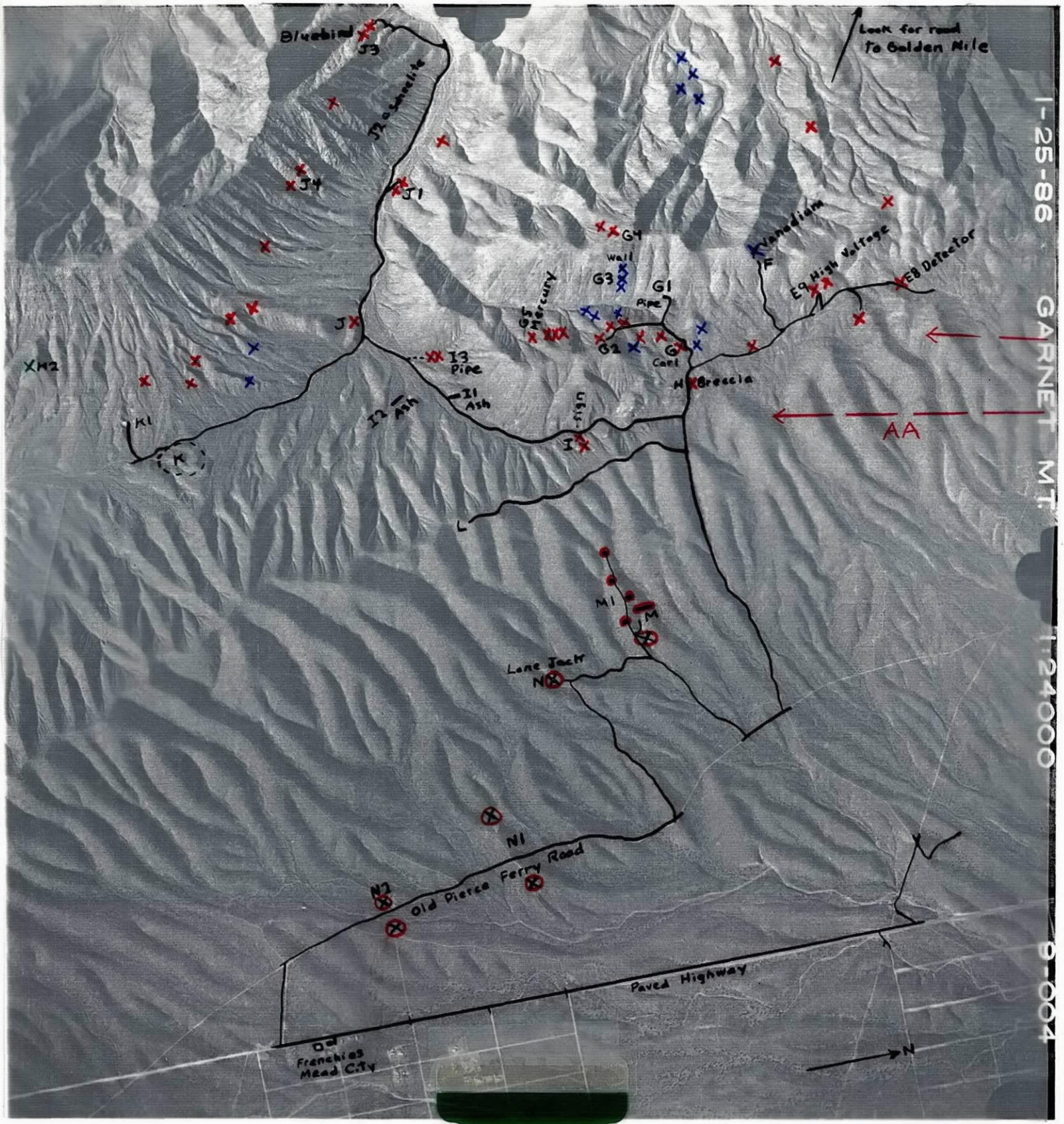
References: Many of the publications listed on pages 22 to 24 of the yellow brochure, "LARGE ARIZONA GOLD PROPERTY", are in Warren Mallory's files.

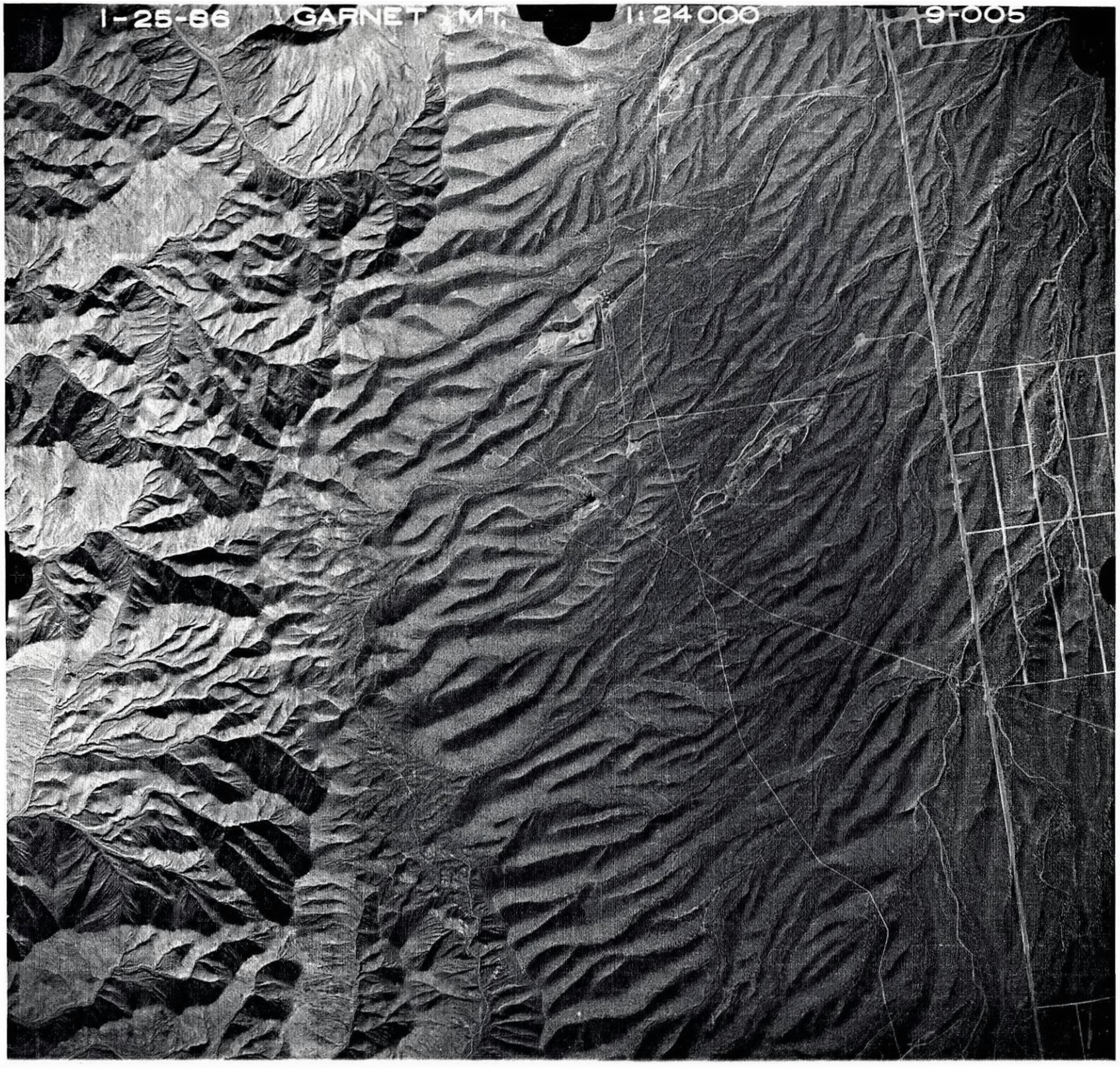
UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

GARNET
AR
15 MINUT

3156 II (ICEBERG CANYON) R.17 W. PIERCE FY ANCHORAGE 11 MI.




Look for road to Golden Mile
Bluebird
J3
Montmorillonite
J4
J1
J
XM2
K1
K
I2 Ash
I1 Ash
I3 Pipe
I
L
G4
wall
G3
G1
Pipe
G5 Mercury
G2
G
Carl
Vanadium
F
E9 High voltage
E8 Detector
H Breccia
AA
M1
M
Lone Jack
N
N1
N2
Old Pierce Ferry Road
Paved Highway
Franchies Mead City
N
GARNET MT.
1-25-86
1:24000
8-004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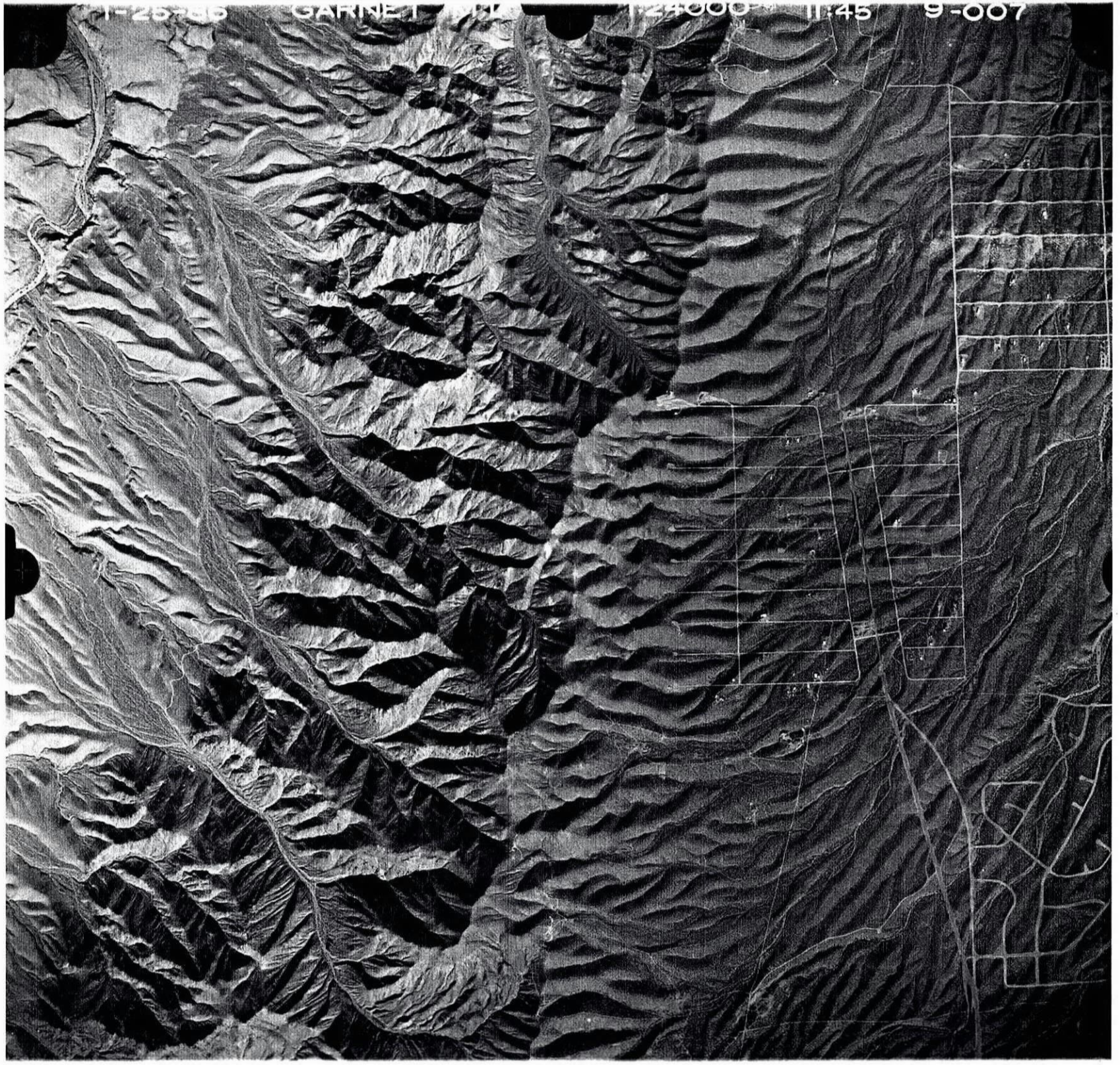
1:24000
9-005

Warren M. Mallory
ENGINEERING CONSULTANT
P. O. Box 730
Laramie, WY 82070


GARNET
1:24000
11:45
9-007

Warren M. Mallory
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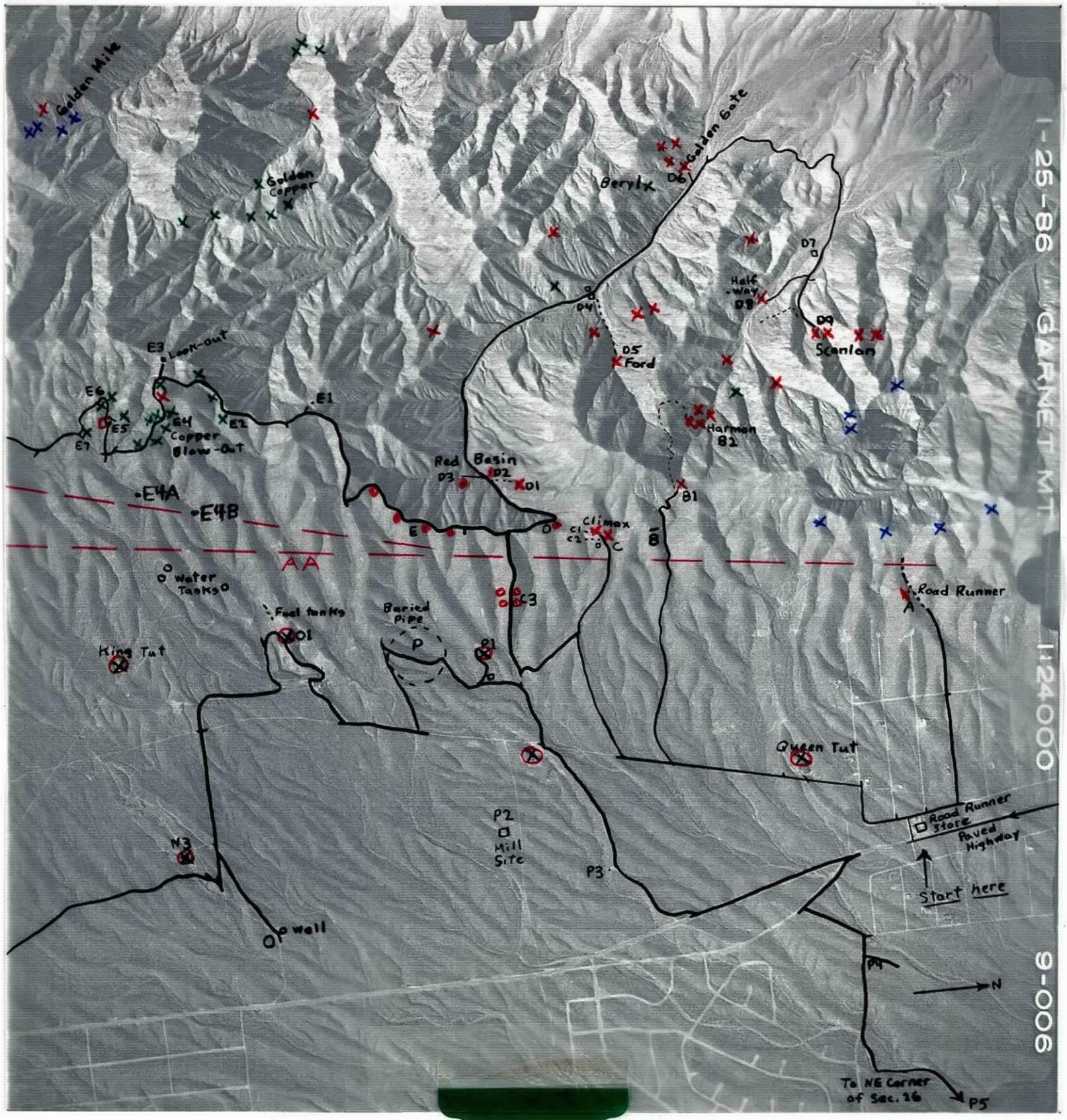
P. O. Box 730
Laramie, WY 82070


Golden Mile
Golden Copper
Beryl
Golden Gate
D6
D7
Half-way
D8
D4
D5
Ford
D9
Scanlan
E3
Look-out
E6
E5
E4
Copper
Blow-Out
E7
E2
E1
Harman
B2
Red
Basin
D3
D2
D1
B1
E4A
E4B
E
D
Climax
C1
C2
C
B
AA
Water
Tanks
Fuel tanks
Buried
Pipe
C3
P
B1
King Tut
Road Runner
A
Queen Tut
Road Runner
store
Paved
Highway
Start here
P2
Mill
Site
P3
M3
Well
P4
N
To NE Corner
of Sec. 16
P5
1-25-86
GARNET MT.
1:24000
9-006

Warren M. Mallory
P. O. Box 730
Laramie, WY 82070

WARREN M. MALLORY, P. E.
Engineering Consultant
POST OFFICE BOX 4446
OCEANSIDE, CA 92054
PHONE: (619) 966-2689

July 26, 1994

Mr. James D. Sell, Manager
ASARCO Exploration
P. O. Box 5747
Tucson. AZ 85703-0747

Dear Jim:

It was good to talk with you last week and appreciate your continued interest in our Lost Basin gold/copper property that Russ Corn inspected and sampled in the spring of 1991 for ASARCO.

Enclosures: My enclosed brochure of 3/15/90 was updated on 5/23/91 by my "First Addendum", then later on 9/1/93 in the text and on the claim maps (Figs. 2, 6, and 7) when we dropped some periphery claims. Also, several additional suspected buried episyenitic gold pipes are outlined in Fig. 4. The only updating of the enclosed 1991 Tour Guide was to mark on the photo overlays where some episyenitic float rock and some formations of water-laid volcanic ash containing gold nuggets were recently found. Also enclosed are the recent drill logs and assays on drill hole LB-10 at the Copper Blow-Out, and a summary description of our property.

Copper Blow-Out: As seen in the enclosed data on Drill hole LB-10, the first 45 feet of 0.69% oxidized copper as well as the first 185 feet of 0.212% copper certainly ties in with both the center of Lost Basin's geophysical magnetic low and the center of the copper zone of the mineral zoning pattern of Lost Basin. Obviously, this drill hole did not follow this mineralized fluid vent to its source at depth. Also, the USGS and several consultants have related the Copper Blow-Out and Lost Basin to the Ithaca Peak porphyry copper deposit and Mineral Park (about 40 miles south of Lost Basin), except that the Copper Blow-Out is estimated to be about 600 feet higher on the buried intrusive system. Probably, if the Lost Basin Range had not down-dropped, the Copper Blow-Out, the pediment gravels of Grapevine Mesa, and the bedrock under the gravels would have eroded down to a similar level of intrusive exposure as Mineral Park's.

Gold Targets: The following are suspected buried sources of the rough gold nuggets and gold attached to various types of rock particles found in the pediment gravels of Grapevine Mesa for 8 miles along a N-S line dividing the exposed down-dropped western range bedrock and the eastern gravels, and from 1 to 3 miles to the east in Grapevine Mesa's gravels. These gold targets buried under the pediment gravels have never been drilled:

8 mile long buried N-S fault and breccia zones.
Paralleling large eluvial gold deposit to the east from erosion of the foregoing.
9 suggested buried episyenitic gold pipes in and to the east of the eluvial deposit.

Eluvial Gold Deposit: The pediment gravels next to the N-S 8-mile long buried faults and and breccia structures, and the suspected buried episyenitic gold pipes contain extremely rough (unrounded by wear) gold nuggets. However, it is estimated that from 50% to 70% of the gold values in the pediment gravels are gold particles attached to, or contained within ankerite, hematite, limonite, chalcopyrite, and quartz in the gravels. It is obvious that, when viewing under a microscope, these eluvial particles with gold attached (as well as uneroded crystals of various minerals) have travelled only a very short distance from their bedrock source. Several different companies over the years have drilled many holes

in this eluvial bench and then processed the cuttings through convential wet gravity separators to recover the free gold. To our knowledge, head assays of the drill cuttings before gravity separation were never made to compare with the concentrate assays. However, in most of the holes drilled by two different companies during the past 5 years, the gold and black-sand concentrates assayed considerably less in gold than the assays of their heads! Also, subsequent assays of the tailings left from the gravity separators showed that most of the gold was lost to the tailings because the gold was attached to sand and gravel particles! As described on pages 13, 14, and 15 of the brochure, limited drilling and surface sampling of the eluvial bench deposit suggests that the eluvial gold and other minerals may be economically mined as the pediment gravels are removed to expose the buried gold and copper bedrock deposits for their eventual mining.

Drilling Program: During 1992, a Canadian company drilled 11 reverse-circulation holes at random ¼ to ½ mile apart before conducting an aerial geophysical survey. One of these holes was LB-10 previously described. In 1993, after an aerial survey, they drilled 7 additional holes in the southern exposed bedrock of the western range about 1½ miles south of the Copper Blow-Out. Since they, apparently, were not interested in copper, no more drilling was done in the area of LB-10. I have on file the logs and assays of all 18 holes and over 2,600 sacks of drill cuttings of 5 foot sections are in storage in Arizona.

Recent Geophysics: An extensive aerial geophysical survey by Dighem covering all of Lost Basin (western range and Grapevine Mesa) was conducted recently which included magnetics, resistivity, radiometrics (potassium, thorium, uranium, and total), VLM, and EM profiles. I have on file the compressed digital data on 12 disks comprising the total airborne survey data.

Seismic Survey: Such a survey has never been conducted over the pediment gravels of Grapevine Mesa to determine the topography of the buried bedrock surface. I believe that such a survey would be very useful for both future gold and copper exploration of the buried bedrock.

Meeting in Oceanside, CA: Before visiting Lost Basin, I am sure it would be of benefit to you to meet with me for 3 to 4 hours in my office. I am only about a 40 minute drive from the San Diego airport and can give you directions over the phone. I have hundreds of cataloged gold, copper, and other mineralized rock samples along with many country-rock samples, eluvial gold sands (view under microscope), large stereo aerial photos, a 2 foot high stack of geological, geophysical, and geochemical reports (see "Applicable References" in brochure, pages 22-24), and many large rough gold nuggets.

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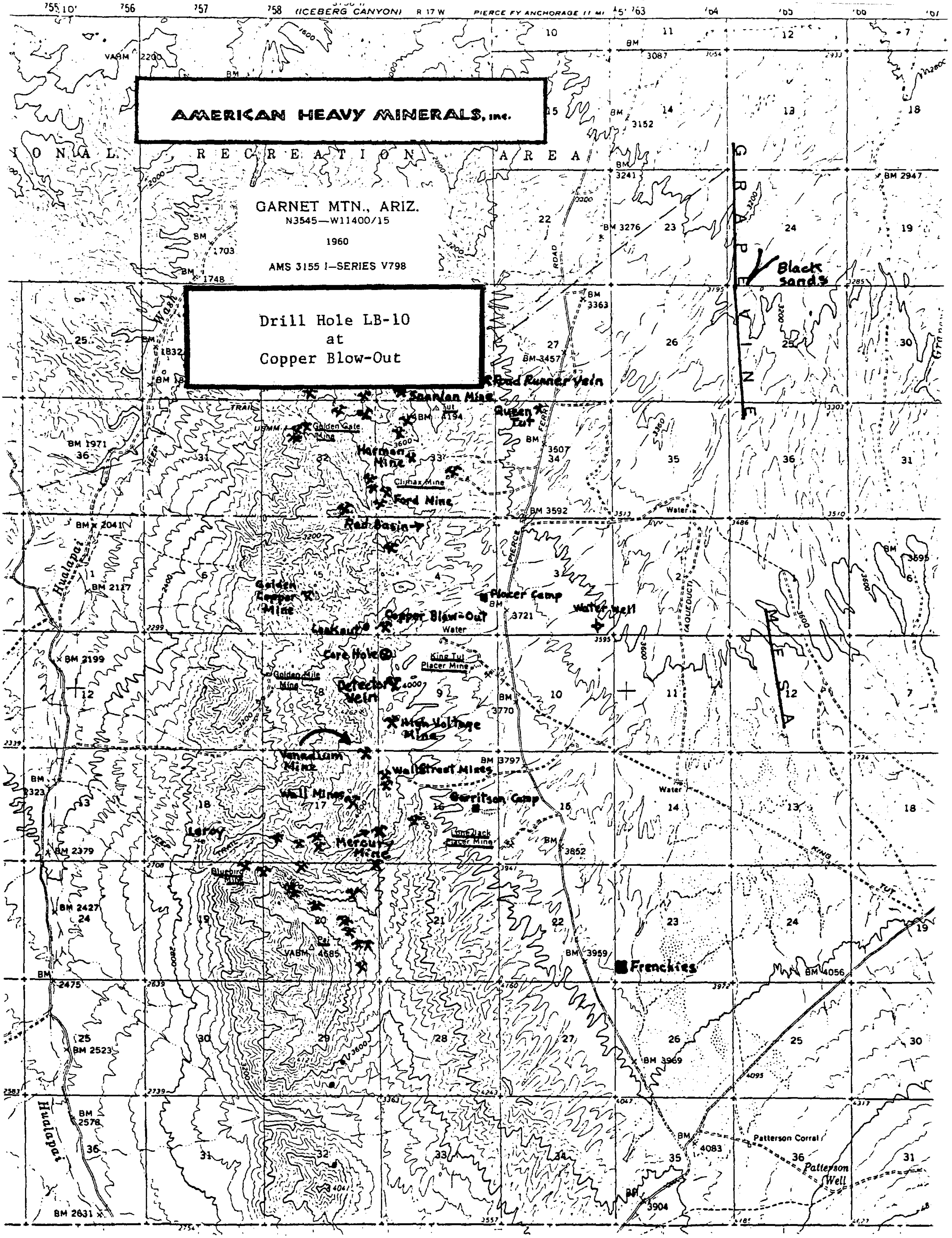

AMERICAN HEAVY MINERALS, inc.
GARNET MTN., ARIZ.
N3545—W11400/15
1960
AMS 3155 I—SERIES V798
Drill Hole LB-10
at
Copper Blow-Out
(ICEBERG CANYON)
R 17 W
RECREATION AREA
Road Runner Vein
Spartan Mine
Queen Tut
Golden Gate Mine
Harmon Mine
Climax Mine
Ford Mine
Red Basin
Golden Copper Mine
Placer Camp
Water Well
Copper Blow-Out
Lookout
Core Hole
King Tut Placer Mine
Golden Mile Mine
Detector Vein
High Voltage Mine
Vanadium Mine
Wall Street Mines
Wall Mines
Gerritsen Camp
Lone Jack Placer Mine
Leroy
Mercury Mine
Bluebird Mine
Frenchies
Black sands
GRAPEVINE
MESA
Hualapai
PIERCE FERRY ROAD
KING TUT
Patterson Corral
Patterson Well
Water

HOLE NO.

LB-10 Vertical, 1000' total depth

DEPTH	INTERVAL	Au ppb Cu ppm	DESCRIPTION
0-130'	130'		Dark Precambrian schist with locally strong red-brown limonite, generally weak to moderate orange-brown limonite. Locally moderate quartz and CuOx to 50'
130-235'	95'		Mostly light colored intrusive with minor Precambrian schist fragments. Weak orange-brown limonite after sulfides.
235-510'	275'		Dark Precambrian with weak to moderate limonite. 500-510' strong limonite.
510-515'	5'		Pale green quartz rich zone.
515-600'	85'		Dark gray Precambrian with strong orange-brown limonite.
600-660'	60'		Precambrian continues but local trace pyrite observed, no limonite.
660-785'	125'		Precambrian with moderate to locally strong limonite.
785-895'	110'		Precambrian with weak limonite.
895-910'	15'		Precambrian with strong limonite.
910-1000'	90'		Precambrian with weak limonite except the interval 965-990' which contains moderate limonite.

SCALE: 1" = 20'
LOGGED BY: DLG 9/12/92

PROJECT: Lost Basin HOLE NO. LB-10 PAGE 1 OF 5

ROCK TYPE	ALTERATION Bio	ALTERATION Rock	ALTERATION REMARKS	GANGUE Veins	GANGUE REMARKS	METALLIZATION G	H	J	MnO	Py	METALLIZATION REMARKS	DEPTH	% REC	Graphic Col.	DETAIL	ASSAYS Au ppb	Ag	Cu
DARK pre-cambrian schist											Strong red-brown lim. 5	0			Weak Cu oxide on fractures.	816		
											Weak or. brown lim. 20	10				14		
												20				6		
											Moderate orange br. lim. 35	30				6		
					35											7		
				///	Moderate Qtz. 40							40				<		
																<		
												50			50	<		
																<		
												60				<		
					65											106		
				///	Moderate Qtz 70							70				<		
																<		
												80				<		
																<		
												90			6	<		
																<		
											Strong red-brown Limonite 95	100				9		
																6		
												110			31	27		
																35		
					115											16		
				///	Moderate Qtz. 120							120				5		
											Weak or. br. lim on fractures and other sulfides	130				22		
130'																15		
Mostly Lt. Colored intrusive with mica precambrian schist fragments.	+											140				12		
	+															5		
	+											150				12		
	"															10		
	+											160				<		
	+															6		
	"											170				<		
	+															<		
	+											180				<		
	+														5	<		
	+											190				<		
	+															4		
												200				8		

SCALE: 1" = 20' PROJECT: Lost Basin HOLE NO. LB-10 PAGE 2 OF 5

LOGGED BY: DLG 9/12/92

ROCK TYPE	ALTERATION BIO	ALTERATION Rock	ALTERATION REMARKS	GANGUE Veins	GANGUE REMARKS	METALLIZATION G	H	J	MnO	Py	DEPTH	% REC.	Graphic Col.	DETAIL	ASSAYS Au, ppb	Ag
+											200				6	
+															<	
											210				7	
+															<	
											220				33	
+														33.5	34	
											230				<	
+															<	
235											240				<	
Dark pre-Cambrian															<	
											250				11	
															9	
											260				<	
															<	
											270				<	
															25	5
											280				<	
															7	
											290				<	
300															<	
Light color. May be rock change											300				<	
											310				<	
															<	
325											320				<	
Dark pre-Cambrian															<	
											330				<	
															<	
											340				<	
															<	
											350				<	
															<	
											360				<	
															<	
											370				<	
															<	
											380				<	
															<	
											390				<	
															<	
											400					

SCALE: 1" = 20'
LOGGED BY: DLG

PROJECT: Lost Basin HOLE NO. LB-10 PAGE 3 OF 5

ROCK TYPE	ALTERATION BIO	ALTERATION Rock	ALTERATION REMARKS	GANGUE Veins	GANGUE REMARKS	METALLIZATION G	H	J	MnO	Py	DEPTH	% REC	Graphic Col.	DETAIL	ASSAYS Au ppb	Ag
Dark Gray Precambrian - continues											400				<	
															<	
											410				<	
															<	
											420				<	
															10	
											430				<	
															<	
											440				6	
															<	
											450				19	
														28	36	
											460				8	
															<	
											470			<	<	
															6	
											480				<	
															5	
											490				<	
															<	
											500				22	
															<	
											510				35	
510														31	27	
Pale Green Aterite 515											520				22	
															40	
Dark Gray Precambrian											530				<	
															19	
											540				20	
															15	
											550				12	
															225	
											560			132	38	
														22	15	
											570				21	
															10	
											580				13	
															<	
											590				<	
															8	
											600				10	

500' Intervals at strong orange brown limonite to 600'

SCALE: 1" = 20'
LOGGED BY: DLG 9/13/92

PROJECT: LOST BASIN HOLE NO. LB-10 PAGE 4 OF 5

ROCK TYPE	ALTERATION BIO	ALTERATION Rock	ALTERATION REMARKS	GANGUE Veins	GANGUE REMARKS	METALLIZATION G	H	J	MnO	Py		DEPTH	% REC.	Graphic Col.	DETAIL	ASSAYS Au. ppb	Ag.
											Local py	600				34	
																12	
												610				<	
																9	
620 Pale green color.												620				<	
																<	
												630				<	
																<	
645												640				<	
																<	
												650				6	
																9	
											660	660			<	<	
											Moderate orange brown limonite					7	
												670				10	
																8	
680 Pale green color.												680				<	
																216	
												690			109	154	
695																34	
												700				32	
																15	
											705 mod. to strong orange br. limonite	710				<	
																<	
												720				10	
																<	
												730				<	
																<	
												740				<	
																<	
												750				21	
															<	<	
												760				8	
																38	
												770				<	
																21	
												780				<	
											785' weak to absent or br/lim on fract.					21	
												790			23	26	
																22	
												800				<	

SCALE: 1" = 20'
LOGGED BY: DLG - 9/13/92

PROJECT: LOST BASIN HOLE NO. LB-10 PAGE 5 OF 5

ROCK TYPE	ALTERATION BIO	ALTERATION Rock	ALTERATION REMARKS	GANGUE Veins	GANGUE REMARKS	METALLIZATION G	H	J	MnO	Py		DEPTH	% REC.	Graphic Col.	DETAIL	ASSAYS Au	Ag
												800				10	
																<	
												810				<	
																6	
												820				<	
																20	
												830				<	
835 local greenish silo color																<	
												840				<	
																<	
												850				<	
															28	<	
												860				16	
																18	
												870				<	
875 local pale greenish color 885																<	
												880				22	
																<	
												890				<	
											895					<	
											Strong or. br. Lim.	900				12	
																248	
											910	910				16	
																<	
												920				<	
																<	
930 Zone bleached.												935				8	
																<	
												940				<	
															<	<	
												950				<	
																<	
												960				<	
																<	
											965						
											Moderate or br lim	970			30	31	
975 Precambrian looks bleached. Attend??																28	
												980				<	
																23	
990											990	990				17	
																5	
												1000				<	

SAMPLE RECORD

SAMPLER: PROJECT DRILL HOLE NO. LB-10 PAGE 1 OF 4

DATE DRILLED	BIT SIZE	RECOVERY Ft.	RECOVERY Lbs.	RECOVERY %	SAMPLE NUMBER	DRILL RUN From	DRILL RUN To	INTERVAL	ASSAYS ppb Au	ASSAYS Ag	ASSAYS	ASSAYS Cu %	REMARKS
					59343	0	5		816			0.81	✓
					59344	5	10		14			0.86	
					59345	10	15		6			1.33	
					59346	15	20		6			0.22	
					59347	20	25		7			0.19	
					59348	25	30		<			0.10	
					59349	30	35		<			1.74	
					59350	35	40		<			0.50	
					59351	40	45		<			0.51	—
					59352	45	50		<			0.16	
					59353	50	55		<			0.07	
					59354	55	60		<			0.01	
					59355	60	65		106			0.04	
					59356	65	70		<			0.03	
					59357	70	75		<			0.06	
					59358	75	80		<			0.003	
					59359	80	85		<			0.002	
					59360	85	90		<			0.01	
				*	59361	85	90		6			—	Dup Smpl
					59362	90	95		<			0.02	
					59363	95	100		9			0.05	
					59364	100	105		6			0.05	
					59365	105	110		27			0.13	
					59366	110	115		35			0.10	
					59367	115	120		16			0.10	✓
					59368	120	125		5			0.20	
					59369	125	130		22			0.20	
					59370	130	135		15			0.07	
					59371	135	140		12			0.04	
					59372	140	145		5			0.02	
					59373	145	150		12			0.07	
					59374	150	155		10			0.05	
					59375	155	160		<			0.02	
					59376	160	165		6			0.03	
					59377	165	170		<			0.04	
					59378	170	175		<			0.02	
					59379	175	180		<			0.003	
					59380	180	185		<				
				*	59381	180	185		5				Dup Smpl
					59382	185	190		<				
					59383	190	195		<				
					59384	195	200		8				
					59385	200	205		6				
					59386	205	210		<				
					59387	210	215		7				✓
					59388	215	220		<				
					59389	220	225		33				
					59390	225	230		34				
					59391	230	235		<				
					59392	235	240		<				
					59393	240	245		<				
					59394	245	250		<				
					59395	250	255		11				
					59396	255	260		9				
					59397	260	265		<				
					59398	265	270		<				
					59399	270	275		<				
					59400	275	280		25				
				*	59401	275	280		5				Dup Smpl
					59402	280	285		<				

SAMPLE RECORD

SAMPLER: PROJECT DRILL HOLE NO. LB-10 PAGE 2 OF 4

DATE DRILLED	BIT SIZE	RECOVERY Ft.	RECOVERY Lbs.	RECOVERY %	SAMPLE NUMBER	DRILL RUN From	DRILL RUN To	INTERVAL	ASSAYS ppb Au	ASSAYS Ag			REMARKS
					59403	285	290		7				
					59404	290	295		<				
					59405	295	300		<				
					59406	300	305		<				
					59407	305	310		<				
					59408	310	315		<				
					59409	315	320		<				
					59410	320	325		<				
					59411	325	330		<				
					59412	330	335		<				
					59413	335	340		<				
					59414	340	345		<				
					59415	345	350		<				
					59416	350	355		<				
					59417	355	360		<				
					59418	360	365		<				
					59419	365	370		<				
					59420	370	375		<				
				*	59421	370	375		<				Dup Smpl
					59422	375	380		<				
					59423	380	385		<				
					59424	385	390		<				
					59425	390	395		<				
					59426	395	400		<				
					59427	400	405		<				
					59428	405	410		<				
					59429	410	415		<				
					59430	415	420		<				
					59431	420	425		<				
					59432	425	430		10				
					59433	430	435		<				
					59434	435	440		<				
					59435	440	445		6				
					59436	445	450		<				
					59437	450	455		19				
					59438	455	460		36				
					59439	460	465		8				
					59440	465	470		<				
				*	59441	465	470		<				Dup Smpl
					59442	470	475		6				
					59443	475	480		<				
					59444	480	485		5				
					59445	485	490		<				
					59446	490	495		<				
					59447	495	500		22				
					59448	500	505		<				✓
					59449	505	510		35				
					59450	510	515		27				
					59451	515	520		22				
					59452	520	525		40				
					59453	525	530		<				
					59454	530	535		19				
					59455	535	540		20				
					59456	540	545		15				
					59457	545	550		12				
					59458	550	555		775				
					59459	555	560		38				
					59460	560	565		15				
				*	59461	560	565		22				Dup Smpl
					59462	565	570		21				

SAMPLE RECORD

SAMPLER:

PROJECT

DRILL HOLE NO. LB-10 PAGE 3 OF 4

DATE DRILLED	BIT SIZE	RECOVERY Ft.	RECOVERY Lbs.	RECOVERY %	SAMPLE NUMBER	DRILL RUN From	DRILL RUN To	INTERVAL	ASSAYS ppb Au	ASSAYS Ag			REMARKS
					59463	570	575		10				
					59464	575	580		13				
					59465	580	585		<				
					59466	585	590		<				
					59467	590	595		8				
					59468	595	600		10				
					59469	600	605		34				
					59470	605	610		12				
					59471	610	615		<				
					59472	615	620		9				
					59473	620	625		<				
					59474	625	630		<				
					59475	630	635		<				
					59476	635	640		<				
					59477	640	645		<				
					59478	645	650		6				
					59479	650	655		9				
					59480	655	660		<				
				*	59481	655	660		<				Dup Smpl
					59482	660	665		7				
					59483	665	670		10				
					59484	670	675		8				
					59485	675	680		<				
					59486	680	685		216				✓
					59487	685	690		154				
					59488	690	695		34				
					59489	695	700		32				
					59490	700	705		15				
					59491	705	710		<				
					59492	710	715		<				
					59493	715	720		10				
					59494	720	725		<				
					59495	725	730		<				
					59496	730	735		<				
					59497	735	740		<				
					59498	740	745		<				
					59499	745	750		21				
					59500	750	755		<				
				*	59501	750	755		<				Dup Smpl
					59502	755	760		8				
					59503	760	765		38				
					59504	765	770		<				
					59505	770	775		21				
					59506	775	780		<				
					59507	780	785		21				
					59508	785	790		26				
					59509	790	795		22				
					59510	795	800		<				
					59511	800	805		<				
					59512	805	810		<				
					59513	810	815		6				
					59514	815	820		<				
					59515	820	825		20				
					59516	825	830		<				
					59517	830	835		<				
					59518	835	840		<				
					59519	840	845		<				
					59520	845	850		<				
				*	59521	850	855		<				Dup Smpl
					59522	850	855		28				

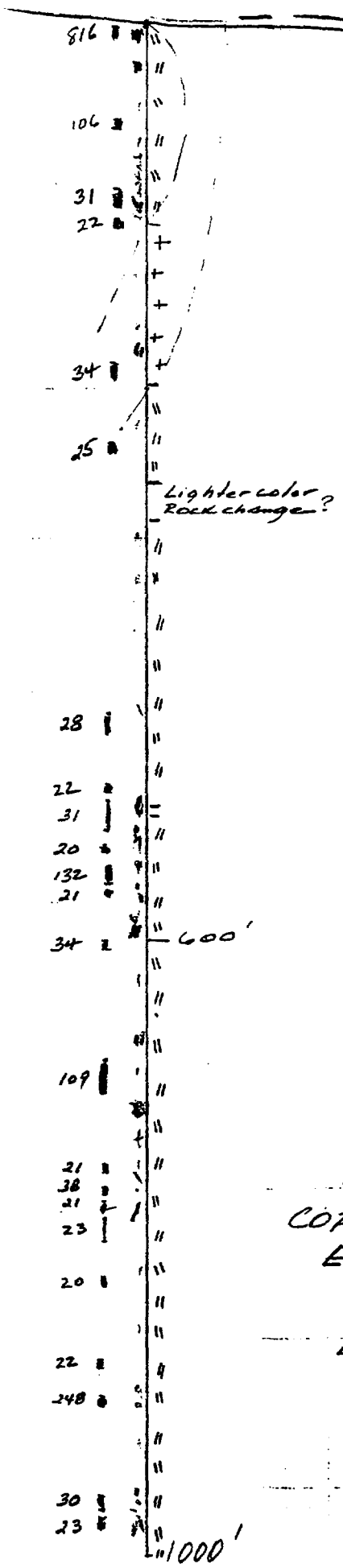
SAMPLE RECORD

SAMPLER:

PROJECT

DRILL HOLE NO. LB-10 PAGE 4 OF 4

DATE DRILLED	BIT SIZE	RECOVERY Ft.	RECOVERY Lbs.	RECOVERY %	SAMPLE NUMBER	DRILL RUN From	DRILL RUN To	INTERVAL	ASSAYS ppb Au	ASSAYS Ag			REMARKS
					59523	855	860		16				
					59524	860	865		18				
					59525	865	870		<				
					59526	870	875		<				
					59527	875	880		22				
					59528	880	885		<				
					59529	885	890		<				
					59530	890	895		<				
					59531	895	900		12				✓
					59532	900	905		248				✓
					59533	905	910		16				
					59534	910	915		<				
					59535	915	920		<				
					59536	920	925		<				
					59537	925	930		8				
					59538	930	935		<				
					59539	935	940		<				
					59540	940	945		<				
				*	59541	940	945		<				Dup. Smpl
					59542	945	950		<				
					59543	950	955		<				
					59544	955	960		<				
					59545	960	965		<				
					59546	965	970		31				
					59547	970	975		28				
					59548	975	980		<				
					59549	980	985		23				
					59550	985	990		17				
					59551	990	995		5				
					59552	995	1000		<				



LB-10
COPPER BLOW OUT AREA
EAST-WEST SECTION
LOOKING NORTH

LOST BASIN Project
1" = 100'

iPL
INTERNATIONAL PLASMA LABORATORY LTD.

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iPL Report: 9200783 T Granges Inc. In: Sep 17, 1992 Page 3 of 12 Section 1 of 1
Project: Lost Basin Out: Sep 23, 1992 460 RC Cutting Certified BC Assayer David Chiu

Sample Name		Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
59318	C	5	<	12	3	153	<	<	<	3	<	<	<	9	12	61	<	196	58	533	3	33	<	6	0.03	1.06	1.13	2.88	0.81	0.16	0.10	0.02
59319	C	<	0.1	19	5	78	6	5	<	6	<	<	<	39	31	67	116	225	24	543	4	28	<	6	0.03	1.12	1.03	2.78	0.92	0.23	0.07	0.03
59320	C	<	<	13	<	51	10	<	<	4	<	<	<	2	6	67	<	159	4	251	12	49	<	1	<	0.41	1.17	1.07	0.15	0.17	0.07	0.01
59321	C	<	0.1	11	2	120	<	5	<	6	<	<	<	3	7	97	<	214	6	364	12	59	<	2	<	0.53	1.49	1.39	0.21	0.24	0.07	0.01
59322	C	<	<	8	<	39	<	5	<	3	<	<	<	5	10	51	<	266	17	374	5	35	<	5	0.02	0.65	0.93	2.42	0.32	0.12	0.10	0.01
59323	C	<	<	9	<	49	<	8	<	6	<	<	<	7	13	44	6	222	21	416	4	37	<	6	0.02	0.69	1.14	2.26	0.40	0.11	0.09	0.02
59324	C	<	<	7	<	45	5	5	<	3	<	<	<	6	11	57	<	240	19	437	5	49	<	6	0.02	0.75	1.35	2.38	0.40	0.14	0.10	0.01
59325	C	<	<	10	<	187	<	<	<	4	<	<	<	6	9	64	<	227	16	455	5	39	<	5	0.02	0.72	1.14	2.66	0.36	0.15	0.10	0.02
59326	C	<	0.2	11	<	36	<	<	<	2	<	<	<	7	11	49	<	190	25	684	5	49	1	9	0.02	0.78	2.02	2.04	0.60	0.17	0.08	0.01
59327	C	<	<	16	<	32	<	<	<	5	<	<	<	6	10	49	<	175	17	379	5	28	<	6	0.03	0.64	0.92	2.03	0.38	0.12	0.08	0.01
59328	C	<	<	11	2	43	<	<	<	3	<	<	<	6	9	64	<	192	19	426	7	37	<	6	0.03	0.76	1.07	2.30	0.39	0.14	0.10	0.01
59329	C	<	<	17	9	703	<	7	<	4	<	<	0.1	6	10	56	<	342	15	430	5	35	<	4	0.02	0.75	0.98	2.53	0.38	0.11	0.09	0.01
59330	C	<	<	17	18	818	27	<	<	3	<	<	<	293	14	68	515	343	22	547	4	41	<	6	0.03	0.90	1.33	2.66	0.64	0.13	0.09	0.02
59331	C	8	<	14	<	122	9	7	<	6	<	<	<	13	19	104	29	181	44	854	7	81	<	10	0.01	1.73	2.05	3.30	1.11	0.15	0.07	0.02
59332	C	<	0.1	6	<	84	<	<	<	3	<	<	<	12	19	87	7	218	50	844	5	59	1	12	0.03	1.51	2.06	3.19	1.46	0.21	0.14	0.02
59333	C	<	0.2	6	2	98	<	7	<	2	<	<	<	11	20	72	<	310	47	576	2	33	1	13	0.04	1.24	1.44	2.73	1.29	0.20	0.16	0.02
59334	C	<	<	7	3	75	<	7	<	3	<	<	<	13	17	56	24	246	36	699	3	35	1	11	0.03	1.09	1.57	2.66	1.09	0.15	0.11	0.02
59335	C	<	<	5	<	66	<	8	<	5	<	<	<	11	20	32	<	242	40	656	2	41	1	10	0.03	1.16	1.73	2.67	1.18	0.12	0.12	0.02
59336	C	<	<	5	<	36	<	5	<	2	<	<	<	5	8	30	<	212	16	327	4	24	<	5	0.02	0.60	0.72	2.41	0.34	0.12	0.09	0.01
59337	C	<	<	5	<	36	<	<	<	2	<	<	<	5	5	38	<	187	16	290	4	28	<	4	0.02	0.68	0.59	2.36	0.33	0.11	0.07	0.01
59338	C	<	<	12	<	32	<	<	<	3	<	<	<	6	7	38	9	154	14	267	4	26	<	3	0.02	0.68	0.66	1.85	0.39	0.12	0.07	0.02
59339	C	<	<	34	<	52	<	8	<	6	<	<	<	6	20	68	<	240	21	410	5	41	<	4	0.03	0.98	1.03	2.24	0.61	0.16	0.10	0.05
59340	C	6	0.2	92	5	55	<	9	<	3	<	<	<	9	23	86	<	276	25	605	6	59	1	6	0.04	1.15	1.26	2.97	0.69	0.14	0.09	0.04
59341	C	6	<	81	5	63	<	9	<	2	<	<	<	10	30	91	<	310	31	635	7	64	1	6	0.06	1.42	1.34	3.23	0.94	0.18	0.11	0.05
59342	C	19	<	33	44	125	22	<	<	6	<	<	<	0.1%	22	169	423	397	27	633	7	54	<	5	0.01	1.13	1.41	3.21	0.55	0.17	0.10	0.02
59343	C	816	3.2	8119	55	1799	22	6	<	9	<	<	3.5	35	38	1126	25	124	46	715	9	59	1	6	0.03	1.79	0.55	5.37	0.73	0.15	0.04	0.04
59344	C	14	0.1	8047	15	2017	8	7	<	5	<	<	9.2	45	55	1023	7	140	76	1076	6	44	1	9	0.07	1.96	1.09	3.62	1.51	0.14	0.06	0.04
59345	C	6	1.5	13287	7	1370	<	6	<	3	<	<	3.1	52	59	846	<	112	105	1284	5	47	2	11	0.12	2.35	1.06	4.38	1.94	0.11	0.07	0.06
59346	C	6	1.6	2213	3	442	<	<	<	2	<	<	0.3	29	43	138	51	116	96	451	2	29	3	9	0.12	1.97	1.11	4.02	1.61	0.09	0.08	0.04
59347	C	7	0.8	1898	4	412	5	<	<	4	<	<	<	14	24	513	<	104	71	302	5	49	1	10	0.06	2.24	0.42	5.06	1.42	0.21	0.04	0.03
59348	C	<	<	999	<	123	<	5	<	6	<	<	<	4	9	507	<	139	13	145	6	50	<	4	0.01	1.76	0.09	3.26	0.93	0.24	0.03	0.01
59349	C	<	0.1	17410	8	1026	<	5	<	4	<	<	2.2	65	51	1756	29	153	17	1823	11	45	<	6	0.01	1.38	0.15	2.92	0.92	0.29	0.05	0.04
59350	C	<	<	5011	<	1514	<	7	<	4	<	<	7.2	42	64	1569	<	149	107	1339	7	67	1	12	0.08	2.41	1.81	4.86	1.85	0.25	0.06	0.05
59351	C	<	<	5130	<	637	<	7	<	3	<	<	1.4	44	68	114	<	152	135	1033	4	49	2	10	0.20	2.54	1.47	4.92	2.16	0.12	0.09	0.07
59352	C	<	0.1	1621	<	391	<	7	<	5	<	<	1.1	34	49	134	<	179	88	768	9	32	1	8	0.12	1.90	1.13	3.71	1.62	0.13	0.08	0.05
59353	C	<	0.1	661	5	567	<	7	<	3	<	<	3.0	51	51	517	20	169	86	1035	4	43	2	9	0.13	1.97	2.08	3.44	1.65	0.14	0.09	0.04
59354	C	<	0.1	113	3	93	<	5	<	3	<	<	<	23	54	172	<	189	79	585	3	36	2	8	0.12	1.98	1.87	3.14	1.87	0.13	0.09	0.04
59355	C	106	<	373	2	258	<	6	<	4	<	<	0.3	28	60	731	<	233	106	813	2	86	3	13	0.11	2.17	3.69	3.90	2.31	0.24	0.07	0.03
59356	C	<	0.1	277	<	172	<	6	<	4	<	<	0.3	28	78	1539	<	226	85	757	5	61	2	11	0.09	2.18	2.82	3.78	2.18	0.18	0.07	0.03
Min Limit		5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*		9999	99.9	20000	20000	20000	9999	9999	9999	9999	999	999	99.9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1.00	99.99	99.99	99.99	9.99	9.99	5.00	5.00
Method		FAAA	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

LB-9
LB-10
45' Avg. 0.69% Cu
185'

---=No Test ins=Insufficient Sample S=Soil R=Rock C=Core L=Silt P=Pulp U=Undefined m=Estimate/1000 %=Estimate % Max=No Estimate

INTERNATIONAL PLASMA LABORATORY LTD.

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iPL Report: 9200783 T Granges Inc. In: Sep 17, 1992 Page 4 of 12 Section 1 of 1
Project: Lost Basin Out: Sep 23, 1992 460 RC Cutting Certified BC Assayer David Chiu

LB-10

Sample Name	% surface	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
59357	C	<	<	625	<	186	<	<	<	2	<	<	0.4	17	17	1612	17	142	27	431	8	39	<	7	0.04	1.43	0.75	2.43	1.41	0.32	0.05	0.01
59358	C	<	<	31	<	48	<	5	<	3	<	<	<	6	6	187	<	144	16	360	6	13	<	6	0.04	1.49	0.43	2.53	1.46	0.42	0.05	0.03
59359	C	<	<	15	<	167	<	5	<	8	<	<	<	6	11	326	<	194	15	625	6	10	<	6	0.02	2.05	0.40	3.28	1.99	0.30	0.04	0.02
59360	C	<	0.1	129	22	158	<	6	<	4	<	<	0.3	12	16	1446	13	173	34	1021	7	32	<	8	0.02	2.03	0.77	3.63	1.97	0.29	0.03	0.01
~~59361~~ Dup.	C	~~6~~	~~<~~	~~104~~	15	153	<	5	3	3	<	<	0.2	10	17	1475	<	169	35	953	6	33	<	8	0.02	2.02	0.94	3.52	1.88	0.29	0.03	0.01
59362	C	<	0.3	214	303	568	35	8	<	4	<	<	1.0	18	33	1216	<	161	74	1154	6	36	1	9	0.06	2.18	1.08	4.46	1.95	0.23	0.04	0.02
59363	C	9	0.3	490	259	936	66	7	<	9	<	<	0.9	18	12	1885	<	162	8	561	6	36	<	6	0.01	2.07	0.12	5.28	1.73	0.27	0.02	<
64	C	6	0.3	501	710	622	100	7	<	4	<	<	0.5	16	11	619	19	191	9	973	10	13	<	6	0.01	2.17	0.07	3.56	1.97	0.33	0.03	<
65	C	27	0.5	1297	688	495	284	8	<	6	<	<	2.1	28	20	347	<	188	6	508	8	16	<	4	<	1.50	0.03	3.13	1.12	0.30	0.02	0.01
59366	C	35	0.3	988	215	409	114	<	<	9	<	<	2.9	30	12	296	<	125	7	711	4	17	<	2	<	0.39	0.05	8.20	0.08	0.24	0.02	0.01
59367	C	16	0.3	1035	22	338	12	<	<	7	<	<	3.7	18	13	754	<	164	3	740	8	27	<	2	<	0.54	0.51	2.98	0.09	0.20	0.06	<
59368	C	5	<	1990	17	903	6	6	4	6	<	<	3.1	79	24	182	6	144	4	1847	6	19	<	6	0.01	2.74	0.35	3.96	2.57	0.34	0.02	0.01
59369	C	22	<	2005	17	501	<	5	<	4	<	<	1.5	36	16	187	<	145	13	1298	7	11	<	5	0.01	2.08	0.12	3.65	1.90	0.31	0.02	0.02
59370	C	15	0.2	705	89	809	8	<	<	4	<	<	3.3	8	10	820	<	127	2	940	8	26	<	3	<	1.21	1.66	2.00	0.95	0.32	0.02	<
59371	C	12	0.7	426	572	3120	90	10	<	11	<	<	1.9	8	9	228	<	159	4	941	8	12	<	4	<	1.49	0.20	2.95	1.21	0.30	0.03	0.01
59372	C	5	0.3	203	379	797	54	6	<	4	<	<	3.1	8	6	154	<	127	4	752	9	10	<	6	0.01	1.90	0.76	3.00	1.79	0.44	0.03	<
59373	C	12	0.9	668	3111	3636	603	14	<	49	<	<	1.1	31	19	1373	<	164	9	724	6	25	<	6	0.01	1.60	0.06	2.91	1.40	0.30	0.03	0.01
59374	C	10	0.6	450	1652	3324	192	15	<	16	<	<	6.6	30	58	986	<	218	63	1689	4	47	<	12	0.03	2.79	1.39	4.68	3.07	0.33	0.03	0.03
59375	C	<	0.5	193	452	575	84	8	<	7	<	<	2.3	9	19	357	<	172	17	1113	8	13	<	6	<	1.93	0.61	3.06	1.95	0.31	0.03	0.01
59376	C	6	0.9	305	911	5050	81	15	<	7	<	<	0.5	12	30	151	<	180	38	1138	6	10	<	9	0.01	2.28	0.11	3.89	2.28	0.24	0.02	0.01
59377	C	<	0.3	383	638	1208	40	12	<	7	<	<	6.1	25	44	2258	<	176	39	1481	3	55	1	10	0.02	2.31	2.28	3.68	2.46	0.18	0.03	0.03
59378	C	<	0.2	220	518	717	19	7	<	4	<	<	3.4	16	39	1130	<	184	44	1078	5	35	<	9	0.02	2.21	1.28	3.46	2.12	0.31	0.03	0.02
59379	C	<	0.1	76	45	242	<	6	<	5	<	<	0.6	9	34	141	<	191	28	752	7	17	<	7	0.02	1.90	1.03	2.84	1.58	0.27	0.04	0.01
~~59380~~ Dup	C	~~<~~	~~0.4~~	~~215~~	199	343	31	5	<	3	<	<	1.0	13	13	438	10	245	11	719	8	19	<	5	0.01	1.46	0.62	1.83	0.87	0.42	0.06	0.02
59381	C	5	0.3	366	254	414	43	7	<	4	<	<	1.0	16	16	712	<	191	14	791	8	26	<	5	0.01	1.52	0.70	2.28	1.07	0.34	0.06	0.02
82	C	<	0.1	71	36	178	14	5	<	3	<	<	0.7	5	11	275	<	223	9	325	9	18	<	4	0.01	1.27	0.62	1.69	0.72	0.41	0.08	<
59383	C	<	<	50	20	131	<	7	<	7	<	<	0.4	4	15	302	<	244	11	326	7	18	<	5	0.01	1.16	0.66	1.70	0.66	0.35	0.07	<
59384	C	8	0.2	61	13	135	<	<	<	3	<	<	0.7	7	10	764	<	131	29	361	16	27	<	4	0.01	0.86	1.00	1.77	0.52	0.27	0.05	0.01
59385	C	6	0.1	45	12	140	<	<	<	7	<	<	0.3	4	8	448	<	128	6	400	11	18	<	5	<	1.04	0.81	1.98	0.68	0.30	0.05	<
59386	C	<	0.1	45	5	144	<	11	<	6	<	<	0.1	22	148	551	<	432	91	1196	5	71	<	13	0.03	2.12	3.18	3.93	2.47	0.40	0.04	0.02
59387	C	7	<	25	4	69	<	5	<	5	<	<	<	6	57	210	<	254	9	812	9	29	<	5	<	1.00	2.09	2.00	0.75	0.35	0.04	<
59388	C	<	<	27	5	215	<	7	<	3	<	<	<	10	30	488	<	165	30	549	7	16	<	6	<	1.98	1.23	2.87	1.88	0.33	0.03	0.01
59389	C	33	<	12	<	235	<	7	<	7	<	<	0.3	4	12	854	<	200	6	375	8	22	<	4	<	1.01	1.14	1.85	0.67	0.30	0.06	<
59390	C	34	0.2	11	2	165	<	5	<	4	<	3	0.2	4	12	791	<	193	7	261	8	21	<	4	<	0.84	0.79	1.76	0.53	0.27	0.07	<
59391	C	<	<	28	<	343	<	8	<	4	<	<	0.4	19	66	845	<	236	57	730	5	52	<	12	0.03	2.30	2.05	3.62	2.38	0.27	0.04	0.02
59392	C	<	<	17	<	104	<	7	<	6	<	<	<	9	23	322	<	195	27	650	5	19	<	9	0.03	1.66	0.82	3.14	1.32	0.30	0.06	0.01
59393	C	<	<	30	<	146	<	7	<	3	<	<	<	10	14	496	<	136	27	714	5	18	<	9	0.02	2.36	0.77	3.30	2.31	0.41	0.04	0.01
59394	C	<	<	57	<	211	<	<	<	3	<	<	<	17	25	112	<	177	70	692	4	15	<	10	0.05	2.53	0.75	3.95	2.67	0.37	0.03	0.02
59395	C	11	<	43	3	138	<	10	<	6	<	<	<	12	77	140	<	277	26	583	4	18	1	8	0.05	1.93	1.01	3.03	2.06	0.41	0.05	0.01
Min Limit		5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*		9999	99.9	20000	20000	20000	9999	9999	9999	9999	999	999	99.9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1.00	99.99	99.99	99.99	9.99	9.99	5.00	5.00
Method		FAAA	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

Avg. 0.212 % Cu 185'

---=No Test ins=Insufficient Sample S=Soil R=Rock C=Core I=Silt P=Pulp U=Undefined m=Estimate/1000 %=Estimate % Max=No Estimate

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iPL Report: 9200783 T Granges Inc. In: Sep 17, 1992 Page 5 of 12 Section 1 of 1
Project: Lost Basin Out: Sep 23, 1992 460 RC Cutting Certified BC Assayer David Chiu

Sample Name		Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
59396	C	9	0.1	27	2	102	<	7	<	3	<	<	<	13	49	121	<	184	31	415	4	23	<	6	0.05	1.66	1.07	2.58	1.61	0.26	0.05	0.01
59397	C	<	0.1	28	2	91	<	6	<	2	<	<	<	17	41	61	<	164	55	523	4	23	1	7	0.07	2.23	1.41	3.19	2.59	0.23	0.04	0.02
59398	C	<	<	3	<	103	<	<	3	3	<	<	<	17	28	63	<	137	72	648	8	18	<	12	0.04	3.14	1.43	4.20	4.10	0.38	0.03	0.03
59399	C	<	0.1	20	<	90	<	8	<	4	<	<	<	24	76	64	<	160	100	618	4	28	<	11	0.04	3.54	1.58	4.70	4.90	0.24	0.03	0.03
59400	C	25	<	14	<	81	<	9	<	3	<	<	<	10	22	1538	<	156	28	477	7	31	<	6	0.01	1.98	1.25	2.73	2.27	0.25	0.03	0.01
59401	C	5	<	14	<	81	<	8	<	3	<	<	<	9	22	1467	<	175	28	453	6	29	<	6	0.01	1.96	1.17	2.66	2.19	0.27	0.02	0.01
59402	C	<	<	46	2	70	<	15	<	4	<	<	<	19	157	387	<	615	35	777	4	41	<	7	0.02	1.66	2.38	2.49	2.53	0.19	0.02	0.02
03	C	7	<	41	<	54	<	23	<	3	<	<	<	26	276	135	<	991	35	877	5	43	<	6	0.02	1.80	2.76	2.59	3.26	0.16	0.02	0.01
04	C	<	<	84	2	72	<	12	<	3	<	<	<	18	129	2316	<	460	31	694	5	65	<	9	0.02	2.05	1.91	2.98	2.52	0.24	0.04	0.01
59405	C	<	<	58	3	66	<	7	<	6	<	<	<	7	26	836	<	193	12	446	7	36	<	7	0.03	1.65	1.57	2.46	1.43	0.40	0.04	0.01
59406	C	<	0.1	72	2	68	<	5	<	2	<	<	<	8	20	655	<	182	21	516	6	27	<	7	0.03	1.58	0.72	2.76	1.18	0.33	0.05	0.01
59407	C	<	0.1	16	<	94	<	7	<	3	<	<	<	16	45	84	<	223	54	764	5	39	1	10	0.05	1.94	2.07	3.50	1.66	0.22	0.04	0.02
59408	C	<	<	21	2	42	<	6	<	6	<	<	0.1	8	22	802	<	176	12	673	7	34	<	6	<	1.03	1.97	1.90	0.62	0.25	0.04	0.01
59409	C	<	0.1	36	<	65	<	5	<	2	<	<	<	7	15	1833	<	158	7	462	6	35	<	5	0.01	1.40	0.97	2.50	1.08	0.30	0.05	0.01
59410	C	<	<	39	4	78	<	7	<	3	<	<	<	14	122	1715	<	310	20	695	6	68	<	6	0.01	1.66	2.02	2.63	1.80	0.27	0.05	0.01
59411	C	<	0.2	26	3	52	<	5	<	3	<	<	<	5	9	768	<	169	7	359	8	29	<	6	0.03	1.27	0.53	2.41	0.81	0.43	0.07	<
59412	C	<	<	18	<	54	<	11	<	5	<	<	<	10	51	885	<	323	22	555	6	48	<	8	0.02	1.60	1.34	2.78	1.62	0.32	0.05	0.01
59413	C	<	0.2	29	<	68	<	7	<	3	<	<	<	10	38	416	<	242	21	712	8	36	<	9	0.01	1.67	1.74	2.95	1.62	0.41	0.05	0.01
59414	C	<	<	52	<	59	<	6	3	3	<	<	<	18	37	121	<	156	82	863	24	44	1	12	0.03	2.00	2.86	3.68	1.86	0.20	0.08	0.03
59415	C	<	<	144	<	46	<	<	<	3	<	<	<	21	26	37	<	125	103	695	2	39	2	12	0.04	1.84	2.04	3.76	1.92	0.14	0.12	0.03
59416	C	<	<	48	<	46	<	5	<	4	<	<	<	16	24	490	<	130	76	853	14	53	1	11	0.03	1.65	2.25	3.16	1.46	0.18	0.11	0.03
59417	C	<	<	129	<	53	<	5	3	2	<	<	<	20	33	53	<	118	90	1093	3	36	1	12	0.05	1.99	2.57	3.70	2.07	0.17	0.12	0.05
59418	C	<	<	90	<	66	<	<	<	2	<	<	<	24	29	2329	<	107	124	1074	3	126	1	15	0.05	2.31	2.61	4.47	2.26	0.17	0.10	0.04
59419	C	<	<	71	<	65	<	7	<	4	<	<	<	23	31	463	<	116	111	956	2	50	1	13	0.05	2.24	2.16	4.23	2.36	0.14	0.11	0.04
59420	C	<	0.2	60	<	80	<	5	<	2	<	<	<	23	30	101	<	127	129	1006	9	42	1	13	0.06	2.47	1.98	4.48	2.72	0.17	0.08	0.03
1	C	<	0.2	63	<	84	<	<	<	3	<	<	<	24	31	105	<	137	133	1040	6	41	1	13	0.07	2.55	1.98	4.63	2.81	0.17	0.08	0.03
5y422	C	<	<	119	<	83	<	5	<	2	<	<	<	22	25	85	<	107	103	708	5	40	1	11	0.07	2.36	1.50	3.99	2.36	0.21	0.10	0.02
59423	C	<	<	146	<	102	<	7	<	4	<	<	<	24	33	80	<	185	95	692	25	34	1	10	0.10	2.64	1.31	4.35	2.61	0.28	0.09	0.02
59424	C	<	0.2	165	36	98	<	5	<	3	<	<	<	25	31	104	<	138	100	983	<	23	1	8	0.06	2.52	1.29	4.50	2.83	0.12	0.06	0.03
59425	C	<	0.1	155	15	98	<	5	<	4	<	<	<	22	17	1442	<	137	45	708	5	36	<	10	0.03	2.28	0.52	3.98	2.41	0.34	0.05	0.03
59426	C	<	0.1	124	<	106	<	<	4	3	<	<	<	27	35	689	<	99	119	1227	2	43	<	10	0.03	2.90	1.89	4.80	3.16	0.18	0.03	0.03
59427	C	<	<	117	<	140	<	7	4	2	<	<	<	32	42	405	<	113	182	1412	2	29	<	11	0.08	3.58	2.00	5.71	4.48	0.11	0.03	0.03
59428	C	<	0.3	82	<	93	<	<	3	3	<	<	<	26	35	191	<	125	140	1343	<	33	<	12	0.04	2.96	2.32	5.01	3.49	0.11	0.04	0.03
59429	C	<	<	58	<	115	<	6	3	4	<	<	<	33	44	2196	<	110	158	1490	2	97	<	14	0.05	3.51	2.55	5.80	3.97	0.12	0.04	0.03
59430	C	<	<	112	<	96	<	5	<	3	<	<	<	30	38	1483	<	99	148	1220	2	85	1	15	0.05	2.84	2.25	5.19	2.83	0.14	0.06	0.03
59431	C	<	<	67	<	90	<	5	<	4	<	<	<	26	46	1678	<	137	131	1065	2	107	2	13	0.10	2.38	2.79	4.46	2.32	0.15	0.07	0.04
59432	C	10	<	83	3	107	<	<	<	2	<	<	<	33	44	517	<	129	168	1311	3	85	1	20	0.02	3.23	3.82	5.65	3.49	0.09	0.04	0.03
59433	C	<	0.1	50	<	117	<	<	<	4	<	<	<	25	37	219	<	127	144	1079	3	32	<	17	0.02	3.54	1.65	5.47	4.80	0.20	0.04	0.02
59434	C	<	<	129	<	117	<	<	<	2	<	<	<	26	35	633	<	94	141	1396	3	69	1	16	0.03	2.69	2.50	4.98	3.03	0.12	0.05	0.03
Min Limit		5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*		9999	99.9	20000	20000	20000	9999	9999	9999	9999	999	999	99.9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1.00	99.99	99.99	99.99	9.99	9.99	5.00	5.00
Method		FAAA	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

---=No Test ins=Insufficient Sample S=Soil R=Rock C=Core I=Silt P=Pulp U=Undefined m=Estimate/1000 %=Estimate % Max No Estimate

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iPL Report: 9200783 T Granges Inc. In: Sep 17, 1992 Section 1 of 1
Project: Lost Basin Out: Sep 23, 1992 460 RC Cutting Certified BC Assayer David Chiu

Sample Name		Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
59435	C	6	<	99	<	159	<	6	<	4	<	<	<	26	37	1180	<	102	131	1121	2	118	1	15	0.04	2.52	2.51	4.61	2.86	0.14	0.06	0.03
59436	C	<	<	61	<	121	<	5	<	3	<	<	<	22	29	736	<	77	110	846	<	57	1	11	0.06	2.20	1.85	3.86	2.43	0.10	0.08	0.03
59437	C	19	0.1	143	2	86	<	<	<	3	<	<	<	21	29	1276	<	90	100	701	7	100	1	10	0.06	1.97	1.68	3.45	1.87	0.11	0.09	0.03
59438	C	36	0.2	82	3	44	<	<	<	5	<	<	<	12	10	1962	<	68	24	851	16	135	<	8	0.01	0.95	3.15	2.62	0.89	0.27	0.04	0.03
59439	C	8	<	92	<	65	<	<	<	4	<	<	<	11	11	1271	<	114	30	637	11	55	<	6	0.01	1.35	1.46	3.12	0.97	0.26	0.05	0.03
59440	C	<	<	26	5	59	<	<	<	3	<	<	<	7	8	264	<	95	20	603	10	46	<	4	0.01	1.31	1.95	2.36	1.00	0.31	0.04	0.02
59441	C	<	0.1	21	7	58	<	<	<	5	<	<	<	7	10	258	<	109	20	588	9	45	<	4	0.01	1.25	1.88	2.27	0.95	0.31	0.04	0.02
442	C	6	<	46	<	77	6	11	5	4	<	<	<	13	19	2065	<	157	31	808	13	107	<	6	0.02	1.78	1.85	3.29	1.33	0.37	0.07	0.06
443	C	<	<	31	3	45	<	5	<	3	<	<	0.2	6	11	2384	<	142	7	346	5	94	<	3	0.02	0.92	0.64	1.81	0.62	0.18	0.06	0.01
59444	C	5	<	11	2	67	<	<	<	3	<	<	<	6	8	431	<	114	9	377	3	22	<	4	0.03	1.08	0.59	2.51	0.80	0.25	0.05	0.01
59445	C	<	<	26	<	53	<	<	<	5	<	<	<	6	8	764	<	111	8	365	3	30	<	4	0.02	0.95	0.52	2.46	0.63	0.27	0.06	0.01
59446	C	<	<	15	<	63	<	<	<	3	<	<	<	5	8	501	<	112	6	484	7	33	<	4	0.01	1.21	0.89	2.38	0.97	0.23	0.05	0.01
59447	C	22	0.1	17	<	58	<	6	<	2	<	<	<	17	73	166	<	216	54	642	6	52	1	7	0.07	1.77	2.42	2.77	2.03	0.14	0.06	0.02
59448	C	<	<	11	<	40	<	<	<	4	<	<	0.1	4	8	172	<	135	3	725	6	52	<	3	<	0.67	2.12	1.95	0.56	0.31	0.04	0.01
59449	C	35	0.2	46	3	66	<	6	<	8	<	<	<	8	10	153	<	152	8	780	5	41	<	5	<	0.89	1.85	2.40	0.81	0.27	0.07	0.01
59450	C	27	0.1	20	2	30	<	5	<	4	<	4	0.1	4	7	554	<	85	3	549	4	98	<	3	<	0.45	1.83	1.42	0.37	0.27	0.05	0.01
59451	C	22	<	20	<	61	<	<	<	3	<	<	<	4	7	194	<	111	4	390	5	35	<	4	0.02	0.86	0.98	1.82	0.58	0.27	0.07	0.01
59452	C	40	0.3	45	13	316	<	8	<	9	<	<	0.2	6	19	447	<	271	14	398	11	45	<	5	0.01	1.08	1.44	1.98	0.78	0.32	0.07	0.01
59453	C	<	<	18	<	91	<	<	<	4	<	<	<	7	9	122	<	125	13	388	7	21	<	6	0.04	1.43	0.74	2.60	1.24	0.51	0.06	0.01
59454	C	19	<	149	<	309	<	<	<	3	<	<	<	27	15	431	<	79	157	1170	2	58	1	14	0.08	2.68	1.75	5.48	2.53	0.35	0.06	0.03
59455	C	20	<	88	<	110	<	<	<	5	<	<	<	25	19	1319	<	72	134	907	6	85	<	13	0.04	2.04	2.41	5.14	1.48	0.23	0.05	0.04
59456	C	15	<	73	<	115	<	5	<	7	<	<	<	19	21	209	<	118	99	785	13	59	1	13	0.07	2.08	1.91	4.86	1.63	0.56	0.05	0.03
59457	C	12	<	48	<	106	<	6	<	6	<	<	<	12	23	619	<	120	43	713	10	48	<	9	0.05	1.78	1.85	4.75	1.36	0.47	0.05	0.04
59458	C	225	<	11	<	48	<	5	<	3	<	<	<	5	7	2025	<	102	18	423	6	55	<	5	<	0.77	1.74	2.37	0.41	0.22	0.06	0.03
59459	C	38	<	10	<	53	<	5	<	3	<	<	<	4	7	154	<	95	12	412	5	28	<	4	0.01	0.96	1.23	2.35	0.48	0.24	0.05	0.03
460	C	15	0.2	19	<	74	<	7	<	6	<	<	<	6	9	230	<	120	11	601	8	34	<	5	0.01	0.95	1.59	2.50	0.70	0.32	0.05	0.01
59461	C	22	0.1	19	<	69	<	<	<	4	<	<	<	6	7	218	<	112	11	631	8	34	<	5	0.01	0.94	1.67	2.51	0.67	0.32	0.05	0.01
59462	C	21	<	18	<	32	<	<	<	4	<	<	0.1	3	5	134	<	130	4	322	18	25	<	2	<	0.54	0.99	1.31	0.31	0.22	0.06	0.01
59463	C	10	0.2	67	<	73	<	5	<	5	<	<	<	4	8	138	<	118	4	411	5	13	<	3	0.01	0.93	0.34	2.13	0.65	0.23	0.05	0.01
59464	C	13	<	26	<	42	<	<	<	3	<	<	0.1	4	8	53	<	107	9	354	13	29	<	3	0.01	0.70	0.99	1.50	0.51	0.16	0.05	0.01
59465	C	<	<	29	<	247	<	<	<	3	<	<	<	24	18	89	<	62	171	1836	4	60	1	17	0.05	3.55	2.36	5.92	4.32	0.63	0.03	0.02
59466	C	<	<	32	<	58	<	5	<	4	<	<	<	6	8	196	<	105	13	899	6	42	<	5	<	0.97	2.04	2.26	0.96	0.31	0.03	0.02
59467	C	8	0.1	24	<	58	<	<	<	6	<	<	<	6	11	486	<	141	14	449	11	32	<	5	0.01	0.91	1.06	2.06	0.73	0.30	0.05	0.01
59468	C	10	0.2	39	<	44	<	<	<	3	<	<	0.1	4	7	235	<	106	7	486	6	25	<	4	<	0.69	1.05	1.74	0.59	0.19	0.05	0.01
59469	C	34	<	60	<	47	<	<	<	5	<	<	0.1	5	9	104	<	112	15	521	5	28	<	4	<	0.78	1.07	1.94	0.64	0.21	0.05	0.01
59470	C	12	0.1	56	<	85	<	<	<	6	<	<	<	6	11	87	<	132	13	611	7	9	<	4	0.01	1.62	0.15	2.90	1.64	0.24	0.02	<
59471	C	<	<	34	<	134	<	5	<	4	<	<	<	11	18	203	<	118	52	888	6	13	<	8	0.01	2.59	0.32	4.12	2.88	0.19	0.03	0.01
59472	C	9	0.1	37	<	103	<	6	<	4	<	<	<	9	13	669	<	150	32	700	5	24	<	6	0.01	1.87	0.63	3.17	2.02	0.16	0.03	0.01
59473	C	<	0.1	14	<	94	<	<	<	5	<	<	<	6	10	78	<	113	18	479	5	9	<	3	0.01	1.59	0.46	2.52	1.49	0.20	0.03	0.01
Min Limit		5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*		9999	99.9	20000	20000	20000	9999	9999	9999	9999	999	999	99.9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1.00	99.99	99.99	99.99	9.99	9.99	5.00	5.00
Method		FAAA	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

---=No Test ins=Insufficient Sample S=Soil R=Rock C=Core L=Silt P=Pulp U=Undefined m=Estimate/1000 %=Estimate % Max=No Estimate

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iPL Report: 9200783 T Granges Inc. In: Sep 17, 1992 Section 1 of 1
Project: Lost Basin Out: Sep 23, 1992 460 RC Cutting Certified BC Assayer David Chiu

Sample Name		Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
59474	C	<	<	23	<	76	<	<	<	2	<	<	<	6	9	302	<	93	16	537	4	9	<	3	0.01	1.53	0.25	2.52	1.45	0.17	0.03	0.01
59475	C	<	<	47	<	62	<	<	<	3	<	<	<	6	7	206	<	98	13	555	3	9	<	2	0.01	1.45	0.11	2.55	1.33	0.16	0.04	0.02
59476	C	<	<	52	<	72	<	<	<	3	<	<	<	7	11	96	<	135	29	633	3	6	<	5	0.01	1.62	0.05	2.73	1.79	0.18	0.03	0.01
59477	C	<	0.1	47	4	67	<	5	3	3	<	<	<	9	16	37	<	150	45	499	4	9	<	6	0.01	1.52	0.28	2.61	1.64	0.16	0.04	0.01
59478	C	6	<	26	<	57	<	<	<	3	<	<	<	8	16	38	<	106	40	423	4	13	<	4	0.01	1.41	0.65	2.34	1.41	0.16	0.05	0.02
59479	C	9	<	44	<	284	<	8	<	3	<	<	<	19	40	40	<	151	79	1046	3	26	<	10	0.04	2.62	1.42	3.82	3.26	0.26	0.04	0.02
59480	C	<	<	46	<	198	<	<	<	4	<	<	<	12	22	110	<	114	63	815	8	17	<	10	0.02	2.08	0.83	3.26	2.62	0.30	0.05	0.02
59481	C	<	0.2	48	<	207	<	<	<	4	<	<	<	13	22	111	<	111	66	833	7	17	<	10	0.02	2.13	0.82	3.36	2.71	0.32	0.05	0.01
59482	C	7	0.1	173	17	150	<	7	<	6	<	<	<	12	27	50	<	119	36	641	14	11	<	8	<	1.79	0.50	3.74	1.96	0.13	0.06	0.01
59483	C	10	<	91	11	132	<	5	<	4	<	<	<	6	33	30	<	137	25	684	7	10	<	6	<	1.40	0.61	3.02	1.33	0.08	0.05	0.01
59484	C	8	<	57	<	137	<	7	3	6	<	3	<	12	63	171	<	191	24	681	10	20	<	7	<	1.70	0.94	3.13	2.08	0.15	0.04	0.01
59485	C	<	0.2	49	<	91	<	7	<	3	<	<	<	6	17	61	<	97	14	613	7	10	<	5	<	1.80	0.50	3.33	1.74	0.14	0.03	0.01
59486	C	216	0.1	22	4	79	<	5	<	4	<	3	<	9	9	1666	<	94	6	432	20	37	<	6	<	1.80	0.41	2.23	2.02	0.16	0.04	0.01
59487	C	154	<	24	<	71	<	<	<	4	<	<	<	10	25	136	<	109	23	509	29	13	<	7	0.01	2.04	0.72	2.44	2.31	0.17	0.05	0.01
59488	C	34	<	12	<	57	<	<	<	5	<	<	0.1	7	13	390	<	108	9	323	21	15	<	4	<	1.78	0.34	1.70	1.99	0.15	0.07	0.01
59489	C	32	<	59	<	65	<	<	<	4	<	<	<	8	9	103	<	100	7	596	17	8	<	7	0.01	1.97	0.21	3.71	1.76	0.17	0.03	<
59490	C	15	0.2	87	<	62	8	<	<	4	<	<	<	6	7	1239	<	93	5	387	10	26	<	4	0.01	1.91	0.06	3.74	1.68	0.15	0.03	<
59491	C	<	<	43	<	60	<	<	<	4	<	<	<	2	7	137	<	104	2	383	8	8	<	3	<	1.27	0.23	2.12	1.18	0.19	0.05	<
59492	C	<	0.1	30	<	50	8	<	<	3	<	<	<	2	6	151	<	113	3	434	7	12	<	4	<	0.87	0.57	1.88	0.78	0.20	0.05	<
59493	C	10	<	40	3	52	18	9	<	4	<	<	0.1	12	135	146	<	262	12	831	8	65	<	6	<	0.89	2.46	2.58	1.85	0.19	0.05	0.01
59494	C	<	0.1	14	<	79	<	19	<	6	<	<	0.2	28	322	419	<	705	45	1607	5	155	1	11	0.04	1.81	5.08	3.54	4.46	0.47	0.03	0.01
59495	C	<	<	99	<	55	<	13	<	3	<	<	<	20	177	389	<	396	30	473	3	45	1	6	0.06	1.60	1.73	2.68	2.49	0.24	0.05	0.01
59496	C	<	0.2	14	<	52	<	10	<	3	<	<	<	14	114	1133	<	338	24	439	6	47	<	5	0.03	1.39	1.86	2.15	1.94	0.20	0.06	0.02
59497	C	<	<	18	2	46	8	<	<	5	<	<	<	5	20	1565	<	150	6	266	22	40	<	3	<	0.84	0.64	2.03	0.62	0.21	0.05	0.01
59498	C	<	<	26	<	50	<	11	<	2	<	<	<	18	159	129	<	429	40	754	2	57	1	7	0.04	1.55	3.24	2.51	2.42	0.11	0.07	0.03
59499	C	21	<	49	<	56	<	8	<	3	<	<	<	10	37	436	<	173	29	484	14	35	<	6	0.02	1.28	1.39	3.02	1.15	0.22	0.06	0.03
59500	C	<	0.1	25	<	64	<	24	<	3	<	<	0.1	29	339	226	<	889	52	1042	5	100	<	12	0.05	2.20	3.07	3.33	4.68	0.65	0.03	0.01
59501	C	<	0.1	25	<	69	<	25	<	5	<	<	<	30	348	261	<	949	52	1098	5	105	<	12	0.06	2.22	3.10	3.43	4.72	0.68	0.04	0.01
59502	C	8	0.2	26	<	67	<	19	<	3	<	<	0.1	26	254	391	<	682	50	1374	4	97	1	12	0.04	2.09	3.71	3.77	4.38	0.58	0.03	0.02
59503	C	38	<	10	<	61	<	<	<	5	<	<	<	7	27	1279	<	163	15	446	5	37	<	5	<	0.88	1.07	2.36	0.76	0.18	0.05	0.01
59504	C	<	0.1	67	<	89	<	33	<	5	<	<	0.1	46	505	631	<	1407	69	1964	<	143	1	12	0.07	2.25	5.08	4.51	6.04	0.88	0.02	0.02
59505	C	21	<	51	<	74	<	24	<	4	<	<	<	41	387	225	<	1083	63	1547	<	137	2	11	0.07	1.74	4.55	3.80	4.79	0.85	0.02	0.02
59506	C	<	<	18	<	77	<	6	<	3	<	<	<	11	63	158	<	229	22	691	4	42	<	7	0.03	1.24	1.43	3.00	1.51	0.33	0.04	0.02
59507	C	21	<	55	12	125	<	7	<	6	<	<	<	7	28	305	<	165	19	516	6	44	1	6	0.01	1.15	1.78	2.40	0.92	0.29	0.07	0.04
59508	C	26	<	93	24	175	<	5	<	4	<	<	<	12	39	316	<	185	42	620	8	66	2	8	0.02	1.66	2.06	3.02	1.65	0.29	0.09	0.03
59509	C	22	<	66	16	122	<	5	<	6	<	<	<	12	36	330	<	185	38	583	8	60	1	7	0.04	1.54	2.02	2.63	1.39	0.26	0.09	0.02
59510	C	<	<	18	3	60	<	9	<	3	<	<	<	9	54	355	<	203	28	472	9	50	<	6	0.02	1.22	1.55	2.39	1.34	0.27	0.05	0.02
59511	C	<	<	9	<	41	<	<	<	5	<	<	<	6	33	299	<	158	15	558	9	30	<	4	0.01	0.90	1.56	1.82	0.85	0.24	0.04	0.01
59512	C	<	0.1	16	<	66	<	10	<	3	<	<	<	14	88	151	<	280	32	641	4	37	<	8	0.04	1.78	1.45	3.13	1.96	0.39	0.04	0.01
Min Limit		5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*		9999	99.9	20000	20000	20000	9999	9999	9999	9999	999	999	99.9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1.00	99.99	99.99	99.99	9.99	9.99	5.00	5.00
Method		FAAA	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

---=No Test ins=Insufficient Sample S=Soil R=Rock C=Core L=Silt P=Pulp U=Undefined m=Estimate/1000 %=Estimate % Max=No Estimate

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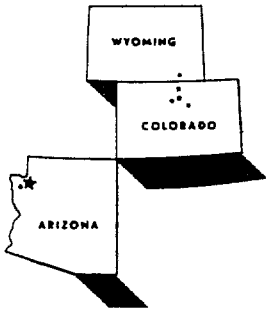
iPL Report: 9200783 T Granges Inc. In: Sep 17, 1992 Page 8 of 12 Section 1 of 1
Project: Lost Basin Out: Sep 23, 1992 460 RC Cutting Certified BC Assayer David Chiu

Sample Name		Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
59513	C	6	0.1	20	<	62	<	<	<	6	<	2	<	9	27	328	<	101	24	632	4	29	1	5	0.02	1.20	1.20	10.36	1.10	0.18	0.04	0.17
59514	C	<	<	47	<	69	<	<	<	4	<	<	0.2	11	38	679	<	97	27	676	5	37	1	7	0.02	1.71	1.31	11.70	1.66	0.16	0.03	0.21
59515	C	20	<	9	<	67	<	<	<	6	<	<	<	5	10	280	<	115	11	491	5	19	<	6	0.01	1.28	0.68	2.85	1.00	0.25	0.05	0.02
59516	C	<	0.1	7	<	67	<	5	<	3	<	<	<	4	7	748	<	95	4	533	4	24	<	6	0.01	1.26	0.51	2.78	1.02	0.20	0.04	0.01
59517	C	<	<	14	<	55	<	<	<	4	<	<	<	4	6	157	<	84	4	493	4	15	<	5	0.01	1.03	0.57	2.22	0.78	0.18	0.04	0.01
59518	C	<	<	15	<	30	<	<	<	3	<	<	<	4	19	411	<	101	5	276	7	21	<	2	<	0.72	0.91	1.25	0.58	0.19	0.06	0.01
59519	C	<	<	32	<	75	<	9	<	3	<	<	<	12	70	775	<	279	28	628	5	35	<	7	0.01	1.74	1.64	3.11	1.89	0.25	0.04	0.02
520	C	<	<	22	<	56	<	<	<	3	<	<	<	5	15	416	<	104	8	448	6	20	<	6	0.01	1.26	0.96	2.49	1.16	0.24	0.04	0.01
521	C	<	<	24	<	60	<	<	<	3	<	<	<	6	17	432	<	105	9	446	6	21	<	6	0.01	1.23	0.99	2.51	1.17	0.22	0.04	0.01
59522	C	28	0.2	38	3	40	<	5	<	3	<	<	0.1	6	28	517	<	132	11	558	6	38	<	6	0.01	0.87	2.19	1.99	0.86	0.21	0.05	0.01
59523	C	16	<	21	<	38	<	<	<	3	<	<	0.2	3	6	64	<	87	4	396	5	19	<	3	0.01	0.77	0.74	1.69	0.52	0.17	0.05	0.02
59524	C	18	<	38	<	81	<	5	<	4	<	<	<	5	12	47	<	114	6	445	5	17	<	5	0.01	1.13	0.59	2.44	0.95	0.16	0.05	0.01
59525	C	<	<	13	<	88	<	<	<	3	<	<	<	4	7	31	<	90	4	611	5	12	<	4	0.01	1.23	0.57	2.53	1.06	0.18	0.04	0.01
59526	C	<	<	23	<	64	<	<	<	3	<	<	<	5	7	902	<	96	5	458	3	22	<	5	0.01	1.08	0.35	2.67	0.83	0.17	0.05	0.02
59527	C	22	<	19	<	73	<	5	<	3	<	<	<	5	18	117	<	119	12	577	5	13	<	5	0.01	1.75	0.62	2.82	1.87	0.22	0.03	0.02
59528	C	<	0.1	138	7	83	5	5	<	4	<	<	0.1	11	14	309	<	147	33	620	7	14	<	6	<	1.71	0.59	3.06	1.69	0.21	0.04	0.01
59529	C	<	<	106	<	69	<	<	<	3	<	<	<	9	11	128	<	91	29	561	3	11	<	5	0.01	1.75	0.10	3.49	1.43	0.25	0.03	<
59530	C	<	<	46	<	69	<	<	<	4	<	<	<	8	16	100	<	97	30	519	3	18	<	6	0.03	1.49	0.57	2.95	1.41	0.30	0.05	0.01
59531	C	12	<	25	<	51	7	9	4	4	<	<	0.8	5	10	108	<	137	9	584	9	30	<	5	0.01	0.89	1.40	2.08	0.81	0.26	0.07	0.01
59532	C	248	0.1	29	<	56	<	<	<	6	<	<	0.4	5	7	60	<	103	9	521	5	22	<	5	<	0.68	1.29	1.78	0.77	0.15	0.06	0.01
59533	C	16	<	10	<	72	<	5	3	4	<	<	<	6	19	514	<	90	6	591	4	16	<	4	<	1.81	0.68	2.91	2.13	0.18	0.03	0.01
59534	C	<	<	4	<	81	<	9	<	3	<	<	<	5	7	185	<	96	6	636	6	11	<	5	0.01	2.33	0.33	3.38	2.76	0.21	0.03	0.01
59535	C	<	0.2	12	<	79	<	5	<	3	<	<	<	7	9	50	<	83	20	608	5	18	<	5	0.02	2.07	0.50	3.27	2.28	0.20	0.03	0.02
59536	C	<	0.1	41	3	77	<	<	<	5	<	<	<	17	25	66	<	133	42	561	4	43	1	6	0.08	1.96	1.02	3.23	1.85	0.23	0.07	0.04
59537	C	8	0.1	15	<	79	<	<	<	3	<	<	<	12	12	92	<	83	36	801	4	36	<	10	0.05	1.94	1.12	3.80	1.93	0.25	0.05	0.03
38	C	<	0.1	15	4	51	<	5	<	4	<	<	<	5	18	133	<	127	12	367	24	22	<	5	0.01	1.02	0.92	2.04	0.94	0.20	0.06	0.02
539	C	<	<	12	<	71	<	<	<	2	<	<	<	9	13	55	<	108	16	550	4	26	<	6	0.05	1.56	0.81	2.75	1.49	0.34	0.05	0.02
59540	C	<	<	20	<	73	<	6	<	5	<	<	<	17	24	65	<	147	37	673	4	64	<	6	0.03	2.03	1.62	3.26	2.01	0.17	0.05	0.04
59541	C	<	<	20	3	71	<	6	<	5	<	<	<	17	23	57	<	143	37	648	3	59	1	6	0.03	1.98	1.53	3.20	1.98	0.16	0.05	0.04
59542	C	<	<	13	<	65	<	5	<	3	<	<	<	9	19	43	<	138	21	464	12	31	<	6	0.05	1.48	0.97	2.79	1.31	0.38	0.05	0.02
59543	C	<	<	30	<	82	<	<	<	3	<	<	<	13	18	137	<	114	33	523	9	36	<	7	0.07	1.70	0.83	3.26	1.54	0.49	0.05	0.04
59544	C	<	0.1	23	<	105	<	<	<	3	<	<	<	15	19	127	<	121	43	846	9	48	<	10	0.04	1.95	1.34	3.80	1.98	0.36	0.04	0.05
59545	C	<	0.1	13	<	81	<	<	<	4	<	<	<	8	7	64	29	98	7	494	4	14	<	5	0.02	0.98	0.46	2.97	0.73	0.26	0.05	0.02
59546	C	31	0.1	55	7	73	<	<	<	4	<	<	<	11	14	90	<	106	36	739	10	29	<	8	0.03	1.17	1.56	3.94	0.95	0.31	0.05	0.03
59547	C	28	0.5	84	8	53	<	<	<	3	<	<	<	9	13	164	<	125	35	566	8	32	<	6	0.01	1.00	1.58	2.93	0.84	0.25	0.05	0.02
59548	C	<	0.2	32	<	37	<	<	<	2	<	<	0.2	4	7	343	<	138	6	341	7	25	<	3	<	0.76	0.87	1.70	0.51	0.25	0.06	0.01
59549	C	23	0.2	48	12	115	<	<	<	4	<	<	<	7	14	237	14	117	16	459	10	32	<	4	0.01	0.87	1.14	2.11	0.81	0.22	0.06	0.02
59550	C	17	0.5	31	3	77	<	9	<	4	<	<	<	10	87	195	<	294	20	740	7	62	<	7	0.02	1.22	1.68	2.75	1.70	0.42	0.06	0.02
59551	C	5	0.4	19	<	58	<	<	<	3	<	<	<	7	23	109	<	121	13	511	5	21	<	5	<	0.92	0.94	2.37	0.97	0.19	0.05	0.02
Min Limit		5	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*		9999	99.9	20000	20000	20000	9999	9999	9999	9999	999	999	99.9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1.00	99.99	99.99	99.99	9.99	9.99	5.00	5.00
Method		FAAA	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

---=No Test ins=Insufficient Sample S=Soil R=Rock C=Core L=Silt P=Pulp U=Undefined m=Estimate/1000 %=Estimate % Max=No Estimate



AMERICAN HEAVY MINERALS, inc.

P.O. Box 1815, Laramie, Wyoming 82070 • (307) 745-5130

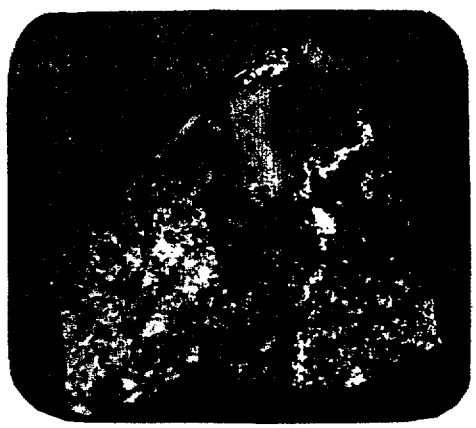
LARGE ARIZONA GOLD PROPERTY

Lost Basin Mining District, Mohave County, Arizona

Property: Contains minable gold deposits in a 7 mile long gold-bearing breccia fault zone, a large suggested buried episyenitic gold-bearing alteration pipe, many gold and silver veins, a large gold-bearing banded-iron formation, a suggested buried copper/molybdenum porphyry, and about 3,000 acres of gold-bearing fanglomerates and alluvial drainages. Located in northwest Arizona, just south of the east end of Lake Mead and the mouth of the Grand Canyon, and just west of the Grand Wash Cliffs (Colorado Plateau) in T29 & 30N, R17W, American Heavy Minerals owns 10.2 square miles (6,540 acres) composed of 129 lode claims (20 acres each) and 42 placer claims (80 to 160 acres each) which cover nearly all of the Lost Basin Mining District.

Area Geology: An 8 mile length of northeasterly trending Lost Basin mountain range in the Basin and Range province of Precambrian gneisses and schists and post-Paleozoic intrusives is paralleled on its east side by a 7 mile long breccia fault zone which, in turn is paralleled on its east side by a 7 mile length of uplifted gold bearing fanglomerates of Miocene/Pliocene age extending east through Grapevine Mesa to the Grand Wash Cliffs. The mountain range's gneisses and schists are dominantly biotitic and/or amphibolitic and in many places are intruded by coarse locally pegmatitic granite and quartz-carbonate veins. Tertiary volcanic conglomerates, water-laid tuffs, and magmatic hydrothermal ore deposits are present. A volcanic caldera is suggested under the gravels between the present southern extent of the Lost Basin Range and Garnet Mountain to the southeast. Age dating and geological data indicate several different (possibly as many as 6) geologic periods and environments of gold mineralization. **Of economic significance is that the bedrock surface is high on the buried intrusive system and has not eroded to any appreciable depth where the unmined mineralization is more consistent and prevalent.** Six different comprehensive geological field studies have been conducted on the property by the U.S. Geological Survey, graduate students of three universities, and two independent consulting geologists. (See Reports Available on page 4).

Gold Breccia Fault Zone Deposits: Excellent potential for future lode mining is believed to be in the large breccia fault zone (7 miles long and up to several hundred feet wide) which is suggested as **being the source of much of the locally derived larger gold nuggets** and which parallels the bulk of the richer fanglomerates to the east. A backhoe trench cut into this fault (1/2 mile directly west of the old King Tut placer mine) recently uncovered an ore pocket that has gold (along with limonite and ankerite) filling the quartz breccia fractures and openings up to 1/4 inch (unlike the gold flakes found in the crystalline vugs in most of the quartz veins in the range to the west). Samples of the breccia with visible chunks of gold (see photo) assayed from 20 to 110 ounces gold per ton. Two miles north of this cut in the same breccia fault, a gold bearing quartz breccia vein at the old Climax Gold Mine has been drilled and sampled indicating a probable reserve at this one location of 12,800 tons grading 0.51 ounces gold per ton. Geochemical, seismic and other appropriate surveys followed by drilling the 7 mile long breccia fault zone is suggested.



Large Suggested Buried Gold Pipe: In the northern area of the eastern fanglomerates a possible episyenitic gold bearing alteration pipe, 0.2 mile in diameter, buried under fanglomerate

gravels at a speculated depth of 100 to 300 feet, has been recently suggested by insertcolor-enhanced infrared satellite photos, the junction of three known major cross-cutting mineralized faults, a mineral zoning pattern, and the ground surface distribution of **abundant gold-bearing quartz gravel float and sharp, angular large gold nuggets with distinct vugs of ankerite, or hematite along with large black sand particles,** all in a logical erosion pattern surrounding the pipe. Four rotary drill holes, 20 to 40 feet deep, in a fanglomerate near to the pipe assayed from 0.015 to 0.44 oz. gold/ton. From all indications this suggested buried high-grade gold bedrock deposit has the potential of being developed into a large open-pit lode gold mining operation. Seismic and other appropriate surveys followed by drilling this suggested buried gold pipe is recommended.

Veins in Mountain Range: Fifty-two different gold quartz veins from 6 inches to 14 feet wide have been found to contain visible native gold. **In fact, over 6,000 rocks with visible gold in vugs have been collected from exposed outcrops.** Also, several hundred other veins contain silver, copper, mercury, tungsten, vanadium, uranium, zinc and lead. A small vein of mercury sulfide assayed 2,200 ppm of mercury, which was identified by the USGS, not as cinnabar, but as a rare, high mercury content sulfide previously only found in Central America. Also, most gold and copper veins contain highly anomalous amounts of mercury. Anomalous platinum/palladium (1.5 ppm) was assayed from 22 feet of cuttings from a drill hole in the bottom of a canyon. Twelve small mines dot the mountain range (old Spanish mines with burro haulage trails along the steep mountain sides and arrastres for grinding ore, and mines of the late 1890's). The ground on the whole was little more than prospected during these early times, or since then, due to the remoteness of the area and lack of water. The visible vein gold consists of thin flakes, most just barely visible to the naked eye, with occasional flakes as large as 1/16 in diameter, usually found in red or brown hematite after chalcopyrite and pyrite in spongy boxworks of vuggy quartz, and are seldom seen in fractures and voids like the chunky gold found in the previously described breccia fault zone to the east. Assays show gold values from a few dollars up to several hundred dollars per ton of ore shoots. Because the veins are very high in the buried intrusive system and have not eroded to any appreciable depth (like the much deeper erosion of Mineral Park, the White Hills, and Oatman), the mineralizing solutions have not penetrated the wall rock near to the ground surface. Therefore, the alteration and mineralization should increase with depth which is indicated by some veins exposed in the canyons to a depth of over 200 feet and which have been reported to yield "good" milling ore from the mountain tops down to the bottom of the gulches.

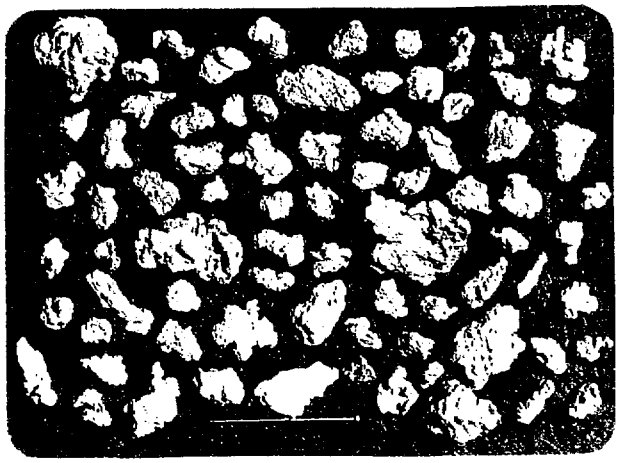
Banded Iron Formation: This gold bearing formation from 5 to 50 feet thick, outcrops throughout the 8 mile length of the Lost Basin mountain range. Sometimes referred to as a "Precambrian Placer," this metamorphosed rock consists of layers of black magnetite and hematite particles (and occasional fine gold) cemented in cherty silica. Limited gold assays vary from "nil" to 0.24 oz. gold/ton.

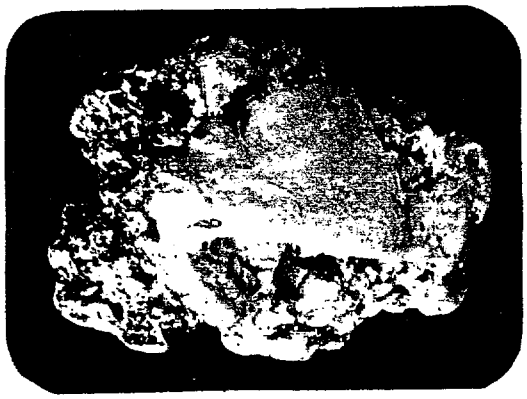
Copper/Molybdenum Porphyry: A copper zone surrounded by a silver-lead-zinc zone and an outer gold halo is located in the center of the 8 mile long Lost Basin mountain range, and several indicators such as a mineral zoning pattern, aeromagnetic pattern, spectrochemical analysis of trace metals in native gold samples, isotopic age dating of gold (Laramide), laboratory identification of a porphyry particle of native copper and extensive geologic and mineralization studies (by the USGS, two consulting geologists, and a graduate student of the Colorado School of Mines) all suggest a buried copper/molybdenum porphyry similar to the Duval Pennzoil porphyry at Mineral Park (38 miles directly south of AHM's property) which has been eroded about 600 feet deeper than AHM's property. Since free gold is found so widely distributed in Lost Basin over such a large area (in both lode and fanglomerates), a "gold crown" is suggested that is typical of the gold-rich outer halo of a copper/molybdenum porphyry that has not yet eroded down to the copper/molybdenum core, which further enhances the possibility for finding large uneroded gold bedrock deposits with depth.

Ore Samples: American Heavy Minerals (AHM) has collected and cataloged many thousands of ore and wallrock samples which are stored in its Arizona field office and are available for inspection. Sample locations are plotted on large (4" = 1 mile) aerial photos.

Fanglomerate Gold Potential: The fanglomerates contain gold carried by mud-flows from as far as 40 miles distant from the Virgin Mountains to the north in Utah, from the Cerbat Range to the south, and from the White Hills to the southwest, as well as gold eroded from veins and breccia zones in the adjacent Lost Basin mountain range to the west. Subsequently, the Muddy Creek gravels which had formed in a trough deeper than 1,000 feet, were uplifted and tilted due to block faulting and were left as a mesa with minimal subsequent erosion, thus preserving this huge gold placer deposit. (Also, drainages from this mesa to the south and southwest contain reworked gold bearing gravels.) Sampling data has been collected from 140 backhoe trenches (5 feet deep) and several small gold placer operations (all surface alluvium), and from a water well 1,340 feet deep and several hundred drill holes 50 to 100 feet deep (no evaluation of the ultra-fines in any holes and significant coarse and fine gold was left in the bottom of many holes). **In 1968, the U.S. Geological Survey estimated the resources "may exceed 500 million cubic yards of gravel averaging 0.01 to 0.02 oz. gold per cubic yard," (5 to 10 million ounces), but this did not include fine and ultra-fine gold.**

Gold Nuggets: In addition to the fine and ultra-fine gold, silver and other minerals in the fanglomerates, many visible gold nuggets (first discovered in 1931) are found in surface drainages over an area of 14 square miles (about 9,000 acres). The majority of nuggets are about 1/16 to 1/8 inch diameter with a few 1/4 to 1/2 inch and, occasionally, 2 ounce nuggets are recovered (even the 8-1/2 ounce nugget shown below!). Most have sharp, ragged surfaces indicating limited travel from their sources such as the breccia fault zone and buried episynenitic gold bearing pipes. All contain varying amounts of silver, mercury, and numerous "signature" minerals.





8-1/2 oz. nugget (actual size)
found by metal detector

Heavy Black Sands: In the fanglomerate alluvial drainages, unusually large quantities of heavy black sands are found (up to 24 pounds of plus 0.1 mm particles per cubic yard of gravels). The sands consist of magnetite, hematite (with occasional attached gold and silver), limonite, ilmenite, pyrite, mercury, tungsten, uranium, garnet, tin, and occasional platinum/palladium. Balls of mercury with enclosed gold particles are occasionally seen in the black sands. An assay showed 5.4 pounds of tin per ton of black sands which is believed to have been introduced into the fanglomerates from sea-floor limestone deposition during an extended embayment of the Gulf of California to the mesa.

Water: A 1,340 foot deep, eight inch water well was drilled in the fanglomerates. Engineering estimates indicate a capacity of 4,000 gallons per minute, but the small diameter and present pump capacity limit the flow to about 200 gallons per minute. A buried pipeline runs from the well to a recent mill-site 1-1/2 miles distant. Also, another source of water about 10 miles distant is a mountain spring which could supply about 150 gallons per minute of water by gravity (a 1,000 foot drop) via a pipeline to the property.

Power: Single and three phase power which is supplied to two nearby rural communities, is available from a transmission line along the east side of the property.

Reports Available: In addition to assays of lode and fanglomerate drill holes, rock chip channel samplings, and bulk gravel samplings, American Heavy Minerals (AHM) has available for inspection many different reports containing the various surveys and studies either conducted by AHM and its consultants, or by groups such as the USGS, Arizona Bureau of Mines, Pennsylvania State University, New Mexico Institute of Mineral Technology and the Colorado School of Mines and includes six different geological studies, color stereo aerial photography (1967 and 1986), black and white stereo aerial photography (1958, 1973 and 1980), enhanced-color infrared satellite photography, total intensity airborne magnetic and scintillation surveys, induced polarization survey of 7 lines, gravity meter profile, metal zoning survey, soil survey, petrochemistry studies of crystalline rocks in relation to mineralization, fluid inclusion studies, gold signatures (trace element) studies, surveys, cyanide leaching tests, and evaluations of two of the old lode mines.

Adjoining Properties: Three square miles (1,920 acres) of adjoining mineralized bedrock mountain range to the west is available for lease from the U.S. Park Service, as are several adjoining alluvial placer sections whose mineral rights are owned by Santa Fe Railroad and a half section of State land leased by Garritson Mining Enterprises.

Claim Jumpers: For several years many different groups of claim jumpers have been removed from the property. In fact, every weekend many amateur gold hunters with dry washers and metal-detectors sneak on to the property and adjoining Santa Fe and State land and have absconded with an estimated total of several thousands of ounces of gold nuggets. Several jumpers have been associated with fraudulent stock promotions. Recently $24,000 of gold ore was stolen overnight and hauled out of state. Of course, the major thefts and fraudulent operations have been reported to appropriate law enforcement and governmental agencies. In 1981, a court judgement was obtained against a group of jumpers who were required to pay all costs (plus interest), including court, attorney, and plaintiff.

Investment of American Heavy Minerals: Approximately $4.58 million was spent during the past 30 years in acquiring, exploring, and maintaining AHM's placer and lode claims. AHM's goal was to delineate potential mining targets that would interest experienced mining operators to complete the exploration and development. Of the foregoing, $2.30 million was spent by AHM and its associate, Apache Oro Company (AO), and an estimated additional $2.28 million was spent by other groups (motivated by AO or AHM) that produced a considerable amount of valuable information and data on the property. This included various geological and geochemical surveys and studies by Masters Degree candidates at two universities, as well as drilling, limited geophysical surveys, and a placer gravity recovery and heap leaching operation. $4.58 million total investment does not include inflation, nor the several million dollars spent by the U.S. Geological Survey in their 16 years of research in the area.

Proposal: Because the major investors and officers of American Heavy Minerals (a small privately held corporation) are either past, or rapidly approaching retirement age, it is their desire to sell this large gold property outright. Seriously interested prospective purchasers should first contact Warren M. Mallory, General Manager of AHM, to arrange a meeting to study the various reports, stereo aerial photos and ore samples before visiting the property. AHM asks that no visits be made to the property before meeting with Mr. Mallory, or one of his associates.

FILE

Lost Basin
T28,29,30N; R17,18W
Mohave Co., AZ

WARREN M. MALLORY, P.E.
Engineering Consultant
POST OFFICE BOX 4446
OCEANSIDE, CA 92054
PHONE: (619) 966-2689

February 12, 1991

Mr. James Sell, Manager
ASARCO, Inc.
P.O. Box 5747
Tucson, AZ 85703

Dear Jim:

Re our telephone conversation today, enclosed is the updated brochure and a tour guide on our large Arizona gold and probable copper porphyry property. When you visit Lost Basin please keep in mind that the probable porphyry intrusive has not eroded appreciably and, therefore, the bedrock surface is still high on the outer gold shell which accounts for freshly eroded gold found in the surface pediments along a 7 mile long N-S line with outward travel to the east from 1 to 3 miles distance.

As shown in red on Figure 4 in the brochure and the photo overlays of the "Tour Guide," two "eastern N-S fault zones" buried under pediment gravels have been recently suggested and are believed to be the primary source (along with the adjacent suggested buried gold pipe) of most of the eluvial and alluvial placer gold in Lost Basin. This resulted from a study of five different sets of stereo-aerial photos (1958 to 1986), analysis of assays of pediment gravels from several former placer drill holes, four E-W ground magnetometer lines and field observations of the pediment gravels. Also, paragraph 3B on page 4 of the enclosed brochure suggests another N-S fault (further west) where chunky gold fills quartz vugs and breccia fractures (completely unlike the very small particles of gold found in the vugs in the many tight quartz veins in the Lost Basin Range to the west).

The most easterly long red-dotted line in Figure 4 has been recently suggested as being a major mineralized fault zone that has eroded in place, thus forming the so-called "buried residual fossil (gold) deposit" described on page 14. In situ erosion appears to have formed this deposit. A recently completed microscopic study of placer concentrates from an exposed fossil red-clay channel about 600 feet east from the fault (see top of

page 16) revealed that the concentrates are primarily composed of angular, sharp cornered crystals and fragments of quartz, hematite (after pyrite), specularite, and other minerals not rounded by appreciable travel. Angular gold nuggets with vugs after pyrite and ankerite were abundant, as well as quartz and hematite particles with attached gold. The foregoing certainly seems to explain the rough, angular gold nuggets that are found in Lost Basin's 7 mile long band of pediment eluvial and alluvial gravels.

Also, this long fault zone appears to be tied with the buried pipe to the north and with the adjacent faults to the west. In other words, Lost Basin's bedrock "gold sleeper" probably is composed of one, or more of the buried faults and buried pipe which are believed to be the source of most of the 5 to 10 million ounces of gold resources previously estimated by the USGS. The bedrock buried underneath the eastern pediment gravels has never been drilled, or mapped.

It is my opinion and that of several geologists (both independent and some USGS personnel) that the potential for large scale gold mining in Lost Basin lies in the gold lodes buried under the pediment gravels and in the large eluvial gold deposit adjacent to the faults, and not in the exposed gold veins to the west, nor in the outlying alluvial placer gravels. Even though the alluvial gold placer area of surface drainages which cover about 9,000 acres where visible gold nuggets have been found, has seemed to attract considerable interest during the past 60 years, it is my personal opinion that the alluvial gold is too close to its source and has not had a chance to travel sufficient distance to concentrate into minable alluvial placer deposits. However, we have kept our surrounding alluvial placer claims to act as a "buffer zone" between any future lode and eluvial mining operations and the outlying desert developments of Meadview and Mead City.

However, before visiting the property I believe it would be of considerable value to you if you would spend a day with me here in Oceanside, California to discuss the property and to look over (and copy if desired) some of the theses and the many reports along with drilling and assay data listed in "Applicable References" on pages 22-24 of the enclosed brochure. Also, I have copies of unpublished maps, color stereo-aerial photos, many ore and bedrock samples along with numerous unusual gold nuggets

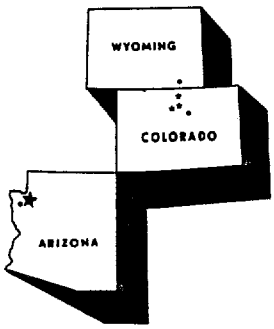
(up to 3/4 pound), as well as the eluvial concentrates (for viewing under a stereo microscope).

Also, before you or your men go to Lost Basin, please telephone me to discuss your planned visit. Thank you.

Cordially,
American Heavy Minerals, Inc.

Warren M. Mallory, P.E.
General Manager

Enc: Yellow brochure on Lost Basin
List of references
Tour Guide of Lost Basin



AMERICAN HEAVY MINERALS, INC.

(An Associate of Apache Oro Company)

410 Grand Avenue • P.O. Box 730 • Laramie, Wyoming 82070 • 307 742-6668 • Cable: AHM

Financial responsibility and character references of American Heavy Minerals, Inc. and its General Manager, Warren M. Mallory, and its associate, Apache Oro Company:

P.W. (Bill) Wilke, C.E.O.
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3121 Bowl Place
Solvang, CA 93463
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First Interstate Bank of Laramie
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Professional and business responsibility and character references of American Heavy Minerals, Inc. and its General Manager, Warren M. Mallory, and its associate, Apache Oro Company:

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Modern Printing Company
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Laramie, WY 82070
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J. David Love, Research Geologist, Retired
During the winter:
U.S. Geological Survey
P.O. Box 3007 University Station
Laramie, WY 82071
Telephone (307) 745-4495

During the summer:
P.O. Box 349
Jackson, WY 83001
Telephone (307) 733-2177

The following are some of the consultants affiliated with American Heavy Minerals, Inc. and its associate, Apache Oro Company:

John C. Bellamy: Civil engineer and nuclear physicist. Recently retired Professor of Civil Engineering, University of Wyoming and a director of Apache Oro Co. Formerly Director of Natural Resources Research Institute; founding member of Western Interstate Nuclear Board; registered professional engineer and land surveyor, State of Wyoming. Certified consulting meteorologist. Awarded the Medal of Freedom by the President of the U.S., 1945; the Losey Award from the Institute of Aeronautical Sciences, 1945; and the Turlow Award from the Institute of Navigation, 1944. Ph.D. in meteorology, University of Chicago, 1947. Ph.M. in nuclear physics, University of Wisconsin, 1938. B.S. in civil engineering, University of Wyoming, 1936.

Consultants affiliated with American Heavy Minerals, Inc. and its associate, Apache Oro Company (Continued):

Alfred J. Deaderick: Geologist. Currently senior minerals geologist for Shell Oil Co. Formerly part-time field geologist for Public Service Company of Oklahoma, the Wyoming Geological Survey, Superior Oil Co., University of Wyoming Geology Department, and Ozark-Mahoney Mining Co. M.S. in geology, New Mexico Institute of Mining & Technology, 1980. B.S. in geology, University of Wyoming, 1976.

Walter E. Duncan: Mineral engineer. Recently retired Director of Natural Resources Research Institute and presently is advisor to American Heavy Minerals, Inc. and Apache Oro Company. Formerly Professor of Mineral Engineering at University of Wyoming and mineral engineer for Ozark-Mahoning Mining Co. Specialty areas are mineral processing, utilization, specifications, identification and analysis. Registered professional engineer, State of Illinois. Professional degree in mineral engineering at Montana School of Mines, 1960. Three years of graduate work in metallurgy at University of Missouri, 1938. M.S. in metallurgical engineering at Montana School of Mines, 1934. B.S. in chemical engineering at Montana School of Mines, 1933.

Edward J. Krish: Exploration geologist. Currently senior minerals exploration geologist for Kerr-McGee Resources. Formerly exploration geologist for Texas-Gulf, Inc., Exxon Corp., U.S. Geological Survey, and Sunray DX Oil Co. M.S. in Geology, Colorado School of Mines, 1974. B.S. in geology, University of Texas, 1971.

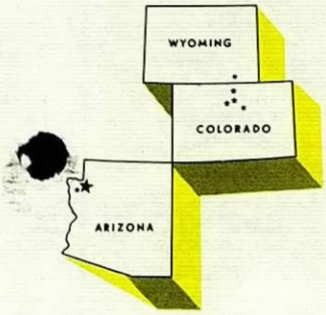
Warren M. Mallory: Exploration engineer. Currently President of Apache Oro Co. and IDEAS, Inc., and General Manager of American Heavy Minerals, Inc., and Managing Partner of Lost Basin Mining. Formerly President of P & M Building Co.; Professor of Electrical Engineering, University of Wyoming; electrical design engineer for U.S. Bureau of Reclamation and Naval Research Laboratories; and geophysical engineer for Magnolia Petroleum Co. Licensed professional electrical engineer, State of Wyoming. Patentee in both electrical engineering and minerals identification. Professional Electrical Engineer degree, University of Colorado, 1950. B.S. in electrical engineering, University of Colorado, 1941.

Frank J. Sander: Consulting Engineer. Currently a director of Apache Oro Co., American Heavy Minerals, Inc., and Lost Basin Mining. Formerly District Manager of Schlumberger Well Surveying Corp. Registered professional electrical engineer, State of Montana. B.S. in electrical engineering, University of Wyoming, 1950.

Lawrence E. Smith: Economic geologist. Currently advisor to American Heavy Minerals, Inc., Apache Oro Co., and Lost Basin Mining. Formerly 25 years as an independent consulting geologist to various mining companies; for 11 years previously was responsible for mining and exploration geology and geophysics for North Range Mining Company; and 6 years before as an economic geologist with the USGS. Completed all requirements for Ph.D. in geology except submission and defence of thesis, University of California, 1948. B.S. in geology, Pennsylvania State College, 1942.

Other consultants: Although not directly affiliated with Apache Oro Company and American Heavy Minerals, Inc., various engineering, analytical, geophysical, geochemical, geological and aerial photography consulting organizations have been hired for specific projects.

Old-timers: Both Apache Oro Company and American Heavy Minerals, Inc. are also affiliated with several retired old-time mining men who are extremely knowledgeable and experienced.



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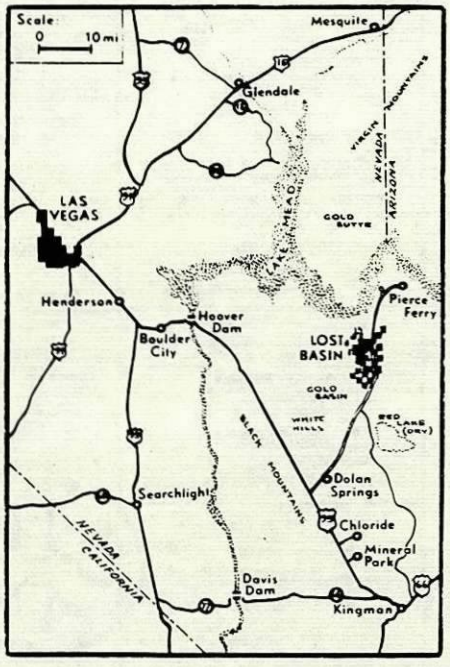
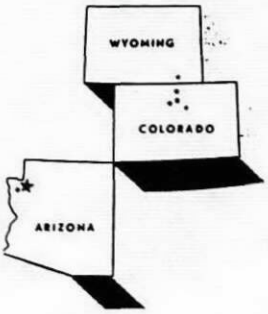
LARGE ARIZONA GOLD PROPERTY

Lost Basin Mining District
Mohave County, Arizona



by

Warren M. Mallory, P.E.
Engineering Consultant

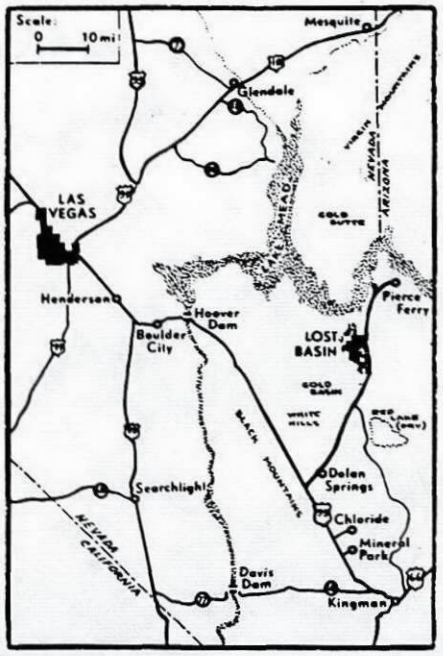


AMERICAN HEAVY MINERALS, inc.

P.O. Box 1815, Laramie, Wyoming 82070 • (307) 745-5130

LARGE ARIZONA GOLD PROPERTY

Lost Basin Mining District
Mohave County, Arizona



by

Warren M. Mallory, P.E.
Engineering Consultant

March 15, 1990

NOTE: On 9/1/93 several periphery placer and a few lode claims were dropped as shown by claim status revisions on Page 1 ("Property") and in Figures 2, 6 and 7. Also please note the addendums in the rear pocket of this folder.

TABLE OF CONTENTS

LARGE ARIZONA GOLD PROPERTY

Lost Basin Mining District, Mohave County, Arizona

Property: Contains mineable gold deposits in a 7 mile long gold bearing breccia fault zone, a large suggested buried episyenitic gold bearing alteration pipe, many gold and silver veins, a large gold-bearing banded-iron formation, a suggested buried copper/molybdenum porphyry, and about 9,000 acres of gold bearing fanglomerates and alluvial drainages. Located in northwest Arizona, just south of the east end of Lake Mead and the mouth of the Grand Canyon, and just west of the Grand Wash Cliffs (Colorado Plateau) in T28, 29 & 30N, R17 & 18W, American Heavy Minerals (AHM), an associate of Apache Oro Company, owns 21.5 square miles (13,740 acres) composed of 176 lode claims (20 acres each) and 92 placer claims (80 to 160 acres each) which cover nearly all of the Lost Basin Mining District. See appended area photo of Figure 4, and maps, Figures 1, 2, 3, 6 and 7.

Adjoining Properties: Three square miles (1,920 acres) of adjoining mineralized bedrock mountain range to the west is available for lease from the U.S. Park Service, as are several adjoining alluvial placer sections whose mineral rights are owned by Santa Fe Railroad and a half section (320 acres) of state land presently leased by Garritson Mining Enterprises. See Figure 2.

Area Geology: An 8 mile length of northeasterly trending Lost Basin mountain range in the Basin and Range province of Precambrian gneisses and schists and post-Paleozoic intrusives is paralleled on its east side by a 7 mile long breccia zone which, in turn is paralleled on its east side by a 7 mile length of uplifted gold bearing fanglomerates of Miocene/Pliocene age extending east through Grapevine Mesa to the Grand Wash Cliffs. The mountain range's gneisses and schists are dominantly biotitic and/or amphibolitic and in many places are intruded by coarse locally pegmatitic granite and quartz-carbonate veins. Tertiary volcanic conglomerates, water-laid tuffs, and magmatic hydrothermal ore deposits are present. A volcanic caldera is suggested under the gravels between the present southern extent of the Lost Basin Range and Garnet Mountain to the southeast. Age dating and geological data indicate several different (possibly as many as 6) geologic periods and environments of gold mineralization. Six different comprehensive geological field studies have been conducted on the property by the U.S. Geological Survey, graduate students of three universities, and two independent consulting geologists. See Figures 4 and 5 and Applicable References of Andreen, Arizona Bureau of Mines (B 137), Deaderick, Krish, Lucchitta, Post (3/1/70 Report), Smith, and the U.S. Geological Survey (B 397 and P 1361).

Mineralization in the Lost Basin Mountains: The following relates to the mineralization and old mines in the 8 mile N-S curve of western exposed bedrock of the Lost Basin mountains which dip westerly into Hualapai Wash. This down-dropped mountain range is immediately west of the 7 mile long paralleling breccia fault zone and uplifted eastern gold bearing fanglomerate mesa. **Of economic significance is that the bedrock surface is high on the buried intrusive system and has not eroded to any appreciable depth where the unmined mineralization is more consistent and prevalent.**

1A) **Mineralized Veins**: Apache Oro Company (AHM's associate) found 52 different quartz veins in the western exposed bedrock that contain visible native gold. Also, over 100 other veins contain silver, copper, zinc, lead, and vanadium. According to the Arizona Bureau of Mines, the old Golden Mile silver mine in Section 8, T29N, R17W (see Figure 3), contains considerable uranium ore. A small vein of mercury sulfide (see "Mercury Mine" in Figure 3) assayed 2,200 ppm of mercury, which was identified by the USGS, not as cinnabar, but as a rare, high mercury content sulfide previously only found in Central America. Also, most gold and copper veins contain highly anomalous amounts of mercury. Anomalous platinum/palladium (1.5 ppm) was assayed from the 72 to 94 foot depth in a drill hole in Bluebird Canyon, 1/2 mile directly east of the Bluebird mine. Also, tungsten (scheelite) was found in a vein outcrop about 1/4 mile NE

of the Bluebird mine. Over 100 outcrops of the various minerals in the Lost Basin Range occur at and near the junctions on N-S veins and NW-SE fault structures except the Bluebird and Wall mine veins in southern Lost Basin which appear to be mineralized over extensive NW-SE distances. Over 6,000 rocks with visible gold in vugs and fractures have been collected from exposed outcrops. The visible vein gold consists of thin flakes, most just barely visible to the naked eye, with occasional flakes as large as 1/16 in diameter, usually found in red or brown hematite after chalcopyrite and pyrite in spongy boxworks of vuggy quartz, and are seldom seen in fractures and voids like the chunky gold found in the breccia fault described in the following page. Assays show gold values from a few dollars up to several hundred dollars per ton of ore in quartz veins a few inches to over fourteen feet in width. **Because the veins (as well as the breccia fault zone and episyenitic pipes) are very high in the buried intrusive system and have not eroded to any appreciable depth (like the much deeper erosion of Mineral Park, the White Hills, and Oatman), the mineralizing solutions have not penetrated the wall rock near to the ground surface. Therefore, the alteration and mineralization should increase with depth** which is indicated by some veins exposed in the canyons to a depth of over 200 feet and which have been reported to yield "good" milling ore from the mountain tops down to the bottom of the gulches. The veins average from 4 to 6 feet in width and several are from 10 to 14 feet in width and from 1 to 2 miles in length. However, the veins on the whole have been little more than prospected since the early high-grading by the Spaniards due to the remoteness of the area and lack of water. See Applicable References of Apache Oro Company (Vein & Soil Assays), Arizona Bureau of Mines (B 137), and U.S. Geological Survey (B 397, 4/30/68 Letter, and P 1361).

2A) **Banded Iron Formation**: This gold bearing formation from 5 to 50 feet thick, outcrops throughout the 8 mile length of the Lost Basin mountain range. Sometimes referred to as a "Precambrian Placer," this metamorphosed rock consists of layers of black magnetite and hematite particles (and occasional fine gold) cemented in cherty silica. Limited gold assays vary from "nil" to 0.24 oz. gold/ton. See Applicable Reference of Apache oro Company (Vein & Soil Assays).

3A) **Mineral Zoning Pattern**: As a result of collecting and cataloging ore samples from over one hundred veins in the Lost Basin mountain range, Apache Oro Company (AHM's associate) developed a zoning pattern consisting of a gold-rich outer halo with an inner halo of silver-lead-zinc veins, centered on a band of copper mineralization (see Figure 2). The copper band is believed to extend under the eastern fanglomerates nearly to the summit of the Grand Wash Cliffs where the copper is reported to be associated with limestone. In general, the northern gold halo contains quartz with gold associated mainly with abundant chalcopyrite, whereas in the southern gold halo the gold is associated mainly with abundant pyrite. Since the veins are very high in the buried intrusive system, considerable gold is also found in the silver-lead-zinc halo as well as in the middle copper band. Also, gold, silver, and copper outcrops have been found in the extreme southern part of the range (see Figure 2), but the adjoining bedrock areas (uncolored lodes) have not been prospected by AHM. See Applicable References of Mallory (Mineralization Plot), Post (3/1/70 Report), and U.S. Geological Survey (B 397 and P 1361).

4A) **Old Mines**: Eighteen small mines and many prospect holes dot the mountain range. The largest mines were the Bluebird, the Golden Copper, and the Golden Gate, each of which drifted about 1,000 feet into the mountains (see Figure 3).

LARGE ARIZONA GOLD PROPERTY

Lost Basin Mining District, Mohave County, Arizona

Property (as of 9/1/93): Contains minable gold deposits in a 7 mile long gold-bearing breccia fault zone, large suggested buried episyenitic gold-bearing alteration pipes, many gold and silver veins, a large gold-bearing banded-iron formation, a suggested buried copper/molybdenum porphyry, and about 3,000 acres of gold-bearing fanglomerates and alluvial drainages. Located in northwest Arizona, just south of the east end of Lake Mead and the mouth of the Grand Canyon, and just west of the Grand Wash Cliffs (Colorado Plateau) in T29 & 30N, R17W, American Heavy Minerals (AHM), owns 10.2 square miles (6,540 acres) composed of 129 lode claims (20 acres each) and 42 placer claims (80 to 160 acres each) which cover nearly all of the Lost Basin Mining District. See appended area photo of Figure 4, and maps, Figures 1, 2, 3, 6 and 7.

Adjoining Properties: As shown in figure 2, three square miles (1,920 acres) of adjoining mineralized bedrock mountain range to the west ("PS") is available for lease from the U.S. Park Service, as are several adjoining alluvial placer sections whose mineral rights are owned by Santa Fe Railroad ("SF") and a half section (320 acres) of state land ("AZ") presently leased by Garritson Mining Enterprises.

Area Geology: An 8 mile length of northeasterly trending Lost Basin mountain range in the Basin and Range province of Precambrian gneisses and schists and post-Paleozoic intrusives is paralleled on its east side by a 7 mile long breccia zone which, in turn is paralleled on its east side by a 7 mile length of uplifted gold bearing fanglomerates of Miocene/Pliocene age extending east through Grapevine Mesa to the Grand Wash Cliffs. The mountain range's gneisses and schists are dominantly biotitic and/or amphibolitic and in many places are intruded by coarse locally pegmatitic granite and quartz-carbonate veins. Tertiary volcanic conglomerates, water-laid tuffs, and magmatic hydrothermal ore deposits are present. A volcanic caldera is suggested under the gravels between the present southern extent of the Lost Basin Range and Garnet Mountain to the southeast. Age dating and geological data indicate several different (possibly as many as 6) geologic periods and environments of gold mineralization. Six different comprehensive geological field studies have been conducted on the property by the U.S. Geological Survey, graduate students of three universities, and two independent consulting geologists. See Figures 4 and 5 and Applicable References of Andreen, Arizona Bureau of Mines (B 137), Deaderick, Krish, Lucchitta, Post (3/1/70 Report), Smith, and the U.S. Geological Survey (B 397 and P 1361).

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Mineralization in the Lost Basin Mountains (Continued)

Old Spanish rock houses are evident in the gulches with burro haulage trails on riprap foundations winding up the steep mountain sides to the high-grade gold "Scanlon" mine (now called the "Empire-Manhattan") and the "Ford" mine, and possibly to the "Bluebird" mine before modern-day prospectors widened some of the trails and mined additional ore. In the area of the old Patterson water well (SE of AHM's property) two old Spanish arrastres used for grinding the gold ores have been identified. In 1974, Apache Oro Company (AHM's associate) commissioned Albert F. Trites, a consulting geologist, to sample and evaluate the Ford mine. The USGS in 1909 reported that Lost Basin's "ore contains principally gold and silver and a little copper, but no copper of commercial value and not enough to interfere with cyaniding." In 1981, gold ore from the Leroy prospect (see Figure 3) was successfully tested for amenability to cyanide leaching. See Applicable References, of Apache Oro Company (Vein & Soil Assays), Arizona Bureau of Mines (B 137), Leroy, Trites, and U.S. Geological Survey (B 397).

5A) **Santa Fe Mining**: In January of 1986, Santa Fe Mining (SFM) leased American Heavy Mineral's lode claims after one of SFM's geologists had sampled some gold vein outcrops in the canyon from 1/2 to 1 mile directly east of the Bluebird mine (see Figure 2). The assays were reported to be unusually high in gold. SFM had color stereo aerial photos (2-1/2"=1 mile) taken of the Lost Basin Range and conducted some geophysical and geochemical surveys in the Pai Mountain area and a couple of small areas farther north. However, before SFM could expand their studies into the more mineralized bedrock areas of Lost Basin, Santa Fe Railroad's merger with Southern Pacific Railroad was blocked by the Interstate Commerce Commission in August of 1986, and as a result, SFM immediately dropped its lease with AHM as well as leases with other companies on several other mineral properties in the western United States. See Applicable Reference of Santa Fe Mining.

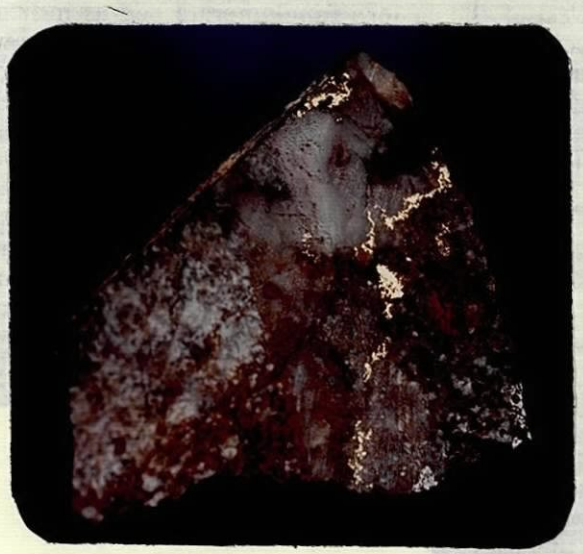
Gold Bearing Fault Breccia Zones: A 7 mile long, 1/4 mile wide curved band of gold bearing fault breccia bedrock lies to the west of the eastern fanglomerate bed as indicated in Figure 2. This highly fractured and brecciated bedrock was caused by major faulting with subsequent magmatic hydrothermal mineralization. Gold bearing quartz stringers, ankerite, limonite, and free gold (in some instances) fills the fractures and voids in the breccia (unlike the gold flakes in the vugs of the quartz veins in the down-dropped mountains to the west). This long breccia band has been divided into five zones which coincide with the five mineral zones shown in Figure 2:

1B) **Southern Breccia Zone**: This zone (dotted lines) coincides with the orange southern gold halo and is covered with pediments from westward erosion of Grapevine Mesa. (Note in Figure 4 the three mile long NW-SE crest of the mesa whose gulches back-up into space due to the westward erosion toward this breccia zone). See Applicable References of Deaderick, Lucchitta, Smith, and U.S. Geological Survey (P 1361).

2B) **Wall Street Breccia Zone**: This zone coincides with the blue southern silver-lead-zinc halo of Figure 2 and contains three shallow old mine shafts (the Wall Street mines, the High Voltage mine) as shown in Figure 3, and many prospect holes on mineralized outcrops. **As shown in the accompanying photo, the gold is associated with galena, native**

silver, vanadinite, and some chalcopyrite and pyrite. Between the two Wall Street mines is a prospect hole that contains chunky gold (up to 1/8") and sheet gold in fractures with limonite and quartz. Also, on nearby structures are the Mercury mine (see 1A, page 1), the Wall mines (silver on the side of the gulch and gold and chalcopyrite on the top of the mountain), and the Vanadium mine. As shown on both Figure 4 and page , one-quarter mile south of the Mercury mine the USGS found a syenitic aplite pyrite-bearing dike and, further north, a few hundred feet west of the Wall Street shafts, the USGS located an episyenitic aplite body with disseminated pyrite. See Applicable References of Apache Oro Company (Vein & Soil Assays, and Drill Assays & Logs), Deaderick, Lucchitta, Mallory (Mineralization Plot), RIP, Smith, and U.S. Geological Survey (4/30/68 Letter, and P 1361).

3B) **Copper Blow-Out Breccia Zone**: This zone coincides with the green middle copper band of Figure 2. At the "Copper Blow-Out" (see Figure 3) the zone contains two shallow shafts, a short adit, and many prospect holes on outcrops of secondary copper minerals such as azurite, chrysocolla, and malachite. About 600 feet directly west of these two shafts is a prospect hole with chalcopyrite in schist. Half-way between these two points (shafts and prospect hole) a quartz vein containing visible gold is exposed on the ground surface. Highly alterated bedrock with secondary copper minerals and some opal exposed in several dozer cuts and prospect holes extends from the Copper Blow-Out about 1/2 mile south and north about 1/4 mile. Drill sludge from a 240 foot deep "Core Hole" (see Figure 3) as sampled by the USGS assayed 0.083 oz. gold/ton. (The mineralized sections of the cores from this hole were thrown away by the inexperienced driller, so only assay of the sludge was conducted.) Recently, a backhoe trench cut into the breccia zone at the "Detector Vein" exposed an ore pocket with gold (along with limonite and ankerite) filling the quartz breccia fractures and openings up to 1/4 inch. **As shown in the accompanying photo, chunks of breccia with visible gold assayed from 20 to 110 ounces per ton.** This ore pocket is 1/2 mile directly west of the head of a series of 11 old King Tut gulches feeding an arroyo about one mile long located about 1/4 mile SE of the King Tut tailings pile. The immediate area surrounding this ore pocket was probably the source of many of the larger rough gold nuggets found in the King Tut gulches. As mentioned previously, this section of the breccia zone which coincides with the "copper zone" of the mineral zoning pattern, is high on the buried intrusive system (possible copper-molybdenum core at depth) and should, therefore, still contain widespread gold from the upper gold and the silver-lead-zinc halos that have only partially eroded and which were the source of much of the larger gold nuggets found in the eastern fanglomerates. See ApplicableReferences of Apache Oro Company (Vein & Soil Assays, and Drill Assays & Logs), Deaderick, Krish, Lucchitta, Mallory (Mineralization Plot), Post (3/1/70 Report), RIP, Smith, and U.S. Geological Survey (P 1361).



Gold Bearing Breccia Zones (Continued)

4B) **Red-Basin Breccia Zone**: This zone which coincides with the blue northern silver-lead-zinc halo of Figure 2, is on the eastern edge of "Red Basin" which was formerly erroneously called "Copper Basin" by a prospector that found a quartz vein with a small amount of green secondary copper staining! The basin's red iron-stained Proterozoic metasediments cover an area of about 1/2 mile long (N-S) and 1/4 mile wide (E-W). An 86 foot deep percussion drill hole near the center of this red area (west of the breccia zone) averaged 0.05 oz. gold/ton over the entire 86 feet. Another drill hole closer to the breccia zone to the east, assayed 0.02 oz. gold/ton over its 86 foot depth. Much of the breccia zone east of Red Basin is covered with fanglomerates. However, three 50 foot percussion drill holes by Resources International Partners (RIP) in bedrock on a road just west of the center of Section 4 (which is immediately south of Red Basin), where drill cuttings were blown out in piles on top of the ground contained considerable fine gold when samples were wet panned. See Applicable References of Apache Oro Company (Vein & Soil Assay, and Drill Assays & Logs), Deaderick, Krish, Lucchitta, Mallory (Mineralization Plot), Post (3/1/70 Report), RIP, Smith, and U.S. Geological Survey (P 1361).

5B) **Northern Breccia Zone**: This zone coincides with the orange northern gold halo of Figure 2. It contains the Climax Mine (described in the following 6B) and extends northerly through the Road Runner vein outcrop (see page 8, 5C, lineament "E"). On the east side of the Climax quartz breccia vein is a paralleling 27 foot wide north-south ankerite zone which is exposed at least 1/4 mile to the north of the Climax shaft. The USGS reports that trace elements in the free gold found in the Northern breccia zone are noticeably different than at the "Harmon Mine" (just over the top of the mountain, see Figure 3) indicating different original sources of mineralization. See Applicable Reference of U.S. Geological Survey (P 1361).

6B) **Climax Gold Mine**: This 105 foot shaft was dug in the northern breccia zone after World War II. On the ground surface the vein varies from 6 inches to 4 feet in width. At the bottom of the shaft the vein is 10 feet wide. A 600 foot length of the vein was explored by drilling to a depth of 50 feet, giving a probable reserve of 12,800 tons grading 0.51 oz. gold/ton. Drilling at an exposure about 500 feet farther north on the vein shows comparable values. Surface onyx exposed near the 60 foot wide horsetailed south end of the vein assayed from "nil" to "trace" to 0.06, 0.20, and 0.50 oz. gold/ton. The average of the mill production records from the Climax mine was 6.0 oz. gold/ton. See Applicable References of Climax and U.S. Geological Survey (P 1361).

Suggested Gold Bearing Episyenitic Pipe: Because of several ground surface indicators, such as related distribution patterns of gold bearing quartz float, sharp and angular gold nuggets, fanglomerate gravels, cross-cutting lineaments and mineralized vein structures, aeromagnetic low, and the area's mineral zoning pattern, a large buried gold mineralized pipe is strongly suggested in the NE corner of Section 4, T29N, R17W. As a result of this suggestion, color-enhanced infrared satellite photos were made (page 7) which show a circular form at the same location as the suggested pipe and a fan of fanglomerate gravels which appear to have possibly eroded to the SE from this pipe. The USGS had previously identified an episyenitic aplite ("E") and a syenitic aplite ("S") outcrop in the Wall Street breccia zone area, both of which show similar gravel coloring as the gravels in the photo SE of the suggested buried pipe. This pipe appears to be the source of much of the surficial rock types and large gold nuggets found within at least a 1 mile distance to the SE. The pipe's bedrock surface is estimated to be buried at a depth under the fanglomerate gravels of from 100 feet to, perhaps, 300 feet. See Applicable References of Mallory (11/1/86 Summary, 2/1/87 and

Suggested Gold Bearing Episyenitic Pipe (Continued)

8/25/87 Addenda) and U.S. Geological Survey (P 1361). The following observations and studies certainly point to a buried gold mineralized bedrock source about 0.2 mile in diameter which has the potential of being developed into a large open-pit gold mining operation:

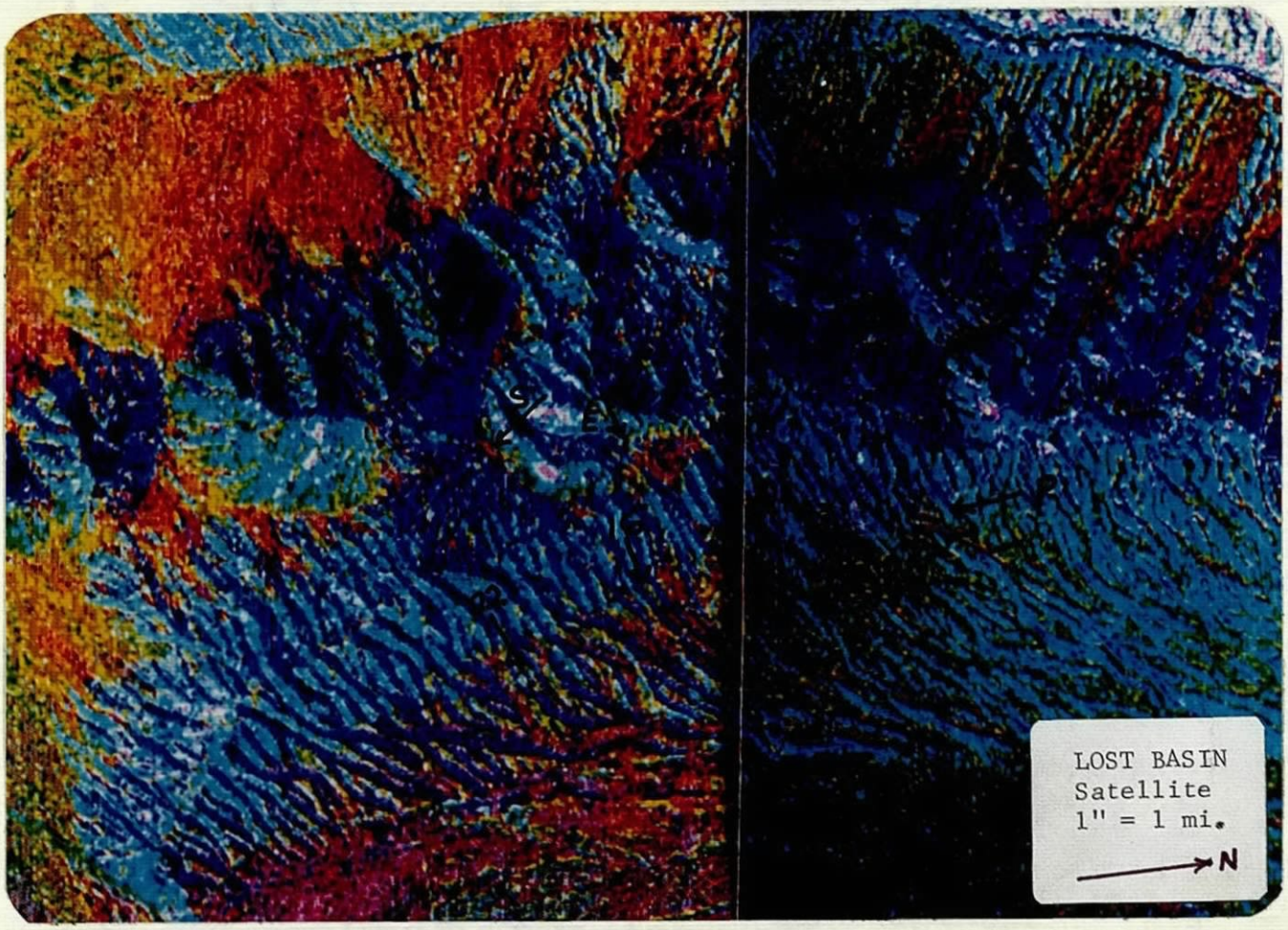
1C) **Quartz Float**: A significant indicator is that the fanglomerate gravels covering the suspected buried pipe contain abundant small (1 inch and smaller) white and colored quartz particles, and as one walks radially away from this spot, abundant large quartz rocks (mineralized and bull, 3 to 12 inches diameter and larger) cover the ground. Often the breaking with a rock hammer of pieces of this quartz rock float reveals visible free gold in vugs of hematite, or ankerite. Also, upon inspecting the surrounding area, it is obvious that the bulk of this quartz float (both small and large) has been deposited to the SE (a distance of at least 1 mile) and becomes more diluted with fanglomerate gravels the greater the distance from the suspected pipe. To the north and west, the larger quartz rocks and abundant quartz gravels are evident in the fanglomerate gravels only for about 1/4 to 1/2 mile. However, to the northeast (present surface drainage) abundant quartz float is found over a distance of at least two miles.

2C) **Gold Distribution**: Another significant indicator of a possible buried mineralized bedrock pipe are the eluvial gold nuggets found in the vicinity which are very sharp and angular (not traveled more than a few hundred feet) with distinct vugs of ankerite, or hematite, and usually are large (1/16 to 3/4 inch diameter), and appear to have been eroded out of a large mineralized structure. See nugget "A" of photo on page 13. The black sand concentrate particles (after wet panning) are larger than the black sands found elsewhere in the fanglomerates. Also, free gold attached to rough hematite and quartz particles is usually found in the black sand concentrates.

3C) **Satellite Color-Enhanced Infrared Photos**: After various ground observations suggested a buried gold pipe in bedrock with initial erosion to the SE (instead of the present-day drainage to the NE), the color-enhanced infrared photos (next page) were made which, to the surprise of all concerned, show a rounded anomaly at the same location as the suggested buried pipe "P" and erosion appears to have been to the SE! These photos distinguish (in general) by absorption and reflection, different rock types such as granites, volcanics, and both newer and older fanglomerate gravels and pediments. On the photo note the yellow/brown/-red/orange colored band which shows recent gold bearing fanglomerate gravels that appear to have originated in the area of the pipe "P" and flowed SE to the end of Lost Basin ridge (in the lower left hand corner), a total distance of about 4-1/2 miles and a width of about 1 mile. This gold bearing gravel band probably extends about 1-1/2 miles to the north of the arrow, but is covered by more recent flows of pediment gravels (the blue color) from the steep erosional slopes of Tut Mountain on the west. Note that this multi-colored band plus its extension under the north pediments covers the primary areas of surface gold bearing gravels where various gulches were placered for gold by the King Tut and others during the past 50 years (see Figure 4). However, because bedrock (which underlies this eastern fanglomerate mesa) dips to the north (100 feet in 3 miles) it is difficult to justify erosion of a mineralized pipe any great distance to the SE. Possibly, the colored gravels beyond those eroded from the pipe (say 1 mile SE of "P") are a result of erosion from episyenitic pipes such as "E" and syenitic dikes such as "S" (marked on photo in the Wall Street area) as well as several other possible similar structures not yet identified in the Lost Basin Range, or under the fanglomerates. Of course, these very recent gravels (colored band) are mixed

Suggested Gold Bearing Episvenitic Pipe (Continued)

with older pediment gravels from the range to the west and the underlying Muddy Creek formation.



4C) **Pediment Gravels**: Obviously, SE of the buried pipe the pediment gravels (blue band) between the curved N-S Lost Basin ridge and the eastern fanglomerate band were primarily derived from the Lost Basin Range to the west (before the eastern gravels were uplifted) which left the eastern gold fanglomerate deposits protected from further rapid erosion especially in the southern and central parts. Field inspection of these pediment gravels shows a subtle change in rock types to the east where the pediment meets the colored gravels in the photo.

5C) **Lineaments**: (See Figure 8). In studying color stereo aerial photos flown in 1967 and 1986, along with black and white USGS stereo photos flown in 1958, 1973 and 1980, five predominant lineaments (A,B,C,D,E) intersect at the suspected buried mineralized bedrock pipe. Each lineament viewed in the pediment and fanglomerate gravels extends to the SE, W, and NW into bedrock lineaments of known exposures of veins, breccia zones, faults, or shear zones. Close inspection of the photos as well as walking over the ground surrounding the buried pipe, shows lineaments to be desert plants and trees, or changes in surface relief, or subtle differences such as soil coloring and changes in rock types in the gravels.

Suggested Gold Bearing Episyenitic Pipe (Continued)

See Applicable References of Cooper Aerial Surveys, Santa Fe Mining, and U.S. Geological Survey (Photos GS-VVB-58, 73165-73, and 351416-HAP-80), and Figure 8:

"A": This lineament is a major shear zone about 1/2 mile wide. Also, as mentioned in subparagraph 1C, abundant quartz float is found on (and feeding off of) the ridge from the suspected buried pipe along lineament "A" to the northeast (to the lower right-hand corner of photo).

"B": A very predominant pediment lineament.

"C": A major shear zone NW-SE. At most junctions with cross-cutting N-S structures in the Lost Basin Range to the west, mineralization is concentrated. At the junction of lineament "C" with "D" and "E" (location of buried pipe), mineralization should be extensive.

"D": A major structure that extends NW to the mouth of Hualapai Wash at Lake Mead. In reference to the short section of the lineament which is shown in Figure 8, the middle part (covering 3/4 mile) of this section is the western limit of where good placer gold concentrations are found in the gulches. To the north of this middle section there are bedrock exposures of mineralized structures, and to south the placer gold distribution appears to be directly related to the buried pipe rather than to this lineament.

"E": The Road Runner, "RR", gold/silver vein which is in the northern breccia zone, appears to dip under the pediment gravels and follow this lineament southerly toward the buried pipe. This vein is exposed at point "RR" which is in Park Service withdrawn land (SE corner of Section 28) about 1/4 mile north of AHM's claims. An average appearing grab ore sample from this vein with no visible free gold showing, reportedly assayed 39.1 oz. gold/ton and 35.4 oz. silver/ton!

"QH": Quartz Hill is covered with large quartz float (mineralized and bull, 3 to 12 inches diameter and larger) 1/4 mile NW of the suspected buried pipe. This quartz float is part of the uniform radial deposition which surrounds the buried pipe. Four percussion drill holes from 20 to 40 feet deep in the pediment gravels were drilled 100 feet apart, about 1/4 mile west of the NE corner of Section 4. The reported average oz. gold/ton for the 20 foot hole was 0.015, for the 30 foot hole 0.44, for the first 40 foot hole was 0.02 and the other 40 foot hole 0.19. See Applicable Reference of Climax.

"X": Recent rock chip channel sampling was conducted near to the lower edge of a cemented riverbed gravel layer of Muddy Creek Formation about 20 feet thick which is about 100 feet east of the 86 foot deep drill hole near the center of "Red Basin" (see 4B, page 4). The cemented sands assayed 0.009 oz. gold/ton. Red rock inclusions (same rock types as in Red Basin) in this cemented layer assayed less than 0.001 oz. gold/ton. It is believed that these cemented sands came directly from the area of the suspected buried mineralized pipe to the east, since the positioning of many flat rocks in this layer indicates original drainage to the west. The red iron staining in Red Basin is believed by several consultants to have originated to the east under the fanglomerate gravels, possibly from the

Suggested Gold Bearing Episyenitic Pipe (Continued)

suggested buried mineralized pipe. See Applicable Reference of Apache Oro Company (Vein & Soil Assays).

"Y": This point is the junction of Lineament "C" and the cross-cutting northern breccia zone. Channel sampling assayed 0.006 oz. gold/ton. See Applicable References of Apache Oro Company (Vein & Soil Assays).

6C) **Additional Considerations**: The suggested buried gold pipe (in the NE corner of Section 4) is covered by the extension of the northern gold halo and is located (as shown in Figure 10) at the neck of the magnetic low that encircles the "Copper Blow-Out" and the adjoining magnetic "low-low" covering Sections 34 and 27 to the NE. On the long NE-SW ridge immediately SW of the buried pipe, a cable-tool drill hole was started by Western Nuclear, but abandoned when the driller thought he hit bedrock at about 10 feet. It is suspected that older bedrock could be still higher than the adjoining mineralized pipe which would have eroded much faster than the older bedrock through which the pipe was intruded. See Applicable References of Heinrichs' Airborne Magnetic and Scintillation Survey, and Western Nuclear.

Possible Buried Episyenitic Pipes in Southern Area: Two other possible large buried mineralized bedrock deposits are suggested by lineaments and surrounding fanglomerate occurrences of sharp, angular eluvial gold nuggets along with fine gold. Both suspected bedrock deposits are separated in a NW-SE direction by a distance of about 3/4 mile as shown in Figure 9 (which is a copy of the southern area of the color-enhanced satellite photos on page 7). Even though this area does not have as many of the obvious indicators as observed around the northern suspected buried pipe, further consideration and studies are warranted:

1D) **NW Corner of Section 22, T29N, R17W**: The old Lone Jack Placer mine is 1/4 mile directly north and other old major placer diggings are directly to the east of this suspected deposit. Also, a curved lineament 2 miles long in the fanglomerate gravels on the west and several cross-cutting lineaments which intersect in the general area are especially obvious on the 1967 color stereo aerial photos. A white spot (about 0.05 inch in diameter) is seen on the color-enhanced satellite infrared photo (page 7, marked "22") which directly coordinates with two of the aforementioned cross-cutting orange lineaments (N30°E and N80°E) shown in Figure 9. See Applicable Reference of Cooper Aerial Surveys.

2D) **E Center of E-1/2 Section 16, T29N, R17W**: This is in the 1/2 section State of Arizona lease of the Garritsons', in the area of the trench described in 2F on page 15, and is marked as "16" on the color-enhanced satellite infrared photo on page 7. Also, this point is at the junction of two long major purple lineaments shown in Figure 9. One purple lineament, N60°E, has been previously identified as a major fault. The other purple lineament, N30°E, covers a distance of about 9 miles, which is an obvious linear structure, at least in the northern 4 mile length where it intersects with the aforementioned identified fault.

Other Observations Regarding Intrusives: In the eastern fanglomerates other indications of mineralized bedrock intrusives into, and possibly up through the Muddy Creek formation have been observed. For example, at or near the upper (western) end of gulches placered by the King Tut and others over the eastern fanglomerate gravels, the color aerial photos occasionally show short SE-NW, or S-N lineaments crossing the gulches near their upper ends. On the ground upon inspecting the bottom of the gulches directly below these crossings, many times float of ankerite, a green schist with black mica, and gold bearing

Other Observations Regarding Intrusives (Continued)

quartz rocks are found. Occasionally, pegmatite float is found. Ankerite and this particular green schist and pegmatite are not common as float in the surrounding alluvial gravels. In other words, these three particular rock types appear to have eroded from some structure directly related to the crossing lineament. Near the head of one gulch on the north edge of the "Placer Camp" shown in Figure 3, large boulders of pegmatite are buried in a N-S line down the N side of the fanglomerate ridge suggesting a nearby pegmatite dike. This lineament also appears on the 1967 color stereo aerial photos. At the head of an old placer gulch west of the King Tut tailings pile, a rock was found with a matrix of weakly metamorphosed red sands (easily crumbles) and an intruded crystalline quartz vein. Also, a cross-cutting lineament is seen in the color stereo aerial photos at this same point. Two cable-tool drill holes were drilled by Western Nuclear in two gulches, one about 1/4 mile E and, the other about 1/4 mile NE of the "Copper Blow-Out" (see Figure 3) to sample the gravels in the bottoms of the gulches. In both holes, drilling was stopped when bedrock was hit at 30 feet. The driller later reported that the bedrock chips were "blood red" but no samples were saved or assayed. See Applicable References of Cooper Aerial Surveys and Western Nuclear.

Suggested Copper/Molybdenum Porphyry: The following observations suggest a buried copper/molybdenum porphyry similar to the Duval Pennzoil porphyry at Mineral Park (38 miles directly south of Lost Basin), but which has eroded about 600 feet less than Mineral Park (leaving Lost Basin about 600 higher on the buried intrusive system):

1E) Mineral Zoning Pattern: As described in 3A on page 2, and as shown in Figure 2, the NW-SE copper (green) band covers the "Copper Blow-Out" and the "Golden Copper" mines.

2E) Aeromagnetics: An aeromagnetic pattern (see Figure 10) consisting of a magnetic low, in part, centered on the exposed "Copper Blow-Out" area and surrounded by a discontinuous band of aeromagnetic highs apparently produced by epigenetic introduction of magnetite, along with vein quartz. This magnetic discontinuity has been confirmed at high altitude by USGS. See Applicable References of Heinrichs' Airborne Magnetic and Scintillation Survey and U.S. Geological Survey (GP-757).

3E) Age Dating: An isotopic age dating on vein material indicated that the veins are of Laramide age (approximately 70 million years old)--the same general age as that of many porphyry copper deposits of the southwestern United States. See Applicable References of U.S. Geological Survey (P 1361).

4E) Anomalous Minerals: In many rock and soil samples from the property of geochemically anomalous amounts of gold, silver, copper, lead, zinc, molybdenum, nickel, chromium, barium, arsenic, vanadium, mercury, indium, cadmium, antimony, thallium, manganese, and tellurium are present.

5E) Native Copper: Recently, a "porphyry particle" of native copper from surface gravels east of the "Copper Blow-Out" was identified under a 250,000 power mineral identification microscope.

6E) Mercury: The existence of anomalous amounts of mercury associated with gold veins and with the few exposed copper occurrences suggests that both types of deposits are genetically related and younger than Precambrian.

Suggested Copper/Molybdenum Porphyry (Continued)

7E) **Green Gold Nuggets**: An observation made by a local prospector is that many of the gold nuggets found in gulches to the east of the "Copper Blow-Out" have a "greenish tint" (secondary copper?) unlike the nuggets in other areas.

8E) **Research by the USGS**: The U.S. Geological Survey spent 16 years in researching the geology and mineralization of Lost Basin. These studies included the petrochemistry of crystalline rocks, fluid-inclusion studies and spectrochemical analysis of accessory metal (signatures) in native bedrock and placer gold samples, and their relations to the geology. See Applicable Reference of U.S. Geological Survey (P 1361).

9E) **Geological Studies**: After Apache Oro Company (an associate of American Heavy Minerals) had developed the mineral zoning pattern and realized its relationship to the aeromagnetic pattern, Ed Post, a consultant, in 1970 studied and reported on the porphyry copper potential. Subsequently in 1974, a student of the Colorado School of Mines in comparing the relationship of trace element distribution to the level of erosion in some producing porphyry copper deposits (Silver Bell and Esperanza) in Arizona with prospects (Lost Basin, Arizona, and Bella Esperanza, Mexico) showed a definite correlation in mineral zoning between Lost Basin and the two producing porphyry copper deposits. In 1980, a graduate student of the New Mexico Institute of Mining and Technology conducted further studies followed in 1984 by Lawrence Smith, Consultant, all of which further substantiated the potential of a copper/molybdenum porphyry at depth. See Deaderick, Krish, Mallory (3/18/70, 6/10/70, and 1/1/71 Memos), Post (3/1/70 Report), Smith, and U.S. Geological Survey (P 1361).

Geochemical Mineral Indicators: Desert plants such as Princesplume (which absorbs selenium from the soil) are often found in mineralized zones of both bedrock and the fanglomerate gravels. Also, some desert plants contain small amounts of cyanide. Anomalous mercury occurs throughout the fanglomerate gravels and bedrock in Lost Basin. These and other organic and mineral indicators (such as mercury vapor) may possibly be used to advantage in prospecting for buried mineral deposits in Lost Basin. See Applicable References of Mallory (3/3/70 Letter and 6/1/75 Map), Post (2/25/70, 2/26/70, 3/4/70, and 3/25/70 Letters), and U.S. Geological Survey (4/30/68 Letter and C 562).

Previous Bedrock Exploration: In addition to the research by the USGS, and the exploration and studies mentioned in the foregoing pages which included geologic, color aerial stereo photos, aeromagnetics, mineral zoning, evaluations of vein gold potentials, assay of sludge from a 240 feet deep core hole, various drilling (percussion, hammer, and rotary), and leaching, the following has also been conducted by, or for Apache Oro Company (an associate of American Heavy Minerals):

Total intensity airborne scintillation survey.
Induced polarization survey, 7 lines in Red Basin and Migmatite Valley.
Gravity meter profile, north-south on Pierce Ferry Road.
24 percussion drill holes, (average 80 feet deep) and 21 holes (average 30 feet deep) in exposed bedrock.
Construction of more than 35 miles of roads.

See Applicable References of Apache Oro Company (Drill Assays & Logs and 7/19/72 Gravity Profile), and Heinrichs' (Airborne Magnetic and Scintillation Survey, and Electrical Geophysical Survey). The goal of Apache Oro Company was to conduct geological, geophysical, and geochemical surveys to narrow down the area into potential mining targets that would sufficiently interest outside mining operators to complete the exploration and

development. However, all of the drilling and associated sampling was conducted and controlled by outside groups, most of whom had little or no previous gold exploration experience. In fact, all drilling was at random and was not preceded by any geophysical, or geochemical studies to delineate possible targets. Most of the gold was left in the bottom of the holes, or was lost in air-blowing of the drill chips onto the bare ground, or lost in processing. In other words, Lost Basin bedrock needs to have careful, systematic, scientific exploration and pilot plant studies, combined with the data from the past sporadic attempts, to assure proper development.

Ore Samples: American Heavy Minerals (AHM) has collected and cataloged many thousands of ore and wallrock samples which are stored in its Arizona field office and are available for inspection. Sample locations are plotted on large (4" = 1 mile) aerial photos.

Future Exploration of Bedrock: Before anymore "blind," random drilling is done in the bedrock, effective geological, geochemical, and geophysical surveys should be conducted over all targets. Where bedrock is covered extensively by alluvial gravels (in areas of suspected buried pipes) the major lineaments observed in the aerial photos should first be mapped in detail, including the plotting of the identification, distribution and directions of flow of different placer formations in the various exposed layers (sides of gulches and road cuts).

Gold Bearing Fanglomerates: The eastern gold bearing fanglomerates are contained in an area about 7 miles long and 2 to 3 miles wide, and cover the steeply dipping eastern slope of the Lost Basin Range. They consist of Tertiary Muddy Creek formations derived from various gold bearing mountain ranges at least 40 miles distant, and are covered and intermixed with gravels eroded directly from the Lost Basin mountain range to the west. In 1983, American Heavy Minerals (AHM) commissioned a consulting geologist to study the area and review all previous research conducted on the property. His report (see Applicable Reference of Smith) ties together the findings of the U.S. Geological Survey and the several independent geologists who have studied the area, and explains the detailed geologic history of the property and region. Three different types of gold deposits in the eastern fanglomerates were identified:

1. Buried residual fossil gold deposit.
2. Buried fossil gold channels from residual deposit.
3. Surface alluvial gold deposits.

Fanglomerate Gold Potential: The fanglomerates contain gold carried by mud-flows from as far as 40 miles distant from the Virgin Mountains to the north in Utah, from the Cerbat Range to the south, and from the White Hills to the southwest, as well as gold eroded from veins and breccia zones in the adjacent Lost Basin mountain range to the west. Subsequently, the Muddy Creek gravels which had formed in a trough deeper than 1,000 feet, were uplifted and tilted due to block faulting and were left as a mesa with minimal subsequent erosion, thus preserving this huge gold deposit. (Also, drainages from this mesa to the south and southwest contain reworked gold bearing gravels.) Sampling data has been collected from 140 backhoe trenches (5 feet deep) and several small gold placer operations (all surface alluvium), and from a water well 1,340 feet deep and several hundred drill holes 50 to 100 feet deep (no evaluation of the ultra-fines in any holes and significant coarse and fine gold was left in the bottom of many holes). **In 1968, the U.S. Geological Survey estimated the resources "may exceed 500 million cubic yards of gravel averaging 0.01 to 0.02 oz. gold per cubic yard," (5 to 10 million ounces)**, but this did not include fine and ultra-fine gold, because the hand-operated dry-washer used for sampling by the Survey geologist could not possibly have recovered any meaningful amount of fine gold values. See Figures 2, 4 and 6 and Applicable References of Apache Oro Company (Drill Assays & Logs), Dragg, Gray, RIP, Smith, and U.S. Geological Survey (C 560, P 650-A, and P 1361).

Gold Nuggets: In the alluvial gravels of the eastern fanglomerates (in addition to the ultra-fine and micron size gold, silver and other minerals), many visible gold nuggets are found, all of which contain mercury and silver plus various "signature" minerals. The majority of the nuggets are about 1/16 to 1/8 inch diameter with a few from 1/4 to 1/2 inch (see photo below), and most have sharp, ragged surfaces indicating limited travel from their source. Occasionally 2 ounce nuggets are recovered. The nuggets are believed to have been formed either from hydrothermal deposition in voids and fractures in nearby breccia fault zones and episyenitic pipes (note "A" nugget in lower photo formed in ankerite), or from precipitation of micron gold out of meteoric water by mercury in the fanglomerates (or by bacteria, or fungi) in "growing" nuggets around river-worn and metamorphosed sand particles found inside the nuggets (note surface-rounded "B" nugget with round sand-grain in lower photo). Gold nuggets attracted by a magnet are found to contain rounded magnetite crystals. The USGS spent 16 years in researching the geology and gold mineralization in the Lost Basin and adjoining Gold Basin mining districts as reported in Applicable Reference of U.S. Geological Survey (P 1361).

Note ratio of coarse to average size nuggets and sharp, ragged surfaces. (Photo 50% actual size.) From surface gulches in eastern fanglomerates in E-1/4 of Section 33 (about 1,000 feet east of northern breccia fault zone).

A = Nugget with ankerite crystal vugs from nearby breccia zone. B = Nugget containing rounded sand grain. (Photo about 75% actual size). From surface gulches in eastern fanglomerates in NW-1/4 of Section 10. (about 1-1/2 miles east of copper blow-out breccia fault zone).

Large nugget (actual size). Weighs 8.53 Troy ounces (almost 3/4 pound) with 7.34 ounces of gold content. Named "The Apache Oro Nugget," it was found by Frank Snow about 1-1/4 miles east of the breccia fault zone.

Heavy Black Sands: In the fanglomerate alluvial drainages, unusually large quantities of heavy black sands are found (up to 24 pounds of plus 0.1 mm particles per cubic yard of gravels). The sands consist of magnetite, hematite (with occasional attached gold and silver), limonite, ilmenite, pyrite, mercury, tungsten, uranium, garnet, tin, and occasional platinum/-palladium. Balls of mercury with enclosed gold particles are occasionally seen in the black sands. An assay showed 5.4 pounds of tin per ton of black sands which is believed to have been introduced into the fanglomerates from sea-floor limestone deposition during an extended embayment of the Gulf of California to the mesa. See Applicable References of Mallory (1967 Report), and U.S. Geological Survey (P 1361).

Buried Residual Fossil Deposit: Is laid down in a curved band of fanglomerates about 6 miles long and is believed to be from 1/2 mile to 3/4 mile wide, and several hundred feet deep on its eastern side. See Figure 4. The fossil deposit is covered with caliche-cemented gravels from 5 to 20 feet thick (pediment and recent surface erosion). The fossil gravels are products of cyclic reworking of the Muddy Creek fanglomerates and of erosional products from the adjacent breccia fault zone and mountain range. Also, erosion from nearby known and suggested episyenitic alteration pipes have contributed to the deposit. The fossil deposit formation consists of various horizontal layers of both loose and cemented sands and gravels which appear to have very small gold particles distributed with some uniformity throughout the layers (much of the small gold being cemented to the gravels) with, of course, more concentration of both small and larger gold particles on top of and in various red and brown layers of higher clay content sands and on caliche zones that act as false-bedrock horizons. In viewing the heavy black sand concentrates from recently exposed top layers of the fossil deposit under a 40-power stereo microscope, the particles of gold, silver, hematite, magnetite, quartz, and other minerals along with gold attached to hematite and quartz particles are very rough and have not been rounded by travel and do not appear to have been materially attacked by chemical solutions like the more rounded and coated back sands and gold found in the surface alluvial gravels. The viewer gets the impression that the heavy sands from this upper strata of the fossil deposit appear to be similar to eluvial particles from a freshly crushed ore vein, and probably were eroded directly from adjoining bedrock sources. With depth, the sand and gravel layers should contain increasing quantities of cyclic reworked Muddy Creek gravels. This residual fossil deposit might be appropriately called a "fossil bench placer" since it is several hundred feet higher than the mesa's bedrock trough and is in a long band resting upon the steeply dipping eastern flank of the Lost Basin range. Only 5 to 20 feet of overburden would have to be removed to expose this residual fossil deposit for open-pit mining.

1F) Drilling the Fossil Deposit: This deposit was never explored or mined until 1986 when Andy and Ken Garritson, owners of the State of Arizona mining lease of the E-1/2 of Section 16, T29N, R17W, commissioned some holes to be drilled on their lease, as well as on AHM's property. Using a 6 inch rotary air drill, five 50 foot and one 95 foot deep evenly spaced holes were drilled along an E-W ridge

Buried Residual Fossil Deposit (Continued)

from the western edge of the fossil bench placer about 0.3 mile to the east in the middle of the E-1/2 of Section 16. Also, two 35 foot and one 50 foot deep holes were drilled into the bench along an E-W ridge over a distance of about 0.2 mile in the middle of the W-1/2 of adjoining Section 22 to the SE, and one 35 foot hole (probably drilled into a fossil channel) in the center NW-1/4 of adjoining Section 10 to the NE. These holes were drilled primarily to locate the fossil deposits; but, because of the lack of sample control by the driller, no quantitative assays were made. However, Andy and Ken Garritson, each wet-panned one pan of cuttings and sand from every 5 foot drill section of material from the hole. All holes were reported to show visible fine gold in several of the 5 foot drill sections, but nearly every drill section in all holes were reported to show very fine gold under a 30-power field microscope. Also, gold attached to both hematite and quartz particles was observed. More gold was observed in the most western hole than in those to the east in the fossil bench in both Sections 16 and 22. The drill hole material contained very fine pink, brown and white quartz sands and abundant hematite. The amount of magnetite was low as compared with that in surficial alluvial sands. An accompanying multiple line magnetometer survey was conducted by Heinrichs Geoexploration Company, but only minimal coordination with the drill holes appeared possible. See Applicable References of Apache Oro Company (Drill Assays & Logs), Garritson, and Mallory (8/25/87 Addendum).

2F) **Leaching the Fossil Deposit**: In the E-1/2 of Section 16, on a ridge just north of the ridge with E-W line of six drill holes (mentioned previously), a D-9 dozer dug a 10 foot deep N-S trench through the crest of the ridge, exposing the top layers of the fossil bench under a caliche-cemented pediment gravel overburden. The layers were made up of weakly cemented sand and gravel, interfingered with red and brown clay layers as well as some caliche-enriched layers. Two 50 pound samples were taken by the Garritsons from these layers, just above a red clay layer on the bottom. Five pounds were split from each sample and placed in a cyanide leach that was occasionally agitated (helped clean off desert-varnish on the gold particles). Assays of the gold recovered were 0.06 and 0.24 oz. per ton. As mentioned previously, the gold in the upper layers of the fossil bench consists of free particles as well as gold attached to hematite and quartz sands. Consequently, 100 tons was dug from the foregoing exposed fossil bench and was trucked about 20 miles west to a closed circuit cyanide heap-leaching plant in Gold Basin by the Garritsons. However, it was found that either organic material, or desert varnish (manganese, or iron oxide) which coated the free gold, as well as the gold on the hematite and quartz prevented the cyanide from attacking much of the gold in the unagitated heap. Subsequently, caustic soda was found to effectively clean off the coating on the gold; however, by that time control of the leaching test was lost and results were meaningless. No subsequent leaching tests have been conducted on this ore. It is believed that successful leaching of this fossil deposit can be accomplished by first recovering the coarser gold nuggets by conventional gravity separation methods and at the same time screening out the larger gravels, making sure to not throw away the fine and ultra-fine gold. The resulting screened material should then be adequately crushed and ground to liberate and clean the ultra-fine minerals before leaching. Caustic soda, or other cleaning agents will have to be added to remove the organic coatings and desert varnish. Also, cement may have to be added to improve percolation. Of course, before any large-scale leaching operation is attempted, the particular volume of the fossil bench placer to be mined must be adequately explored, and a pilot plant study conducted. See Applicable Reference of Mallory (8/25/87 Addendum).

Buried Fossil Gold Channels: Slow erosion produced fossil channels flowing outward from the fossil bench placer. These channels are buried under present surface pediment alluvial gravels and are exposed in several spots by incised present-day gulches. Both the fossil bench and the outward flowing fossil channels contain anomalous amounts of hematite and limonite, and the resulting reddish-brown staining of the fossil channels is usually apparent where present-day gulches have cut the fossil channels, especially as seen in color stereo aerial photos and after a rain. Using this coloring as an indicator, the location of fossil channels can be implied up to about two miles from the residual fossil layer. See Applicable Reference of Cooper Aerial Surveys.

Present-Day Surface Alluvial Gold Gravels: All placer mining (wet and dry) in the eastern fanglomerates has been conducted in the surface gravels which were formed from erosion and reconcentration of sands and gravels from the fossil bench deposit and outflowing fossil channels, along with recent erosion from the Lost Basin Range. Also, placer mining on the western slope of the Lost Basin Range has occurred at, and several hundred feet west of the mouths of the canyons that drain into Hualapai Wash. These shallow western alluvial deposits are fed by erosion from veins and breccia zones in the Lost Basin mountains and by westward erosion of the eastern uplifted fanglomerate mesa. In the eastern fanglomerates, larger gold nuggets are found nearer to the fossil bench and channels, with gold particles becoming smaller and more uniformly distributed in the drainages to the east and north and, also, in the drainages to the southwest (Gold Basin) area. Large quantities of black sands and widely disseminated fine gold are found in these outer drainages where the rate of flood water flow suddenly decreased. Both color and black and white aerial photos indicate widespread heavy black sand concentrations at these points of sudden flood flow rate change. An airborne scintillation anomaly (2 to 3-1/2 times background) about 1/2 mile long occurs in the W-1/2 of Section 6, T28N, R17W, which covers the N-S width of the black sand concentration in the southwest (Gold Basin) area where radioactive particles would be expected to concentrate in their westward migration. See Figures 3, 4, and 10 and Applicable References of Cooper Aerial Surveys, Heinrichs' Airborne Magnetic and Scintillation Survey, and U.S. Geological Survey (Photos GS-VVB-58, and 351416-HAP-80).

Former Alluvial Placer Operations: Since all of the old lode gold mines (before 1930) had westerly downward erosion and drainage into Hualapai Wash on the west side of Lost Basin Range, and since these mines were geographically lower than the west side of the uplifted eastern fanglomerate mesa, the prospectors probably were not led to look for placer gold in the uplifted eastern fanglomerates. As a likely result, gold nuggets were not discovered in this eastern mesa until 1931--not by prospectors, but by a rancher's wife who picked up a golf ball size gold nugget! Three years later the first placer operation (King Tut) was launched, followed in the next 50 years by other smaller operations and hundreds of "weekenders" and a few serious prospectors using hand-operated dry-washers and metal-detectors during recent years.

1G) **King Tut Placer Mine**: After considerable sampling of surface arroyo and gulch bottoms, in 1934 the King Tut placer operation was launched in the NE-1/4 of Section 9. A pipeline was installed to bring water (for sluicing) to nearby water tanks by gravity from mountain springs about 10 miles to the southeast. A small power-shovel dug into the arroyo and gulch bottoms but was limited by hard caliche to a maximum depth of 6 feet. Dump trucks hauled the shoveled gravels from Sections 3, 4, 9 and 10 to the sluice. The reported yield was 1,175 troy ounces of gold averaging 0.035 oz./cu.yd.; however, several persons involved in the operation have since revealed that more than 2,000 ounces were produced with the missing gold having been high-graded by employees who sold the nuggets in Chloride, Kingman, and Las Vegas. None of the gold was mined directly from the residual fossil bench, or its buried channels. Figure 4 shows the gulches

Former Alluvial Placer Operations (Continued)

placered by the King Tut and others up to 1958. See Applicable Reference of Mallory (1967 Report).

2G) **Lone Jack and Queen Tut Mines**: As seen in Figure 3, the Lone Jack placer is 1-1/2 miles directly south of the King Tut and the Queen Tut placer 2-1/2 miles north. Both wet and dry washing operations were tried at these placers after the King Tut closed down.

3G) **RIP's Alluvial Placer Operation**: In 1976, American Heavy Minerals (AHM) leased its properties to Resources International partners (RIP). In 1978, RIP set up a wet placer system using water piped from a nearby 1,340 foot well. Alluvial gravels from two narrow gulches in the eastern fanglomerates of the N-1/4 of Section 10, T29N, R17W, to a maximum depth of 10 feet onto the caliche-cemented bottom, were dug by a front-end loader and then dumped onto a conveyor feeding a wet classifier from which (-)3/4" material was sluiced. Later, jigs were added at the output of the sluice. After about five months of placering, RIP reported a recovery of 113 troy ounces of free gold, plus abundant black sands.

Previous Attempts in Drilling the Fanglomerates: The only successful drill employed to date (see page 14, Drilling the Fossil Deposit), that appeared to capture most of the fanglomerate gold is the rotary air drill with reverse circulation. Percussion air drills appear to force some of the gold into the drill walls and, if the air pressure is insufficient, the large gold particles tend to remain in the bottom of the hole. So far, drills that use water instead of air appear to be worthless, such as the following described cable tool and churn drills. Perhaps a heavy mud might be effective in capturing and bringing the gold to the surface. American Heavy Minerals (AHM) had no control over the drilling and sampling which was conducted by outside groups who either had leased the property, or were considering a lease. Most groups were inexperienced in fanglomerate placer gold sampling. Some or all of the coarse and fine gold particles were left in the bottom of the holes, and most of the ultra-fines were lost in dust clouds or wash water. In many instances, the drill cuttings were blown, or dumped on top of the bare ground (into sand, gravel, and weeds), then the samples for assay were taken from the top of the pile! In several cases, considerable values were lost in the subsequent sample handling and gravity recovery operations. The following describes some of the difficulties encountered in drilling and sampling the fanglomerates:

1H) **Cable Tool Drilling in the Fanglomerates**: In 1969, Western Nuclear drilled 10 seven-inch cable tool holes 100 feet deep using water in widely scattered locations in the eastern fanglomerates. The samples representing 5 foot intervals were first dried in large wooden trays (with narrow cracks between the boards), then shoveled into barrels which were trucked to Colorado for wet gravity concentration in a Denver Gold-Saver. Only four samples yielded more than six visible gold flakes! It was suspected that only gold flakes which were churned up in the water would be caught by the input valve which was about 8 inches above the bottom of the cable tool bit. The following year to check this supposition, grab samples from the bottoms of several holes (by dropping down the holes an 8 foot long, 4 inch diameter steel pipe on a cable) proved that considerable gold particles and black sands (both fine and coarse) were left in the bottom of the holes by this

Previous Attempts in Drilling the Fanglomerates (Continued)

ineffective drill baler. Needless to say, no credibility should be given to Western Nuclear's tests. See Applicable References of Smith and Western Nuclear.

2H) Churn Drilling in the Fanglomerates: In 1986, Channel Mining drilled 32 churn drill holes using water to an average depth of 30 feet in easily accessible spots in the eastern fanglomerates and southern alluvial gravels. All holes were reported as "blank" (no gold seen). AHM personnel who witnessed the drilling, sample recovery, and gravity concentration reported that all coarse gold was probably left in the bottom of the holes, and the fines and ultra-fines were either lost in the drill water, or in the wash water of the gravity concentrator. The president of Channel Mining later wrote AHM that "Churn Drills are not the answer." See Applicable Reference of Channel Mining.

3H) Percussion Drilling in the Fanglomerates: Resources International Partners (RIP) from 1976 to 1979 reportedly drilled 551 percussion air holes 50 feet deep at random in the eastern fanglomerates which were said to have averaged 0.0174 oz. gold/ cu.yd.

4H) Hammer Drilling in the Fanglomerates: In 1980, RIP and AMAX contracted for 16 hammer drill holes by Becker Drilling and sampled the fanglomerates in areas previously drilled by RIP. When assays reportedly did not match RIP's related adjoining holes, the project was abandoned. However, shortly thereafter RIP and AMAX determined that the sampling/assaying technique used did not qualitatively determine the free gold in the fanglomerates. Subsequently in 1981, RIP and Charter Gold Corporation contracted another sampling program in the NE-1/4 of Section 4, T29N, R17W, by Becker Drilling and set up a gravity test plant using Reichert spirals. No report on the drilling and test results has been obtained by American Heavy Minerals (AHM).

Previous Trenching the Alluvial Gravels: In 1974 and 1975, bulk sampling of 140 backhoe trenches was conducted by Vanguard Partners and Western Contracting. Most trenches were dug in recent bottom drainage alluvium, but included some trenches dug into the slopes and tops of adjoining ridges. The sampling covered the eastern fanglomerate area from the Lone Jack mine 3-1/2 miles to north of the King Tut mine and between the contact with bedrock on the west and the old Pierce Ferry road on the east. The one cubic yard samples were processed through a Denver Gold-Saver and a 6 foot Hungarian riffle-box. The coarse gold bearing drainages varied from 0.02 to 0.03 oz. gold/cu.yd. and appear to have eroded from the fossil bench, or channels. Gravels from the overlying and reworked pediments varied from zero to less than 0.01 oz. gold/cu.yd. However, the sampling did not recover the ultra-fine gold and other minerals which were thrown out with the wash water and tailings. See Applicable References of Dragg, Gray, and Smith.

Former Leaching of the Alluvial Gravels: In 1977, Resources International Partners (RIP) set up a cyanide leaching operation (at "Placer Camp" in Figure 3), in an attempt to leach the gold nuggets and the fine gold particles as well as the gold in the vugs and fractures of the loose surface alluvial gravels. A leach pile (about 20 feet high and covering 4 acres) was constructed from the loose alluvial gravels covering nearby ridges and gulches. It was reported due to compaction, that the cyanide solution would not uniformly flow through the gravels. Also, the organic material that had been mixed in the gravels impaired the leaching. Thus, many problems were reported to have been encountered in obtaining uniform and consistent wetting of the high and large leach pile and overcoming the detrimental effects of carbon and manganese from the gravels and of a cyanide polymer which was formed. Also, several reported problems were encountered in obtaining satisfactory separation of the gold and other metals from the pregnant solution. An ion exchange process and a zinc separation method were attempted with little reported success. Subsequently, leaching attempts were abandoned. RIP's pioneering efforts to leach Lost Basin's alluvial gravels certainly have revealed several additional problems that will be encountered by others in the future when leaching such gravels, as compared with the standard methods of leaching crushed bedrock.

Future Development of the Fanglomerates: American Heavy Minerals (AHM) recommends that an initial pilot plant study be conducted on the residual fossil bench after first removing the 5 to 20 feet thick covering of pediment cemented gravels. Possibly, as a first step, the oversize gravels should be washed with caustic soda (to remove desert varnish) and screened, and the larger gold and other mineral particles recovered by gravity separation. Then the representative finer fossil sands should be experimentally crushed and ground to determine the fineness for optimum mineral recovery employing such methods as leaching, flotation, and gravity. Also, the eluvial and alluvial placer formations should be mapped in detail (from drill hole samplings and exposed sides of gulches and road cuts), including the plotting of the distribution and directions of flows of different placer rock types. Of course, a drilling program also coordinated with appropriate geophysical surveys should be conducted. Later the studies should be expanded to the fossil channels and other areas of the fanglomerates.

Water: A 1,340 foot deep water well was drilled by RIP in the SE corner of Section 3, T29N, R17W. Engineering estimates indicated a capacity of 4,000 gallons per minute. The 8 inch well diameter and the present pump capacity limit the flow to about 200 gallons per minute through a buried pipeline to RIP's recent mill-site ("Placer Camp" in Figure 3) 1-1/2 miles distant. The well was located over an indicated major fault zone suggested by ERTS high altitude infrared satellite photographs. Several water wells drilled in the alluvial gravels about one mile to the east of this fault zone have produced water at depths from 450 to 900 feet and at pumping rates from 20 to an estimated capacity of 300 gallons per minute. The 1,340 foot deep well was entirely in the alluvial gravels and did not reach bedrock. Assays of the well to its bottom were reported to average 0.0174 oz. gold per cubic yard. Another source of about 150 gallons per minute of water would be to replace the old King Tut pipeline which began at springs east of Garnet Mountain and by gravity (a 1,000 foot drop) was routed through the Smith ranch, then NW to the King Tut mine's storage tanks NW of the tailings pile, a total distance of about 10 miles.

Power: Single and three phase power which is supplied to two nearby rural communities, is available from a transmission line along the east side of the property and is owned by Citizens Utilities of Kingman, Arizona.

Misleading Monument: On the paved highway 6 miles north of the King Tut mine, just west of Meadview and north of the Lake Mead Ranger Station in a gravel parking lot that overlooks Lake Mead to the west (in the direction of the old Scanlon Ferry and the mouth of Hualapai Wash) is a monument of cemented rocks with an engraved metal plaque as follows:

Misleading Monument (Continued)

"Lost Basin"

The legendary tale about Lost Basin in the 1880's led prospectors to the discovery of gold. The Golden Gate, King Tut, Golden Mile, Lone Jack, Bluebird, and other mines produced precious metals. Placer gold is still found in the area. Pierce, Scanlon, and Gregg's ferries were then in operation on the Colorado River and an active Mormon trail crossed the area. Erected by the Meadview Bicentennial Committee, July 4, 1976

Because this monument is on the edge of a very deep basin immediately to the west, anyone (who does not know that the mentioned mines and where placer gold is found, is an area from 3 to 9 miles south of the monument) gets the impression that the deep basin they are looking down into is "Lost Basin". The only place mentioned that can be seen from the monument is the general area where the old Scanlon Ferry was located which was near to the mouth of Hualapai Wash. Pierce Ferry is about 8 miles to the northeast and Gregg's Ferry about 8 miles to the west. Obviously, this misleading monument should either be moved to the area of the King Tut, or should be completely reworded.

Claim Jumpers: For the past 30 years many different groups of claim jumpers have been removed from the property. In fact, every weekend during the past 20 years many amateur gold hunters with dry washers and metal-detectors have been sneaking onto the property and adjoining Santa Fe and state land and have absconded with an estimated total of several thousands of ounces of gold nuggets. Several jumpers have been associated with fraudulent stock and gold promotions. Recently $24,000 of gold breccia ore was stolen overnight and hauled out of state. Of course, the major thefts and fraudulent operations have been reported to appropriate law enforcement and governmental agencies. In 1981, a court judgement was obtained against a group of jumpers who were required to pay all costs (plus interest), including court, attorney, and plaintiff.

History of Property Ownership: Incorporated in Arizona in 1960, Apache Oro Company (AO) headquartered in Laramie, Wyoming, is a privately held company engaged in minerals exploration and its assets consist almost entirely of various mining properties in Arizona and Colorado. The company relied upon consultation and direction from independent professional geologists and engineers. Apache Oro company owned the Lost Basin property from 1960 to 1976, at which time it transferred the property to American Heavy Minerals, Inc. (AHM) and Lost Basin Mining (LBM), a limited partnership. Stockholders own the same percentage interests in all three companies. These are privately held companies and the stock is not traded on the public market. IDEAS, Inc. is one of the stockholders (of about 255) and has furnished most of the capital to finance the three mineral development companies.

Investment of American Heavy Minerals: Approximately $4.58 million was spent during the past 30 years in acquiring, exploring, and maintaining AHM's 13,740 acres of placer and lode claims. AHM's goal was to delineate potential mining targets that would interest experienced mining operators to complete the exploration and development. Of the foregoing, $2.30 million was spent by AHM and its associate, Apache Oro Company (AO), and an estimated additional $2.28 million was spent by other groups (motivated by AO or AHM) that produced a considerable amount of valuable information and data on the property. This included various geological and geochemical surveys and studies by Masters Degree candidates at two universities, as well as drilling, limited geophysical surveys, and a placer gravity recovery and heap leaching operation. $4.58 million total investment does not include inflation, nor the several million dollars spent by the U.S. Geological Survey in their 16 years of research in the area.

Proposal: Because the major investors and officers of American Heavy Minerals (a small privately held corporation) are either past, or rapidly approaching retirement age, it is their desire to sell this large gold property outright. Seriously interested prospective purchasers should first contact Warren M. Mallory, General Manager of AHM and President of Apache Oro Company, in Laramie, Wyoming (phone 307-742-6668) to arrange a meeting to study the various reports, stereo aerial photos and ore samples before visiting the property with Mr. Mallory. AHM asks that no visits be made to the property without the presence of Mr. Mallory, or one of his associates.

APPLICABLE REFERENCES

LARGE ARIZONA GOLD PROPERTY

Lost Basin Mining District, Mohave County, Arizona

Apache Oro Company, Drill Assays & Logs, Lost Basin.

----------, Vein & Soil Assays, Lost Basin.

----------, 7/19/72 Gravity Profile, Old Pierce Ferry Road in Lost Basin.

----------, Satellite Photos, Color Enhanced Infrared of Lost Basin, 11/14/86, Pseudo LBN and LBS, 2 photos.

Arizona Bureau of Mines, B 137 Bulletin, 8/15/34 (revised 1967), Eldred D. Wilson, J.B. Cunningham, and G.B. Butler, Arizona Lode Gold Mines and Gold Mining, pp. 75-76 (regarding Lost Basin).

----------, B 168 Bulletin, 1961, Gold Placers and Placering in Arizona, pp. 37-38 (regarding Lost Basin).

----------, 1971 Map, J.S. Sumner and W.A. Sauck, Residual Aeromagnetic Map of Arizona, 1 sheet.

Berry, Jacob, 12/14/64 Report, Exploration of Gold Placers, A Comparison of Methods, 11 pp.

----------, 1/1/65 Report, The Concentration of Placer Gold Samples, 7 pp.

Cederstrom, D.J., 1/30/74, Report on Ground Water Possibilities in Lost Basin Placer Gold Area, 8 pp.

Channel Mining, 1986 Letter, Map and Drill Results, Lost Basin.

Climax, 1979 Report, Climax Gold Mine and Quartz Hill and Red Basin Rim Drill Holes in Lost Basin, 10 pp., 10 figures.

Cooper Aerial Surveys, 2/1/67 Aerial Color Stereo Transparencies of Lost Basin, 5" = 1 mile, 9-1/2" x 10-1/2", 76 exposures.

Deaderick, Alfred J., 5/1/80 Thesis, Geologic Investigation of the Apache Oro Mining Claims, Lost Basin Range, 123 pp., New Mexico Institute of Mining and Technology.

Devlin, M.J., 1974 Report, Profiles of 14 Water Wells, Lost Basin Area, 1 p.

Dragg, Allen, 1976 Report, Evaluation of Several Alluvial Placer Deposits of Lost Basin.

Garritson Mining Enterprises, 1986 Report, Magnetic Survey in Lost Basin by Heinrichs Geoexploration.

Gray, Allen D., 1975 Data, Evaluation of Several Alluvial Placer Deposits of Lost Basin.

Heinrichs, 1967 Reports, Airborne Magnetic and Scintillation Survey of the Lost Basin Mountain Range, 10 pp., plus Reconnaissance Geologic Investigation of the Lost Basin Area, 7 pp.

----------, 1968 Report, Electrical Geophysical Survey of the Lost Basin Area, 17 pp., plus letter from Apache Oro Company 6/3/69, and Heinrichs' reply of 6/19/69. Also, 5/22/73 Three I.P. Lines, King Tut area, 5 pp.

Horton, Jack O., 12/23/63, Letter to Apache Oro Company describing field test of Jalander Magnetometer on Apache Oro's gold placer, 2 pp., plus description of Jalander Magnetometer, 3 pp.

Krish, Edward J., 1974 Thesis, Relationship of Trace Element Distribution to Level of Erosion in Some Porphyry Copper Deposits and Prospects, Southwestern U.S. (including Lost Basin) and Northwestern Mexico, 138 pp., Colorado School of Mines.

Leroy, 10/21/81 Report, Cyanide Leach Tests, Leroy/Knight Rider Vein Ore, Lost Basin.

Lucchitta, Ivo, 1966 Thesis, Cenozoic Geology of the Upper Lake Mead Area Adjacent to the Grand Wash Cliffs (Lost Basin), 213 pp., Pennsylvania State University.

Mallory, Warren M., 1967 Report of Apache Oro Deposits in Lost Basin, 16 pp.

----------, 3/3/70 Letter to E.V. Post regarding poisonous plants in Lost Basin, 2 pp., plus excerpt from "Poisonous Plants of the United States and Canada," 4 pp.

----------, 3/18/70 Memo, Factors indicating the possibility of a large copper porphyry in Lost Basin, 1 p.

----------, 6/10/70 Memo, Addendum to E.V. Post's 3/1/70 Report on Copper Porphyry Potential in Lost Basin, 1 p.

----------, 1/1/71 Memo, Thoughts on the Porphyry Copper Potential of Apache Oro Properties in Lost Basin, 2 pp.

----------, 1974 Mineralization Plot of Lost Basin, plus USGS enlarged aerial photos (4" = 1 mile), 6/30/58, GS-VVB, prints 3-74 and 3-76.

----------, 6/1/75 Map, Occurrences of Princesplume (Stanleya Albescens) indicating Anomalous Mineralized Zones in Alluvial Gravels in Lost Basin, 1 sheet.

----------, 11/1/86 Report, Summary of Gold, Silver, Copper-Molybdenum Deposits of Lost Basin, 13 pp., 7 maps.

----------, 2/1/87, Addendum regarding Buried Pipes to 11/1/86 Report on Lost Basin, 2 pp.

----------, 8/25/87 Addendum to 2/1/87 Buried Pipes Addendum and to 11/1/86 Report on Lost Basin, 5 pp., 3 photos.

Post, E.V., 2/25/70 Letter to Warren M. Mallory regarding results of trace mercury assays on soil samples across two placer gulches in Lost Basin, 2 pp.

----------, 2/26/70 Letter to Warren M. Mallory regarding gold and cyanide in desert plants in Lost Basin, 2 pp.

----------, 3/1/70 Report, Porphyry Copper Potential, Apache Oro Properties, Lost Basin Range, 14 pp.

----------, 3/4/70 Letter to Warren M. Mallory regarding plants as concentrators of gold in Lost Basin, 1 p.

----------, 3/25/70 Letter of Warren M. Mallory regarding test results for gold and cyanide in plant roots collected in Lost Basin, 1 p.

RIP, Resources International Partners, 1976-1981, Various letters, maps and assays of drill holes in Lost Basin.

Santa Fe Mining, 1986 Data, Geophysical and geochemical surveys in Lost Basin and aerial color stereo photography, 2-1/2" = 1 mile, 9" x 9", 14 exposures.

Smith, Lawrence E., 10/23/84 Report, Review and Evaluation, Geology and Mineralization, Lost Basin Range, 29 pp.

Trites, A.F., 5/1/74 Report, Evaluation of the Gold Deposits of the Ford Mine and Surrounding Areas of Lost Basin, 11 pp., 3 plates.

U.S. Geological Survey, B 397 Bulletin, F.C. Schraeder, 1909, Mineral Deposits of the Cerbat Range, Black Mountains, and Grand Wash Cliffs, 226 pp., 1 map.

----------, Aerial Plots, black and white stereo aerial, GS-VV-B-58 (3-73 to 3-78, 6/30/58), 73165-73 (1 to 27, 1:3000, 9/7/73), and 351416-HAP-80 (220-18, 19, and 20, 10/4/80) of Lost Basin.

----------, 1966 Report, Basic Hydrology Data of the Hualapai, Sacramento, and Big Sandy Valleys, Mohave County, Arizona, 39 pp.

----------, 4/30/68 Letter from John C. Antweiler to Warren M. Mallory regarding mercury content in Apache Oro placer and lode gold in Lost Basin, 2 pp.

----------, C 560 Circular, 1968, Heavy Metals Program Progress Report 1966 and 1967, (Potential Resources of Lost Basin), p. 6.

----------, C 562 Circular, 1968, Utilization of Humus-Rich Forest Soil (Mull) in Geochemical Exploration for Gold, 11 pp.

----------, 35-39-N Maps, 1968, Transcontinental Geophysical Survey, Maps I-532-A, I-532-B, 2 sheets.

----------, P 650-A Professional Paper, 1969, Geographical Survey Research 1969, Resources Investigations, (Potential Resources of Lost Basin), pp. A1 and A2.

----------, 1970 Report, J.C. Antweiler and A.L. Sutton, Jr., Spectrochemical Analysis of Native Gold Samples, Lost Basin, 28 pp.

----------, GP-757 Maps, 1972, Aeromagnetic Map of the Gold Butte-Chloride Area, Arizona and Nevada, 2 sheets.

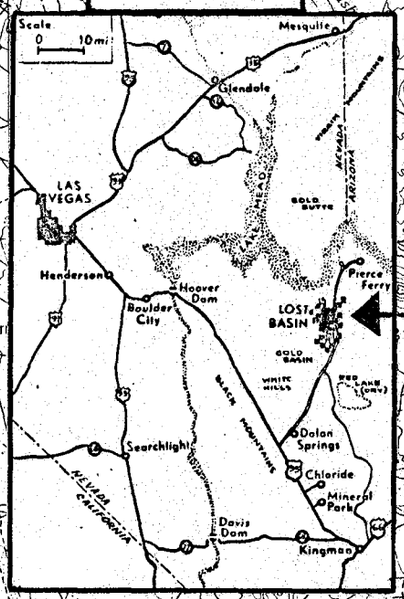
----------, OF-82-1052 Preliminary Open File Report, 1982, Geology and Gold Mineralization of the Gold Basin-Lost Basin Mining Districts, 322 pp.

----------, P 1361 Professional Paper, 1987, Geology and Gold Mineralization of the Gold Basin-Lost Basin Mining Districts, 167 pp., 1 plate.

Western Nuclear, 1970 Report, I.W. Mathisen, Apache Oro Operational Report, Initial Phase in Lost Basin, 66 pp.

AMERICAN HEAVY MINERALS, Inc.

Figure 1



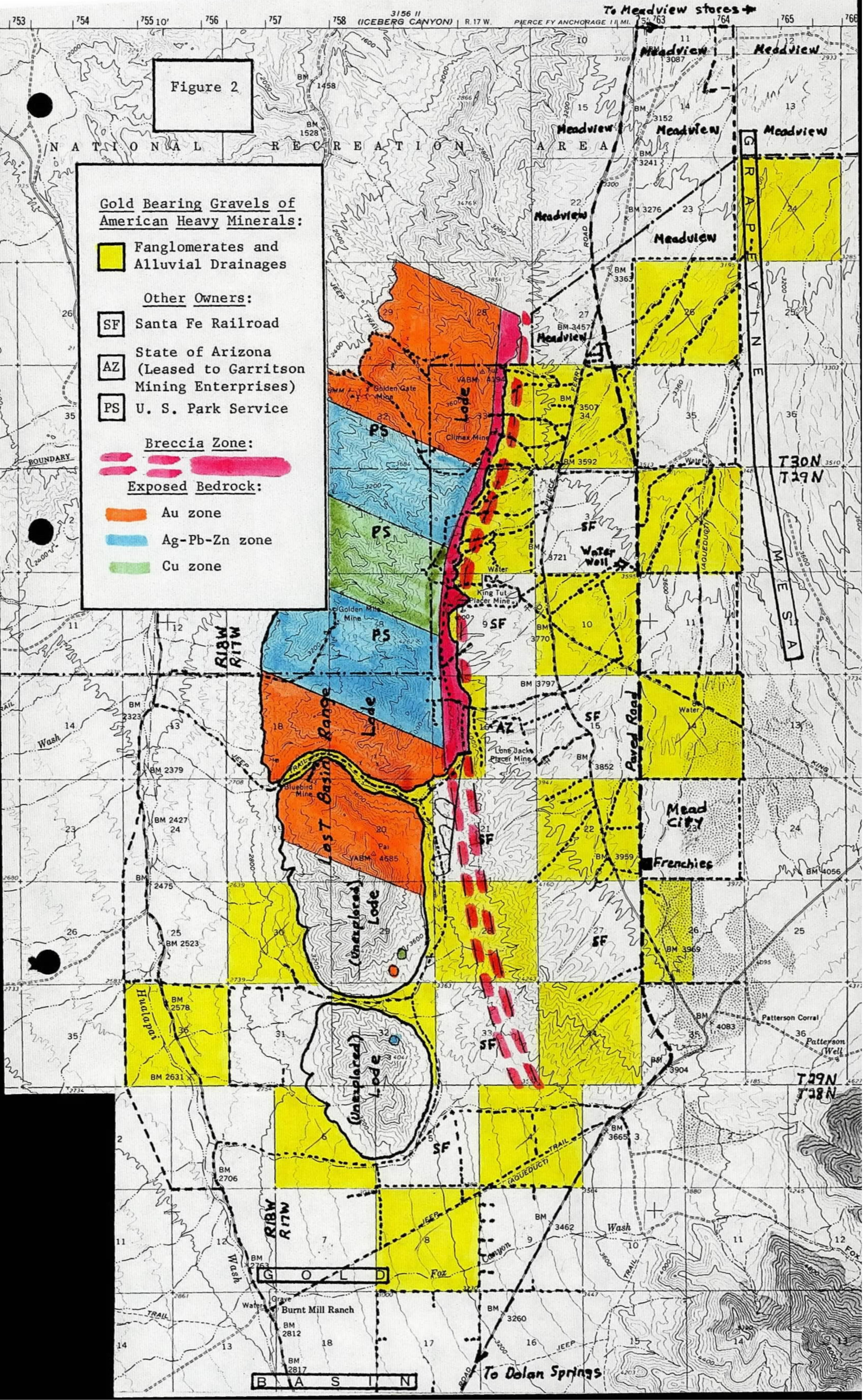


Figure 2
Gold Bearing Gravels of American Heavy Minerals:
Fanglomerates and Alluvial Drainages
Other Owners:
SF Santa Fe Railroad
AZ State of Arizona (Leased to Garritson Mining Enterprises)
PS U. S. Park Service
Breccia Zone:
Exposed Bedrock:
Au zone
Ag-Pb-Zn zone
Cu zone
To Meadview stores
NATIONAL RECREATION AREA
Meadview
GRAPEVINE MESA
Lost Basin Range
Lode
(Unexplored) Lode
PS
SF
AZ
Paved Road
Mead City
Frenchies
Water Well
T30N
T29N
T28N
R18W R17W
Golden Gate Mine
Climax Mine
King Tut Placer Mine
Golden Mile Mine
Lone Jack Placer Mine
Bluebird Mine
Patterson Corral
Patterson Well
Burnt Mill Ranch
Hualapai
GOLD
BASIN
To Dolan Springs

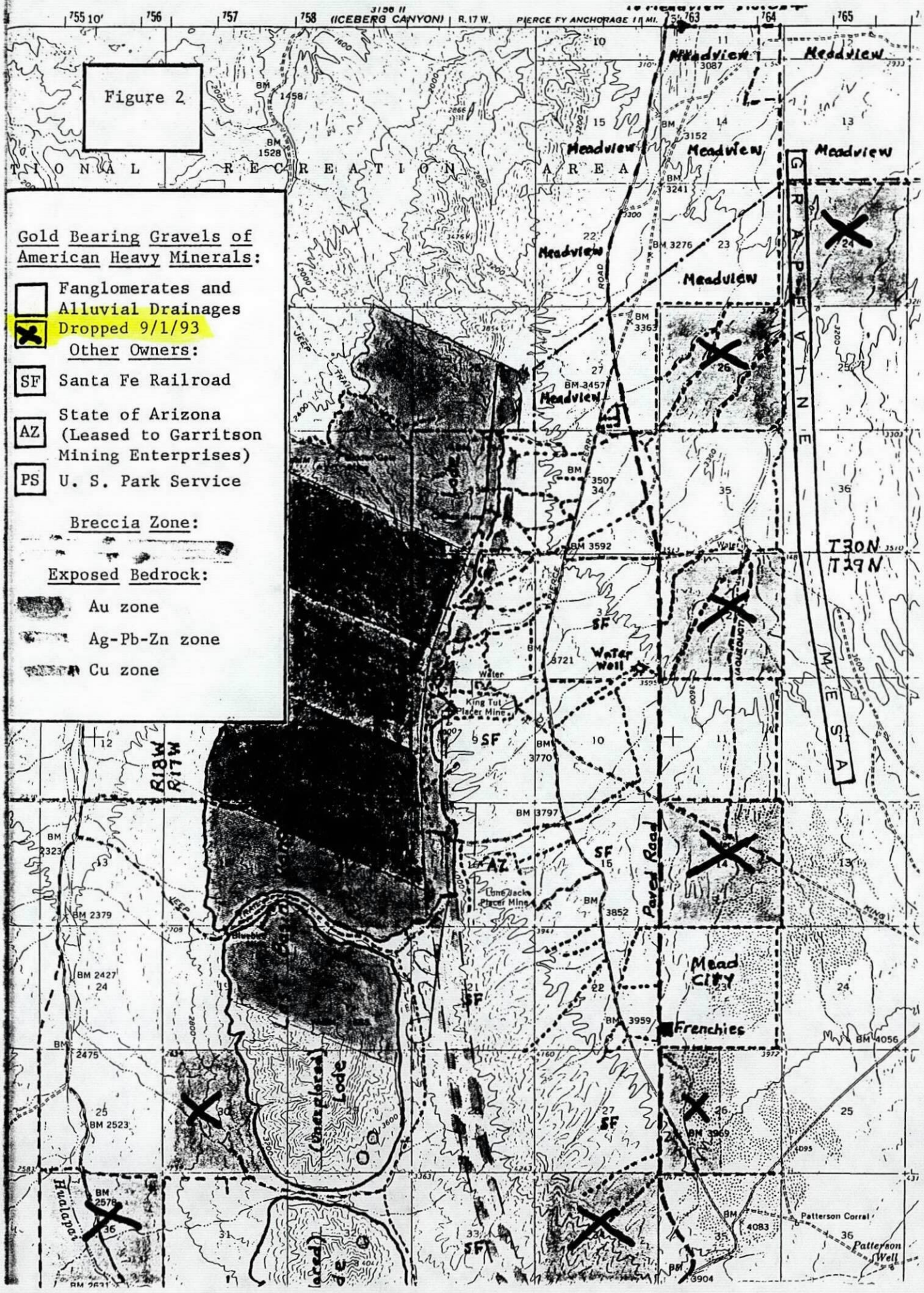
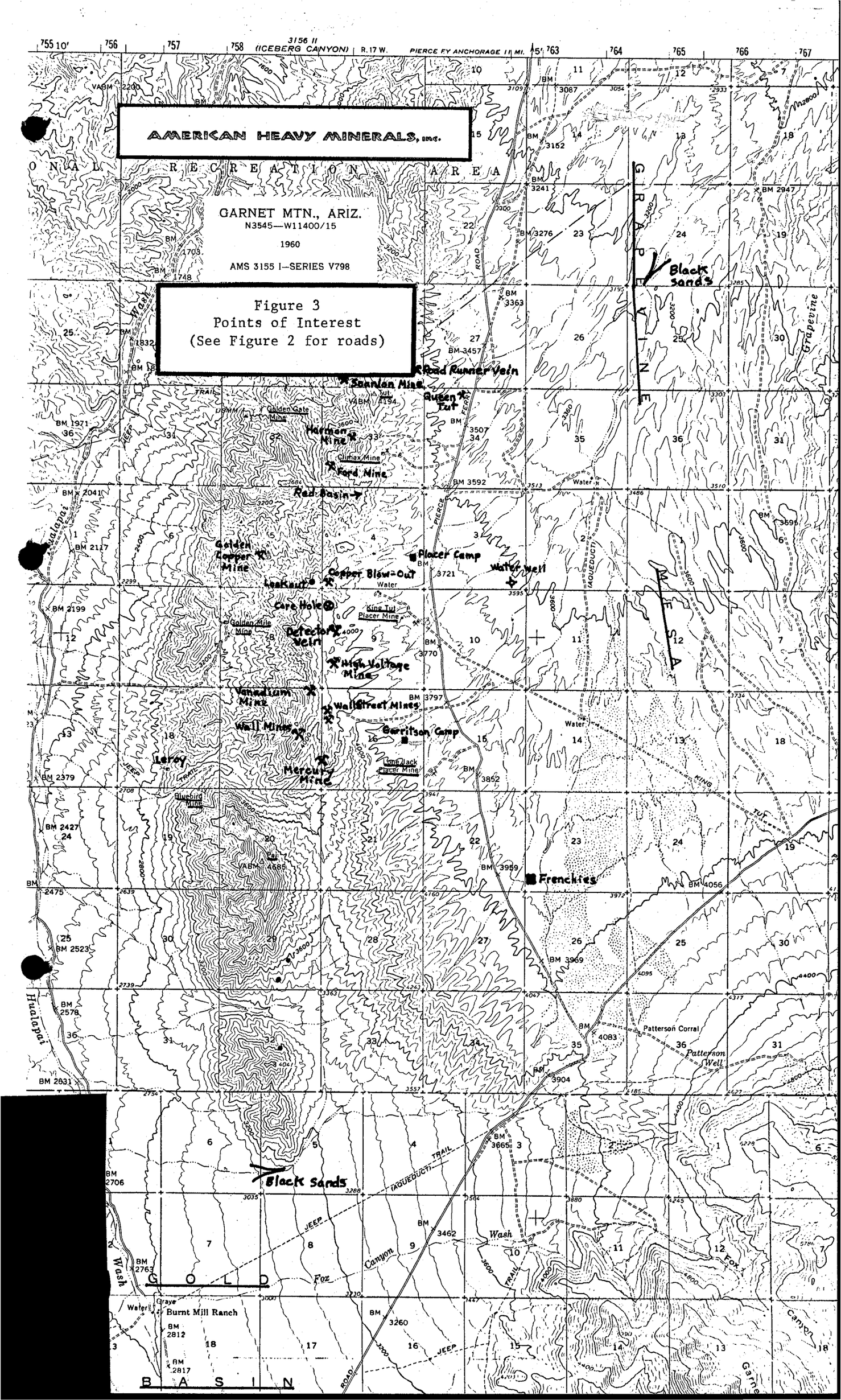
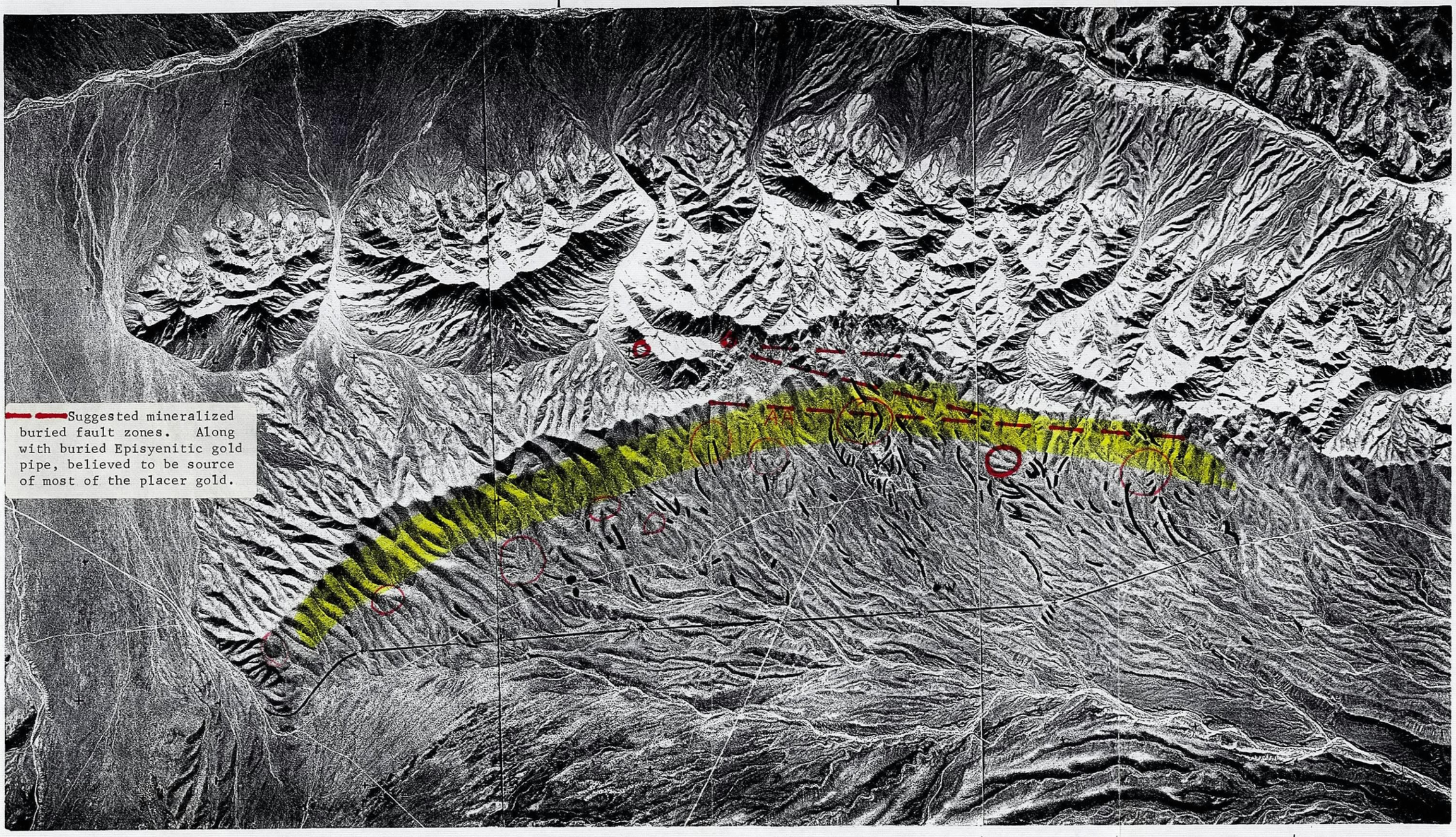


Figure 2
Gold Bearing Gravels of American Heavy Minerals:
Fanglomerates and Alluvial Drainages Dropped 9/1/93
Other Owners:
SF Santa Fe Railroad
AZ State of Arizona (Leased to Garritson Mining Enterprises)
PS U. S. Park Service
Breccia Zone:
Exposed Bedrock:
Au zone
Ag-Pb-Zn zone
Cu zone
(ICEBERG CANYON)
PIERCE FY ANCHORAGE 11 MI.
Meadview
Meadview AREA
GRAPEVINE MESA
Water Well
King Tut Placer Mine
Lone Jack Placer Mine
Paved Road
Mead City
Frenchies
Patterson Corral
Patterson Well
Hualapai
T30N
T29N
R18W
R17W


AMERICAN HEAVY MINERALS, INC.
GARNET MTN., ARIZ.
N3545—W11400/15
1960
AMS 3155 I—SERIES V798
Figure 3
Points of Interest
(See Figure 2 for roads)
3156 II
(ICEBERG CANYON)
R.17 W.
PIERCE FY ANCHORAGE 11 MI.
Black Sands
Road Runner Vein
Scanlon Mine
Queen Tut
Golden Gate Mine
Harmon Mine
Climax Mine
Ford Mine
Red Basin
Golden Copper Mine
Placer Camp
Water well
Copper Blow-Out
Leakout
Care Hole
King Tut Placer Mine
Golden Mile Mine
Defector Vein
High Voltage Mine
Vanadium Mine
Wall Street Mines
Wall Mine
Garrison Camp
King Jack Placer Mine
Leroy
Mercury Mine
Bluebird Mine
Frenchies
Patterson Corral
Patterson Well
Black Sands
Burnt Mill Ranch
GRAPEVINE MESA
GOLD BASIN
Hualapai
Wash
Canyon
Fox
JEEP TRAIL
AQUEDUCT
ROAD
PIERCE FERRY
KING TUT

AMERICAN HEAVY MINERALS, INC.



Note gulches backing up into "space" in south half of fanglomerates.

Buried Residual Fossil Placer. (See page 14).

Small Episyenitic pipes in Wall Street breccia zone. (See top of page 4).

Suggested buried Episyenitic pipes. (See pages 5 to 9).

Gulches placered for gold by King Tut and others.

•W Water well, 1,340 feet deep in fanglomerates.

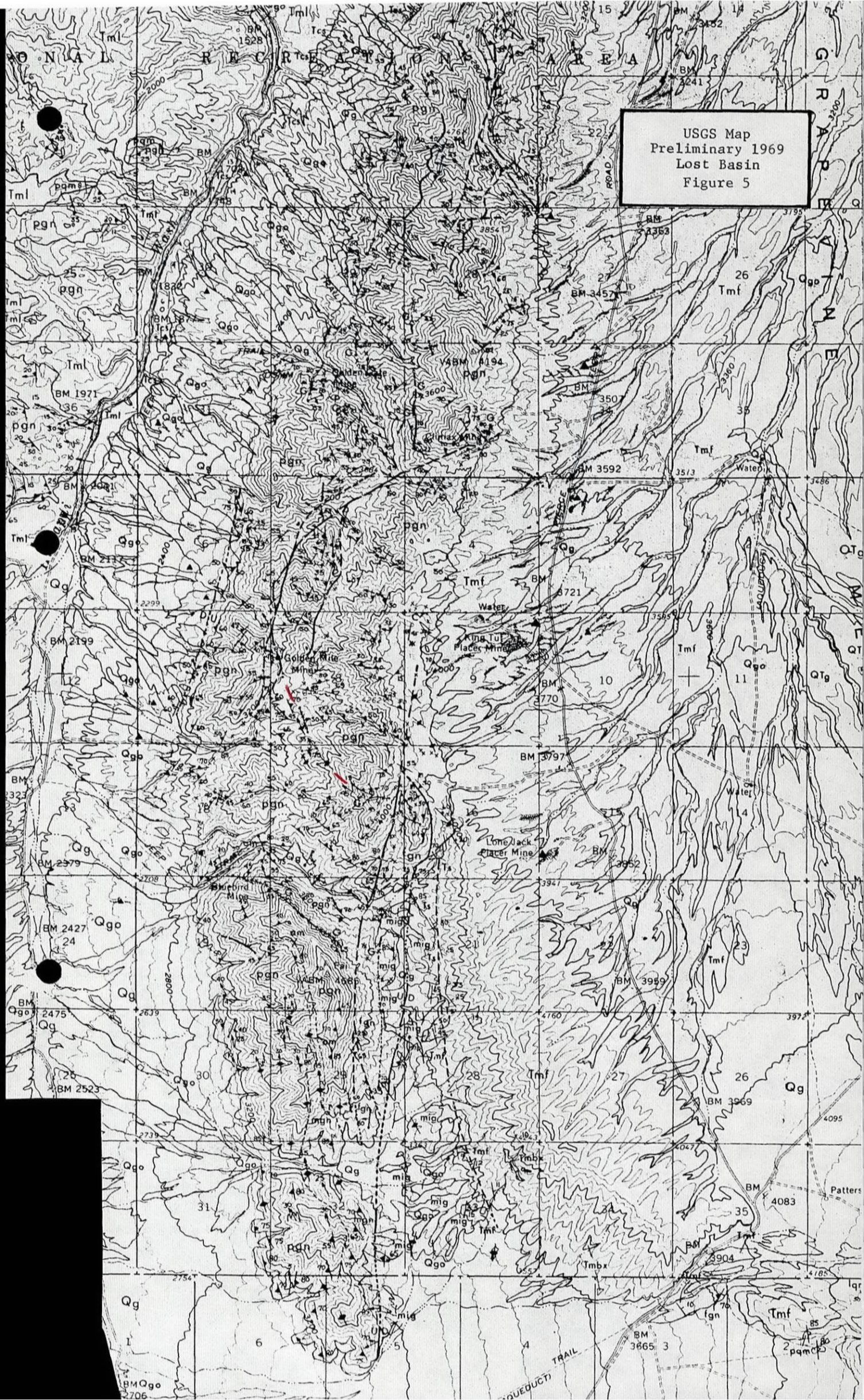
\+ Section corners.

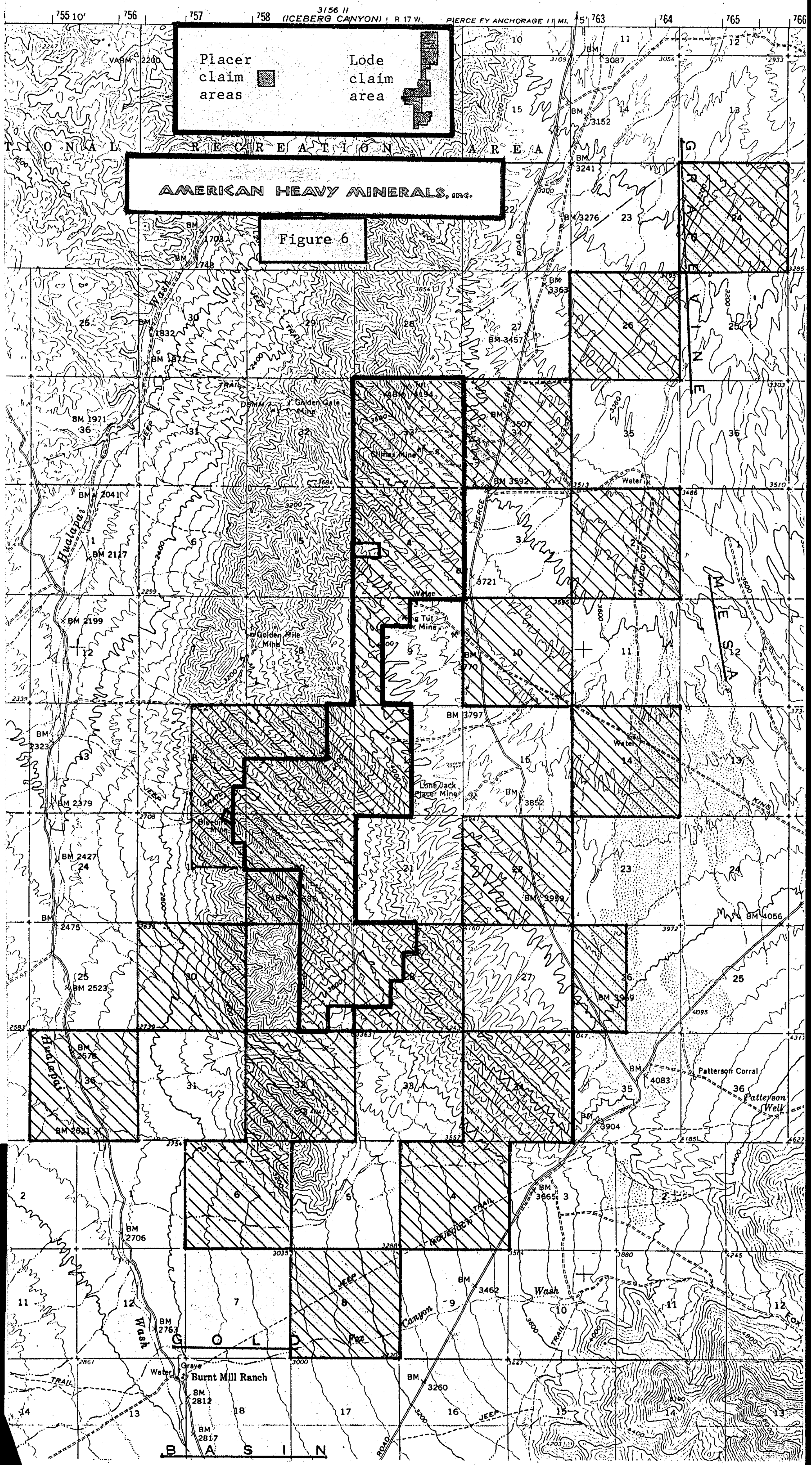
Paved road.

Figure 4

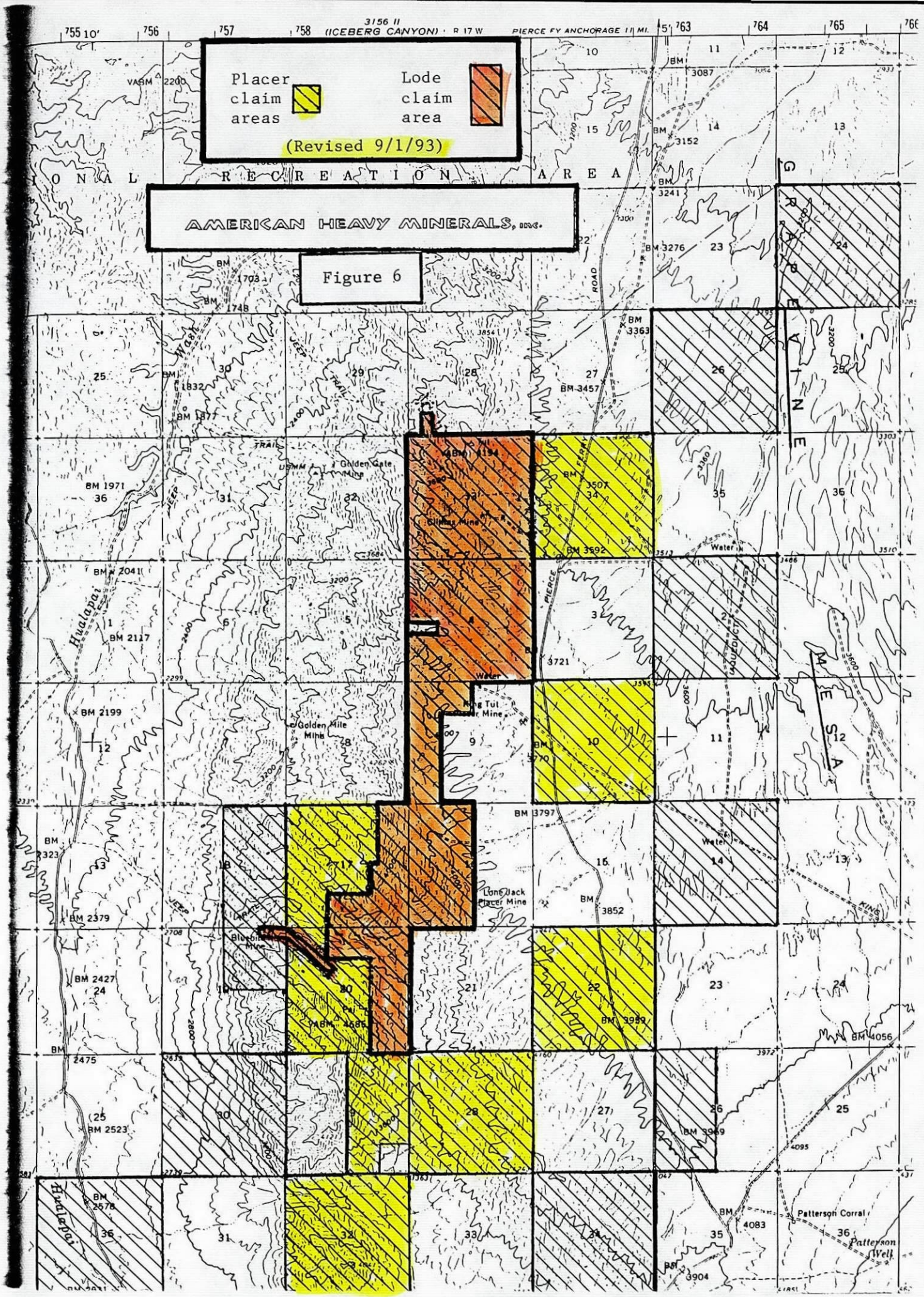
Scale: 1½" ≐ 1 mile.

(USGS 1958)

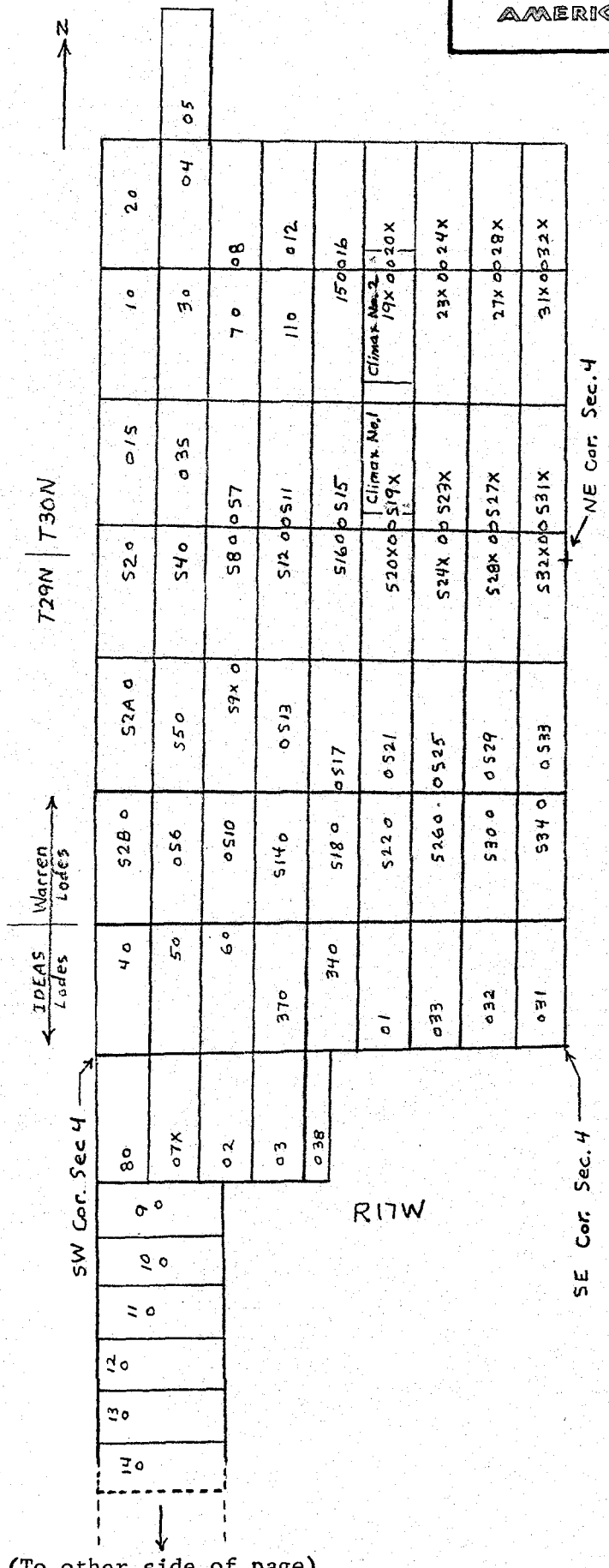

USGS Map
Preliminary 1969
Lost Basin
Figure 5



3156 II (ICEBERG CANYON) R 17 W. PIERCE FY ANCHORAGE 11 MI.
Placer claim areas
Lode claim area
NATIONAL RECREATION AREA
AMERICAN HEAVY MINERALS, INC.
Figure 6
Golden Gate Mine
Climax Mine
King Tut Placer Mine
Golden Mile Mine
Lone Jack Placer Mine
Bluebird Mine
Hualapai Wash
GRAPEVINE MESA
Patterson Corral
Patterson Well
Burnt Mill Ranch
GOLD BASIN


Placer claim areas
Lode claim area
(Revised 9/1/93)
AMERICAN HEAVY MINERALS, INC.
Figure 6
(ICEBERG CANYON)
PIERCE FY ANCHORAGE 11 MI.
Golden Gate Mine
Climax Mine
King Tut Placer Mine
Golden Mile Mine
Lone Jack Placer Mine
Bluebird Mine
Patterson Corral
Patterson Well
Hualapai
PIERCE
AQUEDUCT
KING

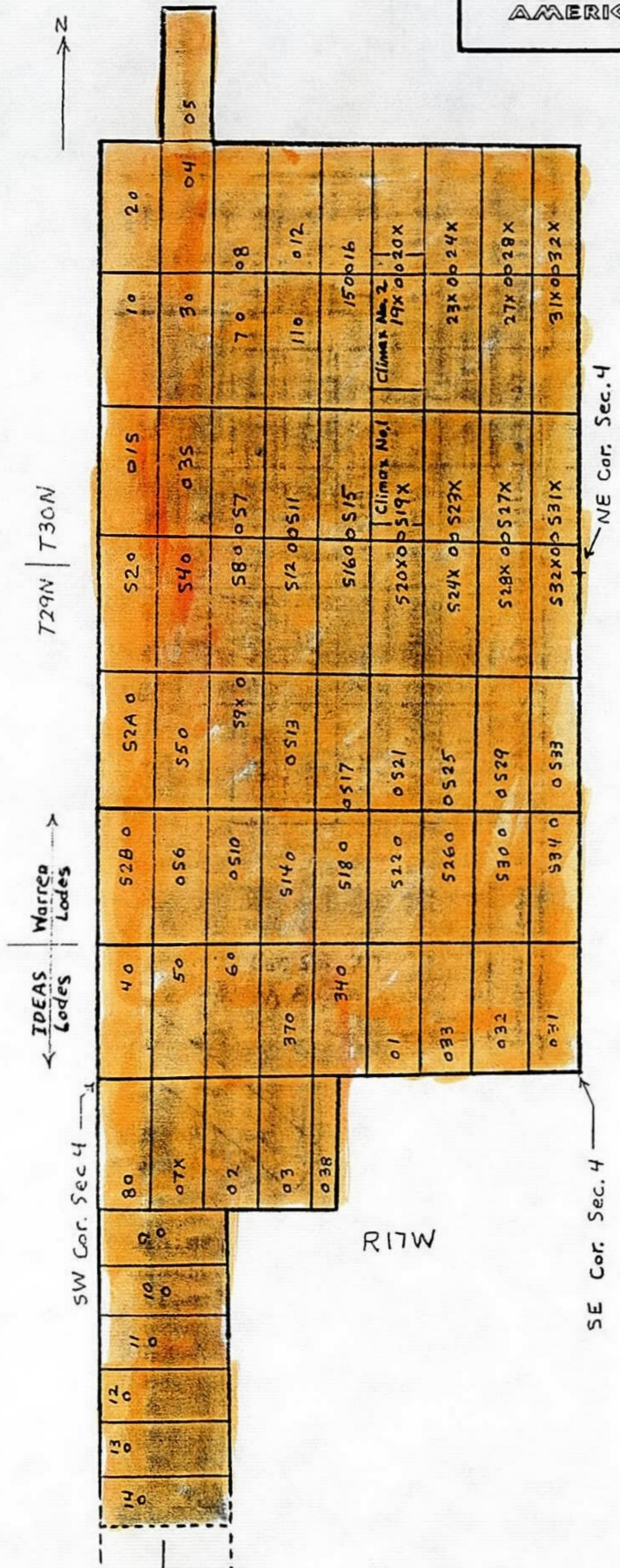
AMERICAN HEAVY MINERALS, inc.



Lode Claims
o = Location Post
Scale: 1mm:73 feet

Figure 7 (Side A)

AMERICAN HEAVY MINERALS, inc.

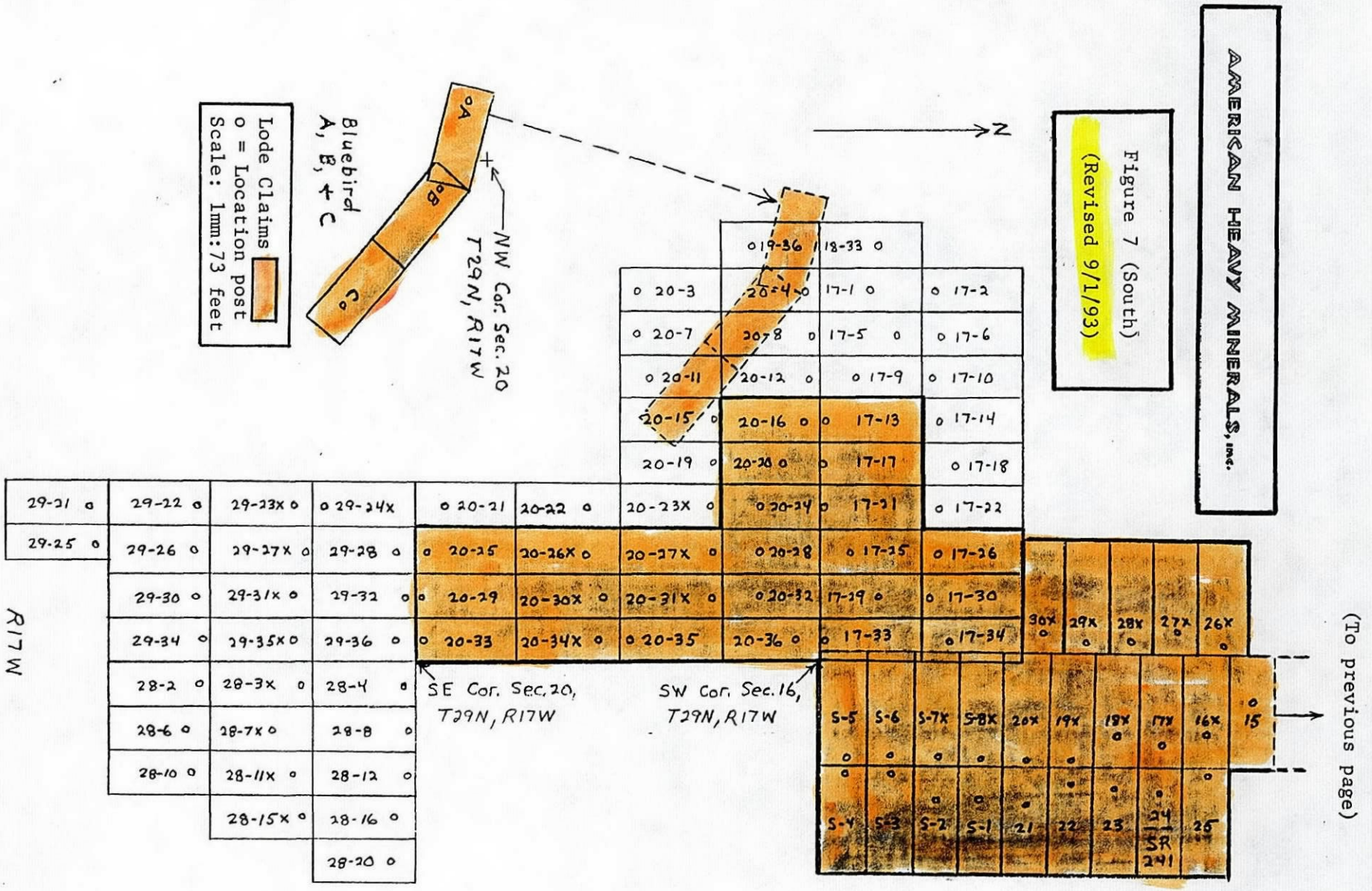


(To next page)

Lode Claims
o = Location Post
Scale: 1mm:73 feet

Figure 7 (North)

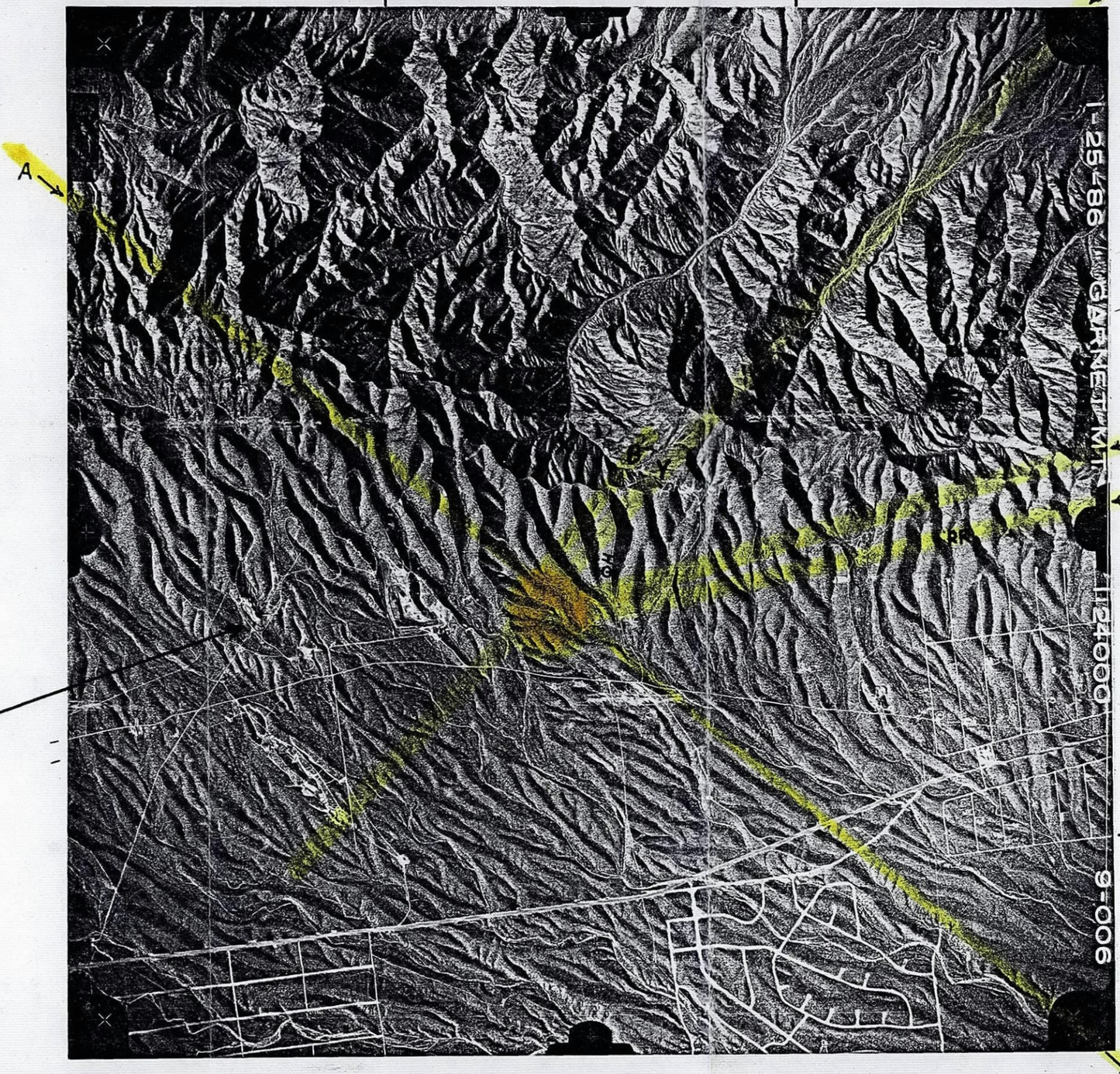
(Revised 9/1/93)



Bluebird = Double-numbered claims

IDEAS = Single-numbered claims

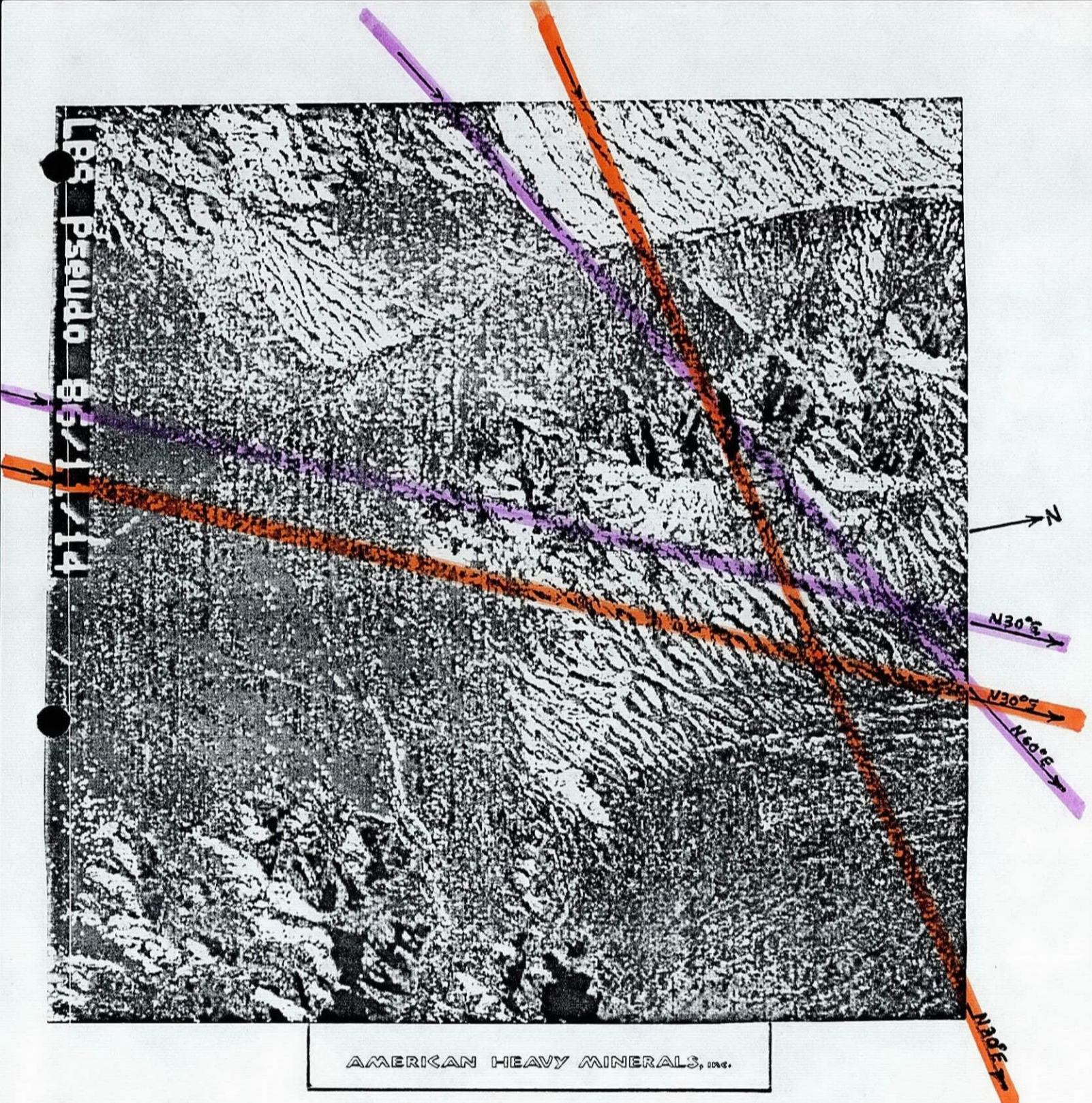
AMERICAN HEAVY MINERALS, INC.



Lineaments (A,B,C,D,E) to a suggested buried episyenitic gold bearing bedrock pipe at NE corner Sec. 4, T29N, R17W.

QH = Quartz Hill
RR = Road Runner Vein
X = Muddy Creek sampling
Y = Breccia zone sampling

Figure 8
(See pages 7 to 9)



Possible Buried Episyenitic Gold Bearing Pipes in the Southern Area (See page 9).

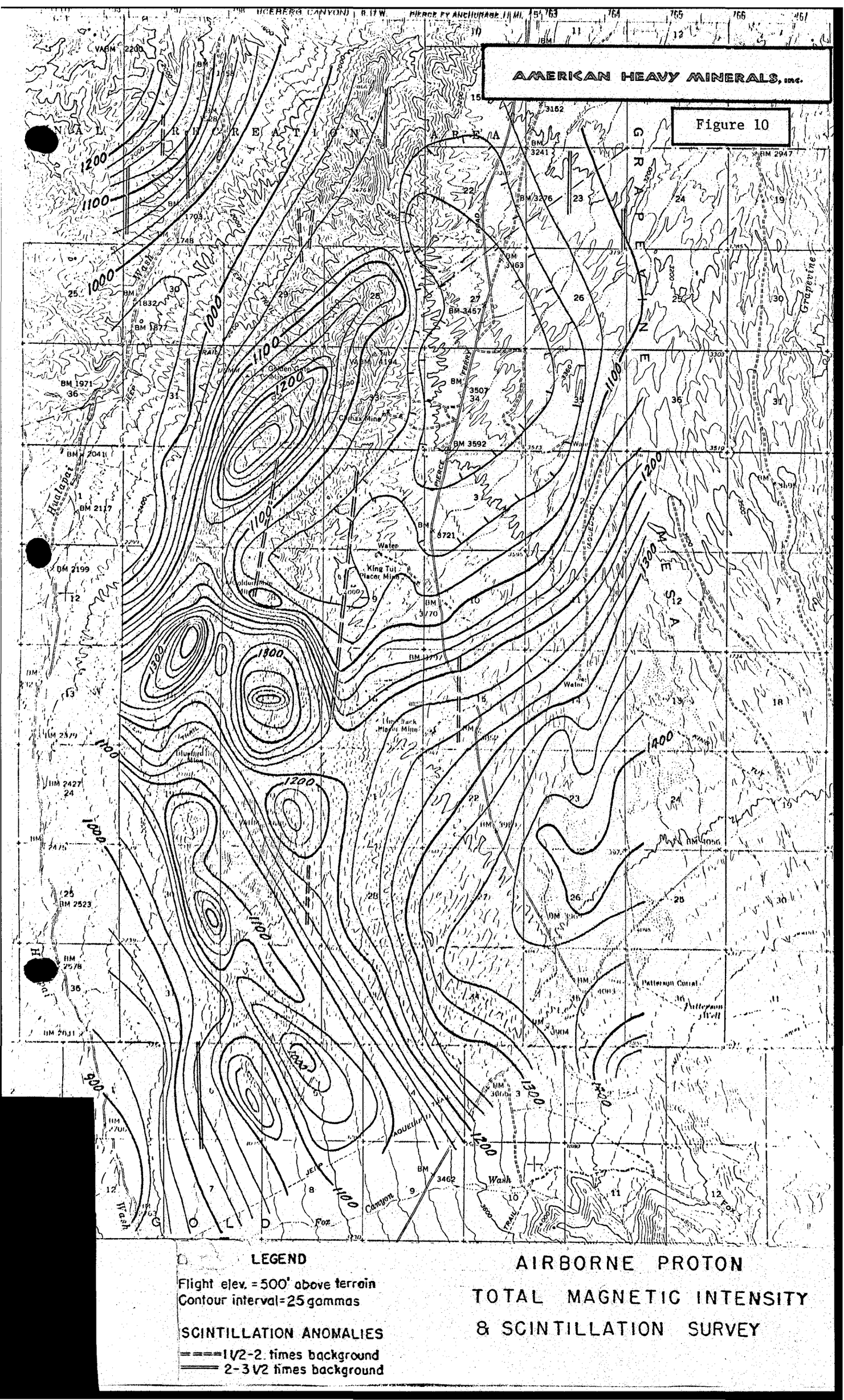
Orange lines:

Crosscutting lineaments near to center of NW¼ of Sec. 22, T29N, R17W.

Purple lines:

Crosscutting lineaments near to E center of E½ of Sec. 16, T29N, R17W. (State lease of Garritson Mining Enterprises).

Figure 9


AMERICAN HEAVY MINERALS, inc.
Figure 10
LEGEND
Flight elev. = 500' above terrain
Contour interval = 25 gammas
SCINTILLATION ANOMALIES
1 1/2-2 times background
2-3 1/2 times background
AIRBORNE PROTON
TOTAL MAGNETIC INTENSITY
& SCINTILLATION SURVEY

WARREN M. MALLORY, P.E.
Engineering Consultant

Post Office Box 1815
Laramie, Wyoming 82070
Phone: (307) 745-5130

May 23, 1991

FIRST ADDENDUM TO MARCH 15, 1990 REPORT:

It is my opinion and that of several geologists (both independent and some USGS personnel) that the potential for large scale gold mining in Lost Basin lies in the gold fault zones buried under the eastern pediment gravel mesa and in the large eluvial gold deposit adjacent to the faults (and possible buried pipe) and not in the exposed gold veins to the west, nor in the outlying alluvial placer gravels. Even though the alluvial gold placer area of surface drainages which cover about 9,000 acres where visible gold nuggets have been found, has seemed to attract considerable interest during the past 60 years, it is my personal opinion that the alluvial gold is too close to its source and has not had a chance to travel sufficient distance to concentrate into minable alluvial placer deposits.

Also, serious consideration should be given to the potential of the suggested copper/molybdenum porphyry deposit described in the brochure on pages 10 and 11. Note in Figure 5 the circular faults centering on the "Copper Blow-Out" which is in the SW corner of Section 4 west of the "King Tut."

Surface samples of exposed country rock to the west of where it dips under the eastern pediment gravels (Tour Guide points "A" through "G"), in general, give low gold values because the bedrock is still high on the outer gold shell which accounts for weak surface alteration and mineralization. Of course, exposed gold veins and mineralized shear zones give high gold values. The following suggest what may be expected with depth:

Bedrock Drill holes: Enclosed is a map showing the location of drillholes whose assays are given in the accompanying Appendix C of Deaderick's (Alfred J.) Thesis (page 22 of brochure). Please note that I have filled in the drill hole circles whose assays were listed. I do not know whether or not assays were made on the other drill holes shown on the map. Note that most of these drill holes are very near to the most western red dashed line of a suggested mineralized fault zone shown in Figure 4 of the brochure.

Mineralization with depth: Schraeder in USGS Bulletin B-397 (page 24 of brochure) mentioned that the miners in Lost Basin reported much greater alteration and mineralization with depth. As I mentioned in "E3" on page 5 of the Tour Guide, in the Golden Copper and Bluebird mines abundant pyrite is disseminated in the country rock with depth, giving the impression that such mineralization exists at not too great a depth in Lost Basin.

Episyenitic pipe: The USGS identified such a pipe as shown at point "E" of the satellite photo on page 7 of the brochure and as shown at point "G1" on the Tour Guide. An assay of a channel sample of this outcrop assayed 0.009 oz. gold/ton.

The following are some considerations of the bedrock mineralization under the eastern pediment mesa:

Buried mineralized structures: Some geologists believe that the bedrock buried underneath the eastern pediment gravels is the same as the exposed Lost Basin Range. However, the USGS and several other geologists have expressed the opinion that the block faults in the eastern mesa contain much wider and intense mineralization than the down-dropped exposed narrow vein systems to the west. Such conclusions have been substantiated by inspections of at least 70 E-W pediment ridges in the 6 mile long N-S 1/4 mile wide band just east of the contact of bedrock and the pediment gravels in the north half of the band, and east of the pediment gravel break in the south half. Subtle apparent bedrock exposures and float from nearby bedrock was observed at one or more points along many of the ridges. Note on the enclosed Deaderick map, his suggested N-S fault exposure through the alluvial pediments 1/2 mile SW of the King Tut. Also, much wider and abundant ankerite dikes are believed to exist in the eastern mesa. The USGS found different ages of mineralization and entirely different signature minerals in the lode gold from the Ford vein (in the western range) in relation to the Climax vein in the quartz breccia zone 1/2 mile to the east (next to the eastern mesa). I believe that the USGS told me that the Climax mineralization was much more recent than the Ford. The USGS did not test the chunky gold that fills the fractures and voids in the brecciated country rock at the Detector (lens?) at point "E8" of the Tour Guide (3/4 mile SW of the King Tut) since this gold was discovered only two years ago which was several years after the USGS concluded its research in the area. An inspection of several gold nuggets recently found with a metal detector shows the gold attached to fractured, brecciated country rock, hematite, quartz, ankerite and other rock particles which obviously would have had to been formed in fault zones. This chunky gold attached to fractured, brecciated rock is completely unlike the tiny thin flakes of gold seen in the small vugs in over 6,000 quartz rocks collected from the narrow, tight veins in the Lost Basin Range to the west. I'll never forget Frank Coolbaugh, the renowned mining engineer, about 20 years ago suggesting to me that exploration to the east of the line where exposed bedrock dips under the pediment gravels would be the "best place to start." We have tried to get this 1/4 mile wide N-S band explored and drilled ever since then, but this bedrock buried under the pediment gravels has never been drilled or mapped. Only the two placer drill holes at points "E4A" and "E4B" of Tour Guide, which were through 25 feet of alluvial gravels in gulch bottoms have hit bedrock in this N-S band (which was "blood red" at these two points as reported by the driller, but not assayed).

Buried eastern faults: As shown in red on Figure 4 in the brochure and on the photo-overlays of the Tour Guide, two "eastern N-S fault zones" buried under pediment gravels have been recently suggested and are believed to be the primary source (along with the adjacent suggested buried gold pipe) of most of the eluvial and alluvial placer gold in Lost Basin. This resulted from a study of five different sets of stereo-aerial photos (1958 to 1986), analysis of assays of pediment gravels from several former placer drill holes, four E-W ground magnetometer lines, the research of the USGS, and field observations of the pediment gravels. In other words, Lost Basin's bedrock "gold sleeper" probably is composed of one, or more of the buried faults and buried pipe which are believed to be the source of most of the 5 to 10 million ounces of gold resources previously estimated by the USGS as described on page 12.

Buried fault "AA": The most easterly red-dotted line (Figure 4 in the brochure and line "AA" in the Tour Guide overlays and Deaderick's suggested N-S fault exposure) has been recently suggested as being a major mineralized fault zone that has eroded in place, thus forming the so-called "buried residual fossil eluvial (gold) deposit" described on page 14. In situ erosion appears to have formed this deposit. A recently completed microscopic study of placer concentrates from an exposed fossil red-clay channel about 600 feet east from the fault (see top of page 16) revealed that the concentrates are primarily composed of angular, sharp cornered crystals and fragments of quartz, hematite (after pyrite), specularite, and other minerals not rounded by appreciable travel. Angular gold nuggets with vugs after pyrite and ankerite are abundant, as well as quartz and hematite particles with attached gold.

Anamolous mercury: Tests by the USGS showed anamolous mercury in the eluvial and alluvial placer gold from Lost Basin's eastern pediments. Also, widespread surface soil pediment samples show anamolous mercury. As noted at the bottom of page 1 of the brochure and at point "G5" in the Tour Guide, a vein of a rare mercury sulfide has been found in exposed bedrock just to the west of the eastern pediment mesa.

Red-clay fossil channels: As I mentioned previously, a study of the eluvial concentrates from a red-clay fossil channel (point "01" of Tour Guide about 600 feet east of suggested fault "AA") strongly suggests in situ erosion of the fault from which the red-clay outflowing fossil channels are derived. The exploration in following these red-clay channels to the west under the pediment gravels would certainly be of great value. Perhaps, they may eventually be found to terminate at the "blood red" bedrock zone!

Eluvial gold bench: A series of drill holes in the eluvial gravels in both Sections 16 and 22, showed higher and more consistent gold values with depth in going from east to west. I believe this strongly suggests that an in situ source is close by to the west. Also, results from these holes did suggest an average of 0.03 oz. gold/ton in the eluvial bench which has been identified in Sections 22, 16, 9, 10, 4, and 33 and should contain at least 6 million ounces of gold which certainly is in line with the USGS's previous estimate of 5 to 10 million ounces of gold resources.

Breccia pipe: The suggested buried gold bearing episyenitic pipe described on pages 5 to 9 of the brochure may be a quartz breccia pipe instead of episyenitic. Such might be concluded from the large quantity of quartz float found in the pediments surrounding the pipe and in a probable fossil drainage to the south and present-day drainage for several miles to the northeast. The conjecture that the pipe is episyenitic was from viewing the color enhanced satellite photo on page 7 which shows the same coloring of pediments flowing southward from the pipe "P" as the thin alluvial cover in the "Wall Street" area just to the north of the known episyenitic pipe at "E" described previously.

Surveys: I wonder if a seismic survey would give a plot of the bedrock surface contours under the pediments? Perhaps such results might be coordinated with a surface geochemical (mercury?) survey and possibly with IP and magnetics?

Appendix C

DRILL HOLE ASSAYS

Provided by Resources International, Run by
C.D.C. Associates Inc. Boulder, Colo.

Section No./ Drill Hole No.	Footage Intervals (from collar)	Au oz/ton	Ag oz/ton
4/5	0-15	0.014	0.048
	15-25	0.014	0.078
4/26	0-15	0.017	0.032
	15-25	0.009	0.032
	25-35	0.009	0.032
	35-45	0.017	0.016
	45-55	0.020	0.049
4/27	0-15	0.003	0.016
	15-25	0.038	0.049
4/28	0-15	0.016	0.081
	15-25	0.023	0.081
	25-35	0.039	0.354
	35-45	0.020	0.049
	45-50	0.020	0.049
4/36	0-15	0.012	0.034
	15-25	0.007	0.044
4/39	0-15	0.012	0.049
	15-25	0.012	0.024
	25-35	0.012	0.042
4/45	0-15	0.015	0.053
	15-25	0.012	0.042
	25-35	0.023	0.042
4/47	0-15	0.022	0.038
	15-25	0.015	0.038
	25-35	0.015	0.051
4/52	0-15	0.002	0.030
	15-25	0.005	0.030
4/53	0-15	0.002	0.040
	15-28	0.005	0.070
4/54	0-15	0.007	0.030
	15-25	0.011	0.030
	25-35	0.022	0.040
	35-45	0.002	0.030
	45-55	0.007	0.030

Section No./ Drill Hole No.	Footage Intervals (from collar)	Au oz/ton	Ag oz/ton
4/55	0-15	0.005	0.030
	15-25	0.007	0.030
	25-35	0.009	0.030
4/56	0-15	0.005	0.031
	15-25	0.005	0.031
4/59	0-15	0.024	0.028
9/1	0-15	0.006	0.032
	15-25	0.004	0.044
9/2	0-15	0.004	0.044
	15-25	0.007	0.010
	25-35	0.012	0.032
	35-45	0.007	0.058
	45-55	0.007	0.058
9/3	0-15	0.007	0.058
	15-25	0.007	0.058
9/4	15-25	0.016	0.049
9/8	0-15	0.023	0.049
	15-25	0.017	0.049
9/9	0-15	0.014	0.044
	15-25	0.014	0.117
	25-35	0.012	0.073
	35-45	0.004	0.058
	45-55	0.012	0.032
9/19	0-15	0.012	0.045
	15-25	0.009	0.045
9/20	0-15	0.014	0.024
	15-25	0.009	0.024
9/21	0-15	0.014	0.024
	15-25	0.024	0.024
9/22	0-15	0.017	0.024
9/23	0-15	0.019	0.036
	15-25	0.004	0.036
9/24	0-15	0.017	0.024
	15-25	0.017	0.024
9/27	0-15	0.034	0.036
	15-25	0.009	0.036

Section No./ Drill Hole No.	Footage Intervals (from collar)	Au oz/ton	Ag oz/ton
9/30	0-15	0.017	0.036
	15-25	0.017	0.036
9/36	0-15	0.005	0.029
	15-25	0.007	0.044
9/37	0-15	0.005	
9/38	0-15	0.003	
	15-25	0.001	
	25-35	0.007	
	35-45	0.001	
	45-55	0.001	
	55-65	0.005	
9/39	0-15	0.001	
	15-25	0.001	
	25-35	0.003	
	35-45	0.003	
	45-55	0.003	
9/43	0-15	0.023	0.036
	15-25	0.010	0.036
	25-35	0.017	0.022
	35-45	0.007	0.036
	45-55	0.026	0.036
9/44	0-15	0.020	0.036
	15-25	0.020	0.036
	25-35	0.016	0.027
	35-45	0.010	0.036
	45-55	0.029	0.046
9/45	0-15	0.029	0.036
	15-25	0.130	0.036
9/46	0-15	0.020	0.036
	15-25	0.016	0.036
	25-35	0.023	0.036
	35-45	0.013	0.036
	45-55	0.013	0.036
	55-65	0.009	0.032
9/48	0-15	0.026	0.036
	15-25	0.016	0.036
	25-35	0.036	0.036
	35-45	0.013	0.036
	45-55	0.010	0.036
9/49	0-15	0.016	0.036
	15-25	0.036	0.036
	25-35	0.013	0.036
	35-45	0.010	0.036
	45-55	0.010	0.036

Section No./ Drill Hole No.	Footage Intervals (from collar)	Au oz/ton	Ag oz/ton
9/50	0-15	0.008	0.035
	15-25	0.004	0.022
	25-35	0.022	0.035
	35-45	0.022	0.027
	45-55	0.022	0.018
9/51	0-15	0.011	0.028
	15-25	0.022	0.035
	25-35	0.013	0.035
	35-45	0.026	0.042
	45-55	0.018	0.028
	55-65	0.011	0.028
	65-75	0.015	0.028
	75-85	0.015	0.021
	85-95	0.024	0.028
	95-105	0.015	0.035
9/52	0-15	0.003	0.031
	15-25	0.005	0.031
	25-35	0.005	0.031
	35-45	0.012	0.054
	45-55	0.014	0.054
9/53	0-15	0.007	0.023
	15-25	0.003	0.015
	25-35	0.003	0.015
	35-45	0.002	0.015
	45-55	0.010	0.023
9/54	0-15	0.012	0.015
	15-25	0.010	0.023
	25-35	0.012	0.023
	35-45	0.003	0.023
	45-55	0.005	0.023
9/55	0-15	0.003	0.031
	15-25	0.014	0.031
	25-35	0.014	0.153
	35-45	0.009	0.023
	45-55	0.007	0.031
9/56	0-15	0.010	0.023
	15-25	0.009	0.023
	25-35	0.015	0.031
	35-45	0.014	0.015
	45-55	0.009	0.031
9/57	0-15	0.009	0.015
	15-25	0.014	0.023
	25-35	0.007	0.023
	35-45	0.012	0.034
	45-55	0.005	0.026

Section No./ Drill Hole No.	Footage Intervals (from collar)	Au oz/ton	Ag oz/ton
9/58	0-15	0.007	0.034
	15-25	0.012	0.034
	25-35	0.010	0.034
	35-45	0.012	0.026
	45-55	0.007	0.026
9/59	0-15	0.012	0.026
	15-25	0.007	0.034
	25-35	0.019	0.026
9/60	0-15	0.019	0.034
	15-25	0.029	0.026
	25-35	0.017	0.034
	35-45	0.027	0.034
	45-55	0.015	0.034
9/61	0-15	0.008	0.021
	15-25	0.017	0.021
	25-35	0.017	0.028
	35-45	0.004	0.028
	45-55	0.015	0.028
9/62	0-15	0.006	0.021
	15-25	0.004	0.014
	25-35	0.006	0.021
	35-45	0.004	0.014
	45-55	0.002	0.014
9/64	0-15	0.012	0.021
	15-25	0.010	0.021
	25-35	0.012	0.021
	35-45	0.008	0.028
	45-55	0.019	0.028
9/65	0-15	0.002	0.021
	15-25	0.019	0.028
	25-35	0.004	0.111
16/7	0-15	0.003	0.032
	15-25	0.003	0.032

Appendix D

GEOCHEMICAL ANALYSIS OF HEAVY MINERAL SANDS
Qualitative Spectrographic Analysis Determined by Emission Spectrography--Rocky Mtn. Geochemical Corp. Tuscon, AZ.

Sample	Major(+1%)	Minor (1%-.01%)	Trace(>.01%)
G-1	Aluminum Calcium Iron Magnesium Manganese Silicon Titanium	Copper Potassium Sodium Strontium Uranium	Barium Chromium Cobalt Lead Molybdenum Nickel Vanadium Zinc Zirconium
G-2	Aluminum Calcium Iron Magnesium Manganese Silicon Titanium	Copper Potassium Sodium Strontium Uranium	Barium Chromium Cobalt Lead Molybdenum Nickel Vanadium Zinc Zirconium
G-3	Aluminum Calcium Iron Magnesium Manganese Silicon Titanium	Copper Potassium Sodium Uranium Zinc Zirconium	Barium Chromium Cobalt Lead Nickel Strontium Vanadium Cerium (?) Ytterbium (?)
G-4	Aluminum Calcium Iron Magnesium Manganese Silicon Titanium	Copper Potassium Sodium Strontium Uranium Zinc	Chromium Cobalt Lead Nickel Zirconium Ytterbium (?)
G-5	Aluminum Calcium Iron Magnesium Manganese Silicon Titanium	Copper Potassium Uranium Zinc Zirconium	Barium Chromium Cobalt Lead Nickel Vanadium Yttrium (?) Cerium (?) Lanthanum Ytterbium (?)

C.D.C.
Associates, Inc.
5401-B WESTERN AVE.
BOULDER, COLORADO 80301
(303) 442-8361

December 15, 1975

Apache Oro
c/o Mike Wendell
2525 Eldridge
Golden, Co 80401

Assay by Atomic Absorption

CDC #	Customer Designation	Au oz/t		Ag oz/t
4600	9L3 6-12	0.02		0.060
4601	9L3 12-24	0.02		0.040
4602	9L3 24-36	0.02		0.050
4603	9L3 36-48	0.02		0.050
4604	9L3 48060 ←	0.44	.59/8	0.040
4605	9L3 60-72	0.02		0.040
4606	9L3 72-84	0.02	= 0.0175 avg	0.292
4607	9L3 84-94	0.02		0.040
4608	16L2 6-12	0.02		0.050
4609	16L2 12-24	0.02		0.050
4610	16L2 24-36	0.02		0.050
4611	16L2 36-48	0.04		0.061
4612	16L2 48-60	0.02	.36/9	0.061
4613	16L2 60-72 ←	0.190	= 0.045	0.050
4614	16L2 72-84	0.02		0.046
4615	16L2 84-94	0.03		0.422
4616	9L2 2-12	0.02		0.230
4617	9L2 12-24	0.03		0.300
4618	9L2 24-36 ←	0.04		0.046
4619	9L2 36-48	0.02	.21/8	0.077
4620	9L2 48-60	0.02		0.215
4621	9L2 60-72	0.02	= 0.026 avg	0.353
4622	9L2 72-84	0.02		0.046
4623	9L2 84-94	0.04		0.054
4624	9L1A 2-12	0.02		0.130
4625	9L1A 12-24	0.02		0.050
4626	9L1A 24-36	0.03		0.046
4627	9L1A 36-48	0.03		0.046
4628	9L1A 48-60	0.03	.22/8	0.215
4629	9L1A 60-72 ←	0.04	= 0.0275 avg	0.046
4630	9L1A 72-84	0.03		0.200
4631	9L1A 84-94	0.02		0.050
4632	8Dāā	0.03		0.077
4633	8Dáb	0.05		0.077
4634	8Dac	0.07		0.046
4635	8Dad	0.02		0.284

apache Oro's split samples

?

J. Michael Connell
JMC/lh

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THE MINING RECORD

WESTERN MI
AND INTERNA

Wednesday, March 18, 1992, Denver, CO

Mountain View Acquires Twin Dome Mine In Nevada

RENO, NV — Mountain View Exploration reported that it has purchased the Twin Dome mine located approximately 15 miles northeast of the town of Imaly in Pershing County, Nevada. The property which consists of 20 unpatented claims, lies on the western pediment of the East Range.

Mountain View President Raymond Wittkopp said that mineral character of the land adjacent to the mine has been evident for a number of years, since portions of the property were excluded from the railroad patent. The mine has had prior production of approximately 2,000 ounces of gold from several open pits. Ore grade averaged from between 0.50 and 0.75 ounce per ton.

The style of mineralization at the Twin Dome mine is unique to this portion of Nevada and would best be classified as an episyenite gold deposit, Wittkopp said. Episyenite gold mineralization has been reported at the Salve mine in Spain, the Oriental mine at Alleghany, California and at several gold prospects in the Gold Basin—Lost Basin district of Arizona.

Management has outlined an aggressive exploration program for this property.

The company's address is 100 West Grove Street, Reno, NV 89509, (702) 826-4011.

GEOLOGIC MAP AND SECTIONS OF THE LOST BASIN PROSPECT, MOHAVE COUNTY, ARIZONA

EXPLANATION

DESCRIPTION OF MAP UNITS

QUATERNARY

Qg — QUATERNARY GRAVELS STREAM GRAVEL AND ALLUVIUM DEPOSITED ALONG ACTIVE WASHES, LOCALLY INCLUDES TALUS AND COLLUVIUM

Tmc — FANGLOMERATE MODERATE TO WELL CONSOLIDATED ALLUVIAL FAN DEPOSITS OF THE MUDDY CREEK FORMATION, CALICHE CEMETED, WITH PREDOMINANTLY PRECAMBRIAN METAMORPHIC CLASTS, INCLUDES LENSES OF TUFFACEOUS SANDSTONE. REWORKING OF THESE DEPOSITS HAS BEEN ASSOCIATED WITH LOCAL CONCENTRATION OF DETRITAL GOLD.

UNCONFORMITY

MIOCENE - PLIOCENE

Tms — MUDFLOWS AND RHYOLITIC TUFFACEOUS SEDIMENTS STEEPLY DIPPING ALTERNATING SEQUENCE OF TUFFACEOUS MUDFLOWS WITH PREDOMINANTLY PRECAMBRIAN GRANITE MIGMATITIC CLASTS AND WATER LAID, RHYOLITIC TUFFACEOUS SEDIMENTS

UNCONFORMITY

$P\epsilon_4$ — GRANITIC MIGMATITE COMPLEX MAJOR BIOTITE LEPIDOBLASTIC MIGMATITE WITH CONTORTED AND TIGHTLY CRENULATED FOLIATIONS. STRONGLY DEVELOPED FELSIC LEUCOSOMES AND LARGE DISCORDANT FELSIC PEGMATITES. MIGMATITE COMPLEX INJECTED INTO PARAGNEISS COMPLEX

AN COMPLEX

$P\epsilon_3$ — GRANODIORITE GNEISS COMPLEX SEQUENCE OF FINE TO MEDIUM-GRAINED FELSIC TO QUARTZ-PLAGIOCLASE GNEISSES, MASSIVE TO THICK GNEISSIC BANDING WITH STRONG DEVELOPMENT OF PTYGMATIC FOLDING. COMPOSITIONAL BOUNDARIES ARE GRADATIONAL. LOCALLY AMPHIBOLITE GNEISSES AND THIN CHLORITIC-BIOTITE SCHISTS. SPORADIC OCCURANCES OF PEGMATITES,

SYMBOLS

- GEOLOGIC CONTACT, SOLID WHERE KNOWN, DASHED WHERE APPROXIMATELY LOCATED, DOTTED WHERE CONCEALED
- FAULT SHOWING DIRECTION OF DIP, SOLID WHERE KNOWN, LONG DASH WHERE APPROXIMATELY LOCATED, SHORT DASH WHERE INFERRED, DOTTED WHERE CONCEALED (U ON UPTHROWN, D ON DOWNTHROWN)
- FAULT INFERRED FROM INDIRECT GEOLOGIC EVIDENCE
- STRIKE AND DIP OF SEDIMENTARY BEDS
- STRIKE AND DIP OF OVERTURNED SEDIMENTARY BEDS
- STRIKE OF VERTICAL SEDIMENTARY BEDS
- STRIKE AND DIP OF FOLIATION
- STRIKE OF VERTICAL FOLIATION
- STRIKE OF HORIZONTAL FOLIATION
- STRIKE AND DIP OF JOINT
- STRIKE AND DIP OF QUARTZ VEIN
- PROSPECT PIT, GLORY HOLE
- EXCAVATION PIT

UNCONFORMITY

PRECAMBRIAN COMPLEX

$P\epsilon_4$ GRANITIC MIGMATITE COMPLEX MAJOR BIOTITE LEPIDOBLASTIC MIGMATITE WITH CONTORTED AND TIGHTLY CRENULATED FOLIATIONS. STRONGLY DEVELOPED FELSIC LEUCOSOMES AND LARGE DISCORDANT FELSIC PEGMATITES. MIGMATITE COMPLEX INJECTED INTO PARAGNEISS COMPLEX

$P\epsilon_3$ GRANODIORITE GNEISS COMPLEX SEQUENCE OF FINE TO MEDIUM-GRAINED FELSIC TO QUARTZ-PLAGIOCLASE GNEISSES, MASSIVE TO THICK GNEISSIC BANDING WITH STRONG DEVELOPMENT OF PTYGMATIC FOLDING. COMPOSITIONAL BOUNDARIES ARE GRADATIONAL. LOCALLY AMPHIBOLITE GNEISSES AND THIN CHLORITIC-BIOTITE SCHISTS. SPORADIC OCCURANCES OF PEGMATITES, PREDOMINANTLY CONCORDANT TO FOLIATION TRENDS

$P\epsilon_2$ PARAGNEISS COMPLEX UNDIFFERENTIATED ASSEMBLAGE OF METASEDMENTS, ALTERNATING SEQUENCE OF THIN TO THICK LAYERED AMPHIBOLITE GNEISS, AMPHIBOLITES, QUARTZ-FELDSPAR GNEISSES, THIN MINOR BIOTITE SCHISTS AND THICK PEGMATITES STRONGLY CONCORDANT TO FOLIATION TRENDS

$P\epsilon_1$ MIGMATITIC GNEISS UNDIFFERENTIATED ASSEMBLAGE OF THIN BEDDED METASEDIMENTS, DOMINANTLY FINE-MEDIUM GRAIN QUARTZ-PLAGIOCLASE GNEISS, BIOTITE-GARNET SCHISTS, AMPHIBOLITE, AMPHIBOLITE GNEISS, CALC-SILICATE GNEISS AND IRON BANDED QUARTZITE. WEAK LEPIDOBLASTIC TO NEMATOBLASTIC AND STRONG PTYGMATIC FOLDING IN QUARTZ-PLAGIOCLASE GNEISS

STRIKE OF VERTICAL FOLIATION

STRIKE OF HORIZONTAL FOLIATION

STRIKE AND DIP OF JOINT

34 STRIKE AND DIP OF QUARTZ VEIN

PROSPECT PIT, GLORY HOLE

EXCAVATION PIT

BULLDOZER CUT

MINE ADIT

MINE SHAFT

9-4 DRILL HOLE, 9-SECTION NUMBER, 4-HOLE NUMBER

BRECCIA ZONE

ALTERED ZONE

A——A' GEOLOGIC CROSS SECTION

Au, Ag, Cu Mo, V, Pb ELEMENT SYMBOLS INDICATING MINERALIZATION OBSERVED IN FIELD

SLUMP BLOCK

T.N. M.N. 15.5°

MAGNETIC DECLINATION

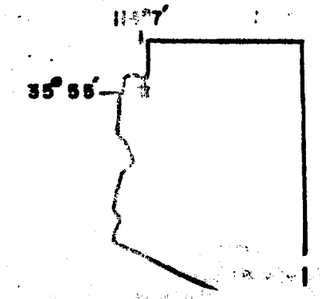
SCALE 1:6000

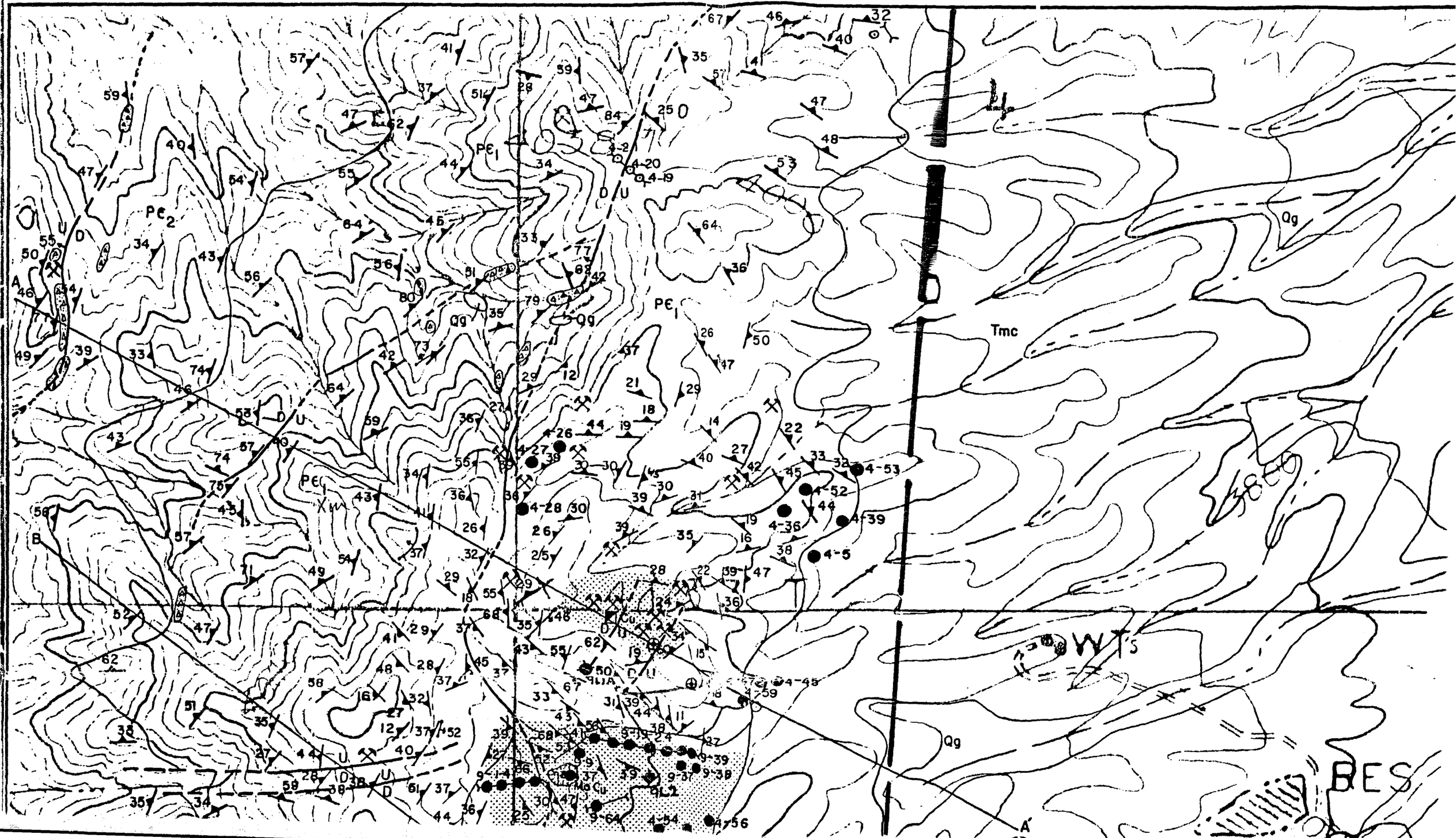
0 500 1000 1500 2000 FEET

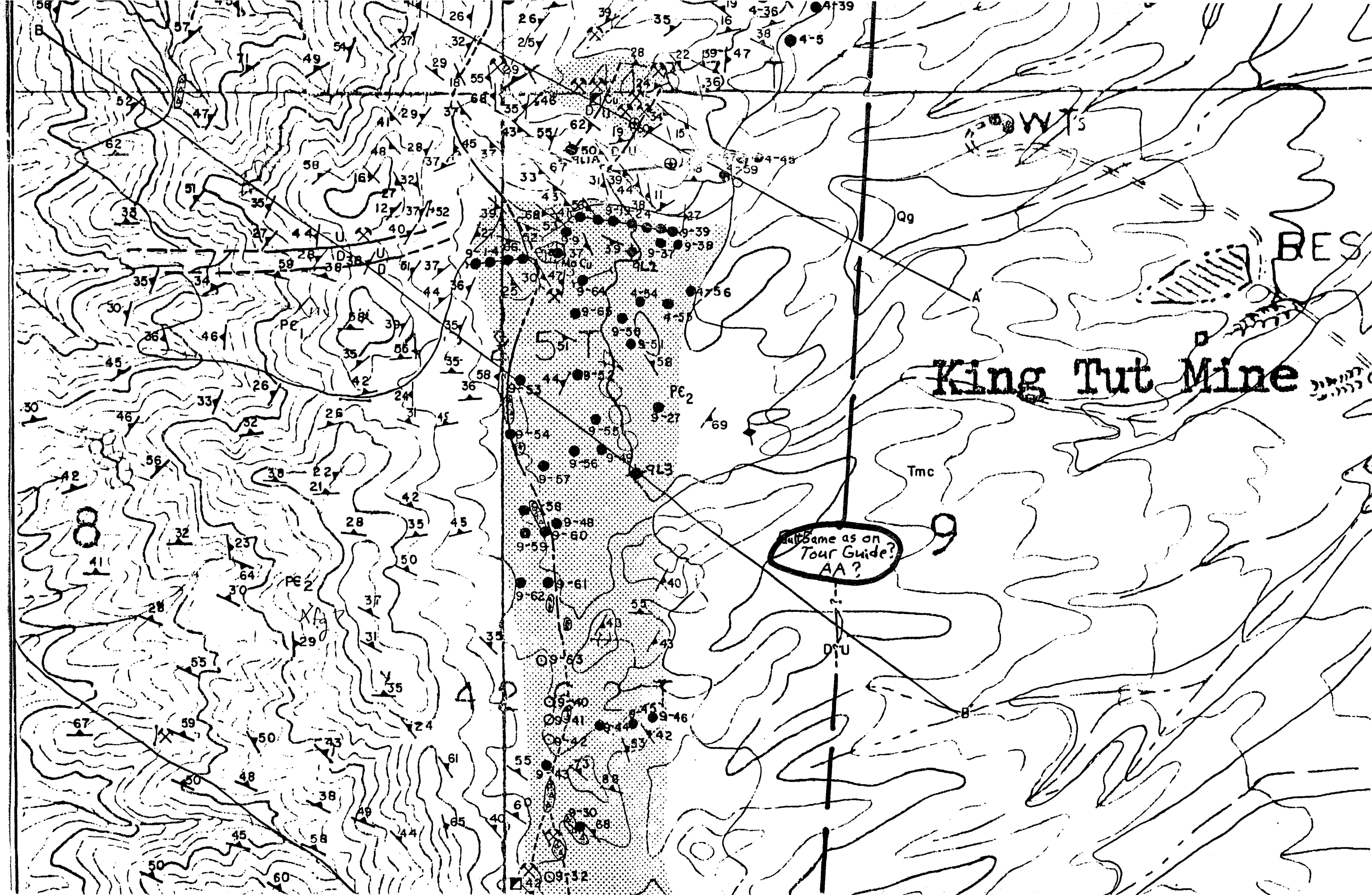
0 100 200 300 400 500 METERS

CONTOUR INTERVAL 40 FEET

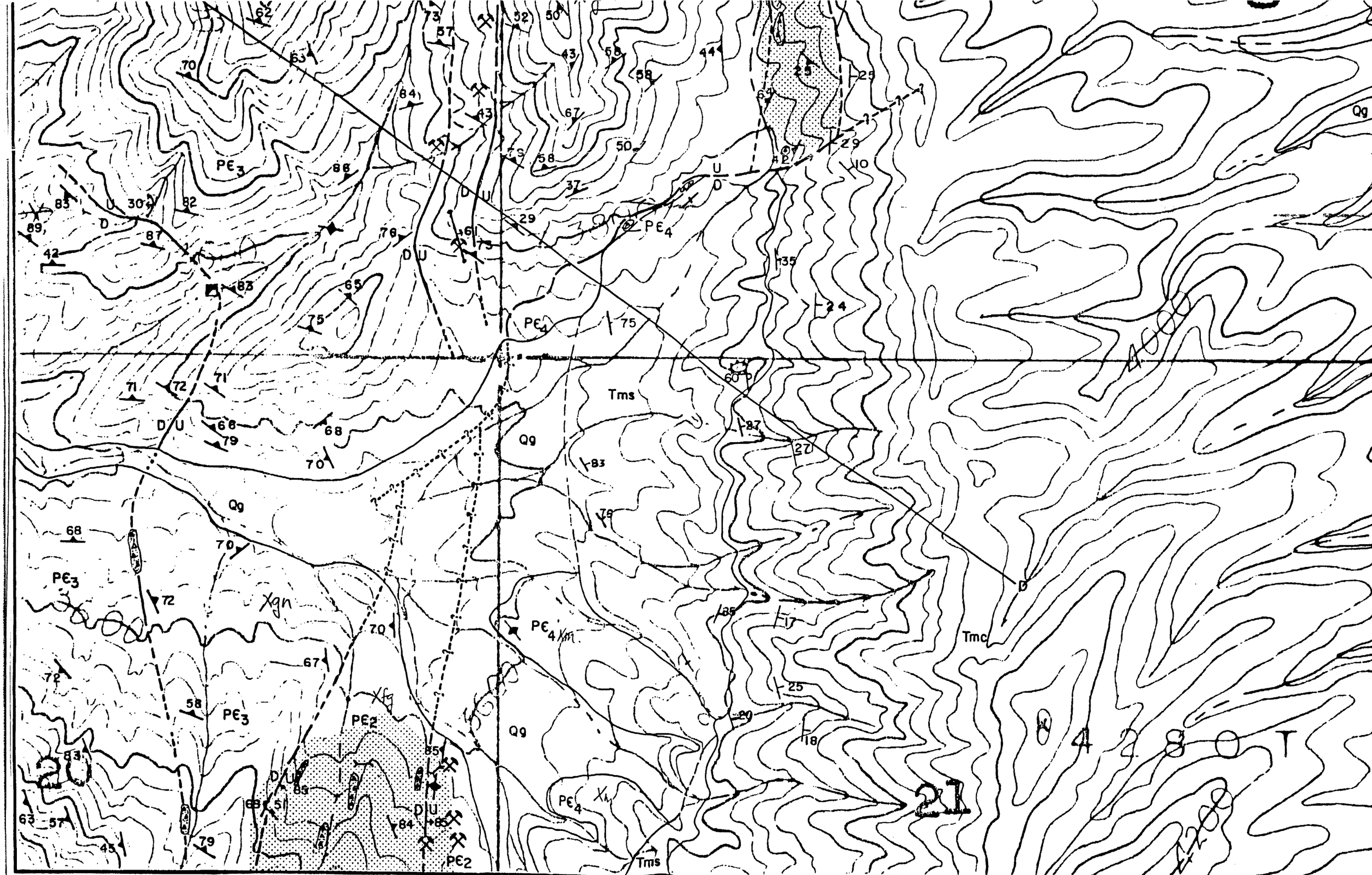
BASE MAP FROM PART OF 7 1/2' PRELIMINARY EDITION OF MT. TIPTON INW, NE. USGS TOPOGRAPHIC SHEETS




Pε2
Pε1
Pε1
Pε1
Xm
Qg
Qg
Qg
Tmc
WT's
BES
A
A'
B

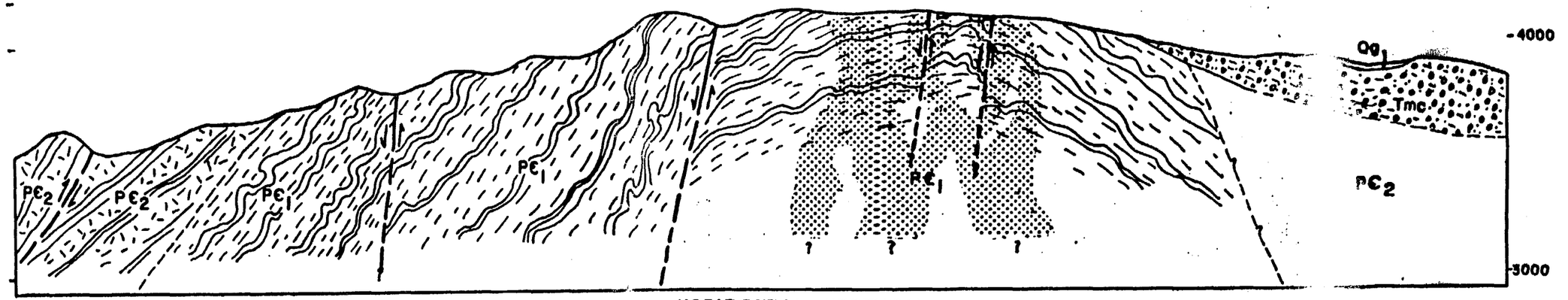

King Tut Mine
Same as on Tour Guide? AA?
Qg
Tmc
A'
B'
D U
9-53
9-54
9-56
9-57
9-58
9-48
9-60
9-59
9-61
9-62
9-63
9-40
9-41
9-42
9-43
9-44
9-46
9-30
9-32
9-27
9-55
9-52
9-51
9-37
9-38
9-39
9-64
9-65
4-54
4-55
4-56
4-39
4-5
4-36
8
9

PE2
PE3
PE4
Qg
Tmc
Xqn
Au
Y Mo Pb
9-36
16-7
16L2
VVE
3-75
Tailings
17
16
4000
4400


PE3
PE4
PE2
Q9
Tms
Tmc
Xgn
Xfg
Xm
20
21
D
U

LOCATION MAP

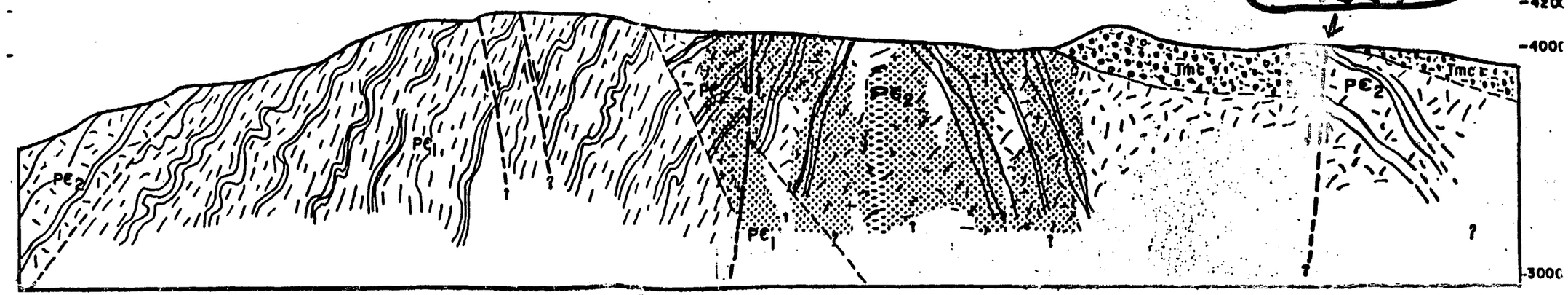
GEOLOGIC CROSS SECTION A-A'



HORIZONTAL = VERTICAL

Fault
Same as on
Tour Guide?
AA?

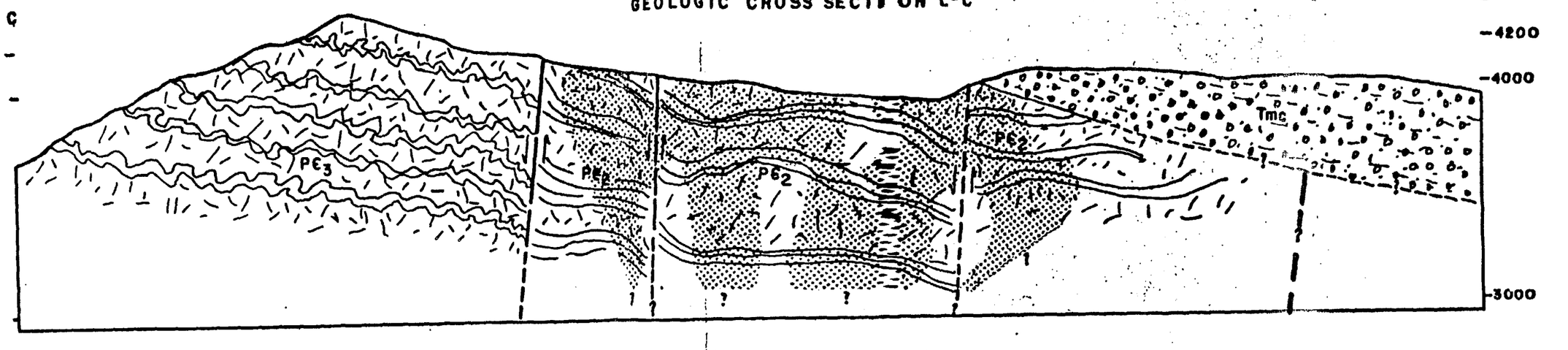
GEOLOGIC CROSS SECTION B-B'



GEOLOGIC CROSS SECTION C-C'

C
C'

GEOLOGIC CROSS SECTION C-C'



GEOLOGIC CROSS SECTION D-D'