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PRELIMINARY EVALUATION OF THE VULTURE MINE PLACER POTENTIAL MARICOPA COUNTY, ARIZONA

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by

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1. INTRODUCTION

This author was retained by DMEA, headquartered in Scottsdale, Arizona, on a fee-paid consulting retainer basis to investigate the placer potential of the Vulture Mine area. The object of this preliminary testing program was to determine the presence of placer gold in these alluvials and whether economic concentrations could exist adjacent to the Vulture Mine. This field investigation encompassed the period of December 3rd to December 20th 1984.

The Vulture Mine is located approximately 16 miles southwest from Wickenberg. The property is easily accessed by a well graded and partially paved road from Wickenberg located in the extreme northern portion of Maricopa County, Arizona. Vegetation in the area consists of cactus and assorted desert brush which flourishes at this 200 foot elevation. Stream gulleys can contain water only after severe rain storms and consequently the Vulture Mine water is obtained form deep wells at a reported pumping rate of 75 gpm.

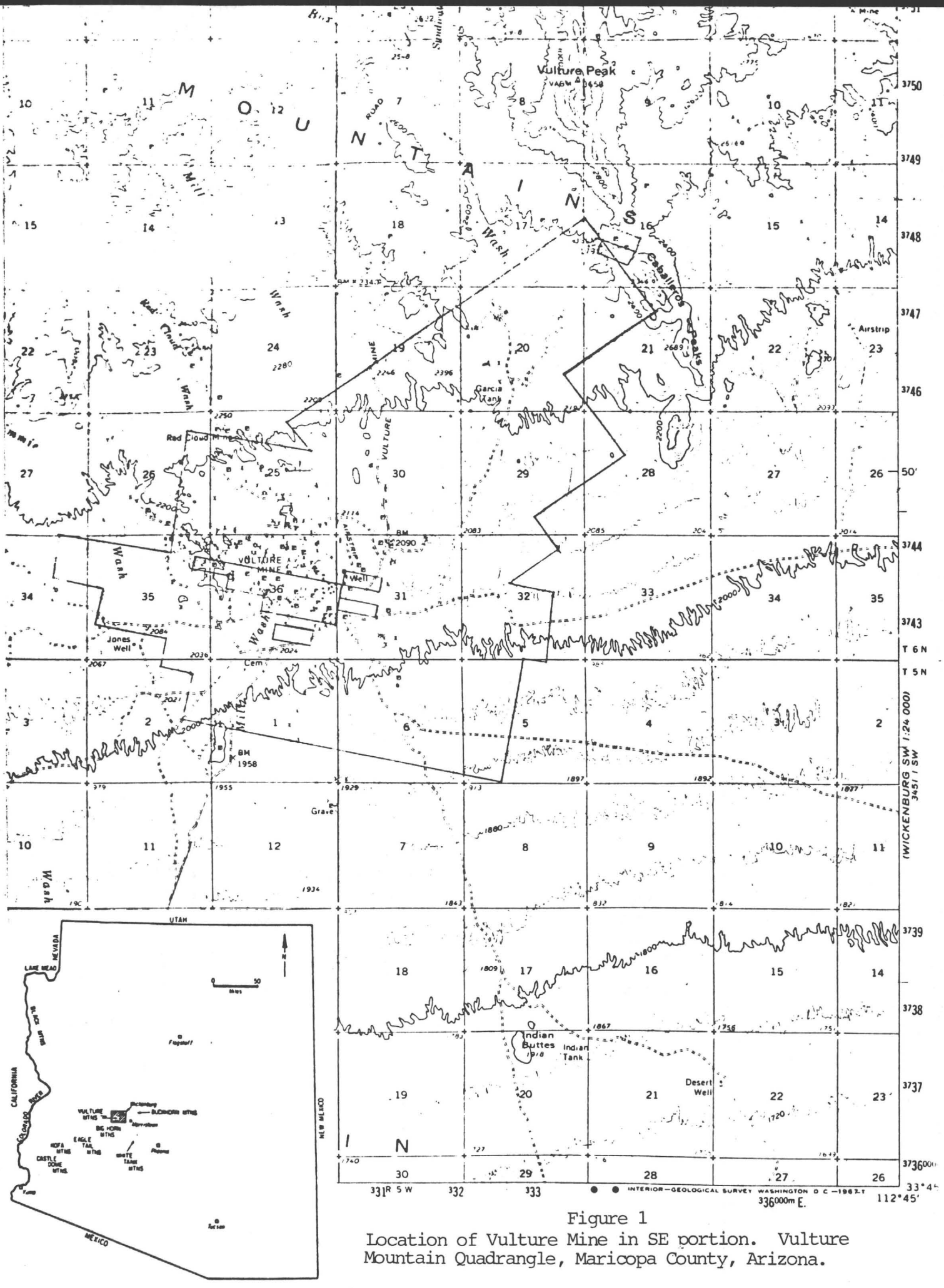


Figure 1
Location of Vulture Mine in SE portion. Vulture Mountain Quadrangle, Maricopa County, Arizona.

2. SAMPLING

Reconnaissance evaluation of a number of potential alluvial channels is best facilitated by excavating a sequence of sample points along strategically placed "fences." Hand excavated channels within back hoe trenches provides large volume geological samples for mechanical upgrading. The following described each phase of this operation.

2-1 Each "fence" of back hoe trench sites were selected after reviewing local geology, available maps and enlarged air photograph of the Vulture Mine area. A back hoe equipped with bucket rippers and capable of an effective excavating depth of 20 feet was used to provide samples at approximately 200 foot intervals along five (5) "fences" illustrated in Figures 3 through 7. Many trenches did not reach maximum depth penetration as either bedrock or dense caliche formation effectively halted practical excavation. Photograph 1 illustrates the excavator that was used on this project.

2-2 Hand excavated channels were cut the full depth or at selected intervals in strategic trenches. The typical cross sectional dimensions were 1.5 feet x 1.0 feet, however changes in this standard procedure were dictated by specific geological conditions. Channel lengths were also adjusted to geological criterion illustrated in mapped channel profiles located in Appendix I. Statistical summary of channel sample data as follows:

17 trenches sampled

7 sampled trenches reached bedrock

39 channels excavated

6.9 cubic feet average channel volume

20.3 feet maximum sampled depth

13.4 feet average sampled depth

PHOTOGRAPH 1

Excavator used in trench digging. Note twin ripper teeth on 7/8 cu yd bucket

PHOTOGRAPH 2

Sampling plant consisting of upper Denver Gold Saver and lower E-Z Panner for fines recovery

2-3 Excavated channel samples were weighed prior to mechanical processing. Individual sample data is located in Table I, with the following averages for the project:

849 pounds/sample

123.8 pounds/cu. ft. bulk density (assuming 0% moisture)

1.67 tons/cu. yd.

The processing plant utilized consisted of a two stage process (photograph 2). A "Denver Gold Saver" emulsified, classified at 5/16 inch and provided a "rougher" concentrate. The 5/16 inch tails from this unit were classified in an E-Z Panner at 20 mesh providing the "cleaner" concentrate. The E-Z Panner typically recovered virtually all the black sand and fine gold in each sample. The E-Z Panner was used initially as the primary recovery plant in samples 1-1-1 through 1-1-3 screening at 8 mesh.

Concentrate from both units were combined and hand panned producing an 85% black sand concentrate containing all the free gold. Rejects from this process were screened at 10 mesh producing the tails samples found in Table I. Black sand concentrates averaged 805.6 grams or approximately 4.18 Pounds/ton of the feed weight.

2-4 Visual gold grain counts were performed on each black sand concentrate prior to laboratory submittal. Three samples for each processed channel were submitted to Jacobs Assay Laboratory, Tucson for analysis. The black sand concentrate was submitted for amalgamation and subsequent fire assay processing with total gold reported in milligrams. Prior to amalgamation, all nuggets (> 1.5 mm) were weighed individually with their weights located in Appendix II. Detailed amalgamation procedure is located in Appendix III. The concentrate residue was fire assayed using a two (2) assay ton sample. The tails samples were each analyzed using a

two (2) assay ton fire assay charge. Results are listed in Table 1.

Select five (5) foot interval samples from previously drilled exploration reverse circulation holes were hand panned and the resulting black sand concentrates submitted to Jacobs Assay Laboratory for total fire assaying. Analytical results, together with visual gold notations, are located in Table II.

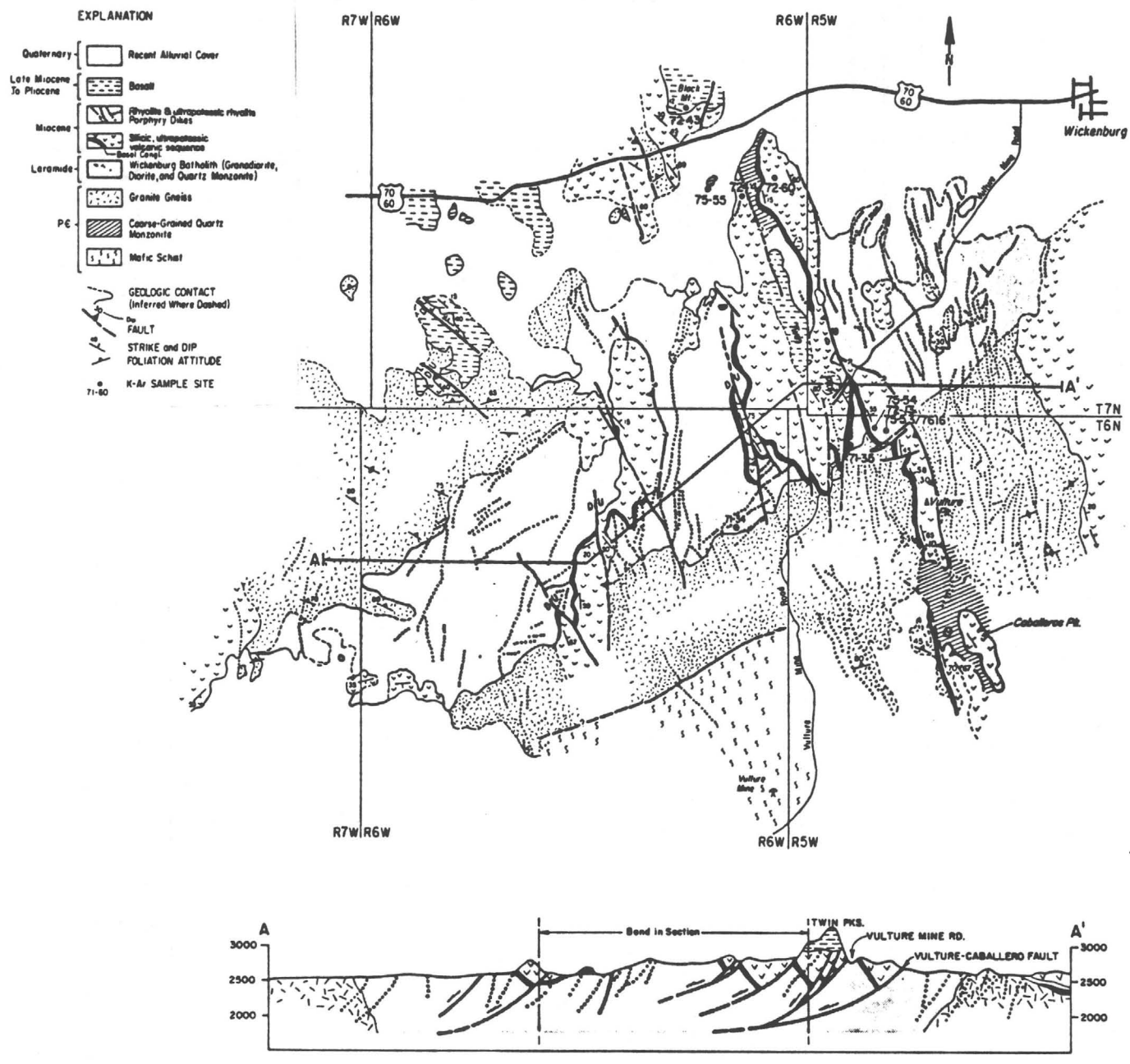


Figure 2
Generalized geologic map and cross section of the Vulture Mts. Precambrian rocks exhibit crude northeast pattern. Erosional unconformity exists below Miocene acid volcanics and Mio-Pliocene basalts. (After Rehrig, Shafigullah & Damon; 1980)

3. GEOLOGY

3-1 Regional bedrock geology has been mapped by a variety of individuals. The most recent by Rehrig, Shafigullah and Damon (Arizona Geol. Soc. Digest. Col. XII, 1980) is found in Figure 2. They have summarized the geology of the Vulture Mountain area as:

> "Geologic mapping and geochronologic studies in the Vulture Mountains near Wickenberg, Arizona, have lead to the recognition of a large, northeast-trending batholith of 68.4 m.y. age that intrudes complex gneissic and granitic rocks of probably Precambrian age. Overlying the denuded crystalline terrain is a sequence of late Oligocene to Miocene (26 to 16 m.y.) volcanic rocks (vitrophyres, ash-flow tuffs, welded tuffs, breccios, sp agglomerates and lava flows) that vary locally. ---------
> Overlying this volcanic sequence in angular unconformity is a thin section of basal conglomerate and basalt lava flows dated at 13.5 m.y."

Tertiary sedimentation commenced in the Eocene coinciding with the Laramide orogeny. The landscape became increasingly higher in relief producing ever increasing percentages of clastic sediments, including gravels deposited in tectonic basins. This ±30 m.y. sedimentation phase was terminated with the deposition of the Oligocene-Miocene acid volcanism. A second phase of clastic sedimentation ensured, which was subsequently covered by basic volcanism. Miocene and Pliocene sedimentation occurred within closed basins and produced essentially evaporite and carbonate sequences. Interbedded fine grained clastic sediments were deposited

adjacent to basin margins. The development of external drainage in the Pliocene greatly diminished evaporite-carbonate deposition which evolved into well-defined fluvial systems, without ponding, in the Pleistocene. It is believed that these established drainage systems prevailed to the Recent.

3-2 The above brief and generalized chronologic Tertiary cyclic tectonics, volcanism and sedimentation had a pronounced influence on the auriferous fluvial channels exposed during this current placer evaluation program. The well-developed regional southerly trending drainage system (Figure 1) in the Vulture Mountain area probably existed for a considerable geologic period.

Detailed geologic mapping in 1984 by Noranda Exploration (unpublished map and summary report) revealed a complex sequence of east-west trending north dipping meta-sediments and volcanics dislocated by major north-northwest and north-south trending fault zones (Talmadge and Schoolhouse Faults, respectively). These intersecting structures undoubtedly greatly influence the courses of the fluvial channels in the Vulture Mine area. In fact, the position of known placers greatly assisted in locating underground structures in the Vulture Mine (E&M. J. Vol. III No. 7, 1921).

Trench mapping during this placer evaluation-sampling program indicated general bedrock slopes to the south with coincident fluvial paleocurrent directions revealing gradients of 5 to 10 percent. Mapped east-west striking north dipping (110°31°) reverse faults within the fluvial sediments (Photograph 6) suggests that minor essentially bedding plane dislocations also influenced fluvial sedimentation.

Sedimentological evaluation of all fluvial sequences exposed in trenches suggest these channels occupy a relatively high profile position within the regional sedimentation pattern. Semi-angular clasts (rounding 3-5) appear locally derived and occur as moderately to well sorted and packed gravels in narrow high energy multiple sedimentation pulses. Individual channel width to depth ratios suggest a relative diminishing fluvial energy upward in these relatively unconsolidated clastic units. This correlates with the graded sequences seen in many locations. The grossly unsorted nature of the uppermost sediments suggests progressively less humid conditions later in the sedimentation pattern as reflected by the present arid climate.

The following detailed trench "fence" descriptions attempt to elaborate on local variances within the above generalized sedimentation pattern.

3-3 Southeastern Placers

This series of southwest-northwest trenches (Trenches 13, 1, 2 and 14) seen in Figure 3 represent mature fluvial systems typified by well-defined bedding outlining moderate energy systems deposited on irregular bedrock surfaces (Photographs 4, 5 and 6). Detailed channel sample mapping (Appendix I) well illustrates the transition from unsorted alluvium to broad low-moderate energy broad channel development to higher energy scour features near bedrock (Trenches 1, 2 and 14). Trench 13 represents a higher elevation or late phase system consisting of small sorted scour channels marginal to the main fluvial system in Trenches 1 and 2.

3-4 Southern Placers

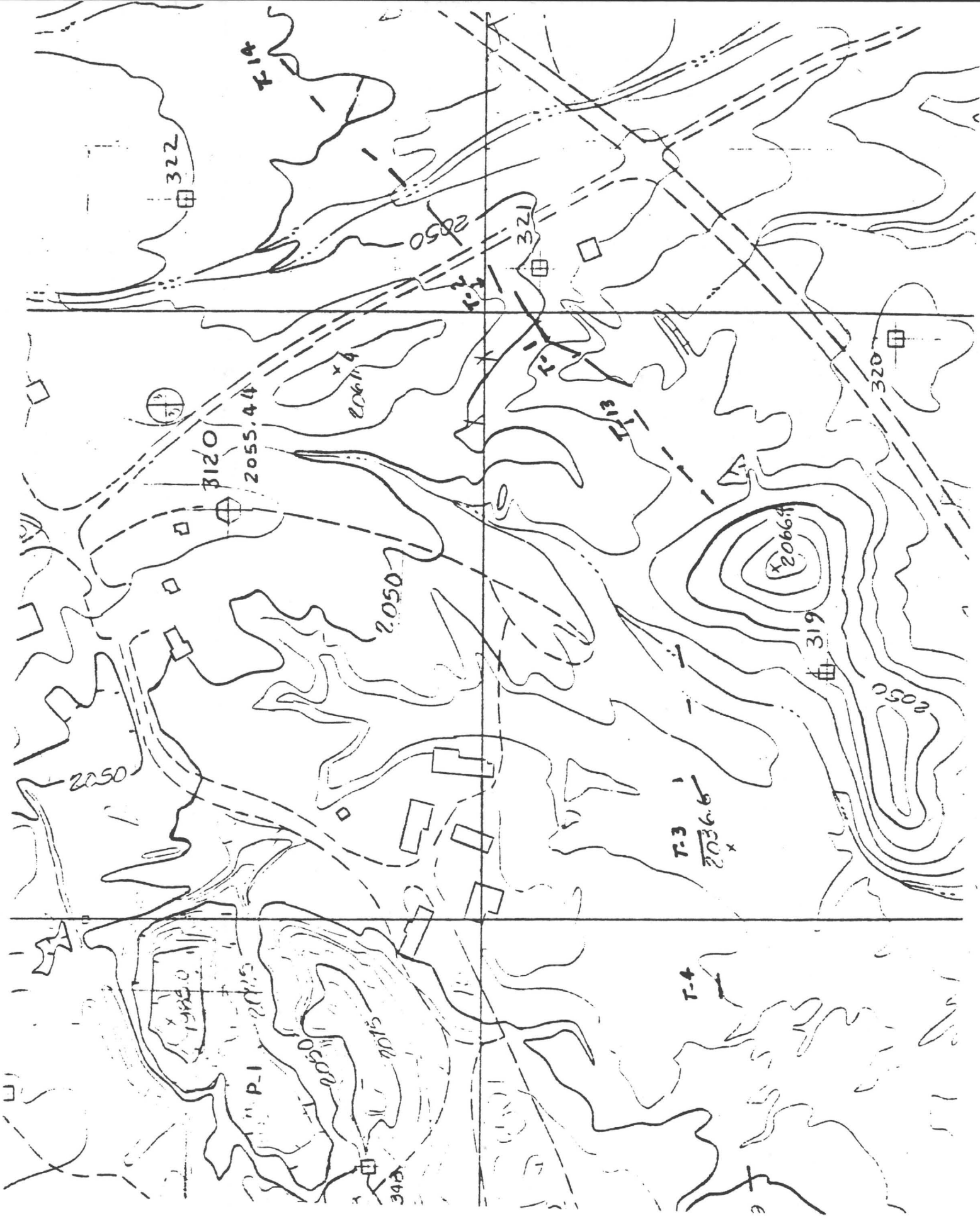


Figure 3
Vulture Mine Placer Project showing locations of sampled trenches in Southern and Southeastern placer areas.

PHOTOGRAPH 3

Careful attention to final clean-up in channels

PHOTOGRAPH 4

Bedrock pinnacle within fluvial sediments in Trench 1

PHOTOGRAPH 5

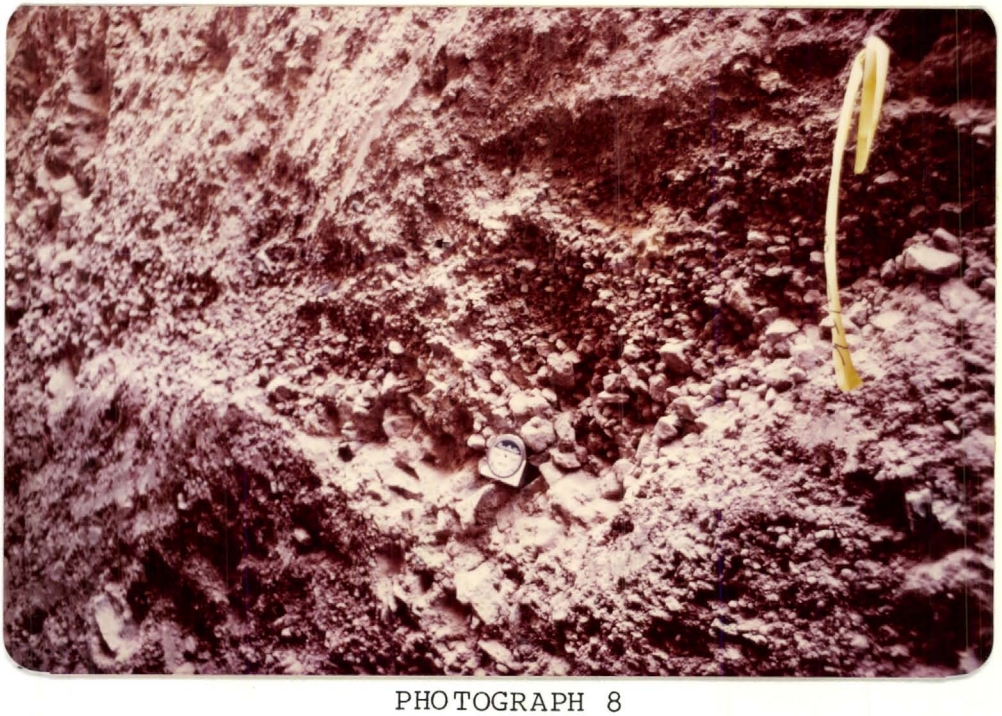
Full wall channel in 20-foot trench. Yellow ribbons mark channel limits

PHOTOGRAPH 6

Low angle small scale reverse faulting displacing bedded and sorted fluvial sediments in Trench 1

PHOTOGRAPH 7

Trench 4 illustrating yellow mine tailings overlying scour bedding with increasing conglomerate percentage downward



PHOTOGRAPH 8

High energy well sorted channel adjacent to sample 3-1-2

Figure 4
Vulture Mine Tailing Area showing tailings isopachs based on drill holes and proposed pre-tailings erosion surface channel axies

PHOTOGRAPH 9

Sample 3-1-2 illustrating moderately sorted and and graded fluvial conglomerate overlying bedrock

PHOTOGRAPH 10

Base of Trench 7 illustrating semi-angular pebbles within a small pebble-grit unconsolidated fluvial sequence

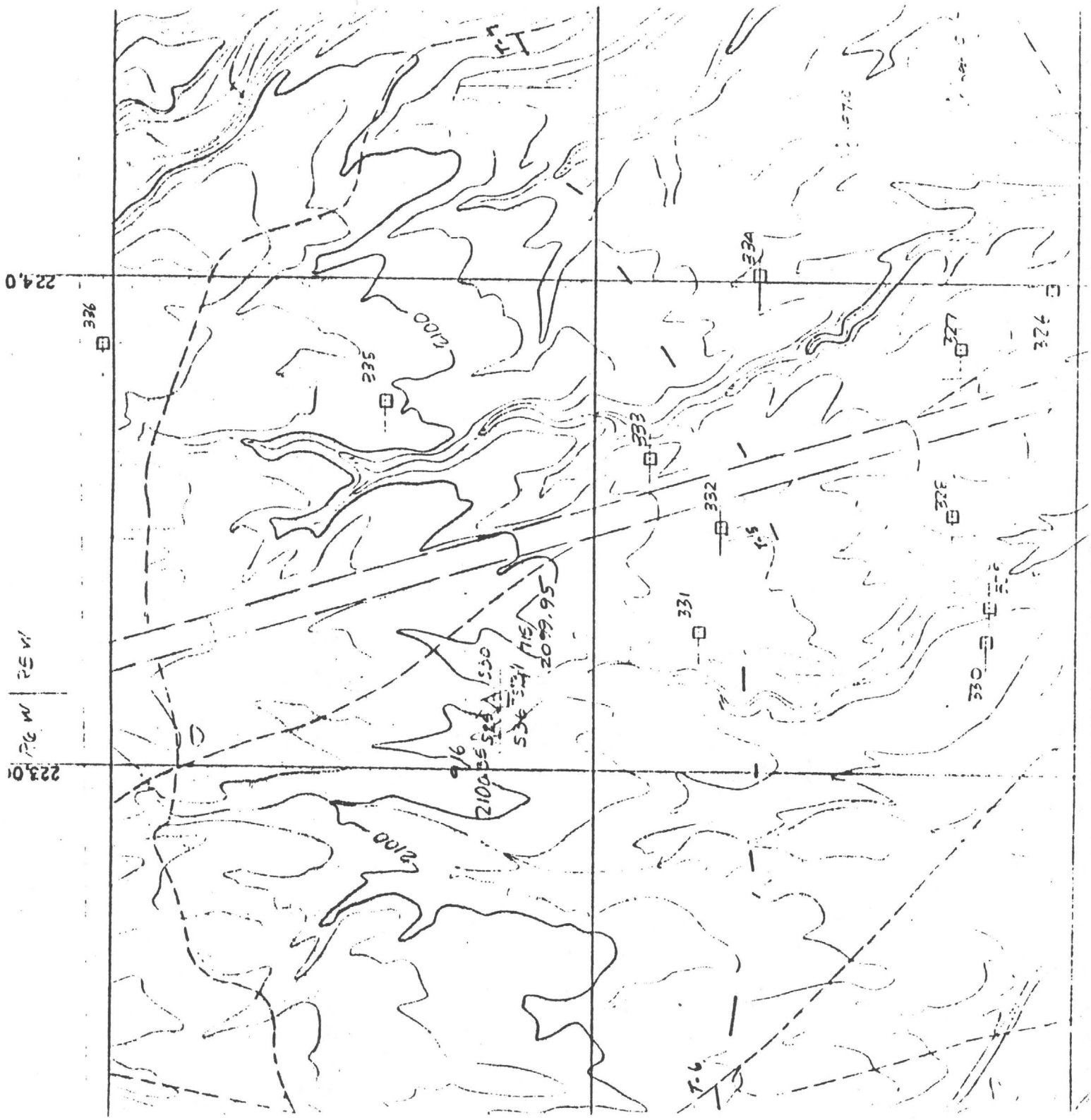


Figure 5
Vulture Mine-Placer Project showing sampled trenches in Eastern placer air strip area.

A series of east-west trenches underlying existing mine tailings reveal sequences of high energy fluvial activity partially exposed in Trenches 3 and 4 (Figure 3 and Appendix I). Graded bedding is very evident in this area with moderately rounded cobbles located close to bedrock as generally poorly sorted gravels (photographs 4 and 5). Well sorted and packed scour channels occur at various levels within the basal 50% of this sequence (photograph 7). Bedrock exposed in Trench 3 (Photograph 8) would indicate irregular scouring activity probably controlled by both bedrock lithology and structure.

Contouring overlying mine tailings from drill records (Figure 4) suggests a north-south and northwest-southeast erosion surface channel network centered on the Vulture Mine outcrop system. Angular quartz pebbles in the placer gravels indicate a very local source. Trench bottom bedrock exposures reveal a westward 13:1 bedrock slope from Trench 3 to Trench 4, suggesting the main drainage axis possibly correlates with a larger paleo drainage system as indicated in Figure 4.

3-5 Eastern Placer

A series of east-west trenches in the Air Strip area disclose relatively deep fluvial channels which must be deeply incised into bedrock as Trenches 5, 6, and 7 (Figure 5) failed to reach bedrock, although schistose bedrock is exposed in shallow flanking trenches. Graded bedding is definitely seen in Trenches 5 and 7 where multiple well-sorted and bedded clastic sediments become progressively coarser grained at depth. The 15:1 width to depth ratio for Trench 5 reveals a moderate fluvial energy system corresponding to a well-developed rhythmic bedded

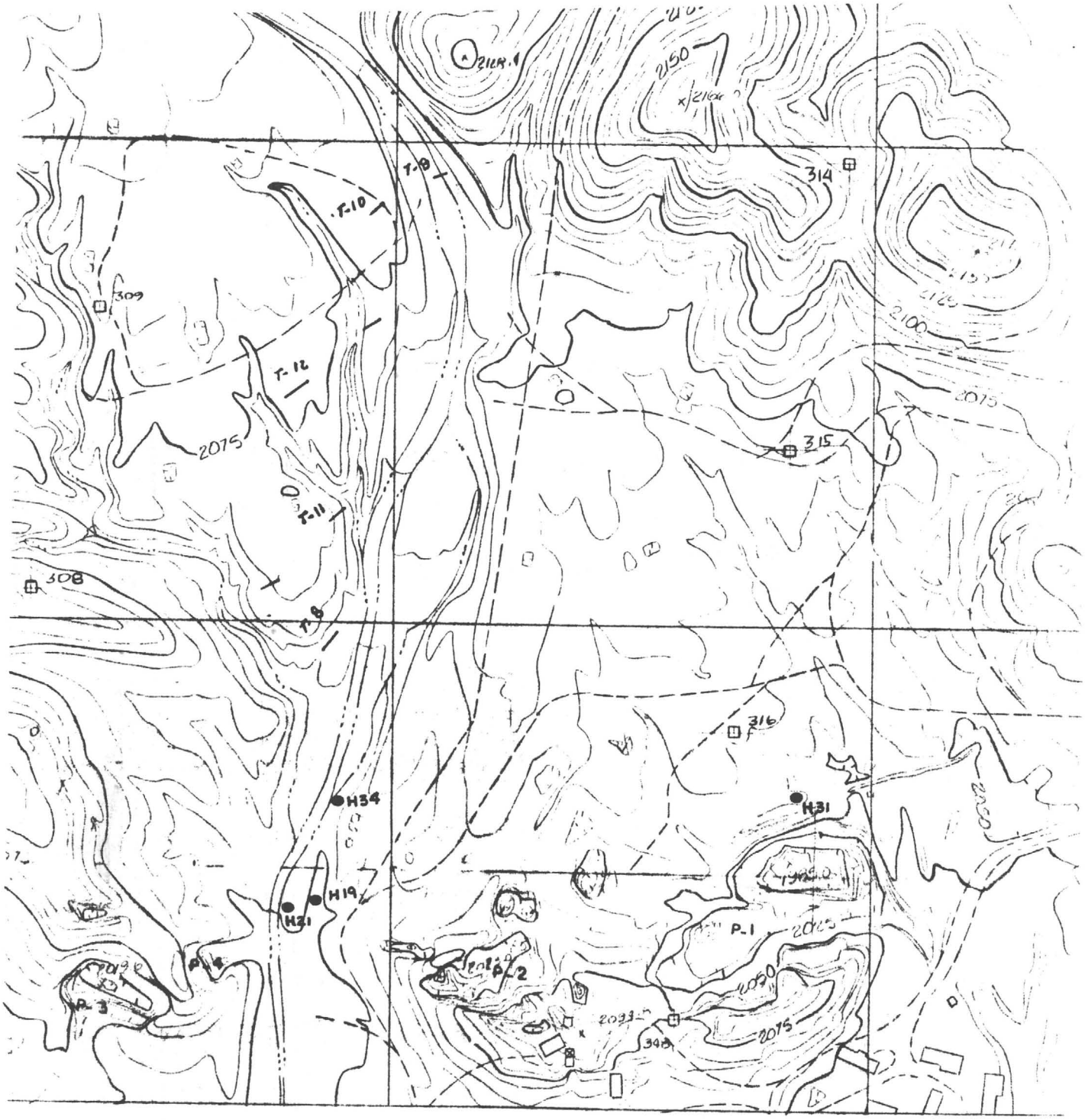


Figure 6
Vulture Mine Placer Project location of northern area sampled trenches and drill holes, T-9 sampled trench, .H34 sampled drill hole

PHOTOGRAPH 11

Sample 11-1-4 illustrating the upper well sorted fluvial channel overlying well bedded poorer sorted small pebble conglomerate

PHOTOGRAPH 12

Samples 12-1-2 and 12-1-3 illustrating graded moderate energy fluviate channel development

sedimentation pattern containing well-packed robust gravels at the bottom. A well-sorted fine grained sand overlies well-bedded and graded coarse fluvial gravels in Trench 7 (Appendix I and Photograph 10). The exposed alluvial section in Trench 6 suggests these low energy sediments occupy a relatively high level fluvial sequence relative to the more basal sections in Trenches 5 and 7.

3-6 Northern Placer

A total of five (5) trenches (Figure 6) were sampled in an area of broad but dissected alluvium north of the Vulture Mine. Four (4) of these excavations reached bedrock (Appendix I) and one (Trench 9 - not mapped) was cut in a gully containing active stream wash. All mapped trenches revealed progressively increasing fluvial sedimentation with depth reflected as graded bedding, increased sorting and packing. Relatively dense caliche was encountered cementing near surface rubble.

Mapping Trench 8 revealed a bedrock relief of at least two (2) feet overlain by a well-packed poorly sorted conglomerate containing metamorphic, igneous and conglomerate clasts. Trench 9 revealed a well-packed graded sequence with sub-rounded pebbles to 6 cms lying on a schistose bedrock. A similar coarse robust clastic sequence was evident on bedrock in Trench 12 (photograph 10). However, multiple scour channels containing small pebbles and grits were evident in the middle sections suggesting a change from relatively high energy robust fluvial action to overlying lower energy pulsating sedimentation. Although Trench 11 bottomed on hard caliche (false bedrock?), graded bedding with well-packed and sorted gravel lenses are very prevalent and suggest a modest energy

fluvial system (photograph 11).

3-7 Southwestern Placer

Trenching in this area was severely restricted by a thick layer of near surface hard caliche cemented cobble wash. Two trenches reached maximum practical excavation depth (Figure 7 and Appendix I) and will be discussed at length.

Trench 15 intersected multiple gravel horizons depicting pulsating fluvial sedimentation depositing rather thin pebble horizons followed by low energy weakly bedded pebbly sands. The igneous (dioritic) clasts are better rounded than the metamorphics probably reflecting durability factors rather than variable transport distance. Clast rounding is markedly better in the sampled portion than in the near-surface unsorted gravels.

The fluvial section exposed in Trench 16 contrasts greatly with Trench 15, as the clasts are nearly 100% porphyritic quartz diorite and more angular. A scattering of the greenish metamorphic clasts were seen in the excavation. The very uneven bedrock is essentially this same igneous rock, suggesting a very local source for this sediment. A relatively steep paleocurrent gradient (approximately 11%) coincides with the multiple narrow cut and fill high energy channel development.

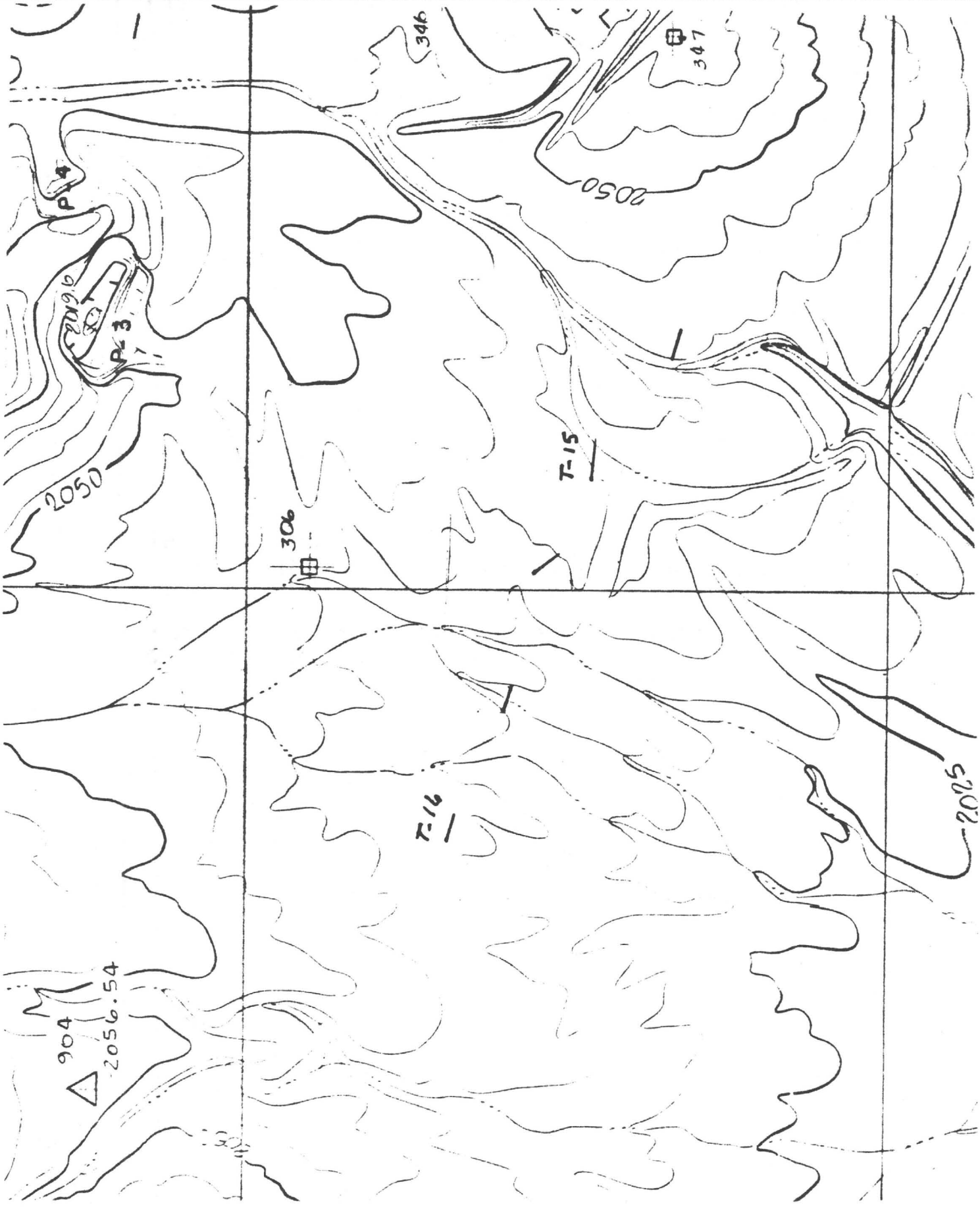


Figure 7
Vulture Mine Placer Project
Showing sampled trenches in southwest area.

VULTURE MINE PLACER SAMPLE DATA TABLE I

Sample No.	Depth Below Surface	Sample Wt. (lb.)	Sample Vol. (ft3)	Con. Wt. (g)	T. F. lb/cu.ft	Gold Nugget	Particle #1	Size Distribution #2	#3	Distribution Fines	Amalgamation Au mg.	Amalgamation Tails OPT	Plant Tails +10# Au	Plant Tails -10# Au	Placer Grade mg/cu.yd
1-1-1	1.5'-7.5'	909	12.00	927	75.75	----------	----------	----------	----------	----------	6.734	.005	.009	.001	15.15
1-1-2	7.5'-11.5'	730	8.00	673	91.25	----------	----------	----------	1	9	2.780	.007	.002	.002	9.38
1-1-3	11.5'-16.0'	1431	9.00	4635	159.00	----------	----------	----------	----------	14	13.145	.002	.001	.001	39.44
1-2-1	3.0'-7.5'	805	9.00	503	89.44	----------	----------	----------	----------	6	0.835	.010	.003	.002	2.51
1-2-2	7.5'-12.0'	718	8.00	399	89.75	----------	----------	----------	----------	11	3.210	.014	.002	.001	10.83
2-1-1	2.0'-6.5'	973	6.75	722	89.75	----------	----------	----------	----------	3	0.765	.002	.003	.002	3.06
2-1-2	6.5'-12.5'	1887	9.00	1126	144.15	----------	----------	2	----------	12	9.220	.004	.001	.002	27.66
3-1-1	6.0'-11.5'	1082	8.75	1643	123.66	----------	----------	----------	----------	3	1.990	.013	Tr	Tr	6.14
3-1-2	11.5'-16.5'	1069	6.50	553	164.46	2	1	15	----------	13	451.100	.023	.002	.002	1874.22
3-2-1	11.3'-16.5'	955	7.75	612	123.23	1	3	----------	2	23	107.310	.033	.005	.001	373.85
4-1-1	2.0'-7.2'	753	7.75	424	97.16	----------	----------	----------	----------	16	3.410	.045	Tr	Tr	11.88
4-1-2	7.2'-11.3'	747	6.25	413	119.52	----------	1	16	10	20	20.180	.013	.002	.001	87.18
4-2-1	7.3'-11.3'	757	6.00	468	126.17	----------	----------	5	7	51	11.950	.050	Tr	.0028	53.78
5-1-1	1.0'-4.0'	367	4.50	271	81.56	----------	----------	----------	----------	----------	0.040	.010	Tr	.001	0.24
5-1-2	4.0'-11.0'	1417	10.50	780	134.95	----------	----------	----------	----------	7	0.153	.037	Tr	Tr	0.65
5-1-3	11.0'-17.0'	1268	9.00	931	140.89	----------	----------	----------	----------	----------	0.062	.003	.001	Tr	0.19
6-1-1	0 -6.0'	840	9.00	1337	93.33	----------	----------	----------	1	6	0.140	.010	.001	.001	0.42
6-1-2	6.0'-11.0'	871	7.50	637	116.13	----------	----------	----------	----------	4	0.580	.011	Tr	Tr	2.09
7-1-1	1.0'-6.0'	283	3.75	70	75.47	----------	----------	----------	----------	----------	0.030	.528/.583R	.002	Tr	0.22
7-1-2	6.0'-10.25'	273	3.19	86	85.58	----------	----------	----------	----------	2	0.063	.096/.091R	.005	.002	0.53
7-1-3	10.25'-15.0'	849	7.00	949	121.14	----------	----------	2	----------	9	0.022	.005	.002	.002	0.08
8-1-1	0 -4.0'	667	4.00	349	166.75	----------	----------	----------	----------	2	0.026	.006	.002	.002	0.10
8-1-2	4.0'-8.0'	777	4.00	755	194.25	----------	----------	----------	----------	9	0.468	.006	.003	.002	3.16
8-1-3	8.0'-13.0'	701	4.83	461	145.13	----------	----------	----------	1	19	14.530	.020	.001	.004	81.22
9-1-1	0 -4.5'	771	6.50	1124	118.62	----------	1	1	----------	4	18.020	.031	.001	.001	74.85
10-1-1	0 -4.33'	971	6.50	824	141.08	----------	----------	----------	1	18	11.054	.014	.002	.008R	45.92
11-1-1	3.0'-6.7'	413	4.13	199	100.00	----------	----------	----------	----------	1	0.413	.008	.001	.002	2.70
11-1-2	6.7'-12.0'	973	8.00	784	121.63	----------	----------	----------	----------	6	3.180	.009	.002	.001	10.73
11-1-3	12.0'-16.3'	874	6.50	867	134.46	----------	----------	1	1	12	0.835	.002	Tr	.001	3.47
11-1-4	16.3'-20.3'	756	6.00	385	126.00	----------	----------	1	3	8	5.553	.014	.001	.004	24.99
12-1-1	4.0'-8.0'	796	6.00	587	132.67	----------	----------	----------	1	3	0.434	.006	Tr	Tr	1.95
12-1-2	8.0'-12.0'	828	6.00	569	138.00	----------	----------	----------	----------	10	1.430	.002	.001	.002	6.44
12-1-3	12.0'-15.5'	799	5.25	591	152.19	----------	----------	----------	2	8	0.838	.004	.001	.001	4.31
13-1-1	0 -4.9'	568	4.79	289	118.58	1	2	4	10	59	66.650	.663/.467R	.002	.003	375.69
14-1-1	9.0'-15.0'	1026	9.00	1195	114.00	----------	----------	----------	----------	16	2.455	.003	.004	.001	7.37
15-1-1	8.0'-11.7'	620	5.50	2480	112.73	----------	----------	----------	----------	----------	0.179	.005	.001	Tr	0.88
15-1-2	11.7'-16.0'	990	6.50	1350	152.31	----------	----------	----------	----------	8	14.300	.002	Tr	.001	59.40
16-1-1	7.0'-11.0'	623	6.00	247	103.83	----------	----------	----------	1	24	1.800	.014	.001	.001	8.10
16-1-2	11.0'-17.0'	1029	9.00	284	114.33	----------	2	1	20	133	74.160	1.028/1.133R	.002	Tr	222.48

4. RESULTS

Evaluation of placer deposits is frequently haunted by the well-known particle sparsity effect. Sample processing efficiency can be yet another critical concern in determining the economic viability of a property. Sedimentological aspects of placer geology frequently explains the seemingly random and high gold distribution found in many placers. The following discusses each aspect in some detail striving to rationalize area evaluation.

4-1 Sample processing consistency can be considered good when viewing the linear relationship between concentrate weight vrs. sample weight in Figure 8 indicating a consistent relationship in recovery efficiency. Two samples (1-1-3 and 15-1-1) deviate from this well-defined trend, both of which contained abnormally high concentrate weights but low gold values.

4-2 Bulk density calculations (Table I and Appendix I) indicate that the gravel becomes more dense with depth reflecting compaction/packing density coinciding with the general increased fluviate sedimentation energy at depth. Minor amounts of caliche apparently only subtly effect bulk density levels, with the exception of Trench 12. The high bulk densities in Trench 8 are attributed to the well lithified nature of these sediments. It is interesting to note the sample that contained very high concentrate weights also correlates with a high bulk density (e.g. 1-1-3:4635 gms; 159.00 lb/cu. ft.) respectively.

4-3 Assay results are found in Table I and Appendix III along with general amalgamation-assaying procedures. Silver is not reported for the amalgamation step due to the pre-amalgamation (nitric acid) treatment of

BLACK SAND CONCENTRATE WEIGHT (gms.)
2500
2000
1500
1000
500
SAMPLE WEIGHT (lbs.)
500
1000
1500
2000
4235g.

FIGURE 8

the concentrates. Silver results for all fire assays are found in Appendix III, however are not reported in Table I due to their relatively low values. Each "fence" area will be discussed individually similar to Chapter 3 striving to evaluate economic significance to the large volume essentially geochemical samples.

4-3-1 Southeastern Placers

A total of four (4) channels were cut in three (3) trenches accounting for eight (8) large volume samples in this ±240-foot-wide channel. Trench 14 is considered to occur in a parallel but separate fluvial system. Geologic mapping (Appendix I) has indicated general increased fluvial energy with depth correlating with a commensurate increase in gold content. Samples 1-2-2 and 13-1-1 consist of multiple high energy fluvial channels deposited on bedrock marginal to the main channel. The disparity in gold content (1-2-2, 10.83 mg/cuyd vrs. 13-1-1, 375.69 mg/cuyd) relates partially to the probable reworking of gold in the younger (13-1-1) channel relative to the main channel. A very interesting and significant feature is the grade increase factors for 1-2 and 2-1 which should be located over this main channel axies. Should this significant multiplier continue (4.3:1 for 1-2 and 9.04:1 for 2-1). Then this channel could contain economic gold values for a significant portion of its several 1,000 foot strike length.

The one sample in Trench 14 (14-1-1) signifies that this auriferous low energy fluvial sedimentation constitutes background level values for upper profile sediments.

4-3-2 Southern Placers

Underlying the existing Vulture Mine tailings is a probable network of juvenile fluvial channels at least partially derived from the Vulture Mine outcrop system. Numerous references refer to the very bold pre-mining outcrop character of the Vulture Mine vein. Calculations indicate that the 45° dipping vein would liberate 13,575 ounces per vertical foot of erosion (e.g. 1,000' long x 32' wide x sec 45° x 0.30 opt Au) a large part of which would have been transported southward in the paleo drainage system.

Two trenches penetrated the mine tailings revealing a moderate-high energy fluvial system containing very encouraging gold concentrations which correlate with sedimentation characteristics and provenance area. Values are tabulated for Trenches 3 and 4 (Table I and Appendix I) and will be discussed in detail below:

	Total	Nugget	Residual	% Total
3-1-2	1843.8 mg/cuyd	859.86 mg/cu yd	983.94 mg/cuyd	53.4
3-2-1	373.85 mg/cuyd	314.06 mg/cuyd	59.79 mg/cuyd	16.0
Ave.	1123.83 mg/cuyd	586.96mg/cuyd	521.87 mg/cuyd	46.4

It becomes apparent from the above calculations (3-2-1 is a duplicate sample from opposite side of the trench from 3-1-2) that the 521.87 mg/cuyd average without nuggets is an attractive and probable economic placer grade with an approximate 1:1 strip ratio (tails negated). Nuggets will be a significant and real contribution to grade.

Trench 4 is approximately 170 feet west and within the same fluvial system as Trench 3 (Figure 3 and 4). Sample values from adjacent duplicate

samples are compared below:

4-1-2	87.18 mg/cuyd	
4-2-1	53.78 mg/cuyd	No nuggets recovered
Ave.	70.48 mg/cuyd	

Careful inspection of geologic mapping in Appendix I will reveal that these samples did not reach bedrock. Also, a concentration ratio of 1:7.3 between 4-1-1 and 4-1-2 indicates very significant accumulation of gold with depth suggesting continuing concentration ratios downwards with 3-1-2 and 3-2-1 level values likely on bedrock.

A random bulk sample from Trench 3 spoils was processed in the existing plant (Photograph 2). The magnetic fraction was removed and the resultant concentrate submitted for a geochemical scan. This analysis (Appendix IV) confirmed the presence of unoxidized galena seen in Trench 3 and 4 concentrates. A whitish-blue fluorescent mineral, tentatively identified as scheelite, is probably barite and zircon based on these analysis. The significance of this analysis again suggests the Vulture Mine outcrop is the primary provenance area for this placer as galena was one of the prime ore minerals obtained from the Vulture Mine. This concentrate also contained significant quantities of metallic gold ranging in size from 3 mm to -150 mesh.

4-3-3 Eastern Placers

Geological mapping in this area (refer to Chapter 3-5) indicates that well-incised fluvial systems of moderate energy level occur in the three sampled trenches. Channel mapping (Appendix I) reveal graded bedding culminating in well-developed gravels at the base of Trenches 5 and 7.

Values reported for these samples are the lowest for all placers

sampled in the Vulture Mine area and a concentration ratio increase with depth is not evident. The gold grains recovered are very small and dispersed.

4-3-4 Northern Placer

These five (5) trenches and four (4) drill holes (Table II) effectively sampled the fluvial profile immediately north of the Vulture Mine. Significant gold increases with depth were registered for Trench 8 and to a less extent in Trench 11. Particulate gold seen in these samples (refer Gold Particle Size Distribution, Table I) reveals that the particulate gold is almost universally fine grained and very juvenile with angular flat and wire forms predominating. Some of these gold grains were sufficiently thin to overcome surface tension/specific gravity relationships and floated during the concentrate clean-up operation.

Gold recovered in Trench 9, which was excavated to bedrock in active stream wash, revealed two larger gold grains that were moderately well rounded and coated with iron and calcium. The accompanying small grains were similar to the gold recovered in the adjacent Trench 10 which was excavated in well-packed older gravels lying directly on bedrock. The conclusion from the above reveals that the coarser gold in Trench 9 was derived from a more distant source than the small angular grains which are more characteristic of this immediate area.

Select drill cuttings from previously drilled reverse circulation holes were hand panned and the black sand concentrate fire assayed. Scattered very small angular gold grains were visible in some samples (Table II). However, value levels were very low and further indicates the

TABLE II

VULTURE MINE PLACER SAMPLES
DRILL CUTTINGS

Hole No.	Location	Conc(g)	Au (mg)	Ag	Comments
H19 0-5	26,418N/20,846E	7.0	.012	.30	
5-10		2.0	Tr	.20	
10-15		45.0	.110	.20	
15-20		18.0	.02	.25	1 Au grain
H21 0-5	26,418N/20,783E	NA	.017	NA	
5-10		NA	.058	NA	
H31 5-10	16,666N/21,840E	NA	.081	NA	
10-15		5.0	.124	.35	
15-20		1.5	.050	1.85	1 Au grain
H34 10-15	26,633N/20,880E	NA	.026	NA	
15-20		40.0	.005	.35	2 Au grains

local provenance area for these sediments contained only fine-grained free gold. The seemingly high silver values in the concentrates could benefit "hard rock" geochemical prospecting.

4-3-5 Southwestern Placer

The geological contrast between the two deep trenches in this area (Chapter 3-7) is further enhanced by their value distribution noted in Table I. It becomes readily apparent that the angular and platy juvenile character of the recovered gold is entirely compatible with the host semi-angular dioritic sediments. This suggests a very local source -- either the Vulture Mine workings or some other provenance location -- for these values.

Value concentration ratios with depth are impressive for both trenches and indicates a fairly active sedimentation history for these southerly trending paleo channels. The steep paleocurrent gradient and multiple robust gravel formation (Appendix I) also attests to a vigorous sedimentation environment supplied from an adjacent provenance zone. The amalgamation tail assays would indicate that very fine grained gold is still contained within some heavy mineral.

5. CONCLUSIONS

The wide range of fluvial sedimentation seen during this reconnaissance evaluation of the Vulture Mine property generally consists of well incised linear channels developed relatively high on the fluvial paleoslope. These drainage patterns were probably formed at the close of the Pliocene and reached their present state of maturity during the Pleistocene humid climatic cycle. These alluvial systems degenerated with increasing aridity to the present day narrow incised gullys that are not appreciably reworking the eroding older gravels. Gold distribution profiles adequately reflect this sedimentological pattern with the very high value concentration ratios and coarser gold distribution favoring bedrock locations. Placer gold particle distribution and related values obtained from these 39 channel samples strongly suggest the Vulture Mine outcrop system was the dominant provenance area for the resulting alluvials. The measured southerly paleocurrent direction suggests the important placer concentrations will be located south of the Vulture Mine -- which is, in fact, the case. Significant quantities of fine grained angular gold in the Northern Placer area (Chs. 3-6 and 4-3-4) indicates that a secondary provenance is very likely north of the Vulture Mine.

This geological-sedimentological evaluation combined with careful sampling has revealed a significant placer potential for the Vulture Mine measuring in the 100,000's cubic yard range within the trenched areas. Specific areas containing potential economic gold values (say +200 mg/cu yd) or important geochemical concentrations will be defined based on geological deduction, value distribution and inferred economic considerations.

6. RECOMMENDATIONS

Specific areas of interest lie south and adjacent to the Vulture Mine outcrop system. Each area will be discussed briefly in order of importance striving to formulate objective economic decision making goals based on reconnaissance sampling.

6-1 Southern Placers

Channel samples in two (2) trenches revealed very attractive economic grades on bedrock (3-1-2 and 3-2-1 avg 112.3:83 mg (cu yd) and highly anomolous values (4-1-2 and 4-2-1; ave 70.48 mg/cu yd) in mid level gravels. Figures 3 and 4 indicates a pre-tailings erosion basin containing an inferred area of 15.2 acres supplied by Vulture Mine outcrop material as indicated by geologic observations and abundant galena in plant concentrates (Appendix IV).

Approximately 46.4% of the average value from Trench 3 bedrock channels (e.g. 521.87 mg/cu yd) are contained within the -1.5 mm gold particle size. These channels were approximately five (5) feet long, indicating a 1:1 strip ratio discounting overlying potentially economic mine tails.

The inferred volume of 120,000 cubic yards combined with a conservative grade of 500 mg/cubic yard based on these preliminary sampling results, indicates this area could provide economic grade gravel to a modest size placer plant. Reconnaissance drilling would be warranted to substantiate this preliminary geologic conclusion and could expand reserves

in a southerly direction.

6-2 Southwest Placer

The relatively isolated position of Trench 16 and its differing sedimentological-geological characteristics compared to other fluvial systems precludes definite grade-volume estimations. However, the approximate 2:1 overburden to "ore" strip ratio is a positive feature along with the abundance of fine gold particles facilitating probable higher confidence level grade determinations (e.g. subdued particle sparsity effect). In essence, this area must be considered a second priority but important placer drilling target.

6-3 Southeastern Placer

This third priority selection is based on its southerly drainage position relative to the Vulture Mine and the potentially economic grade channel in Trench 13 indicating that economic bedrock concentrations could exist in this area. The numerous intersecting trenches suggest a channel width ±240 feet and approximate maximum depth of 30 feet (never reached by the back hoe). Considering the basal five (5) feet could be economic (5:1 strip ratio) then this channel could produce say 45,000 cubic yards per linear 1,000 feet. Select drilling is required to confirm the above geologic prediction.

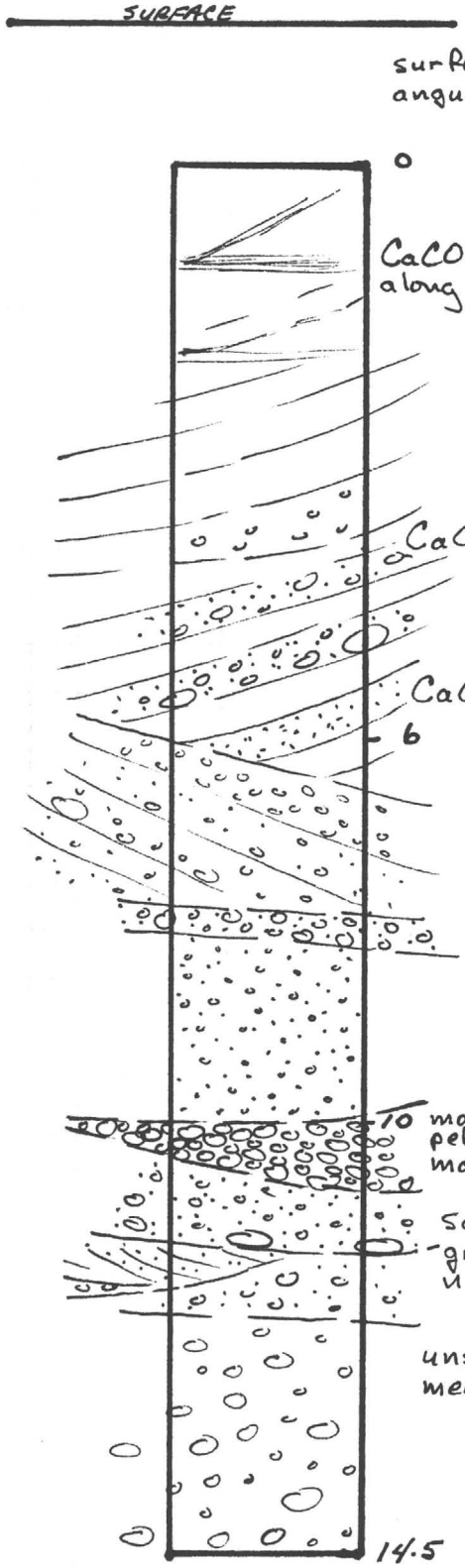
The above three (3) prioritized placer drilling targets could, in their entirety, produce an attractive modest (say 150 cuyd/hr.) placer operation. Obviously, the southern placer area has the highest probability of producing an economic placer on its own merits. The overlying possibly economic mine tailings must also be considered in the economic feasibility

study for this small area. A modest drilling program could very well expand the economic scope for this historic property to the position of a modest placer gold producer for a substantial period.

James M. Prudden
Consulting Geologist
AIPG No. 4455

APPENDIX I

VULTURE MINE PLACER PROJECT
TRENCH 1
CHANNEL 1



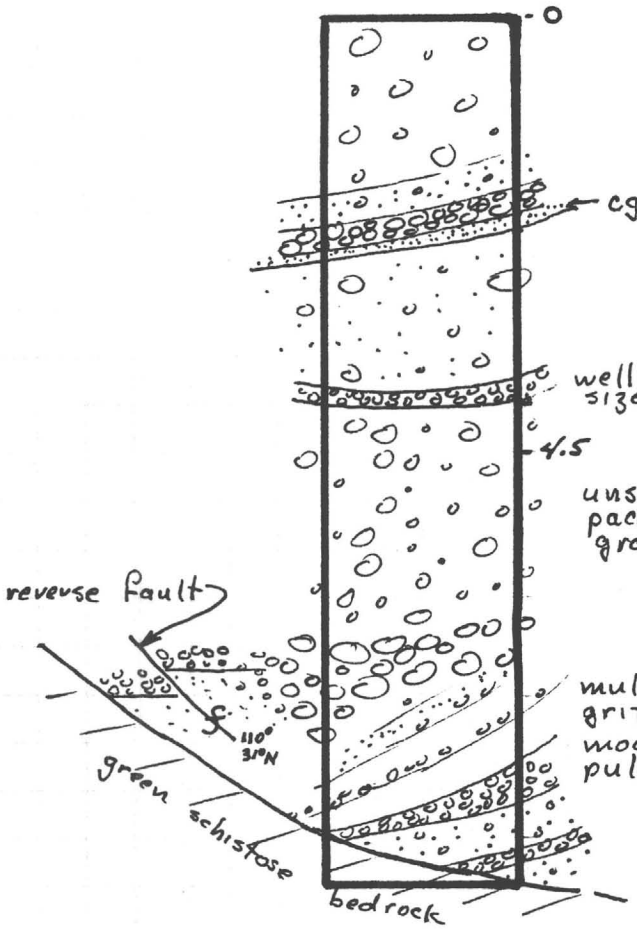
1-1-1: 15.15 mg/cuyd
75.75 lb/cuft

1-1-2: 9.38 mg/cuyd
91.25 lb/cuft

1-1-3: 39.44 mg/cuyd
159.0 lb/cuft

total fluvial sequence graded, most individual sed. phases mod-well sorted; clasts semi-angular, rounding 3-4; 70% clasts green schistose metamorphics to 35cms, 28% clasts igneous & 2% clasts basalt

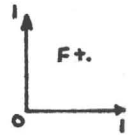
VULTURE MINE PLACER PROJECT TRENCH 1 CHANNEL 2



1-2-1: 2.51 mg/cuyd
89.4 lb/cu ft

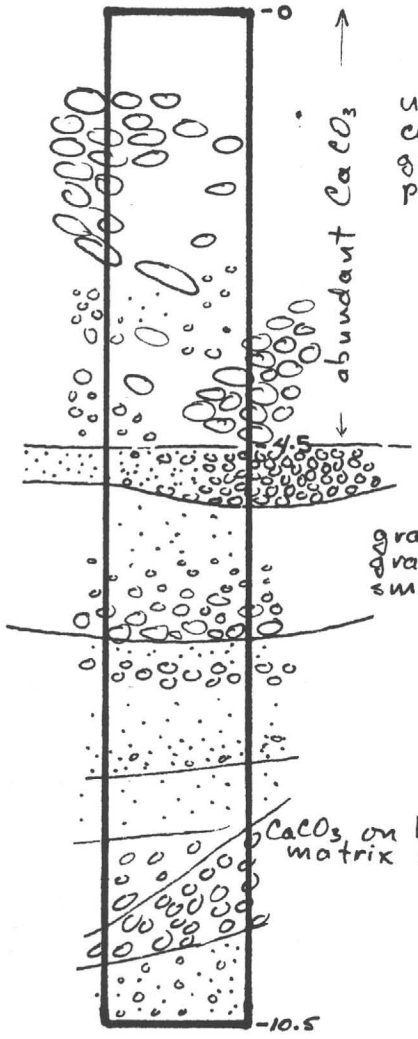
1-2-2: 10.83 mg/cuyd
89.75 lb./cu ft

similar fluvial sequence to channel 1. bedrock influence on sedimentation very evident, clastic matrix coarse grained, semi-consolidated containing only minor clay; scour troughs 185° azm.



VULTURE MINE PLACER PROJECT TRENCH 2 CHANNEL 1

SURFACE



unsorted large pebble-cobble gravel in coarse grained sand-grit-small pebble matrix

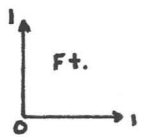
2-1-1: 3.06 mg/cuyd
89.75 lb/cu ft.

graded sequence from coarse grained sand to well sorted small-medium pebble gravel

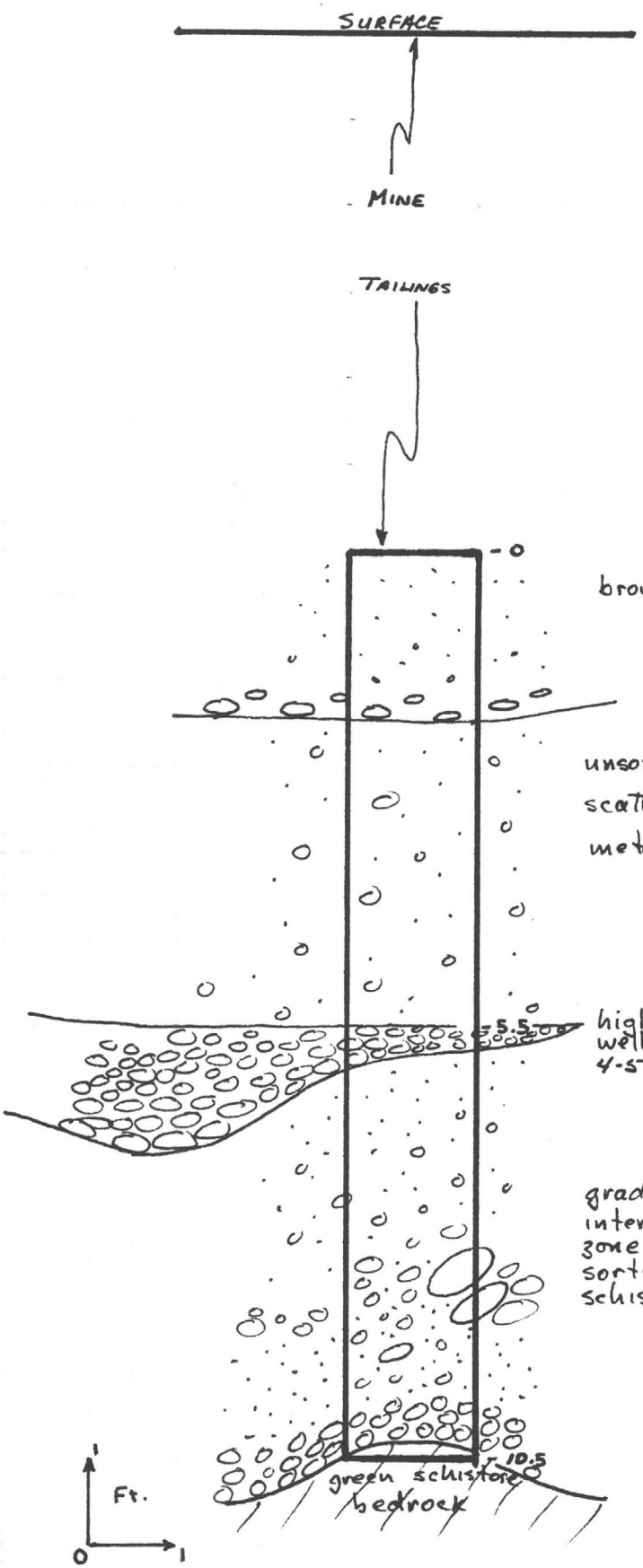
2-1-2: 27.66 mg/cuyd
144.15 lb/cu ft

$CaCO_3$ on bedding planes & minor matrix cement.

contains lower energy fluvial sedimentation than Trench 1 seen as smaller pebbles & lower angle trough scours



VULTURE MINE PLACER PROJECT TRENCH 3 CHANNEL 1



brown sandy soil

unsorted sand containing scattered sub-angular metamorphic clasts

3-1-1/6.14 mg/cuyd
lb/cu ft
123.66

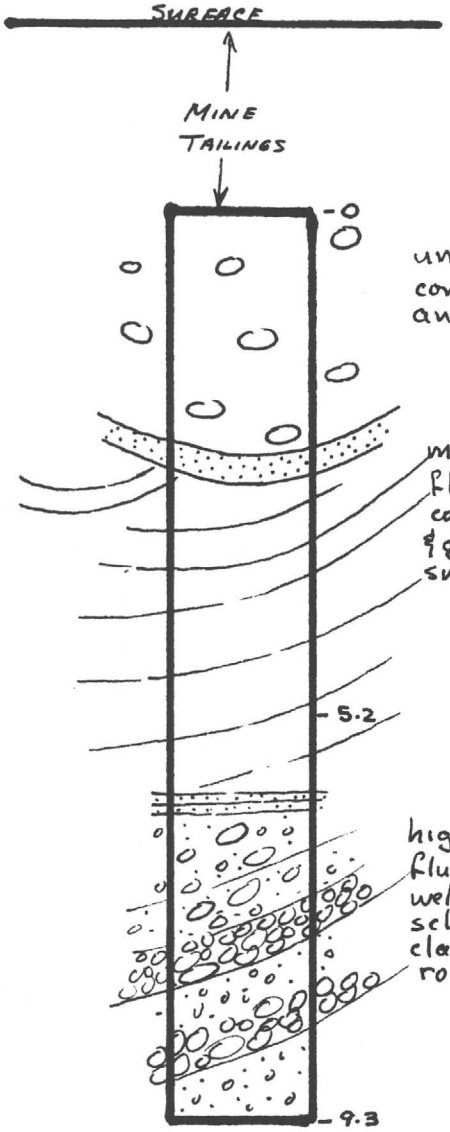
high energy fluvial channel well sorted & packed, rounding 4-5°, channel axies 195° 040°S.

graded coarse pebbly sand w/ intermediate cobbles & pebble zone, basal well packed & sorted gravel on smooth schistose bedrock

3-1-2 : 1874.22 mg/cuyd
164.46 lb/cu ft

[NOTE: adjacent sample
3-2-1: 373.85 mg/cuyd
123.23 lb/cu ft.

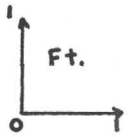
VULTURE MINE PLACER PROJECT TRENCH 4 CHANNEL 1



4-1-1: 11.88 mg/cuyd
97.16 lb/cu ft.

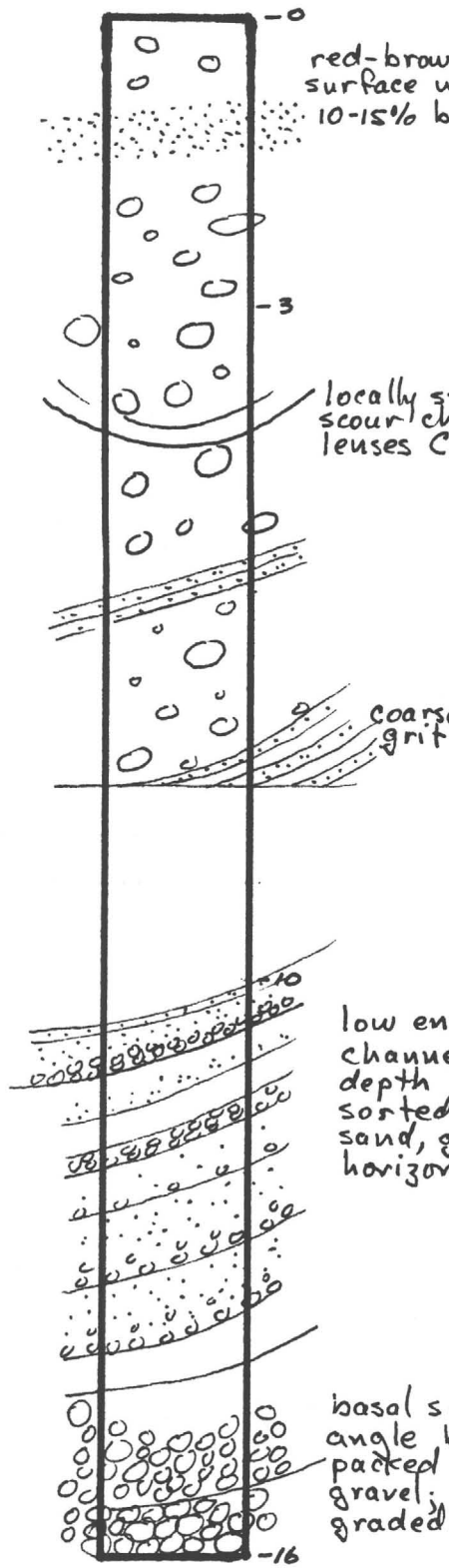
4-1-2: 87.18 mg/cuyd
119.52 lb/cuft

[NOTE: adjacent sample
4-2-1: 53.78 mg/cuyd
126.17 lb/cuft



VULTURE MINE PLACER PROJECT TRENCH 5 CHANNEL 1

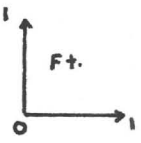
SURFACE



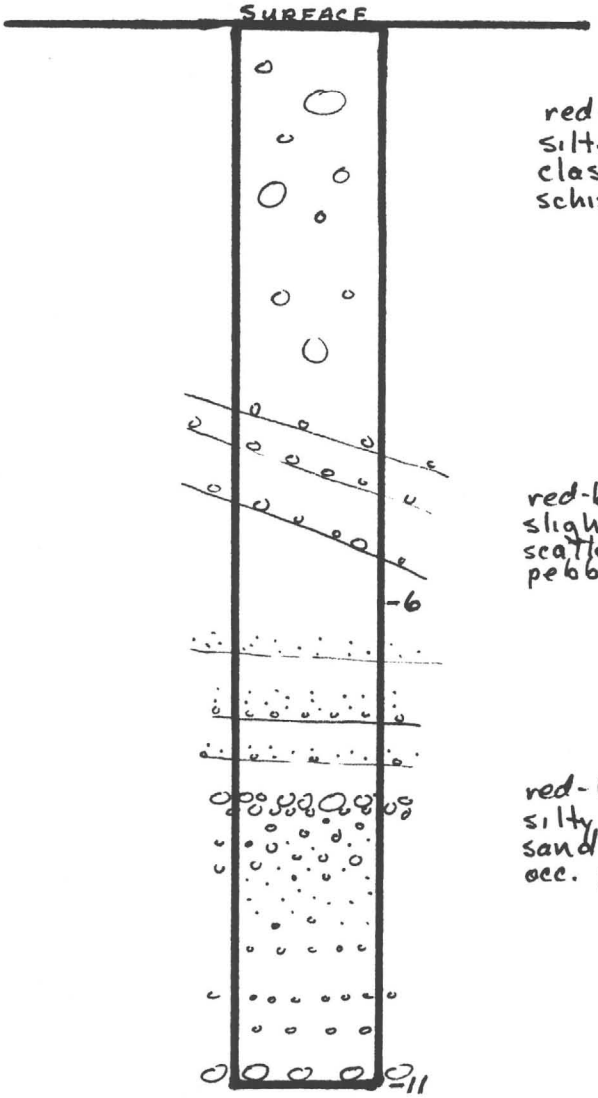
5-1-1: 0.24 mg/cuyd
81.56 lb/cu ft

5-1-2: 0.65 mg/cuyd
134.95 lb/cu ft

5-1-3: 0.062 mg/cuyd
140.89 lb/cu ft.



VULTURE MINE PLACER PROJECT TRENCH 6 CHANNEL 1



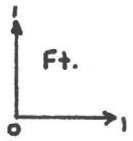
red-brown soil, silt & sand scattered clasts basalt, diorite & schistose metamorphic

6-1-1: 0.42 mg/cuyd
93.3 lb/cu ft

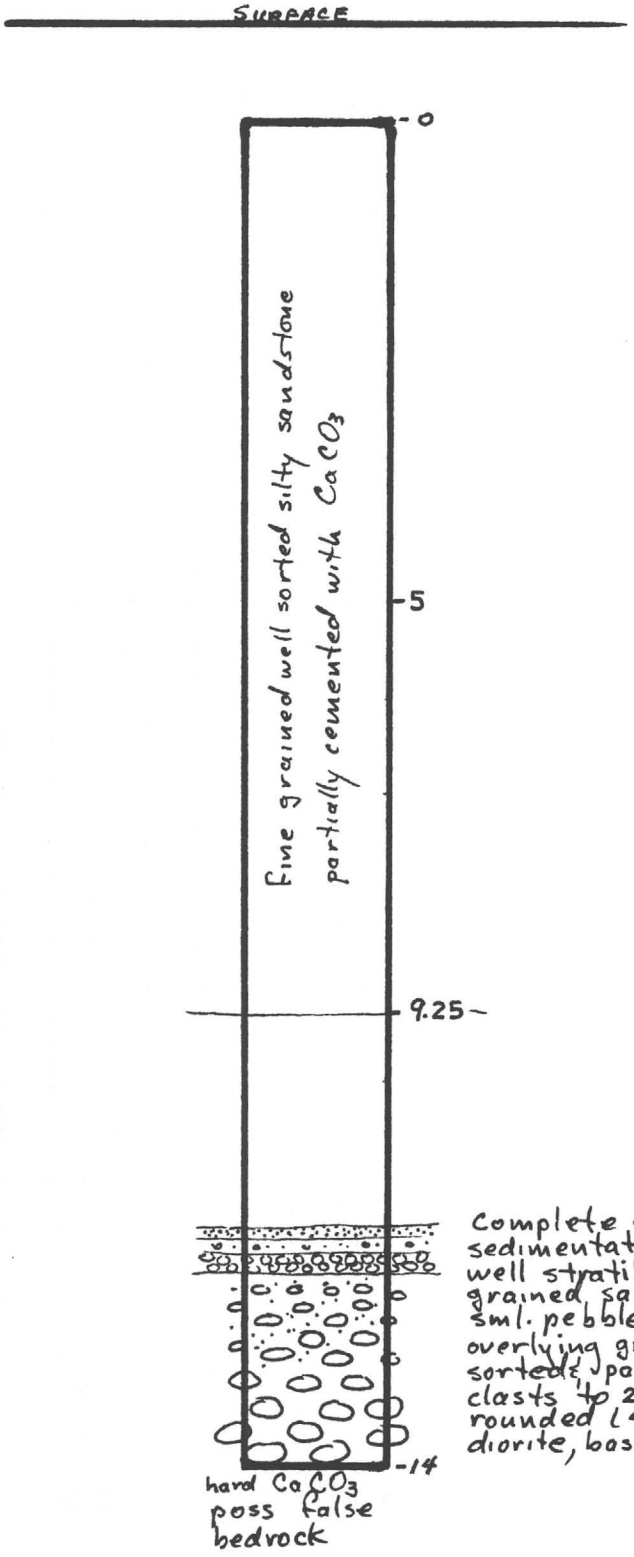
red-brown sand slightly winnowed scattered clasts/ pebble

red-brown slightly silty coarse grained sand & grit containing occ. pebble zone

6-1-2: 2.09 mg/cuyd
116.13 lb/cu ft.



VULTURE MINE PLACER PROJECT
TRENCH 7
CHANNEL 1

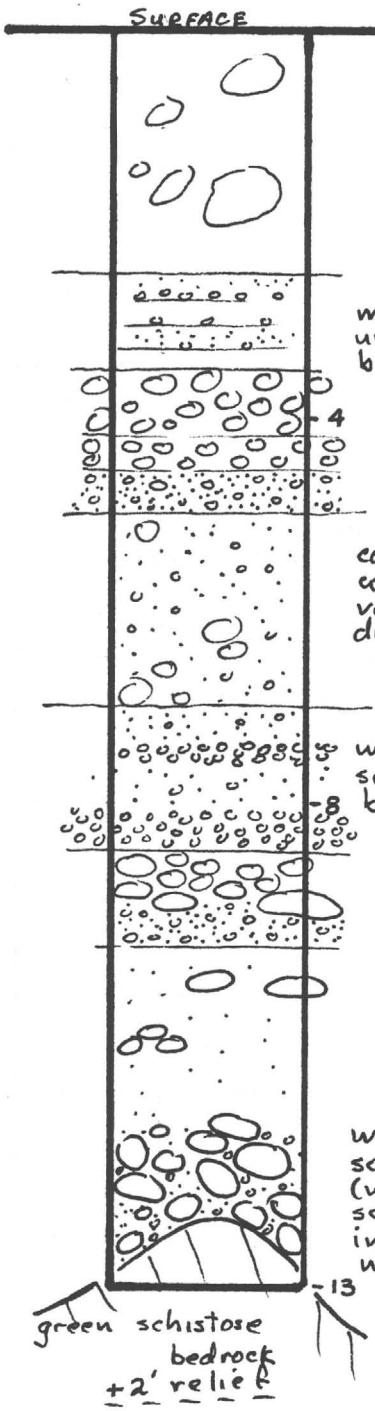


7-1-1: 0.22 mg/cuyd
75.47 lb/cu ft

7-1-2: 0.53 mg/cuyd
85.58 lb/cu ft

7-1-3: 0.08 mg/cuyd
121.14 lb./cu ft

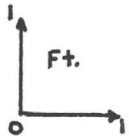
Vulture Mine Placer Project Trench 8 Channel 1



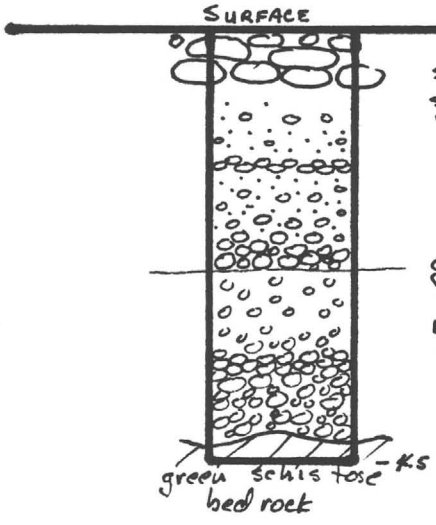
8-1-1: 3.16 mg/cuyd
166.75 lb/cu ft

8-1-2: 0.18 mg/cuyd
194.25 lb/cu ft

8-1-3: 81.22 mg/cuyd
145.13 lb/cu ft



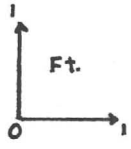
VULTURE MINE PLACER PROJECT
TRENCH 10
CHANNEL 1



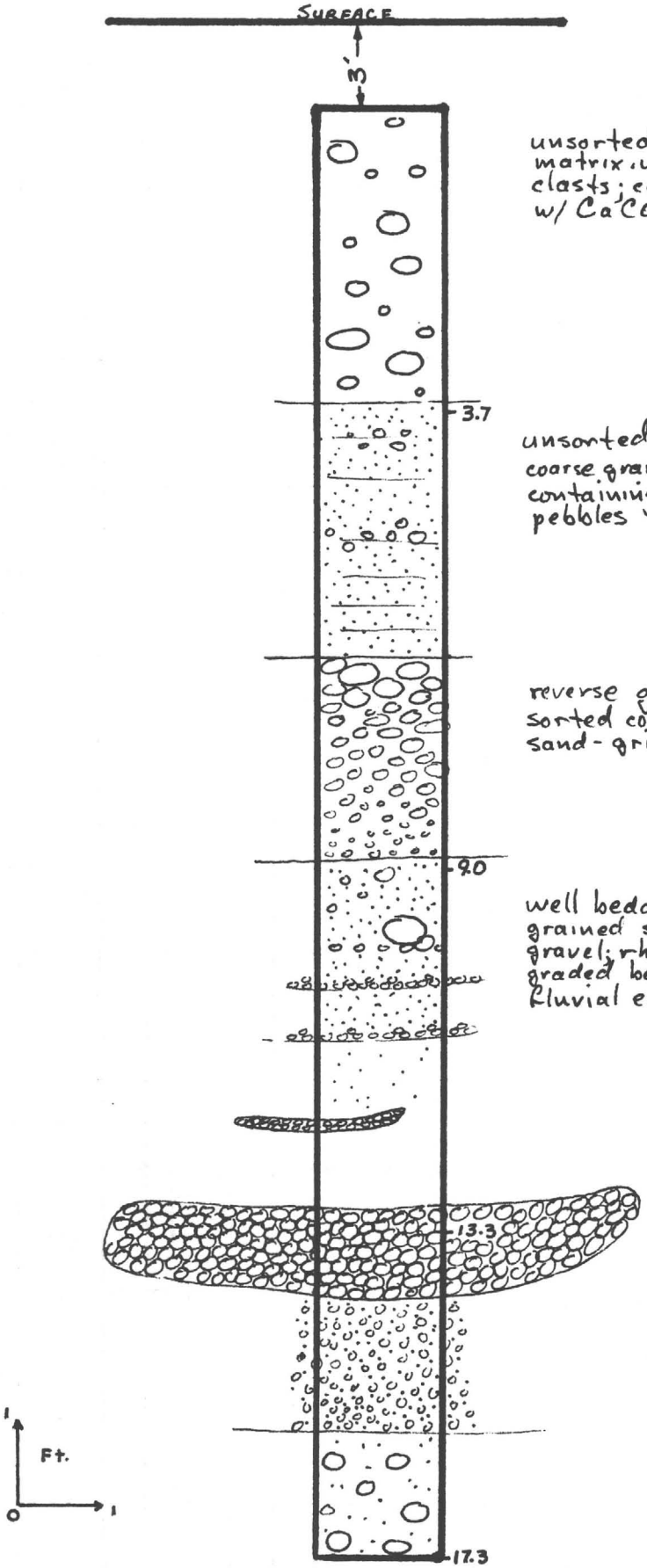
surface sandy; diorite, basalt, schistose cobbles to 20 cms, mod well rounded

graded sequence containing progressivly higher % gravel mod. sorted & packed at base pebbles to 6 cm; schistose metamorphic pebbles semi-angular (Rounding 3-4) to 10 cms. at base.

10-1-1 : 45.92 mg/cuyd
141.08 lb/cuft



Vulture Mine Placer Project
Trench 11
Channel 1



unsorted sand matrix, unsorted clasts; cemented w/ $CaCO_3$

11-1-1: 2.70 mg/cuyd
100.0 lb/cu ft

unsorted, mod-bedded coarse grained sand & grit containing scattered small pebbles

11-1-2: 10.73 mg/cuyd
121.63 lb/cu ft

reverse grading, poorly sorted coarse grained sand-grit matrix

well bedded series coarse grained sand, small pebble gravel; rhythmic sedimentation & graded bedding in low energy fluvial environment

11-1-3: 3.47 mg/cuyd
134.46 lb/cu ft

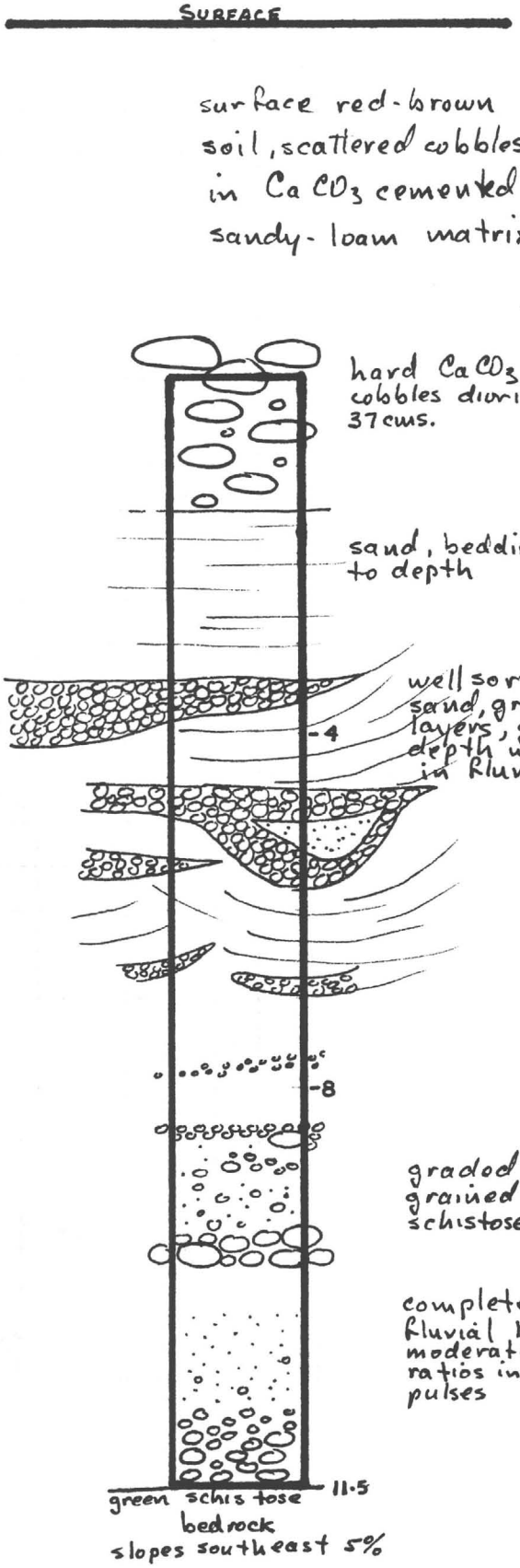
very well packed & sorted high energy fluvial channel; clasts to 8cms, semi-angular (Rounding 3)

11-1-4:
24.99 mg/cuyd
126.0 lb/cu ft

mod. sorted sand-grit-sml. pebble sediment, loosly cons.

poorly packed & sorted sandy gravel; highly $CaCO_3$ cemented.

VULTURE MINE PLACER PROJECT TRENCH 12 CHANNEL 1

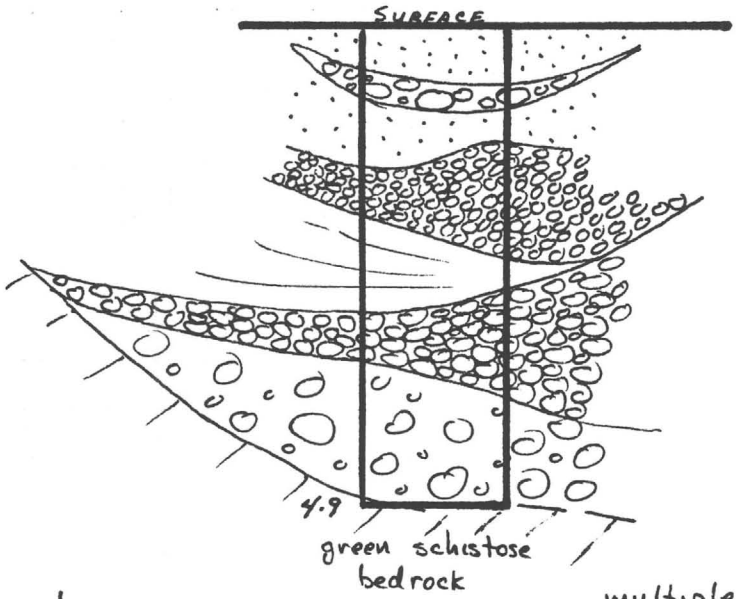


12-1-1: 1.95 mg/cuyd
132.67 lb/cuft

12-1-2: 6.44 mg/cuyd
138.0 lb/cuft

12-1-3: 4.31 mg/cuyd
152.19 lb/cuft

VULTURE MINE PLACER PROJECT TRENCH 13 CHANNEL 1



minor $CaCO_3$ cement in sand matrix

well packed & sorted small pebble gravel, high energy scour channel. clasts semi-angular (Rounding 3-4)

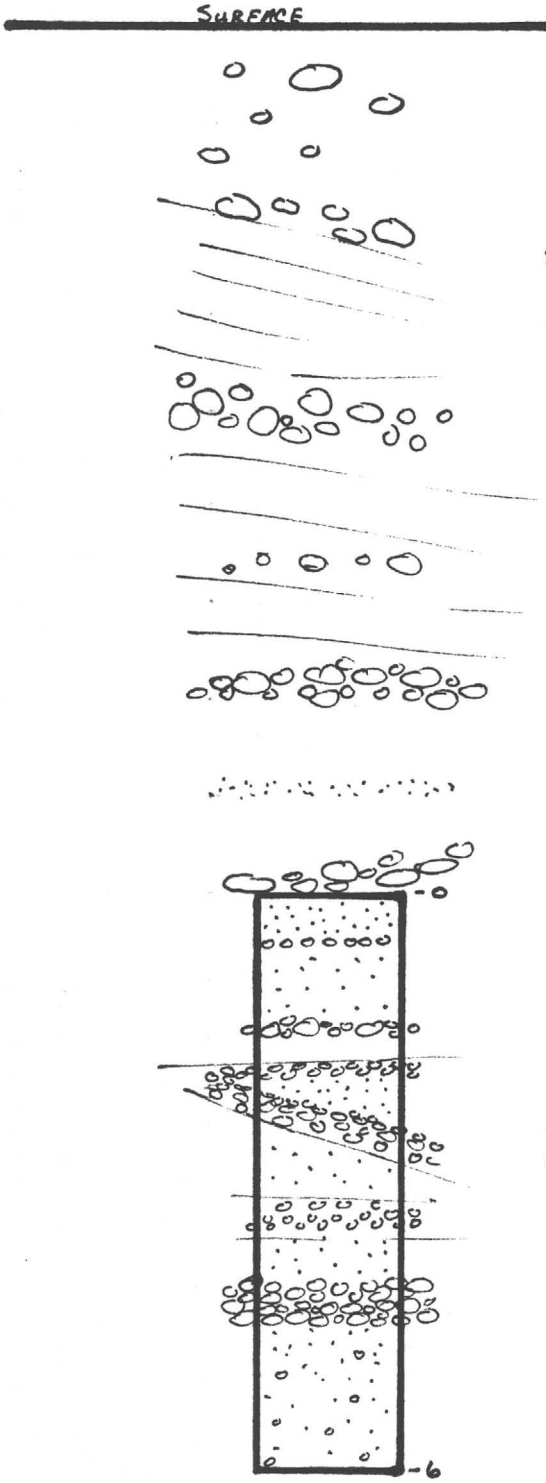
moderatly sorted, well packed small pebble gravel (2cm. avg.)

poorly packed & sorted coarse sand containing 10cm schistose clasts

multiple fluvial pulses high energy and lap onto well incised bedrock channel contour

13-1-1:
375.69 mg/cuyd
118.58 lb/cu ft

VULTURE MINE PLACER PROJECT TRENCH 14 CHANNEL 1

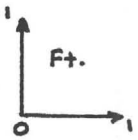


Sequence of poorly bedded & sorted coarse grained sand, grit & pebbly sand units

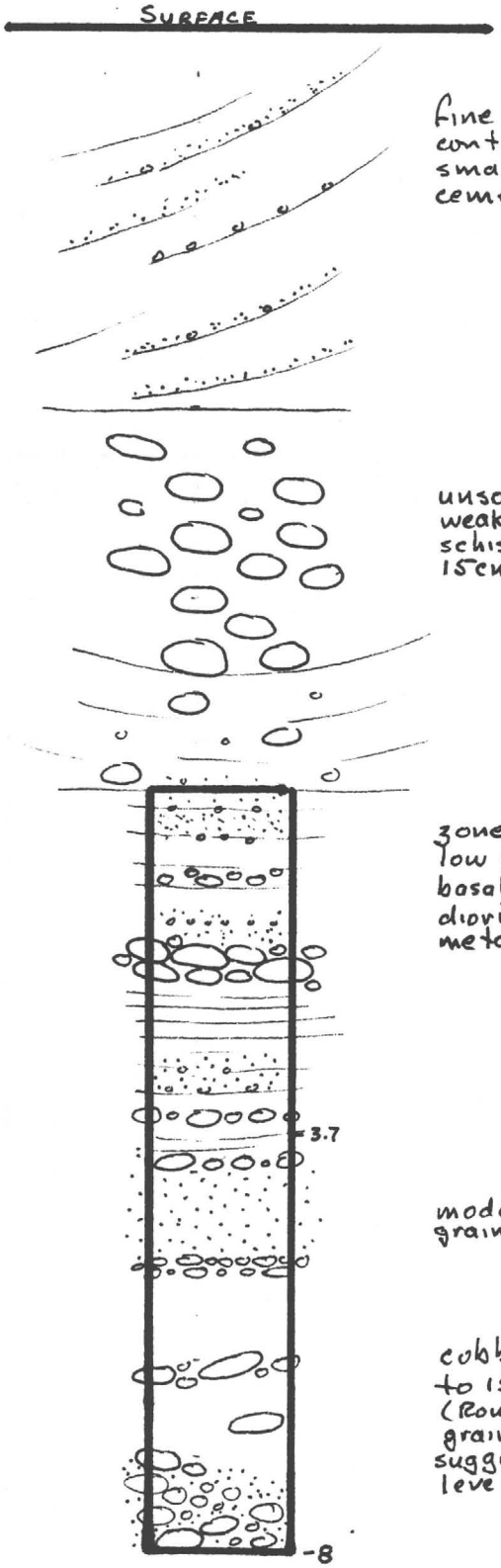
cyclic fluvial low-moderate energy sed. pulses in wide channel environment

14-1-1: 7.37 mg/cuyd
114.07 6/cu ft

gravel lenses mod. packed & sorted, clasts semi-angular (Rounding 3) in gritty sand matrix; sequence largely unconsolidated.



VULTURE MINE PLACER PROJECT TRENCH 15 CHANNEL 1



fine grained sands containing lenses grits & small pebbles, highly cemented with $CaCO_3$

unsorted unconsolidated weak bedded cobble unit; schistose metamorphics to 15cms. semi-angular (Rounding 3)

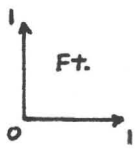
zone of rythmic graded low energy fluvial sediments, basal gravel mod-well packed diorite (Rounding 5) schistose metamorphic (Rounding 4)

15-1-1: 0.88 mg/cuyd
112.73 lb/cu ft

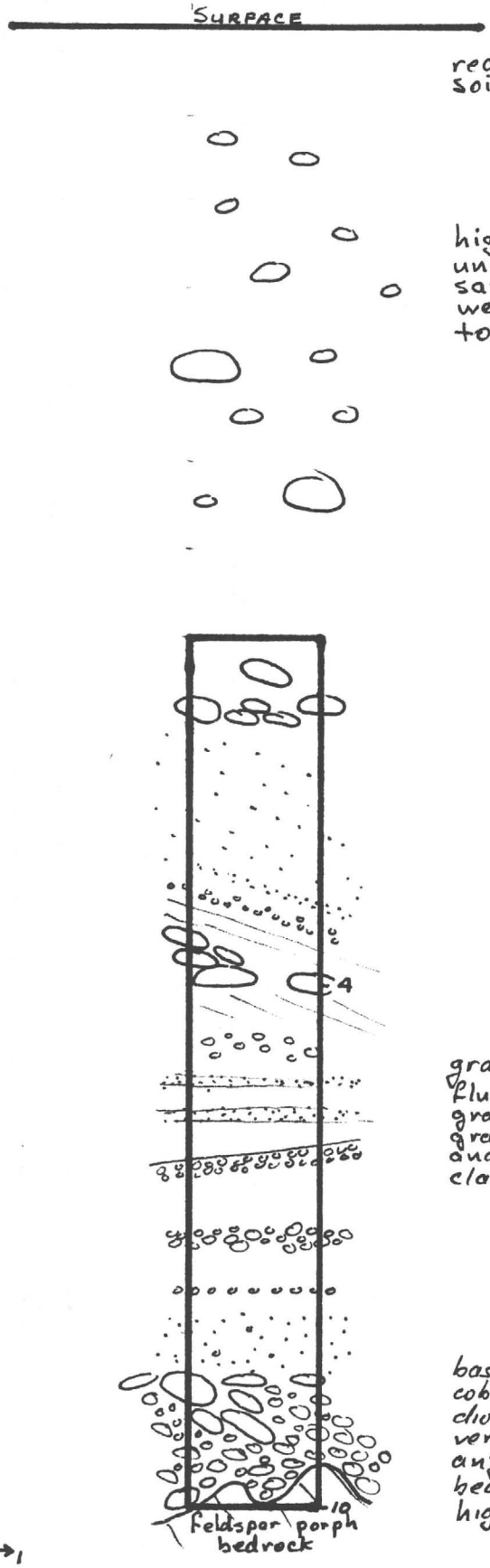
moderatly sorted coarse grained sand-grit

15-1-2: 59.4 mg/cuyd
152.31 lb/cu ft.

cobble-pebble clasts to 15cms, semi-rounded (Rounding 5-6) in coarse grained sand matrix suggesting low-moderate level fluvial energy



VULTURE MINE PLACER PROJECT TRENCH 16 CHANNEL 1



16-1-1: 8.10 mg/cuyd
103.83 lb/cu Ft

graded sequence, several fluvial cycles of increasing grain size; alternating coarse grained sand bodies with grit and small pebble lenses clasts 100% diorite

16-1-2: 222.48 mg/cuyd
114.33 lb/cu Ft.

basal section unsorted pebble-cobble gravel composed 100% dioritic identical to bedrock; very local source for the semi-angular (Rounding 4) clasts; bedding gradients 11% suggests high energy environment.

APPENDIX II

APPENDIX II

INDIVIDUAL NUGGET WEIGHTS

Sample No.	Mg. Weight	Size	Shape
3-1-2	277.0	5 mm	Eliptical spongy
		2.5 mm	Eliptical spongy
	Total----------	1.5 mm	"X" moderately round
3-2-1	79.05	4x2 mm	Sub-rounded, spongy
	6.99		
	4.297		
13-1-1	37.06 mg	4x3 mm	Irregular spongy & wire
	19.326 mg	1x4 mm	Wire-Irregular
	4.756		#1 Color equal dimensional & flat
	2.306		#1 color equal dimensional and flat
	1.960		#1 color equal dimensional and flat

APPENDIX III

ESTABLISHED 1880

1435 SOUTH 10TH AVENUE

JACOBS ASSAY OFFICE

REGISTERED ASSAYERS

PHONE 622-0813 1435 SOUTH 10TH AVE.

TUCSON, ARIZONA 85713

James M. Prudden
Consulting Geologist
4809 Quail Point Rd.
Salt Lake City, Utah 84124

1/11/85

"Sample Processing Procedures"
DMEA PLACER PROJECT

Dear Jim:

As-per to our phone conversation yesterday concerning our procedures to our processing the DMEA'S placer project.

(1) Blacks and Concentrates, will be dried, weighed and submitted to a 4 hour ball mill type grind, any visable gold will first be extracted and weighed prior to milling. An equal amount of water will be added and a slight amount of conc. nitric acid,to help remove any Fe,Ca, and native Hg amalgam (pH checked). After 4 hours have passed, sample is removed and Sodium Hydroxide is added to neturalize pH. Sample is then bottle rolled with Hg (1 gram Hg to 5 grams ore) at approx. 30 RPM for a period of 8 hours. Amalgam is then removed, and the residue is dried and Fire Assayed for Gold & Silver reported Au & Ag oz./ton. Amalgamated material is then subjected to a nitric acid digestion until dissolved, remaining gold is cupelled, weighed and saved.

(2) Black sand concentrates when designated will, be first dried,weighed, and the entire sample fire assayed for gold & silver. Results reported in total mg. of gold and total mg of silver.

(3) Tailing samples whrn designated, will be fire assayed, using a two (2) assay ton charge (58.33 grams). Results will be reported in troy oz/2000 lb.ton.

We hope this procedure meets with your approval.

Respectfully,

MICHAEL G. JACOBS
REGISTERED ASSAYER-OWNER

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 1/1/0-6 conc as received.

Weight as received 927 gr. ~~kbox~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.217 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.005			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	6.734	0.1589			Oz/T silver	
TOTAL mg silver	XXX	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.69

silver = N/A

927/29.166 = 31.78 A.T.

6.8929/31.78 = .2169 OZ/TON Au

927 grams milled 4 hours
8 hours agitated w/195 gr. Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 1/1/6-10 conc. as received.

Weight as received 673 gr. ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.127 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.007			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	2.780	0.161			Oz/T silver	
TOTAL mg silver	N/A	1.15			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 94.53

silver = N/A

673/29.166 = 23.07 A.T.
2.941/23.07 = .127

673 grams milled 4 hours
8 hours agitated w/135 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTT.

PRELIMINARY TESTS

SAMPLE NO. 1/1/10'-14:5" conc as received.
Weight as received 4635 gr. ~~lbs~~ XXX ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.085 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	13.145	0.318			Oz/T silver	
TOTAL mg silver	N/A	7.95			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.64

silver = N/A

4635/29.166 = 158.92

13.463/158.92 = 0.085

4635 grams milled 4 hours
8 hour agitated w/930 gr.Hg.

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

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1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 1/2/1 (4'-8') as received.

Weight as received 503 gr. ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.058 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.010			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.835	0.173			Oz/T silver	
TOTAL mg silver	N/A				Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 82.84

silver = N/A

503/29.166 = 17.25
1.008/17.25 = 0.058

503 grams milled 4 hours
8 hours agitated w/100 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTT.

PRELIMINARY TESTS

SAMPLE NO. 1/2/2 conc. as received.

Weight as received 399 gr. ~~bbxxx~~; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.249 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXXX mg; SILVER/200 grams XXXx

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.014			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	3.210	0.192			Oz/T silver	
TOTAL mg silver	N/A	0.68			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = _____

silver = N/A

399/29.166 = 13.68 A.T.

3.402/13.68 = 0.249

399 grams milled 4 hours
8 hours agitated w/80 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

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Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 2/1/1 conc. as received.

Weight as received 722 gr. ~~xxx~~ lbs ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.033 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.765	0.050			Oz/T silver	
TOTAL mg silver	N/A	1.24			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = _____

silver = _____

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

722/29.166 = 24.75
.815/24.75 = .033
722 grams milled 4 hours
8 hours agitated w/145 grams Hg.

Registered Assayer
Michael G. Jacobs

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DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 2/1/2 conc. as received.

Weight as received 1126 gr. ~~lbs~~ xxx ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.243 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.004			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	9.22	0.154			Oz/T silver	
TOTAL mg silver	N/A	1.93			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 98.36

silver = N/A

1126/29.166 = 38.61 A.T.

9.374/38.61 = 0.243

1126 grams milled 4 hours
8 hours agitated w/225 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

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Tucson, Arizona 85713
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DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 3/1/1 conc as received.

Weight as received 1643 gr. ~~xxx~~ lbs ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.048 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.013			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	1.990	0.732			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 73.11

silver = N/A

1643/29.166= 56.33
2.722/56.33= 0.048

1643 grams milled 4 hours
8 hours agitated w/330 gr.Hg.

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

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1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 3/1/2 conc as received.

Weight as received 553 gr. XXXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 12.897 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.023			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	244.10	0.436			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 99.82

silver = N/A

553/29.166 = 18.96 A.T.
244.536/18.96 = 12.897 OZ/TON Au

553 grams milled 4 hours
8 hours agitated w/110 gr.Hg.

Note:
207.0 Mg free gold weighed prior to amalgamating.

244.10
207.00
451.10

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery
gold = _____
silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 3/2/1 conc. as received.

Weight as received 612 gr. ~~xlbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 5.15 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.033			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	107.31	0.692			Oz/T silver	
TOTAL mg silver	N/A	1.05			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 99.36

silver = N/A

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

612/29.166 = 20.98 A.T.

108.00/20.98 = 5.15

612 grams milled 4 hours
8 hours agitated w/125 gr.Hg.

Note:
Mg. of free gold wts. 79.05
6.799
4.297
90.146

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. ~~4/1/1 cone.~~ as received.

Weight as received ~~424 gr.~~ XXX lbs ; Size, all minus ~~3/8~~ inches

HEAD ASSAY: Gold ~~0.279 (calc)~~ oz/T, Silver ~~N/A~~ oz/T

GOLD/200 grams ~~XXX~~ mg; SILVER/200 grams ~~XXX~~

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	~~0.045~~			Wt. g	
SILVER oz/T	XXXXXXX	~~<0.05~~			Oz/T gold	
TOTAL mg Gold	~~3.410~~	~~0.654~~			Oz/T silver	
TOTAL mg silver	~~N/A~~	~~N/A~~			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = ~~83.91~~

silver = ~~N/A~~

424/29.166 = 14.54

4.064/14.54 = .279 OZ/TON Au

429 grams milled 4 hours
8 hours agitated w/85 gr.Hg.

Free sodium cyanide
lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 4/1/2 conc. as received.

Weight as received 413 gr. ~~lbs~~ XXXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 1.438(calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.013			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	20.180	0.184			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 99.09

silver = N/A

413/29.166 = 14.16 A.T.

20.364/14.16 = 1.438 OZ/TON Au

413 grams milled 4 hours
8 hours agitated w/85 gr.Hg.

Free sodium cyanide
lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

DMEA LTD.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 4/2/1 conc. as received.

Weight as received 468 gr. ~~XXXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.795 (calc)z/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.050			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	11.95	0.803			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.70

silver = N/A

468/29.166 = 16.05 A.T.

12.753/16.05 = .795 oz/ton

468 gr. milled 4 hours
8 hours agitated w/95 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____
Ore = ____

Lime lb/Ton
Solution = ____
Ore = ____

Percent recovery
gold = ____
silver = ____

pH ____

Registered Assayer
Michael G. Jacobs

DMEA LTD.

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1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 5/1/1 conc. as received.

Weight as received 271 gr. xxx ; Size, all minus .3/8 inches

HEAD ASSAY: Gold 0.014 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.010			Wt. g	
SILVER oz/T	XXXXXXX	0.10			Oz/T gold	
TOTAL mg Gold	0.040	0.093			Oz/T silver	
TOTAL mg silver	N/A	0.93			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 30.08 %

silver = N/A

271/29.166 = 9.29

0.133/9.29 = 0.014 OZ/TON Au

271 grams milled 4 hours
8 hours agitated w/55 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 5/1/2 conc. as received.

Weight as received 780 gr. ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.013 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	.007			Wt. g	
SILVER oz/T	XXXXXXX	0.10			Oz/T gold	
TOTAL mg Gold	0.153	0.187			Oz/T silver	
TOTAL mg silver	N/A	2.67			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 45.00%

silver = N/A

780/29.166 26.74

.340/26.74 .013

780 grams milled 4 hours
8 hours agitated w/155 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
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Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 5/1/3 conc. as received.

Weight as received 931 gr. ~~xxxx~~ lbs ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.005 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.003			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	0.062	0.096			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 39.24

silver = N/A

931/29.166 = 31.92

0.158/31.92 = .005 OZ/TON Au

931 grams milled 4 hours
8 hours agitated w/185 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 6/1/1 conc. as received.

Weight as received 1337 gr. ~~xxx~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.013 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.010			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.140	0.458			Oz/T silver	
TOTAL mg silver	N/A	2.292			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 23.41

silver = N/A

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery

gold =

silver =

pH

1337/29.166 = 45.84

.598/45.84 = 0.013 OZ/TON Au

1337 grams milled 4 hours
8 hours agitated w/270 gr.Hg.

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PRELIMINARY TESTS

SAMPLE NO. 6/1/2 conc. as received.

Weight as received 637 gr. ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.038 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.011			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.580	0.240			Oz/T silver	
TOTAL mg silver	N/A	1.09			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 70.73

silver = N/A

637/29.166 = 21.84 A.T.

0.820/21.84 = .038 oz/ton

637 gr. milled 4 hours
8 hours agitated w/130 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 7/1/1 conc. as received.

Weight as received 70 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.540 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.528			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	0.030	1.267			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 2.31

silver = N/A

70/29.166 = 2.40 A.T.
1.297/2.40 = 0.540 oz/ton

70 grams milled 4 hours
8 hours agitated w/15 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____
Ore = ____

Lime lb/Ton
Solution = ____
Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

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PRELIMINARY TESTS

SAMPLE NO. 7/1/2 5'-9'-3"conc as received.

Weight as received 86 grams ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.117 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.096			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.063	0.283			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 11.73

silver = N/A

86/29.166 = 2.949 A.T.
0.346/2.949 = 0.117 oz/ton

86 grams milled 4 hours
8 hours agitated w/20 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
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PRELIMINARY TESTS

SAMPLE NO. 7/1/3 9'-3"-14'-3" conc as received.
Weight as received 949 grams ~~XXX~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.006 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.005			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.022	0.163			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 11.89

silver = N/A

949/29.166 = 32.53 A.T.
0.185/32.53 = 0.006 oz/ton

949 grams milled 4 hours
8 hours agitated w/190 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 8/1/1 0-4' conc. as received.

Weight as received 349 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.008 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.006			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	0.026	0.072			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 26.53

silver = N/A

349 gr/29.166 = 11.97 A.T.

0.098/11.97 = 0.008 oz./ton

349 grams milled 4 hours
8 hours agitated w/70 gr.Hg.

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

11552
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PRELIMINARY TESTS

SAMPLE NO. 8/1/2 4'-8' conc. as received.

Weight as received 755 grams XXXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.024 (calc)z/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.006			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	0.468	0.155			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 75.12

silver = N/A

755/29.166 = 25.89 A.T.

0.623/25.89 = 0.024 oz/ton

755 grams milled 4 hours
8 hours agitated w/150 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery
gold = _____
silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

MICHAEL G. JACOBS

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PRELIMINARY TESTS

SAMPLE NO. 8/1/3 8'-12'-10" conc. as received.

Weight as received 461 grams XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.939 calc. oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.020			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	14.530	0.316			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.87

silver = N/A

461/29.166 = 15.81 A.T.

14.846/15.81 = 0.939 oz/ton

461 grams milled 4 hours
8 hours agitated w/95 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
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PRELIMINARY TESTS

SAMPLE NO. 9/1/1 0-4'-4"conc.as received.

Weight as received 1124 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.499 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.031			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	18.020	1.194			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.79

silver = N/A

1124/29.166 = 38.54 A.T.

19.214/38.54 = 0.499 oz/ton

1124 grams milled 4 hours
8 hours agitated w/225 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
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PRELIMINARY TESTS

SAMPLE NO. 10/1/1 conc. as received.

Weight as received 824 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.398 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.014			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	11.054	0.396			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 96.54

silver = N/A

824/29.166 = 28.25 A.T.

11.45/28.25 = 0.398 oz/ton

824 grams milled 4 hours
8 hours agitated w/165gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
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PRELIMINARY TESTS

SAMPLE NO. 11/1/1 conc as received.

Weight as received 199 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.068 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.008			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.413	0.054			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 88.44

silver = N/A

199/29.166 = 6.82 A.T.

0.467/6.82 = 0.068 oz/ton

199 grams milled 4 hours
8 hours agitated w/40 gr.Hg.

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
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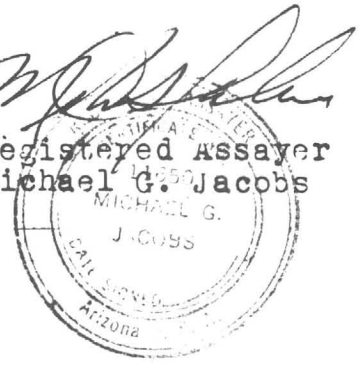

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PRELIMINARY TESTS

SAMPLE NO. 11/1/2 conc. as received.

Weight as received 784 grams XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.133 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.009			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	3.180	0.231			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.23

silver = N/A

784/29.166 = 25.65 A.T.
3.411/25.65 = 0.133 oz/ton

784 grams milled 4 hours
8 hours agitated w/155 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
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PRELIMINARY TESTS

SAMPLE NO. 11/1/3 conc. as received.

Weight as received 867 grams XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.030 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.835	0.059			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.40

silver = N/A

867/29.166 = 29/73 A.T.

0.894/29.73 = 0.030 oz/ton

867 grams milled 4 hours
8 hours agitated w/175 gr.Hg.

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
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PRELIMINARY TESTS

SAMPLE NO. 11/1/4 conc. as received.

Weight as received 385 grams ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.433 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.012			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	5.553	0.158			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.23

silver = N/A

385/29.166 = 13.20 A.T.

5.711/13.20 = 0.433 oz/ton

385 grams milled 4 hours
8 hours agitated w/80 gr.Hg.

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

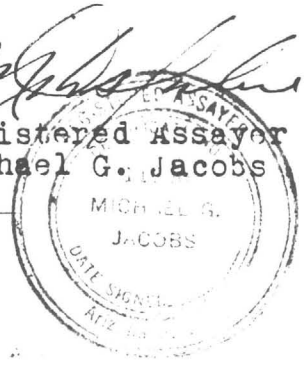
Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs



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DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 12/1/1, conc. as received.

Weight as received ~~587 grams~~ XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.028 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.006			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.434	0.120			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 78.34

silver = N/A

587/29.166 = 20.13 A.T.
0.554/20.13 = 0.028 oz/ton

587 grams milled 4 hours
8 hours agitated w/120gr.Hg.

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 12/1/2 conc. as received.

Weight as received 569 grams ~~XXXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.075 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	1.430	0.039			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.35

silver = N/A

569/29.166 = 19.51 A.T.
1.460/19.51 = 0.075 oz/ton

569 grams milled 4 hours
8 hours agitated w/115 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

DMEA LTD.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 12/1/3 conc. as received.

Weight as received 591 grams XXXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.045 (calc)/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.004			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.838	0.081			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 91.19

silver = N/A

591/29.166 = 20/26 A.T.
0.919/20.26 = 0.045 oz/ton

591 grams milled 4 hours
8 hours agitated w/120 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 13/1/1 conc. as received.

Weight as received 289 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 7.39 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

→ AMALGAM
→ TAILS

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

→ SOLUTION
→ TAILS

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg
→ METALLICS
→ PULP

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.663			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	66.650	6.570			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 91.02

silver = N/A

289/29.166 = 9.91 A.T.
73.22/9.91 = 7.39 oz/ton

289 grams milled 4 hours
8 hours agitated w/60 gr.Hg.

Note: Sample wts.of small nuggetts.
#1--37.060 Mg.
#2--19.326 "
#3--4.756 "
#4--2.306 "
#5--1.960 "

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

REGISTERED ASSAYER CERTIFICATE NO. 11650 MICHAEL G. JACOBS Arizona U.S.A.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 14/1/1 conc. as received.

Weight as received 1195 grams XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.063 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.003			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	2.455	0.123			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 95.23

silver = N/A

1195/29.166 = 40.97 A.T.
2.578/40.97 = 0.063 oz/ton

1195 grams milled 4 hours
8 hours agitated w/240 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____
Ore = ____

Lime lb/Ton
Solution = ____
Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
Michael G. Jacobs

REGISTERED ASSAYER CERTIFICATE NO. MICHAEL G. JACOBS DATE SIGNED ARIZONA U.S.A.

DMEA LTD.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 15/1/1 conc. as received.

Weight as received 2480 grams XXX; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.007 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.005			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	0.179	0.425			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 42.11

silver = N/A

2480/29.166 = 85.03 A.T.

0.604/85.03 = 0.007 oz/ton

2480 grams milled 4 hours
8 hours agitated w/500 grams Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

ASSAYER 1050 MICHAEL G. JACOBS

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 15/1/2 conc. as received.
Weight as received 1350 grams~~XXXX~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.310 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	14.300	0.092			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 99.36

silver = N/A

1350/29.166 = 46.29 A.T.
14.392/46.29 = 0.310

1350 grams milled 4 hours
8 hours agitated w/270 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____
Ore = ____

Lime lb/Ton
Solution = ____
Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
Michael G. Jacobs

MICHAEL G. JACOBS
DATE SIGNED
ARIZONA U. S. A.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 16/1/1 conc. as received.

Weight as received 247 grams ~~XXXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.226 (calc)z/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.014			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	1.800	0.119			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.80

silver = N/A

247/29.166 = 8.47 A.T.

1.919/8.47 = 0.226 ox/ton

247 grams milled 4 hours
8 hours agitated w/50 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

REGISTERED ASSAYER
CERTIFICATE NO.
11650
MICHAEL G.
JACOBS

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 16/1/2 conc. as received.

Weight as received 204 grams ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 11.64 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	1.028			Wt. g	
SILVER oz/T	XXXXXXX	0.10			Oz/T gold	
TOTAL mg Gold	74.160	7.185			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 91.17

silver = N/A

204/29.166 = 6.99 A.T.

81.345/6.99 = 11.64 oz/ton

204 grams milled 4 hours

8 hours agitated w/40 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

MICHAEL G. JACOBS
DATE SIGNED
Arizona U. S. A.

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

Certificate No. 64278

12/28 1984

Sample Submitted By Mr. PRUDDEN

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
TAILS 3/2/1 -10M	0.001	$	< 0.05				
" " +10M	0.005		< 0.05				
" 4/2/1 -10M	0.012		< 0.05				
" " +10M	TRACE		< 0.05				
" 11/1/1 -10M	0.002		< 0.05				
" " +10M	0.09		< 0.05				
" 11/1/2 -10M	0.001		< 0.05				
" " +10M	0.002		< 0.05				
" 11/1/3 -10M	0.001		< 0.05				
" " +10M	TRACE		< 0.05				
" 11/1/4 -10M	0.004		< 0.05				
" " +10M	0.001		< 0.05				
" 12/1/1 -10M	TRACE		< 0.05				
" " +10M	TRACE		< 0.05				
" 12/1/2 -10M	0.002		< 0.05				
" " +10M	0.001		< 0.05				
" 12/1/3 -10M	0.001		< 0.05				
" " +10M	0.001		< 0.05				
" 13/1/1 -10M	0.003		< 0.05				
" " +10M	0.002		< 0.05				
" 14/1/1 -10M	0.001		< 0.05				
" " +10M	0.004		< 0.05				
" 15/1/1 -10M	TRACE		< 0.05				
" " +10M	0.001		< 0.05				
" 15/1/2 -10M	0.001		< 0.05				
" " +10M	TRACE		< 0.05				
" 16/1/1 -10M	0.001		< 0.05				
" 16/1/1 +10M	0.001		< 0.05				
" 16/1/2 -10M	TRACE		< 0.05				
" " +10M	0.002		< 0.05				

FIRE ASSAY
2 ASSAY TON GA SAMPLE
WET SAMPLES

Charges $ 315.00

Very respectfully,

M. Jacobs

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

Certificate No. 64258

12/27 1984

Sample Submitted By Mr. PRUDDEN

	SAMPLE MARKED	GOLD OZS PER TON	SILVER OZS PER TON
1	tails 1/1/0 -10M	0.001	< 0.05
1	" 1/1/0 +10M	0.009	< 0.05
2	1/1/6 -10M	0.002	< 0.05
2	tails 1/1/6 +10M	0.002	< 0.05
3	" 1/1/10 -10M	0.001	< 0.05
3	" 1/1/10 +10M	0.001	0.05
4	" 1/2/2 -10M	0.001	< 0.05
4	" 1/2/2 +10M	0.002	0.05
5	" 1/2/4 -10M	0.002	< 0.05
5	" 1/2/4 +10M	0.003	< 0.05
6	" 2/1/1 -10M	0.002	0.05
6	" 2/1/1 +10M	0.003	0.05
7	" 2/1/2 -10M	0.002	0.05
7	" 2/1/2 +10M	0.001	< 0.05
8	3/1/1 -10M	TRACE	0.05
8	tails 3/1/1 +10M	TRACE	< 0.05
9	" 3/1/2 -10M	0.002	0.05
9	" 3/1/2 +10M	0.002	0.05
10	4/1/1 -10M	TRACE	0.05
10	tails 4/1/1 +10M	TRACE	0.05
11	" 4/1/2 -10M	0.001	< 0.05
11	" 4/1/2 +10M	0.002	< 0.05
12	" 5/1/1 -10M	0.001	< 0.05
12	" 5/1/1 +10M	TRACE	< 0.05
13	" 5/1/2 -10M	TRACE	< 0.05
13	" 5/1/2 +10M	TRACE	< 0.05
14	" 5/1/3 -10M	TRACE	< 0.05
14	" 5/1/3 +10M	0.001	0.05
15	" 6/1/1 -10M	0.001	0.05
15	" 6/1/1 +10M	0.001	0.05
16	" 6/1/2 -10M	TRACE	< 0.05
16	" 6/1/2 +10M	TRACE	< 0.05
17	" 7/1/1 -10M	TRACE	< 0.05
17	" 7/1/1 +10M	0.002	0.05
K	" 7/1/2 -10M	0.002	0.05
18	" 7/1/2 +10M	0.005	< 0.05
19	" 7/1/3 -10M	0.002	< 0.05
19	" 7/1/3 +10M	0.002	0.05

	SAMPLE MARKED	GOLD OZS PER TON	SILVER OZS PER TON
19	tails 8/1/1 -10M	0.002	< 0.05
20	" 8/1/1 +10M	0.002	0.05
20	" 8/1/2 -10M	0.002	0.05
21	" 8/1/2 +10M	0.003	0.05
22	" 8/1/3 -10M	0.004	< 0.05
22	" 8/1/3 +10M	0.001	< 0.05
23	" 9/1/1 -10M	0.001	0.05
23	" 9/1/1 +10M	0.001	0.05
24	" 10/1/1 -10M	0.018	0.05
24	" 10/1/1 +10M	0.002	0.05

FIRE ASSAY
2 ASSAY TON PER SAMPLE
SCREENING

Very respectfully,

Charges $ 504.00

1435 SOUTH 10TH AVENUE
TUCSON ARIZONA 85713

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

Cert. # 64309

Tucson, Arizona, 17 JAN, 1985

Sample Submitted by Mr. DMEA Ltd. c/o James Prudon

Sample Marked	GOLD Ozs. per ton ore	GOLD ~~Value per ton ore~~	SILVER Ozs. per ton ore	~~COPPER Per Cent Wet Assay~~	~~LEAD Per Cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~
"Gravity Tails"	0.016	—	2.50					
Amalgamation Tails	0.071	—	5.15					

Special Bulk sample — Starting wt as Rec — 5,675 grams
Entire sample crushed to 60 mesh - Gravity concentrated
Conc wt — 6 grams — Ball milled 4 hours, Agitated
8 hours with 3 grams Hg.
Total oz Gold Recovered = Nil

Charges $ 90.00

Very respectfully,

1435 SOUTH 10TH AVENUE
TUCSON, ARIZONA 85713

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

64256

Tucson, Arizona, 12/20, 19 84

Sample Submitted by Mr. JAMES M. PRUDDEN

Sample Marked	GOLD Ozs. per ton ore	GOLD Value per ton ore*	SILVER Ozs. per ton ore	COPPER Per Cent Wet Assay	LEAD Per Cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay
H-210-S	0.017	mg Au						
H21 5-10S-345 } 5-10S-400 }	0.058	Mg Au						
H21 0-5-S-95 } 5-10S-410 }	0.081	Mg Au						
H-34 10-15	0.026	Mg Au						
ENTIRE SAMPLE FIRE ASSAYED								

Charges $ 39 00

Very respectfully,

1435 SOUTH 10TH AVENUE
TUCSON ARIZONA 85713

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

64279

Sample Submitted by Mr. PRUDDEN

Tucson, Arizona, 1/4, 19 55

CONC.

Sample Marked	GOLD Ozs. per ton ore	~~GOLD Value per ton ore~~	SILVER Ozs. per ton ore	~~COPPER Per cent Wet Assay~~	~~LEAD Per cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~
H-19	~~~					1/4 sample (dry)		
0-5	0.012 oz		0.30 oz			7 grams		
5-10	T oz		0.20 oz			2 "		
10-15	0.110 oz		0.2 oz			45 "		
15-20	0.020 oz		0.25 oz			15 "		
H-31	~~~		~~~					
10-15	0.124 oz		0.35 oz			5 "		
15-20	0.050 oz		1.85 oz			1.5 "		
H-34	~~~		~~~					
15-20	0.005 oz		0.35 oz			40 "		
Entire sample Fire Assayed								

Charges $ 70

Very respectfully,

APPENDIX IV

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF SPECTROGRAPHIC ANALYSIS

JOB NO. UQX 023
January 10, 1985
BLACK SAND CONCENTRATE

A.F. BUDGE (MINING) LIMITED
Attn: Ms. Carole A. O'Brien
DMEA Ltd.
4203 North Brown Avenue, Suite F
Scottsdale, Arizona 85251

Analysis of 1 Black Sand Concentrate

The attached pages comprise this report of analysis. Values are reported in parts per million (ppm), except where otherwise noted, to the nearest number in the series 1, 1.5, 2, 3, 5, 7, 10, etc. within each order of magnitude. These numbers represent the approximate boundaries and midpoints of arbitrary ranges of concentration differing by the reciprocal of the cube root of ten. The 'accepted' value is considered to be within + or - 1 step of the range reported at the 68 % confidence level and within + or - 2 steps at the 95 % confidence level.

William L. Lehmbeck
Manager

cc: Jim Prudden
Frank Millsaps

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM NO. SAMPLE NO.
1 = BLACK SAND CONCENTRATE

ITEM	1
ELEMENT	
Fe	>20%
Ca	1.5%
Mg	.3%
Ag	150
As	<500
B	10
Ba	2000
Be	<2
Bi	10
Cd	<50
Co	100
Cr	500
Cu	300
Ga	<10
Ge	<20
La	1000
Mn	700
Mo	2000
Nb	<20
Ni	200
Pb	>10000
Sb	<100
Sc	10
Sn	<10
Sr	<100
Ti	10000
V	500
W	50
Y	300
Zn	700
Zr	5000

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

1435 SOUTH 10TH AVENUE
TUCSON, ARIZONA 85713

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

64308

Tucson, Arizona, 1/24, 85

Sample Submitted by Mr. PRUDDEN DMEA

Sample Marked	~~GOLD Ozs. per ton ore~~	~~GOLD Value per ton ore~~	~~SILVER Ozs. per ton ore~~	~~COPPER Per cent Wet Assay~~	LEAD Per cent Wet Assay	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~
13/1/1 conc					0.55			
16/1/2 conc					0.08			
#17/1/2 conc.					0.06			

Charges $ 7.50

Very respectfully,

Notes - BFD October, 1984

Abstract of NEI report on Vulture Prospect by Michael Donnelly
March 16, 1981

Recommendations

High grade mineralization restricted to zones of quartz veining and adjacent wall rock. Gold in metasediments has direct correlation with intensity and extent of hydrothermal alteration; altered portions of quartz monzonite intrusive are weakly mineralized.

Best potential for gold mineralization on meaningful scale (NEI) is restricted to the intrusive body; veins near exhaustion and gold in metasediments very low grade.

IP survey revealed nothing much of value; one weak anomaly - maybe one drill hole on it.

Property of some interest, but high cost deal precludes work at this time. (Beal mentioned unfavorably.)

Introduction - History

Nothing much new. Two north dipping, east raking ore shoots mined; west shoot to 600 feet; east shoot to approx. 1000 feet; one stope on west shoot, 100-ft. level was approx. 80 feet wide. Noranda had 6-month walk-on at $1,000/month. In 1970, conducted a bulk sampling program. No results given.

Present work consisted of rock chip and channel samples; detailed mapping in pits; and 20 shallow rotary holes (24-36 feet deep).

Regional Setting

Nothing new - Rehrig

Geology - Mine Area

Protovolcanics & sediments

Series of metavolcanics, amphibolites, fine- to coarse-grained epiclastics, quartz-pebble conglomerate and some volcaniclastics; a small lens (?) of ferruginous chert located north of pits is only chemical sediment seen. Upper greenschist metamorphism (staurolite to chlorite); some folding and pegmatites (aplite?).

Metasediments = wackes, quartz-wackes, siltites and quartzites; quartz pebble lens (?) exposed in pits; 75 feet thick in east pit; matrix strongly foliated quartz-sericite.

No bed top indicators: rock probably equivalent to Spud Mountain, or, Iron King volcanics: approx. 1760 m.y. age

Quartz Monzonite Porphyry Intrusive

Least understood rock in the mine area; poorly exposed; multiple facies and alteration overprint make it difficult to map.

Field evidence indicates Qm brought hydrothermal alteration to metasediments along with aplite and pegmatites; latter two very subordinate to Qm porphyry. Outcrop extent of Qmp is poorly defined; that exposed west of mine area dips under gravels to south, east and west. Mapping does show intrusive persists for 1 mile to north and northwest.

Small exposure of Qmp in pits in central part of mine area represents thin knobby apophysis of main intrusive mass. Qmp not seen underground.

Tertiary

Mid-Tertiary volcanics mostly andesite lavas and tuffs with some intercalated epiclastic and volcaniclastic materials. A 1929 Mining Journal article suggests 500 to 600 feet of volcanics on east side of Schoolhouse Fault in drill holes. The only Tertiary unit in the mine area is porphyritic rhyolite dike exposed in southwestern most pit.

Quartz veins - zones

Two large and several smaller veins provided most of historic production; sub-parallel, east-west, semi-conformable to enclosing metasediments. Two large veins tentatively traced through pit areas for 900 feet.

Veins mostly quartz-carbonate with a little pyrite, chalcopyrite and galena; native gold in flakes and leaves in association with basemetal rich portions.

All mineralized vein samples show multiple stages of brecciation, silicification and annealing in thin section and hand specimen. Silicified wall rock fragments occur in all veins and show ghost outlines; changes color of veins to blue-grey; may be a quartz vein breccia.

Absence of cross-cutting relationships prevents establishing relative ages among veins. Two barren vein events in mine area; 2-30 mm thick veins in metasediments.

Structure

Fabric dominated by west trending, north dipping metasediments; both Qmp intrusive and quartz veins are partly controlled by rock structural grain; 35 to 55 degree north dips.

Limited folding, northeast plunging isoclines; wave length less than 1 meter in east wall of west pit.

Faulting

Property in broad zone of intense north-northwest to northwest trending normal faults - shaped Vulture range.

Three episodes can be seen

1) In mine area: east-west to west-northwest trending high angle normal faults, predating quartz veins. These provided avenue for hydrothermal alteration best seen in east pit.

2) Post mineral faulting a) low angle normal faults displace quartz veins in stair step fashion; b) north-northwest trending high angle faults with right lateral movement; age relationship between (a) and (b) not known.

3) North trending Basin and Range faulting; youngest episode in area. The Schoolhouse Fault exemplifys; may have 500 to 600 feet of vertical displacement.

Hydrothermal Alteration

All metasediments and Qpi rocks in mine area have been hydrothermally altered. Quartz-sericite-pyrite is characteristic, and is most advanced in the Qpi apophysis and in fine-grained clastic units.

As a rule, metasediment alteration is strongly developed adjacent to mineralized quartz veins; alteration decreases laterally for 10's of feet before it becomes indiscernable with greenschist metamorphism. However, this relationship breaks down when alteration is structurally controlled and alteration overlaps. Structurally controlled alteration best seen in southwestern corner of east pit.

Advance alteration in metasediments frequently obliterates all relict sedimentary features. Fine-grained clastics are most susceptible and are usually replaced by an auriferous qtz-ser-py association. Pyrite may form 1-5% volume of rock.

Mineralization

Rock chip geochem in conjunction with mapping shows that gold mineralization occurs in 2 distinct modes:

1) mineralized quartz veins and in their hydrothermally altered wall rocks;

2) disseminated gold mineralization in Qpi. Although copper, lead, zinc and silver are present in anomalous amounts, gold is the principal metal. Gold-silver ratios vary from 1:1 in weakly altered metasediments to 1:3.8 in strongly mineralized

quartz veins.

Base metal concentrations are low in all units, with the exception of high grade samples. Arsenic content is quite low, 15-20 ppm, and shows no relationship to gold. Gold vs. lithology plot clearly shows gold mineralization not confined to a single stratigraphic unit or rock type. Gold does vary with the intensity of alteration.

Gold mineralization in Qpi is poorly understood. Rock chip analyses suggest that Qpi in the immediate mine area is weakly gold bearing and there is correlation between intensity of alteration and gold content. Pyritic samples usually the most strongly mineralized. Gold values in Qpi range from a low of 0.04 ppm to a high of 2.2 ppm.

IP Survey

Designed to detect possible sulfide-rich portions of intrusive body and to delineate strongly altered metasediments (Mining Geophys. Surveys of Tucson); 4 north-south trending lines, 500-600 feet apart.

Result: weak amplitude IP response with associated weak resistivity signal on 2 adjacent lines. Anomaly described as an east-west trending dike-like response at, or near the surface that is associated with a relatively high resistivity rock of 500 ohmmeters vs. background of about 150. The significance of this resistivity contrast is not clear. Geophys. estimated that under ideal conditions the 20 ms anomaly may equate to 1% volume sulfides.

The centre of the anomaly lies between the west open pits and the central mine area and continues to the east where it is very weak on line 4, which is centered over old mine workings in central pit of mine area.

Cross sections B-B' and C-C' show the north dipping projection of the pyritic altered rocks and is a likely explanation for the IP response. Rocks (altered metasediments and Qpi) in this area contain 0.5 to 1.0% volume pyrite.

Discussion

This work has added a certain amount of understanding to the gold mineralization at Vulture:

1) altered metasediments in mine area are ubiquitously mineralized;

2) gold content of more than 1.7 ppm (0.05 oz/t) in metasediments generally restricted to zones of more intense alteration adjacent to quartz veins;

3) gold content fades laterally for 10's of feet before

falling to bac

6/20/1882

Land Office
No 171

The United States of America

To all to whom these presents shall come, Greeting;

Whereas Thomas T. Greenlaw Probate Judge of Maricopa County Arizona Territory in trust for the several use and benefit of the occupants of the Townsite of Vulture City in said County and Territory, according to their respective interests, has deposited in the General Land Office of the United States a Certificate of the Register at Prescott Arizona Territory whereby it appears that full payment has been made by the said Thomas T. Greenlaw Probate Judge as aforesaid in trust as aforesaid, according to the provisions of the Act of Congress of the 24th of April 1820 entitled "An Act making further provision for the sale of the Public Lands" and the Acts supplemental thereto including Section 2387 of the Revised Statutes for the following described tract of land to wit:

To establish the N.E. corner of Vulture City Townsite. Set a cedar stake post 6 x 6 ins. 24 inches long, marked V.C.T.S. N.E. cor. 2 ft. in ground, having first leveled the top of post and planted underneath it 2 quarts of coarse charcoal.

From this corner a witness monument 4 feet high by 3 feet in diameter at base with stone post 12 x 4 inches marked as above V.C.T.S. planted firmly in centre bears N. 81° 03' E. Variation 15° 26' E. chains and stands on the Summit Hunts Peak a prominent conical butte having a rocky crest and rising about 150 feet above the plain.

From this N.E. corner I run S. 10° 40' W. Variation 14° 15' E. by observation on Polaris with Roach Transit

Chains 13.80 Centre of marsh 25 feet wide 4 feet deep bears S 35° 78' W.

110.00 Set a sawed pine post 6x6 in. square 5½ feet long marked V.C. J.S. & N. cor, two feet in ground having first bevelled the top of post and planted underneath it two quarts of Charcoal. for the S.W. corner of Vulture City Townsite.

From which a spalt on a fir 6 in Diam. at base flagged and marked N. cor V.C. J.S. bears N. 44° 30' E. 113 lks.

From this corner I run S 79° 20' E.

Variation 14° 15' E.

Chains 16.20 Centre of marsh 25 feet wide 5 feet deep bears south.

" 25.00 Top of Northern Slope of small hill.

" 110.00 Set a sawed pine post 6x6 inches square 5½ feet long marked V.C.J.S. S.E. cor 2½ feet in ground having first bevelled top of post and planted underneath it 2 quarts of coarse charcoal. for the south east quarter of Vulture City Townsite.

From this corner I run N 10° 40' E

Variation 14° 15' E.

Chains 6.00 Centre of Marsh 10 ft deep 30 ft wide bears S. 11° E.

" 11.55 Centre of Marsh 7 feet deep 22 feet wide bears S. 27° E.

" 110.00 Set a sawed pine post 6x6 in. square 5½ ft. long marked V.C. J.S. N.E. corner 2½ feet in ground having first bevelled top of post and planted underneath it 2 quarts of coarse charcoal

for the N.E. cor. of Vulture City Townsite.
From this corner I run N. 77° 20' W.
Variation 14° 15' E.

chains 7.75 To p of ridge between two small hills

" 10.25 Centre of Wash 30 feet wide 4 feet deep bears S. 61° W.

" 13.00 Wash 25 feet wide 8 feet deep bears S. 20° 33' W.

" 25.15 Top of hill 25 feet high.

" 33.40 Centre of Wash 20 feet wide 4 ft. deep bears S. 2° 35' E.

40.00 To N.W. corner post, the place of beginning, containing one hundred and forty acres, according to the Official Plat of the Survey of the said lands returned to the General Land Office by the Surveyor General, which said tract has been purchased by the said Thomas G. Greenhaw, Probate Judge as aforesaid in trust as aforesaid.

Now Know ye, That the United States of America, in consideration of the premises and in conformity with the several Acts of Congress in such case made and provided, Have given and granted and by these presents Do give and grant, unto the said Thomas G. Greenhaw Probate Judge as aforesaid, in trust as aforesaid and to his successors, the said Tract above described: To Have and to Hold the same together with all the rights, privileges, immunities and appurtenances of whatsoever nature thereunto belonging unto the said Thomas G. Greenhaw Probate Judge as aforesaid, in trust as aforesaid and to his successors and assigns in trust as aforesaid: Provided, That no title shall be hereby acquired to any mine of gold, silver, cinnabar, or copper, or to any valid mi[illegible]

claim or possession held under existing laws; and provided further, That the grant hereby made is held and declared to be subject to all the conditions, limitations and restrictions contained in Section two thousand three hundred and eighty six (2386) of the Revised Statutes of the United States, so far as the same are applicable thereto."

In Testimony whereof, I, Chester A. Arthur, President of the United States of America, have caused these letters to be made Patent, and the Seal of the General Land Office, to be hereunto affixed.

Given under my hand at the City of Washington the Twentieth day of June in the year of Our Lord one thousand eight hundred and eighty-two and of the Independence of the United States the one hundred and sixth.

L. S.

By the President Chester A. Arthur
By Wm. H. Crook Secretary
L. W. Clark Recorder of the General Land Office

Qpi.

Head 0.072 (-1/4)

.072	-1 +3/4	
.021	-3/4 +1/2	
.034	-1/2 +1/4	
.026	-1/4 +6 mesh	
.057	-6 +10 mesh	
.008	-10 mesh.	36%

H.W.

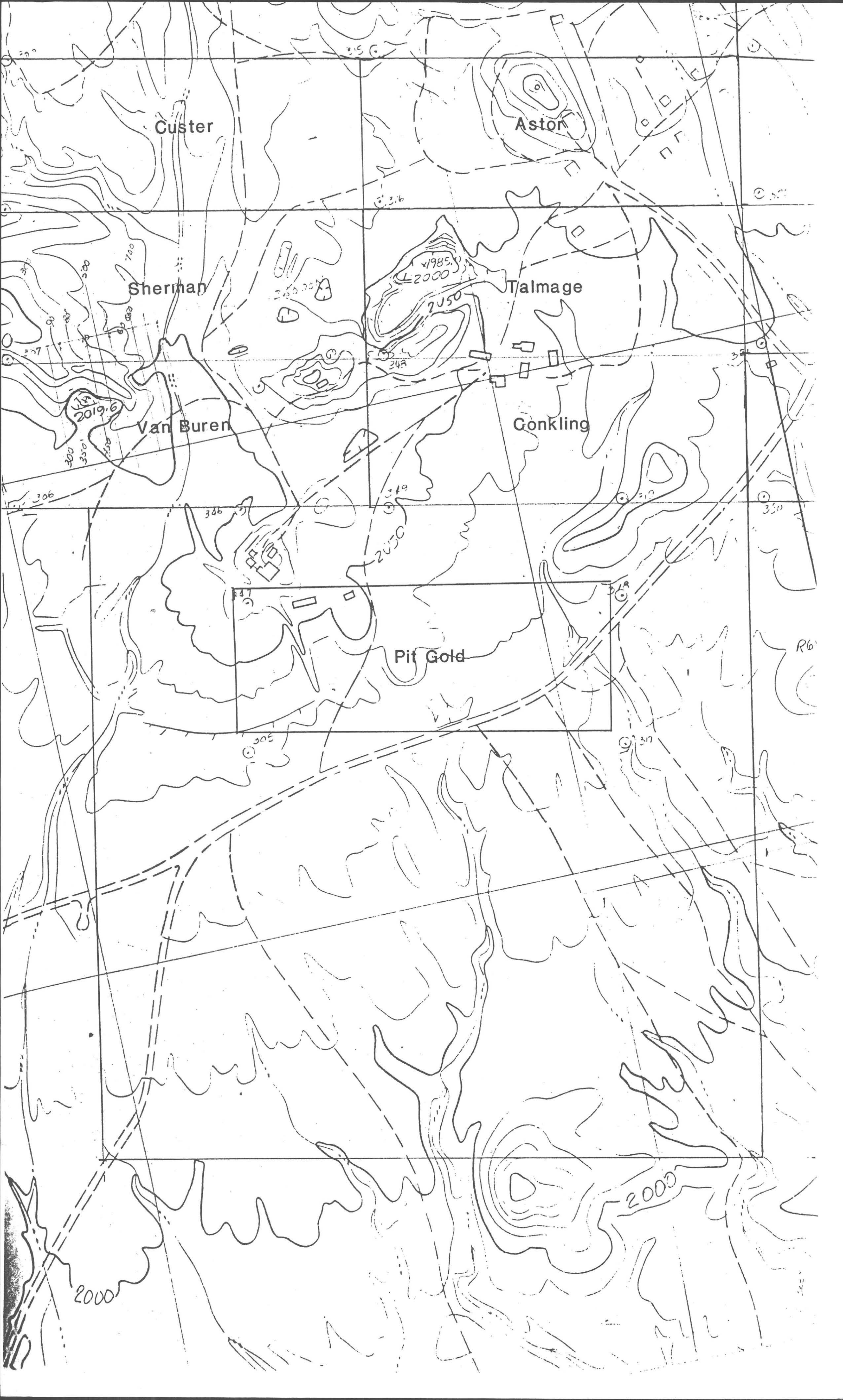
Head 0.058

.011	-1 +3/4	(-½")
.044	-3/4 +1/2	
.014	-1/2 +1/4	
.031	-1/4 +6 mesh	
.015	-6 +10 mesh	
.016	-10 mesh.	58%

F.W.

Head 0.032

.021	-1 +3/4	(-⅜")
.021	-3/4 +1/2	
.021	-1/2 +1/4	
.020	-1/4 +6 mesh	
.013	-6 +10 mesh	
.003	-10 mesh	74%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Astor
Sherman
Talmage
Van Buren
Conkling
Pit Gold
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2050
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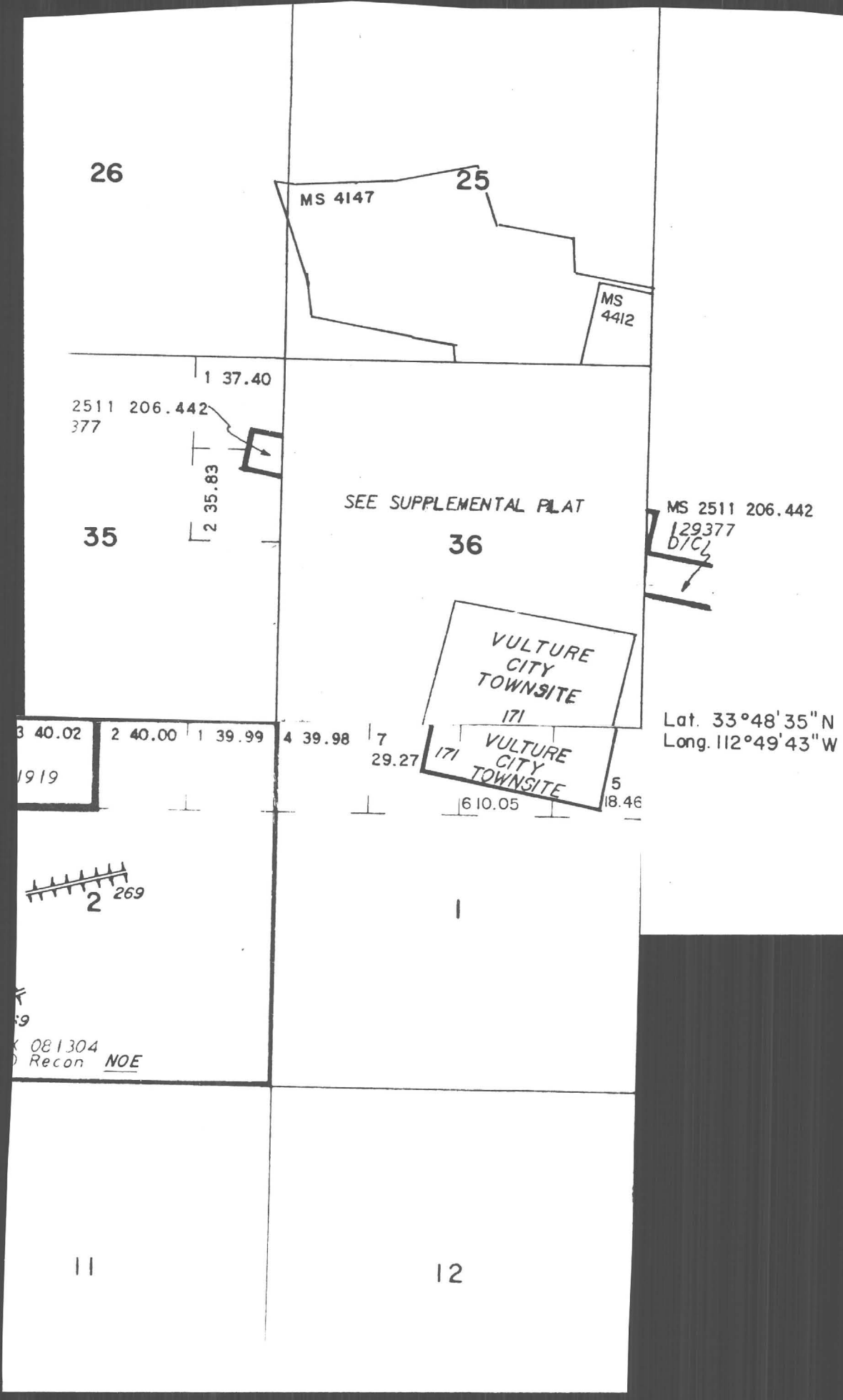
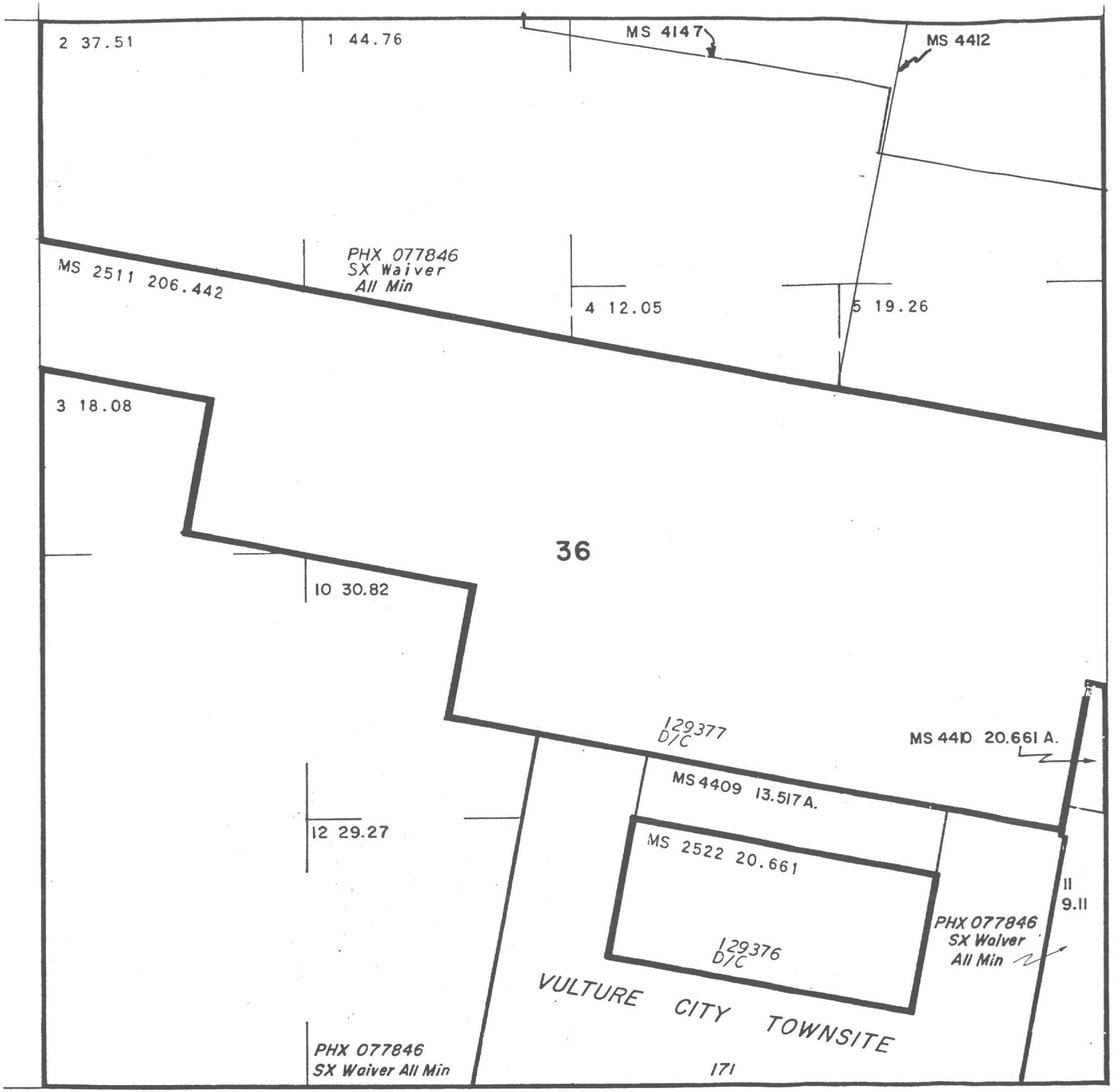


Lat. 33°48'35"N
Long. 112°49'43"W

CURRENT TO	
OG	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1 44.76
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MS 4412
PHX 077846
SX Waiver
All Min
MS 2511 206.442
4 12.05
5 19.26
3 18.08
36
10 30.82
129377
D/C
MS 4410 20.661 A.
MS 4409 13.517 A.
12 29.27
MS 2522 20.661
129376
D/C
11
9.11
PHX 077846
SX Waiver
All Min
VULTURE CITY TOWNSITE
PHX 077846
SX Waiver All Min
171

Vulture Core for Metallurgical Tests

Procedure

15 intervals (5 from each of 3 rock types: Qpi, F.W. & H.W.) sent to Dawson Labs, Salt Lake City

each individual interval crushed to 1"; sample cut from each interval for head assay; crushed to 20 mesh; sample cut for assay (200 mesh)

Composite of each rock types made of intervals selected to give approximate feed of 0.05 oz/t

5 kg. sample cut from each composite for bottle roll tests

Bottle roll for 72 hours to determine crushing size and length of leach time in column

solution checked each 24 hours for cyanide strength and PH

start with 10# cyanide

After bottle roll, solid-liquid separation;

liquid to assay; screen solids; e.g. 3/4, 1/2, 3/8, 1/4, 6 mesh, 8 mesh, & 12 mesh; 6-7 assays

Once crushing size and leach time has been determined;

load columns (3) @ 150# each, plus 4th column of combination of 3 composites; possible leach time: 5 days.

While column is leaching, run tests on solution again every 24 hours.

DMEA Ltd.
Mineral Exploration Advice

Ben F. Dickerson III
Registered & Certified Geologist
Carole A. O'Brien
Certified Geologist

7340 E. Shoeman Lane
Suite 111 "B" (E)
Scottsdale, AZ 85251-3335
(602) 945-4630
Telex: 75-1739

December 18, 1986

Mr. Harmel Dawson
Dawson Metallurgical Labs
5217 Major Street
Murray, UT 84107

Re: Testing of Ore Samples
Vulture Mine, Arizona

Dear Mr. Dawson:

I am extemely concerned by the serious time delays involved in testing of the referenced samples. Your organization was chosen to test these samples primarily because of your reputation of smoothly producing quality work.

The samples were received at your laboratory on October 28. Mr. Millsaps, our representative, advised today that assays on the bottle roll - screen tests may be available this afternoon.

This is 51 calendar days after receipt, or about 37 working days. A very large part of this time seems to have been consumed in obtaining reliable assay results.

A testing facility like yours is highly dependent on good, reliable assaying. Assayers all make mistakes. However, I have, rightly or wrongly, gained the strong impression of bumbledom at work here.

Most importantly, the amount of time consumed seems highly disproportionate to the stage of testing actually reached.

I would appreciate receiving your comments on this matter at your earliest convenience, and also your attempt to eliminate additional costly delays.

Very truly yours,

Ben F. Dickerson III

Ben F. Dickerson III

Vulture Core for Metallurgical Tests

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Bottle roll for 72 hours to determine crushing size and length of leach time in column

solution checked each 24 hours for cyanide strength and PH

start with 10# cyanide

After bottle roll, solid-liquid separation;

liquid to assay; screen solids; e.g. 3/4, 1/2, 3/8, 1/4, 6 mesh, 8 mesh, & 12 mesh; 6-7 assays

Once crushing size and leach time has been determined;

load columns (3) @ 150# each, plus 4th column of combination of

3 composites; possible leach time: 5 days.

While column is leaching, run tests on solution again every 24 hours.

Vulture Core for Metallurgical Tests

Procedure

15 intervals (5 from each of 3 rock types: Qpi, F.W. & H.W.)
sent to Dawson Labs, Salt Lake City

each individual interval crushed to 1"; sample cut from each interval for head assay; crushed to 20 mesh; sample cut for assay (200 mesh)

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While column is leaching, run tests on solution again every 24 hours.

IN REPLY REFER TO:
A MC 246423 et

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE
3707 N. 7th Street
Phoenix, Arizona 85014

(943) TR

December 5, 1985

(602) 241-5550

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

DECISION

V. M. P. Inc.
Box 20202
Wickenburg, AZ. 85358

Vulture #81 - A MC 246423
Vulture #81A - A MC 246528
Vulture #82 - A MC 246424
Vulture #83 - A MC 246425

Mining Claim(s) Declared Null and Void
Ab Initio

Pursuant to the requirements of the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1744, and the implementing regulations in 43 CFR 3833.1-2, notice(s) of location for the above-named mining claim(s) were filed for recording in the Arizona State Office of the Bureau of Land Management.

Date Located	Date Filed
September 24, 1985	December 4, 1985

The location notice(s) and accompanying map(s) show the claim(s) to be located on the following land:

Gila and Salt River Meridian, Arizona

T. 5 N., R. 6 W.
Section 1, N½

T. 6 N., R. 6 W.
Section 36, S½

The subject mining claim(s) are invalid and are hereby declared null and void ab initio. The Bureau of Land Management public records show the lands were not open to location of mining claims at the time of their location.

The land has been patented without a reservation of minerals to the United States. Therefore, the lands are not subject to location under the general mining laws.

"Land which has been patented without a reservation of minerals to the United States is not available for location of mining claims, and mining claims located on such land after it is so patented are null and void ab initio," Ariel C. MacDonald, et al, 52 IBLA 384 (1981).

"Mining claims located on lands which are closed to mineral entry are null and void from their inception as a matter of law, and no property rights are created thereby. Therefore, no contest proceeding notice, or hearing is required preliminary to a decision holding that such claims are invalid." John A. Ross, Maxine Lidke, 73 IBLA 16 (1983).

An appeal from this decision may be taken to the Interior Board of Land Appeals, Office of Hearings and Appeals, in accordance with the regulations in Title 43 Code of Federal Regulations (CFR), Parts 1 and 4, and the enclosed Form 1842-1. If an appeal is taken, the notice of appeal must be filed in the Arizona State Office of the Bureau of Land Management, P.O. Box 16563, Phoenix, Arizona 85011, within thirty days from the receipt of this decision. Do not send the appeal directly to the Board. The appeal and case history file will be sent to the Board from this office. Within thirty days after filing the notice of appeal, file a complete statement of the reasons why you are appealing. This must be filed with the U.S. Department of the Interior, Office of the Secretary, Board of Land Appeals, 4015 Wilson Boulevard, Arlington, Virginia 22203. If you fully stated your reasons for appealing when filing the notice of appeal, no additional statement is necessary. Additionally, within fifteen days after each document is filed, the regulations also require the appellant to serve a copy of the notice of the appeal, statement of reasons, written arguments or briefs on the Field Solicitor, U.S. Department of the Interior, 505 N. 2nd St., Suite 150, Phoenix, Arizona 85004. To avoid summary dismissal of the appeal, there must be strict compliance with the regulations.

If no appeal is taken, this decision constitutes final administrative action of this Department as affects the mining claim(s). No appeal, protest, or petition for reconsideration will be entertained from this decision after the appeal period has expired.

/s/ Thomas E. Reitmeyer

Thomas E. Reitmeyer
Acting Chief, Branch of Lands
and Minerals Operations

Encl: Regulations
Appeal Procedures
Form 1842-1

P.S. In addition, other claims i.e, B-lan 23, Vulture 32, 47 thru 52, 95 thru 97, Desert 118 thru 120, 122 thru 124 are partially located on lands in which the United States has no Federal mineral ownership. The BLM does not issue decisions on claims that are void in part. However, you have acquired no rights on these lands.

cc: Del Tierra Engineering

IN REPLY REFER TO:
A MC 246423 et al

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE
3707 N. 7th Street
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/s/ Thomas E. Reitmeyer

Thomas E. Reitmeyer
Acting Chief, Branch of Lands
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cc: Del Tierra Engineering

V.M.P., Inc.
Wickenburg, Arizona 85358

Mr Budge

Please find enclosed, copies of my letters to Mr. Dickerson.

It is my sincere desire to settle this matter in a fair, equitable, and gentlemanly manor — however — Mr Dickerson persists in making the situation totally one-sided — AND I might add — At both our expenses

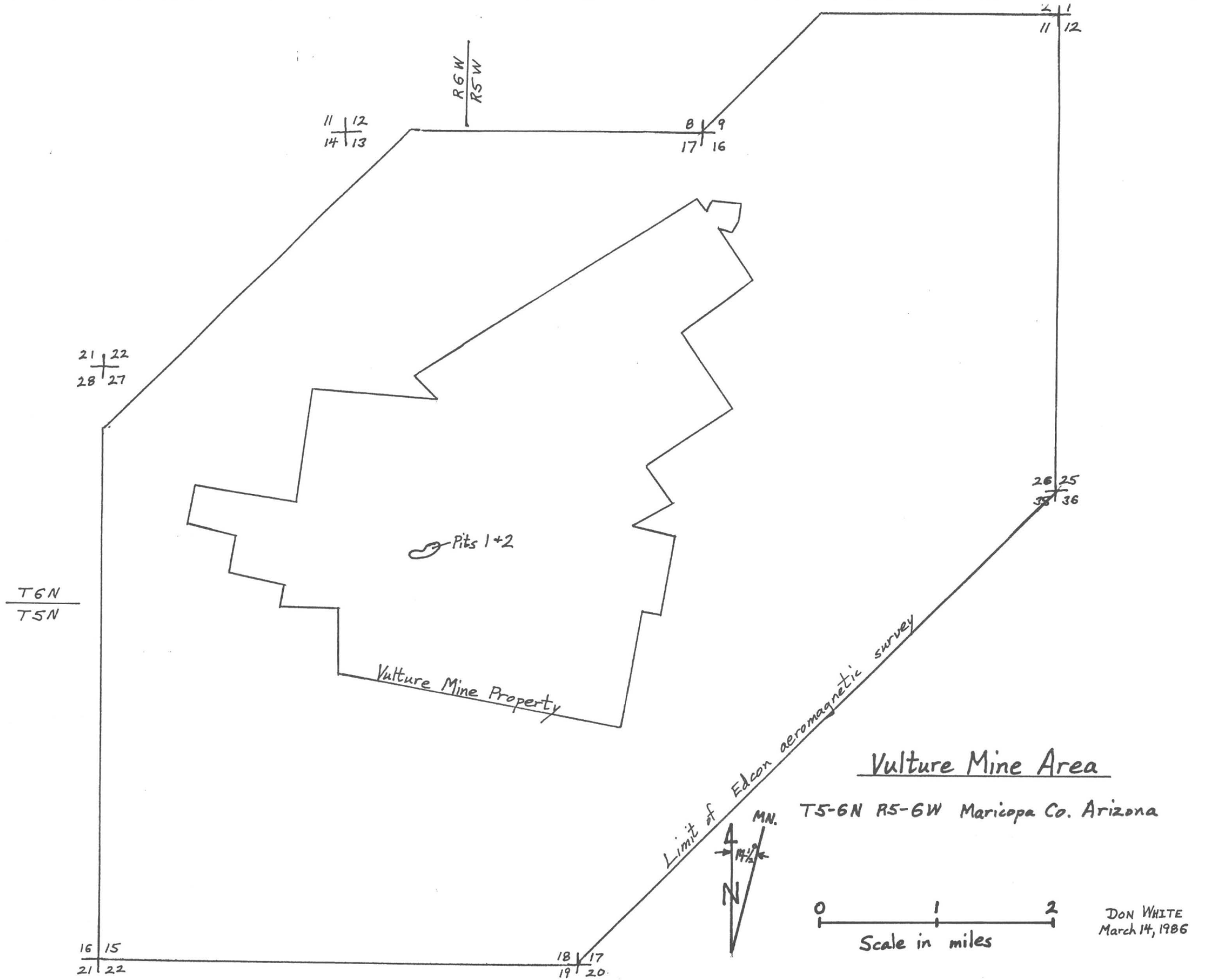
Hopefully my letters will help you to understand my position in this matter — My reference to our charges ARE not unfounded.

As two businessmen we should be able to resolve this minor problem and proceed to the MAJOR objective — "PRODUCTION" —

Please feel free to contact me next time you are in the states —

Sincerely
Charles W Bond

P.S. Have an enjoyable holiday season — AND A profitable New Year.



Vulture Mine Area

T5-6N R5-6W Maricopa Co. Arizona

DON WHITE
March 14, 1986

Ben & Carole,

Friday 3-14-86

This the outline of the aeromag survey area as we discussed on the phone. No time today to put the gedogy notes on it to explain the changes but I'll do that soon — at least so that Chuck + I can review it together when I see him Wed. afternoon in Tucson.

Don

Don White
521 East Willis St.
Prescott, AZ 86301
602/778-3140

March 14, 1986

Fleetwood R. Koutz
Geologist, Southwest Exploration Div.
ASARCO, Inc.
P.O. Box 5747
Tucson, AZ 85703

Dear Fleet,

Attached is the data on U.V.X. drilling. It may be useful in your review of the data you already have. Of course that little summary report is only sketchy in that it contains 8½" x 11" graphics and no drill logs. If and when you care to make a more detailed review we shall be happy to provide copies of pertinent level plans and cross sections (both 1" = 40') and drill logs (1" = 40' and/or 1" = 20') and chert detail logs (1" = 10').

Perhaps we shall be able to meet at the A.G.S. symposium later next week.

Regards,

Don White
Geologist, C.P.G.

Enclosure

cc: Ben F. Dickerson, III

DW:sk

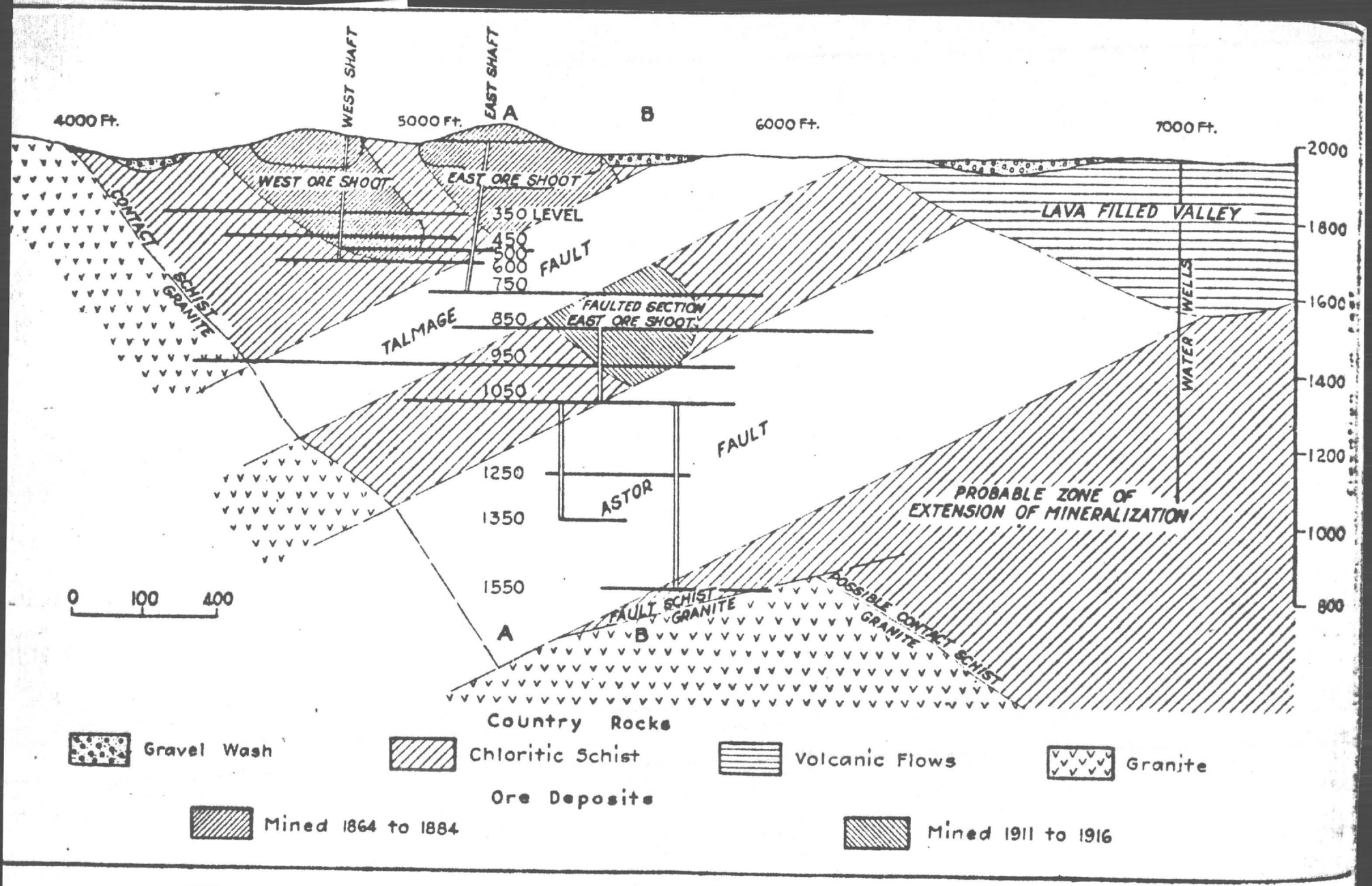


FIG. 1. LONGITUDINAL VERTICAL PROJECTION OF THE VULTURE MINE WORKINGS

Not Scanned

(Some duplicates in adjacent Scanned Folder)

BFD

Don White
521 East Willis St.
Prescott, AZ 86301
602/778-3140

February 4, 1986

Charles L. Williot
ELLIOT GEOPHYSICAL CO., INC.
4653 East Pima St.
Tucson, AZ 85712

Dear Chuck,

Shipped by bus yesterday (Monday) were two boxes containing the thirty Vulture area rock samples I collected as a suite for magnetic susceptibility testing. The Greyhound bus people are supposed to phone you regarding their arrival. I'm sorry I couldn't send them U.P.S. for your convenience but our local office doesn't pick up and is only open three hours each of three days per week, never when I can get there.

Attached is a brief log of what the hand specimens look like megascopically, some interpretation of what they represent, and their grid location (the grid is the one on the 200-scale topo map Carole O'Brien sent you). Don't bother plotting their locations though, for I will get you a copy with that already done. The rock suite represents the Precambrian, Laramide (?), and Tertiary rocks of import to us.

I ran trial magnetometer lines over various exposed and covered features as a sort of orientation and test of the suitability of magnetics. I was not too enthused. The exposed faults are too narrow to be resolved, the alluvial covered faults are effectively masked, the qpi sill is not distinguished magnetically, even where outcropping, and the qpi stock to ~~p€~~ country rock contact is only vaguely suggested by the magnetics. The chance of resolving a narrow apophysis beneath basalt, ash, and granitic alluvium seems slight.

These judgements are based upon the raw data only. I am just now plotting up the profiles and will either mail them or bring them when we rendezvous.

Give me a call if anything notable comes out of the magnetic susceptibility testing. Let's touch base this weekend regarding our rendezvous at the Vulture next week. I tentatively plan to be there Monday, Feb. 10 for another matter, and as many days thereafter as necessary for the VLF work.

Regards,

Don White

Don White
Geologist

DW:sk

Attachments

cc: Ben F. Dickerson, III and Carole A. O'Brien

VULTURE ROCK SUITE

FOR MAGNETIC SUSCEPTIBILITY TESTING

1 qpi stock - Beige, white, & light gray, coarse grained granite porphyry with clear quartz porphyroblasts up to 1/4" composing about 50% of rock. Balance is feldspar, mostly orthoclase, some biotite, and muscovite and about 5% scattered iron-stained spots of an unidentified, oxidized, ferruginous mineral (pyrite-?) preferentially surrounded by a halo of white feldspar. Massive, unfoliated. Trace manganese on feldspar faces. Some carbonate (siderite-?) as disseminations around the iron stained and feldspar-rich areas.
25,850 N - 218-770 E

2 qpi stock - Same as 1 except for more iron-stained spots (looking more like relict pyrite and casts thereof) up to 10%. More coarse grained, some quartz porphyroblasts approaching 1/2 inch in diameter.
25,850 N - 218,600 E

3 Tertiary dike rock - Beige to light brown-gray, fine to coarse grained, massive, feldspar porphyry. White subhedral orthoclase porphyroblasts up to 1/4" (30%) and clear quartz phenocrysts up to 1/10" (20%) are set in a very fine grained groundmass. Trace casts of pyrite euhedra up to 1/10". Some carbonate which may be primary or secondary. This rock forms dikes up to 40' thick within the qpi stock. Possible trachyte composition.
26,450 N - 218,650 E

4 Intrusive breccia - Black and white, coarse grained, breccia of about 50% subangular qpi fragments up to 4" ($\bar{x}$ = 1/2") healed by specular hematite (forming a 1/4" thick rim to the rock fragments) and vug-filling euhedral quartz. Some casts after coarse pyrite (up to 1/4"). This rock probably doesn't occur in more than a few-foot thicknesses along faults within the qpi stock.
26,800 N - 218,700 E

5 Tertiary dike rock - Same as sample 3 but slightly more pink color groundmass. Possible latite composition.
26,750 N - 218,950 E

6 qpi - Same as sample 1.
26,600 N - 219,050 E

7 qpi sill - Pale green variant (trace chlorite-?) of sample 1. Also contains a 1/4" thick white quartz vein. Similar to sample 1 but taken from the sill-like apophysis north of pit 3 rather than from the stock's core.
26,400 N - 220,430 E

8 p€ schist - Brown, green-gray, very fine grained, crudely foliated, quartz-sericite-carbonate-hematite schist with cross-cutting and conformable veinlets (up to 1/2" thick) of calcite, siderite, and quartz. Foliation probably obscured by hornfelsing as a result of qpi sill within 20 ft. north.
26,350 N - 220,400 E

9 Tertiary rhyolite dike - White to very palest green very fine grained intrusive dike rock. Massive, hard (H about same as steel nail) and characteristically contains abundant manganese dendrites on virtually every fracture surface. Some hairline quartz veins cutting at various orientations. Well displayed in walls of pit 3.
26,330 N - 220,350 E

10 p€ schist - Gray green, very fine grained, faintly foliated, quartz-chlorite-sericite schist with trace carbonate, some conformable quartz veins. Partially hornfelsed by proximity to qpi sill. Collected from north wall of pit 3.
26,270 N - 220-400 E

11 p€ schist breccia - Gray green, very fine grained, foliated, quartz-sericite-chlorite schist rock fragments in a slightly more siliceous, unfoliated qpi-like matrix. Some iron staining and carbonate. From south wall pit 3.
26,200 N - 220,450 E

12 p€ gneiss - Black and white, banded, fine to medium grained, quartz-amphibole-sericite-biotite gneiss with some iron stain. This rock is hanging wall to the qpi north of pit 3.
26,470 N - 220,400 E

13 qpi sill - Like sample 1 except for smaller, less distinct quartz phenocrysts. This is a more quickly chilled, marginal facies from the hanging wall of the sill north of pit 3.
26,600 N - 220,380 E

14 Quartz - White, massive "bull" quartz thought to be vein material within and emanating from the qpi sill. Includes adhering chunks of massive sericite along what were probably walls of the vein. This sample from the gold-barren lense northwest of the mine area.
26,760 N - 220,300 E

15 p€ schist - Gray-green, very fine grained, foliated, quartz-chlorite-sericite-hematite-carbonate schist. Foliation preserved by being at least 200 ft hanging wall to the qpi north of pit 4.
26,700 N - 220,600 E

16 qpi sill - Very pale green, white silicified, sericitized, and argillized variant of sample 1. Contains anastomosing quartz veins from hairline size to 1/2" thick, all with diffuse contacts as though the silica has penetrated the rock. This sample from cut between pit 2 and west incline.
26,180 N - 221,340 E

17 p€ schist - Gray-green, very fine grained, poorly foliated, silicified and hornfelsed and pyritized quartz-chlorite-sericite schist. Quartz veins up to 1/2" thick, generally conformable. Pyrite euhedra up to 1/4" both in the schist and quartz. This is the immediate footwall to the qpi sill of pit 2 (sample 16)
26,160 N - 221,350 E

18 pЄ schist - Iron stained silver gray, very fine grained, thick foliated, quartz-sericite-chlorite schist. This sample about 100 ft. footwall to qpi sill of pit 2 (sample 16).
26,060 N - 221,370 E

19 Sulfidic qpi - Similar to sample 16 but including about 3% pyrite, 3% galena, both as euhedra up to 1/4". Some yellow sulfur stain. From west end pit 1.
26,250 N - 221,600 E

20 pЄ schist - Gray-brown, iron stained, very fine grained, poorly foliated, hornfelsed (?) sheared, quartz-chlorite-sericite schist. This is immediate hanging wall to qpi sill of pit 1 (sample 20).
26,320 N - 221,600 E

21 Calcite - Light gray, very coarse grained, massive sparry calcite occurring as fault filling up to 2 ft. thick. This sample from Talmage fault in east wall of pit 1.
26,500 N - 221,980 E

22 Fault breccia - Coarse, angular breccia fragments of same composition as sample 20 within sparry calcite (like sample 21) of fault zone. This sample from dump around shaft northwest of old schoolhouse (shaft sunk on fault which is a splay off the Schoolhouse fault).
27,560 N - 222,360 E

23 pЄ diabase (?) - White and light gray, medium to coarse grained, foliated plutonic textured, quartz-feldspar-sericite-biotite ± chlorite. Contact relationships not found but texturally and mineralogically this is like the qpi but foliated enough to be pЄ. Occurs west of the old schoolhouse.
27,600 N - 222,270 E

24 pЄ amphibolite - Black, fine grained, faintly banded to massive, hornblende-quartz-feldspar gneiss with pyrite occurring as iron stained clusters of euhedra up to 1/10" surrounded by a feldspar-rich halo.
27,500 N - 222,200 E

25 Tertiary ash flow - Pink-gray, medium grained, massive, unfoliated, equigranular quartz-orthoclase-plagioclase ash flow rock. Collected from dump of Douglas shaft.
27,650 N - 223,400 E

26 Tertiary basalt - Gray, fine to medium grained, massive and fragmental basalt or andesite flow breccia and/or ash fall. Now contains about 20% sparry calcite. Collected from dump of Douglas shaft.
27,650 N - 223,400 E

27 pЄ amphibolite - Dark gray, fine grained, very faintly foliated, quartz hornblende-sericite-gneiss with hematite and carbonate alteration now pervasive. This is the pЄ rock at the bottom of the Douglas shaft.
27,650 N - 223,400 E

28 Tertiary volcanics - White, fine to medium grained, banded, crystal lithic tuff and ash fall. Bands about 1/2" thick alternate from a crystal tuff (hard, vitrious) to a poorly sorted pumice-rich ash with abundant open space. Outcrops on twin hills in W1/2SW1/4Sec1, one mile southwest of Vulture mine.

29 Tertiary volcanics - Same as sample 28 but all ash and pumice. Same location as sample 28.

30 p€ gneiss - Light gray, fine to medium grained, faintly foliated, dense, hard, quartz-feldspar-magnetite-biotite meta-intrusive (?). Noticeably magnetic. Collected from outcrop in wash in NW1/4Sec 2 T5N R6W (AZ minerals under prospecting permit to Hunt, Ware, and Proffett).

Carole

M E M O

TO: Carole A. O'Brien, Anthony F. Budge

FROM: Don White

DATE: Sept. 28, 1987

SUBJECT: Exploration ideas and opportunities near the Vulture Mine.

Compilation of the Vulture paper for the January 1988 S.M.E. meeting accompanied by careful study of Bill Rehrig's data has allowed me to recognize another Vulture-stock-like pluton worthy of exploration. Also, a property just two miles east of Caballeros Peaks (and the east edge of the Vulture claim block) has been brought to my attention with several 0.1 oz/t Au drill intercepts.

Our understanding of the genesis of the Vulture lode is summarized in the enclosed SME paper just completed. What is critical is the Vulture stock (the "quartz porphyry") and its apophysis, now dated as 85 ± 3 m.y. or latest Cretaceous/earliest Laramide. The Vulture claim block encompasses perhaps one third of the Vulture stock and perimeter, mainly the northeast and east sides. The Vulture lode dominates the area of outcrops. This spring's exercise with the ground magnetics and reverse circulation drilling was an attempt to locate other qp apophyses buried by Quarternary pediments. Three such targets were drilled with all three apparently being low-mag. interbeds within the Proterozoic stratigraphy. While that is disappointing, it doesn't mean other such targets aren't Vulture-like lodes. The concept may be applied to any perimeter of any pluton of similar composition and age to that of the Vulture stock. Study of a regional map by Rehrig, et. al. 1980 (colored copy attached) highlights a total of three such plutons; the Vulture stock, the Cañon City stock, and the more northerly Hartman Wash stock (all my names). All are coarse grained quartz monzonite with quartz porphyroblasts or the so-called "qp".

The Cañon City patent is plunk in the middle of the Cañon City qp body, unlike the Vulture lode area which is off along a sill. Thus the relatively lesser size and grade of the Cañon City gold occurrance to that of the Vulture. The all-important margins of the Cañon City stock are virtually unexposed because of faulting and Tertiary volcanic and Quarternary pediment cover. I propose we devote some careful thought on how to detect qp apophyses beneath the various cover types. Geophysics (including seismics, magnetics, radar) geochemistry (incl. Tellis Gold's "sniffer") and drilling should all be considered.

The Hartman Wash qp occurrence ought to be prospected. It is in an area of no reported workings (15' Vulture topo quad). A day or two of reconnaissance traverses and sampling would tell whether it is the right sort of pluton or not.

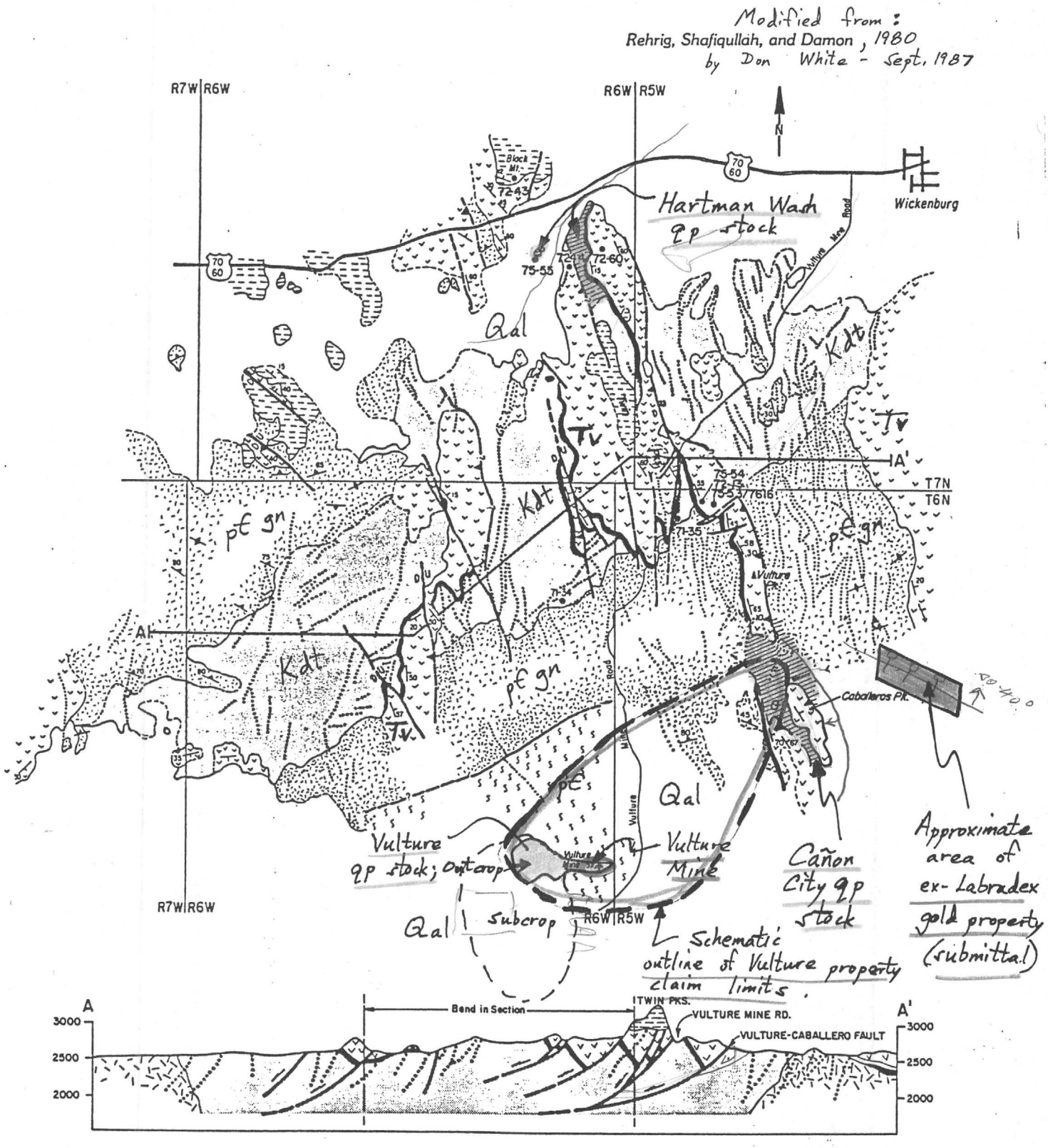
Almost coincident with your querries regarding higher grade hard-rock gold reserves at the Vulture, I have had a submittal that could fit the bill. It is the ex-Labradex property just east of Caballeros Peaks, about a 6-mile haul from the Vulture. Labradex is no more, but spun the property off to its ex-staff. They, in turn, have retained REDCO of Reno to peddle it for them.

Labradex drilled a number of holes along a 3,000 foot structure, intercepting two areas of gold over 0.1 oz/t and over 10 feet thick. Stripping ratios would be similar to the Vulture but there is hope the foliated rock would crush more easily and leach with better recoveries than the Vulture q.p.

I believe the Labradex property has potential for at least two areas of 10,000 to 100,000 s.t. each, at 0.1 oz/t. It was looked at recently by Noranda, including several additional holes, but was too small and erratic for them.

The ex-Labradex owners are looking for an N.S.R. royalty. REDCO wishes to be retained for the exploration work plus a royalty on any finds, but all is negotiable. Seems to me it offers an opportunity to beef up the reserve total for any operation at the Vulture. Let me know if a field visit or study of their data is warranted.

DW:sk



Map showing three identified quartz porphyry (qp) stocks and area of ex-Labrodex property with respect to Vulture Mine and claim block.

for the N.E. cor. of Vulture City Townsite.
From this corner I run N. 77° 20' W.
Variation 14° 15' E.

Chains 7.75 Top of ridge between two small hills

" 10.25 Center of Wash 30 feet wide 4 feet deep bears S. 61° W.

" 13.00 Wash 25 feet wide 8 feet deep bears S. 30° 33' W.

" 25.10 Top of hill 25 feet high

" 33.10 Center of Wash 20 feet wide 4 ft. deep bears S. 2° 35' E.

" 49.00 To N.W. corner post, the place of beginning, containing one hundred and forty acres according to the Official Plat of the Survey of the said lands returned to the General Land Office by the Surveyor General which said tract has been purchased by the said Thomas G. Grenham, Probate Judge as aforesaid in trust as aforesaid,

Now Know ye, That the United States of America, in consideration of the premises and in conformity with the several Acts of Congress in such case made and provided, Have given and granted and by these presents Do give and grant unto the said Thomas G. Grenham Probate Judge as aforesaid, in trust as aforesaid and to his successors, the said Tract above described: To Have and to Hold the same together with all the rights, privileges, immunities and appurtenances of whatsoever nature thereunto belonging unto the said Thomas G. Grenham Probate Judge as aforesaid, in trust as aforesaid and to his successors and assigns in trust as aforesaid" Provided, That no title shall be hereby acquired to any mine of gold silver, cinnabar, or copper or to any Valid

claim or possession held under existing laws; and provided further, That the grant hereby made is held and declared to be subject to all the conditions, limitations and restrictions contained in Section two thousand three hundred and eighty six (2386) of the Revised Statutes of the United States, so far as the same are applicable thereto."

In Testimony Whereof, I, Chester A. Arthur President of the United States of America, have caused these letters to be made Patent, and the Seal of the General Land Office, to be hereunto affixed.

Given under my hand at the City of Washington the Twentieth Day of June in the Year of Our Lord one thousand eight hundred and eighty two and of the Independence of the United States the one hundred and Sixth

L. S.

By the President Chester A. Arthur
By Wm. H. Cook Secretary
S. W. Clark Recorder of the General Land Office

Duplicate
No 171

The United States of America

To all to whom these presents shall come. Greeting:

Whereas Thomas T. Gresham Probate Judge of Maricopa County Arizona Territory in trust for the several use and benefit of the occupants of the Town site of Vulture City in said County and Territory according to their respective interests has deposited in the General Land Office of the United States a Certificate of the Register at Prescott Arizona Territory whereby it appears that full payment has been made by the said Thomas T. Gresham Probate Judge as aforesaid in trust as aforesaid according to the provisions of the Act of Congress of the 24th of April 1820 entitled An Act making further provision for the sale of the Public Lands and the Acts supplemental thereto including Section 2387 of the Revised Statutes for the following described tract of land to wit:

To establish the N.E. corner of Vulture City Townsite Set a sawed pine post 6x 6 ins. sq. x 5½ feet long, marked V.C.T.S. N.E. cor. 2½ ft in ground having first heeled the top of post and planted underneath it 2 quarts of coarse charcoal.

From this corner a witness monument 4 feet high by 3 feet in diameter at base with stone post 8x4 inches marked witness V.C.T.S. planted firmly in centre bears N. 81° 05' E. Variation 14° 15' E 260/100 chains and stands on the Summit "Hunts Peak" a prominent conical butte having a rocky crest and rising about 150 feet above the plain.

From this N.E. corner I run S 10° 40' E. Variations 14° 15' E by observation on Polaris with Transit

Chains 13.80 Centre of wash 25 feet wide 5 feet deep bears S 35° 75' E.

" 40.00 Set a sawed pine post 6x6 ins. square 5½ feet long marked V.C.T.S. E. cor. two feet in ground having first heeled the top of post and planted underneath it two quarts of charcoal for the S.E. corner of Vulture City Townsite.

From this a pine 6 ins diam. at base flagged and marked S. cor V.C.T.S. bears N 44° 30' E. 113 lks.

From this corner I run S 79° 20' E.

Variation 14° 15' E.

Chains 10.20 Centre of wash 25 feet wide 5 feet deep bears South.

" 25.00 Top of Northern Slope of small hill.

" 40.00 Set a sawed pine post 6x6 inches square 5½ feet long marked V.C.T.S. S.C. cor 2½ feet in ground having first heeled top of post and planted underneath it 2 quarts of coarse charcoal for the south east quarter of Vulture City Townsite.

From this corner I run N 10° 40' E

Variation 14° 15' E.

Chains 6.00 Centre of Wash 10 ft deep 30 ft wide runs E. 10° E.

" 11.55 Centre of Wash 7 feet deep 22 feet wide runs N. 27° E.

" 40.00 Set a sawed pine post 6x6 ins. square 5½ ft. long marked V.C.T.S. W.C. corner 2½ feet in ground having first heeled top of post and planted underneath it 2 quarts of coarse charcoal

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HOWARD A. TWITTY
RALPH B. SIEVWRIGHT
JOHN F. MILLS
N. DOUGLAS GRIMWOOD
ANDREW R. ALEX
ROGER K. FERLAND

RECEIVED MAR 15 1982

March 11, 1982

Mr. Russ Walker
Zortman/Lancusky Mining Company
P. O. Box 1904
Wickenburg, AZ 85358

RE: Vulture City Townsite

Dear Mr. Walker:

I have received the townsite patent for the Vulture City Townsite issued by the United States on June 20, 1982. This copy of the patent was delivered to us by one of your representatives. In the patent, the provision is made as follows:

> "Provided, that no title shall be hereby acquired to any mine of gold, silver, cinnabar, or copper or to any valid mining claim or possession held under existing law; . . ."

At the time of the issuance of this townsite patent, the matter of mineral rights in land granted by a townsite patent was unclear. It wasn't until the U.S. Supreme Court decision in 1885 was there any authoritative opinion by the U.S. Supreme Court given with respect to the rights of a townsite patentee to mineral lands. In the case of Deffeback v. Hawke, 115 U.S. 392, decided in 1885, the U.S. Supreme Court considered the effect of mining claims located on land held under the townsite laws.

Enclosed are 5 pages from the American Law of Mining discussing townsite entries. Also enclosed is a copy of an Arizona territorial decision by the Supreme Court of Arizona involving the town-site cases.

We think the effect of the Court decisions is that lands known to be valuable for minerals immediately prior to a townsite entry are excluded from the townsite entry, even though it may be included in a townsite patent. On the other hand, land included in a townsite patent that was not known to be valuable for mineral deposits are with its minerals included in the townsite patent.

Because of this uncertainty, we suggest that it would be desirable to have a title company make a title search of the history of this townsite patent. Such a search can be made by the title company more efficiently and less expensively than by an attorney or a land man. If such a search is authorized, we would employ Transamerica Title to make this search.

TWITTY, SIEVWRIGHT & MILLS

By

HAT/jel

Enclosures

cc George Hennessey w/encl.

and the state elected to select lieu land pursuant to the Act of 1891. The state had filed in 1912 a list of selected lands in full conformance with the directions of the Secretary of Interior, which was accompanied by requisite proofs and the proper fees. The section of land selected was withdrawn in 1914 as possible oil land, and the land department subsequently refused to approve the selection unless the state prove it was not known to be valuable for oil. The court specifically held that mineral character was to be tested by known conditions at the time the state had done all necessary on its part, and further indicated that school grants were to be liberally construed.

The foregoing decision reversed previous rulings by the land department that a state acquired no vested right in lieu selections until approved by the Secretary.[6] However, if a state has accepted a patent to lieu selections containing a reservation of minerals, the land department has taken the position that acceptance of the patent constitutes a waiver to an unrestricted patent although it subsequently develops that the department's position had been erroneous and the patentee was lawfully entitled to the unrestricted patent.[7]

§ 3.18 **Townsite Entries.** Of the many provisions, both general and special, that have been enacted for the entry of townsites upon the public lands, the first of significance to mining interests were the acts passed during the 1860's.[1] With regard to the character of land available for townsite entry, the Act of March 3, 1865[2] provided that title to town lots would be subject to recognized possession of mineral veins. Two years later legislation provided that no title to any mine of gold, silver, cinnabar, or copper, or to any valid mining claim or possession held under existing laws, could be acquired under a townsite entry.[3] In the leading case of *Deffeback v.*

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[6] Robinson (1921) 48 LD 384.

[7] United States v. New Mexico (1933) 54 ID 175; Robinson (1921) 48 LD 384, 387.

§ 3.18 [1] In general see 43 USC §§ 711–731 (1958) and 43 CFR Part 255 (1958 Supp) for existing townsite laws and regulations.

[2] 13 Stat 530 (1865), 43 USC § 717 (1958).

[3] 14 Stat 541 (1867), 43 USC § 722 (1958).

Hawke [4] the Supreme Court considered the foregoing act in the light of the general mining laws of 1866 and concluded that no title could be acquired under the townsite laws to land known at the time of sale to be valuable for its minerals of gold, silver, cinnabar, or copper. It was further stated that where a mining claim had been initiated and pursued to final certificate prior to any entry of the townsite pursuant to law, there was no legislative authority for the inclusion in the mining patent subsequently issued of a reservation excluding from the patent's operation all town improvements on the surface, as the mining patent carries with it the title to the surface included within the lines of the mining location. The certificate of purchase issued the mining claimant was said to be equivalent to a patent as to third persons and that the occupation of the town prior to any formal townsite entry initiated no rights which antedated those of the mineral claimant.[5] At the time of formal townsite entry the land was found to be known mineral land so that no rights were acquired thereby under the townsite law. The decision reiterated the view that unoccupied land within a townsite entry was not exempt from location under the mining law.

In *Davis v. Weibbold* [6] the Supreme Court directly considered whether the prohibition in the townsite law against acquisition of title to any mine was a reservation of such mines to the United States. It was held that the Act merely prohibited the passage of title under the town site laws to mines which were known to exist upon the issue of the townsite patent. If not known to exist at that time, a townsite patent passes all title of the United States to the land, thereby becoming private property to which the mining laws are inapplicable, so that the title of purchasers will not be disturbed by subsequent discoveries. The Court described the basic

[4] (1885) 115 US 392.

[5] But *cf* Bonner v. Meikle (D Nev 1897) 82 Fed 697 (the court here recognized a possessory right by a townsite unofficially founded on public land; however, the asserted rights of the mining locator appear to have failed for the lack of a valid mineral discovery, which was treated as essential to the success of a mining claim as against occupants of a town).

[6] (1891) 139 US 507.

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rule when it said that where "the mining patentee's rights antedated those of the occupants under the town-site law, and wherever such is the case, his rights will be enforced against the pretensions of the townsite holder; but where the latter has acquired his rights in advance of the discovery of any mines and the initiation of proceedings for the acquisition of their title or possession, his rights will be deemed superior to those of the mining claimant."[7]

While the relative priority of a mining patentee or townsite patentee is an easy matter to state, it is not clear from the decisions just what factual evidence was necessary to constitute an exception of land under the townsite law. The courts have used the terms "lands known to be valuable for minerals," or "for mineral deposits," and "known mines," or "land containing known mines," as equivalent in meaning under the townsite laws.[8] In one case it was stated that a town took no title when the evidence shows that the existence of a mineral-bearing vein was known prior to the town's application for title and prior to subsequent discoveries.[9] However, the test normally announced has been that in order to except mineral lands from the operation of a town-site patent, it is not sufficient that the lands do in fact contain minerals, or even valuable minerals, when the town-site patent takes effect, but they must at that time be known to contain minerals of such extent and value as to justify expenditures for the purpose of extracting them. If the lands are not known at the time to be so valuable for mining purposes, the fact that they have once been valuable, or are afterwards discovered to be still valuable for such purposes, does not defeat or impair the title of persons claiming under the townsite patent.[10]

The townsite laws resulted in a concept that is to be considered unique in the administration of the early public land

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[7] *Id* at 526; *also see* Tombstone Townsite Cases (1887) 2 Ariz 272, 15 Pac 26; 2 Ariz 442, 17 Pac 72.

[8] *See* Brady's Mortgagee v. Harris (1900) 39 LD 426.

[9] Mayle v. Bullene (1896) 7 Colo App 308, 44 Pac 69; *see* Golden v. Murphy (1909) 31 Nev 395, 103 Pac 394.

[10] Dower v. Richards (1894) 151 US 658; Bonner v. Meikle, *supra* N. 5; Clark (1928) 52 LD 426.

laws dependent upon classification of lands as mineral or non-mineral. The issuance of a townsite patent is not considered an adjudication that the lands embraced therein are non-mineral in character. In protests by claimants of unpatented mining claims against townsite patents embracing their claims within the limits of the townsite, the position has been taken that under the townsite laws a patent cannot operate to convey title to any lands known to be valuable for minerals at the date of the entry or which are held under a possession recognized by law, and the presence of such minerals is not a bar to issuance of a townsite patent. In such a situation, jurisdiction remains in the land department over any known minerals so that it may subsequently issue a patent to a mining claim when it is determined that the mining claim was in fact based upon rights, present or prospective, possessory or otherwise, which were acquired under provisions of the mining laws at the time of allowing the townsite patent.[11] Such an approach is an application of the principle that mining location rights recognized by law cannot be subsequently conveyed by the United States, but are to be protected by recognizing that the townsite patent cannot affect them.[12] The land office has demanded the clearest proof that land within a townsite patent was known to be valuable for minerals at the time of the patent whenever the issue has been raised many years thereafter.[13]

As in the case of other entries of public lands, a townsite entry consists of several formal steps spanning a period of time. The land department has expressed the view that the determination of any mineral claims encompassed within a townsite entry must be based upon facts existing as of the date of townsite entry.[14] The phrase "date of townsite entry" was held to refer to the date when final entry of the

[11] Golden Valley Mining Co. (1919) 47 LD 25; Brophy v. O'Hare (1906) 34 LD 596; Laland v. Townsite of Saltese (1903) 32 LD 211; Hulings v. Ward Townsite (1899) 29 LD 21; Pacific Slope Lode v. Butte Townsite (1897) 25 LD 518.

[12] *See* Butte City Smoke-House Lode Cases (1887) 6 Mont 397, 12 Pac 858; Talbott v. King (1886) 6 Mont 76, 9 Pac 434.

[13] Mill Side Lode (1910) 39 LD 356.

[14] Clark (1928) 52 LD 426.

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townsite is made and certificate of purchase is issued, or at least to the date when the townsite claimants have done everything required under the laws and regulations to entitle them to such certificate and nothing remains but to issue it. The latter position was adopted as being in accord with the general rule applicable to the vesting of rights in entrymen under the general land laws. The department recognized that the supreme courts of two of the mining states had previously held that the time for characterization of land within a claimed townsite was as of the time of the original application for entry.[15] However, the departmental decision clearly indicates that it would accept proof of the discovery of minerals at any time prior to the time all is done but the issuance of a final certificate as excluding the land from the townsite entry.

§ 3.19 ———. **Entries on Mineral Lands.** By the Act of March 3, 1891[1] provision was made for townsite entries by:

> [I]ncorporated towns and cities on the mineral lands of the United States, but no title shall be acquired by such towns or cities to any vein of gold, silver, cinnabar, copper, or lead, or to any valid mining claim or possession held under the law . . . the possessor of such mineral vein may enter and receive patent for such mineral vein, and the surface ground appertaining thereto: *provided,* that no entry shall be made by such mineral-vein claimant for surface ground where the owner or occupier of the surface ground shall have had possession of the same before the inception of the title of the mineral-vein applicant.

The different features involved in the legislation are the limitation of the act to incorporated cities or towns, the authorization of entries on mineral lands, and specific authority for the issuance of a patent to veins of minerals excepted from the operation of the townsite patent. However, such legislative provisions had little effect upon the general rules applied to townsite entries under the earlier acts. It had been

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[15] *See* Clark v. Jones (1926) 116 Ore 94, 240 Pac 551; Lockwitz v. Larson (1898) 16 Utah 275, 52 Pac 279.

§ 3.19 [1] 26 Stat 1101 (1891), 43 USC § 728 (1958).

was sold to the plaintiff at the same time, and, so far as we can see, his possession of her during the whole six months was open and unequivocal, carrying with it the usual marks and indications of ownership. It was such as to give evidence to the world of the claims of the new owner. It was an open, visible change manifested by such outward signs as rendered it evident that the possession of the vendor had wholly ceased. *Stevens* v. *Irwin*, 15 Cal. 506; *Cahoon* v. *Marshall*, 25 Cal. 201. And it was not necessary that the plaintiff's possession of the mare be continued indefinitely. It was said by REDFIELD, J., in delivering the opinion of the supreme court of Vermont in *Dewey* v. *Thrall*, 13 Vt. 284: "After a sale of personal chattels has become perfected by such a visible, notorious, and continued change of possession, that the creditors of the vendor may be presumed to have notice of it, the vendee may lend or let, or employ the vendor to sell, or perform any other service about the thing with the same safety he may a stranger." So in *Stevens* v. *Irwin*, *supra*, this court said: "This possession must be continuous—not taken to be surrendered back again—not formal, but substantial. But it need not, necessarily, continue indefinitely, when it is *bona fide* and openly taken, and is kept for such a length of time as to give general advertisement to the *status* of the property, and the claim to it by the vendee." See, also, *Godchaux* v. *Mulford*, 26 Cal. 316. In the light of these decisions we cannot say that the plaintiff's possession of the mare was not sufficient, the court below having found that it was, and we think, therefore, that the judgment and order should be affirmed

We concur: FOOTE, C.; HAYNE, C.

BY THE COURT. For the reasons given in the foregoing opinion the judgment and order are affirmed.

THE TOMBSTONE TOWN-SITE CASES.

REILLY *v.* BLACKMORE. SAME *v.* BERRY. MOUNTAIN MAID MIN. CO. *v.* REILLY.

(*Supreme Court of Arizona.* September 1, 1887.)

1. PUBLIC LANDS—TOWN-SITE—MINING CLAIM—CONFLICTING PATENTS.
   Where a patent to a town-site and a patent to a mining claim conflict, that one will be sustained which first vests the right.
2. SAME.
   A town-site patent does not vest a right in lands known at the time to be mineral lands.
3. SAME.
   A town-site patent will not be defeated by discovery of mineral and location of mineral lands as such after the town-site patent.
4. SAME.
   The right to mineral lands vests at the time of a valid location. A location void for uncertainty prior to a town-site afterwards amended and made the basis of a patent will not defeat a town-site patent prior to such amendment.
5. MINING CLAIM—LOCATION—EFFECT OF PATENT.
   The granting of a patent is *res adjudicata* that lands were mineral lands at the time of location, and known to be such.
6. SAME—EVIDENCE.
   A location uncertain as to lands claimed, unaided by proof of monuments, possession, or working, cannot be evidence that lands were then known to be mineral lands.

(*Syllabus by the Court.*)

Appeal from district court, Cochise county; BARNES, Judge.

Thos. Mitchell and *Goodrich & Smith*, for appellees. *Geo. G. Berry*, for appellants.

BARNES, J. The question presented in these cases is between a title derived from the Tombstone town-site patent, and one derived from a patent to the Mountain Maid Mining Company. The date of entry of the town-site, is April 9, 1880. The mining patent was dated August 15, 1882. February 25, 1879, there was filed a notice of location of the Mountain Maid mine. This notice is so uncertain that the land claimed cannot be identified. It is aided by no evidence whatever. November 20, 1880, the record was amended, and on August 15, 1882, a patent was issued to the land described in the amendment. This amendment was after the entry of the town-site. The mining title cannot be superior to the town-site title, unless the location, earlier than the town-site, be held to have fixed the title. A location of a mining claim, to fix the title as against after acquired rights by entry and patent, should be sufficiently clear to designate the ground claimed, and should be marked on the ground by monuments, showing the extent of possession. If the location on its face be uncertain, the uncertainty could be aided by evidence of the possession, or of monuments; but a location notice, on its face uncertain and without evidence of what land was occupied, cannot be evidence for any purpose. An amendment afterwards made, describing different land or making certain what was uncertain, cannot revert back to the original defective location. The entry of the town-site intervening after the first location and before the amendment must be prior in right as it is prior in time. If this were not so, it would open the door to great wrongs. A person might locate a mining claim, and then, by doing $100 worth of work annually, lie still and permit title to be acquired from a town-site, buildings erected, thousands of dollars spent, and then apply for a patent, amend his record, and swing his claim around, so as to include the most valuable improvements, and hold the same under his mining claim; and there is no limit to the time he might wait. It would be monstrous to give that construction to the mining act of 1872 and the town-site act as would make such a result possible. A town-site entry upon land not known to be mineral land at the time of entry is prior to any after acquired mining claim. *Deffeback* v. *Hawke*, 115 U. S. 392; 6 Sup. Ct. Rep. 95.

We have reviewed with care the *Butte City Smoke-House Lode Cases*, 12 Pac. Rep. 858, and *King* v. *Thomas*, Id. 865. We concur with these cases in holding that all mines, mining claims, and possessions held under existing laws are excluded from the terms of a town-site patent; that mining claims, located before the town-site entry, are paramount thereto. We also go so far as to say that lands upon which is any mine of gold, silver, cinnabar, or copper, or known to be such mineral lands, at the time of a town-site entry, are not included in such town-site entry. If those cases are to be construed as holding that if minerals be discovered in lands conveyed by a town-site patent, after the patent, and located as such, that such after-discovery and location become paramount to a town-site patent, and take such lands out from the operation of such patent, we do not concur with them. The question does not arise in the *Smoke-House Cases*. In the *King Case* there is some doubt as to whether this question is passed upon. The court in that case properly held that whether the lands were as a matter of fact mineral lands is *res adjudicata* by the patent to the mining claim. They held that the Silver King was a valid mining claim at the time of the issuing of the town-site patent. This view of these cases will meet with approbation, and clearly states the law as we understand it. The case before us, however, seeks to apply the principle to an invalid mining claim, prior to the town-site patent, and without proof that any mine existed prior to the town-site entry, or that the lands were known to contain mineral veins or deposits, or that there was any possession under existing laws. This is a very different question. To hold that every purchaser of a lot under a town-site patent, who erects valuable improvements thereon, ever after rests upon the precarious chance of having his title

and possession defeated by the discovery of minerals sufficient in amount to sustain a mining claim, is further than we can go. The supreme court in the *Deffeback Case, supra*, seem to have had this in mind, and to have recoiled from it, and they go no further than to hold "that a title to known mineral land cannot be acquired under the town-site laws."

We therefore hold that the Tombstone town-site patent is paramount to the patent to the Mountain Maid mine. The judgments are affirmed.

WRIGHT, C. J., concurs.

O'DOHERTY *v.* TOOLE.

(*Supreme Court of Arizona.* September 25, 1887.)

1. FRAUDULENT CONVEYANCES—BETWEEN HUSBAND AND WIFE.
   Real estate, conveyed by a husband to his wife, where the deed has not been recorded, and where husband openly has charge of and use of property conveyed, where it is listed for taxation in his name, and he pays taxes on the same, may be reached to satisfy a judgment against the husband.
2. LIMITATION OF ACTIONS—CLAIMS AGAINST AN ESTATE.
   The statute barring all claims against an estate, if not presented within 10 months, does not bar action to subject said property to a judgment.
3. EXECUTORS AND ADMINISTRATORS—ACTION AGAINST ESTATE—PARTIES.
   The administrator is not a necessary party to such an action.

(*Syllabus by the Court.*)

Appeal from county court of Pima; GREGG, County Judge.

J. A. Anderson, for appellant. *Hereford & Lovell*, for respondent.

WRIGHT, C. J. The main questions raised by the record in this case are: (1) Had the appellant and creditor, under the general law, the right to pursue the property fraudulently conveyed by the debtor, in the hands of the vendee, without joining the executor of the deceased debtor? (2) If so, has the law of this territory contravened that right, or by it is the debt barred and the right lost, because the claim was not presented for allowance in the probate court within the 10 months allowed by said law?

John O'Doherty, the appellant and creditor, had recovered judgment against James H. Toole, the husband of respondent, Louisa M. Toole, and one Hudson, during the life-time of said Toole, in the district court of Pima county, for about $3,800. The exact date of the judgment was May 29, 1884; the appellant having been a creditor of the said Toole some months prior to the date of the judgment. On the first day of November, 1882, Toole executed a deed to the respondent, his wife, whereby he deeded to her certain premises in the city of Tucson, worth at the time probably $15,000. This was a voluntary conveyance, made in consideration of one dollar and love and affection; and the judge below, in his first conclusion of law, finds that the deed was fraudulent and void as to appellant, but that it vested a good title in respondent, as to said Toole, his heirs, devisees, and assigns; and, in his second conclusion of law, he finds that respondent was and is estopped from denying that said deed was and is void as to the creditors of the said Toole.

These findings or conclusions of law were undoubtedly correct. The evidence showed that, after Toole had executed this deed to his wife, the respondent, she and he suffered it to lie in a drawer, along with other papers of his, for nearly two years; that it was not recorded until two months after the assignment, in May, 1884; that during all that time the public, including appellant, had no intimation whatever that the property had been deeded by Toole to his wife; that, on the contrary, Toole gave the property in to the assessor as his, during the years 1883 and 1884, and paid the taxes thereon during those years; that he continued to act towards the property in every respect

DKT 5404 PGE 199 18395 01-DEED UNION TITLE COMPANY

STATE OF ARIZONA, County of Maricopa, ss.
I do hereby certify that the within instrument was filed and recorded at request of
DKT 5404 PGE 199 on JAN 29 1965 - 9 22 AM at M. Docket 5104
WITNESS my hand and official seal the day and year first above written. Records of Maricopa County, Arizona.
CLIFFORD H. WARD
County Recorder,
By Jan Denton Deputy

(45)

When recorded, mail to:
ED MOOMJIAN
2025 East Campbell (Apt. 11)
Phoenix, Arizona

no Moomjian in Phx phone book

Quit Claim Deed (JOINT TENANCY) 1.75

Policy No. 26740

For the consideration of Ten Dollars, and other valuable considerations, I or we,

D. D. BLAIR, a single man

hereby quit-claim to

ED MOOMJIAN and NICOLE L. MOOMJIAN, his wife

not as tenants in common and not as community property estate but as joint tenants with right of survivorship the following described property situated in the County of Maricopa State of Arizona

An undivided 12½% interest in and to those certain portions of the plat of VULTURE CITY described as follows:

PARCEL "A": That portion of the plat of Vulture City lying South of the center line of Yuma Street and West of the center line of Hayes Street;

PARCEL "B": That portion lying South of the center line of Prescott Street and East of the center line of the North-South alleys through Blocks 39 and 46 and West of the center line of Hancock Street;

PARCEL "C": That part North of the center line of Phoenix Street and East of the center line of Hancock Street;

ALL according to said plat of VULTURE CITY recorded September 21, 1880, and indexed in Book 1 of Maps, page 2, records of Maricopa County, Arizona.

(Consideration for this deed is less than $100; therefore, no Internal Revenue Stamps are required)

The grantees by signing the acceptance below evidence their intention to acquire said premises as joint tenants with the right of survivorship and not as community property or as tenants in common

Dated this 27 day of January, 19 65

ACCEPTED AND APPROVED

D. D. Blair

Nicole L. Moomjian
Grantees

STATE OF ARIZONA)
County of Maricopa) ss.

This instrument was acknowledged before me this 27 day of January 1965 by D. D. BLAIR, a single man

Notary Public

STATE OF ARIZONA)
County of Maricopa) ss.

This instrument was acknowledged before me this 27th day of January 1965 by ED MOOMJIAN and NICOLE L. MOOMJIAN, his wife

Notary Public

Dkt 5404 Pg 200 18396 01 DEC

STATE OF ARIZONA, County of Maricopa, ss

I do hereby certify that the within instrument was filed and recorded at request of UNION TITLE COMPANY

Dkt 5404 Pg 200 JAN 2 1965 9:00 AM at M. Docket 5404

Page Records of Maricopa County, Arizona

WITNESS my hand and official seal the day and year first above written CLIFFORD H. WARD

County Recorder.

By Deputy

When recorded, mail to

JOHN C. McCLAMROCH, JR.
5515 E. Mockingbird Lane
Scottsdale, Arizona

Not in '65 phone book, but 2 with similar names

1.75

Quit Claim Deed
(JOINT TENANCY)

Policy No. 28740

For the consideration of Ten Dollars, and other valuable considerations, I or we,

D. D. BLAIR, a single man

hereby quit-claim to

JOHN C. McCLAMROCH, JR. and DONNA B. McCLAMROCH, his wife

not as tenants in common and not as community property estate, but as joint tenants with right of survivorship the following described property situated in the County of Maricopa, State of Arizona

An undivided 12½% interest in and to those certain portions of the plat of VULTURE CITY described as follows:

PARCEL "A": That portion of the plat of Vulture City lying South of the center line of Yuma Street and West of the center line of Hayes Street;

PARCEL "B": That portion lying South of the center line of Prescott Street and East of the center line of the North-South alleys through Blocks 39 and 46 and West of the center line of Hancock Street;

PARCEL "C": That part North of the center line of Phoenix Street and East of the center line of Hancock Street;

ALL according to said plat of VULTURE CITY recorded September 21, 1880, and indexed in Book 1 of Maps, page 2, records of Maricopa County, Arizona.

(Consideration for this deed is less than $100; therefore, no Internal Revenue Stamps are required)

January 1965

ACCEPTED AND APPROVED

D D Blair

Grantors

This instrument was acknowledged before me this day of , 19

5404 PAGE 198 01 DEED 18394

STATE OF ARIZONA, County of Maricopa, ss

I do hereby certify that the within instrument was filed and recorded at request of UNION TITLE COMPANY

Page 5404 PAGE 198 on JAN 29 1965 - 8 00 AM at M Docket

Records of Maricopa County, Arizona

WITNESS my hand and official seal the day and year first above written CLIFFORD H. WARD

[redacted] MOORE, County Recorder.

By Jm Denton, Deputy

When recorded mail to

BERNARD MILLER
2725 East Flower
Phoenix, Arizona 85016

In book
Same address
956-4973

Quit Claim Deed

(JOINT TENANCY) [redacted]

1.75

Policy No. 28760

For the consideration of Ten Dollars, and other valuable considerations, I or we

D. D. BLAIR, a single man

hereby quit-claim to

BERNARD MILLER and RUTH MILLER, his wife

not as tenants in common and not as community property estate, but as joint tenants with right of survivorship, the following described property situated in the County of Maricopa, State of Arizona

An undivided 25% interest in and to those certain portions of the plat of VULTURE CITY described as follows:

PARCEL "A": That portion of the plat of Vulture City lying South of the center line of Yuma Street and West of the center line of Hayes Street;

PARCEL "B": That portion lying South of the center line of Prescott Street and East of the center line of the North-South alleys through Blocks 39 and 46 and West of the center line of Hancock Street;

PARCEL "C": That part North of the center line of Phoenix Street and East of the center line of Hancock Street;

ALL according to said plat of VULTURE CITY recorded September 21, 1880, and indexed in Book 1 of Maps, page 2, records of Maricopa County, Arizona.

(Consideration for this deed is less than $100; therefore, no Internal Revenue Stamps are required)

The grantees by signing the acceptance below evidence their intention to acquire said premises as joint tenants with the right of survivorship and not as community property or as tenants in common

January 19 65

D. D. Blair

Grantors

DK 15948 PG 848

DEED D

STATE OF ARIZONA
COUNTY OF MARICOPA } ss. I hereby certify that the within instrument was filed and recorded in DOCKET 15948 -848-849 and indexed in DEEDS APR 9 - 1982 -12 45

Fee No. 108473

at the request of L.W Beal

Compared

Photostated

When recorded, mail to:
L.W. Beal
P.O. Box 1853
Wickenburg, Arizona 85358

Witness my hand and official seal.
BILL HENRY
COUNTY RECORDER
R Brooks
Deputy Recorder

Fee: 5.00

A

Warranty Deed

For the consideration of Ten Dollars, and other valuable considerations, I or we, L. Wayne Beal, and M. Jeanette Beal, husband and wife,

do hereby convey to V.M.P., INC., an Arizona corporation,

the following real property situated in Maricopa County, Arizona:

Refer to Exhibit "A" attached hereto and incorporated herein by this reference.

Subject to current taxes and other assessments, reservations in patents and all easements, rights of way, encumbrances, liens, covenants, conditions, restrictions, obligations and liabilities as may appear of record, the Grantor warrants the title against all persons whomsoever.

Dated this 14 day of March, 1982.

L. WAYNE BEAL

M. JEANETTE BEAL

STATE OF ARIZONA
County of Maricopa } ss.

This instrument was acknowledged before me this 14 day of March, 1982 by L. Wayne Beal, and M. Jeanette Beal.

Notary Public

My commission will expire 2-3-86

STATE OF ARIZONA
County of } ss.

This instrument was acknowledged before me this day of 19 by

Notary Public

My commission will expire

EXHIBIT "A"

DKT 15948 PG 849

D E S C R I P T I O N

PARCEL NO. 1: HAMILTON, ASTOR, TALMAGE, CONKLING, CUSTER, SHERMAN, VAN BUREN, ELMORE, JANE ELMORE and SHERIDAN Lode Mining Claims, in Sections 35, and 36, Township 6 North, Range 6 West of the Gila and Salt River Base and Meridian, and in Section 31, Township 6 North, Range 5 West of the Gila and Salt River Base and Meridian in the Vulture Mining District, being shown on Mineral Survey No. 2511 on file in the Bureau of Land Management as granted by Patent recorded July 1, 1924 in Book 186 of Deeds, page 259, records of Maricopa County, Arizona.

PARCEL NO. 2: PIT GOLD Lode Mining Claim in the Southeast quarter of Section 36, Township 6 North, Range 6 West of the Gila and Salt River Base and Meridian in the Vulture Mining District, being shown on Mineral Survey No. 2522 on file in the Bureau of Land Management as granted by Patent recorded July 1, 1924 in Book 186 of Deeds, page 257, records of Maricopa County, Arizona.

PARCEL NO. 3: VULTURE EXTENSION Lode Mining Claim in the South half of the Northwest quarter of Section 31, Township 6 North, Range 5 West of the Gila and Salt River Base and Meridian in the Vulture Mining District, being shown on Mineral Survey No. 3146, on file in the Bureau of Land Management as granted by Patent recorded November 17, 1924 in Book 187 of Deeds, page 441, records of Maricopa County, Arizona.

PARCEL NO. 3-A:

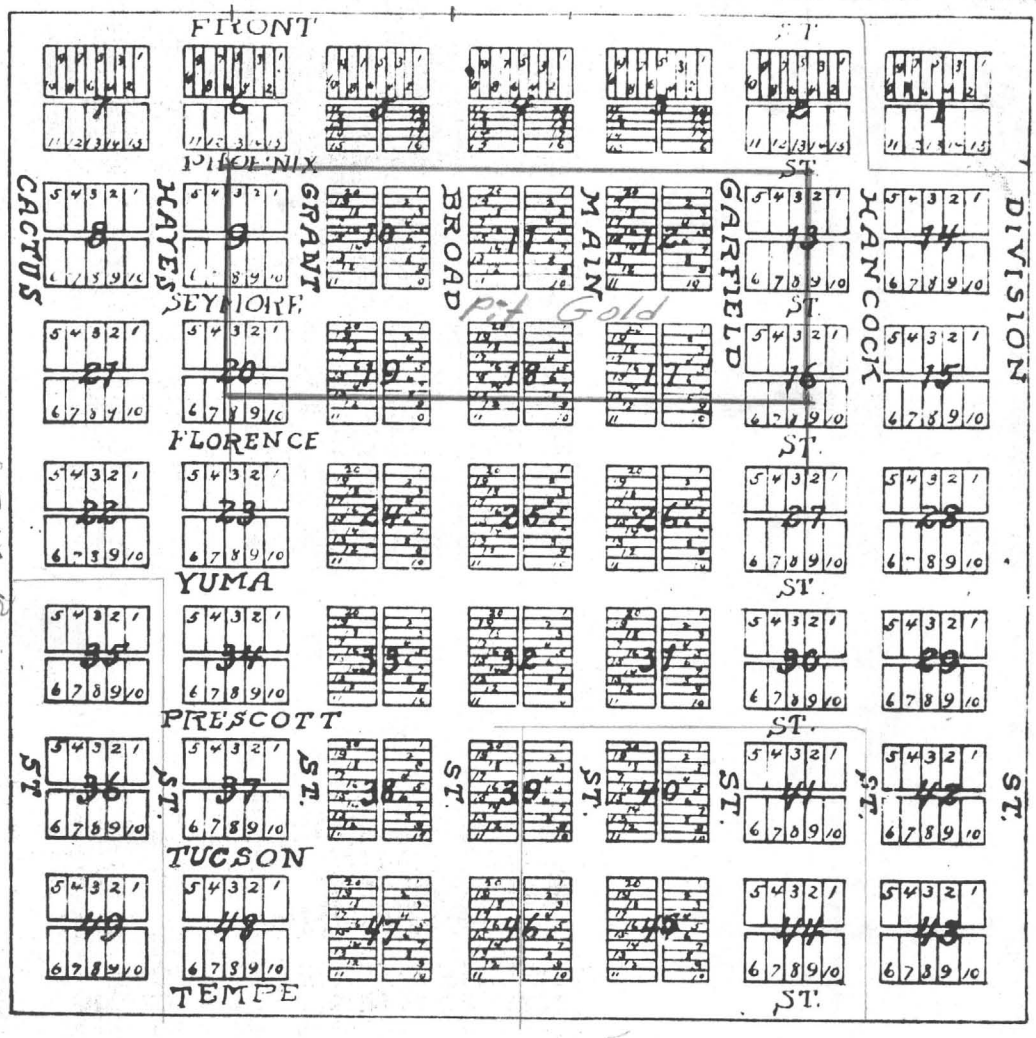
GOLD NUGGET LODE & CANON CITY LODE #1 Mining claim, in Vulture District in Section Sixteen (16), Township Six (6) North, Range Five (5) West, being shown on Mineral Survey No. 1797, on file in the Bureau of Land Management, as granted by Patent recorded February 21, 1974, in Docket 10526, page 323, records of Maricopa County, Arizona.

Pit Gold Claim M.S. 2522

Patent recorded 7/1/24

305 x 305

Needed: blocks 2, 3, 4



2640

305 x 832

505 x

Plat of

1" = 506'

3.673 ac/block

EXPLANATORY

Townsite ½ mile (2640 ft) Square Including 160 Acres —

All Streets are 90 ft wide. Except MAIN, BROAD, FLORENCE and YUMA which are 105.

All Alleyways are 20 ft. wide.

Interior Business Lots are 25 x 125 ft.

Corner " " " 35 x 125 ft. Except lots 15 and 16 in blocks 3, 4 and 5 which are 25 ft. x 125 ft.

Interior Resident Lots are 50 ft. x 125 ft.

Corner " " " 60 ft x 125 ft.

VULTURE CITY

Maricopa Co. ARIZONA

Surveyed by Herbert R. Patrick. SURVEYOR. (when?)

Book 1 Maps, page 2.

THE VALLEY ABSTRACT CO. PHOENIX ARIZONA.

IRON KING ASSAY INC.

28-Oct-86

LAB JOB #: MSC01101

Client name: DMEA Ltd.

Billing address: 7340 E. Shoeman Ln.
Suite 111-B-E
Scottsdale, AZ 85251

Phone number: 778-3140

No. Samples: 6
Date Received: 10-22-86
Submitted by: Don White

INVOICE ATTACHED

ANALYTICAL REPORT

Client ID MSC01101	Lab ID	FA/AA Au oz/ton		
M 101	1101- 1	0.003	M1 54-58	.003 ✓
M 102	1101- 2	0.115	M1 61-62	.096 ✓
M 103	1101- 3	3.190	M2 11-16	2.19
M 104	1101- 4	0.012	M2 16-21	.006 ✓
M 105	1101- 5	0.031	M3 24-27	.030 ✓
M 106	1101- 6	0.002	M3 27-31	<.001

DMEA LTD.
OCT 29 1986
RECEIVED

REGISTERED ASSAYER
CERTIFICATE NO.
1431
ROBERT G.
CROOK
Date Signed 10-28-86
ARIZONA, U.S.A.

P.O. Box 56 • Humboldt, Arizona 86329 • Phone (602) 632-7410

call on Friday 622-4836

Vulture Check Assays

October, 1986

		I.K. #		Hole	Footage	Gold Assay (oz/T) IK	Skyline	Δ	ppm	
1	MSC	1048	4	H-41	15-20	.009	.008		.26	.010
2			5		20-25	.081	.082	+1.25%	2.8	.085
3			6		25-30	.052	.038	-27%	1.3	.040
4			7		30-35	.321			>10	.325
5			8		35-40	.017	.015		.50	.015
6			9		40-45	.003	.004		.14	.005
7	MSC	1055	22	H-47	120-125	.004	.004		.15	.005
8			23		125-130	.005	.004		.12	<.005
9			24		130-135	.004	.003		.09	<.005
10			25		135-140	.016	.018		.63	.020
11	MSC	1056	28	H-48	150-155	.013	.013		.46	.015
12			29		155-160	.015	.012		.40	.010
13			30		170-175	.180	.140	-22%	4.8	.135
14			31		175-180	.002	.002		.05	<.005
15	MSC	1057	13	H-49	70-75	.009	.009		.32	.010
16			14		75-80	.220	.239	+8.6%	8.2	.230
17			15		80-85	.280	.277		9.5	.285
18			16		85-90	.085	.143	✓+68%	4.9	.145
19	MSC	1072	4	H-54	15-20	.100	.134	✓+34%	4.6	.135
20			5		20-25	.185	.225	✓+22%	7.7	.190
21	MSC	1080	5	M-1	34-39	.004	.003		.09	<.005
22			6		39-43	.049	.050		1.7	.050
23			7		43-46	.073	.061	-16.4%	2.1	.060
24			19		80-84	.050	.058	+16%	2.0	.060
25			20		84-85	.099	.088	-11.1%	3.0	.085
26	MSC	1081	1	M-2	11-16	2.190			>10	2.400
			2		16-21	.006	.006		.22	.005
28			8		50-54	.080	.085	+6.25%	2.9	.085
29	MSC	1082	2	M-3	19-24	.003	.038	+267%	1.3	.040
30			3		24-27	.030	.006		.21	.005

Total of 20 Reverse circ. samples and 10 core chip samples or 30 gold check assays

0.044 0.044

ORDER FOR ANALYTICAL SERVICES

Samples Sent to:

SKYLINE LABS, INC.
P.O. BOX 50106 • 1700 WEST GRANT ROAD
TUCSON, ARIZONA 85703
(602) 622-4836

(Report and invoice in duplicate will be sent to address below unless otherwise instructed)

Address Report To:
Don White
521 East Willis St.
Prescott, AZ
86301
Tel. 778-3140

P.O. NO.:
SHIPMENT NO.:
DATE SHIPPED: Tuesday, Oct. 14, 1986
SHIPPED VIA: U.P.S. (insured)
NO. OF CARTONS: One (1)
NO. OF SAMPLES: Thirty (30)
(Information above helps us trace lost shipments)

Send Invoice To: Ben F. Dickerson III
DMEA Ltd.
7340 East Sherman Ln.
Suite 111-B-(E)
Scottsdale, AZ 85251

Send Copy of Report To: Same

LIST SAMPLE NOS.	DESCRIBE MATERIAL	LIST ELEMENTS TO BE DETERMINED (Give anticipated range of values, if possible) Describe any special sample preparation procedures desired. (#)	INDICATE METHOD OF ANALYSIS*	✓ IF 31-ELEMENT EMISSION SPEC SCAN DESIRED
MSC 1048	4 thru 9	(6) All are pulps Gold assay by Fire/AA using one assay ton and being sure to homogenize each pulp prior to taking your split for assay	G	
MSC 1055	22 thru 25	(4)		
MSC 1056	28 thru 31	(4)		
MSC 1057	13 thru 16	(4)		
MSC 1072	4 and 5	(2)		
MSC 1080	5, 6, 7, 19, 20	(5)		
MSC 1081	1, 2, 8	(3)		
MSC 1082	2, 3	(2)		
If any values exceed the geochem (AA) range, go ahead with straight assay				

PAYMENT FOR SERVICES REQUESTED MUST ACCOMPANY ORDER UNLESS CREDIT ARRANGED

Signature of person authorizing work: Don White
(Use Continuation Sheet If Necessary)

INSTRUCTIONS

*METHOD OF ANALYSIS: G-Geochem, Q-Quantitative or Routine Assay
W-Wet Assay, F-Fire Assay

+ Hold for pickup ~ Dec 8

†SAMPLE STORAGE: Pulps stored 90 days pending instructions, bulk rejects stored 30 days pending instructions.

Enclose yellow original with samples, send white copy by mail, retain pink copy. White copy will be returned to shipper as an acknowledgement that shipment has been received.

INDICATE DESIRED DISPOSITION OF SAMPLES AFTER ANALYSIS	Bulk Rejects	Pulp
Return at customer's expense via: ~~[illegible]~~ (+)	None	Save
Store temporarily pending instructions†		
Discard immediately		

SENDER COPY

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. UQX 045
October 29, 1986
MSC-1048-04 TO
MSC-1082-03

A.F. BUDGE (MINING) LIMITED
Attn: Mr. Ben F. Dickerson III
DMEA Ltd.
7340 E. Shoeman Lane, 111-B (E)
Scottsdale, Arizona 85251

Analysis of 30 Pulp Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (oz/t)
1	MSC-1048-04	.010
2	MSC-1048-05	.085
3	MSC-1048-06	.040
4	MSC-1048-07	.325
5	MSC-1048-08	.015
6	MSC-1048-09	.005
7	MSC-1055-22	.005
8	MSC-1055-23	<.005
9	MSC-1055-24	<.005
10	MSC-1055-25	.020
11	MSC-1056-28	.015
12	MSC-1056-29	.010
13	MSC-1056-30	.135
14	MSC-1056-31	<.005
15	MSC-1057-13	.010
16	MSC-1057-14	.230
17	MSC-1057-15	.285
18	MSC-1057-16	.145
19	MSC-1072-04	.135
20	MSC-1072-05	.190
21	MSC-1080-05	<.005
22	MSC-1080-06	.050
23	MSC-1080-07	.060
24	MSC-1080-19	.060
25	MSC-1080-20	.085

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (oz/t)
26	MSC-1081-01	2.400
27	MSC-1081-02	.005
28	MSC-1081-08	.085
29	MSC-1082-02	.040
30	MSC-1082-03	.005

*NOTE: Analysis based on a one assay-ton sample.

cc: Mr. Don White
521 East Willis St.
Prescott, AZ 85301

REGISTERED ASSAYER
CERTIFICATE No.
9425
WILLIAM L.
LEHMBECK
SIGNED
ARIZONA, U.S.A.

William L. Lehmbeck
Manager

10/29/86

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

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6	MSC-1048-09	.005
7	MSC-1055-22	.005
8	MSC-1055-23	<.005
9	MSC-1055-24	<.005
10	MSC-1055-25	.020
11	MSC-1056-28	.015
12	MSC-1056-29	.010
13	MSC-1056-30	.135
14	MSC-1056-31	<.005
15	MSC-1057-13	.010
16	MSC-1057-14	.230
17	MSC-1057-15	.285
18	MSC-1057-16	.145
19	MSC-1072-04	.135
20	MSC-1072-05	.190
21	MSC-1080-05	<.005
22	MSC-1080-06	.050
23	MSC-1080-07	.060
24	MSC-1080-19	.060
25	MSC-1080-20	.085

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Tucson, Arizona 85703
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ITEM	SAMPLE NUMBER	FIRE ASSAY Au* (oz/t)
26	MSC-1081-01	2.400
27	MSC-1081-02	.005
28	MSC-1081-08	.085
29	MSC-1082-02	.040
30	MSC-1082-03	.005

*NOTE: Analysis based on a one assay-ton sample.

cc: Mr. Don White
521 East Willis St.
Prescott, AZ 85301

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

Vulture Core for Metallurgical Tests

October, 1986

Hole No.	From	To	Interval (ft)	Rock Type	Assay oz/t	Weight (lbs)
M-1	39	43	4	h.w.	0.049	130.8
	43	46	3	qpi	0.073	98.1
	46	48	2	qpi	0.006	65.4
	48	50	2	qpi	0.028	65.4
	50	52	2	qpi	0.003	65.4
	52	54	2	qpi	0.053	65.4
	54	58	4	int.	0.003	130.8
	58	61	3	int.	0.006	98.1
	61	62	1	int.	0.096	32.7
	62	65	3	int.	0.011	98.1
	65	70	5	int.	0.013	163.5
	70	75	5	int.	0.009	163.5
	75	80	5	qpi	0.042	163.5
	80	84	4	qpi	0.050	130.8
	84	85	1	f.w.	0.099	32.7
M-2	11	16	5	h.w.	2.190	163.5
	16	21	5	h.w.	0.006	163.5
	21	27	6	h.w.	0.005	196.3
	27	32	5	h.w.	0.015	163.5
	32	40	8	h.w.	0.012	261.7
	40	45	5	h.w.	0.026	163.5
	45	50	5	h.w.	0.012	163.5
	50	54	4	h.w.	0.080	130.8
	54	58	4	h.w.	0.017	130.8
	58	63	5	h.w.	0.009	163.5
	63	68	5	h.w.	0.002	163.5
M-3	14	19	5	f.w.	0.011	163.5
	19	24	5	f.w.	0.003	163.5
	24	27	3	f.w.	0.030	98.1
	27	31	4	f.w.	< 0.001	130.8
	32	37	5	f.w.	0.005	163.5
	37	41	4	f.w.	0.005	130.8

Notes - BFD October, 1984

Abstract of NEI report on Vulture Prospect by Michael Donnelly
March 16, 1981

Recommendations

High grade mineralization restricted to zones of quartz veining and adjacent wall rock. Gold in metasediments has direct correlation with intensity and extent of hydrothermal alteration; altered portions of quartz monzonite intrusive are weakly mineralized.

Best potential for gold mineralization on meaningful scale (NEI) is restricted to the intrusive body; veins near exhaustion and gold in metasediments very low grade.

IP survey revealed nothing much of value; one weak anomaly - maybe one drill hole on it.

Property of some interest, but high cost deal precludes work at this time. (Beal mentioned unfavorably.)

Introduction - History

Nothing much new. Two north dipping, east raking ore shoots mined; west shoot to 600 feet; east shoot to approx. 1000 feet; one stope on west shoot, 100-ft. level was approx. 80 feet wide. Noranda had 6-month walk-on at $1,000/month. In 1970, conducted a bulk sampling program. No results given.

Present work consisted of rock chip and channel samples; detailed mapping in pits; and 20 shallow rotary holes (24-36 feet deep).

Regional Setting

Nothing new - Rehrig

Geology - Mine Area

Protovolcanics & sediments

Series of metavolcanics, amphibolites, fine- to coarse-grained epiclastics, quartz-pebble conglomerate and some volcaniclastics; a small lens (?) of ferruginous chert located north of pits is only chemical sediment seen. Upper greenschist metamorphism (staurolite to chlorite); some folding and pegmatites (aplite?).

Metasediments = wackes, quartz-wackes, siltites and quartzites; quartz pebble lens (?) exposed in pits; 75 feet thick in east pit; matrix strongly foliated quartz-sericite.

No bed top indicators: rock probably equivalent to Spud Mountain, or, Iron King volcanics: approx. 1760 m.y. age

Quartz Monzonite Porphyry Intrusive

Least understood rock in the mine area; poorly exposed; multiple facies and alteration overprint make it difficult to map.

Field evidence indicates Qm brought hydrothermal alteration to metasediments along with aplite and pegmatites; latter two very subordinate to Qm porphyry. Outcrop extent of Qmp is poorly defined; that exposed west of mine area dips under gravels to south, east and west. Mapping does show intrusive persists for 1 mile to north and northwest.

Small exposure of Qmp in pits in central part of mine area represents thin knobby apophysis of main intrusive mass. Qmp not seen underground.

Tertiary

Mid-Tertiary volcanics mostly andesite lavas and tuffs with some intercalated epiclastic and volcaniclastic materials. A 1929 Mining Journal article suggests 500 to 600 feet of volcanics on east side of Schoolhouse Fault in drill holes. The only Tertiary unit in the mine area is porphyritic rhyolite dike exposed in southwestern most pit.

Quartz veins - zones

Two large and several smaller veins provided most of historic production; sub-parallel, east-west, semi-conformable to enclosing metasediments. Two large veins tentatively traced through pit areas for 900 feet.

Veins mostly quartz-carbonate with a little pyrite, chalcopyrite and galena; native gold in flakes and leaves in association with basemetal rich portions.

All mineralized vein samples show multiple stages of brecciation, silicification and annealing in thin section and hand specimen. Silicified wall rock fragments occur in all veins and show ghost outlines; changes color of veins to blue-grey; may be a quartz vein breccia.

Absence of cross-cutting relationships prevents establishing relative ages among veins. Two barren vein events in mine area; 2-30 mm thick veins in metasediments.

Structure

Fabric dominated by west trending, north dipping metasediments; both Qmp intrusive and quartz veins are partly controlled by rock structural grain; 35 to 55 degree north dips.

Limited folding, northeast plunging isoclines; wave length less than 1 meter in east wall of west pit.

Faulting

Property in broad zone of intense north-northwest to northwest trending normal faults - shaped Vulture range.

Three episodes can be seen

1) In mine area: east-west to west-northwest trending high angle normal faults, predating quartz veins. These provided avenue for hydrothermal alteration best seen in east pit.

2) Post mineral faulting a) low angle normal faults displace quartz veins in stair step fashion; b) north-northwest trending high angle faults with right lateral movement; age relationship between (a) and (b) not known.

3) North trending Basin and Range faulting; youngest episode in area. The Schoolhouse Fault exemplifys; may have 500 to 600 feet of vertical displacement.

Hydrothermal Alteration

All metasediments and Qpi rocks in mine area have been hydrothermally altered. Quartz-sericite-pyrite is characteristic, and is most advanced in the Qpi apophysis and in fine-grained clastic units.

As a rule, metasediment alteration is strongly developed adjacent to mineralized quartz veins; alteration decreases laterally for 10's of feet before it becomes indiscernable with greenschist metamorphism. However, this relationship breaks down when alteration is structurally controlled and alteration overlaps. Structurally controlled alteration best seen in southwestern corner of east pit.

Advance alteration in metasediments frequently obliterates all relict sedimentary features. Fine-grained clastics are most susceptible and are usually replaced by an auriferous qtz-ser-py association. Pyrite may form 1-5% volume of rock.

Mineralization

Rock chip geochem in conjunction with mapping shows that gold mineralization occurs in 2 distinct modes:

1) mineralized quartz veins and in their hydrothermally altered wall rocks;

2) disseminated gold mineralization in Qpi. Although copper, lead, zinc and silver are present in anomalous amounts, gold is the principal metal. Gold-silver ratios vary from 1:1 in weakly altered metasediments to 1:3.8 in strongly mineralized

quartz veins.

Base metal concentrations are low in all units, with the exception of high grade samples. Arsenic content is quite low, 15-20 ppm, and shows no relationship to gold. Gold vs. lithology plot clearly shows gold mineralization not confined to a single stratigraphic unit or rock type. Gold does vary with the intensity of alteration.

Gold mineralization in Qpi is poorly understood. Rock chip analyses suggest that Qpi in the immediate mine area is weakly gold bearing and there is correlation between intensity of alteration and gold content. Pyritic samples usually the most strongly mineralized. Gold values in Qpi range from a low of 0.04 ppm to a high of 2.2 ppm.

IP Survey

Designed to detect possible sulfide-rich portions of intrusive body and to delineate strongly altered metasediments (Mining Geophys. Surveys of Tucson); 4 north-south trending lines, 500-600 feet apart.

Result: weak amplitude IP response with associated weak resistivity signal on 2 adjacent lines. Anomaly described as an east-west trending dike-like response at, or near the surface that is associated with a relatively high resistivity rock of 500 ohmmeters vs. background of about 150. The significance of this resistivity contrast is not clear. Geophys. estimated that under ideal conditions the 20 ms anomaly may equate to 1% volume sulfides.

The centre of the anomaly lies between the west open pits and the central mine area and continues to the east where it is very weak on line 4, which is centered over old mine workings in central pit of mine area.

Cross sections B-B' and C-C' show the north dipping projection of the pyritic altered rocks and is a likely explanation for the IP response. Rocks (altered metasediments and Qpi) in this area contain 0.5 to 1.0% volume pyrite.

Discussion

This work has added a certain amount of understanding to the gold mineralization at Vulture:

1) altered metasediments in mine area are ubiquitously mineralized;

2) gold content of more than 1.7 ppm (0.05 oz/t) in metasediments generally restricted to zones of more intense alteration adjacent to quartz veins;

3) gold content fades laterally for 10's of feet before

falling to background levels;

4) gold mineralization is not associated with or restricted to a particular stratigraphic unit, including quartz pebble conglomerate;

5) preliminary evidence suggests that the altered portions of Qpi body are weakly mineralized.

Evidence gathered during this work suggests the altered Qpi body offers the best potential for moderate to large tonnage, low grade gold mineralization. This is little promise for discovery of high grade gold vein mineralization on a meaningful scale; gold bearing metasediments are low grade.

The auriferous character of the intrusive is poorly understood and geologic and geochemical data are restricted to scattered exposures. Although preliminary model suggests a strong pyrite-gold correlation, a sulfide-poor mineralized system cannot be ruled out.

Relative and absolute ages of veining and emplacment of Qpi body are uncertain. Based upon petrologic makeup of the intrusive and the apparently deep erosional level, an atypical Laramide age magmatic event is suggested. Field evidence indicates that mineralized veins are cogenetic with the Qpi intrusive mass and unrelated to Tertiary volcanics.

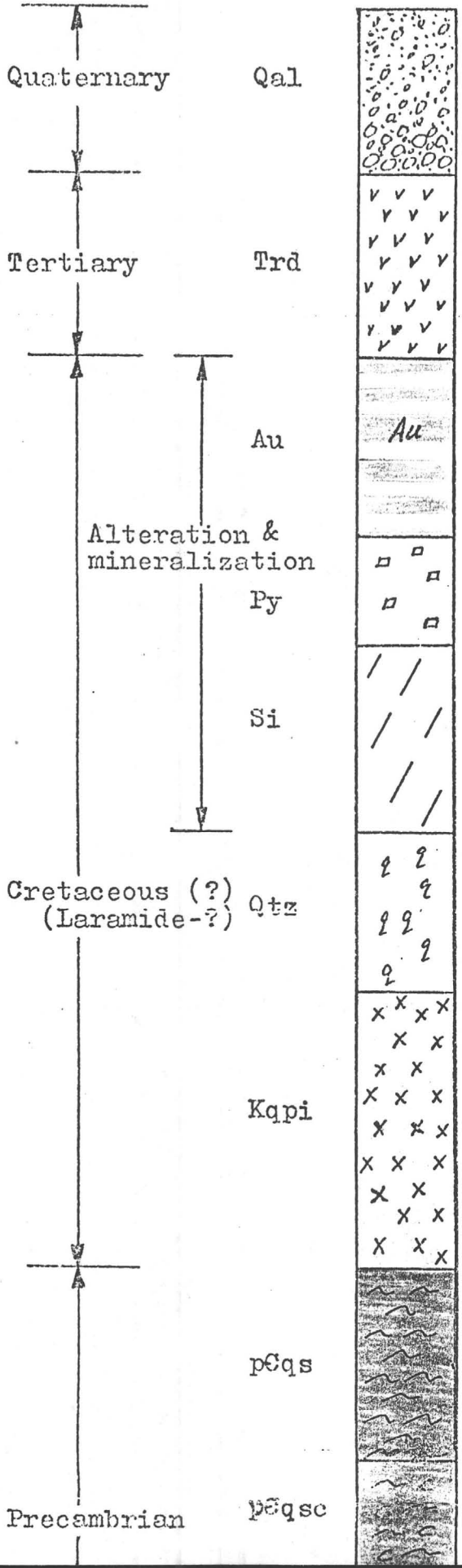
The absence of subsurface data in the west half of the mine area causes source of IP anomaly to be conjectural. From the geologic framework available now, several geologic explanations could be constructed. However, Gordon W's (geophys) interpretation that the anomaly is a near surface, north dipping, dike-like feature suggests that the subsurface projection of weakly to moderately altered instrusive and metasediments exposed on the surface can best account for the anomaly. The strength of the anomaly, in contrast to the weak response over vein mineralization on line 4 suggests that vein mineralization cannot be sole source. An attractive alternate explanation for the IP response is a sulfide poor, potentially mineralized, buried portion of the intrusive body.

- End -

VULTURE MINE

GRAPHIC DRILL LOG LEGEND

Compiled from rotary-reverse circulation chips



ALLUVIUM, colluvium; derived from the same rocks as in this sequence except for granodiorite from ≥2 miles NW. Varied but generally low degree of rounding, sorting, and stratification.

RHYOLITE DIKE; white, aphanitic, cross-cutting unit up to 15 feet in drill intercept thickness. Commonly contains black Mn dendrites on joint surfaces. Only known to occur in W portion of property near pits 3 and 4.

GOLD; noted in graphic log where significant assays are reported. Thought to be cogenetic with other Laramide (?) events like qtz-pphy intrusion and associated pyritization, silicification, and quartz veining (see below).

PYRITE; generally tiny (≤0.5mm) disseminated cubes. Often in qtz or intensely silicified rocks.

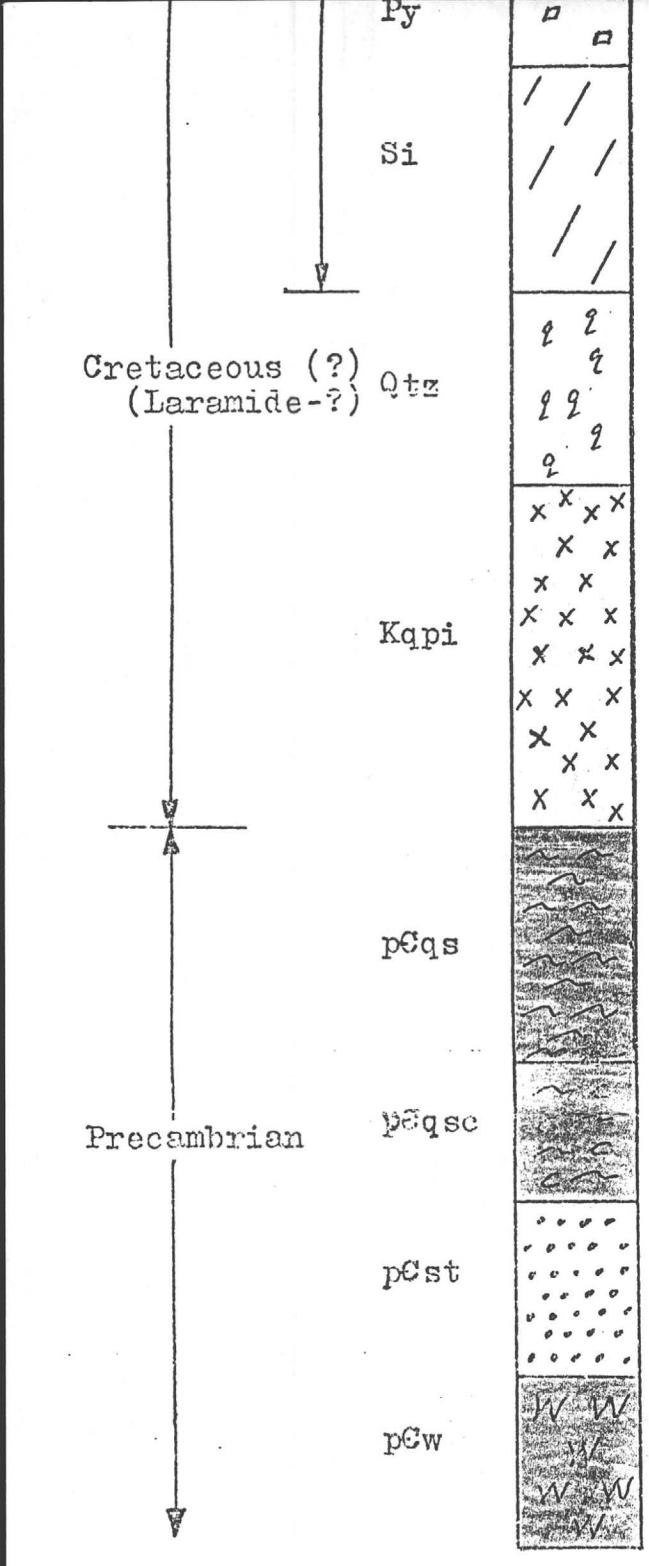
SILICIOUS ROCK; thought to be introduced silica related to the qtz-pphy intrusive Often obscures foliation and sometimes prevents identity of the original rock type. Intense silicification yields an amorphous quartzite.

QUARTZ; only used to designate vein or bull quartz and discrete, visible qtz as in qtz-rich siltite and qtz-pphy intrusive. May harbor sulfides (py, gal) and native gold.

QUARTZ-PORPHYRY INTRUSIVE; med to coarse-grained, altered (sericitized, pyritized silicified) granite to qtz-monzonite with qtz porphyroblasts (often up to 4mm dia). Quartz is typically a soft, pastel green (chloritic-?) or pale gray to milky. Emanates as an apophysis from stock to the W of pit 3. Generally semi-conformable, sill-like.

QUARTZ-SERICITE SCHIST; brown, gray, tan, or almost white, thin laminated, fine to med grained quartz and sericite. Often iron stained. Gradational to siltite or wacke (see below) and prone to silicification.

QUARTZ-SERICITE-CHLORITE SCHIST; same as above with the addition of a chlorite component (usually < 20%).



silicified rocks.

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QUARTZ-SERICITE-CHLORITE SCHIST; same as above with the addition of a chlorite component (usually < 20%).

SILTITE; brown or tan to light gray, poorly foliated, very fine grained, meta-silt. Often a quartzite. Grades finer to quartz-sericite schist or coarser to wacke.

WACKE; brown, tan, or med to dark gray, poorly foliated, med grained, meta-wacke Grades to siltite and qtz-ser schist. Prone to silicification.

Don White - Dec. 1984

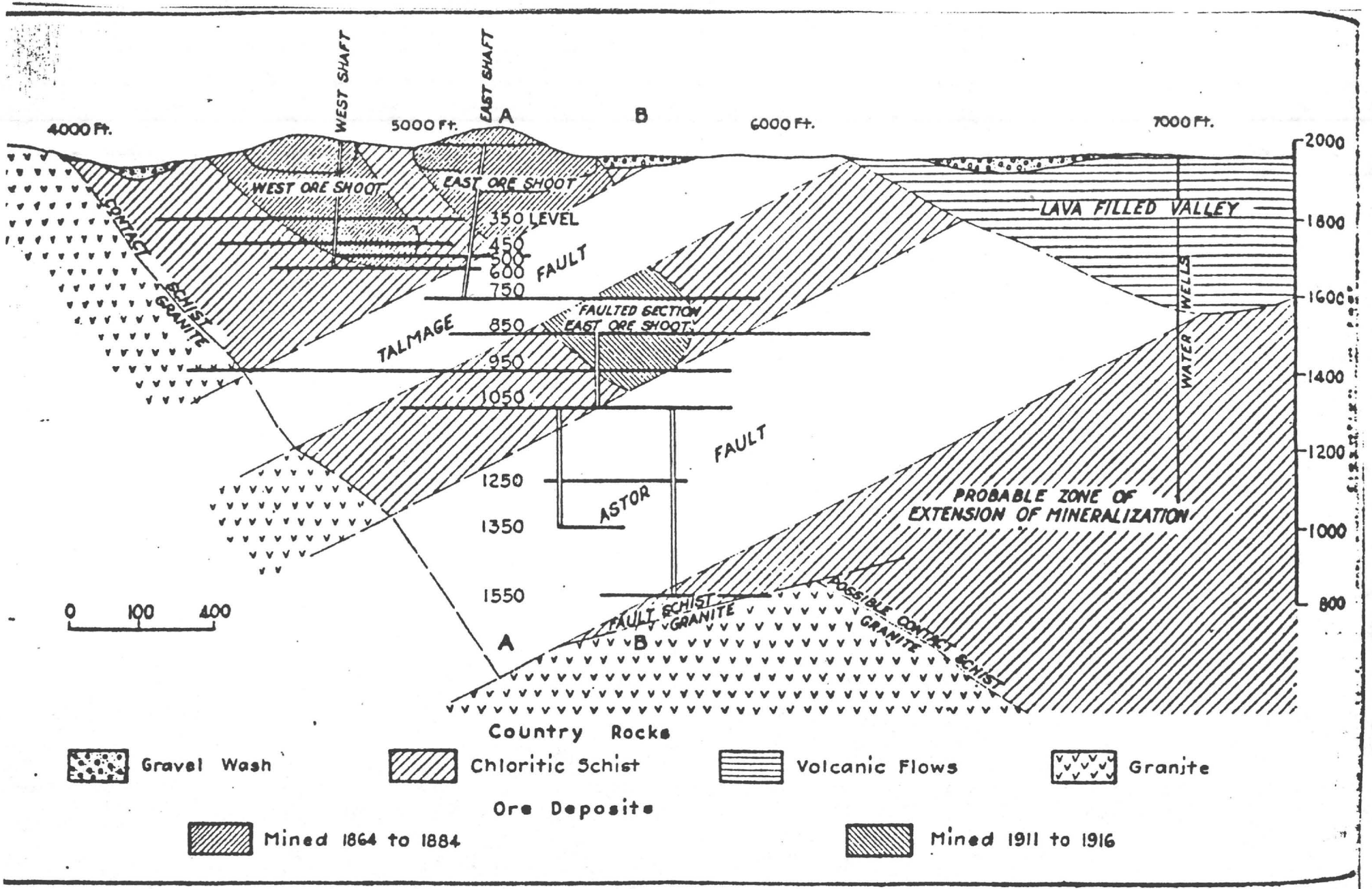

FIG. 1. LONGITUDINAL VERTICAL PROJECTION OF THE VULTURE MINE WORKINGS