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520-770-3500
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James Doyle Sell Mining Collection

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The gangue is usually iron-stained quartz and the ore contains gold, some silver, oxide of manganese, and considerable hematite.

LOST BASIN DISTRICT.

The Lost Basin district is situated in the most northern part of the region examined. It comprises the belt lying between Hualpai Wash on the west and Pierce Mill Canyon on the east, and extending from Colorado River at the mouth of the Grand Canyon southward through the Grand Wash Cliffs to a point 12 miles beyond Scanlon Ferry, near the latitude of Gold Basin. It has a length of 20 miles and a width of about 9 miles. It is reached by wagon road descending Hualpai Wash from Gold Basin to Colorado River at Scanlon Ferry.

The principal veins occur south of the middle of the belt, about 7 miles northeast of Gold Basin, where, between elevations of about 2,000 feet on the west and 5,000 feet on the east, they trend about east and west across the district for a distance of 6 miles.

They were discovered about 1886, and considerable ore has been taken out from time to time and treated in arrastres or milled, but the ground on the whole is but little more than prospected. This is probably due to the lack of water. The nearest water supply is Colorado River at Scanlon Ferry, 8 miles to the north, whence water is now hauled at a cost of $2 a barrel. The two points, however, could be readily connected by pipe line.

The ore could without difficulty be hauled to the river, with which the area is said to be connected by a good wagon road, but its transportation by water down the river, advocated by some, does not seem feasible, owing to the dangerous rapids that would be encountered and the impracticability of bringing barges or bottoms of any kind up the river and the great cost of bringing them overland.

The deposits are mostly owned by about half a dozen men. They occur mainly in the pre-Cambrian granitic rocks in well-defined, strong quartz fissure veins, of which there are two sets. Those on the west strike northward with dips vertical or steep to the east and are chiefly gold bearing; those on the east strike west-northwest and are chiefly copper bearing. The relative age of the two sets of veins has not been determined, but it is possible that the copper deposits may be in part pre-Cambrian.

The principal gold properties are known as the Scanlon-Childers mines and are owned chiefly by Mike Scanlon, of Basin, and Cy Childers, of Kingman. The veins average from 4 to 6 feet in width. Several of them are reported to be from 10 to 14 feet in width and [illegible] to 2 miles in length. The croppings are principally brown and green iron and copper-stained quartz and are in part prominent.

Some of the veins are said to be exposed in the canyons to a depth of 200 feet or more and yield good shipping ore from the surface down to this depth. The ore contains principally gold and silver and a little copper, but no copper of commercial value and not enough to interfere with cyaniding.

The ore on the whole is fine in texture. It has been sampled and tested by Denver men and was found to be excellent cyaniding ore, and is reported to contain on the average $8 or upward in gold to the ton.

The copper deposits are said to extend from a point near the middle of the belt nearly to the summit of the Grand Wash Cliffs and Colorado Plateau on the east. They are owned chiefly by James Burrows and J. W. Mouat, of White Hills. Other owners are Messrs. Grant, Fielding, and Roseborough, of Hackberry. The pre-Cambrian complex is here more schistose than on the gold-bearing side of the belt, and some of the deposits on the extreme east are said to be associated with limestone. The copper-bearing veins, as indicated, strike west-northwest at nearly right angles to the gold-bearing veins. The croppings are large, and, as seen by the writer, consist principally of oxidized masses of brown and black quartz, with some malachite and azurite. The ore contains principally copper and carries also some gold and silver. Some of it is reported to have assayed from 17 to 20 per cent of copper.

The production of the district is reported to be many thousand dollars, chiefly in gold.

BLACK MOUNTAINS.

INTRODUCTION.

The deposits of the Black Mountains differ in most respects very markedly from those of the Cerbat Range. They occur chiefly in the Tertiary volcanic rocks. Their trend is west-northwest to northwest, the dip steep. Their gangue is mainly calcite and dolomitic carbonates, but these minerals have largely been replaced by quartz and adularia, a variety of orthoclase free from sodium and with characteristic crystal form. They are deeply oxidized and, as a rule, contain no sulphides, and their values are almost exclusively in gold, there being usually no base metals present. There is a general absence of flucan or gouge, the veins being usually frozen fast to the country rock.

The districts in the Black Mountains, named in order from north to south, are the Eldorado Pass, Gold Bug, Mocking Bird, Virginia, Pilgrim, Union Pass, Gold Road, Vivian, and Boundary Cone. Of these the most important is the Gold Road district. The two first

Last Basin Mining Dist

21 sq miles

T28, 29, & 30N

R 17 & 18W.

Mohave Co, AZ

American Heavy Metals

(Apache Oro Company)

To JDS

Date 10/11/90 Time 10:35 ☐ AM ☐ PM

WHILE YOU WERE OUT

M Warren Mallory

of Laramie, WY

Phone (307) 742-6668

Area Code Number Extension

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CALLED TO SEE YOU		WILL CALL AGAIN	
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Message Request return of brochure he sent you on Large AZ gold Property (see all) He is going to update brochure & give you a copy He will be spending the winter in Ocean City Calif

Operator

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WARREN M. MALLORY, P.E.
Engineering Consultant
410 GRAND AVE., SUITE 313
POST OFFICE BOX 730
LARAMIE, WYOMING 82070
PHONE: (307) 742-6668

May 30, 1990

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

Dear Jim:

Re our telephone conversation last Friday, enclosed is a brochure on our Lost Basin, Arizona, 13,740 acre gold property.

If you are interested, I can send you a two-day (minimum) "tour guide" of Lost Basin which describes and locates (on four stereo-aerial photos and two marked overlays) many interesting and significant spots that tie in with the 7-mile long gold bearing fault breccia zone and the paralleling gold eluvial bench, as well as the suggested buried episyenitic gold pipe.

However, before visiting Lost Basin I suggest, if at all possible, that you meet with me in my Laramie, Wyoming office to discuss the property and to look over (and copy if you desire) some of the reports and 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, and many ore and bedrock samples along with eluvial concentrates for viewing under a stereo microscope.

Thank you for your interest and I look forward to meeting you.

Cordially,

Warren M. Mallory,
General Manager of
American Heavy Minerals

Enc: Lost Basin brochure

WMM/pw

ASARCO

Exploration Department
Great Basin Division
Peter G. Vikre
Manager

March 28, 1990

Mr. Warren M. Mallory, P.E.
410 Grand Avenue, Suite 313
P.O. Box 730
Laramie, WY 82070

Dear Mr. Mallory:

Thank you for your letter and description of the gold property in northwest Arizona. Exploration in Arizona is conducted out of ASARCO's Tucson Office and I am forwarding your correspondence to James Sell, Manager of that office. Mr. Sell will contact you directly if he is interested in further evaluation of your property.

Yours truly,

Peter Vikre

Peter G. Vikre

PGV:ks
cc: J.D. Sell

ASARCO Incorporated
510 East Plumb Lane
Reno, NV 89502
(702) 826-7007

WARREN M. MALLORY, P.E.
Engineering Consultant
410 GRAND AVE., SUITE 313
POST OFFICE BOX 730
LARAMIE, WYOMING 82070
PHONE: (307) 742-6668

March 19, 1990

Mr. P.G. Vikre
ASARCO
510 East Plumb Lane
Reno, NV 89502

Dear Mr. Vikre:

Is your company seeking large open-pit gold deposits as described in the enclosed summary of our 13,740 acre Arizona gold property?

If you are interested in more information, please contact me (**from March 22 to May 15**) at my Oceanside office:

Warren M. Mallory
P.O. Box 4446
→ Oceanside, CA 92054
Phone (619) 966-2689

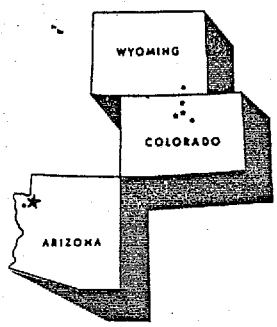
Thank you and I look forward to hearing from you.

Cordially,

Warren M. Mallory

Warren M. Mallory

Enclosure: Large Arizona Gold Property Summary



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

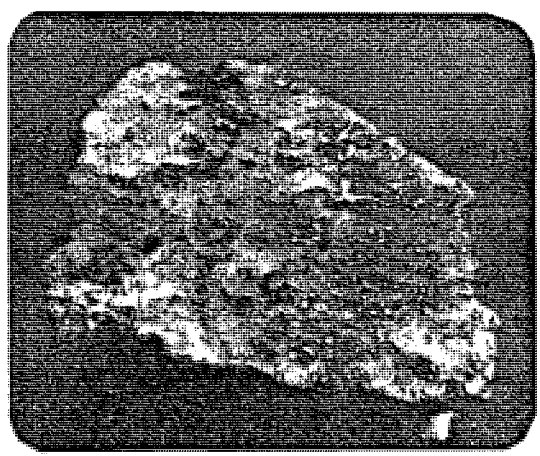
LARGE ARIZONA GOLD PROPERTY

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 (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.

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.

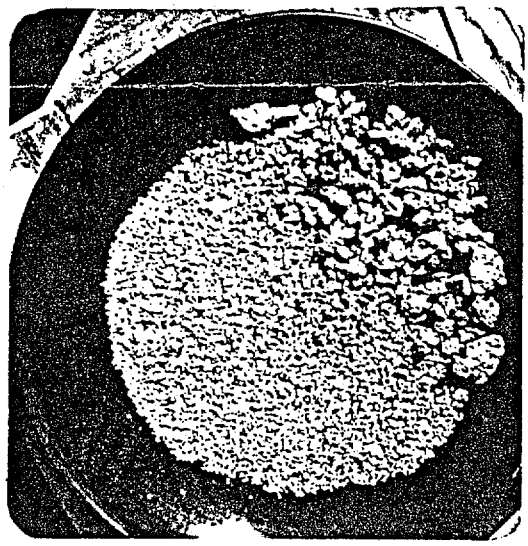
Banded Iron Formation: This gold bearing formation from 5 to 50 feet thick, outcrops throughout the 8 mile length of the Lost Basin mountain range. Sometimes referred to as a "Precambrian Placer," this metamorphosed rock consists of layers of black magnetite and hematite particles (and occasional fine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

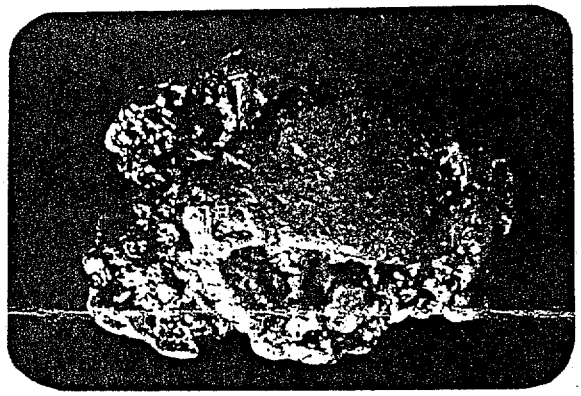
Copper/Molybdenum Porphyry: A copper zone surrounded by a silver-lead-zinc zone and an outer gold halo is located in the center of the 8 mile long Lost Basin mountain range, and several indicators such as a mineral zoning pattern, aeromagnetic pattern, spectrochemical analysis of trace metals in native 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. See Figure 2.

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.

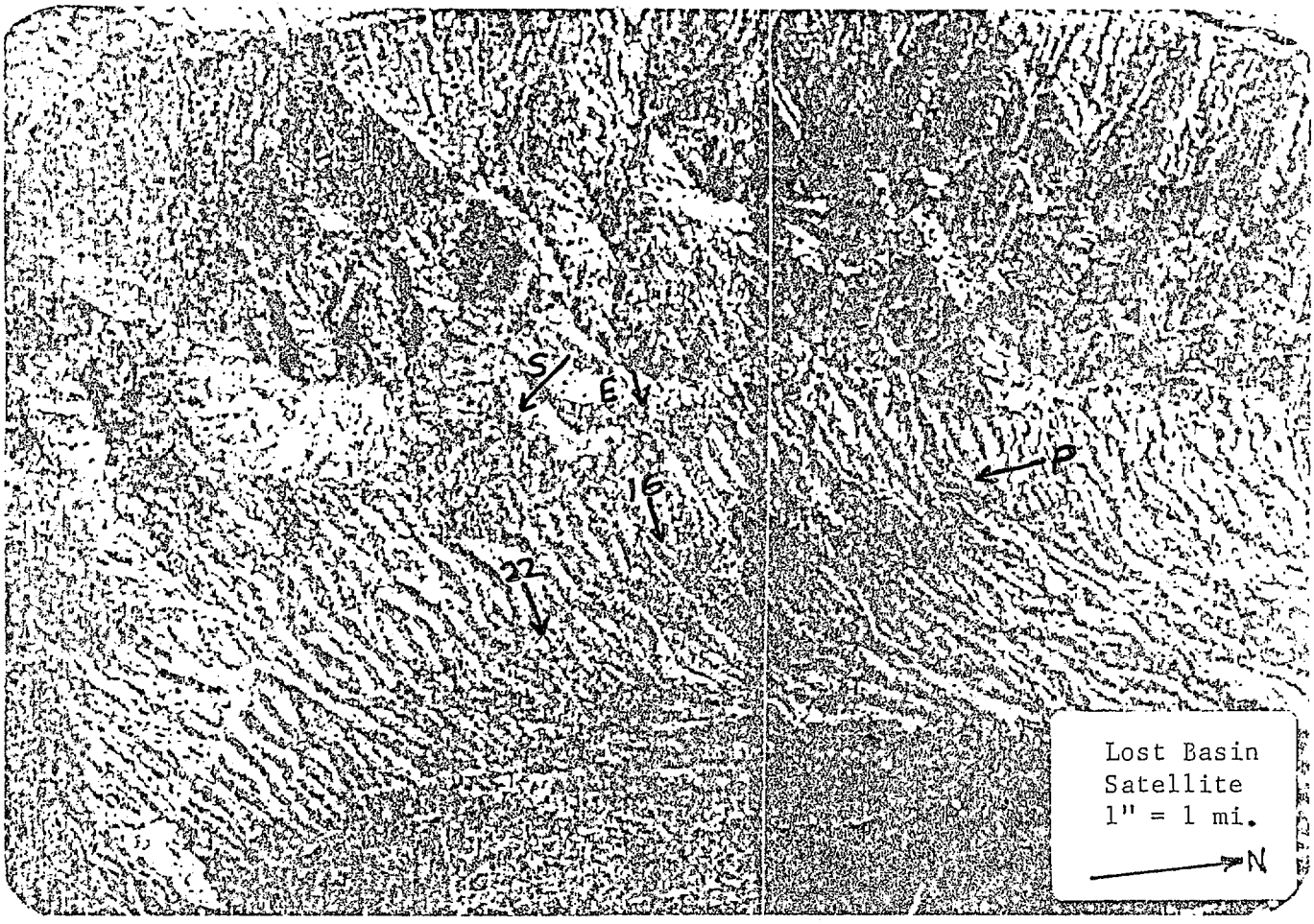
Investment of American Heavy Minerals: Approximately $4.58 million was spent during the past 30 years in acquiring, exploring, and maintaining AHM's 13,740 acres of placer and lode claims. AHM's goal was to delineate potential mining targets that would interest experienced mining operators to complete 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, either by groups desiring to enter into gold mining, or who had no experience in mining disseminated desert gold deposits. Not included in the foregoing that AHM considers to be of no value, is about $1.4 million additional spent by one of these groups and two others who were under-financed, had little previous mining experience, incurred exorbitant management costs, and (because gold nuggets are so easily found over such a large area) they jumped into mining production without proper preliminary exploration and pilot plant studies. Needless to say, all failed in their abortive exploration and mining attempts. Also, the $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.

From report – See files

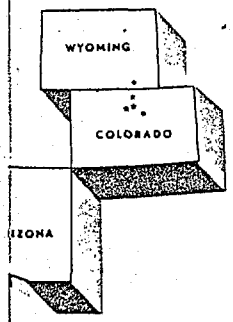
Suggested Gold Bearing Episvenitic Pipe (Continued)

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.

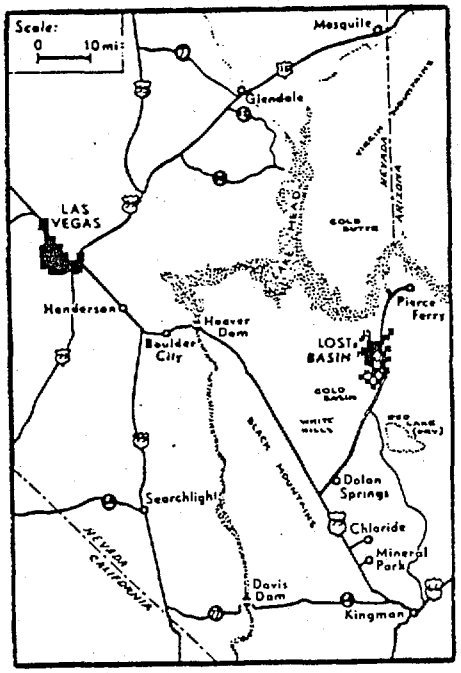
5C) Lineaments: (See Figure 8). In studying color stereo aerial photos flown in 1967 and 1986, along with black and white USGS stereo photos flown in 1958, 1973 and 1980, five predominant lineaments (A,B,C,D,E) intersect at the suspected buried mineralized bedrock pipe. Each lineament viewed in the pediment 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.



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

LARGE ARIZONA GOLD PROPERTY

Lost Basin Mining District
Mohave County, Arizona



by

Warren M. Mallory, P.E.
Engineering Consultant

March 15, 1990

JDS

ASARCO

Exploration Department
Southwestern United States Division
James D. Sell
Manager

July 19, 1989

Mr. Paul L. Roberts
2821 Wyandotte
Las Vegas, Nevada 89102

Lost Basin Placers
Sec. 18, T29N, R17W
Mohave County, AZ

Dear Mr. Roberts:

Your large packet of information has been retransmitted from the Asarco New York Office to the Southwestern Exploration Division.

Thank you for the submittal. The data shows you can secure some fairly large nuggets from the gravels, but only further exploration can determine the amount of pay dirt available.

At the present time our staff is fully committed, but at some future date I shall schedule a visit to your area for a field review.

Thank you for the submittal and I look forward to having the time for the review.

Sincerely,

James D. Sell

JDS:mek

cc: W.L. Kurtz

ASARCO Incorporated P. O. Box 5747 Tucson, Az 85703-0747
1150 North 7th Avenue (602) 792-3010