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United States Department of the Interior

OFFICE OF HEARINGS AND APPEALS
INTERIOR BOARD OF LAND APPEALS
4015 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22203

UNITED STATES
v.
ARIZONA MINING AND REFINING COMPANY, INC., ET AL.

IBLA 72-302 Decided September 29, 1976

Appeals by contestant and by contestee from a decision by Chief Administrative Law Judge L. K. Luoma with respect to a group of 17 lode mining claims dismissing the contest complaints against eight claims, declaring five claims valid, and declaring four claims invalid. Arizona Contests 325, 907, 908, 909 and 910.

Affirmed in part; reversed in part.

1. Mining Claims: Discovery: Generally

A discovery exists where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means with a reasonable prospect of success in developing a valuable mine. Minerals which no prudent person will extract because there is no demand for them at a higher price than the cost of extraction and transportation generally cannot be classed as valuable.

2. Contests and Protests: Generally--Evidence: Generally--Mining Claims: Contests--Rules of Practice: Government Contests

Although, in a mining claim contest, the Government may make a prima facie case of no discovery by the testimony of a mineral examiner that he has been on the land in issue and saw nothing of mineral value, a prima facie case is ordinarily not made where it is established that the examiner was not on the land in issue.

3. Administrative Procedure: Generally--Contests and Protests: Generally--Evidence: Generally--Mining Claims: Contests--Rules of Practice: Evidence--Rules of Practice: Government Contests

In a mining claim contest where a contestee is of the opinion that the Government did not make a prima facie case of no discovery, he may move to have the case dismissed at the conclusion of the Government's case, and then rest. The contest complaint could be dismissed if the Administrative Law Judge rules that no prima facie case had been made of lack of discovery and there is no other evidence in the record to support the charges in the complaint. But if the contestee goes forward after making such a motion to dismiss and presents his evidence, that evidence must be considered as part of the entire record and its probative value will be weighed. Thus, even if the Government has failed to make a prima facie case, evidence presented by the contestee which supports the Government's contest charges may be used against the contestee, regardless of the defects in the Government's case.

4. Administrative Procedures: Hearings--Contests and Protests: Generally--Mining Claims: Contests--Mining Claims: Determination of Validity--Mining Claims: Hearings--Rules of Practice: Government Contests

In a mining claim contest where the evidence of a valuable mineral deposit, submitted by contestee at a hearing, bearing on the validity of a mining claim, has greater probative weight than that offered by the Government, it is proper to find that contestee has preponderated and to dismiss, without prejudice, the complaint alleging no discovery of a valuable mineral deposit.

APPEARANCES: W. T. Elsing, Esq., Phoenix, Arizona, for contestee; Richard L. Fowler, Esq., Office of the General Counsel, U.S. Department of Agriculture, Albuquerque, New Mexico, for contestant.

OPINION BY ADMINISTRATIVE JUDGE HENRIQUES

Arizona Mining and Refining Company (AMARCO), claimant-contestee, 1/ appeals from that portion of the decision dated January 26, 1972, in which Chief Administrative Law Judge L. K. Luoma declared four mining claims invalid. The United States Forest Service, contestant, appeals from those portions of the decision validating five mining claims and dismissing the complaints against eight other claims.

The group of contiguous lode mining claims 2/ involved in this proceeding are situated within section 36, T. 18 S., R. 15 E., sections 1, 12, T. 19 S., R. 15 E., and sections 6, 7, T. 19 S., R. 16 E., G. & S.R.M., on the southern edge of the Helvetia Mining District in the Coronado National Forest, Pima County, Arizona. 3/

1/ The contest complaints named Arizona Mining and Refining Company, Inc., Mary E. Deering, Thomas Deering, Sidney H. Halberg, David C. Halliday, Charles C. Ramsey and Rhod Delaney as contestees. The present appeal is from AMARCO, joined by Sidney H. Halberg whose present interest in the claims is solely as a creditor of AMARCO.

2/ The claims are named: Blue Wing, Cloud Rest, Cloud Rest No. 1 South, Big Windy, Big Windy No. 1, Golden Eagle, Golden Fleece, Golden Oak, Lexington, Reserve, Wish Bone, Carbonate Silver (aka Silver Carbonate), Golden Gate, Gold Fish, West Side, Banner and Golden Portal.

3/ Mining activity in the Helvetia Mining District commenced in 1880 and practically ceased circa 1950. During its 70-odd years of operating, the district produced gold, silver, copper, lead and zinc ores valued in excess of $4,000,000. Copper was the predominant mineral. Most of the production centered around the mining camp of Helvetia, about 4 miles north-northwest of the Golden Portal claim.

With the exception of the Golden Portal claim, located in 1953, all the contested claims were located between 1892 and 1926, with the principal locators having been Thomas Deering and M. E. Deering. Through a series of mesne conveyances, title to the claims has vested in AMARCO, incorporated in 1962. It is reported that prior to acquisition of the claims, the Deerings and others shipped ores rich in gold, silver and lead from the Golden Gate claim, and good zinc ores from the Big Windy claim.

The Arizona Land Office, Bureau of Land Management, at the request of the Forest Service, issued complaints against the 17 mining claims on June 14, 1967, in Arizona Contests 325, 907, 908, 909 and 910. The complaints charged that a valid mineral discovery did not exist within the limits of any of the claims and that the land embraced within each claim was nonmineral in character. The contestee denied the charges and asserted that the claims are valuable for ores of gold, silver, copper, lead and zinc. The complaints and answers were amended by a stipulation filed March 20, 1968, which added the charge that the claims were not marked on the ground so that their boundaries could be traced. Hearings were held in Phoenix, Arizona, on February 19, 1968, on April 29 and 30, and on September 29, 1969. Additional stipulations and exhibits were submitted in June, July and August 1971, after the claims had been resurveyed by contestee.

In his decision, Judge Luoma, relying on the post-hearing stipulations which reflected substantial agreement by the parties on the mapping of the claims and their respective workings, dismissed the charges that the claims were not properly marked. On the ground that the Government had presented no evidence thereon, the Judge dismissed the complaints without prejudice as to the following claims: Blue Wing, Cloud Rest, Cloud Rest No. 1 South, Big Windy No. 1, Reserve, Golden Oak, Wish Bone and Banner. Judge Luoma found that a mineral discovery exists on the Golden Fleece, Lexington, Carbonate Silver, Gold Fish and West Side claims, and that no discovery had been made on the Big Windy, Golden Eagle, Golden Gate and Golden Portal claims.

Contestant appeals from the decision insofar as it dismissed the complaints as to eight of the claims and found four of them to be valid. The Government's brief contends that although the Forest Service mineral examiner took no samples from any of the eight claims against which complaints were dismissed, his expert testimony, based upon his physical examination of the claims, was sufficient to constitute a prima facie case of their invalidity. With respect to the claims determined to be valid, the Government maintains that, at best, the record shows them to be "subject to further exploration in the hope of finding a valuable mineral deposit." For this proposition the brief cites, inter alia, evidence of mineralization on the claims consists of narrow, discontinuous veins whose quantity and extent cannot be ascertained; and testimony by the contestee's mineral examiner which the Government interprets as an admission that additional exploration would be required to determine whether a discovery exists on any of the claims. The Government also calls attention to the fact that, although AMARCO had spent more than $300,000 in developing the contested claims, O. G. Williams, executive vice president and general manager of the company, conceded at the hearing that the

financial returns had been "very little." According to the Government, the evidence indicates that any valuable minerals on the claims had been removed and disposed of long before AMARCO acquired the properties.

Contestee appeals from that part of the decision which held four claims to be invalid. It asserts that in finding a lack of discovery Judge Luoma applied the marketability test to the exclusion of other criteria properly used to determine whether a valuable mineral deposit exists. Contending that the quality of mineralization on each of the claims found to be invalid is adequate to sustain a profitable mining operation, contestee attributes AMARCO's failure to develop these claims largely to what it characterizes as interference and wrongful harassment on the part of the Forest Service. Contestee also alleges that the Forest Service mineral examiner, either through ignorance or intent, took mineral samples from known barren or partially barren areas. Consequently, it urges, the result of the Government's mineral sampling introduced at the hearings was devoid of evidentiary value. Finally, contestee argues, in effect, that it has sustained the burden of proof that the revenues which it can reasonably expect to derive from the claims will exceed the costs of mining, extracting, removing and marketing the minerals.

[1] The discovery of a valuable mineral deposit within the limits of a lode mining claim is the sine qua non for a valid location. 30 U.S.C. § 23 (1970). A discovery exists "where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine." Castle v. Womble, 19 L.D. 455, 457 (1894); United States v. Coleman, 390 U.S. 599 (1968).

This test, the "prudent man rule," has been refined to require a showing that the mineral in question can be extracted, removed, and presently marketed at a profit, the so-called "marketability test:"

> * * * [M]inerals which no prudent man will extract because there is no demand for them at a higher price than the cost of extraction and transportation are hardly economically valuable. Thus, profitability is an important consideration in applying the prudent-man rule, and the marketability test which the Secretary has used here merely recognizes this fact.

United States v. Coleman, supra at 602.

Coleman was concerned only with a "common variety" mineral. In considering a case involving both precious and base metals, as in the present proceeding before us, the United States Court of Appeals for the Ninth Circuit has held that the marketability test should be applied to all minerals. In Converse v. Udall, 399 F.2d 616 (9th Cir. 1968), cert. denied, 393 U.S. 1025 (1969), the Court said:

> * * * We think that in such a case it is still the law that there need not be a full showing of marketability, such as the Secretary required in Coleman, supra. But the marketability test does permit the fact finder, even in the case of a showing of gold, to consider, somewhat more extensively than heretofore, the economics of the situation. Perhaps we could phrase the test this way: When the claimed discovery is of a lode or vein bearing one or more of the metals listed in 30 U.S.C. § 23, the fact finder, in applying the prudent man test, may consider evidence as to the cost of extraction and transportation as bearing on whether a person of ordinary prudence would be justified in the further expenditure of his labor and means. But this does not mean that the locator must prove that he will in fact develop a profitable mine.

399 F.2d at 622.

In the time-honored test to determine whether discovery has been made on a lode mining claim, these elements are necessary:

1. There must be a vein or lode of quartz or other rock in place.

2. The quartz or other rock in place must carry gold or some other valuable mineral deposit.

3. The two preceding elements, when taken together, must be such as to warrant a prudent man in the expenditure of his time and money in the effort to develop a valuable mine.

It is clear that many factors may enter into the third element: the size of the vein, as far as disclosed, the quality and quantity of mineral it carries, its proximity to working mines and location in an established mining district, the geological conditions, the fact that similar veins in the particular locality have been explored with success, and other facts, would all be considered by a prudent man in determining whether the vein

or lode he had discovered warrants a further expenditure or not. United States v. Snyder, 72 I.D. 223 (1965); Jefferson-Montana Copper Mines Company, 41 L.D. 320, 323 (1912).

Obviously, a claimant with a history of recent and uninterrupted commercial success in marketing the locatable mineral resources of his claim would have gone a long way toward meeting the requirements of the prudent man test as complemented by the marketability test. The Department has never insisted upon such a high standard of proof, and the fact that the revenues heretofore derived from a claim are insignificant when compared with the cost of exploration and development does not negate the possibility of a discovery. Indeed it is not necessary for a claimant to show that so much as a single sale has been made of minerals found within his claim. United States v. Barrows, 76 I.D. 299, 305 (1969), aff'd 447 F.2d 80 (9th Cir. 1971). Whatever records may exist of past production and sales from the claims are, nevertheless, worthy of being accorded some evidentiary weight, even in cases involving metallic minerals of a type for which marketability may be presumed, and should be evaluated in connection with other factors in determining whether the particular mineral deposit within the claim is sufficient qualitatively and quantitatively to hold forth the reasonable prospect that it can be marketed at a profit. See Converse v. Udall, supra.

To establish the existence of a valuable mineral deposit on a lode claim there must be proof of continuous mineralization along the course of a vein or lode; the mere showing of disconnected pods of mineral concentration, even of high values, does not satisfy the test. See United States v. Zerwekh, 9 IBLA 172, 176 (1973); cf. United States v. Taylor, A-30776 (October 6, 1967); United States v. Consolidated Mines and Smelting Company, A-30760 (September 19, 1967). While geologic inference based upon knowledge of the degree of mineralization prevalent within the surrounding area cannot substitute for the actual exposure of a vein or lode within a claim, it may be relied upon as an aid to calculate the extent and potential value of the mineral deposit, once a continuous vein or lode bearing minable material has been exposed. See United States v. Larsen, 9 IBLA 247, 262 (1973); United States v. Henault Mining Co., 73 I.D. 184, 194 (1966), aff'd, 419 F.2d 766 (9th Cir. 1969), cert. denied, 398 U.S. 950 (1970).

The existence of a valuable mineral deposit within the claim must be established as present fact. If at the time of the validity determination the deposit has been depleted to the extent that the cost of extraction, processing and transportation of the remaining minerals would exceed the revenues reasonably expected to be derived from their sale, the fact that the claim may at one time have been

profitably worked is of no avail. See Best v. Humboldt Placer Mining Company, 371 U.S. 334, 336 (1963); Mulkern v. Hammitt, 326 F.2d 896, 898 (9th Cir. 1964); Adams v. United States, 318 F.2d 861 (9th Cir. 1963); United States v. Wurts, 76 I.D. 6, 11 (1969).

A present discovery may, however, exist where the known economic factors are such as to warrant a reasonable expectation that the claim can be developed into a profitable mine within the reasonably foreseeable future. A prudent man could be justified, for example, in the belief that a sustained upward trend in the prices of minerals of the types found on his claim would continue and have the tendency, within a predictable period, to result in a remunerative return for the products of the claim. Cf. United States v. Denison's Estate, 76 I.D. 233 (1969); United States v. Jenkins, 75 I.D. 312 (1968).

When the Government contests a group of mining claims the test of discovery is applied to each claim individually, since a discovery without the limits of the claim, no matter what its proximity, does not suffice. Waskey v. Hammer, 223 U.S. 85, 91 (1912); United States v. Harper, 8 IBLA 357, 368 (1972).

When the Government, by means of a contest proceeding, challenges the validity of a mining claim on public land, either before or after an application for patent, it has only the burden of going forward with evidence to make a prima facie case that no discovery of a valuable mineral deposit has been made within the limits of the claim. The burden of proof then shifts to the mining claimant, who in order to prevail must overcome the Government's prima facie case, through a preponderance of the evidence, that a discovery has been made. Foster v. Seaton, 271 F.2d 836, 838 (D.C. Cir. 1959); United States v. Heard, 18 IBLA 43 (1974); United States v. Winters, 2 IBLA 329, 339, 78 I.D. 193, 197 (1971).

In Winters, supra, we set forth the standard to be applied in determining whether the Government has established a prima facie case of invalidity of a claim:

> Where a Government mineral examiner offers his expert opinion that discovery of a valuable mineral deposit has not been made within the boundaries of a contested claim, a prima facie case of invalidity has been made, provided that such opinion is formed on the basis of probative evidence of the character, quality and extent of the mineralization allegedly discovered by the claimant. Mere unfounded surmise or conjecture will not suffice, regardless of the

> expert qualifications of the witnesses. But an expert's opinion which is premised on his belief or hypothetical assumption of the existence of certain relevant conditions, if evidence is presented that those conditions do exist, is sufficient to establish a prima facie case and to shift the burden of evidence to the contestee. The admissibility of expert testimony in a mining claim contest is determined by the hearing examiner [now Administrative Law Judge], who exercises a wide latitude of discretion in making these determinations.

2 IBLA at 335-36, 78 I.D. at 195.

[2] The function of the Government's mineral examiner is to verify, if possible, the existence of discovery by examining the claim and by extracting mineral samples from accessible areas of exposed mineralization at which the claimant alleges discovery to have been made. United States v. Humboldt Placer Mining Company, 8 IBLA 407, 419, 79 I.D. 709, 719 (1972); United States v. Patee, A-28731 (May 7, 1962). If a valuable mineral deposit exists within the claim, it is incumbent upon the claimant to discover it; the mineral examiner has no affirmative duty to explore or sample beyond the alleged discovery points. Neither is he required to undertake to excavate or rehabilitate any purportedly mineralized area which is concealed by overburden or is otherwise difficult of access. United States v. Woolsey, 13 IBLA 120, 123 (1973); United States v. McKenzie, 4 IBLA 97, 105 (1971); United States v. Houston, 66 I.D. 161, 167 (1959). Indeed a prima facie case of invalidity may be established by the Government without any sampling at all where a qualified mineral examiner testifies that it is his expert opinion, based upon an inspection of the land within the claim, that there is insufficient exposed or accessible mineralization thereon to warrant taking of samples. Cf. United States v. Zweifel, 11 IBLA 53, 80 I.D. 323 (1973), sustained Roberts v. Morton, 389 F. Supp. 87 (D. Colo. 1975). See United States v. Flurry, A-30887 (March 5, 1968); United States v. Coston, A-30835 (February 23, 1968). Of course, the claimant is free to overcome the Government's prima facie case, if he can do so, by demonstrating the presence of a valuable mineral deposit on a claim characterized by the examiner as devoid of significant mineralization. United States v. Flurry, supra; United States v. Coston, supra.

While the Government's mineral examiner is under no obligation to search throughout the claim for indication of a valuable deposit, his sampling need not be confined to the precise points at which the claimant contends discovery to have been made; the examiner is at liberty to obtain mineral samples from anywhere

within the claim, if in his professional judgment the extraction and evaluation of such samples should become necessary or desirable to ascertain the strike or dip of a vein or to determine the quality and extent of the prevailing mineralization. The function of the examiner is, as previously stated, one of verification, but where an examiner insists upon sampling at a point which shows no external indication of the presence of minerals and which the claimant has described to him as barren, the trier of fact may find the samples obtained therefrom to be unrepresentative of the deposit for which discovery is claimed and to consider them only for the purposes of delineating the outer limits of the mineralized area.

[3] If the Government fails to present a prima facie case, a contestee by timely motion may move to have the case dismissed and then rest. The contest complaint would then be properly dismissed because there was no prima facie case making an evidentiary basis for an order of invalidity by lack of discovery, and no other evidence in the record to support the charges in the complaint. Cf. United States v. Winters, supra. On the other hand, if the contestee goes forward, even after filing a motion to dismiss, and presents his evidence, that evidence must be considered as part of the entire evidentiary record and weighed in accordance with its probative value. So even if the Government has failed to make a satisfactory prima facie case, or if its case is weak, evidence presented by contestee which supports the Government's contest charges may be used against the contestee, regardless of the defects in the Government's case. United States v. Taylor, 19 IBLA 9 (1975).

The only witness who testified for the Government was Jack McK. Pardee, a mining engineer employed by the Forest Service. His mineral report, dated June 25, 1965 (Ex. 2), stated categorically that no discovery was present on any of the 17 claims but the report itself has no specific narrative reference to any examination other than of those claims from which he took samples. Pardee stated that he had visited the claims on numerous occasions in the period from 1960 to 1969, and that he had extracted samples in March 1965, February 1968, and April and September 1969. He took a total of 49 samples from only nine of the 17 claims, and of the samples, only nine showed assay values in excess of $10 per ton, based on the then prevailing prices of metals. As a result of his examinations, Pardee expressed his opinion that a discovery of a valuable mineral deposit does not exist on any of the claims. He characterized the mineralization on the claims as generally weak and limited to small bunches of gold and silver-bearing galena in quartz stringers, oxidized copper carbonates along slickensided

surfaces and a little gold in iron-stained croppings. He conceded, in response to questions from the Judge, that there might be some ore deposits found by deep drilling, but he thought that the claims could not profitably be worked by the open-pit method. He gave his opinion that the geological formations favorable to strong mineralization which occur in the adjacent area of the Helvetia Mining District being drilled by Anaconda do not prevail in the lands occupied by the contested claims.

Pardee stated that he tried to take his samples from a general average of the mineral material, not from little pods of metallic ores only. He suggested that he would sample the full width or height of an opening, whether drift, inclined shaft, or other. Where there was an identifiable vein, he stated he did sample only the vein without any country rock, but he asserted that the true value of such a sample could be obtained only by dividing the width of the sampled vein into a 4-foot practical mining width, and diluting the assay value accordingly. As a result, all of his samples having high values taken from a quartz vein on the Gold Fish claim, ranging from .1 to .3 foot in width, were reduced from an average assay value of $77.98 to an average of $3.29. Pardee stated that this vein was the only continuous quartz vein he had found within the area of the claims and that in his estimation it could not be mined profitably.

Pardee admitted that he had not made a feasibility study of the costs of mining these claims because he had not found any ore body on which to base such a study. He suggested that an underground mine of the type that AMARCO proposed to operate would be subject to costs similar to those set forth by Harry E. Krumlauf, in University of Arizona Bulletin No. 164, "Exploration and Development of Small Mines," Revised 1966. The break-even figure is about $16 a ton, and small miners should have ore that runs to $25 a ton in order to make a reasonable profit. He was unable to state what grade of ore or what value of ore would have to be found on these claims to permit a profitable venture in mining.

Pardee testified that the claims he had examined were delineated by the boundaries shown on Ex. 3. After conclusion of his testimony, the Government later stipulated that the red lines on Ex. AA were to be regarded as the true boundaries of the claims. Because of the great disparity between the boundaries indicated on these exhibits, Pardee's testimony does not establish that he did truly examine all the claims within the stipulated boundaries except for those having substantially the same boundaries on both exhibits.

Three persons testified as to discovery for the contestee: O. G. Williams, Donald F. Reed and Robert Lenon.

O. G. Williams, vice president of AMARCO, stated that he had first become familiar with these claims in 1932, but had not become interested financially in the properties until 1959. Prior to that time he had been a general contractor but had spent some 30 years in part-time mining ventures. He related that for more than 4 years, work on the claims had been hampered by a title suit, AMARCO had been unable to develop the properties to the fullest extent because of a series of harassing actions by the Forest Service, including refusal of permission to extend a power line to the Golden Gate claim and to remove water from that claim, thus preventing construction of a pilot mill, and denial or delay of approval to applications to construct roads to the Lexington, Gold Fish and West Side claims. He stated that during the first 9 months of 1969 the company had spent more than $40,000 in work on these claims, including a road to the Gold Fish claim where mining had commenced. He alleged that between 1,500 and 2,000 tons of milling ore had been accumulated on the claims.

Williams asserted that he had been unable to procure any samples from the Golden Oak, Wish Bone and Banner claims because the Forest Service had prevented entrance into the area of these claims by threat of legal action, ostensibly because of concern over possible loss of water supply through mining activity. He believed that it would be possible to obtain both shipping and milling ore from each of these three claims if mining were permitted.

He introduced in evidence 72 assay reports of samples extracted from 14 of the 17 claims, by himself or under his supervision, at various times from 1960 to 1969. He testified that his samples were mostly cut from rock in place across the width of a vein, some 18 or 20 inches, and averaged approximately 10 pounds in weight. The sampling was not confined to areas where it was thought the highest values could be found but rather was an earnest effort to find ore bodies showing promise, and he considered the results to be truly representative of the areas sampled.

Williams criticized the sampling procedures by Pardee, alleging that the Government's examiner had cut samples in areas known to be partially or completely barren. On cross-examination, Pardee conceded that two of his samples from the Golden Gate claim were taken from openings used for access or for water supply rather than as sources of minerals; four were cut in spots where Williams had told him there was little or no mineralization; and two were extracted from country rock where there was no indication of a vein. Pardee defended his choice of sampling spots on the premise that he had to make a complete evaluation of the claims and to satisfy

himself that Williams had not overlooked any possible values. With respect to six other samples which Williams felt were unrepresentative, two each from the Golden Gate, Golden Portal and West Side claims, it was apparent from Williams' own testimony that the caved condition of the workings from which they were cut made it impossible for Pardee to uncover the vein structure that might be present. None of Pardee's samples were assayed for zinc, an omission which the contestee felt was prejudicial, as its samples from the Lexington and Big Windy claims showed high values for zinc.

Williams estimated that AMARCO's total costs for mining, milling, transporting and selling ore from the claims, including amortization of a mill on the property, would be approximately $15 per ton. If the ore could be shipped directly to a smelter without milling, he calculated the total production costs at $20 to $23 a ton. He cited an instance in which AMARCO had submitted a sample of copper ore to American Smelting and Refining Company and had been told that the smelter returns on that grade of ore would be from $34 to $36 per ton, with a net return to AMARCO of approximately $21.60 per ton less transportation costs. He stated that a sample of lead ore sent to the same smelter brought the information that the returns to AMARCO would be slightly higher, with other costs being about the same. Williams did not disclose the percentage of copper or lead in either of the samples, nor the year in which the samples were taken.

In support of his belief that he is a prudent person and that a prudent person would be justified in expending time and means in developing these claims with a reasonable expectation of making a valuable mine, Williams produced copies of feasibility reports prepared by him for AMARCO's board of directors, between 1963 and 1967, as well as an updated feasibility report compiled for presentation at the hearing in 1969. The reports trace the history of past production on the claims and plans for future development are outlined, including a projected tunnel extension on the Golden Gate claim. His estimates of ore deposits within the Big Windy, Big Windy No. 1, Blue Wing, Cloud Rest, and Cloud Rest No. 1 South claims range from 22,000 to 45,000 tons in size. He also discusses the feasibility of mining and milling ore from the West Side and Gold Fish claims. As Judge Luoma remarked in his decision, the feasibility reports are quite impressive at face value, but their evidentiary weight is diminished somewhat by the lack of a foundation to support his optimistic predictions on the size of the ore bodies which he expects to be found within the claims. Neither Williams nor his other witnesses gave testimony which would lead to the conclusions in the feasibility reports.

Donald F. Reed, a consulting mining engineer, testified as an expert witness. During a 4-day inspection of the claims in April 1969, Reed examined 14 of the claims at issue and took a total of 31 samples from 12 of the claims.

In defining his approach to sampling as a means of evaluating a mining claim Reed testified that he would not necessarily sample every excavation on the claim, but would confine his sampling to areas where he had found some indication of minerals of value. He stated he would consider the width, dip and strike of the vein sampled, and expressed sharp disagreement with Pardee's thesis that the true value of the vein material can be obtained only by dilution of the assay values over a 4-foot mining width. Reed would consider simply the material within the vein to ascertain the grade of ore and would disregard the country rock surrounding it. In his view, the cost of removal of waste rock to gain access to a vein is to be allocated as part of the overall cost of mining. He explained that only the ore would be processed or sent to a smelter, while the waste material would be disposed of on a mine dump, or within the excavated mine area. Reed depicted the ideal situation as one in which the vein is wide enough so that it is not necessary to remove waste rock, and acknowledged that extraction of minerals from an extremely narrow vein would increase the cost of mining.

In his report to AMARCO Reed stated that minerals had been found on each of the claims examined, and reported sample values ranging from under $5 to more than $500 per ton. He admitted that most of the veins sampled were narrow but described the mineralization as general throughout the bedding plane of the limestone. He suggested the possibility of open pit operations but, on cross-examination, conceded that more exploratory drilling would be required, and on the basis of his present knowledge he could not give an opinion.

Reed's conclusions were summed up in his report in this wise:

> The values found on several of the claims, notably the Blue Wing, Gold Fish, Golden Fleece, Carbonate Silver, Lexington, West Side, and possibly Reserve, claims are such that small-scale mining could be profitable right away. The values of all the rest of the claims, in the light of the highly mineralized character of the entire area, are certainly sufficient to justify a prudent man, a man who is interested in mining, in expending time and money to develop further the ore bodies which can be mined profitably.

Reed indicated that further drilling or digging would be necessary to ascertain the quantity of the veins. He suggested the Gold Fish claim could be mined at a profit at the present but the ultimate size of the ore body would require more drill holes. Similarly, the two small but rich veins on the Golden Fleece claim justified present work and concomitant development by means of a tunnel along the vein, and perhaps a shaft should be sunk. He also recommended exploratory development of Carbonate Silver, Blue Wing, Lexington and West Side claims, but for none of the claims did he venture an estimate of the size of the ore body.

The final witness for contestee was Robert Lenon, a mining engineer and surveyor. Lenon examined the claims on two occasions in September 1969 and sampled from the West Side and Lexington claims. Samples allegedly taken from the Gold Fish claim were not introduced. Lenon recommended that mining could be commenced on these three named claims, but he suggested that mining should be undertaken on only one claim at a time, and because of its accessibility by road, the Gold Fish claim was the one he thought should be mined now. He professed familiarity with the favorable geological formations in the neighboring claims being developed by Anaconda and stated that these formations persisted into the area of AMARCO's claims.

At the time of the hearings in this case, the prevailing prices for the metal present on the claims were: gold, $35.75 per troy ounce; silver, $1.88 per troy ounce; lead, $0.16 per pound; copper, $0.5216 per pound; zinc, $0.16 per pound. Judge Luoma took official notice of the increase in the price of gold to circa $46 per ounce at the time he wrote his decision. Our review is based on the prices used by the Judge because the testimony relating to costs of operations were couched in dollar values prevalent at that time. We are aware that the prices of metals zoomed upward in 1974, but have dropped back to lower levels at present, albeit much higher than those which prevailed at the time of Judge Luoma's decision. We are not unaware that costs of operations have similarly increased. It is our opinion that claims which indicated a marginal operation at the time of the hearing will likewise exhibit only a marginal probability of profitable operations now, even with the increased prices for the metals to be extracted. Recently reported prices for the subject metals are: gold, $111.04; silver, $4.52; copper, $0.74625; lead, $0.245; zinc, $0.37. The values reflected in the assay certificates submitted as evidence in this matter have increased by a factor of nearly 3.

We now move to a discussion of the workings and samplings on the individual claims. Gold, silver and copper were found on each of the claims sampled; lead on each, excepting only the Cloud Rest No. 1 South; and zinc on each excepting only the Cloud Rest No. 1 South, Golden Eagle and Gold Fish claims.

Golden Oak, Wish Bone and Banner Claims

No samples were taken by either party from the Golden Oak, Wish Bone or Banner claims. Judge Luoma ruled that the government had not made a prima facie case against these claims because none of Pardee's testimony or evidence related directly to them. The Judge dismissed, without prejudice, the complaints as to these claims. We affirm. United States v. Taylor, supra.

No samples were taken by the Government from the Blue Wing, Cloud Rest, Cloud Rest No. 1 South, Big Windy No. 1 South or Reserve claims. Judge Luoma likewise dismissed the complaints, without prejudice, against these claims because Pardee's testimony failed to cover them and he submitted no assay reports as to their mineral character. Contestee, however, submitted both testimony and evidence in the form of assay certificates as to each of these claims. We are constrained by the Board's holding in United States v. Taylor, supra, to overrule Judge Luoma's dismissal and to determine the validity of each claim in light of the record before us. The Judge alluded to the evidence submitted by the contestee, and as dictum in a footnote suggested that the showing probably would not support a finding of discovery of a valuable mineral deposit within the limits of any of the claims.

Blue Wing Claim

Contestee took five samples, four of them from a tunnel in the eastern portion of the claim. The assay reports revealed only minute amounts of gold, but indicated substantial quantities of lead and silver. Two of the samples from the tunnel, with values of $19.33 and $111.24 per ton respectively, were cut across a 15-inch width of a vein; a third, valued at $87.30 per ton, was more than 20 inches wide. The average value of these samples was $49.44.

Cloud Rest Claim

Contestee took three samples from this claim, with values of $33.78, $105.50 and $274.22, for an average of $137.83. One sample assayed 6.35 percent copper, another 60.3 percent lead. Additionally, the three samples showed the highest silver values for any of the claims sampled, averaging more than 25 ounces per ton.

Cloud Rest No. 1 South Claim

Contestee introduced only one assay certificate with a value of $7.91.

Big Windy No. 1 Claim

The two assayed samples of contestee from this claim averaged only $7.64 per ton.

Reserve Claim

Contestee introduced six assay reports, three samples taken by Reed and three taken by Williams. Reed's samples showed values of $2.05, $5.03 and $21.25, whereas Williams' samples indicated values of $29.61, $40.61 and $62.74 per ton, respectively. Gold, silver and lead were the sources of value. The average of all the samples from this claim was $26.88.

As to the Cloud Rest No. 1 South and Big Windy No. 1, we find that the record supports the Government's charge that no discovery of a valuable mineral deposit has been made within the limits of the claim. To this extent, we reverse the holding by Judge Luoma dismissing the complaints against these two claims.

As to Blue Wing, Cloud Rest and Reserve, we find that the evidence supports a finding that a valuable mineral deposit exists within the limits of each claim. To this extent we modify Judge Luoma's dismissal of the complaints for failure of the Government to present a prima facie case, and find that the Government did make a prima facie case of no discovery, but that the contestee preponderated so that the complaints are properly dismissed.

Big Windy Claim

From the various workings on this claim, 19 samples were extracted, six by the Government and 13 by the contestee. All of the Government's samples reflected low mineral content, ranging in assayed value from $1.17 to $5.86 per ton, with an average of $2.69. On the samples submitted by the contestee, two, having values of $83.57 and $107.77 per ton, showed substantial amounts of copper but relatively little gold. The remaining samples by the contestee ranged in value from $0.57 to $28.47. Several of the samples carried indications of zinc. The average value of the contestee's samples was $21.20 per ton. Williams criticized Pardee for failing to have the Government's samples assayed for zinc,

asserting that a rich zinc deposit exists within this claim, and that the low values of the Government's assays are attributable to the failure to include the zinc.

In support of Williams' testimony, he introduced in evidence copies of three pages purportedly taken from a University of Arizona publication entitled "Zinc and Lead Deposits of the Mohawk Silver - Big Windy Claims." Although the material is quite impressive on its face, it is lacking in probative weight, since neither the document from which taken nor the assay returns which formed the basis for its conclusions were made available. Judge Luoma properly disregarded this material in his evaluation of the claim.

Golden Eagle Claim

The sampling from this claim revealed gold to be the predominant mineral although silver, copper and lead were also present. The Government submitted the results of a single grab sample from the dump above working No. 20, a shaft identified as the "Zeggler Shaft," which Pardee found to be inaccessible. The assay certificate represented a value of $17.19 per ton. Williams submitted the assay results from a sample taken from the vein in the shaft as $59.95 per ton, with 1.22 ounces of gold. Other samples taken by Williams and Reed ranged in value from $3.87 to $34.30, with the average value of all assays on this claim being $30.02.

Golden Fleece Claim

Ten samples were taken from this claim, nine by the contestee. The principal excavation is working No. 21, a short adit identified as Mann's Tunnel. Pardee took a sample which assayed to a value of $0.79 per ton. The contestee's samples from the area of the adit reflected values of $34.15, $39.61 and $190.07. Samples from other parts of the claim ranged in value from $1.85 to $28.53. All of the contestee's high-value samples showed gold in significant amounts. The average value of all assays was $30.86.

Lexington Claim

This claim contains three workings, No. 11, a 27-foot shaft, No. 12, an open-end cut, and No. 13, a small pit. Samples taken for the Government reflected values of $0.82, $1.19, $2.25 and $6.14, with an average value of $2.60.

From the shaft, which Pardee stated contained no evidence of vein material, and from which his sample valued at $6.14 was cut, contestee submitted evidence of three samples with relatively

high percentages of zinc and lead. One sample was valued at $148.75, taken from an old pillar. The other samples taken by Lenon and Reed ranged in value from $13.28 to $63.45. The average value of all samples was $46.27. Lead values ranged up to 11.9 percent, with the average of all samples being slightly more than 5 percent; zinc values ranged up to 16 percent, with the average being 5.3 percent.

Government samples from working No. 12 were valued at $1.19 and $2.25, and from working No. 13, $0.82 per ton. Contestee offered no samples from either of these workings.

Carbonate Silver Claim

The principal improvement on this claim is working No. 18, an inclined shaft some 71 feet deep, and known as the Wetzler Shaft. The Government submitted one sample assay from near this shaft, chipped along a quartz vein, with a value of $19.68 per ton. Three samples by the contestee, similarly taken from a quartz vein, assayed at $90.79, $101.48 and $539.88, respectively.

Contestee submitted assay certificates for samples taken elsewhere on the claim, with values of $15.17, $24.79, $74.73 and $104.41 per ton. Also submitted was a sample having a value of $231.62, based on its lead content of 58.5 percent. The average value of the contestee's assays was $140.36.

Golden Gate Claim

This claim was the most extensively sampled claim in the hearing. The Government took 20 samples, the contestee 29. The principal improvement on the claim is adit No. 1, a series of underground workings comprising about 490 feet of drifts and cross-cuts on the adit level, an inclined raise 96 feet long to the surface and four small stopes. Other excavations on the claim consist of three shafts ranging in depth from 16 to 60 feet, two adits, 10 and 18 feet in length, and an open-end cut. The Government's samples assayed at very low values, ranging from $0.74 to $6.44 per ton. Williams was highly critical of Pardee's sampling sites on this claim, asserting that patently barren ground was sampled. Reed submitted a sample with assay value of $19.80, taken from the dump at adit No. 1. The samples submitted by Williams ranged in value from $1.06 to $143.69, with an average value of $38.71. The samples by the contestee averaged .18 ounces of gold, 3.0 ounces of silver, .35 percent copper, 5 percent lead and 2.2 percent zinc.

Gold Fish Claim

There are two workings on this claim, No. 15, an open-end cut some 55 feet long, and No. 16, a stub adit as an upward extension of the Gold Fish vein. Pardee took five samples from working No. 15, three of which were chipped from a vein and showed values of $22.24, $33.80 and $94.29, with very good values of gold. A fourth sample taken past the end of the exposed vein produced an assay value of only $1.04. The fifth sample produced values of $22.29 per ton. Samples for the contestee within working No. 15 showed values of $33.66 and $48.39.

In working No. 16, the Government's samples showed values of $173.77, $194.07 and $83.55 per ton, with exceptionally high values of gold.

Williams submitted four assay certificates from samples taken on this claim, with values ranging from $11.38 to $59.84 per ton, with an average of $35.84.

West Side Claim

There are three improvements on this claim: No. 8, a caved adit 39 feet in length; No. 9, a caved adit 12 feet in length; and No. 10, a 50-foot long side hill cut, an inclined shaft and an adit. A total of four samples were taken by the Government from the three workings, ranging in value from $0.62 to $4.67. For the contestee, Reed cut a sample from a vein in working No. 10 which assayed $116.95 per ton, with values in gold, silver, copper, lead and zinc. Lenon, also in working No. 10, cut a sample with an assayed value of $37.30. Williams submitted six samples from various places within the claim; their values ranged from $6.38 to $232.26 per ton. The latter was characterized as being a "high grade" sample, deliberately chosen. Excluding this sample, the average value of all the contestee's samples was $48.09 per ton.

Golden Portal Claim

Working No. 2, an adit caved at a distance of 85 feet from its portal, is the principal improvement on this claim. Four samples were taken by the Government, ranging in value from $0.61 to $4.27 per ton. Two of the Government's samples were taken from an adit which the claimant considered unsuitable for mining. The contestee submitted six samples from the tunnel area, with values ranging from $1.41 to $98.18. Substantial values for lead and zinc were shown on this claim.

Since the Government's mineral examiner declined to give any estimate of the costs of mining the mineral deposits in these claims, confining himself to general statements regarding the cost of a small underground mine, we have only the evidence submitted by the contestee that mining cost on these claims would be in the range of $20 to $23 per ton of ore produced.

The results of the assay reports submitted by the Government showed only minimal values for six of the nine claims sampled. Only from the Golden Eagle, Carbonate Silver and Gold Fish claims did Pardee find samples whose values exceeded $20 per ton. He discounted the high values reflected in the samples from Gold Fish as unrepresentative because of the narrowness of the vein from which they were cut. Contestee, on the other hand, introduced assay reports which showed an average value for each of the nine claims in amount considerably in excess of the maximum cost of production reflected by the record. The number of samples taken from these claims by the contestee ranged from four to 29. The wide disparity in values between the samples by Pardee and those for the contestee is due in large part to the variance of approach in sampling techniques, Pardee's failure to have his samples assayed for zinc, and his sampling at many points which contestee conceded were barren of mineral values, and the fact that a number of the contestee's samples were cut in areas where it would have been necessary to rehabilitate a working or to operate in hazardous conditions, tasks which the Government's mineral examiner is not obligated to do.

Considered as a whole, we find contestee's samples to be more representative of the mineralization existing within the Big Windy, Golden Eagle, Golden Fleece, Lexington, Carbonate Silver, Golden Gate, Gold Fish, West Side and Golden Portal claims than those introduced by the Government. Giving full weight to the values of the samples taken by the Government in computing the average values for the claims, the combined results of the sampling conducted by both parties indicate an average value per ton for each of the nine claims which exceeds the maximum cost of mining as reflected by this record.

[4] We find on the basis of the record that the contestee has produced evidence of greater probative weight than that offered on behalf of the Government, and that the contestee has preponderated with respect to these nine claims. Accordingly, the complaints alleging that no discovery of a valuable mineral deposit exists within the limits of Big Windy, Golden Eagle, Golden Fleece, Lexington, Carbonate Silver, Golden Gate, Gold Fish, West Side, and Golden Portal should be dismissed without prejudice.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision of the Administrative Law Judge is affirmed as to its dismissal without prejudice of the complaints against Golden Oak, Wish Bone and Banner claims; reversed as to its dismissal of the complaints against Cloud Rest No. 1 South and Big Windy No. 1 claims, which are declared null and void; affirmed as to dismissal of the complaints against Blue Wing, Cloud Rest and Reserve claims for the modified reasons that contestee's evidence preponderated; reversed as to its holdings on Golden Fleece, Lexington, Gold Fish, West Side, Carbonate Silver, Golden Eagle, Golden Gate, Golden Portal and Big Windy claims, against all of which the complaints are dismissed because the evidence of the contestee preponderated.

Douglas E. Henriques
Administrative Judge

I concur:

Frederick Fishman
Administrative Judge

ADMINISTRATIVE JUDGE GOSS CONCURRING IN PART AND DISSENTING IN PART:

I agree with the majority as to Cloud Rest No. 1 South, Big Windy No. 1, Blue Wing, Cloud Rest and Reserve.

As to the remaining claims, I do not feel contestees have met their burden of proof as to quantity. In contestant's Statement of Reasons for Appeal, it is argued:

> There is no basis of any sort from which any type of quantity determinations could be made; in fact, no serious effort is made by the Contestees * * * to do so.

Contestees, in the Reply to Contestant's Statement of Reasons for Appeal, do not address this argument.

While I feel the majority position can be generally supported, I would remand for further evidence on quantity. The law as to lode claims is clear. To constitute a discovery upon a mining claim there must be physically exposed within the limits of the claim minerals in such quantity to warrant a prudent man in expending his labor and means, with a reasonable prospect of success, in developing a valuable mine. United States v. Clark, 18 IBLA 368 (1975). Geologic inference may be relied upon to estimate the extent and potential value of a particular mineral deposit. United States v. Relyea, A-30909 (June 25, 1968), sustained in Relyea v. Udall, Civil No. 3-58-20 (D. Idaho, February 19, 1970). However, without convincing evidence of quantity, evidence of quality is of little significance.

It is recognized that contestees have presented very general indications of quantity by evidence that a reasonable man would develop all of the 17 claims. See Reed's conclusions, grouping the claims together, quoted supra. This evidence is somewhat discredited by the findings of the Administrative Law Judge and majority that certain of the claims are invalid. It would be much more convincing if an impartial expert witness for contestees had shown quantity, at least by geological inference, specifically as to each discovered vein. The record is virtually barren of any such specifics.

Of the two principal witnesses for contestees, the record is replete with indications that Mr. Reed feels the extent of the ore in some of the claims could be estimated by digging more holes (e.g., Tr. 253, 255, 257-58, 260-61). It is not clear which of the claims witness Robert Lenon inspected (Tr. 347). He states he was on "virtually every one of the claims," and sampled three places, but ordered no assay for one of those places.

As to fluctuations in the market value of minerals, if a party desires that the Board consider changes in value, he should present a comparison with the changes in cost of operation. While the Board may take official notice of certain matters, the Board considers other new evidence only in connection with whether the hearing should be reopened so that the evidence may be introduced into the record. United States v. Taylor, 25 IBLA 21 (1976).

Joseph W. Goss
Administrative Judge

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A

GEOLOGICAL and EXPLORATION

REPORT

of the

RACKENSACK MINING CLAIMS

Maricopa County, Arizona

by

Richard E. Mieritz
Mining Consultant
Phoenix, Arizona

November 27, 1976

TABLE of CONTENTS

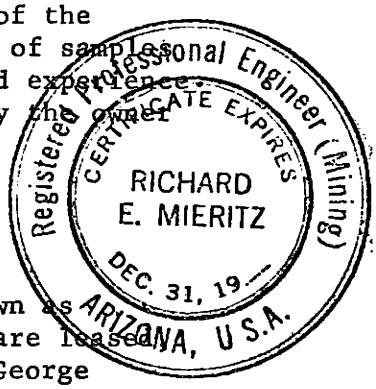
Included Exhibits:

Map No. 1 - Index Map, Central Arizona
Map No. 2 - Claim Map, Rackensack Claims
Map No. 3 - Surface Map, Rackensack Claims
Map No. 4 - Geologic & Assay Map, Underground Workings, Rackensack Claims

INTRODUCTION:

At the request of and authorization by Mr. Jerry W. Fowles, Ballwin, Missouri, the writer field examined the Rackensack claims, Maricopa County, Arizona, on November 20, 1976, accompanied by Messrs. Jack Gardner, George Edeline, John Thompson and Jerry Fowles.

This geologic report is based on the writer's examination of the property, his observations of geologic conditions, results of samples taken by the writer, his general and geologic knowledge and experience, and on a review and study of factual data made available by the owner of the property.



PROPERTY, LOCATION and ACCESSIBILITY:

The property includes four standard lode mining claims known as Rackensack #1, #2, #3 and Cerro Del Oro #1. These claims are leased with option to buy, to Mr. Jerry Fowles, from the owners, George Edeline and Mabel Steinegger, Cave Creek, Arizona. (See Map No. 2.)

Rackensack #2 claim, adjoins, in part, the south line of the Fort Worth patented claims which places the Rackensack group of claims in Sec. 4 of T. 6 N., R. 5 E. and Sec. 33 of T. 7 N., R. 5 E., G. & S. R. B. & M., Maricopa County, Arizona, about 7 airline miles northeast of Cave Creek, which is approximately 30 miles northerly by road from downtown Phoenix, Arizona.

The property is accessible by pickup or 4 wheel drive vehicles. Although the writer drove his passenger car vehicle to the property, such travel is not recommended for others. To reach the property from Cave Creek, (See Map No. 1), travel northeast on the paved County road leading to and servicing Bartlett Dam. Seven miles beyond Cave Creek is a right hand junction (to Bartlett Dam). Two and one half miles northerly on the County road (straight ahead) the pavement ends - gravel commences. This road leads to Seven Springs and Bloody Basin farther north. From the end of the pavement, travel 2.7 miles northerly to a branching road or junction on the left (wash bottom). Turning left onto the mine access road and travelling westward for 1.4 miles is a gate (old equipment on the right). From this point, continue westerly for 1.3 miles to the mine site. High centers and loose rock are prevailing the last 1.3 miles.

FACILITIES:

Natural gas and electricity are not available at or near the property. One Adit (Toothpick) makes a small amount of water but may not be potable for domestic use nor is it adequate for commercial use.

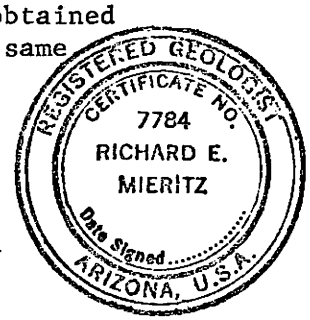
HISTORY and DEVELOPMENT:

The property dates back to 1934 and was worked for about three years during which time No. 1 Adit, the Rattlesnake Adit and the shaft

were driven as well as some stoping completed, indicating that gold had been mined and recovered - about a $1,000.00 production at the then gold price. (See Map No. 3.)

Mr. George Edeline re-staked the claims in mid 1960's and since has caused the Toothpick Adit to be driven by Tonto Milling Company and excavation of the "open pit" by Mr. Edeline himself. (See Map No. 3.)

In August 1973, a Canadian company, Acheron Mines Ltd. caused the property to be field examined and sampled. The factual data obtained was given to Mr. Edeline who in turn provided the writer with same. (See Maps No. 3 and 4.)



LOCAL GEOLOGY:

Geology in the area of the claims includes schist, a granitoid (alaskite?) altered diabase as a dike and quartz veins.

This area is heavily soil covered which makes rock contacts difficult to recognize and trace surface-wise. The geological features of interest here are the quartz veins as they apply to gold, silver, copper and lead mineralization and are hosted in the granitoid.

MINERALIZATION:

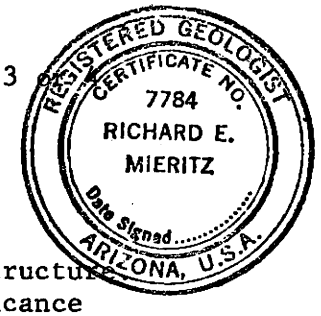
Exploration and development to date have been concentrated on a strong, persistent white quartz vein which has a general strike or trend of N. 45° W. and a dip of 60° to the northeast. This structure rolls and/or weaves both horizontally and vertically, creating localized strikes from almost north-south to almost east-west in the NW and SE quadrants. (See Map No. 4.) Except for slight displacements by cross-faults, the structure is continuous and exposed in the drift of No. 1 Adit for 320 feet. (See Map No. 4.)

Beyond the NW drift face, on the surface to the northwest, the structure is again exposed in an old shaft. The bulldozer "open pit" northerly from the shaft exposes the same quartz structure, but down dip and further to the northwest. The total strike length is thus in excess of 400 feet. (See Map No. 3.)

This strong, persistent structure is somewhat broken up and appears to be interrupted in the area of the "open pit" which is probably caused in part by the existence of the flat dipping, northwesterly trending, highly altered diabase dike which has cut the quartz vein and caused some displacement. To the southeast, the structure is still quite strong in the face of the SE drift of No. 1 Adit. The writer has personally observed the strong structure along its strike in both the No. 1 Adit and the Rattlesnake Adit as well as on the surface.

The strong quartz structure contains such primary minerals as pyrite, some chalcopyrite, some galena, some pyrrhotite-marcasite and native gold. The quartz also contains secondary minerals as malachite, some

silver chlorides but mostly residual limonites, sometimes in box-work form, after pyrite, after chalcopyrite, after galena and even perhaps after sphalerite. These limonites vary from yellow, yellow-green, through the browns, deep reds and even black. An associated manganese mineral is also present.



Width-wise, the structure varies from about two feet down to 3 inches with an estimated average width of 18 inches.

STRENGTH of MINERALIZATION:

Gold-silver is the principal value contained in the quartz structure. The base metal (copper-lead-zinc) values are of minor significance and thus unimportant at this time.

The examination of the property by the Canadian company included the taking of many samples which were assayed for gold and silver. Map No. 4 shows the position of these samples, the width or length of the sample and the gold-silver contents. It can be seen that the gold values range from a trace to over 11 ounces per ton.

Gold mineralization in Arizona is not of the consistent, homogenous type as might be expected in California, Nevada, Idaho or Colorado. Here, gold mineralization tends toward zonal occurrence within a structure in horizontal and vertical attitudes and most frequently associated or controlled by some physical or structural characteristic of the host structure. This can be the graininess of the quartz, a horizontal roll, a vertical roll, a pinching or swelling of the structure, a cross fault, whatever.

The sampling completed by the Canadian company demonstrates the type and mode of the gold-silver mineralization possible in the quartz structure partially developed by the underground workings.

Several samples were taken by the writer during the field examination to provide a further insight into the type, mode and strength of the gold-silver mineralization. Map No. 3 indicates the location of samples #1397 through #1401. The descriptions and results of the samples taken by the writer are as follows:

Sample Number	Sample Description	Ounces/ton Gold	Silver
1397	15" across top of quartz vein (pocket?) in granite in Pit on small bench. Much yellow to brown to red FeOx. Specks of gold visible.	1.536	1.02
1398	15" across white quartz vein, 80° NE dip, strong FeOx near footwall, some yellow to red FeOx throughout. Above #1397	0.028	0.34
1399	Blind grab sample of heavily FeOx stained (yellow-orange-brown-red) quartz, some box-work, from shaft	0.402	0.66

	dump.		
1400	Blind grab of stockpile, mostly granitoid, some FeOx, some pyrite, some Moly? Copper assay 0.04%, Moly assay Nil.	Tr.	0.36
1401	4.0 foot chip down bank wall in small pit. Highly altered granitoid of pinkish color, some FeOx but not live type. This material was milled.	Tr.	2.44

EXPLORATION REQUIREMENTS:

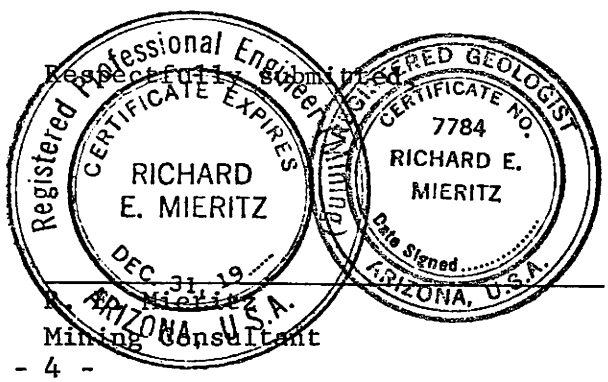
The results of all the limited sampling completed thus far, and the strong, persistent, observable character of the quartz structure suggest necessary exploration of the structure laterally to the southeast and depth-wise.

Exploration must be done by underground methods and can be accomplished by utilizing the three existing Adits.

A suggested program is:

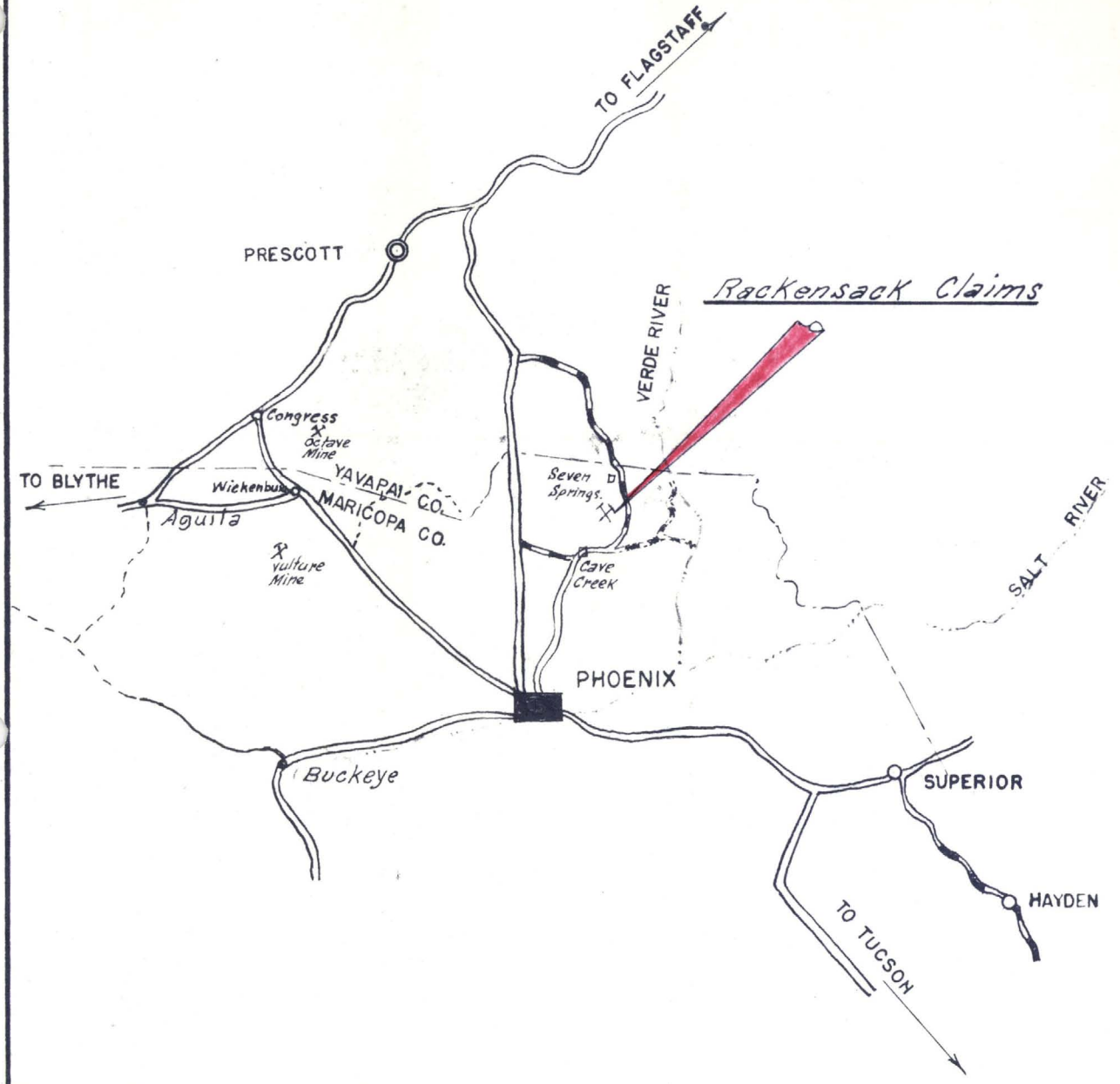
(a) Detailed sampling (every 5 feet) of the exposed structure in both the No. 1 Adit and the Rattlesnake Adit, as well as the raise between the Adits and the walls of the stopes.
(b) Drift southeast on the structure, sampling every five feet, in both Adits.
(c) Raise at selected locations from the No. 1 Adit to the Rattlesnake Adit.
(d) Enter and rehabilitate the Toothpick Adit and drift southeast on the structure, sampling every five feet.
(e) Raising at selected locations from the Toothpick Adit to the No. 1 Adit.
(f) Drift northwest and southeast on the parallel quartz structure exposed in the short crosscut off the southeast drift of No. 1 Adit.

This means of exploration would indicate the presence and locations of the stronger zonal modes of mineralization as well as to basically "block" out an ore reserve preparatory to mining operations. No exploratory work should be done on the pit area until the results of the above suggested exploration program have been completed and the results studied and analyzed.



Respectfully submitted,

R. E. Mieritz
Mining Consultant



66

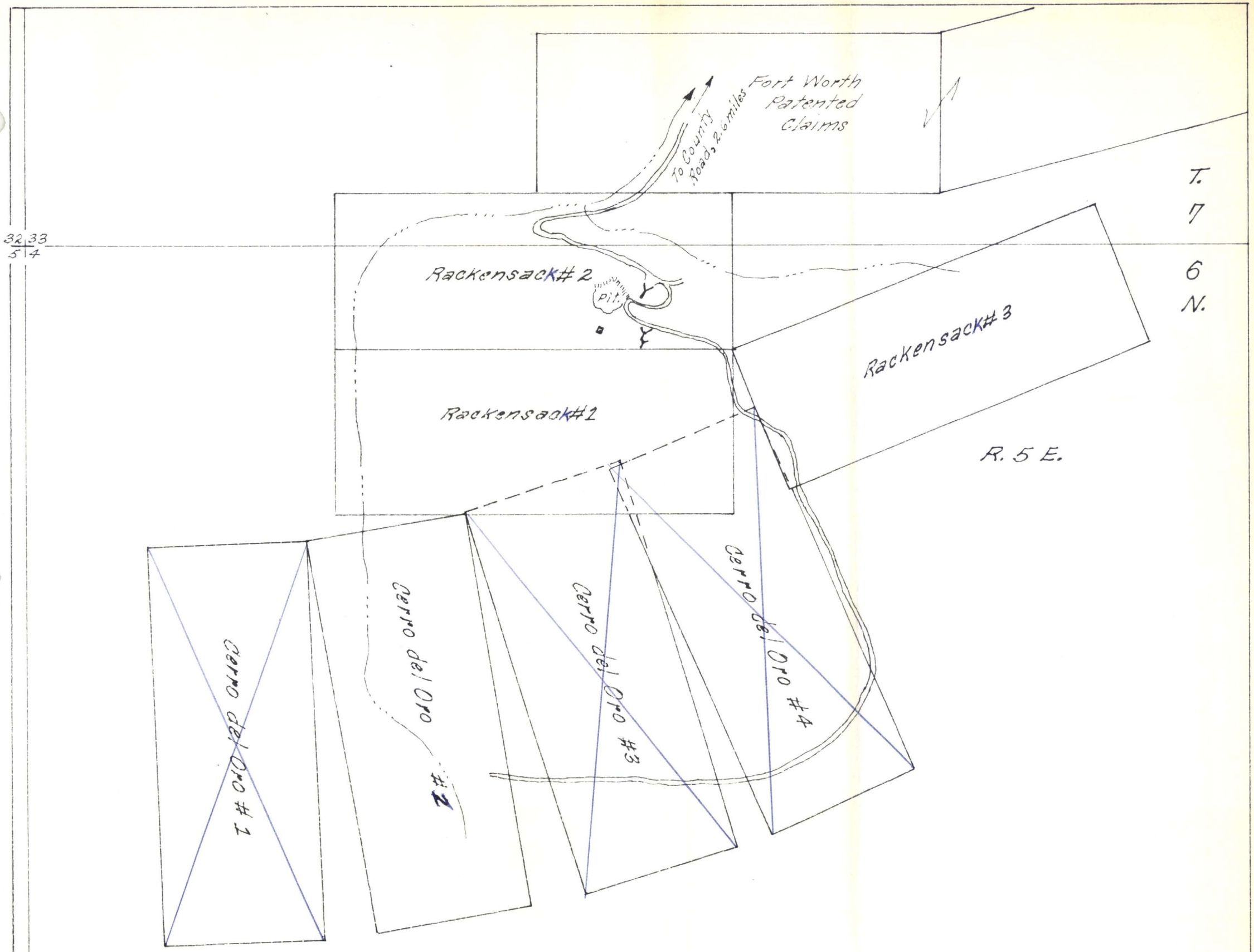
INDEX MAP
CENTRAL ARIZ.

SCALE: 1" = 27 MI.

R.E. MIERITZ, P.E. MAR., 1962

MAP No. 1

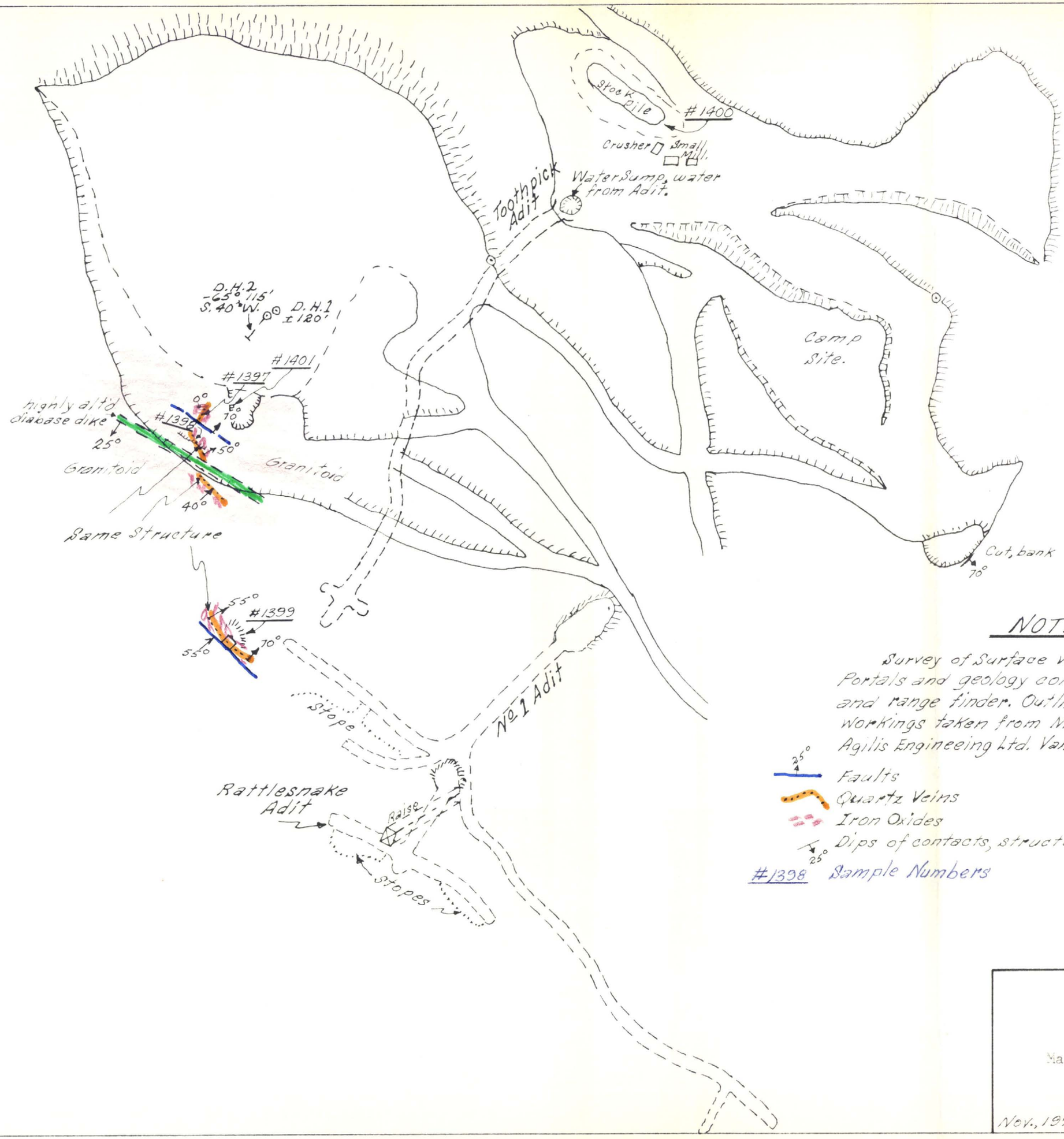
A-23



CLAIM MAP
RACKENSACK CLAIMS
T. 6-7 N., R. 5 E.
Maricopa County, Arizona
SCALE: 1"= 400 Ft.

Nov., 1976 R.E. Mieritz

MAP Nº 2



NOTE

Survey of Surface Workings, roads, Adit Portals and geology completed by Brunton and range finder. Outline of underground workings taken from Map prepared by Agilis Engineering Ltd. Vancouver, B.C., Aug. 1973.

25° Faults

Quartz Veins

Iron Oxides

Dips of contacts, structures, etc.

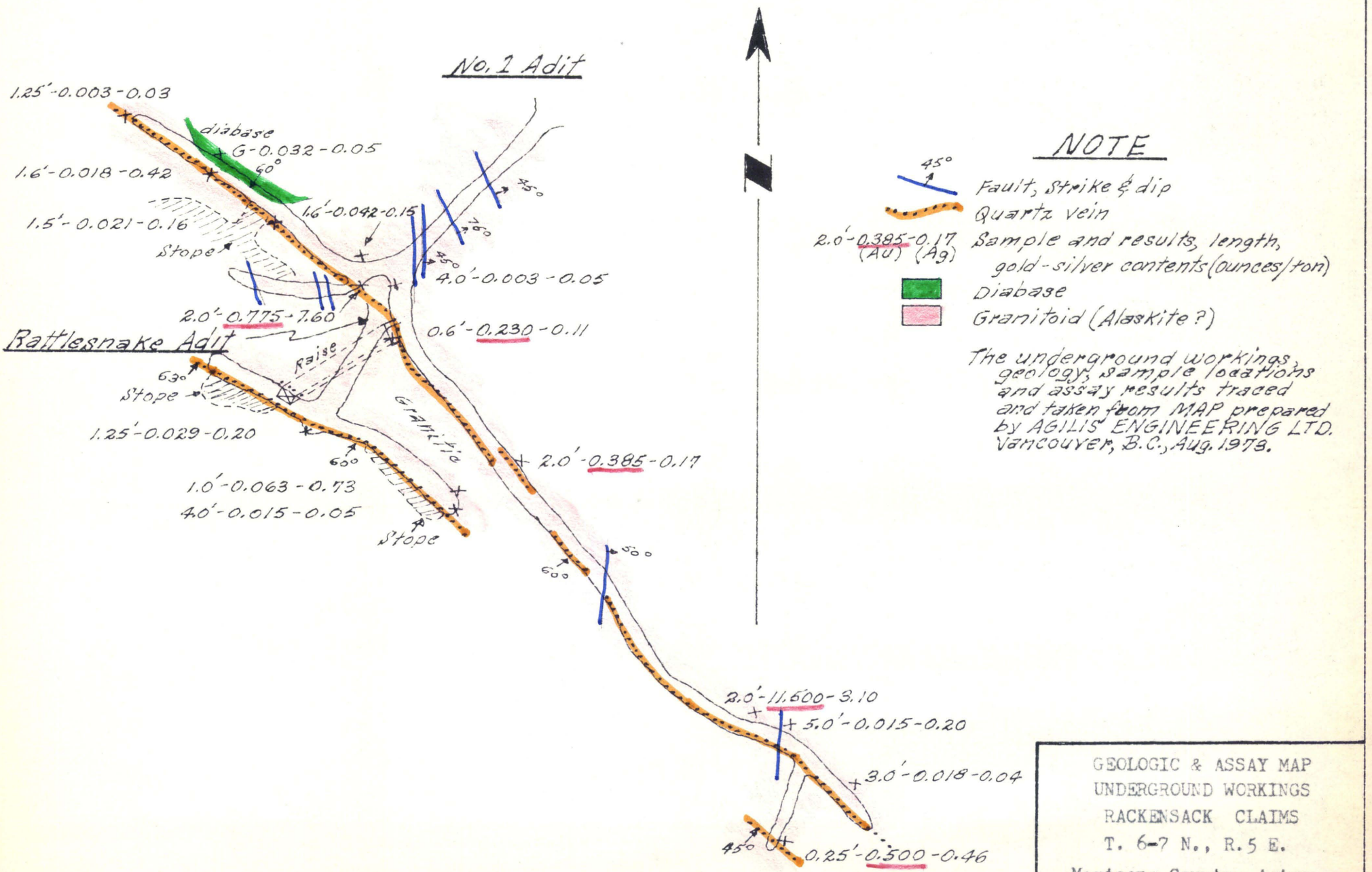
25°

#1398 Sample Numbers

SURFACE MAP
RACKENSACK CLAIMS
T. 6-7 N., R. 5 E.
Maricopa County, Arizona
SCALE: 1"= 50 Ft.

Nov., 1976 R.E. Mieritz

MAP No 3


No. 1 Adit
1.25'-0.003-0.03
diabase
G-0.032-0.05
60°
1.6'-0.018-0.42
1.6'-0.042-0.15
45°
76°
1.5'-0.021-0.16
Stope
45°
4.0'-0.003-0.05
2.0'-0.775-7.60
0.6'-0.230-0.11
Rattlesnake Adit
Raise
63°
Stope
Granitic
1.25'-0.029-0.20
60°
2.0'-0.385-0.17
1.0'-0.063-0.73
4.0'-0.015-0.05
Stope
50°
60°
2.0'-11.600-3.10
5.0'-0.015-0.20
3.0'-0.018-0.04
45°
0.25'-0.500-0.46
NOTE
45°
Fault, Strike & dip
Quartz vein
2.0'-0.385-0.17 (Au) (Ag)
Sample and results, length, gold-silver contents (ounces/ton)
Diabase
Granitoid (Alaskite?)
The underground workings, geology, sample locations and assay results traced and taken from MAP prepared by AGILIS ENGINEERING LTD. Vancouver, B.C., Aug. 1973.
GEOLOGIC & ASSAY MAP
UNDERGROUND WORKINGS
RACKENSACK CLAIMS
T. 6-7 N., R. 5 E.
Maricopa County, Arizona
SCALE: 1"= 40 Ft.
Nov., 1976
R.E. Mieritz
MAP Nº 4

A

DEVELOPMENT and OPERATIONAL

REPORT

of the

RACKENSACK MINING CLAIMS

Maricopa County, Arizona

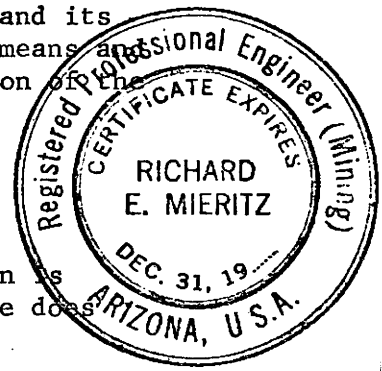
by

Richard E. Mieritz
Mining Consultant
Phoenix, Arizona

November 27, 1976

INTRODUCTION:

The writer's Geological and Exploration Report has indicated the presence of a strong quartz vein or structure on the Rackensack claims. Samples by the Canadian company and the writer indicate the presence of gold-silver values. The report also suggests the method and procedure for further exploring this structure and its values. The ensuing writing provides an insight into the means and expenditures required for development and possible operation of the mine.



EXPLORATION POTENTIAL and COSTS:

Unlike copper, lead, zinc, etc., gold-silver mineralization is usually non-visible for estimating purposes, therefore, one does not know what is or is not ore except by an assay value.

The limited sampling completed thus far indicates more very low grade mineralization than average or high grade values. However, these samples are rather far apart along the strike of the structure and areas of greater values could be missed. This, of course, is the reason for the suggested exploration program of sampling and underground drifting on the structure. Estimated costs for the suggested exploration work could be:

(a) Sampling present workings and assaying (Professional person and helper)	$ 1,450.-
(b) Underground drifting as indicated in b, c, e and f (Geological Report)	
500 feet drift work @ $40.00/ft.	20,000.-
300 feet raising @ $40.00/ft.	12,000.-
(c) Rehabilitate Toothpick Adit	4,000.-
TOTAL	$37,450.-

The above expenditure is the minimum requirement, even for a "small" mill operation.

The above work could indicate the presence of 500 to 1000 tons of ore containing 0.75 ounces gold per ton or an in place value of $100.00 per ton at today's price of $130.00 per ounce of gold.

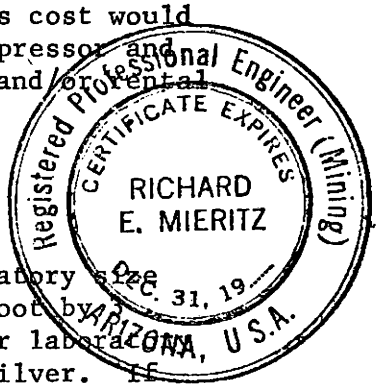
MINING:

Were the quartz vein to average about 18 inches in width, selective mining of the ore in the stope would be required. A stope width of 42 to 44 inches could be maintained, thus, for each ton of ore, about 1½ tons of waste must also be mined.

When stoping, the waste need not be removed as it would act as fill to continue the upward progress of the stope to the next level.

A stope round, 3½ feet wide, 7 feet high and 6 feet deep would provide about 5 tons of ore if the quartz vein is 1½ feet wide.

Mining costs would be approximately $30.00/ton of ore including the cost of mining 1½ tons of waste for each ton of ore. This cost would include two men, miner and helper, diesel and oil for compressor and drill, drill bits and powder, but not equipment purchase and/or rental nor professional supervision.



MILLING:

The small mill operation at the property utilized a laboratory size crusher (hand fed), an 18 inch by 36 inch rod mill, a 2 foot by foot table and a mercury plate. This mill, a pilot and/or laboratory size, is designed solely to recover free or native gold-silver. If not very carefully and expertly operated, it could have as much gold value in the "tails" as would be collected in the concentrate and/or amalgam, thus, a recovery factor of 50%.

Gold mineralization is of two types, free or native which most frequently is visible with a geologist glass and gold which is "locked" in with other minerals as galena, sphalerite, chalcopyrite, chalcocite, pyrite, iron oxides and several other minerals. Mercury will not remove this "locked-in" gold-silver. Other methods must be used to recover these values.

As part of the writer's examination, two samples were taken to obtain some information as regards the amenability to milling of the material excavated from the small pit within the large pit. (See Map No. 3.) Sample #1401 was taken in this area. As understood, this material was run through the mill. As understood also, a controlled weight of "high grade" was run from this same pit and a concentrate obtained which Mr. Gardner has in his possession. The writer took a grab sample of this "wet" concentrate. The writer dried the sample and the assayer has made two samples; one for a normal fire assay of gold and silver, the other (balance of the material) as an amalgamation test. The following facts have been obtained:

Writer's sample in Pit #1401 (not high grade) Au Tr., Ag 2.44
Dry weight of ore through mill (est. Gardner) 400-500 pounds
Wet weight of concentrate (est. Mieritz & Gardner) 60 pounds
Dry weight of concentrate (75% of wet weight) 45 pounds
Sample of concentrate #1402 Au 0.792, Ag 0.94
Amalgam test of concentrate #1403 Au 1.517, Ag 0.29
Concentration ratio (ore to concentrate) 10 to 1
Calculated heads (material used presumably high grade) Au 0.152, Ag 0.029

The above facts indicate the following:

(1) The crude material used was relatively low grade - less than 0.25 ounces per ton.
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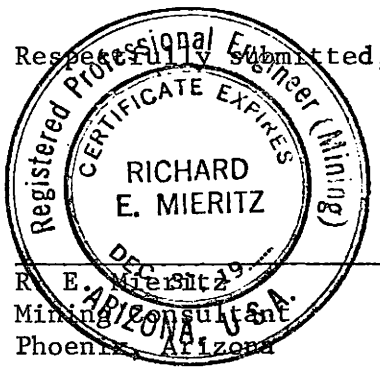
After an adequate ore reserve has been developed by the suggested method of exploration, then metallurgical samples can be selected and tested to determine the proper flow sheet for an efficient mill design of a capacity which would harmonize with the mine production.

OPINION:

In the opinion of the writer, if monies are not available for exploration as indicated, for equipping and operating the mine and for equipping and operating a mill yet to be decided on, then the project should be dropped and forgotten.

Respectfully submitted,



R. E. Mieritz
Mining Consultant
Phoenix, Arizona

November 27, 1976

IRON KING ASSAY OFFICE

ASSAY CERTIFICATE

BOX 14 — PHONE 632-7410
HUMBOLDT, ARIZONA 86329

REGISTERED ASSAYER CERTIFICATE NO. 2978 WALTER E. STATLER Date Signed 11-24-76 ARIZONA, U.S.A.

ASSAY MADE FOR
RICHARD E. MIERITZ
2940 N. Casa Tomas
Phoenix, Ariz. 85016

Nov. 24, 1976

Ref no.	DESCRIPTION	oz/ton Au	oz/ton Ag	%MO	% Fe	% Pb	% Zn	% Cu
11-22-1	#1397	1.536	1.02					
11-22-2	#1398	.028	0.34					
11-22-3	#1399	.402	0.66					
11-22-4	#1400	Tr	0.36	nil				0.04
11-22-5	#1401	Tr	2.44					
11-22-6	#1402	.792	0.94					
11-22-7	#1403	1.517	0.29					

Total weight of sample #1402 = 767grams
" " " " #1403 = 567 " (amount taken for amalgamation.)
Weight of amalgamated Au = 39.42 mgs.(dirty gold)
" " " Au = 35.06
Total weight of fine gold = 29.494 mgs. Gold was 841 fine.

CHARGES $53.50

ASSAYER _____

A

DEVELOPMENT and OPERATIONAL

REPORT

of the

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Maricopa County, Arizona

by

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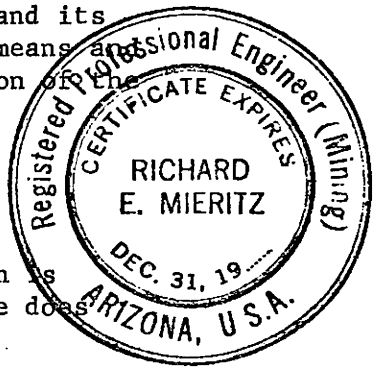

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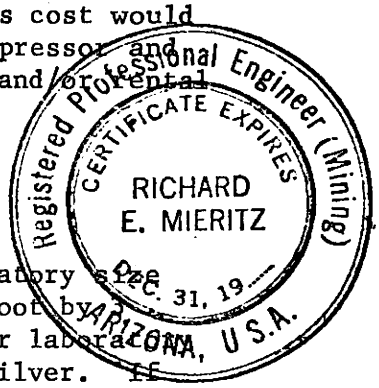

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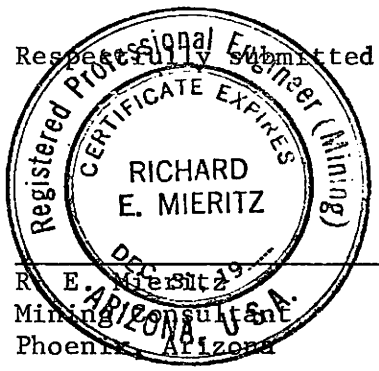


R. E. Mieritz
Mining Consultant
Phoenix, Arizona

November 27, 1976

REPLY TO:
1634 W. HAZELWOOD STREET
PHOENIX, ARIZONA 85015
TELEPHONE (602) 277-6053
2940 N. Casa Tomas

Richard E. Mieritz

MINING CONSULTANT

ARIZONA REGISTERED
MINING ENGINEER AND GEOLOGIST

GEOLOGY
EXPLORATION
EVALUATION
FEASIBILITY
OPERATION

December 1, 1976

Mr. W. T. Elsing, Attorney
34 W. Monroe, Suite 712
Phoenix, Arizona, 85003

Re: Rackensack Claims
Maricopa County, Az.

Dear Mr. Elsing:

During a telephone conversation of even date with Mr. Jerry Fowles, Ballwin, Missouri, I was instructed to hand present to you the one copy of a Geological Report I had prepared for Mr. Fowles on the Rackensack claims, Maricopa County, Arizona.

This Report was prepared for and at the expense of Mr. Jerry Fowles. I field examined the workings and surface of the Rackensack No. 1 and No. 2 claims on November 20, 1976, took some samples which were assayed by the Iron King Assay Office, Humboldt, Arizona and prepared the report.

Herewith a copy of the Geological Report on the Rackensack claims.

Very truly yours,

R. E. Mieritz,
Mining Consultant

cc: Jerry Fowles.

REPLY TO:
1634 W. HAZELWOOD STREET
PHOENIX, ARIZONA 85015
TELEPHONE (602) 277-6053
2940 N. Casa Tomas

Richard E. Mieritz

MINING CONSULTANT

ARIZONA REGISTERED
MINING ENGINEER AND GEOLOGIST

GEOLOGY
EXPLORATION
EVALUATION
FEASIBILITY
OPERATION

November 27, 1976

Mr. Jerry W. Fowles
15039 Claymont Estates Drive
Ballwin, Missouri 63011

Dear Mr. Fowles:

There is but one original and copy - my file - of this letter. Your confidence is therefore requested, desired and appreciated.

I had expressed much of my opinion on Arizona land deals and mining deals to you verbally over the phone during our initial contact on Friday. At that time, you expressed ill feelings about your venture into the "mining business." Except for your sincerity and frankness, this letter would not be written.

I am not sure of exactly how you became interested in and invested in the property - or who - in effect - promoted the deal or what you were told about the property, the potential, etc.

In most instances such as this, information is usually verbal with little written, proven fact. George is a prospector, promoter of mining properties, knowledgeable to a degree of geology, etc., however, like most prospectors, is over enthusiastic, over hopeful, and over projective beyond realistic proportions. I have known George for several years and been on three of his properties. They are not "duds" but neither are they "bonanzas" - usually requiring considerable exploration and expenditure of funds. George is, in my opinion, a good, fair dealing mine property promoter.

The driller, on the other hand, is something else again. Without proper supervision, his tangential projections are costly. I can name at least three projects where the work has been unsatisfactory and costly. Frankly, I share no trust for him at all.

From your conversation and several questions, I deduct that someone has indicated and pushed the point that "all you would have to do is provide equipment for a mill - mine the ore - and collect the revenue." Someone did a "snow job," and as such is a very dangerous, uninformed, unknowledgeable person who is a discredit to the mining industry.

Unfortunately, every mine or potential mine requires considerable expenditures to explore, to develop, to mine, to mill - even the smallest type of operation. Without specific, pinpointed knowledge and fact of "where" the material is, "what" the material is, "how" to handle the material - there is no possibility of a successful,

enterprising operation. Mining is not simple.

The above situation occurs many, many times. A second alternative as to "why" you became involved as an investor is that someone "promoted" the idea of patenting the claims as a means of acquiring 80 some odd acres as "real property." If this be the case, let me say it is not an easy task. Patenting is a risk, is expensive and time consuming. The application for patent, the required surveying, lawyer's fees, etc., could consume $10,000.00 and up to five years to obtain a deed. That expenditure would be over and above expenditures for exploration, mining and operation (preparation for patenting).

Unless you are willing to expend funds in amounts indicated in the writer's Operational Report, it would be the writer's recommendation to "back off" and take the loss of expenditures to date.

I am sorry to put it so bluntly, but fact is fact. I see little hope of ever recouping the funds which would have to be spent to "prove" an ore reserve - even for the smallest type operation. Simply put, the values and volume just are not there nor is the potential there.

If, after studying my report and analysis of the situation, it is your opinion to move forward in a "poor boy" fashion of hand sorting ore (to obtain high grade mill feed) and milling same, I will be happy to be of professional service to you and your group, endeavoring to accomplish the best results possible, however, it would not be possible for me to guarantee profitable results.

Very truly yours,

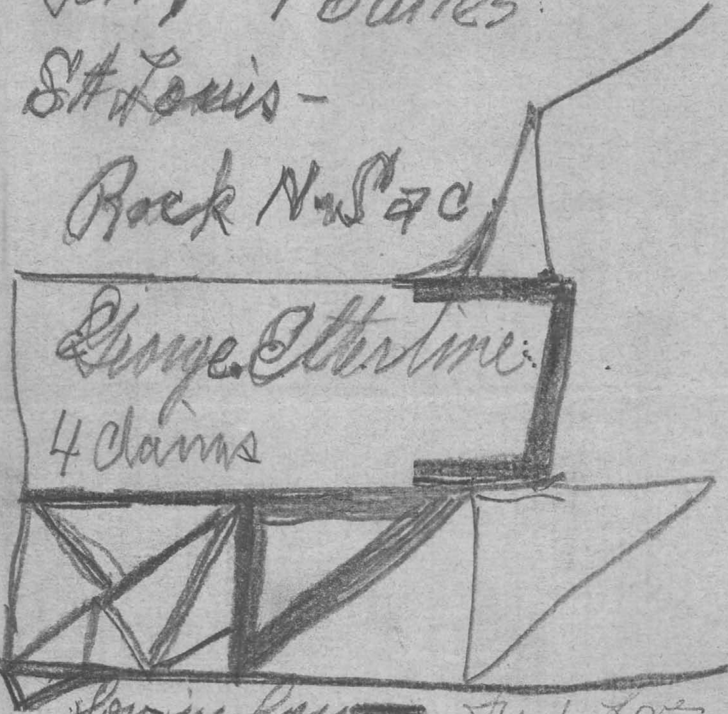
R. E. Mieritz
Mining Consultant

cm

Jerry Fowles

St Louis -

Rock N.S 7C



Lorain Lowe

Fred Love
Fun Helicopters

Gunn White

The Arizona Biltmore

821-6053 Joe Drona
wrong # 11/3 4:30 pm
Wesley / Doug
338

America's Tradition of Elegance

Phoenix, Arizona 85002 • (602) 955-6600

231.7 road to Lakes

34.2 pavement ends

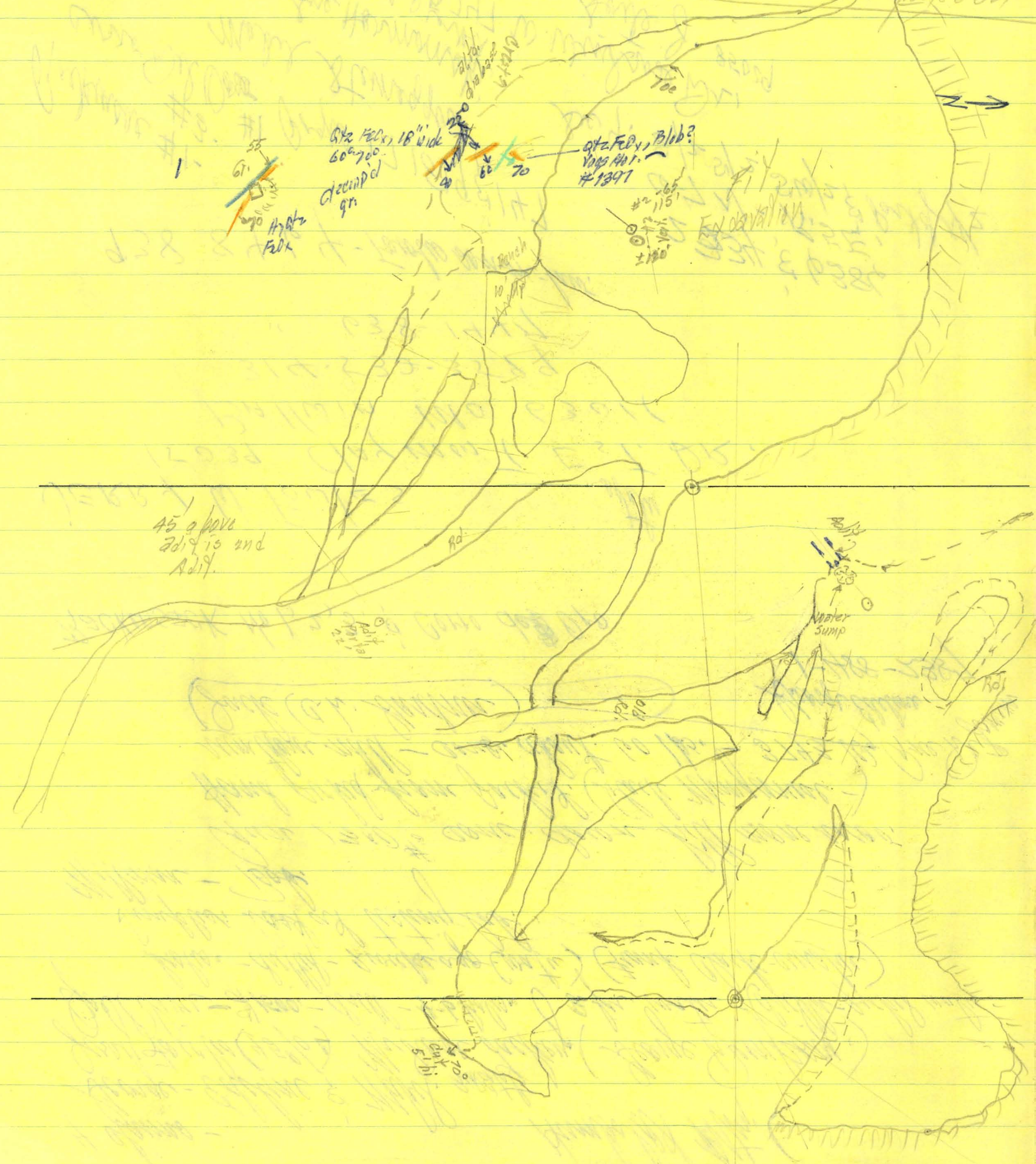
36.9 ?

38.3 old equipment to right

39.6 mine

T.7N. R.5E.

George - Edeline - P.O. Box 2083
[illegible], 85331



4 claims -   Humboldt Atty. (
George - Edeline & Mabel. estate
Jerry Fowles (45%) Mr. Dave Lackey (George Dempsey.)
Joe Oliver - $1500 - drill - 4-6 holes. (2 for water - drilled - picked water
holes - drilled - 2 weeks ago (water) (Frank Clark - cuvalier)
Samples: lost at testing lab.
Mill man - Bob.
Run 1300#s ore. down hill. more mov.
Hand picked from pocket. (Black Manganese -)
run thru mill - ore. about. 60 lbs. - 3743 W. Pine Dr. Tempe
(Jack (C.L. Gardner) 938-5709)   George Edeline
1-488-2387

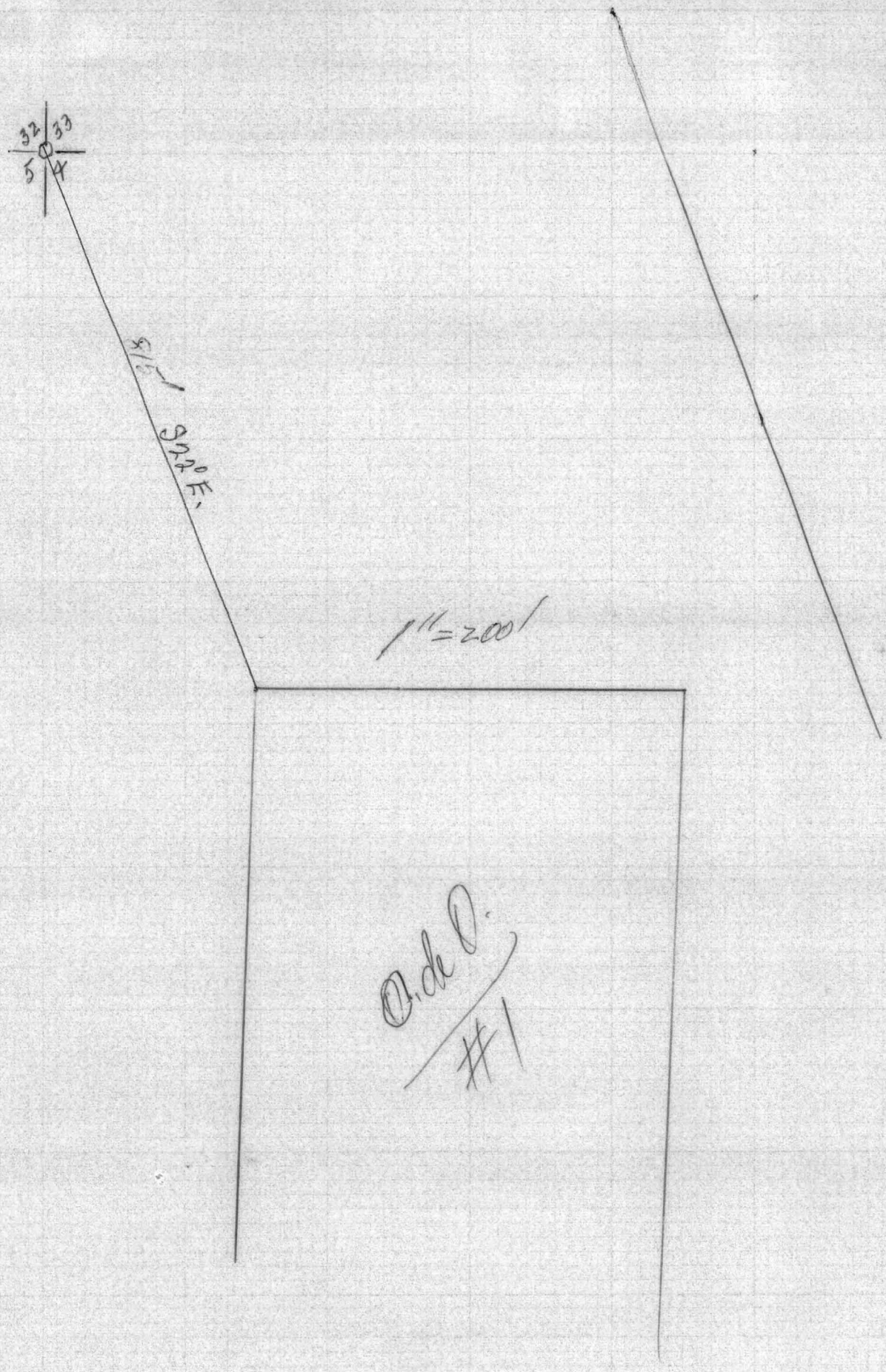
Rackensack No 1, 2, 3, & Cerro del Oro

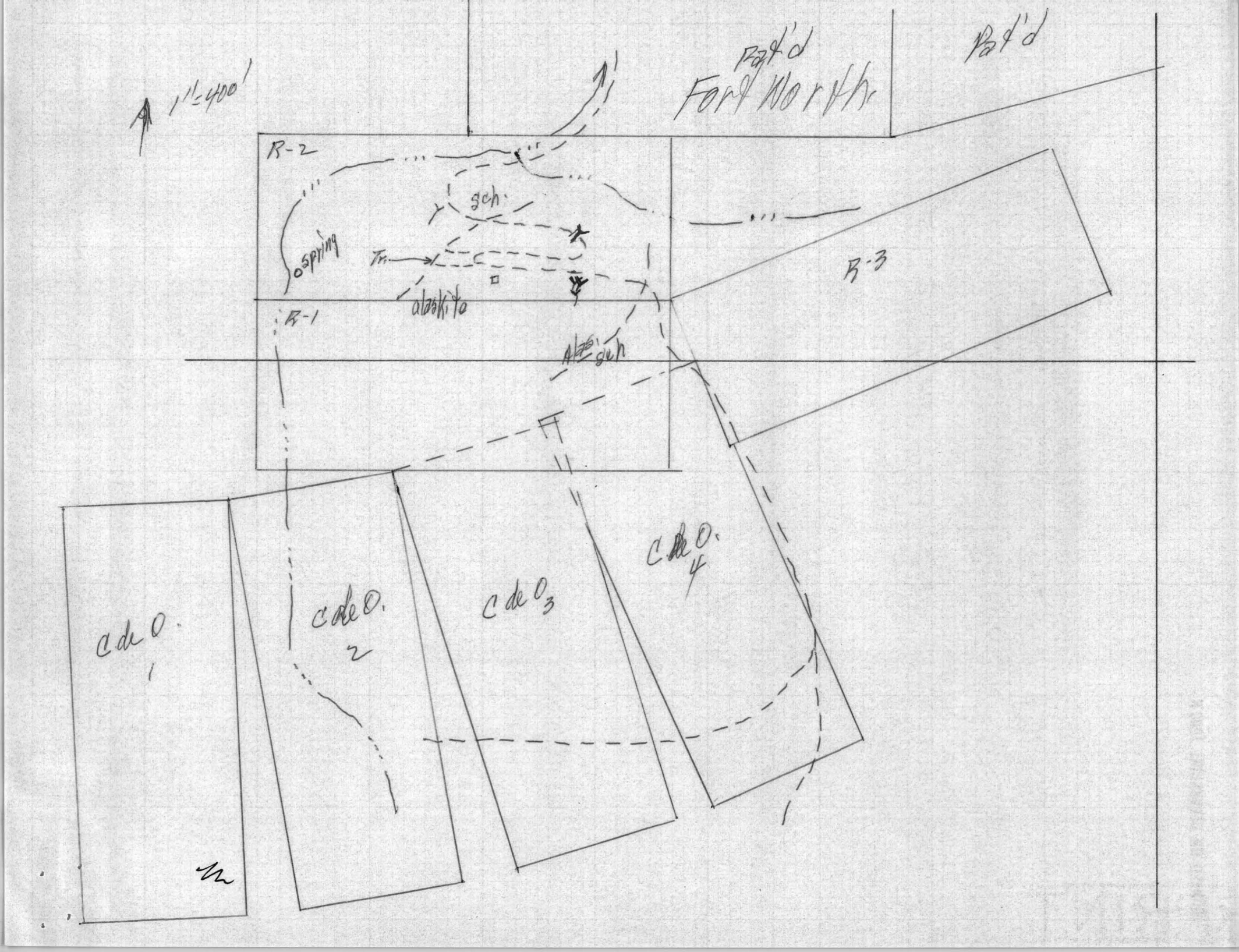
JERRY W. FOWLES   estate
15039 ClaymonT EsT. DR.
BAllwin Mo 63011
314-532-3599
" 638-1447

938 8464 - Fowles son-in-law.

2334, & 6386
6?7N - R.5E,
SW/2 & Part of N/2
Sec 4. S/2 S/2

Rackensack #1 - #3.
cerro Del Oro
#1 Pages 17 18 19 & 147
Mabel Steinegger
Sue Hermanski
Rd 4747 W. Windrose Dr.
Suite J. 85029


32
33
5
4
S72° E.
1" = 200'
O. de O.
#1


1" = 400'
Rd'd
Ft. Worth
Rd'd
R-2
sch.
spring
R-1
R-3
sch.
cde 1
cde 2
cde 3
cde 4

400 - 500 lbs

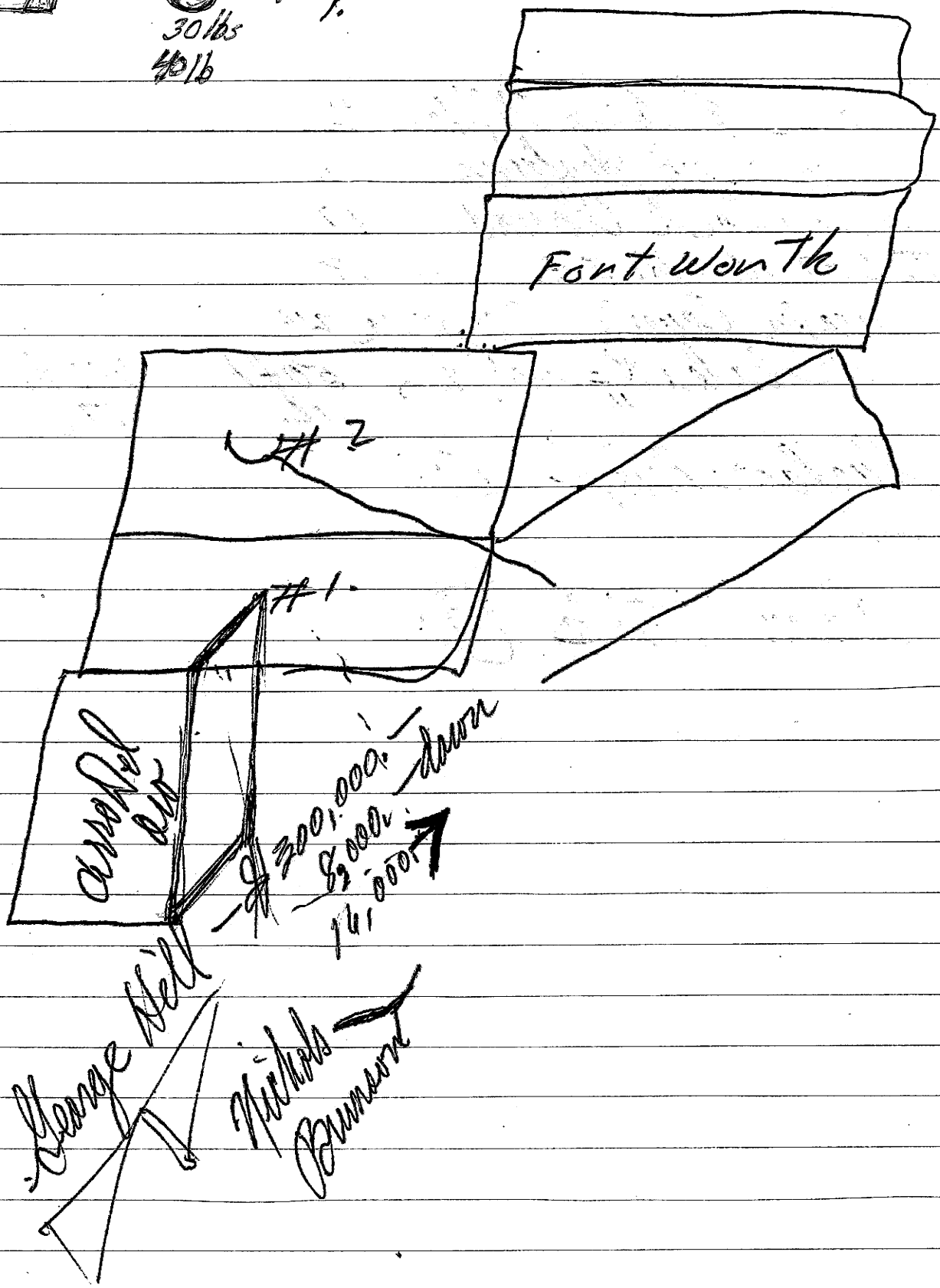
Rod Mill

60 769 → 2.2 f.

30 lbs

40 lb

10 →



Geologic & Assay Map 20

Underground Workings 20

Rucken Sack Claims 17

T. 6 N. 18

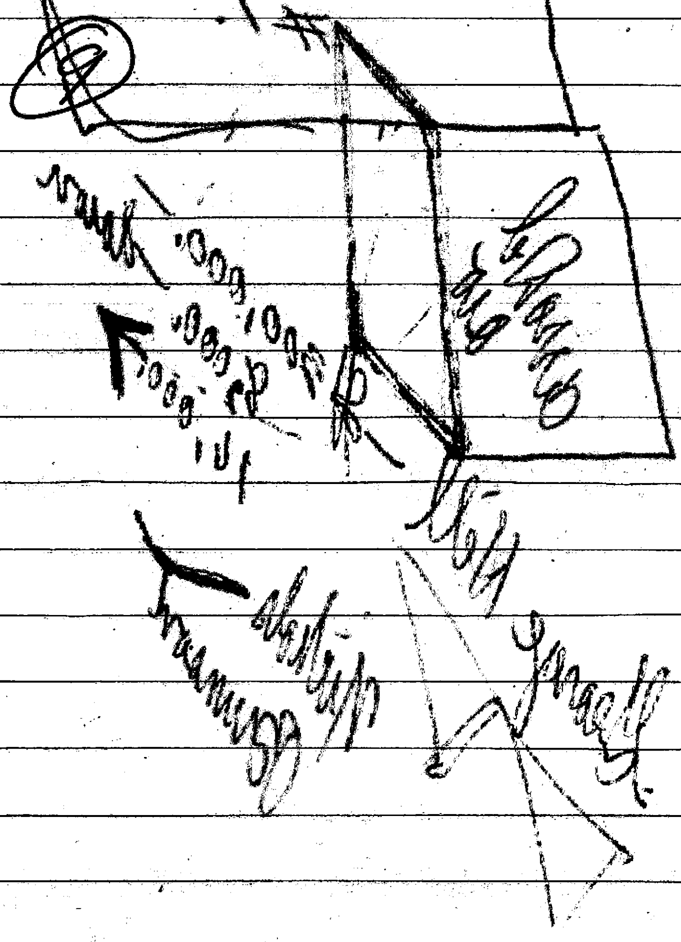
Maricopa County, Arizona 24

Scale: 1" = 40 ft., 20 ft, 400 ft.

16 16 17 18

Surface Map (1)

Claim Map (2)



[illegible] Prof [illegible] #127 - to 1934 - produced 5 yrs.
worked by Geo. mid 1960s

No1 Adit - N 60 W - 35° N. to [illegible] alaskite
western branch 25 to 70° N.

	Au	Ag	Cu	Mo	Weight
#1 1397	1.536	1.02	X	X	X
2 1398	.028	.34	X	X	X
3 1399	.402	.66	X	X	X
4 1400	.Tr	.36	.04	.None	X
5 1401	.Tr	2.44	X	X	X
6 1402	.792	.94	X	X	X
7 1403	0.517 oz	.29	X	X	567 ? (grams) (lbs)

oz. 567 grams → 767

29.494 — 841 fine
29.42

Fort Worth Patented Claims

To County Roads 2.6 miles

Rackensac #2

pit

Rackensac #1

Rackensac #3

T. 7 6 N.

R. 5 E.

32 | 33
5 | 4

Cerro del Oro #1

Cerro del Oro #2

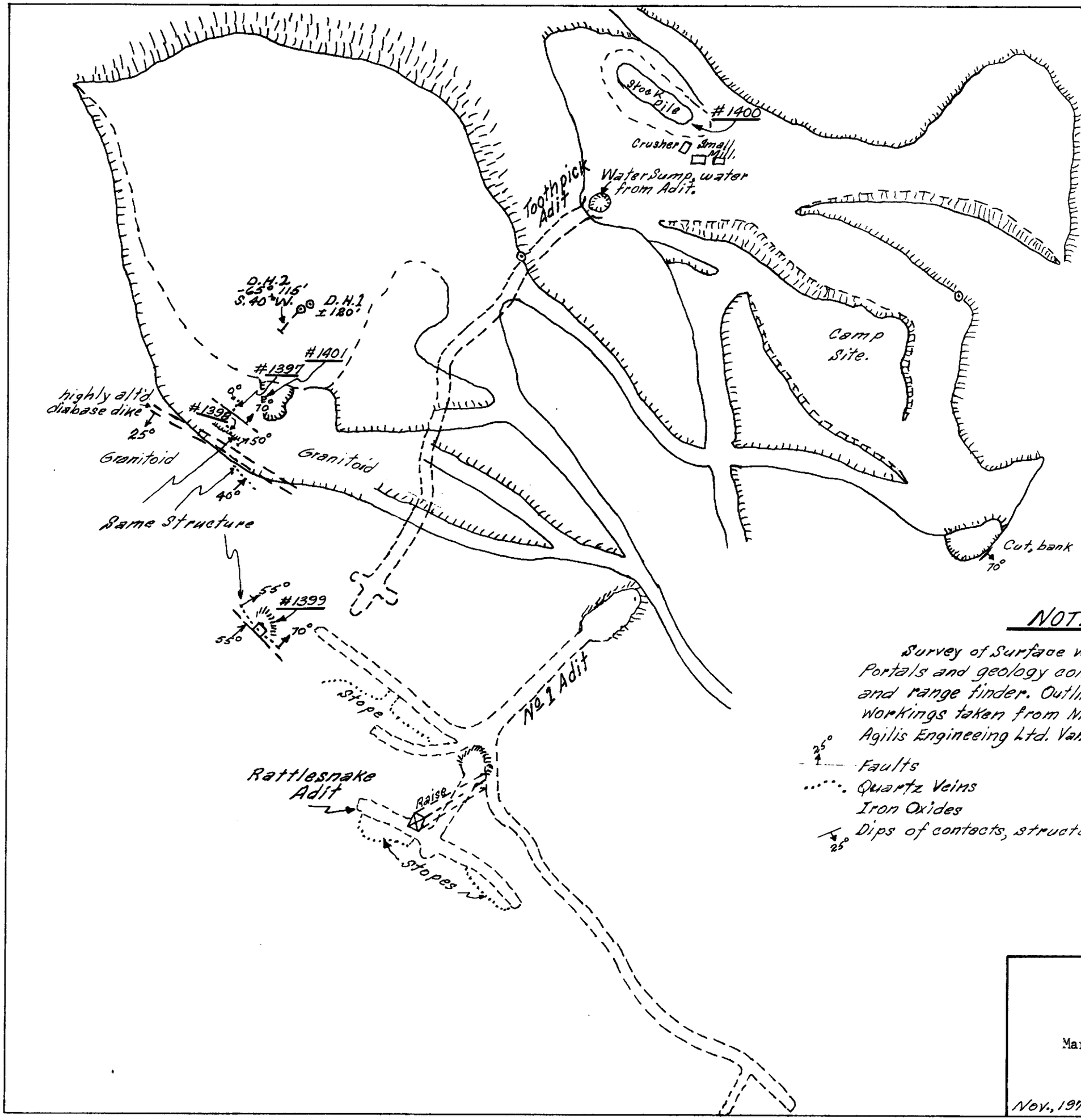
Cerro del Oro #3

Cerro del Oro #4

CLAIM MAP
RACKENSACK CLAIMS
T. 6-7 N., R. 5 E.
Maricopa County, Arizona
SCALE: 1"= 400 Ft.

Nov, 1976 R.E. Mieritz

MAP Nº__



NOTE

Survey of Surface Workings, roads, Adit Portals and geology completed by Brunton and range finder. Outline of underground workings taken from Map prepared by Agilis Engineeing Ltd. Vancouver, B.C., Aug. 1973.

25° — Faults

..... Quartz Veins

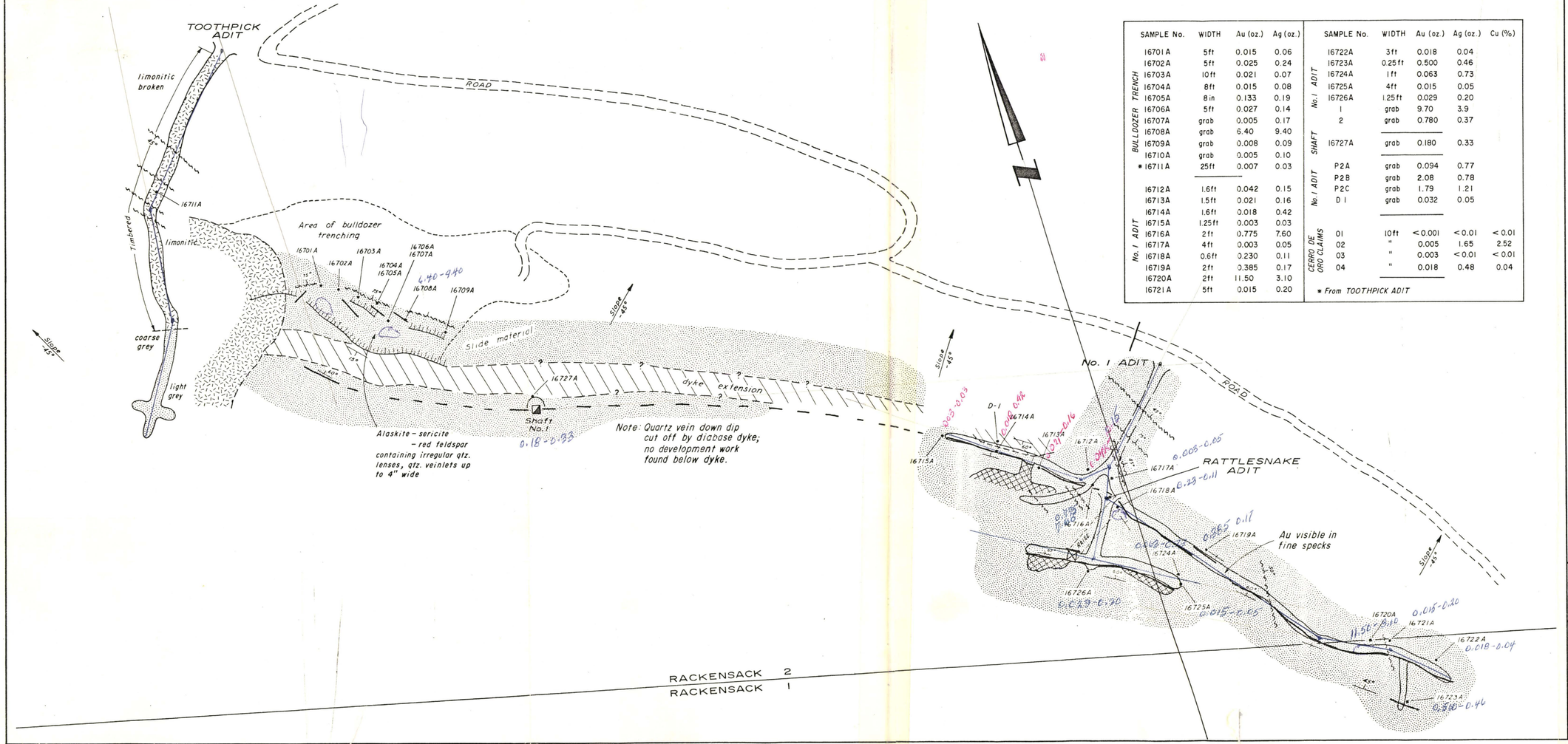
Iron Oxides

25° Dips of contacts, structures, etc.

SURFACE MAP
RACKENSACK CLAIMS
T. 6-7 N., R. 5 E.
Maricopa County, Arizona
SCALE: 1"= 50 Ft.

Nov., 1976 R.E. Mieritz

MAP No.



SAMPLE No.	WIDTH	Au (oz.)	Ag (oz.)
BULLDOZER TRENCH			
16701A	5ft	0.015	0.06
16702A	5ft	0.025	0.24
16703A	10ft	0.021	0.07
16704A	8ft	0.015	0.08
16705A	8in	0.133	0.19
16706A	5ft	0.027	0.14
16707A	grab	0.005	0.17
16708A	grab	6.40	9.40
16709A	grab	0.008	0.09
16710A	grab	0.005	0.10
* 16711A	25ft	0.007	0.03
No. 1 ADIT			
16712A	1.6ft	0.042	0.15
16713A	1.5ft	0.021	0.16
16714A	1.6ft	0.018	0.42
16715A	1.25ft	0.003	0.03
16716A	2ft	0.775	7.60
16717A	4ft	0.003	0.05
16718A	0.6ft	0.230	0.11
16719A	2ft	0.385	0.17
16720A	2ft	11.50	3.10
16721A	5ft	0.015	0.20

SAMPLE No.	WIDTH	Au (oz.)	Ag (oz.)	Cu (%)
No. 1 ADIT				
16722A	3ft	0.018	0.04	
16723A	0.25ft	0.500	0.46	
16724A	1ft	0.063	0.73	
16725A	4ft	0.015	0.05	
16726A	1.25ft	0.029	0.20	
SHAFT				
No. 1	grab	9.70	3.9	
2	grab	0.780	0.37	
16727A	grab	0.180	0.33	
No. 1 ADIT				
P2A	grab	0.094	0.77	
P2B	grab	2.08	0.78	
P2C	grab	1.79	1.21	
D 1	grab	0.032	0.05	
CERRO DE ORO CLAIMS				
01	10ft	<0.001	<0.01	<0.01
02	"	0.005	1.65	2.52
03	"	0.003	<0.01	<0.01
04	"	0.018	0.48	0.04

* From TOOTHPICK ADIT

LEGEND

- Cliff
- Geologic contact
- Fault
- Strike and dip
- Mineralized quartz vein
- Stope
- Diabase dyke
- Alaskite
- Schist

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. HOLCAPEK

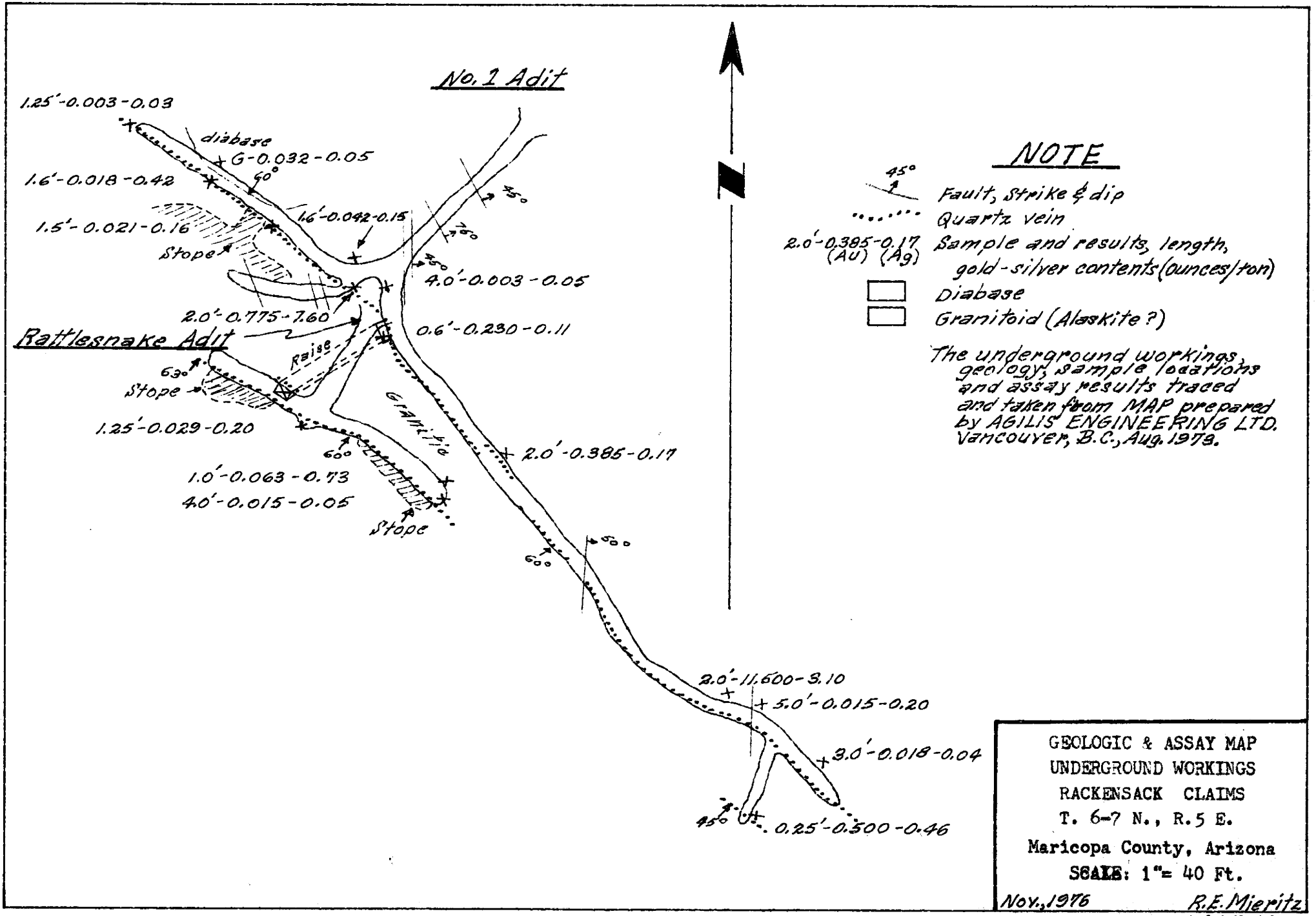
FIG. 3

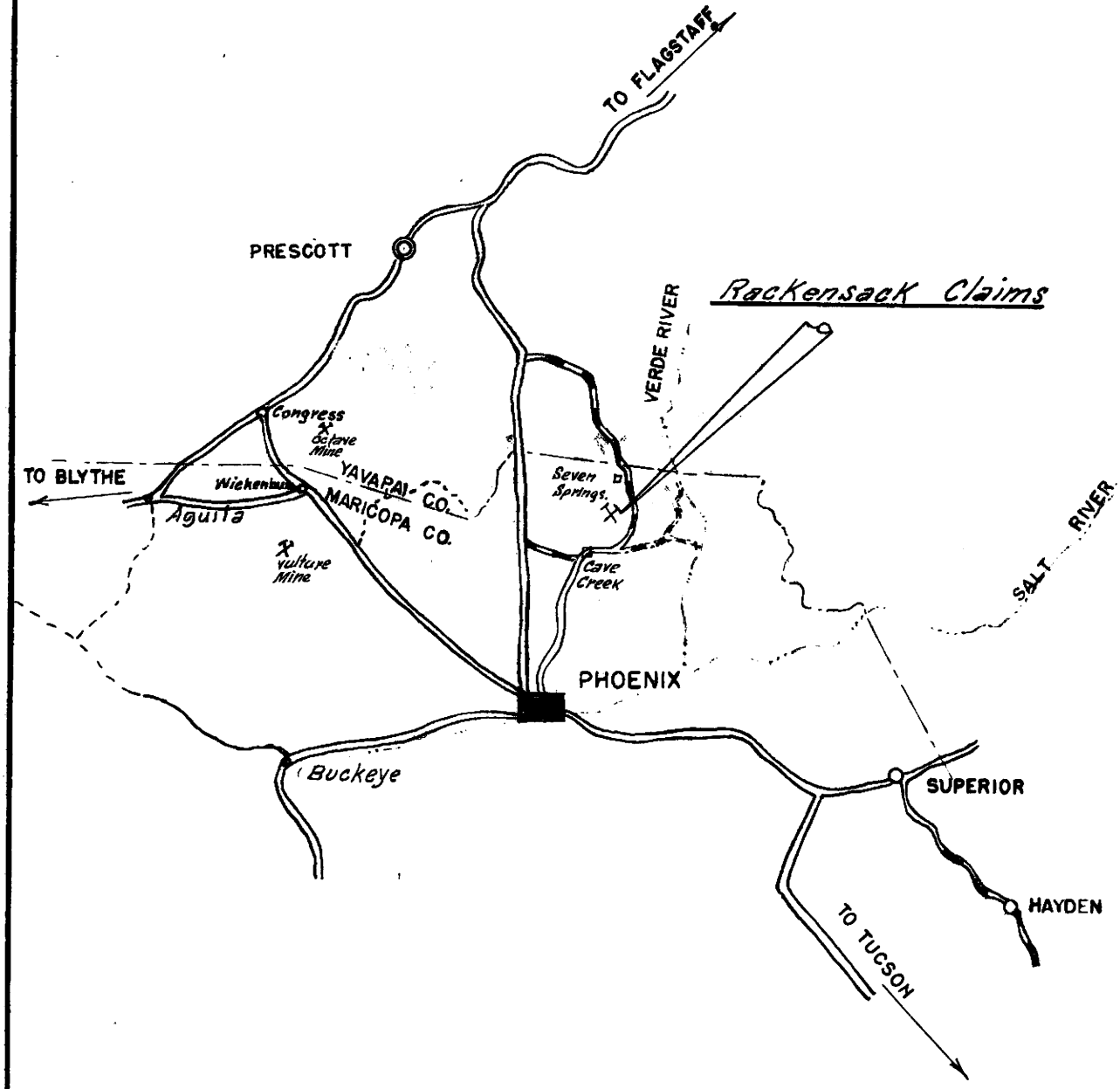
ACHERON MINES LTD. (NPL)
MINAS DE CERRO DORADO LTD. (NPL)
RACKENSACK PROSPECT
MARICOPA CTY., ARIZONA, U.S.A.

GEOLOGICAL MAP of SURFACE and UNDERGROUND WORKINGS

SCALE IN FEET
0 40 80 120

AGILIS ENGINEERING LTD. AUGUST, 1973


No. 1 Adit
1.25'-0.003-0.03
diabase
G-0.032-0.05
60°
1.6'-0.018-0.42
1.5'-0.021-0.16
Stope
1.6'-0.042-0.15
45°
75°
45°
4.0'-0.003-0.05
2.0'-0.775-7.60
0.6'-0.230-0.11
Rattlesnake Adit
Raise
63°
Stope
1.25'-0.029-0.20
60°
1.0'-0.063-0.73
40'-0.015-0.05
Stope
Granite
2.0'-0.385-0.17
60°
50°
2.0'-11.600-3.10
5.0'-0.015-0.20
3.0'-0.018-0.04
45°
0.25'-0.500-0.46
NOTE
45°
Fault, Strike & dip
Quartz vein
2.0'-0.385-0.17 (AU) (Ag)
Sample and results, length, gold-silver contents (ounces/ton)
Diabase
Granitoid (Alaskite ?)
The underground workings, geology, sample locations and assay results traced and taken from MAP prepared by AGILIS ENGINEERING LTD. Vancouver, B.C., Aug. 1978.
GEOLOGIC & ASSAY MAP
UNDERGROUND WORKINGS
RACKENSACK CLAIMS
T. 6-7 N., R.5 E.
Maricopa County, Arizona
SCALE: 1"= 40 Ft.
Nov., 1976
R.E. Mieritz
MAP No



66

INDEX MAP
CENTRAL ARIZ.

SCALE: 1" = 27 MI.

R.E. MIERITZ, P.E. MAR., 1962

MAP No.

A-23

INTRODUCTION:

The writer's Geological and Exploration Report has indicated the presence of a strong quartz vein or structure on the Rackensack claims. Samples by the Canadian company and the writer indicate the presence of gold-silver values. The report also suggests the method and procedure for further exploring this structure and its values. The ensuing writing provides an insight into the means and expenditures required for development and possible operation of the mine.

EXPLORATION POTENTIAL and COSTS:

Unlike copper, lead, zinc, etc., gold-silver mineralization is usually non-visible for estimating purposes, therefore, one does not know what is or is not ore except by an assay value.

The limited sampling completed thus far indicates more very low grade mineralization than average or high grade values. However, these samples are rather far apart along the strike of the structure and areas of greater values could be missed. This, of course, is the reason for the suggested exploration program of sampling and underground drifting on the structure. Estimated costs for the suggested exploration work could be:

(a) Sampling present workings and assaying (Professional person and helper)	$ 1450.-
(b) Underground drifting as indicated in b, c, e and f (Geological Report)	
500 feet drift work @ $40.00/ft.	20,000.-
300 feet raising @ $40.00/ft.	12,000.-
(c) Rehabilitate Toothpick Adit	4,000.-
TOTAL	$37,450.-

The above expenditure is the minimum requirement, even for a "small" mill operation.

The above work could indicate the presence of 500 to 1000 tons of ore containing 0.75 ounces gold per ton or an inplace value of $100.00 per ton at today's price of $130.00 per ounce of gold.

MINING:

Were
With the quartz vein to average about 18 inches in width, selective mining of the ore in the stope would be required. A stope width of 42 to 44 inches could be maintained, thus, for each ton of ore, about 1½ tons of waste must also be mined.

When stoping, the waste need not be removed as it would act as fill to continue the upward progress of the stope to the next level.

A stope round, 3½ feet wide, 7 feet high and 6 feet deep would provide about 5 tons of ore if the quartz vein is 1½ feet wide. Mining costs would be approximately $30.00/ton of ore including the cost of mining 1½ tons of waste for each ton of ore. This cost would include two men, miner and helper, diesel and oil for compressor and drill, drill bits and powder, but not equipment purchase and/or rental nor professional supervision.

MILLING:

The small mill operation at the property utilized a laboratory size crusher (hand fed), an 18 inch by 36 inch rod mill, a 2 foot by 3 foot table and a mercury plate. This mill, a pilot and/or laboratory size operation, is designed solely to recover free or native gold-silver. If not very carefully and expertly operated it could will have as much gold value in the "tails" as would will be collected in the concentrate and/or amalgam, thus, a recovery factor of 50%.

Gold mineralization is of two types, free or native gold which most frequently is visible with a geologist glass and gold which is "locked" in with other minerals as galena, sphalerite, chalcopyrite, chalcocite, pyrite, iron oxides and several other minerals. Mercury will not remove this "locked-in" gold-silver. Other methods must be used to recover these values.

As part of the writer's examination, two samples were taken to obtain some information as regards the amenability to milling of the material excavated from the small pit within the large pit. (See Map No. 3.)

Sample 1401 was taken in this area. As understood, this material was run through the mill, ~~and all that was recovered was the amalgam sponge Jack Gardner has in his possession, the contained gold-silver not having been removed or recovered as of this date~~.

As understood also, ~~Mr. Gardner ran~~ a controlled weight of "high grade" was run from this same pit and ~~obtained~~ obtained Mr. Gardner a concentrate which ~~he~~ has in his possession. The writer took a grab sample of this "wet" concentrate. The writer dried the sample and the assayer has made two samples; one for a normal fire assay of gold and silver, the other (balance of the material) as an amalgamation test. The following facts have been obtained:

Writer's sample in Pit #1401 (not high grade) Au. Tr., Ag. 2.44
Dry weight of ore through mill (est. Gardner) 400-500 pounds
Wet weight of concentrate (est. Mieritz & Gardner) 60 pounds
Dry weight of concentrate (75% of wet weight) 45 pounds
Sample of concentrate #1402 Au. 0.792, Ag. 0.94
Amalgam test of concentrate #1403 Au. 1.517, Ag. 0.29
Concentration ratio (ore to concentrate) 10 to 1
Calculated heads (material used presumably high grade) Au. 0.152, Ag. 0.029

Approx.

The above facts indicate the following:

(1) The crude material used was relatively low grade - less than 0.25 ounces per ton.

(2) There was much free gold in the concentrate which should have been caught on the amalgam plate,

(3) The design of the mill is not correct, and

(4) The material used is not necessarily representative of the type ore that could be developed in the quartz structure exposed in the drifts of the Adits which when developped could be the life of the mine in the future.

After an adequate ore reserve has been developed by the suggested method of exploration, then metallurgical samples can be selected and tested to determine the proper flow sheet for an efficient mill design.

of a capacity which would harmonize with the mine production.

OPINION:

In the opinion of the writer, if monies are not available for exploration as indicated, for equipping and operating the mine and for equipping and operating a mill yet to be decided on, then the project should be dropped and forgotten.

Respectfully submitted,

REM

INTRODUCTION:

At the request of and authorization by Mr. Jerry W. Fowles, Ballwin, Missouri, the writer fiedd examined the Rackensack claims, Maricopa County, Arizona, on November 20, 1976, accompanied by Messrs. Jack Gardner, George Edeline, John Thompson and Jerry Fowles.

This geologic report is based on the writer's examination of the property, his observations of geologic conditions, results of samples taken by the writer, his general and geologic knowledge and experience and on a review and study of factual data made available by the owner of the property.

PROPERTY, LOCATION and ACCESSIBILITY:

The property includes four standard lode mining claims known as Rackensack #1, #2, #3 and Cerro Del Oro #1. These claims are leased, with option to buy, to Mr. Jerry Fowles, from the owners, George Edeline and Mabel Steinegger, Cave Creek, Arizona. (See Map No. 2.)

Rackensack #2 claim, adjoins, in part, the south line of the Fort Worth patented claims which places the Rackensack group of claims in Sec. 4 of T. 6 N., R. 5 E. and Sec. 33 of T. 7 N., R. 5 E., G. & S. R. B. & M., Maricopa County, Arizona, about 7 airline miles northeast of Cave Creek, which is approximately 30 miles northerly by road from downtown Phoenix, Arizona.

The property is accessible by pickup or 4 wheel drive vehicles. Although the writer drove his passenger car vehicle to the property, such travel is not recommended for others. To reach the property from Cave Creek, (See Map No. 1), travel northeast on the paved County road leading to and servicing Bartlett Dam. Seven miles beyond Cave Creek is a right hand junction (to Bartlett Dam). Two and one half miles northerly on the County road (straight ahead) the pavement ends - gravel commences. This road leads to Seven Springs and Bloody Basin farther north. From the end of the pavement, travel 2.7 miles northerly to a branching road or junction on the left, (wash bottom). Turning left onto the mine access road and traveling

westward for 1.4 miles is a gate (old equipment on the right). From this point, continue westerly for 1.3 miles to the mine site. High centers and loose rock are prevailing the last 1.3 miles.

FACILITIES:

Natural gas and electricity are not available at or near the property. One Adit (Toothpick) makes a small amount of water but may not be potable for domestic use nor is it adequate for commercial use.

HISTORY and DEVELOPMENT:

The property dates back to 1934 and was worked for about three years during which time No. 1 Adit, the Rattlesanke Adit and the shaft were driven as well as some stoping completed, indicating that gold had been mined and recovered - about a $1,000.00 production at the then gold price. (See Map No. 3.)

Mr. George Edeline re-staked the claims in mid 1960's and since has caused the Toothpick Adit to be driven by Tonto Milling Company and excavation of the "open pit" by Mr. Edeline himself. (See Map No. 3.)

In August 1973, a Canadian company, Acheron Mines Ltd. caused the property to be field examined and sampled. The factual data obtained was given to Mr. Edeline who in turn provided the writer with same. (See Maps No. 3 and 4.)

LOCAL GEOLOGY:

Geology in the area of the claims includes schist, a granitoid (alaskite?) altered diabase as a dike and quartz veins.

This area is heavily soil covered which makes rock contacts difficult to recognize and trace surface-wise. The geological features of interest here are the quartz veins as they apply to gold, silver, copper and lead mineralization and are hosted in the granitoid.

MINERALIZATION:

Exploration and development to date have been concentrated on a strong, persistent white quartz vein which has a general strike or trend of N. 45° W. and a dip of 60° to the northeast. This structure

rolls and/or weaves both horizontally and vertically, creating localized strikes from almost north-south to almost east-west in the NW and SE quadrants. (See Map No. 4.) Except for slight displacements by cross-faults, the structure is continuous and exposed in the drift of No. 1 Adit for 320 feet. (See Map No. 4.)

Beyond the NW drift face, on the surface to the northwest, the structure is again exposed in an old shaft. The bulldozer "open pit" northerly from the shaft exposes the same quartz structure, but down dip and further to the northwest. The total strike length is thus in excess of 400 feet. (See Map No. 3.)

This strong, persistent structure is somewhat broken up and appears to be interrupted in the area of the "open pit" which is probably caused in part by the existence of the flat dipping, northwesterly trending, highly altered diabase dike which has cut the quartz vein and caused some displacement. To the southeast, the structure is still quite strong in the face of the SE drift of No. 1 Adit. The writer has personally observed the strong structure along its strike in both the No. 1 Adit and the Rattlesnake Adit as well as on the surface.

The strong quartz structure contains such primary minerals as pyrite, some chalcopyrite, some galena, some pyrrhotite-marcasite and native gold. The quartz also contains secondary minerals as malachite, some silver chlorides but mostly residual limonites, sometimes in box-work form, after pyrite, chalcopyrite, galena and even perhaps sphalerite. These limonites vary from yellow, yellow-green, through the browns, deep reds and even black. An associated manganese mineral is also present.

Width-wise, the structure varies from about two feet down to 3 or 4 inches with an estimated average width of 18 inches.

STRENGTH of MINERALIZATION:

Gold-silver is the principal value contained in the quartz structure. The base metal (copper-lead-zinc) values are of minor significance

and thus unimportant at this time.

The examination of the property by the Canadian Company included the taking of many samples which were assayed for gold and silver. Map No 4 shows the position of these samples, the width or length of the sample and the gold-silver contents. It can be seen that the gold values range from a trace to over 11 ounces per ton.

Gold mineralization in Arizona is not of the consistent, homogenous type as might be expected in California, Nevada, Idaho or Colorado. Here, gold mineralization tends toward zonal occurrence within a structure in horizontal and vertical attitudes and most frequently associated or controlled by some physical or structural characteristic of the host structure. This can be the graininess of the quartz, a horizontal roll, a vertical roll, a pinching or swelling of the structure, a cross fault, whatever.

The sampling completed by the Canadian Company demonstrates the type and mode of the gold-silver mineralization possible in the quartz structure partially developed by the underground workings.

Several samples were taken by the writer during the field examination to provide a further insight into the type, mode and strength of the gold-silver mineralization. Map No. 3 indicates the location of samples #1397 through #1401. The descriptions and results of the samples taken by the writer are as follows:

Sample Number	Sample Description	Ounces/ton Gold	Silver
1397	15" across top of quartz vein (pocket?) in granite in Pit on small bench. Much yellow to brown to red FeOx. Specks of gold visible.	1.536	1.02
1398	15" across white quartz vein, 80° NE dip, strong FeOx near footwall, some yellow to red FeOx throughout. Above #1397.	0.028	0.34
1399	Blind grab sample of heavily FeOx stained (yellow-orange-brown-red) quartz, some box-work, from shaft dump.	0.402	0.66
1400	Blind grab of stockpile, mostly granitoid, some FeOx, some pyrite, some Moly? Copper assay 0.04 %, Moly assay; Nil %	Tr	0.36
1401	4.0 foot chip down bank wall in ~~xxxxxxxx~~	Tr	2.44

small pit. Highly altered granitoid of pinkish color, some FeOx but not live type. This material was milled.

EXPLORATION REQUIREMENTS

The results of all the limited sampling completed thus far, and the strong, persistent, observable character of the quartz structure suggests necessary exploration of the structure laterally to the southeast and depth-wise.

Exploration must be done by underground methods and can be accomplished by utilizing the three existing Adits.

A suggested program is:

(a) Detailed sampling (every 5 feet) of the exposed structure in both the No. 1 Adit and the Rattlesnake Adit, as well as the raise between the Adits and the walls of the stopes.

(b) Drift southeast on the structure, sampling every five feet, in both Adits.

(c) Raise at selected locations from the No. 1 Adit to the Rattlesnake Adit.

(d) Enter and rehabilitate the Toothpick Adit and drift southeast on the structure, sampling every five feet.

(e) Raising at selected locations from the Toothpick Adit to the No. 1 Adit.

(f) Drift northwest and southeast on the parallel quartz structure exposed in the short crosscut off the southeast drift of No. 1 Adit.

This means of exploration would indicate the presence and locations of the stronger zonal modes of mineralization as well as to basically "block" out an ore reserve preparatory to mining operations.

Respectfully submitted,

REM

No exploratory work should be done on the pit area until the results of the above suggested exploration program has been completed and the results studied and analyzed.

15039 Claymont Estates Dr.
Ballwin, Missouri, 63011

Dear Mr. Fowles:

There is but one original and copy - my file - of this letter. Your confidence is therefore requested, desired and appreciated.

I had expressed much of my opinion ~~of land frauds, etc.,~~ on Arizona land deals and mining deals to you verbally over the phone during out initial contact on Friday, ~~when~~ At that time you expressed ill feelings about your venture into the "mining business." Except for your sincerity and frankness, this letter would not be written.

I am not sure of exactly how you became interested in and invested in the property - or who - in effect - promoted the deal or what you were told about the property, the potential, etc.

In most instances such as this, information is usually verbal with little written, proven fact. George is a prospector, promoter of mining properties, knowledgeable to a degree of geology, etc., however, like most prospectors, is over enthusiastic, over hopeful, and over projective beyond realistic proportions. I have known George for several years and been on three of his properties. They are not "duds" but neither are they "bonanzas" - usually requiring considerable exploration and expenditure of funds. George is, in my opinion, a good, fair dealing mine property promoter.

The driller, on the other hand, is something else again. Without proper supervision, his tangential projections are costly. I can name at least three projects where the work has been unsatisfactory and costly. Frankly, I share no trust for him at all.

From your conversation and several questions, I deduct that someone has indicated and pushed the point that "all you would have to do is provide equipment for a mill - mine the ore - and collect the revenue." Someone did a "snow job," and as such is a very dangerous, un-informed, unknowledgeable person who is a discredit to the mining industry.

Unfortunately, every mine or potential mine requires considerable expenditures to explore, to develop, to mine, to mill - even the

smallest type of operation. Without specific, pinpointed knowledge and fact of "where" the material is, "what" the material is, "how" to handle the material - there is no possibility of a successful, enterprising operation. Mining is not simple.

The above situation occurs many, many times. A second alternative as to "why" you became involved as an investor is that someone "promoted" the idea of patenting the claims as a means of acquiring 80 some odd acres as "real property." If this be the case, let me say it is not an easy task. Patenting is a risk, is expensive and time consuming. The application for patent, the required surveying, lawyers' fees, etc., could consume $10,000.00 and up to five years to obtain a deed. That expenditure would be over and above expenditures for exploration, mining and operation. (preparation for patenting)

Unless you are willing to expend funds in amounts indicated in the writer's Operational Report, it would be the writer's recommendation to "back off" and take the loss of expenditures to date.

I am sorry to put it so bluntly but fact is fact. I see little hope of ever recouping the funds which would have to be spent to "prove" an ore reserve - even for the smallest type operation. Simply put, the values and volume just are not there nor is the potential there.

~~If after~~ studying my report and analysis of the situation, it is your opinion to move forward in a "poor boy" fashion of hand sorting ore (to obtain high grade mill feed) and milling same, I will be happy to be of professional service to you and your group endeavoring to accomplish the best results possible however it would not be possible for me to guarantee profitable results.

~~Very truly yours~~,

V. T.

BEM