CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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TOMBSTONE MINING DISTRICT

Cochise County, Arizona

State of Maine

Area of Interest

Sierra Minerals

Reports & Technical Data

TStone
State of Maine
Charlestre

CAROUSO PROGRESS REPORT

PROGRESS REPORT

To: R. F. Hewlett, President

From: N. H. Carouso, Consultant

Subject: Progress Report

71 Minerals Project:

The 71 Minerals project area, southwest of Tombstone, Arizona, was visited with Mr. R. F. Hewlett, President, Sierra Mineral Management, on June 28, 1973, to inspect the project site, and discuss project goals. It was decided to resample the State of Maine Mine area dumps at a deeper level in the dumps to determine if the grade of silver changes with depth and also to collect representative samples for cyanidation tests to be run by the Reno Metallurgy Research Center, U.S.B.M., Reno, Nevada. A forty to fifty pound sample from each dump was collected and sent to the Reno Metallurgy Research Center. Mine dumps sampled were as follows:

	Ag. oz./ton	Au. oz./ton
State of Maine dump #2	3.8	trace
" #3	2.0	trace
" #4	2.8	trace
" #5	2.6	trace
" #6	1.4	trace
" #7	4.8	trace
" #8	3.2	trace
Triple X dump	3.7	trace
Triple X extension dump	4.5	trace
Bonanza dump	4.4	trace
North Bonanza dump	2.0	trace
Uncle Sam dump	1.1	trace
Brother Jonathan	3.0	trace
Solstice	3.4	trace
Merrimac	2.4	trace

The above assays were run by the Reno Metallurgy Research Center, and the results received by the writer while visiting the Center on August 17, 1973. Discussion of the visit will be reported in a subsequent part of the progress report.

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On July 9, 1973, at a meeting at Miami, Arizona, Messrs. R.F. Hewlett, E. Escapule, John White and the writer discussed the Golden Sunlight Mill at Whitehall, Montana, which was to be dismantled and reconstructed at the 71 Minerals project area near Tombstone, Arizona. Immediately after the meeting, Mr. E. Escapule and his crew departed for Whitehall, Montana. Early the next morning the writer and his son, Mark, also departed for Whitehall, Montana, to inspect the equipment, take measurements of equipment and building, and assist Mr. E. Escapule in scheduling the priority of equipment to be dismantled and shipped to Tombstone, Arizona.

Upon inspection of the thickners at the Whitehall Mill, it was found that pulp had been left in the steel tanks when the mill was shut down about 1956, and along the air/solids line the walls of the tanks were pitted and in places rusted through. Two possible coatings to restore the tanks will be discussed later in this report. The agitator tanks are sound and will only require minor modification to conform to our flowsheet design. The balance of the major equipment all appears usable. The building will be erected at the Tombstone site and will be expanded using material from the Whitehall site and other sources.

It was decided to return via Denver, Colorado, and to contact MSI Industries, Inc., makers of the Marcy ball mill acquired from the Whitehall Mill, and order Instruction and Operations Manuals, to include Parts Lists and Foundation Drawings. This was done, however, as of August 22, 1973. The Manuals have not arrived. The ball mill foundation drawings are needed to complete our building foundation plans. While in Denver, Colorado, Mr. Charles Cito of Machinery Reserve of Denver, and Mr. Harold Grimes of Morse Bros. Machinery Co., were visited and I inspected some equipment which we may need for the Tombstone Mill. Mr. Charles Cito has followed up with additional quotations.

Before the return trip via Denver, Colorado, a gold property evaluation trip was made to the Ruby and Joe placer claims, situated on the St. Joe River, of eastern Idaho. The evaluation of this property will be covered by a separate report. Also a trip was made to Salt Lake City, Utah, for a meeting with Messrs. R.F. Hewlett and J. Bruce Stevenson pertaining to the Gibson Mine copper leaching operation and on the following day a meeting with Messrs. R. F. Hewlett, J.B. Stevenson, and Seth Horne, et al., regarding the acquisition of mining claims to

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expand the 71 Minerals project area.

Upon returning to Arizona during the week of July 24th, effort was directed toward calling and visiting local suppliers of used milling equipment, corrosion resistant coatings, gasket material for the thickner and agitator tanks, prefabricated forms for construction of tanks and sumps from concrete, Gunite contractors, electric motor rebuilders and suppliers. During this time much consideration was given to Tombstone plant site location for the cyanide counter current decantations plant and also the tailings disposal area. A site was selected near the State of Maine main shaft and the site was stripped to bedrock and then drilled by pneumatic drill to obtain samples for assay. Assay results and geological examination will determine if the site selected can be used. We will then set forms for the mill building foundation. However, we are waiting for the ball mill foundations drawings from USI Industries, Inc. Called Mr. Al Evans, Applications Engineer, for MSI Industries, Inc., Denver, Colorado, on August 22, 1973, and he assured me he will expedite our getting the foundation drawings. It is expected that we will set forms for the mill foundations next week.

Two types of tank coatings are being considered and will be evaluated by coating test material. One coating is called Elastron butyl base coating by United Paint Mfg., and the other is a catalytic 2-part nylon epoxy primer and a catalytic nylon modified epoxy enamel manufactured by Garlock Products. The test results should determine the product to be used; however, at this time I am partial to the nylon epoxy coating because, firstly, the cost is approximately one fourth the cost of the butyl base, evaluating from their respective specifications sheets, and secondly, I believe the Garlock product has been more widely tested by industry, expecially the mining industry.

Quotations on gasket material required for tanks, approximately 4600 feet, vary widely. Of the two quotations we have, one is for $114.00/100 feet and the other is for $24.80/100 feet. The $24.80/100 feet quote is my preference, both from cost and quality, as this gasket will be fabricated from Garlock neoprene by Helm Industrial Supply, Inc., Phoenix, Arizona, with one week delivery.

A meeting with Mr. Henry H. Rubin, Trelleborg, pertaining to rubber linings and wear point products was very informative and could lead to some applications at the Tombstone Mill.

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A meeting with Mr. Thomas L. Muir, President, Phoenix Gunite, Inc. Costs and application of Gunite for our needs was discussed and Mr. Muir will send us drawings per my specifications and price quotations for construction of 500 TPD leaching vat and a leach dump pad. The vat could be considered for both Tombstone and the Gibson Mine expansion.

Through Mr. C. Richardson, Denver Equipment Co., Tucson Office, I learned about a CCD cyanide plant that could possibly be acquired, at Atlanta, Nevada. We were unable to locate the last owner of the mill, so I decided that I would inspect the mill at the Atlanta Mine, Nevada, and at the same time attempt to determine the ownership. The trip to Nevada would also include visiting the Carlin Gold Mine and Cortez Gold Mine along with visiting and discussing test work results with Bureau of Mine personnel at the Reno Metallurgy Center, Reno, Nevada.

The Atlanta CCD cyanide plant is about a 500 TPD plant, less the crushing plant and conveyors. The equipment is in good condition. The present owner is Mr. Rutherford Day, 1118 S.W. 8th Terrace, Ft. Lauderdale, Fla. 33345, phone (305) 527-0368, who purchased the equipment and buildings at a sheriff's sale on May 25, 1973 for $17,325. The appraised valuation is approximately $98,000 and assessed value at $32,500. I attempted to contact Mr. Day and was informed that he would be back in Florida on August 24, 1973, at which time I will ask him if he wishes to sell the mill and for how much.

The Carlin Gold Mine, Carlin, Nevada, was interesting. I visited with Mr. Jim McFarlane, Chief Engineer, and discussed the mill design and performance and also their dump leaching design and techniques. They plan to use stripped lake bed pads for dump leaching of their satellite deposits. Asphalt pads, 4 inches thick, sheared, at their millsite test area. This is similar to some of my experiences with asphalt pads. I found at the Gibson Mine that compacted local clay worked far superior to asphalt. The Carlin Mill was designed for 2000 TPD capacity and cost about $6,000,000 and about a year to build. They are now milling about 2400 TPD gold ore.

Heap leaching at Carlin Gold Mine is presently conducted on the abovementioned asphalt pads. They are 100 feet wide and 90 feet long, with four such pads in line with approximately a 2.5% pad slope grade. They load to about a 10 foot lift and irrigate with rubber tubing outlets at 120 gpm per 90 X 100 feet pad. Leaching time is about 5½ days for a 60%

recovery. Carbon precipitation is used with a caustic strip.

The Cortez Gold Mine, Cortez, Nevada, was next visited and a detailed inspection of the mill was arranged by Mr. Don Duncan, Mine Manager. Messrs. Jim Smolik, Mill Superintendent; Reeve Fagg, Mill Foreman; Ed Walker, Refinery Operator; and Bob Baker, Metallurgist, all were very informative. The Cortez Mill was patterned after the Carlin Mill and it has a design capacity of 1600 TPD and cost about $7,000,000. They are milling about 2400 TPD, due to their efficient grinding section. Metallurgy is about the same as Carlin.

Mr. Don Duncan refused to discuss their heap leaching operation with the statement that it was company policy; however, I was able to piece together enough information to at least satisfy some of my curiosity. They are building heaps on stripped lake beds and then compacting mill tailings in the pad area. They eventually plan to build a 50 foot lift. The slope grade of their pads is about 5%. It appears that the gold content of the heap dumps was underestimated, because from a reliable source I learned that as of a week or so ago, they have already extracted 150% of the gold they estimated to be in the dumps. It looks like they may have used mill grade ore for their dump heaps.

The visit with U.S. Bureau of Mines personnel at the Reno Metallurgy Center, Reno, Nevada, was loke old home week. Most of the fellows that I worked with at the Center during the middle 1950's are still there. We discussed Bureau projects, past, present and potential future. Mr. R. Lindstrom, Supervisor Chemical Engineer, assured me that our State of Maine mine area dump samples will be processed in the near future. We need this data for our mill design at Tombstone; therefore, I am initiating test work to be conducted at the Arizona Bureau of Mines laboratory at the University of Arizona, Tucson, Arizona. Mr. Dave Rabb, of the Arizona Bureau of Mines, will expedite grinding and settling rate tests on our ore next week.

I believe that Mr. E. Morrice, Research Metallurgist, Reno Metallurgy Center, Reno, Nevada, is conducting a research project to study methods to benificiate argentiferous manganese ore that is common in certain areas of the Tombstone district and other localities of Arizona. I plan to send Ed Morrice samples of this type ore and information I have and also possibly assist funding of the research project by talking to Dr. T. Henrie, Assistant Director, U.S. Bureau of Mines, Washington, D.C.

I strongly urge that we implement the laboratory at Tombstone to enable us to do most or all of our test work. This is necessary for mill control and to test characteristics of custom ores or and to test [illegible] for whatever property is being evaluated by the company. If this suggestion meets with management approval, I will prepare a proposal of what equipment will be required and supervise the implementation of equipment and train the laboratory technicians

August 22 1973

HEWLETT REPORT

R. F. HEWLETT
President

4741 EAST SUNRISE DRIVE
SKYLINE BEL AIRE PLAZA
TUCSON, ARIZONA 85718
602 / 299-9736

TOMBSTONE PROJECT

Possibilities for mine production by early 1974 are:

1. Waste dumps
2. Small high-grade underground production
3. Potential medium-sized open pit.

Cash requirements and potential cash flow are:

Project	Capital Requirement	Amount
Waste dumps	Plant (lease)	$250,000
Small underground	Mine equipment (lease)	50,000
Open pit	Exploration	50,000
		$350,000

Project	Potential Profit	Year
Waste dumps	$650,000	1974
Small underground	150,000	per year
Open pit	0-500,000	per year

Schedule of Activities follows:

1. Placer will analyze metallurgy and feasibility of moving Whitehall plant (on lease from MECL) to Tombstone.

2. Placer will review feasibility of mining "State of Maine" and we will then move down from Cordero (on lease from MECL) all required mining equipment (hoists, slushers, dozers, loaders, etc.)

3. " 71 ML" is attempting to form a corporation and merge Tombstone Mineral Reserves to obtain their plant (500 t.p.d.) and their 358 mining claims with gold-silver-and copper mineralization.

4. A lease has been proposed to Tombstone Development Corporation to explore and mine their patented claims that constitutes the largest holdings in the district.

5. A lease has been proposed to the Escapules for exploring, developing and mining the "State of Maine" and Santa Ana mines.

Activity	Amount
Move Plant	$100,000
Move Cordero Equipment	10,000
Tombstone Reserves	$ 25,000 to $100,000
Tombstone Development	$ 25,000
Escapules	$ 50,000
	$210,000 to $285,000

TECHNICAL EXPLANATION

"71 Minerals" strategy is to tie up the entire Tombstone district to allow us enough time to select claims or mines that are desireable and drop claims that don't have much potential before the assessment deadline of September 1, 1973.

The mining property in the Tombstone district is owned by (in decreasing order of importance):

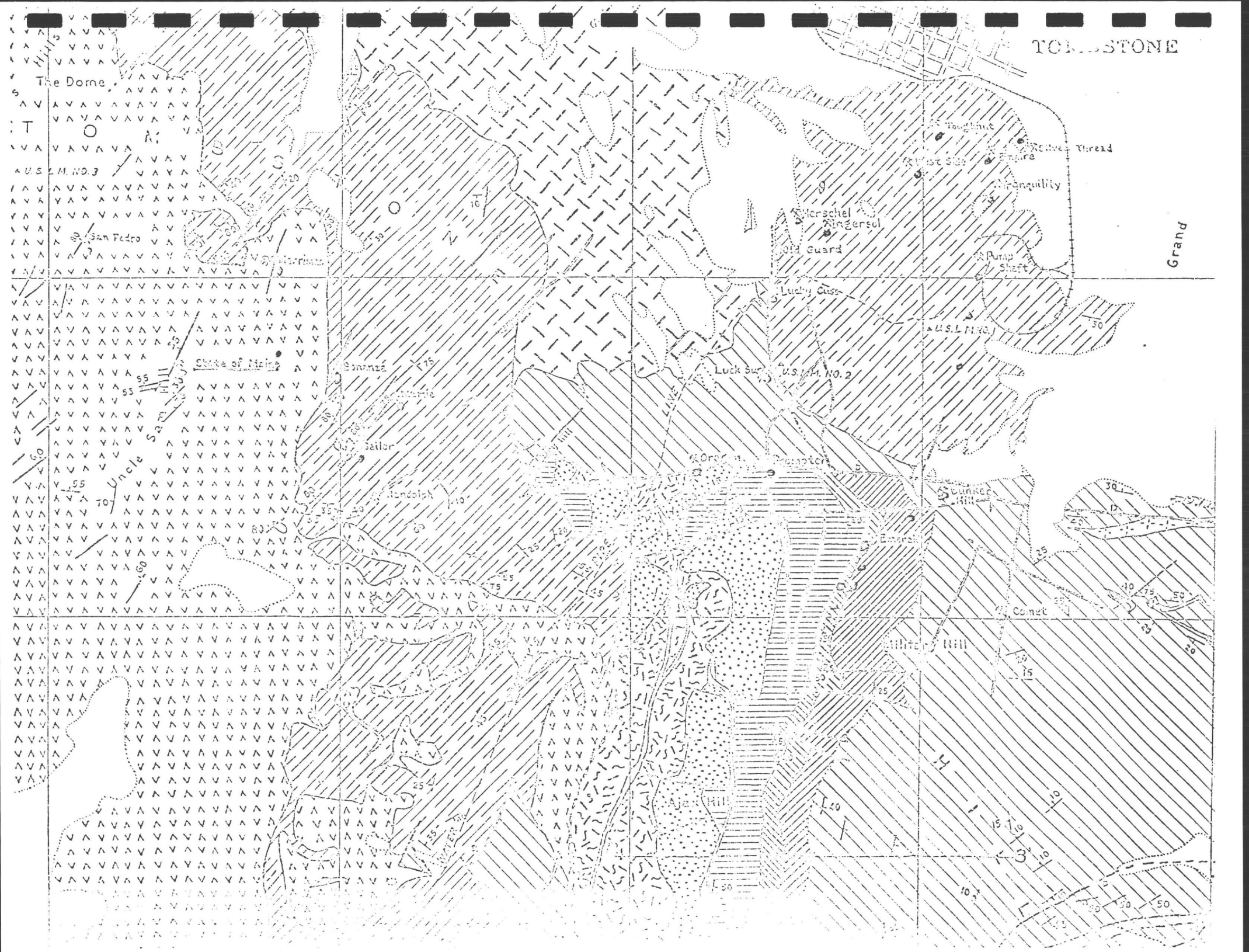
1. Tombstone Development
2. Escapules
3. Tombstone Mineral Reserves
4. Grace-Bonanza
5. Wayne Winters
6. Numerous small trusts, churches, etc.

On the map (on the following page) are shown the following:

Ownership Group	Location of Claims
1. Tombstone Development	All orange dots east of "State of Maine"
2. Escapules	Around and including "State of Maine"
3. T. Mineral Reserves	Unpatented claims south and east of 41° N. (Military Hill)
4. Grace-Bonanza	Bonanza mine due east of "State of Maine"
5. Wayne Winters	North of Military Hill and south of Emerald

Tombstone Development

All orange dots south of Tombstone (excluding "State of Maine" and Bonanza) are waste dumps owned by T.D. The detailed report on waste dump and open-pit potential is in exhibit A.


TOMBSTONE
The Dome
U.S.L.M. NO. 3
San Pedro
Morrison
State of Maine
Uncle Sam
Bommé
Sailor
Randolph
Toughnut
Thread
West Side
Empire
Tranquility
Herschel
Ingersol
Old Guard
Pump Shaft
Grand
Lucky Cuss
U.S.L.M. NO. 1
Luck Sus
U.S.L.M. NO. 2
Dunkel Hill
Emerald
Comet
Hilltop Hill
Ajax Hill
Winter Ck.

Escapules

This property ("State of Maine") should be optioned and put into small scale underground production. This can be done for $30,000 excluding a plant. The potential for this property are:

1. Waste dumps (4.5 oz. Ag)
2. Small underground operation
3. Potential of a large underground operation
4. Potential for open pit ore.

Exhibit B shows the extent of the underground workings. I have examined these workings by ladder and rope and have taken some samples running from 147 to 225 ounces per ton. The average grade of gobb (old low-grade fill) is about 20 ounces which can be mined first.

The advantage of the old "State of Maine" workings is that we can put the mine back into production for relatively low start-up costs.

In addition to the "small" potential, there is the distinct possibility that there will be the same large high-grade bonanza one at depth as over in the Tombstone basin (due south of the town site). This is illustrated in exhibit C, where the ore is shown in cross-section as mined out stopes or levels. Notice that the ore is at and especially above the Naco limestone (8 level-bottom) up into the "Novaculite", blue limestone and Bisbee group limestones. The bottom of the "State of Maine" shaft is just going into Bisbee group limestones from a porphyry rock that is mineralized (that is where the past production came from). Therefore, there is a good chance that larger ore bodies exist at depth. (We can at least make money on the existing "lower grades".)

As I mentioned before, I have a tax lien on the San Juan mine.

Tombstone Mineral Reserves

This company is in bankruptcy and is an excellent possibility for us to control 358 unpatented mining claims with gold-silver mineralization and copper potential. Their 500 t.p.d. plant could be utilized in part by us with our White Hall plant. The T. Mineral Reserves plant is about two (2) miles from the "State of Maine" mine. Our electrolytic-oxidation process is superior to any in the district and we would have the only operating plant and could joint-venture or treat ore on a "custom basis".

Grace-Bonanza

This property is near Escapules and Mr. Grace contacted me recently and wants to make a deal with "71 ML".

Wayne Winters

"71 ML" has 15 mining claims under option in and around the Tombstone district. He has given us much free time for $100 per month. He is very helpful to us in consolidating property and arranging meetings for "71 ML". The value of his claims are discussed in Exhibit D.

SMITH CHARACTERIZATION
SOIL DUMPS

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PRELIMINARY CYANIDATION TEST ON DUMP MATERIAL FROM THE "STATE OF MAINE AND BROTHER JONATHAN MINE, TOMBSTONE, ARIZONA

Lot I

submitted

by

Mr. James A. Briscoe
Sierra Mineral Management
4741 E. Sunrise Dr.
602-299-9736
Tucson, Arizona 85718

by

Sigmund L. Smith
Registered Metallurgical Engineer
P.O. Box 4063, University Station
Tucson, Arizona, 85717
602-884-1578 or 1361

May 16, 1973

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RESULTS:

Lot I; about 500 pounds

Calculated head assay = 3.06 oz/T silver and a trace of gold

PERCOLATION TEST

The plus 20 mesh (0.03") minus 6 mesh (0.13") material assaying 3.40 oz/T silver (40% of the total silver) and 37.3% of the total weight percolated in a 5 foot column for 3 days will extract about 70% of the silver and have a tail assaying about 1.06 oz/T silver.

Using the first order reaction equation, the percent extract vs. time at the end of a 4 day leach will be about 80% recovery of the silver.

Cyanidation and lime consumption tests shows a normal consumption of about 1.5 pounds soldium cyanide (NaCN) and about 5 pounds of lime (CaO) per ton of ore leached.

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SCREEN ANALYSIS AND ASSAYS

No.	Size	Ind. % Wt.	Accum. % Wt.	ASSAYS oz/T Silver	ASSAYS oz/T Gold	SILVER DIST. Ind. % Total	SILVER DIST. Accum. %
1	+1.05"	18.9	18.9	0.36	Tr(A)	2.2	2.2
2	-1.05 +0.74	5.9	24.8	0.56	Tr	1.1	3.3
3	-0.74 +0.63	5.7	30.5	0.72	Tr	1.3	4.6
4	-0.63 +0.38	5.9	36.4	1.14	Tr	2.2	6.8
5	-0.38 +0.26	5.9	42.3	1.60	Tr	3.1	9.9
6	-0.26 +0.13	12.4	54.7	2.40	Tr	9.7	19.6
7	-0.13 + .065	13.5	68.2	3.60	Tr	15.8	35.4
8	-0.065+0.031	11.4	79.6	4.02	Tr	14.9	50.3
9	-0.33(20M)	20.4	100.0	7.52	Tr	49.6	99.9

(A) Trace less than 0.02 oz/T gold.

Calculated head assay = 3.06 oz/T silver and a trace of gold.

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CYANIDATION AND LIME CONSUMPTION: TEST I

Forty grams of pulverized head sample was agitation leached with 120 cc tap water plus 120 mg lime (2#/T solution or 6#/T ore) and 300 mg solium cyanide (5#/T solution or 15#/T ore) for 4 hours.

After leaching the free sodium cyanide was 4.5 # NaCN/ton solution or consumed 0.5 # cyanide/T solution or 1.5 #/T ore.

The free lime was 0.35 # CaO/T solution or consumed 1.65 # CaO/T solution or 4.95 #/T ore.

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SOAK AND DISPLACEMENT LEACH OF VARIOUS SIZE: TEST 2

Five hundred cc of ore was placed in a 600 cc beaker and tap water was added to make a volume of 500 cc. Three hundred and fifty grams of lime and 350 mg sodium cyanide were added to each size fraction. Every 24 hours the contents were changed to a new beaker.

Test 2	Size	Gms Ore	CC Soln.	Reagents Added		Pulp Ratio	After 96 Hours Leaching #/T Soln				
				NaCN #/T Soln.	CaO #/T Soln.		Free CN	Free CaO	Heads oz/T mg	Tails oz/T mg	% Rec Trend
A	-1.05 +0.742	514	270	2.6	2.6	1 to 1.90	1.04	Trace	0.56	0.48	14.0
B	-0.74 +0.63	543	270	2.6	2.6	1 to 1.97	0.96	Trace	0.72	0.60	17.0
C	-0.63 +0.38	560	270	2.6	2.6	1 to 2.08	0.76	Trace	1.14	0.56	51.0
D	-0.38 +0.26	590	270	2.6	2.6	1 to 2.19	0.68	Trace	1.60	Lost	--
E	-0.26 +0.13	621	270	2.6	2.6	1 to 2.30	0.60	Trace	2.40	1.20	50.0
F	-0.13 +0.065	623	270	2.6	2.6	1 to 2.32	0.54	Trace	3.60	0.98	73.0
G	-0.065+0.031	611	270	2.6	2.6	1 to 2.26	0.98	Trace	4.02	2.42	(B) 40.0
H	-0.033(20M)	669	270	2.6	2.6	1 to 2.48	NO RESULT		7.52	2.68	(B) 65.0

(B) Poor results caused by insufficient washing.

PERCOLATION TEST: TEST 3

A 4" diameter 5.5 feet high plastic tube was used as a downward type of percolator.

Feed: Mixed (41 pounds)

6,410 grams #6 -0.26 +0.13" (33% by wt.)

6,960 grams #7 -0.13 +0.065 (36% by wt.)

5,940 grams #8 -.065 +0.03 (31% by wt.)

19,310 grams

Having an assay of 3.4 oz/T silver.

Solution: 8.5 liters (pulp ratio 1 to 0.44) contained 10.69 NaCN (1.25 #/T soln) and 11.39 CaO (1.33 #/T soln).

Leaching cycle was 72 hours and the percolation rate was about 6 inches per hour, a satisfactory rate.

At the end of 24 hours the free cyanide was 1.50 #/T solution and a trace of lime. End 48 hours the free cyanide was 1.30 #/T solution and a trace of lime and at the end of 72 hours of leaching the free cyanide was 1.16 #/T solution.

The tails assayed 1.06 oz/T silver giving a recovery of about 70% for 3 days of leaching or a calculated 80% for 4 days of leaching.

After leaching the system was allowed to drain over night and 2 separate washings were applied.

First wash of 1,250 cc contained 165 mg silver.

Second wash of 1,000 cc contained 64.0 mg silver.

Total silver IN = $\frac{19,300}{30}$ x 3.4 = 2180 mg Ag.

% Recovery total silver first wash = $\frac{165}{2180}$ x 100 = 7.6

% Recovery total silver second wash = $\frac{64}{2180}$ x 100 = 3.0

Wash recovery = 10.6%

Which can be considered satisfactory.

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CONCLUSION:

It appears the dump material is amenable for cyanidation leaching and the cyanide and lime consumption is satisfactory.

More work should be done with various fractions between -20 mesh and perhaps 65 mesh to increase the assay of silver and at the same time increase the percent of the total weight going to percolation. The -0.375 + 0.265 material assaying 1.60 oz/T silver might be included as percolation material.

The -20 mesh material had a poor filtering rate and further testing should be required on agitation before any conclusion can be reached as to its amenability to agitation leaching.

Sigmund L. Smith
Registered Metallurgical
Engineer

4 of 4 SCREEN
TESTING 50M

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UNIVERSITY OF ARIZONA
ARIZONA BUREAU OF MINES
ORE TESTING SERVICE

May 30, 1973

Mr. J. A. Briscoe
1971 Minerals Ltd.
Sierra Mineral Management
4741 E. Sunrise Dr.
Tucson, Arizona 85716

Dear Mr. Briscoe:

Ore Test No. 2182

A sample of minus 20-mesh product which Mr. Smith had screened from the State of Maine dump was separated into minus 20 plus 100-mesh, which assayed 8.3 ounces silver per ton, and minus 100-mesh products.

The minus 100-mesh product was cyanided in a rotating bottle at 40 percent solids for 72 hours and after settling the solution was syphoned off. There is clay present in the material and a flocculent was needed to make the solids settle. More water was added and the pulp agitated for a few minutes and again allowed to settle and the clear solution syphoned off. This procedure was repeated.

The results are given in the following table:

Product	Percent weight based on -100-mesh product	Ounces silver per ton	Distribution percent silver
Head	100.0	6.05*	100.0
Solution #1	85.0	2.55	40.7
" #2	68.0	2.08	23.3
" #3	92.0	0.87	13.3
Tailing	98.0	1.40	22.7

*Calculated

The cyanide consumption was 3.0 pounds per ton and lime, 2.5 lbs. The silver recovered amounted to 77.3 percent of the silver in the minus 100-mesh.

Another test was made on the minus 20-mesh desliming the material at about 200-mesh and cyaniding the plus 200-mesh sands. There was too much fine material left in the sands for the solution to percolate down through the sand in a 20-inch column. I would not recommend leaving any material less than 20-mesh in the sands to be leached.

Jarosite in fines ?
assayed finest slimes, Fe_2SO_4 ↑

KEEP Slimes out of dump
NO Pen

METALLURGICAL RESULTS OBTAINED ABOVE SHOULD BE CONSIDERED AS ONLY APPLICABLE TO MATERIAL CONFORMING TO THE CHARACTER OF THE SAMPLE UPON WHICH

UNIVERSITY OF ARIZONA
ARIZONA BUREAU OF MINES
ORE TESTING SERVICE

#2, 5/30/73

Mr. J. A. Briscoe

State of Maine

Ore Test No. 2183

The sample you delivered to the Arizona Bureau of Mines, May 25, was screened and the products assayed. The results are given in the following table:

Screen size	Weight Percent	Assay ounces silver	Distribution percent silver
Head	100.0	4.25*	100.0
on 1"	31.8	2.00	15.0
Minus 1 on 3/4"	9.1	2.75	6.0
3/4 on 1/2"	6.9	2.30	3.7
1/2 on 1/4"	16.2	3.85	14.8
1/4 on 10-mesh	17.6	6.90	28.6
10 on 20-mesh	6.9	6.40	10.4
20-mesh	11.3	8.10	21.5

*Calculated from products

The silver values in the minus 1/2 plus 20-mesh amounted to 40.7 percent of the weight and contained 53.8 percent of the silver in the mine run sample. It assayed 5.8 ounces silver.

We are holding the samples in reserve in case you may wish to have cyanide test made on any of these products.

METALLURGICAL RESULTS OBTAINED ABOVE SHOULD BE CONSIDERED AS ONLY APPLICABLE TO MATERIAL CONFORMING TO THE CHARACTER OF THE SAMPLE UPON WHICH THE TESTS WERE MADE.

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UNIVERSITY OF ARIZONA
ARIZONA BUREAU OF MINES
ORE TESTING SERVICE

#3, 5/30/73

Mr. J. A. Briscoe

Bisbee Group
(Solstice Mine)

Ore Test No. 2184

The sample you delivered from the Bisbee group, May 25, was screened and each size assayed. The results are given in the following table:

Product	Weight percent	Assay Ounces Silver
Head	100.0	2.00*
plus 1"	32.5	1.30
Minus 1 plus 3/4"	12.4	4.20*
3/4 " 1/2"	10.4	2.20
1/2 " 1/4"	21.4	1.80
1/4 " 10-mesh	11.4	2.20
10 on 20-mesh	3.5	1.85
20-mesh	8.4	3.80

*Calculated

This sample is too low to be considered ore.

Yours very truly,

Geo. Roseveare,
Metallurgist

GR:B

* a little out of norm. : Why?

METALLURGICAL RESULTS OBTAINED ABOVE SHOULD BE CONSIDERED AS ONLY APPLICABLE TO MATERIAL CONFORMING TO THE CHARACTER OF THE SAMPLE UPON WHICH THE TESTS WERE MADE.

THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

ARIZONA BUREAU OF MINES TEL. (602) 884-2733

18 June 1973

Mr. J. A. Briscoe
1971 Minerals Limited
4741 East Sunrise Drive
Tucson, Arizona 85716

Ore Tests 2185, 2186, 2187, 2188

Dear Mr. Briscoe:

The four samples 3, 4, 5, and 6 from State of Maine, Tombstone, were screened and each size assayed for silver.

2185 - Sample 3

Product	Wt. %	Oz. Ag/ton	Distribution Ag %
Heads	100.0	4.88*	100.0
on ½ inch	28.4	3.05	17.5
Minus ½ plus ¼ inch	11.7	3.30	7.9
Minus ¼ plus 20-mesh	36.0	6.20	45.7
Minus 20-mesh	23.9	5.90	28.9

*Calculated from products

2186 - Sample 4

Heads	100.0	1.74*	100.0
on ½ inch	74.8	1.50	64.4
Minus ½ plus ¼ inch	12.2	2.10	14.7
Minus ¼ plus 20-mesh	10.1	2.70	15.6
Minus 20-mesh	2.9	3.20	5.3

*Calculated

2187 - Sample 5

Heads	100.0	2.44*	100.0
on ½ inch	57.4	1.60	41.8
Minus ½ plus ¼ inch	13.1	3.60	21.5
Minus ¼ plus 20-mesh	22.5	2.60	26.2
Minus 20-mesh	7.5	3.10	10.5

*Calculated

2188 - Sample 6

Heads	100.0	2.45*	100.0
on ½ inch	58.8	1.80	47.1
Minus ½ plus ¼ inch	14.3	2.50	15.9
Minus ¼ plus 20-mesh	19.8	2.80	24.4
Minus 20-mesh	7.1	4.00	12.6

*Calculated

The only sample that has promise is Sample 3. We are saving the products in case you would need further information.

Yours very truly,

George H. Roseveare
Metallurgist

GHR:rj

ROCK
GEOCHEM

State of Maine area Dumps Sampled by Nick C. 450
analyzed by USBM, Reno Nevada.

SAMPLE ANALYSIS REPORT

Samples submitted by: MARANDA Date: 7/23

Sample No.	Au	Ag							
				HEWLETT HEAD SAMPLES					
J-2308	TR	2.0		STATE OF MAINE DUMP				#3	
309		1.8						#7	
310		3.2						#8	
311		3.4		Solstice Dump					
312		4.4		Bonanza Dump					
313		3.7		Triple X Dump					
314		1.1		Uncle Sam Dump					
315		4.5		Triple X extension					
316		2.0		North Bonanza Dump					
317		3.0		Brother Jonathan Dump					
318	TR	1.4		Series Cache					
319	.020	13.025 oz		"					
		Numerical Avg =		3.05 oz Ag					

Remarks:

Results are reported as ~~percent element~~ oz/Ton unless otherwise noted.
p.p.m. oxide

Analyst [illegible] Date [illegible]/87

SAMPLE ANALYSIS REPORT

Samples submitted by: Monsanto Date: 9/17

Sample No.	Au	Ag								
Jan 2. 267										
269										Amesite
270										
271										
272										
273										
274	Tr	3.8	Hewlett			State of	Maine	Dump		#2
275	Tr	2.8								#4
276	Tr	2.8	Numerical	Avg. =	2.64 oz					#5
277	Tr	1.4								#6
278	Tr	2.4	Merrimack		Dump		(Hewlett)			
		.1								
12	—	—						"		

Remarks:

Results are reported as ~~percent element~~ oz/ton unless otherwise noted.
p.p.m. oxide

Analyst _____ Date _____

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold ~~xxx~~ ppm	Silver ~~xxx~~ ppm	Lead % OZ Ag	Copper %	Zinc %	Mo. %	copper ppm		
T - 1	<0.01	13.					195		
2	<0.01	5.8					65		
3	0.08	78.					125		
101	<0.01	21.	0.61				70		
102	<0.01	10.	0.29				40		
103	<0.01	6.4	0.19				25		
104	0.01	2.8	0.03				20		
105	<0.01	<0.2					15		
T - 106	<0.01	0.6					15		
Moonlight - 1	0.01	75.	6.56	0.43	5.95				
2	<0.01	100.	0.83	0.05	6.70				
3	<0.01	31.	0.43	0.04	5.05				
Moonlight - 4	0.02	48.	0.76	0.05	2.33				
CC - 1				0.01					
2				0.02					
CC - 3	0.21	0.4							

for Pennie Blue

CC: Sierra Minerals
ADD: 4741 East Sunrise Drive
CITY: Tucson, Arizona 85718
ADD: Attn: Mr. James A. Briscoe
CITY:

REMARKS:
Au, Ag, Cu - Trace analysis
Pb, Cu, Zn - Single determination

Analysis Cert. By

Preparation $ 14.40
Analysis $ 91.00

ACC:	Date Spl. Received	Date Compl.		$
SIERRA MINERALS	4/19/73	4/25/73	347179	105.40

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
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IDENTIFICATION	Gold ~~%~~ ppm	Silver ~~%~~ ppm	Lead ~~%~~ ppm	Copper ~~%~~ ppm	Zinc %	Mo. %	OZ Ag		
T - 107	<0.02	1.0	50	35					
108	<0.02	0.6	50	25					
109	<0.02	0.6	40	25					
110	<0.02	0.6	50	25					
111									
112	<0.02	0.6	30	15					
113	<0.02	0.2	65	20					
114	<0.02	1.4	50	15					
115	<0.02	< 0.2	35	20					
116	<0.02	< 0.2	25	15					
117	<0.02	< 0.2	45	20					
118	<0.02	< 0.2	35	20					
119	0.06	112.	3,280	385			2.27		
120	0.02	35.	7,200	100			1.02		
121	0.08	35.	3,480	140			1.02		
122	0.02	14.	2,680	50			0.41		
123	0.12	150.	4,960	570			4.37		
124	<0.02	11.	2,160	35			0.32		
125	<0.02	3.8	125	25			[illegible]		
T - 126	<0.02	7.4	1,840	40			[illegible]		

For Ranch

Three prospect area

CC: Sierra Minerals
ADD: 1971 Minerals Ltd.,
CITY: 4741 E. Sunrise Drive
ADD: Tucson, Arizona 85716
CITY:

REMARKS:

Trace analysis

Page 1 of 2

Analysis Cert. By

Preparation $
Analysis $
$

ACC: SIERRA MINERALS

Date Spl. Received 4/24/73

Date Compl. 4/27/73

347195

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

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St. Louis

IDENTIFICATION	Gold ~~oz/t~~ ppm	Silver ~~oz/t~~ ppm	Lead ~~%~~ ppm	Copper ~~%~~ ppm	Zinc %	Mo. %
T - 127 (Three Brothers area)	0.08	21.	5,680	75		
128 (Rowell)	0.08	45.	32,000	160		
129	<0.02	10.	1,880	50		
130	<0.02	14.	800	70		
131	<0.02	10.	3,000	35		
132 (Gold Bug area)	<0.02	8.0	920	60		
133 (Where)	0.13	192.	1,960	470		
134 (For Rowell)	<0.02	6.8	2,240	40		
135	<0.02	19.	7,400	130		
136	0.31	26.	1,100	60		
137	0.07	9.4	2,080	25		
138A	0.54	42.	445	40		
138B	0.09	23.	135	25		
T - 139	0.02	28.	100	20		
140	0.35	4.4	4,250	130		
141	<0.02	0.6	75	15		
142	0.06	3.0	95	15		
143	0.03	<.2	50	10		

34	Au @ $2.00	=	$ 68.00
34	Ag @ 1.50	=	51.00
34	Pb, Cu @ 1.60	=	54.40
	Sub-total		$173.40

CC: Sierra Minerals
ADD: 1971 Minerals Ltd.,
CITY: 4741 E. Sunrise Drive
ADD: Tucson, Arizona 85716
CITY:

REMARKS:
Trace analysis

Analysis Cert. By [signature]

REGISTERED ASSAYERS CHEMISTS ARIZONA U.S.A.

Preparation $ 30.60
Analysis $ 173.40

Page 2

ACC:	Date Spl. Received	Date Compl.		$
SIERRA MINERALS	4/24/73	4/27/73	347195	204.00

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
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TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

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St. Louis

IDENTIFICATION	Gold ~~oz/t~~ ppm	Silver ~~oz/t~~ ppm	Lead ~~%~~ ppm	Copper ~~%~~ ppm	Zinc ~~%~~ ppm	Mo. ~~%~~ ppm	Gold oz/ton	Silver oz/ton	SMITH
SMM - LOT 1									
No. 1	0.11	13.7					<0.005	0.39	0.36
2	0.05	12.3					<0.005	0.35	0.56
3	0.05	14.0					<0.005	0.40	0.72
4	0.06	20.5					<0.005	0.59	1.14
5	0.11	44					<0.005	1.28	1.60
6	0.11	48					<0.005	1.39	2.40
7	0.11	66					<0.005	1.92	3.60
8	0.10	128					<0.005	3.73	4.02
No. 9	0.15	232	5,750	550	2,100	< 2	<0.005	6.76	7.52

CC: J. A. Briscoe DBA
ADD: Sierra Mineral Management
CITY: 4741 E. Sunrise Drive
ADD: Tucson, Arizona 85716
CITY:

REMARKS:

Trace analysis

Analysis Cert. By H. E. [illegible]

Preparation $
Analysis $ 34.85

ACC:	Date Spl. Received	Date Compl.		$
J. A. BRISCO DBA SIERRA MINERALS MANAGEMENT	5/9/73	5/16/73	347272	34.85

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 5010/ GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
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Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold OPT	Silver OPT	Lead %	Copper %	Zinc %	Mo. .%			
Fire Assay Recheck of earlier AA determinations									
SSM Lot - 1		0.46							
2		0.47							
3		0.42							
4		0.66							
5		1.33							
6		1.52							
7		2.00							
8		3.84							
SSM Lot - 9		7.23							

CC: J. A. Briscoe DBA
ADD: Sierra Mineral Management
CITY: 4741 E. Sunrise Drive
ADD: Tucson, Arizona 85716
CITY:

REMARKS:
Single determination

Analysis Cert. By

Preparation $
Analysis $ 20.25

ACC: J. A. BRISCOE DBA SIERRA MINERAL MANAGEMENT

Date Spl. Receiv 5/21/73 | Date Compl 5/24/73 | 347272-A | $ 20.25

Re Check of Earlier AA determinations by Fire Assay

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold OPT	Silver OPT	Lead %	Copper %	Zinc %	Mo. %			
			AA results calculated by JAB to Oz from PPM						
T - 119	0.010	2.36	3.26						
120	<0.005	1.10	1.02						
121	0.010	1.07	1.02						
122	<0.005	0.50	.49						
123	0.010	4.20	4.97						
124	<0.005	0.36	.32						
125	<0.005	0.19	0.11						
126	<0.005	0.26	0.21						
127	<0.005	0.73	0.61						
128	<0.005	1.31	1.31						
133	0.005	5.85	5.59						
135	<0.005	0.54	0.55						
136	<0.005	0.80	0.76						
137	<0.005	0.28	0.27						
138 A	0.020	1.12	1.22						
138 B	0.005	0.70	.67						
T - 139	<0.005	0.62	.82						

CC: Sierra Minerals
ADD: 6741 E. Sunrise Drive
CITY: Tucson, Arizona 85718
ADD: Attn: Richard Hewlett
CITY:

REMARKS:

Single determination

Analysis Cert. By

Preparation $
Analysis $ ~~72.25~~

ACC:	Date Spl. Received	Date Compl.		$
SIERRA MINERALS	5/21/73	5/24/73	347195-A	72.25

Jim Briscoe

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
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TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold ppm	Silver ppm	Lead ppm	Copper ppm	~~Zinc %~~	Mo. %	Oz Ag		
T - 145	0.04	<0.2	40	10					
146	0.04	<0.2	40	5					
147	0.05	<0.2	40	5					
148	0.08	<0.2	35	10					
149	0.07	<0.2	35	10					
150	0.06	<0.2	35	10					
151	0.05	<0.2	30	10					
152	0.06	<0.2	35	10					
153	0.04	<0.2	25	10					
154	0.08	<0.2	30	10					
155	0.08	<0.2	25	10					
156	0.04	<0.2	25	10					
157	0.02	<0.2	65	5					
158	0.04	<0.2	65	5					
159	0.03	<0.2	40	5					
160	0.04	<0.2	30	10					
161	<0.02	<0.2	40	10					
162	0.03	1.4	95	30					
163	0.04	0.8	40	30					
164	0.04	4.2	60	15		0.12			
165	0.10	3.0	95	10		0.09			
166	0.04	<0.2	30	5		—			
201	0.11	18	205	25		0.52			
202 A	0.07	29	210	50		0.85			
T - 202 B	0.13	13	310	25		0.38			

202 ABC avg: 19.33 oz .58 oz

201 & 202 ABC avg 25 PPM or .76 oz

CC: Sierra Minerals
ADD: 4741 E. Sunrise Drive
CITY: Tucson, Arizona 85718
ADD: Attn: Mr. R. Hewlett
CITY: cc: J.A. Briscoe, Tucson, Az.

REMARKS:

Trace analysis

Page 1 of 2

Analysis Cert. By

Preparation $
Analysis $

ACC: SIERRA MINERALS

Date Spl. Received 5/22/73

Date Compl. 5/30/73

347338

$

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold ~~%~~ ppm	Silver ~~%~~ ppm	Lead ~~%~~ ppm	Copper ~~%~~ ppm	Zinc %	Mo. %	Ag oz
T - 202 C	0.08	16	65	10		0.47	
203 A	0.05	1.4	20	20		0.27	
203 B	0.18	9.4	350	30		0.20	
203 C	0.08	7.0	80	20			
204	0.05	1.0	25	10			
205	0.17	6.8	55	20		0.20	
206	0.10	5.2	70	10		0.15	
207	0.24	6.2	135	20		0.18	
T - 208	0.10	6.6	135	20		0.19	

203 A B & C Avg. 5.43 ppm or 0.18 oz

34 Gold @ $2.00=	$	68.00
34 Silver 1.50=		51.00
34 Lead & Copper 1.60=		54.40
SUBTOTAL		173.40
34 Full preparations $.90=		30.60

CC: Sierra Minerals
ADD: 4741 E. Sunrise Drive
CITY: Tucson, Arizona 85718
ADD: Attn: Mr. R. Hewlett
CITY: cc: J. A. Briscoe, Tucson, Ariz.

REMARKS:

Trace analysis
Page 2

Analysis Cert. By

REGISTERED ASSAYER CERTIFICATE No. G.A.E. HOWARD State Assayer ARIZONA

Preparation $ 30.60
Analysis $ 173.40

ACC:	Date Spl. Received	Date Compl.		$
SIERRA MINERALS	5/22/73	5/30/73	347338	204.00

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold oz/t ppm	Silver oz/t ppm	Lead %% ppm	Copper %% ppm	Zinc % Oz Ag	Mo. %			
T - 166	0.06	0.8	50	15	—		2 Samp. # 166		
167	0.07	0.8	30	10					
168	0.07	1.2	50	10					
169	0.10	9.4	45	30					
170	0.07	5.0	60	15					
171	0.09	6.6	40	20					
172	0.09	9.8	80	20					
173	0.10	11.	205	35	0.321				
174	0.13	46.	200	40	1.341				
175	0.10	2.4	45	20					
176	0.26	26.	200	25	0.758				
177	9.4	960.	6,900	475	27.993				
178	0.09	1.6	45	15					
179	0.09	2.4	45	15					
180	0.08	2.6	60	20					
181	0.11	3.8	105	20					
182	0.06	4.4	55	15					
183	0.09	6.6	50	15					
184	0.11	13.	40	20	0.379				
185	0.18	16.	55	30	0.466				
186	0.12	5.4	35	25					
187	0.09	5.4	60	15					
188	0.13	10.	345	25	0.2916				
189	0.16	9.0	170	25					
190	0.56	9.8	85	30					
191	0.08	140.	165	85	4.082				
192	0.36	55	285	45	1.604				
193	0.12	5.4	75	15					
194	0.09	35.	100	30	1.021				
195	0.10	3.4	50	10					
T - 196	0.11	28.	80	50	0.816				

wted Avg
Ag = 1.16 oz
Au = 0.01 oz
@ $125 Au
+ $3.00 Ag
value = $4.7[illegible]

CC: J. A. Briscoe DBA
ADD: Sierra Minerals Management
CITY: 4741 E. Sunrise Drive
ADD: Tucson, Arizona 85718
CITY: cc: Mr. R. Hewlett

REMARKS:

Trace analysis

Page 1 of 2

Analysis Cert. By

Preparation $
Analysis $
$

ACC: J A BRISCOE DBA
SIERRA MINERALS MANGEMENT

Date Spl. Received 6/6/73

Date Compl. 6/11/73

347415

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold OPT	Silver OPT	Lead %	Copper %	Zinc %	Mo. %			
	ppm	ppm	ppm	ppm					
T - 197	0.08	1.0	40	10					
198	0.08	2.4	45	10					
199	0.06	4.4	35	10					
200	0.08	0.8	70	10					
209	0.07	0.2	340	15					
210	0.11	7.2	6,000	85					
211	0.08	4.8	3,000	100					
212	0.04	1.0	250	15	0.321				
213	0.04	1.5	1,900	30	~~1.371~~				
214	0.05	7.8	6,400	105					
215	0.03	2.6	1,800	50	~~0.756~~				
216	0.04	3.0	1,400	30	~~27.943~~				
217	0.05	1.6	1,900	35					
218	0.04	16.	2,100	380	0.466				
219	0.11	230	2,000	7,300	6.707				
220	0.26	64.	4,700	600	1.866				
221	0.03	18.	1,500	60	0.524				
222	0.12	220.	9,700	2,200	6.415				
223	0.05	29	800	370	~~0.3846~~				
329	0.07	4.0	70	15	~~0.466~~				
330	0.04	6.8	90	20					
T - 331	0.06	2.8	35	15					
					0.2916				
						53 Gold @ $	2.00=		$106.00
						53 Silver	1.50=		79.50
					4.553	Lead & Copper	1.60=		84.80
					1.604		Sub-total		$270.30
					1.053	sample preparation	@.90=		47.70
					0.846				

2 S

CC: J. A. Briscoe DBA
ADD: Sierra Minerals Management
CITY: 4741 E. Sunrise Drive
ADD: Tucson, Arizona 85718
CITY: cc: Mr. R. Hewlett

REMARKS:

Trace analysis
Page 2

Analysis Cert. By H Ellickson

Preparation $ 47.70
Analysis $ 270.30

ACC: J A BRISCOE DBA
SIERRA MINERALS MANAGEMENT

Date Spl. Received 6/6/73 | Date Compl. 6/11/73 | 347415 | $ 318.00

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

BOX 50106 1700 W. GRANT RD.,

TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

Credits made out.

IDENTIFICATION	Gold ~~OPT~~ ppm	Silver ~~OPT~~ ppm	Lead ~~%~~ ppm	Copper ~~%~~ ppm	~~Zinc %~~ Ag Oz/T	Mo. %
T - 224	<0.02	4.4	1,600	30	0.128	
225	<0.02	1.0	1,700	30	.02916	
226	0.06	1.2	6,700	45	.0349	
227	<0.02	1.2	1,700	30	.0349	
228	0.08	2.0	1,500	30	.0583	
229	0.10	7.1	5,400	40	.207	
230	0.08	3.4	2,600	35	.099	
231	0.06	1.4	1,700	25	.0408	
233	<0.02	4.2	1,200	45	.1224	
234	0.04	0.2	850	25		
235	0.04	14.	45	65	.0408	9' long
236	0.05	52.	360	70	1.516	18' heavy mnox
237	0.05	8.6	200	90	.251	11 side collar state of mexico
238	0.08	171.	12,000	145	4.986	
T - 239	0.05	88.	3,400	155	2.566	12" soft fw rk under #238

Below machine shop

#T-232 missing NEXT PAGE

State Mainline area

15 Gold @ $2.00 =	$30.00
15 Silver @ $1.50 =	22.50
15 Lead & Copper @$1.60 =	24.00
Subtotal	$76.50
15 sample preparations@$.90=	13.50

CC: J. A. Briscoe DBA
ADD: Sierra Mineral Management
CITY: 4741 East Sunrise Drive
ADD: Tucson, Arizona 85718
CITY: Attn: Mr. R. Hewlett

REMARKS:

Trace analysis

Analysis Cert. By H Elsheimer

Preparation $ 13.50
Analysis $ 76.50

ACC: J. A. BRISCOE DBA
SIERRA MINERAL MANAGEMENT

Date Spl. Received 6/8/73

Date Compl. 6/13/73

347419

$ 90.00

HH3

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Gold ppm	Silver ppm	Lead ppm	Copper ppm	Oz Ag
1	T - 232	0.08	8.1	4,900	30	0.24
2	240	<0.02	8.1	2,800	60	0.24
3	241	0.23	220.	25,000	120	6.42
4	242	<0.02	5.7	4,200	600	0.17
5	243	<0.02	1.4	40	25	—
6	244	<0.02	1.8	280	25	—
7	245	<0.02	9.7	1,200	30	0.28
8	246 (9.97 ppm or 0.30 oz)	<0.02	11.4	1,100	30	0.33
9	247	<0.02	8.8	525	25	0.26
10	248	0.06	31.	2,300	40	0.90
11	249	0.11	14.	1,900	55	0.41
12	250	<0.02	13.	65	70	0.38
13	251	<0.02	0.8	80	15	—
14	252	<0.02	9.4	2,500	100	0.27
15	253	<0.02	2.4	470	15	—
16	254	<0.02	2.6	535	20	—
17	255	<0.02	2.2	435	30	—
18	256	<0.02	2.0	540	30	—
19	257	<0.02	39.	4,000	110	1.14
20	258	<0.02	9.8	630	50	0.27
21	259	0.32	39.	33,000	320	1.14
22	260	1.20	240.	4,500	55	7.00
23	261	<0.02	< 0.2	50	15	—
24	262	<0.02	0.6	25	15	—
25	263	<0.02	31.	1,900	55	0.90
26	264	<0.02	6.2	2,500	30	0.18
27	265	<0.02	2.6	165	35	—
28	266	<0.02	2.8	150	30	—
29	T - 305	<0.02	2.0	35	10	—

TO: J. A. Briscoe DBA
Sierra Mineral Management
1971 Minerals Ltd., 4741 E. Sunrise Dr.,
Tucson, Arizona 85718
cc: Mr. R. Hewlett

REMARKS:
Trace analysis

CERTIFIED BY:

REGISTERED ASSAYER CERTIFICATE NO. 6164 ARIZONA, U.S.A.

ACCT.: J. A. BRISCOE, DBA, SIERRA MINERAL MGNT., 1971 MINERALS LTD

DATE REC'D: 6/14/73

DATE COMPL.: 6/21/73

347451

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Pb ppm	Cu ppm	Ag (oz)
1	T - 267	0.03	6.8	2,500	30	0.20
2	268	<0.02	1.6	360	25	—
3	? 269	<0.02	1.0	135	20	—
4	270	0.03	37.	6,100	175	1.08
5	? 271	<0.02	0.40	120	15	—
6	272	0.03	4.4	540	20	—
7	273	<0.02	8.6	400	20	0.25
8	274	0.04	15.	980	85	0.44
9	275	0.12	50.	2,300	195	1.46
10	278	<0.02	2.0	335	10	—
11	279	0.02	2.2	360	10	—
12	280	0.06	79.	17,000	215	2.30
13	? 284	<0.02	31.	1,100	45	0.10
14	285	0.02	34.	850	95	0.11
15	T - 286	0.03	95.	2,200	220	2.77

TO: J. A. Briscoe DBA
Sierra Minerals Management
4741 East Sunrise Drive
Tucson, Arizona 85718
Attn: Mr. R. Hewlett

REMARKS:

CERTIFIED BY:

ACCT.: SIERRA MINERALS MANAGEMENT

DATE REC'D: 6/20/73

DATE COMPL.: 6/26/73

347483

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold ~~%~~	Silver ~~%~~	Lead ~~%~~	Copper ~~%~~	~~Zinc~~ %	Mo. %	Oz Ag	Oz Au
	ppm	ppm	ppm	ppm	Lead			
T - 140 (previous)	0.35	4.4	4250	130	0.425		0.13	0.01
141 (previous)	<0.02	0.6	75	15	.007		—	—
142 (previous)	0.06	3.0	95	15			0.09	0.002
143 (previous)	0.03	<0.2	50	10			—	0.001
300	0.04	<0.2	55	5			—	0.001
301 A	<0.02	<0.2	55	10				—
301 B	<0.02	<0.2	40	10				—
301 C	<0.02	<0.2	40	5				—
302	<0.02	<0.2	25	5				—
303	<0.02	<0.2	35	10				—
304	0.05	<0.2	25	5				0.001
305 Missing								—
306	<0.02	<0.2	40	5				—
307	<0.02	1.6	125	10	0.013			—
308	<0.02	2.2	55	10				—
309	0.04	0.8	50	10				0.001
310	0.16	0.4	60	5				0.005
311	<0.02	<0.2	45	10				—
312	<0.02	0.4	60	10				—
313	<0.02	2.0	35	5				—
314	<0.02	<0.2	25	10				—
315	<0.02	0.2	30	5				—
316	0.03	<0.2	35	10				0.001
317	<0.02	<0.2	30	10				—
T - 318	<0.02	<0.2	30	5				—

CC: J. A. Briscoe DBA
ADD: Sierra Mineral Management
CITY: 4741 E. Sunrise Drive
ADD: Tucson, Arizona 85716
CITY: cc: Mr. Richard Hewlett

REMARKS:

Page 1 of 2

Trace analysis

Analysis Cert. By

Preparation $
Analysis $
$

ACC: J A Briscoe DBA
Sierra Minerals Management

Date Spl. Received 5/29/73

Date Compl. 6/4/73

347359

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.

BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold ~~Oz/T~~	Silver ~~Oz/T~~	Lead %	Copper %	Zinc %	Mo. %	Oz Ag	Oz Au
	ppm	ppm	ppm	ppm				
T - 319	<0.02	<0.2	40	5				
320	<0.02	<0.2	30	10			0.07	
321	<0.02	<0.2	35	10				
322	<0.02	<0.2	35	10				
323	<0.02	<0.2	30	10				
324	<0.02	<0.2	40	10				
325	0.07	1.8	30	15				
326	<0.02	<0.2	35	10				
327	<0.02	<0.2	30	10				
T - 328	0.03	5.4	85	15			0.16	
					0.013			

34 Gold @ $2.00= $ 68.00
34 Silver@ $1.50= 51.00
34 Copper@ $1.60= 54.40
& Lead
Sub-total $173.40

34 sample prep.@ $.90 = 30.60

CC: J. A. Briscoe DBA
ADD: Sierra Mineral Management
CITY: 4741 E. Sunrise Drive
ADD: Tucson, Arizona 85716
CITY: cc: Mr. Richard Hewlett

REMARKS:
Page 2
Trace analysis

Analysis Cert. By A. Ellis Hood

Preparation $ 30.60
Analysis $ 173.40

ACC: J A BRISCOE DBA
SIERRA MINERALS MANAGEMENT

Date Spl. Received 5/29/73
Date Compl. 6/4/73
347359
$ 204.00

HH3

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold ~~oz/t~~ ppm	Silver ~~oz/t~~ ppm	Lead % ppm	Copper % ppm	Zinc %	Mo. %	Oz Ag		
T - 202 C	0.08	16	65	10			0.47		
203 A	0.05	1.4	20	20			—		
203 B	0.18	9.4	350	30			0.27		
203 C	0.08	7.0	80	20			0.20		
204	0.05	1.0	25	10			—		
205	0.17	6.8	55	20			0.20		
206	0.10	5.2	70	10			—		
207	0.24	6.2	135	20			—		
T - 208	0.10	6.6	135	20			—		
						34 Gold @	$2.00=	$	68.00
						34 Silver	1.50=		51.00
					34 Lead & Copper		1.60=		54.40
						SUBTOTAL			173.40
					34 Full preparations		$.90=		30.60

CC: Sierra Minerals
ADD: 4741 E. Sunrise Drive
CITY: Tucson, Arizona 85718
ADD: Attn: Mr. R. Hewlett
CITY: cc: J. A. Briscoe, Tucson, Ariz.

REMARKS:

Trace analysis
Page 2

Analysis Cert. By [signature]

Preparation $ 30.60
Analysis $ 173.40

ACC:	Date Spl. Received	Date Compl.		$
SIERRA MINERALS	5/22/73	5/30/73	347338	204.00

HH3

TUCSON

SKYLINE LABS, INC. - FIRE ASSAY

Sample Weight 1.A.T. by _____

Assayer H.B

Au Ag Pt Pd

Job No. 3474

Page _____ of _____ Pages

Date _____

	Sample No. SIERRA	Fire Assay AU-OPT	Fire Assay AG-OPT	Type of Material	Type of Flux	Flr 1/4 Tsps	Ntr 1/4 Tsps	SiO_2 1/4 Tsps	Cover	wt of Pb Bttn.	Inquart	wt of Au+Ag mg	wt of Au mg	wt of Ag mg
57 1	T-177 12	0.260	36.98		R								.260	37.24
58 2	T-219 46	0.005	7.30										.005	7.30
59 3	T-222 49	L.005	7.50										L.005	7.50
4		PPM	PPM											
5		9.6 9.4	1268 960											
6		.2 "	270 220											
7		<.2 .12	277 230											
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Pb ppm	Cu ppm				
1	T - 276	<0.02	4.0	125	20	—			
2	277	<0.02	0.2	85	15	—			
3	281A	0.18	28.	6,800	75	0.82			
4	281B	0.23	26.	3,800	40	0.76			
5	282	0.11	165.	8,900	1,300	4.81			
6	283	<0.02	6.6	8,100	50	0.19			
7	287	<0.02	8.2	4,000	45	0.24			
8	288	<0.02	11.	3,600	30	0.32			
9	289	0.11	36.	1,400	30	1.05			
10	290	<0.02	165.	4,400	180	4.81			
11	291	0.06	3.6	30	30	—			
12	292	<0.02	2.8	1,100	20	—			
13	293A	<0.02	18.	1,400	75	0.52			
14	293B	0.19	13.	1,300	85	0.38			
15	294	<0.02	1.4	125	20	—			
16	295	<0.02	4.2	3,200	45	—			
17	296	<0.02	0.8	55	20	—			
18	297	<0.02	1.0	425	25	—			
19	298	0.03	13.	1,500	90	0.38			
20	299	0.06	62.	16,000	260	1.81			
21	332	0.06	4.2	850	20	—			
22	333	<0.02	4.0	1,300	15	—			
23	334	<0.02	6.6	1,900	15	—			
24	335	<0.02	1.0	110	25	—			
25	T - 336	<0.02	4.4	4,100	100	—			

TO:
James A. Briscoe DBA
Sierra Mineral Management
4741 East Sunrise Drive
Tucson, Arizona 85718
Attn: Mr. R. Hewlett

REMARKS:
Trace analysis

CERTIFIED BY:

Page 1 of 2

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERAL MANAGEMENT	6/26/73	6/29/73	347509

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Pb ppm	Cu ppm	Oz Ag			
26	T - 337	<0.02	0.8	70	10	—			
27	338	<0.02	1.0	165	15	—			
28	339	<0.02	0.6	50	15	—			
29	340	<0.02	1.0	175	15	—			
30	341	0.07	5.6	950	15	—			
31	342	<0.02	4.2	2,100	15	—			
32	343	0.03	3.2	1,200	25	—			
33	344	<0.02	4.0	1,400	10	—			
34	345	<0.02	11.	1,700	10	0.32			
35	346	<0.02	6.8	2,300	10	0.20			
36	347	<0.02	6.0	1,400	10	—			
37	348	0.03	3.6	1,400	20	—			
38	349	0.09	3.8	1,200	20	—			
39	350	<0.02	2.2	800	15	—			
40	351	0.04	3.3	950	30	—			
41	352	<0.02	4.0	1,100	20	—			
42	T - 353	<0.02	1.8	545	15	—			

TO: James A. Briscoe DBA
Sierra Mineral Management
4741 East Sunrise Drive
Tucson, Arizona 85718
Attn: Mr. R. Hewlett

REMARKS:
Trace analysis
Page 2

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERAL MANAGEMENT	6/26/73	6/29/73	347509

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Cu ppm	Pb ppm	Oz Ag
1	T - 354	0.30	28	185	1,250	0.82
2	T - 355	0.50	820	255	2,150	23.91
3	T - 356	0.64	157	110	2,350	4.58
4	T - 357	0.21	82	185	3,300	2.39
5	T - 358	0.10	35	70	1,400	1.02
6	T - 359	<0.02	24	120	1,300	0.70
7	T - 360	<0.02	10	30	1,250	0.27
8	T - 361	<0.02	101	85	800	2.96
9	T - 362	<0.02	< 0.2	5	35	—
10	T - 363	<0.02	< 0.2	5	30	—
11	T - 364	<0.02	< 0.2	5	35	—
12	T - 365	<0.02	< 0.2	20	35	
13	T - 366	<0.02	< 0.2	10	165	—
14	T - 367	<0.02	1.2	10	950	—
15	T - 368	<0.02	1.0	15	1,200	
16	T - 369	<0.02	< 0.2	10	110	—
17	T - 370	<0.02	< 0.2	10	30	
18	T - 371	<0.02	8.2	15	750	0.24
19	T - 372	<0.02	0.8	20	35	—
20	T - 373	<0.02	0.8	15	75	
21	T - 374	<0.02	0.6	10	170	—
22	T - 375A	<0.02	4.4	35	80	0.13
23	T - 375B	<0.02	5.8	180	600	0.17
24	T - 451	<0.02	2.0	10	80	—
25	T - 452	<0.02	0.6	15	180	—
26	T - 453	<0.02	< 0.2	20	40	—
27	T - 454	<0.02	1.0	20	50	—
28	T - 455	<0.02	< 0.2	15	70	
29	T - 456	<0.02	< 0.2	20	30	
30	T -457	<0.02	< 0.2	25	80	
31	T - 458	<0.02	< 0.2	5	50	
32	T - 459	<0.02	< 0.2	20	200	—

TO:
J. A. Briscoe DBA Sierra Mineral Mgnt.,
4741 East Sunrise Drive, Tucson, Az.85718
Attn: Mr. Hewlett
cc: Mr. J. A. Briscoe
6814 Santa Aurelia, Tucson, Az. 85715

REMARKS:
Trace analysis

CERTIFIED BY:

ACCT.: J. A. BRISCOE, DBA
SIERRA MINERAL MANAGEMENT

DATE REC'D: 7/3/73

DATE COMPL.: 7/11/73

347558

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Cu ppm	Pb ppm
1	T - 376	0.10	2.2	70	285
2	377	0.07	1.6	35	245
3	378	0.15	1.8	75	115
4	379	0.06	<0.2	35	160
5	380	<0.02	0.8	25	110
6	381	0.05	1.4	55	100
7	382	0.03	0.6	15	185
8	383	0.22	5.0	40	365
9	384	0.06	4.0	10	185
10	385	0.06	3.8	10	270
11	386	0.04	1.4	20	25
12	387	0.02	4.0	10	350
13	388	0.10	5.6	10	295
14	T - 389	<0.02	1.6	10	55

TO: Sierra Mineral Management
4741 East Sunrise Drive
Tucson, Arizona 85715
cc: Mr. James A. Briscoe

REMARKS: Trace analysis

CERTIFIED BY:

ACCT.: SIERRA MINERAL MANAGEMENT

DATE REC'D: 8/1/73

DATE COMPL.: 8/6/73

347691

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Cu ppm	Pb ppm
1	T - 390	<0.02	<0.2	20	110
2	391	<0.02	<0.2	25	30
3	392	<0.02	0.8	20	75
4	393	<0.02	1.0	40	25
5	394	<0.02	2.0	15	80
6	395	<0.02	1.6	20	75
7	396	<0.02	4.4	20	45
8	397	<0.02	0.6	50	20
9	398	<0.02	<0.2	15	25
10	399	<0.02	<0.2	15	30
11	400	<0.02	<0.2	5	50
12	401	<0.02	<0.2	10	50
13	402	<0.02	<0.2	15	35
14	403	<0.02	<0.2	15	100
15	404	<0.02	<0.2	25	25
16	405	<0.02	<0.2	10	30
17	406	<0.02	<0.2	10	90
18	407	<0.02	<0.2	5	30
19	408	<0.02	<0.2	10	25
20	409	<0.02	<0.2	10	55
21	410	<0.02	<0.2	15	25
22	411	<0.02	<0.2	10	30
23	412	<0.02	<0.2	10	35
24	413	<0.02	<0.2	10	35
25	T - 414	<0.02	<0.2	5	75

TO: A. BriscoeDBA Sierra Mineral Mng't.
4741 East Sunrise Drive
Tucson, Arizona 85718
cc: James A. Briscoe
6418 Santa Aurelia, Tucson, Az. 85715

REMARKS:

Trace analysis

Page 1 of 2

CERTIFIED BY:

ACGT: A. Briscoe DBA
SIERRA MINERAL MANAGEMENT

DATE REC'D: 8/6/73

DATE COMPL.: 8/14/73

347719

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Cu ppm	Pb ppm
26	T - 415	<0.02	<0.2	10	35
27	416	<0.02	<0.2	15	30
28	417	<0.02	<0.2	20	20
29	418	0.06	<0.2	25	35
30	419	<0.02	<0.2	20	50
31	420	<0.02	<0.2	20	35
32	421	<0.02	<0.2	10	50
33	422	<0.02	<0.2	25	125
34	423	<0.02	<0.2	10	85
35	424	<0.02	<0.2	15	25
36	425	<0.02	<0.2	40	40
37	426	<0.02	<0.2	15	30
38	427	<0.02	<0.2	10	45
39	428	<0.02	<0.2	10	15
40	429	<0.02	<0.2	15	25
41	430	<0.02	1.2	10	130
42	431	<0.02	<0.2	5	100
43	T - 432	<0.02	<0.2	5	65

TO: J. A. Briscoe DBA Sierra Mineral Mng't.
4741 East Sunrise Drive
Tucson, Arizona 85718
cc: James A. Briscoe
6418 Santa Aurelia, Tucson, Az. 85715

REMARKS:
Trace analysis

CERTIFIED BY:

ACCT.: J. A. Briscoe DBA
SIERRA MINERAL MANAGEMENT

DATE REC'D: 8/6/73

DATE COMPL.: 8/14/73

347719

DRILL HOLE ASSAY SHEETS

To Hawley & Hawley, Tucson

SAMPLE SHIPMENT

~~176~~ 191 SAMPLES (in ½ pint containers)

9	samples	marked	"AT-1, 5-10"	to	"AT-1, 45-50"	
9	"	"	"AT-2	"	to AT2	" "
12	"	"	AT-3	"	to "AT3, 60-65"	
12	"	"	AT-4	"	to "AT4, 60-65"	
9	"	"	AT-5	"	to "AT5, 45-50"	
19	"	"	AT-6	"	to AT6, 95-100	
19	"	"	AT-7	"	to AT7 95-100	
20	"	"	AT-8	"	to AT8 100-104	
19	"	"	AT9	"	to AT9 95-100	
19			AT10	"	to AT9 95-100	
19			AT11	"	to AT9 95-100	
10			TDC-1 TRACK 0-5	to	TDC-1 TRACK 45-50	

15 " " HRD-1 80'-85' to HRD-1 150-155'

191

Assay for: Ag, Au, Pb, Cu, Zn

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

✓ County Records for map
I think these
may be
Valculation
dull holes?
Fox - Evening Star
et -
HRD?

245

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
1	HRD-1	0 - 5	<0.02	<0.2	30	50	25				
2		5 - 10	<0.02	0.6	30	35	25				
3		10 - 15	<0.02	0.2	35	65	30				
4		15 - 20	<0.02	0.6	40	155	30				
5		20 - 25	<0.02	<0.2	35	90	30				
6		25 - 30	<0.02	0.6	40	55	25				
7		30 - 35	<0.02	<0.2	45	55	20				
8		35 - 40	<0.02	0.8	50	150	65				
9		40 - 45	<0.02	1.0	45	125	50				
10		45 - 50	<0.02	1.2	40	105	40				
11		50 - 55	<0.02	1.6	45	75	25				
12		55 - 60	<0.02	0.6	35	90	25				
13		60 - 65	<0.02	0.6	40	75	30				
14		65 - 70	<0.02	0.6	45	110	45				
15		70 - 75	<0.02	0.6	35	105	40				
16		75 - 80	<0.02	0.8	40	90	40				
17		155 - 160	<0.02	<0.2	20	75	15				
18		160 - 165	<0.02	<0.2	25	60	20				
19		165 - 170	<0.02	<0.2	25	70	15				
20		170 - 175	<0.02	<0.2	25	65	15				
21		175 - 180	<0.02	0.8	25	75	35				
22		180 - 185	<0.02	<0.2	20	250	35				
23		185 - 190	<0.02	<0.2	25	135	25				
24		190 - 195	<0.02	<0.2	20	85	25				
25		195 - 200	<0.02	<0.2	25	100	20				
26		200 - 205	<0.02	<0.2	25	50	25				
27		205 - 210	<0.02	<0.2	25	65	15				
28		210 - 215	<0.02	<0.2	25	110	30				
29		215 - 220	<0.02	<0.2	20	45	20				
30		220 - 225	<0.02	<0.2	20	55	15				
31		225 - 230	<0.02	0.6	25	230	25				
32		230 - 235	<0.02	<0.2	20	100	15				
33		235 - 240	<0.02	0.4	20	50	20				
34		240 - 245	<0.02	1.0	30	75	25				
35	HRD-1	245 - 250	<0.02	<0.2	100	75	40				

TO: Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718

REMARKS:
Trace analysis
Page 1 of 4

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	8/30/73	9/12/73	347854

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
36	HRD-1	250 - 255	<0.02	0.8	105	150	60				
37		255 - 260	<0.02	<0.2	60	95	45				
38	HRD-1	260 - 265	<0.02	<0.2	40	80	30				
39	TDC-2	0 - 5	<0.02	<0.2	10	100	45				
40		5 - 10	<0.02	<0.2	10	230	60				
41		10 - 15	<0.02	<0.2	10	275	35				
42		15 - 20	<0.02	0.8	10	115	40				
43		20 - 25	<0.02	0.6	10	700	40				
44		25 - 30	<0.02	<0.2	10	300	40				
45		30 - 35	<0.02	<0.2	10	525	45				
46		35 - 40	<0.02	<0.2	10	415	45				
47	TDC-2	40 - 45	<0.02	<0.2	10	225	35				
48	TDC-3	0 - 5	<0.02	<0.2	10	55	30				
49		5 - 10	<0.02	<0.2	10	70	40				
50		10 - 15	<0.02	<0.2	10	200	40				
51		15 - 20	<0.02	<0.2	10	55	30				
52		20 - 25	<0.02	<0.2	10	260	40				
53		25 - 30	<0.02	0.4	10	140	40				
54		30 - 35	<0.02	0.6	10	315	30				
55		35 - 40	<0.02	0.8	15	180	40				
56		40 - 45	<0.02	0.6	45	365	75				
57	TDC-3	45 - 48	<0.02	0.8	20	185	210				
58	TDC-4	0 - 5	<0.02	0.4	10	250	40				
59	TDC-4	5 - 10	<0.02	0.2	10	35	30				
60	TDC-5	0 - 5	<0.02	<0.2	10	35	35				
61	TDC-5	5 - 10	<0.02	<0.2	10	25	45				
62	TDC-6	0 - 5	<0.02	<0.2	10	15	30				
63	TDC-6	5 - 10	<0.02	<0.2	10	35	40				
64	TDC-7	0 - 5	<0.02	<0.2	10	15	10				
65		5 - 10	<0.02	0.2	5	10	10				
66		10 - 15	<0.02	0.2	5	235	5				
67		15 - 20	<0.02	<0.2	20	25	15				
68		20 - 25	<0.02	<0.2	20	155	20				
69		25 - 30	<0.02	<0.2	15	35	30				
70	TDC-7	30 - 35	<0.02	<0.2	20	125	30				

TO:

REMARKS:

Trace analysis
Page 2 of 4

CERTIFIED BY:

ACCT.: SIERRA MINERALS

DATE REC'D: 8/30/73

DATE COMPL.: 9/12/73

347854

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

247

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
1	HRD-2	0-5	<0.02	<0.2	10	40	65				
2		5-10	<0.02	0.8	20	65	65				
3		10-15	<0.02	1.8	15	55	70				
4		15-20	<0.02	<0.2	25	85	80				
5		20-25	<0.02	<0.2	30	50	95				
6		25-30	<0.02	<0.2	45	45	150				
7		30-35	<0.02	<0.2	100	140	155				
8		35-40	<0.02	<0.2	40	140	50				
9		40-45	<0.02	<0.2	45	65	40				
10		45-50	<0.02	<0.2	35	530	40				
11		50-55	<0.02	<0.2	30	130	50				
12		55-60	<0.02	<0.2	75	100	125				
13		60-65	<0.02	<0.2	50	135	155				
14		65-70	<0.02	<0.2	50	135	150				
15		70-75	<0.02	<0.2	50	140	155				
16		75-80	<0.02	<0.2	35	150	145				
17		80-85	<0.02	<0.2	30	75	145				
18		85-90	<0.02	1.0	45	140	165				
19		90-95	<0.02	<0.2	30	70	60				
20		95-100	<0.02	<0.2	40	95	110				
21		100-105	<0.02	<0.2	35	85	135				
22		105-110	<0.02	<0.2	25	75	100				
23		110-115	<0.02	<0.2	20	50	95				
24	HRD-2	115-120	<0.02	<0.2	20	85	90				
25	HRD-3	0-5	<0.02	<0.2	15	90	50				
26		5-10	<0.02	<0.2	10	50	45				
27		10-15	<0.02	<0.2	10	40	40				
28		15-20	<0.02	<0.2	15	195	35				
29		20-25	<0.02	<0.2	15	155	15				
30		25-30	<0.02	<0.2	15	65	15				
31		30-35	<0.02	<0.2	15	180	15				
32		35-40	<0.02	<0.2	15	75	20				
33		40-45	<0.02	<0.2	25	105	25				
34		45-50	<0.02	1.4	15	220	35				
35	HRD-3	50-55	<0.02	<0.2	15	160	30				

TO:
Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718

cc: Mr. James A. Briscoe

REMARKS:
Trace analysis
Page 1 of 6

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/5/73	9/28/73	347882

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
36	HRD-3	55-60	<0.02	<0.2	15	110	30				
37		60-65	<0.02	<0.2	15	155	35				
38		65-70	<0.02	<0.2	10	225	25				
39		70-75	<0.02	<0.2	10	125	35				
40		75-80	<0.02	<0.2	10	135	40				
41		80-85	<0.02	<0.2	15	115	40				
42		85-90	<0.02	<0.2	15	150	30				
43		90-95	<0.02	<0.2	10	90	25				
44		95-100	<0.02	<0.2	10	75	20				
45		100-105	<0.02	<0.2	15	65	20				
46		105-110	<0.02	0.2	20	140	20				
47		110-115	<0.02	<0.2	15	135	10				
48	HRD-3	115-120	<0.02	<0.2	10	90	10				
49	E-1	0-5	<0.02	<0.2	30	35	85				
50		5-10	<0.02	<0.2	20	40	80				
51		10-15	<0.02	1.6	40	170	80				
52		15-20	<0.02	<0.2	30	120	75				
53		20-25	<0.02	<0.2	10	545	50				
54		25-30	<0.02	<0.2	5	185	65				
55		30-35	<0.02	1.0	5	275	60				
56		35-40	<0.02	<0.2	5	155	85				
57		40-45	<0.02	<0.2	5	145	115				
58	E-1	45-50	<0.02	<0.2	5	255	85				
59	E-2	0-5	<0.02	<0.2	5	35	75				
60		5-10	<0.02	<0.2	5	45	70				
61		10-15	<0.02	<0.2	5	120	75				
62		15-20	<0.02	<0.2	5	130	65				
63		20-25	<0.02	<0.2	5	55	65				
64		25-30	<0.02	<0.2	5	255	65				
65		30-35	<0.02	<0.2	5	55	75				
66		35-40	<0.02	<0.2	5	205	70				
67		40-45	<0.02	<0.2	5	65	70				
68	E-2	45-50	<0.02	<0.2	5	295	70				
69	E-3	0-5	<0.02	<0.2	20	240	135				
70	E-3	5-10	<0.02	<0.2	35	295	125				

TO:

REMARKS:

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/5/73	9/28/73	347882

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
71	E-3	10-15	<0.02	<0.2	15	380	130				
72		15-20	<0.02	3.4	15	180	180				
73		20-25	<0.02	0.2	10	295	110				
74		25-30	<0.02	0.2	5	545	110				
75		30-35	<0.02	1.2	15	535	265				
76		35-40	<0.02	0.6	45	525	630				
77		40-45	<0.02	1.4	425	415	2000				
78	E-3	45-50	<0.02	1.2	480	880	1425				
79	F-1	0-5	<0.02	<0.2	10	75	70				
80		5-10	<0.02	<0.2	20	115	105				
81		10-15	<0.02	<0.2	5	125	65				
82		15-20	<0.02	<0.2	5	90	65				
83		20-25	<0.02	<0.2	5	145	55				
84		25-30	<0.02	<0.2	5	260	75				
85	F-1	30-35	<0.02	<0.2	10	85	65				
86	F-2	0-5	<0.02	<0.2	5	95	55				
87		5-10	<0.02	<0.2	5	45	50				
88		10-15	<0.02	<0.2	5	230	55				
89		15-20	<0.02	<0.2	5	40	65				
90		20-25	<0.02	<0.2	5	45	65				
91		25-30	<0.02	0.6	5	515	55				
92		30-35	<0.02	<0.2	5	120	50				
93		35-40	<0.02	<0.2	5	140	40				
94		40-45	<0.02	<0.2	5	115	45				
95	F-2	45-50	<0.02	<0.2	5	150	60				
96	F-3	0-5	<0.02	<0.2	5	385	45				
97		5-10	<0.02	<0.2	5	65	40				
98		10-15	<0.02	0.8	5	405	40				
99		15-20	<0.02	<0.2	5	40	25				
100		20-25	<0.02	<0.2	5	155	45				
101		25-30	<0.02	<0.2	5	245	30				
102		30-35	<0.02	<0.2	20	85	65				
103		35-40	<0.02	<0.2	45	315	110				
104		40-45	<0.02	<0.2	5	690	40				
105	F-3	45-50	<0.02	<0.2	5	205	55				

TO:

REMARKS:

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/5/73	9/28/73	347882

250

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm
106	F-4	0-5	<0.02	<0.2	5	45	40
107		5-10	<0.02	<0.2	5	35	50
108		10-15	<0.02	<0.2	5	385	50
109		15-20	<0.02	<0.2	5	50	50
110		20-25	<0.02	<0.2	5	115	30
111		25-30	<0.02	<0.2	5	80	35
112		30-35	<0.02	<0.2	5	180	40
113		35-40	<0.02	<0.2	5	75	50
114		40-45	<0.02	<0.2	5	110	50
115	F-4	45-50	<0.02	<0.2	5	315	55
116	F-5	0-5	<0.02	<0.2	25	60	65
117		5-10	<0.02	<0.2	25	50	60
118		10-15	<0.02	<0.2	30	80	60
119		15-20	<0.02	<0.2	30	125	75
120		20-25	<0.02	<0.2	30	275	115
121		25-30	<0.02	<0.2	20	115	55
122		30-35	<0.02	<0.2	15	170	55
123		35-40	<0.02	<0.2	10	100	60
124		40-45	<0.02	<0.2	20	130	65
125	F-5	45-50	<0.02	<0.2	15	240	50
126	F-6	0-5	<0.02	<0.2	25	200	70
127		5-10	<0.02	<0.2	30	55	60
128		10-15	<0.02	<0.2	25	165	55
129		15-20	<0.02	<0.2	25	100	65
130		20-25	<0.02	<0.2	25	60	50
131		25-30	<0.02	<0.2	20	145	60
132		30-35	<0.02	<0.2	15	140	60
133		35-40	<0.02	<0.2	20	115	65
134		40-45	<0.02	<0.2	20	170	65
135	F-6	45-50	<0.02	0.4	25	210	55
136	F-7	0-5	<0.02	<0.2	20	45	50
137		5-10	<0.02	0.4	15	65	50
138		10-15	<0.02	<0.2	20	425	55
139		15-20	<0.02	<0.2	25	185	45
140	F-7	20-25	<0.02	<0.2	20	145	60

TO:

REMARKS:

CERTIFIED BY:

ACCT.: SIERRA MINERALS

DATE REC'D: 9/5/73

DATE COMPL.: 9/28/73

347882

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P. O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

251

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
141	F-7	25-30	<0.02	<0.2	20	110	70				
142		30-35	<0.02	0.2	30	130	85				
143		35-40	<0.02	<0.2	25	125	75				
144		40-45	<0.02	<0.2	30	170	75				
145	F-7	45-50	<0.02	2.8	25	70	80				
146	F-8	0-5	<0.02	<0.2	25	185	70				
147		5-10	<0.02	<0.2	45	55	85				
148		10-15	<0.02	<0.2	25	85	75				
149		15-20	<0.02	<0.2	30	60	50				
150		20-25	<0.02	<0.2	35	105	45				
151		25-30	<0.02	<0.2	30	85	85				
152		30-35	<0.02	<0.2	35	80	80				
153		35-40	<0.02	<0.2	25	70	70				
154		40-45	<0.02	<0.2	20	140	70				
155	F-8	45-50	<0.02	<0.2	15	140	65				
156	F-10	0-5	<0.02	<0.2	25	95	70				
157		5-10	<0.02	<0.2	15	50	75				
158		10-15	<0.02	<0.2	5	40	65				
159		15-20	<0.02	<0.2	5	100	65				
160		20-25	<0.02	<0.2	5	70	65				
161		25-30	<0.02	<0.2	5	40	70				
162		30-35	<0.02	<0.2	10	140	75				
163		35-40	<0.02	<0.2	5	45	70				
164		40-45	<0.02	<0.2	10	35	70				
165		45-50	<0.02	<0.2	5	125	75				
166	F-10	50-55	<0.02	0.2	5	45	70				
167	E-4	0-5	<0.02	<0.2	5	110	80				
168		5-10	<0.02	<0.2	5	35	70				
169		10-15	<0.02	<0.2	5	40	70				
170		15-20	<0.02	<0.2	5	145	70				
171		20-25	<0.02	<0.2	5	50	75				
172		25-30	<0.02	<0.2	10	60	75				
173		30-35	<0.02	<0.2	5	125	70				
174		35-40	<0.02	<0.2	5	80	70				
175	E-4	40-45	<0.02	<0.2	5	55	70				

TO:

REMARKS:

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/5/73	9/28/73	347882

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P. O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

252

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
176	E-4	45-50	<0.02	<0.2	5	110	75				
177		50-55	<0.02	<0.2	5	45	75				
178		55-60	<0.02	<0.2	5	30	70				
179		60-65	<0.02	<0.2	5	55	70				
180		65-70	<0.02	<0.2	5	40	75				
181		70-75	<0.02	<0.2	5	45	75				
182		75-80	<0.02	<0.2	10	125	80				
183	E-4	80-85	<0.02	<0.2	10	40	80				

TO:

REMARKS:

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/5/73	9/28/73	347882

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
1	E-4	85-90	<0.02	<0.2	5	35	70				
2		90-95	<0.02	<0.2	< 5	80	75				
3		95-100	<0.02	<0.2	< 5	45	70				
4		100-105	<0.02	<0.2	< 5	25	70				
5		105-110	<0.02	<0.2	< 5	125	70				
6		110-115	<0.02	<0.2	< 5	50	75				
7		115-120	<0.02	<0.2	< 5	45	65				
8		120-125	<0.02	<0.2	< 5	150	70				
9		125-130	<0.02	<0.2	< 5	45	70				
10	E-4	130-135	<0.02	<0.2	5	80	70				
11	F-9	0-5	<0.02	<0.2	30	65	75				
12		5-10	<0.02	<0.2	20	60	75				
13		10-15	<0.02	<0.2	25	185	80				
14		15-20	<0.02	<0.2	25	85	75				
15		20-25	<0.02	<0.2	30	165	70				
16		25-30	<0.02	<0.2	25	80	75				
17		30-35	<0.02	<0.2	20	235	70				
18		35-40	<0.02	<0.2	10	65	65				
19		40-45	<0.02	<0.2	5	250	75				
20	F-9	45-50	<0.02	<0.2	5	95	80				
21	F-10	55-60	<0.02	<0.2	< 5	50	70				
22	F-11	0-5	<0.02	<0.2	25	700	70				
23		5-10	<0.02	<0.2	25	70	70				
24		10-15	0.03	<0.2	20	840	75				
25		15-20	<0.02	<0.2	10	230	55				
26		20-25	<0.02	<0.2	15	220	65				
27		25-30	<0.02	<0.2	5	310	65				
28		30-35	<0.02	<0.2	5	190	70				
29		35-40	<0.02	<0.2	5	110	75				
30		40-45	<0.02	<0.2	5	130	60				
31	F-11	45-48	<0.02	<0.2	5	410	60				
32	F-12	0-5	<0.02	<0.2	20	225	70				
33		5-10	<0.02	<0.2	20	70	85				
34		10-15	<0.02	<0.2	15	120	70				
35	F-12	15-20	<0.02	<0.2	25	60	80				

TO:
Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718

cc: Mr. James A. Briscoe

REMARKS:
Trace analysis
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CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/11/73	10/15/73	347912

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
36	F-12	20-25	<0.02	<0.2	30	170	80				
37		25-30	<0.02	<0.2	25	105	80				
38		30-35	<0.02	<0.2	20	140	70				
39		35-40	<0.02	<0.2	25	75	60				
40		40-45	<0.02	<0.2	25	180	70				
41	F-12	45-50	<0.02	<0.2	25	90	70				
42	F-13	0-5	<0.02	<0.2	15	140	65				
43		5-10	<0.02	<0.2	15	65	65				
44		10-15	<0.02	<0.2	20	155	70				
45		15-20	<0.02	<0.2	30	100	85				
46		20-25	<0.02	<0.2	40	80	75				
47		25-30	<0.02	<0.2	30	85	70				
48		30-35	<0.02	<0.2	25	115	65				
49		35-40	<0.02	<0.2	25	95	80				
50		40-45	<0.02	<0.2	35	70	70				
51	F-13	45-50	<0.02	<0.2	45	220	80				
52	TMR-1	0-5	<0.02	<0.2	25	35	255				
53		5-10	<0.02	0.2	30	35	630				
54		10-15	<0.02	0.6	20	100	490				
55		15-20	<0.02	<0.2	10	55	260				
56		20-25	<0.02	<0.2	20	320	320				
57		25-30	<0.02	0.2	20	630	240				
58		30-35	0.06	2.0	5	370	45				
59		35-40	0.43	2.2	25	450	1050				
60		40-45	<0.02	2.0	15	190	650				
61		45-50	<0.02	0.8	15	400	170				
62		50-55	<0.02	0.2	10	140	105				
63		55-60	<0.02	0.2	15	115	185				
64		60-65	<0.02	<0.2	10	360	310				
65		65-70	<0.02	2.4	20	385	570				
66		70-75	0.20	2.2	10	940	200				
67		75-80	0.10	1.0	5	650	45				
68		80-85	<0.02	<0.2	15	110	25				
69	TMR-1	85-90	<0.02	3.2	30	250	350				
70	TMR-RD-1	0-5	<0.02	<0.2	15	120	25				

TO:

REMARKS:
Trace analysis
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CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/11/73	10/15/73	347912

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SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm
71	TMR-RD-1 5-10	<0.02	<0.2	25	95	80
72	10-15	<0.02	<0.2	10	50	20
73	15-20	<0.02	<0.2	20	245	20
74	20-25	<0.02	<0.2	15	110	25
75	25-30	<0.02	<0.2	10	115	25
76	30-35	<0.02	<0.2	10	145	30
77	35-40	<0.02	<0.2	15	80	25
78	40-45	<0.02	<0.2	15	75	35
79	45-50	<0.02	<0.2	10	140	35
80	50-55	<0.02	<0.2	20	65	35
81	55-60	<0.02	<0.2	20	70	40
82	60-65	<0.02	<0.2	15	130	20
83	65-70	<0.02	<0.2	15	80	30
84	70-75	<0.02	<0.2	15	60	20
85	75-80	<0.02	<0.2	10	125	25
86	80-85	0.05	2.0	10	550	170
87	85-90	<0.02	<0.2	10	85	15
88	90-95	<0.02	<0.2	15	220	25
89	95-100	<0.02	<0.2	15	115	35
90	100-105	<0.02	<0.2	15	170	25
91	105-110	<0.02	<0.2	15	135	25
92	110-115	<0.02	<0.2	20	80	35
93	115-120	<0.02	<0.2	10	90	25
94	120-125	<0.02	<0.2	10	115	20
95	125-130	<0.02	<0.2	10	140	25
96	130-135	<0.02	<0.2	10	230	35
97	135-140	<0.02	<0.2	5	155	25
98	140-145	<0.02	<0.2	10	155	20
99	TMR-RD-1 145-150	<0.02	<0.2	10	150	20
100	T-447	0.04	0.4	10	170	55
101	T-448	0.10	0.2	15	140	185

TO:

REMARKS:

Trace analysis
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CERTIFIED BY:

ACCT.: SIERRA MINERALS

DATE REC'D: 9/11/73

DATE COMPL.: 10/15/73

347912

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm		
1	TMR-RD-1 510-530			50					
2	530-550			45		75	2		
3	550-560			35					
4	560-570			30					
5	570-580			30					
6	580-590			35					
7	590-595	<0.02	<0.2	35	730	165	6		
8	TMR-RD-1 595-600	<0.02	<0.2	35	210	80	6		

TO:
Sierra Minerals
474[illegible] East Sunrise Drive
Tucson, Arizona 85718

cc: Mr. James A. Briscoe

REMARKS:
Trace analysis

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/20/73	9/27/73	347969

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Ag ppm	Cu ppm	Pb ppm					
1	TMR-2 Track	0-5	<0.2							
2		5-10	<0.2							
3		10-15	<0.2							
4		15-20	<0.2							
5		20-25	<0.2							
6		25-30	<0.2							
7		30-35	<0.2							
8		35-40	<0.2							
9		40-45	<0.2							
10		45-50	<0.2							
11		50-55	<0.2							
12		55-60	<0.2							
13		60-65	<0.2							
14		65-70	<0.2							
15		70-75	<0.2							
16		75-80	0.2							
17		80-85	0.6							
18	TMR-2 Track	85-90	0.8	45	1400					
19	TMR-3 Track	0-5	<0.2							
20		5-10	<0.2							
21		10-15	<0.2							
22		15-20	0.2							
23		20-25	<0.2							
24		25-30	<0.2							
25		30-35	<0.2							
26		35-40	<0.2							
27		40-45	<0.2							
28		45-50	<0.2							
29		50-55	0.2							
30		55-60	<0.2							
31		60-65	<0.2							
32		65-70	<0.2							
33		70-75	<0.2							
34		75-80	<0.2							
35	TMR-3 Track	80-85	<0.2							

TO: Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718

cc: Mr. James A. Briscoe

REMARKS:
Trace analysis

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CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/17/73	10/16/73	347940

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm			
36	TMR-3 Track	85-90	0.2	15	160					
37	TMR-4 Track	0-5	0.2							
38		5-10	0.2							
39		10-15	<0.2							
40		15-20	<0.2							
41		20-25	0.2							
42		25-30	<0.2							
43		30-35	<0.2							
44		35-40	0.2							
45		40-45	<0.2							
46		45-50	<0.2							
47		50-55	<0.2							
48		55-60	<0.2							
49		60-65	<0.2							
50		65-70	<0.2							
51		70-75	<0.2							
52		75-80	0.2							
53		80-85	0.2							
54	TMR-4 Track	85-90	<0.2	5	80					
55	TMR-RD-1	150-180		15		15	2			
56		180-200		25						
57		200-220		15						
58		220-240		25						
59		240-260		45						
60		260-280		35						
61		280-300		20						
62		300-320		15						
63		320-340		20						
64		340-360		30		30	2			
65		360-380		50						
66		380-400		20						
67		400-420		20		40	4			
68	TMR-RD-1	420-440		15		60	2			

TO:

REMARKS:

Trace analysis

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CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/17/73	10/16/73	347940

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm
1	TMR # 5 Track	0-10	<0.02	8.4	
2		10-20	<0.02	5.2	
3		20-35	<0.02	2.2	
4		35-45	<0.02	2.4	
5		45-60	<0.02	0.6	
6		60-75	<0.02	0.8	
7	TMR # 5 Track	75-90	<0.02	0.2	15
8	TMR # 6 Track	0-30	<0.02	<0.2	
9		30-60	<0.02	<0.2	
10	TMR # 6 Track	60-90	<0.02	<0.2	10
11	TMR # 7 Track	0-20	<0.02	2.0	
12		20-40	<0.02	5.0	
13		40-60	<0.02	0.4	
14		60-75	<0.02	0.8	
15		75-85	<0.02	2.6	
16	TMR # 7 Track	85-90	<0.02	<0.2	35
17	TMR # 8 Track	0-30	<0.02	3.0	
18		30-60	<0.02	3.4	
19	TMR # 8 Track	60-90	<0.02	0.8	35
20	TMR # 9 Track	0-30	<0.02	<0.2	
21		30-55	<0.02	0.8	
22		55-75	<0.02	0.4	
23	TMR # 9 Track	75-90	<0.02	0.2	105
24	TMR #10 Track	0-15	<0.02	7.4	
25		15-30	<0.02	5.0	
26		30-45	<0.02	1.0	
27		45-60	<0.02	0.2	
28		60-75	<0.02	0.4	
29	TMR #10 Track	75-90	<0.02	1.0	55
30	TMR #11 Track	0-10	<0.02	2.8	

TO:
Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718

cc: Mr. James A. Briscoe

REMARKS:
Trace analysis

CERTIFIED BY:

ACCT.: SIERRA MINERALS

DATE REC'D: 9/18/73

DATE COMPL.: 10/5/73

347953

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm		
1	MS-7	0-5	<0.02	<0.2						
2		5-20	<0.02	<0.2						
3		20-30	<0.02	<0.2						
4		30-35	<0.02	<0.2						
5		35-50	<0.02	<0.2						
6		50-55	<0.02	14.6						
7		55-65	<0.02	1.4						
8		65-80	<0.02	0.6						
9		80-90	<0.02	1.4						
10	MS-7	90-100	<0.02	3.2						
11	PH-2	0-10	<0.02	<0.2						
12		10-20	<0.02	<0.2						
13		20-30	<0.02	<0.2						
14		30-40	<0.02	<0.2						
15		40-50	<0.02	<0.2						
16		50-60	<0.02	<0.2						
17		60-70	<0.02	<0.2						
18		70-80	<0.02	<0.2						
19		80-90	<0.02	<0.2						
20		90-100	<0.02	<0.2						
21		100-110	<0.02	<0.2						
22		110-120	<0.02	<0.2						
23		120-130	<0.02	<0.2						
24		130-140	<0.02	<0.2						
25		140-150	<0.02	<0.2						
26		150-160	<0.02	<0.2						
27		160-175	<0.02	<0.2						
28		175-185		<0.2						
29		185-200		<0.2						
30		200-215		<0.2						
31		215-230		<0.2						
32		230-240		<0.2						
33		335-340	<0.02	<0.2	15	150	65	4		
34		340-345	<0.02	<0.2	15	65	60	4		
35	PH-2	345-350	<0.02	<0.2	10	75	65	4		

TO: Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718
Attn.: Mr. Richard Hewlett

cc: Mr. James A Briscoe

REMARKS:
Trace analysis
Page 1 of 2

CERTIFIED BY:

DATE REC'D:	DATE COMPL.:	JOB NUMBER
10/19/73	10/24/73	348115

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Pb %	
36	PH-2	350-355	<0.02	<0.2	15	50	65	4		
37		355-360	<0.02	<0.2	15	50	55	4		
38		360-365	<0.02	<0.2	15	90	60	4		
39		365-370	<0.02	<0.2	10	120	60	4		
40		370-375	<0.02	<0.2	15	100	80	4		
41		375-380	<0.02	<0.2	15	50	110	2		
42		380-385	<0.02	<0.2	15	110	50	2		
43	PH-2	385-390	<0.02	<0.2	20	60	55	2		
44	TP-1	0-15	<0.02	0.4						
45		15-30	<0.02	<0.2						
46		30-40	<0.02	<0.2						
47		40-50	<0.02	<0.2						
48		50-65	<0.02	<0.2						
49		65-75	<0.02	1.2						
50		75-80	<0.02	3.5						
51		80-90	<0.02	1.8						
52	TP-1	90-100	<0.02	0.4						
53	TP-2	10-25	<0.02	<0.2						
54		25-30	<0.02	3.0		600				
55		30-40		<0.2						
56		40-60		<0.2						
57		60-75		<0.2						
58		75-85		<0.2						
59	TP-2	85-100		<0.2	20					
60	TP-3	5-10	<0.02	<0.2						
61		10-25	<0.02	<0.2						
62		25-30	<0.02	<0.2						
63		30-35	<0.02	<0.2						
64		35-45	<0.02	0.2						
65		45-50	<0.02	1.0						
66		50-55	<0.02	2.4						
67	TP-3	55-60	<0.02	0.4						
68	TP - X - 1		0.05	85.		>2000			0.70	
69	T - 460		0.13	15.8		900				
70	T - 461		0.02	0.5		280				

TO:

REMARKS:
Trace analysis
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CERTIFIED BY:

DATE REC'D: 10/19/73
DATE COMPL.: 10/24/73
JOB NUMBER: 348115

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Pb ppm
1	MS#1	15-20		5.5	
2		20-35		7.0	
3		35-55		<0.2	
4	MS#1	55-70		<0.2	
5	MS#2	0-15		<0.2	
6		15-25		0.4	
7		25-40		<0.2	
8		40-45	<0.02	0.2	
9		45-60		<0.2	
10		60-75		<0.2	
11	MS#2	75-90		<0.2	
12	MS#3	0-20		13.5	
13		20-40		2.2	
14		40-60		<0.2	
15		60-80		<0.2	
16	MS#3	80-100		25.	
17	MS#4	0-25		0.4	
18		25-35		<0.2	
19		35-45	<0.02	<0.2	225
20		45-60		<0.2	
21		60-80		<0.2	
22		80-95		<0.2	
23	MS#4	95-100	<0.02	<0.2	85
24	MS#5	0-15	<0.02	<0.2	100
25		15-30	<0.02	1.2	70
26		30-40		6.4	
27		40-55		0.4	
28		55-70		<0.2	
29		70-85		<0.2	
30		85-95	<0.02	<0.2	115
31	MS#5	95-100	<0.02	<0.2	175
32	MS#6	0-20		1.0	
33		20-35		<0.2	
34		35-45		7.2	
35	MS#6	45-55		12.0	

TO:
Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718
Attn.: Mr. Richard Hewlett

cc: Mr. James A. Briscoe

REMARKS:
Trace analysis

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CERTIFIED BY:

DATE REC'D:	DATE COMPL.:	JOB NUMBER
10/19/73	10/25/73	343126

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Pb ppm					
36	MS#6	55-60		0.8						
37		60-65		<0.2						
38		65-70	<0.02	0.6	40					
39		70-75		<0.2						
40		75-80		<0.2						
41		80-90		<0.2						
42	MS#6	90-100		1.0						
43	PH#1	0-10		1.4						
44		10-20		6.5						
45		20-30		1.6						
46		30-40		<0.2						
47		40-50		<0.2						
48		50-60		<0.2						
49		60-70		<0.2						
50		70-80		<0.2						
51		80-90		<0.2						
52		90-100		0.6						
53		100-110	<0.02	<0.2	55					
54		110-120	<0.02	<0.2	30					
55		120-130	<0.02	0.2	60					
56		130-140	<0.02	0.8	100					
57		140-150	<0.02	0.6	55					
58		150-160		1.4						
59		160-170		0.4						
60		170-180		0.2						
61		180-190		0.2						
62		190-200		1.2						
63		200-210		<0.2						
64		210-220		<0.2						
65		220-230		<0.2						
66		230-240		0.4						
67		240-250		<0.2						
68		250-260	<0.02	<0.2	75					
69	PH#1	260-270	<0.02	0.4	100					
70	PH#2	240-250		<0.2						

TO:

REMARKS:

Trace analysis

Page 2 of 3

CERTIFIED BY:

DATE REC'D:	DATE COMPL.:	JOB NUMBER:
10/19/73	10/25/73	3-8126

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Ag ppm
71	PH#2	250-260	<0.2
72		260-270	<0.2
73		270-280	<0.2
74		280-290	<0.2
75		290-300	<0.2
76		300-310	<0.2
77		310-320	0.4
78		320-330	<0.2
79		330-335	<0.2
80		390-400	<0.2
81		400-410	<0.2
82		410-420	0.4
83		420-430	<0.2
84	PH#2	430-440	<0.2

TO:

REMARKS:

Trace analysis

Page 3 of 3

CERTIFIED BY:

DATE REC'D: 10/19/73

DATE COMPL.: 10/25/73

JOB NUMBER: 348126

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm				
1	TDC-12	0 - 5	<0.02	<0.2	10	285	35				
2		5 - 10	<0.02	1.2	20	100	60				
3		10 - 15	<0.02	<0.2	10	120	65				
4		15 - 20	<0.02	0.4	5	90	100				
5		20 - 25	<0.02	1.2	20	190	205				
6		25 - 30	<0.02	1.2	25	185	170				
7		30 - 35	<0.02	0.4	10	270	40				
8		35 - 40	<0.02	0.6	5	160	25				
9		40 - 45	<0.02	<0.2	5	110	100				
10	TDC-12	45 - 48	<0.02	0.8	10	75	70				
11	TDC-13	0 - 5	<0.02	<0.2	5	60	35				
12		5 - 10	<0.02	<0.2	5	60	45				
13		10 - 15	<0.02	<0.2	10	185	45				
14		15 - 20	<0.02	<0.2	5	155	25				
15		20 - 25	<0.02	<0.2	10	630	25				
16		25 - 30	<0.02	<0.2	10	55	15				
17		30 - 35	<0.02	<0.2	10	50	20				
18		35 - 40	<0.02	0.6	20	460	105				
19		40 - 45	<0.02	<0.2	15	75	80				
20	TDC-13	45 - 48	<0.02	<0.2	10	60	75				
21	TDC-14	0 - 5	<0.02	<0.2	20	55	50				
22		5 - 10	<0.02	0.8	10	50	45				
23		10 - 15	<0.02	<0.2	10	270	50				
24		15 - 20	<0.02	<0.2	10	195	30				
25		20 - 25	<0.02	<0.2	10	290	45				
26		25 - 30	<0.02	<0.2	10	165	50				
27		30 - 35	<0.02	<0.2	10	290	155				
28		35 - 40	<0.02	<0.2	10	390	65				
29		40 - 45	<0.02	<0.2	20	165	50				
30	TDC-14	45 - 48	<0.02	<0.2	15	270	40				
31	TDC-15	0 - 5	<0.02	<0.2	15	170	255				
32		5 - 10	<0.02	<0.2	20	210	335				
33		10 - 15	<0.02	<0.2	25	150	45				
34		15 - 20	<0.02	<0.2	30	60	45				
35	TDC-15	20 - 25	<0.02	<0.2	60	140	25				

TO:
Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718
cc: Mr. James Briscoe, 6418 Santa Aurelia
Tucson, Arizona 85715

REMARKS:
Trace analysis
Page 1 of 3

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	8/31/73	9/19/73	347861

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm
36	TDC-15	25 - 30	<0.02	<0.2	10	80	25
37		30 - 35	<0.02	<0.2	10	70	25
38		35 - 40	<0.02	<0.2	10	230	20
39		40 - 45	<0.02	<0.2	10	150	15
40	TDC-15	45 - 48	<0.02	<0.2	10	105	10
41	TDC-16	0 - 5	<0.02	1.2	15	190	35
42		5 - 10	<0.02	2.0	10	55	25
43		10 - 15	<0.02	0.6	10	310	20
44		15 - 20	<0.02	0.4	10	75	20
45		20 - 25	<0.02	<0.2	10	240	25
46		25 - 30	<0.02	0.6	10	270	65
47		30 - 35	<0.02	0.6	20	200	140
48		35 - 40	<0.02	1.0	15	700	170
49		40 - 45	<0.02	<0.2	10	105	145
50	TDC-16	45 - 48	<0.02	1.0	10	300	160
51	TDC-17	0 - 5	<0.02	<0.2	15	55	30
52		5 - 10	<0.02	0.4	10	50	60
53		10 - 15	<0.02	0.4	10	65	25
54		15 - 20	<0.02	0.4	10	65	20
55		20 - 25	<0.02	<0.2	10	165	35
56		25 - 30	<0.02	0.4	25	105	35
57		30 - 35	<0.02	1.4	20	45	50
58		35 - 40	<0.02	1.8	35	185	30
59		40 - 45	<0.02	0.4	15	120	80
60	TDC-17	45 - 48	<0.02	1.0	10	115	80
61	TDC-18	0 - 5	<0.02	0.2	15	40	15
62		5 - 10	<0.02	0.4	15	35	40
63		10 - 15	<0.02	0.6	15	80	60
64		15 - 20	<0.02	0.6	170	110	50
65		20 - 25	<0.02	1.0	85	240	55
66		25 - 30	<0.02	1.4	25	60	30
67		30 - 35	0.07	5.2	15	100	75
68		35 - 40	0.07	1.4	10	150	85
69		40 - 45	0.05	1.2	15	110	95
70	TDC-18	45 - 48	<0.02	1.5	15	75	70

TO:

REMARKS:

Trace analysis
Page 2 of 3

CERTIFIED BY:

ACCT.: SIERRA MINERALS

DATE REC'D: 8/31/73

DATE COMPL.: 9/19/73

347861

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm
71	TDC-19	0 - 5	<0.02	12.	10	60	25
72		5 - 10	0.16	24.	15	30	35
73		10 - 15	0.06	6.0	10	135	35
74		15 - 20	0.05	3.2	20	65	55
75		20 - 25	0.05	1.6	10	225	90
76		25 - 30	0.09	3.6	40	340	145
77		30 - 35	<0.02	2.8	5	70	35
78		35 - 40	0.10	6.2	10	180	70
79		40 - 45	0.07	4.0	10	55	35
80	TDC-19	45 - 48	<0.02	1.6	30	60	30
81	TDC-20	0 - 5	0.09	25.	30	750	310
82		5 - 10	0.15	5.2	10	180	155
83		10 - 15	0.05	2.6	5	440	25
84		15 - 20	0.03	1.4	5	120	15
85		20 - 25	0.03	2.4	5	170	20
86		25 - 30	<0.02	1.6	5	40	25
87		30 - 35	0.07	3.0	5	35	35
88		35 - 40	0.04	2.6	20	175	50
89		40 - 45	0.05	2.4	30	40	50
90	TDC-20	45 - 48	<0.02	2.0	20	60	45
91	TDC-21	0 - 5	<0.02	1.4	5	125	40
92		5 - 10	0.06	6.4	5	65	65
93		10 - 15	0.07	4.8	5	160	100
94		15 - 20	0.10	2.4	10	90	130
95		20 - 25	0.04	3.6	10	150	50
96		25 - 30	0.03	2.0	5	75	45
97		30 - 35	<0.02	1.2	5	50	15
98		35 - 40	<0.02	0.8	5	120	20
99		40 - 45	<0.02	1.2	5	55	15
100		45 - 50	<0.02	0.4	5	250	25
101		50 - 55	<0.02	0.4	10	125	50
102	TDC-21	55 - 60	<0.02	1.2	10	100	60

TO:

REMARKS:

Trace analysis
Page 3 of 3

CERTIFIED BY:

ACCT.: SIERRA MINERALS

DATE REC'D: 8/31/73

DATE COMPL.: 9/19/73

347861

ORIGC HOLE
NTM 2065

HOLE #	DATE	TYPE	DEPTH	INCLINATION	BY	LOCATION	
TMR 1	9/73		90	-90°	Sierra	CAB-61	Sect. 28
2	"		"	"	"	CAB-69	Sect. 28
3	"		"	"	"	"	"
4	"		"	"	"	"	"
5	"		"	"	"	"	"
6	"		"	"	"	"	"
7	"		"	"	"	"	"
8	"		"	"	"	"	"
9	"		"	"	"	"	"
TMR 10	"		"	"	"	CAB 92	Sect. 22
MS 1	9/73		71	-45°	"	STATE OF maine	
2	"		90	"	"	"	
3	"		100	"	"	"	
4	"		100	"	"	"	
5	"		100	"	"	"	
6	"		100	"	"	"	
MS 7	"		?	"	"	"	
TDC	7/8/73	Rotary	400	-90°	Sierra	TDC #1	
TMR 1	9/73	Rotary	608	-90°	"	CAB-43	Sect. 36
P.H. 1	"	"	270	"	"	Fox 6	Sect 17
STIA							
DH 101	2/1976	Rotary	75?	-90°	Sierra	SKIP SHAFT AREA	
102	3/1976	"	105	"	"	Sec. 29	
103	"	"	105	"	"	Sec 32	
104	"	"	120	"	"	"	
105	"	"	100	"	"	"	
TMR 74			8'			RAY 45	Sect 34
TMR 74-1			98'			RAY 38	Sect. 34
MMCN 8	1952	Diamond	300'	-45°	Newmont	Wide West claim	
DH 1		See claim Map of Humphrey Claims 1953			- ?	✓	
2					- ?	✓	

Date	Hole No.	Total Depth	Property	Location		Remarks
1-[illegible]-73						Altitude [illegible] dec [illegible] 43° - 500L
1-19-78	T.M.R. 1	608'	T.M.R.	CAB-42		core run 501-608' [illegible] - Water at 130'
1-19-78						Water [illegible]
1-25-73	P.H. 1	270'	Escapule	Fox 2		Bisbee fm @ 120' - caving at 250-270' 50-60 gpm blowing at 270'

ITEM #20

TMR DRILLHOLE #1

Southwest Assayers
and Chemists

CORE SAMPLE NO.	FROM - TO	SILVER-OZ.	LEAD-%	COPPER-%	GOLD-OZ.
#004767					
#1	184' - 187.5'	TR	.10	.02	
#2	320' - 327'	TR	+.10	.01	
	327' - 332.5'	TR	+.10	.02	
#4	340' - 345'	TR	+.10	.02	
#004825					
#5	375' - 377'	.06	.05	.02	
#6	400' - 402'	.08	.10	.01	
#7	425' - 427'	TR	+.05	+.01	
#8	450' - 452'	TR	+.05	+.01	
#9	475' - 477'	TR	+.05	+.01	
#10	500' - 502'	TR	+.05	+.01	
#005134					
#12	535' - 537'	TR	*.05	.02	-
#13	550' - 552'	TR	*.05	.05	-
#14	577' - 579'	TR	*.05	.02	-
#15	600' - 602'	TR	*.05	.02	-
#16	625' - 627'	TR	*.05	.06	-
#17	650' - 652'	.14	*.05	.05	-
#18	675' - 677'	.08	*.05	.07	-
#19	700' - 702'	TR	*.05	.06	-
#20	725' - 727'	TR	*.05	.04	-
#21	750' - 752'	TR	*.05	.02	-
#22	775' - 777'	TR	*.05	.02	-
#005134					
#23	800' - 802'	TR	*.05	.08	-
#24	825' - 827'	TR	*.05	.09	-
#25	829' - 831'	TR	*.05	.10	-
#5 12					
#27	851' - 853'	TR		.01	-
#30	880' - 882'	TR		+.01	-
#32	900' - 902'	TR		+.01	-
#35	929' - 931' TD	TR		.01	-

NOTE: Lost 10' N-X-Core Barrel And Core Bit In Hole. Filled Hole With Heavy Mud. Will Overshoot And Recover.

+ = More Than.
* = Less Than.

DRILL HOLE NO. TMR-1 TMR PROJECT PAGE

COLLAR ELEVATION Cochise COUNTY. Ariz BY

COORDINATES

BEARING — INCLINATION Vertical SCALE 1" = 100'

DEPTH 608' STARTED 9/5/73 COMPLETED 9/18/73

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL
Rotary 4 3/4" Rockbit					0 — 0-608 US porphyry, very altered most feldspars to clay & sericite some re-xtalization of the groundmass, biotite to chlorite and sericite, from 1% to 5% dissem. Pyrite throughout. as very fine gr. cubes and flakes on fract. surfaces —			
					100			
					200			
					300			
					400 — 435-500 stronger chloritic alt. w/some decrease in pyrite			
					500			
20%					600 — 608 TD — Core: strong alt., US por ferromags destroyed — groundmass qtz-ser. some vugs w/adularia xtals — 2% dissem pyrite, some minor qtz veining			

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

4 copies ITEM #47

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 (602) 622-4836

Registered Assayers
OVER 50 YEARS

BRANCHES
Douglas
Hayden
Morenci
Inspiration
El Paso
St. Louis

IDENTIFICATION	Gold OPT	Silver ppm	Lead %	Copper ppm	Zinc %	Mo. %
Core Splits from hole TMR #1 375		1.2		50		
425		0.6		17		
475		0.6		18		
518		0.7		14		
556		0.7		15		
605		0.8		14		
640		1.6		24		
686		0.9		16		
737		0.7		19		
784		0.7		27		
820		0.6		17		
Number Illegible		1.1		20		
906		0.6		23		
925		0.7		18		
C - 1 89 - 95		1.5		24		
C - 3 139 - 145		0.8		19		
C - 4 119 - 125		1.0		27		
C - 5 19 - 25		1.4		22		
C - 5 A 119 - 125		1.1		19		
C - 8 154 - 160		1.1		22		
C - 9 114 - 120		1.0		22		
C -13 154 - 160		0.8		15		
C -14 154 - 160		0.8		15		
C -18 110 - 116		0.7		33		
C -21 110 - 116		0.6		39		
C -24 96 - 108		0.7		48		

RESULTS OF GEO-CHEM TESTS ON TMR DRILLHOLE T.D. SAMPLES

LEGEND

C-1 : CAB Claims Drillholes
R-2 : RAY Claims Drillholes
S-1 : STAR Claims Drillholes
TMR-4: Sec. 20
TMR W-W: Sec. 21 Drillholes
COMP: Composite Sample Per No's

CC: Tenneco Oil Company
ADD: Attn: Mr. John Beeder
CITY. 2624 Borth 1st Avenue
ADD: Tucson, Arizona 85719
CITY:

REMARKS:
Page 1
Trace analysis

Analysis Cert. By

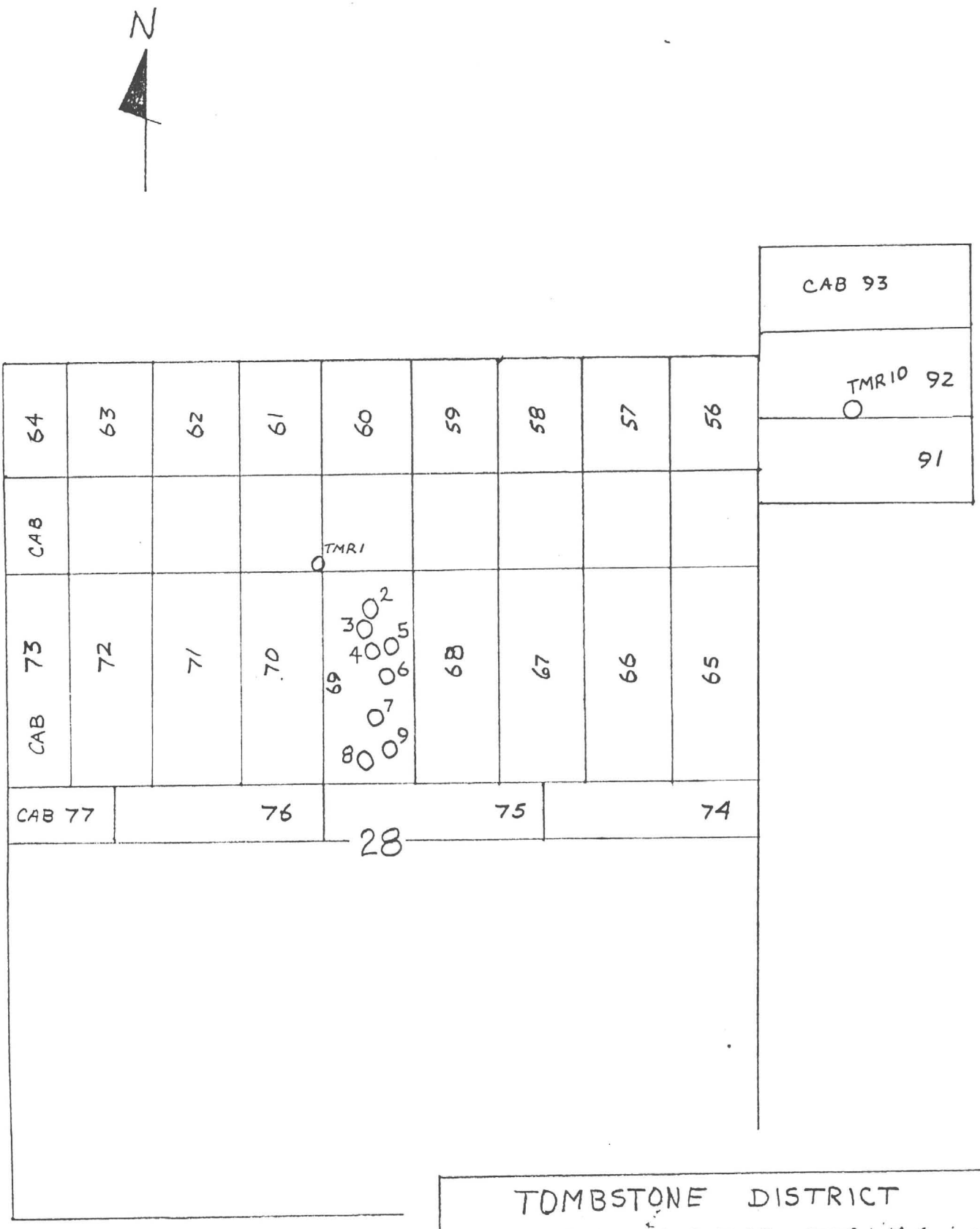
Preparation $
Analysis $
$

ACC: TENNECO OIL COMPANY

Date Spl. Received 10/15/71

Date Compl. 10/20/71

Tuc 345701



TOMBSTONE DISTRICT

DRILL HOLE MAP TMR 1-10 Series

SCALE 1" = 1000' DRAWN BY: E. Speer 4/76

SEC 28 T. 20 S., R. 22 E.

126

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Ag ppm	Cu ppm	Pb ppm
1	TMR-2 Track	0-5	<0.2		
2		5-10	<0.2		
3		10-15	<0.2		
4		15-20	<0.2		
5		20-25	<0.2		
6		25-30	<0.2		
7		30-35	<0.2		
8		35-40	<0.2		
9		40-45	<0.2		
10		45-50	<0.2		
11		50-55	<0.2		
12		55-60	<0.2		
13		60-65	<0.2		
14		65-70	<0.2		
15		70-75	<0.2		
16		75-80	0.2		
17		80-85	0.6		
18	TMR-2 Track	85-90	0.8	45	1400
19	TMR-3 Track	0-5	<0.2		
20		5-10	<0.2		
21		10-15	<0.2		
22		15-20	0.2		
23		20-25	<0.2		
24		25-30	<0.2		
25		30-35	<0.2		
26		35-40	<0.2		
27		40-45	<0.2		
28		45-50	<0.2		
29		50-55	0.2		
30		55-60	<0.2		
31		60-65	<0.2		
32		65-70	<0.2		
33		70-75	<0.2		
34		75-80	<0.2		
35	TMR-3 Track	80-85	<0.2		

TO:
Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718

cc: Mr. James A. Briscoe

REMARKS:
Trace analysis

Page 1 of 2

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/17/73	10/16/73	347940

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm
36	TMR-3 Track	85-90	0.2	15	160		
37	TMR-4 Track	0-5	0.2				
38		5-10	0.2				
39		10-15	<0.2				
40		15-20	<0.2				
41		20-25	0.2				
42		25-30	<0.2				
43		30-35	<0.2				
44		35-40	0.2				
45		40-45	<0.2				
46		45-50	<0.2				
47		50-55	<0.2				
48		55-60	<0.2				
49		60-65	<0.2				
50		65-70	<0.2				
51		70-75	<0.2				
52		75-80	0.2				
53		80-85	0.2				
54	TMR-4 Track	85-90	<0.2	5	80		
55	TMR-RD-1	150-180		15		15	2
56		180-200		25			
57		200-220		15			
58		220-240		25			
59		240-260		45			
60		260-280		35			
61		280-300		20			
62		300-320		15			
63		320-340		20			
64		340-360		30		30	2
65		360-380		50			
66		380-400		20			
67		400-420		20		40	4
68	TMR-RD-1	420-440		15		60	2

TO:

REMARKS:

Trace analysis

Page 2 of 2

CERTIFIED BY:

ACCT.: SIERRA MINERALS

DATE REC'D: 9/17/73

DATE COMPL.: 10/16/73

347940

128

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
P.O. Box 50106, 1700 W. Grant Rd., Tucson, Arizona 85703

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm
1	TMR # 5 Track	0-10	<0.02	8.4	
2		10-20	<0.02	5.2	
3		20-35	<0.02	2.2	
4		35-45	<0.02	2.4	
5		45-60	<0.02	0.6	
6		60-75	<0.02	0.8	
7	TMR # 5 Track	75-90	<0.02	0.2	15
8	TMR # 6 Track	0-30	<0.02	<0.2	
9		30-60	<0.02	<0.2	
10	TMR # 6 Track	60-90	<0.02	<0.2	10
11	TMR # 7 Track	0-20	<0.02	2.0	
12		20-40	<0.02	5.0	
13		40-60	<0.02	0.4	
14		60-75	<0.02	0.8	
15		75-85	<0.02	2.6	
16	TMR # 7 Track	85-90	<0.02	<0.2	35
17	TMR # 8 Track	0-30	<0.02	3.0	
18		30-60	<0.02	3.4	
19	TMR # 8 Track	60-90	<0.02	0.8	35
20	TMR # 9 Track	0-30	<0.02	<0.2	
21		30-55	<0.02	0.8	
22		55-75	<0.02	0.4	
23	TMR # 9 Track	75-90	<0.02	0.2	105
24	TMR #10 Track	0-15	<0.02	7.4	
25		15-30	<0.02	5.0	
26		30-45	<0.02	1.0	
27		45-60	<0.02	0.2	
28		60-75	<0.02	0.4	
29	TMR #10 Track	75-90	<0.02	1.0	55
30	TMR #11 Track	0-10	<0.02	2.8	

TO:
Sierra Minerals
4741 East Sunrise Drive
Tucson, Arizona 85718

cc: Mr. James A. Briscoe

REMARKS:
Trace analysis

CERTIFIED BY:

ACCT.:	DATE REC'D:	DATE COMPL.:	
SIERRA MINERALS	9/18/73	10/5/73	347953

HOLE #	DATE	TYPE	DEPTH	INCLINATION	OF	LOCATION	
TMR 1	9/73		90	-90°	Sierra	CAB-61	Sect. 28
2	"		"	"	"	CAB-69	Sect. 28
3	"		"	"	"	"	"
4	"		"	"	"	"	"
5	"		"	"	"	"	"
6	"		"	"	"	"	"
7	"		"	"	"	"	"
8	"		"	"	"	"	"
9	"		"	"	"	"	"
TMR 10	"		"	"	"	CAB 92	Sect. 22
MS 1	9/73		71	-45°	"	STATE OF Maine	
2	"		90	"	"	"	
3	"		100	"	"	"	
4	"		100	"	"	"	
5	"		100	"	"	"	
6	"		100	"	"	"	
MS 7	"		?	"	"	"	
TDC	7&8/73	Rotary	400	-90°	Sierra	TDC #1	
TMR 1	9/73	Rotary	608	-90°	"	CAB-43	Sect. 36
P.H. 1	"	"	270	"	"	Fox 6	Sect 17
STIA							
RDH 101	2/1976	Rotary	75?	-90°	Sierra	SKIP SHAFT AREA	
102	3/1976	"	105	"	"	Sec. 29	
103	"	"	105	"	"	Sec 32	
104	"	"	120	"	"	"	
105	"	"	100	"	"	"	
TMR 74			8'			RAY 45	Sect 34
TMR 74-1			98'			RAY 38	Sect. 34
MMCN 8	1952	Diamond	300'	-45°	Newmont	Wide West claim	
DH 1	See claim Map of Humphrey claims				- ?	✓	
2			1953		- ?	✓	

DRILL HOLE NO. [illegible] PROJECT Mine

COLLAR ELEVATION _____ COUNTY Cochise

COORDINATES _____

BY _____ PAGE _____

BEARING - INCLINATION Vert. SCALE -

DEPTH 270' STARTED _____ COMPLETED _____

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL

0

0 - 115
US Porphyry

50

100

115-270 Varicolored argillite of K-Bisbee formation
130 first dampness and water

150

Dark ~~grey~~ brown clay abundant 135 - 150 w/ water increase

All Bisbee rocks show more or less Limonite paint and dissem. of FeO after pyrite

200

Color of argillite varies from pale grey-green to dark grey.

250

abundant water 150 - 270'

270

Hole bottomed at 270'

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. PH #2 ?? uncertain as to location PROJECT

COLLAR ELEVATION _____ COUNTY _____

COORDINATES _____

BY _____

BEARING _____ INCLINATION _____ SCALE _____

DEPTH _____ STARTED _____ COMPLETED _____

% Core Recovery	Structure	Alteration	Mineralization	Rock Type

GEOLOGY

0-395

Uncle Sam qtz latite porphyry, mainly fresh and unaltered w/ scattered bands of alt. and bleaching associated w/ Fe Oxide stain

395

Bisbee formation w/ minor pyrite miniz.

415

Dk. Brown Andesite porphyry

ALTERATION	
	SERICITE
	KAOLIN
	SILICA
	CHLORITE
	GARNET
	SERPENTINE

MINERALIZATION	
	PYRITE
	CHALCOPYRITE
	CHALCOCITE
	MOLYBDENITE
	MAGNETITE
	GALENA
	SPHALERITE
	SPECULARITE

CORE ASSAYS					
INTERVAL		MINERAL			
FROM	TO				

HOLE #	DATE	TYPE	DEPTH	INCLINATION	BY	LOCATION	
TMR 1	9/73		90	-90°	Sierra	CAB-61	Sect. 28
2	"		"	"	"	CAB-69	Sect. 28
3	"		"	"	"	"	"
4	"		"	"	"	"	"
5	"		"	"	"	"	"
6	"		"	"	"	"	"
7	"		"	"	"	"	"
8	"		"	"	"	"	"
9	"		"	"	"	"	"
TMR 10	"		"	"	"	CAB 92	Sect. 22
MS 1	9/73		71	-45°	"	STATE OF maine	don't have
2	"		90	"	"	"	
3	"		100	"	"	"	
4	"		100	"	"	"	
5	"		100	"	"	"	
6	"		100	"	"	"	
MS 7	"		?	"	"	"	
TDC	7/8/73	Rotary	400	-90°	Sierra	TDC #1	
TMR 1	9/73	Rotary	608	-90°	"	CAB-43	Sect. 36
→ P.H. 1	"	"	270	"	"	Fox 6	Sect 17
STIA							
RDH 101	2/1976	Rotary	75?	-90°	Sierra	SKIP SHAFT AREA	
102	3/1976	"	105	"	"	Sec. 29	
103	"	"	105	"	"	Sec 32	
104	"	"	120	"	"	"	
105	"	"	100	"	"	"	
TMR 74			8'			RA-145	Sect 34
TMR 74-1			98'			RAY 38	Sect. 34
MMCN 8	1952	Diamond	300'	-45°	Newmont	Wide West claim	
DH 1	See claim Map of Humphrey Claims 1953				- ?	✓	
2					- ?	✓	

HOLE #	DATE	TYPE	DEPTH	INCLINATION	BY	LOCATION	
TMR 1	9/73		90	-90°	Sierra	CAB-61	Sect. 28
2	"		"	"	"	CAB-69	Sect. 28
3	"		"	"	"	"	"
4	"		"	"	"	"	"
5	"		"	"	"	"	"
6	"		"	"	"	"	"
7	"		"	"	"	"	"
8	"		"	"	"	"	"
9	"		"	"	"	"	"
TMR 10	"		"	"	"	CAB 92	Sect. 22
MS 1	9/73		71	-45°	"	STATE OF maine	
2	"		90	"	"	"	
3	"		100	"	"	"	
4	"		100	"	"	"	
5	"		100	"	"	"	
6	"		100	"	"	"	
MS 7	"		?	"	"	"	
TDC	7/8/73	Rotary	400	-90°	Sierra	TDC #1	
TMR 1	9/73	Rotary	608	-90°	"	CAB-43	Sect. 36
P.H. 1	"	"	270	"	"	Fox 6	Sect 17
STIA							
RDH 101	2/1976	Rotary	75?	-90°	Sierra	SKIP SHAFT AREA	
102	3/1976	"	105	"	"	Sec. 29	
103	"	"	105	"	"	Sec 32	
104	"	"	120	"	"	"	
105	"	"	100	"	"	"	
TMR 74			8'			RAY 45	Sect 34
TMR 74-1			98'			RAY 38	Sect. 34
MMCN 8	1952	Diamond	300'	-45°	Newmont	Wide West claim	
DH 1	See claim Map of Humphrey claims 1953				- ?	✓	
2					- ?	✓	

DRILL HOLE NO. TMR-74-[illegible] TMK PROJECT [illegible] PAGE 1 (124)

COLLAR ELEVATION 4320± [illegible] COUNTY [illegible] BY [illegible]

COORDINATES SW Cor. Rgy 38

BEARING — INCLINATION Vert. SCALE 1" = 10'

DEPTH 90 STARTED 31/26/74 COMPLETED [illegible]

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					SURFACE Ls. bldrs & cobbles cem. by calcite 4 3/4" Tricone w/ Air CEMENT AT 45' AND 90' STOPPED AT 90' [illegible]						
					90						

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

[redacted] #1
[redacted]OLE #2
[redacted] 9 3/4

131

TDC-74 #1

[redacted]E	FOOTAGE	DRILLING REMARKS	DOWN TIME
[redacted]-8 74 7/5	80'	HOLE OUT OF GAGE REM F. 75-105 30'	25 min TRUCK CARB. FLOODED
[redacted]9-74 7/3	25'	108-112 SOFTEN UP	
[redacted]12-74 7/3	45'	123-128 " "	
[redacted]-13-74 7/3	60'	143-148 " " RED	

CIR AIR

HOLE 90°

BIT CHANGE
SETTER BIT 180' + 35
NEW BIT 15'
NEW BIT 105'
USED BIT 180

PIPE DOWN
HS
2-30
3-45
4-60
5-75
6-105
7 120
8-135
9 150
10-165
11-180
12-195
13-210
BOTTOM

HOLE 210
CLOSED

DRILL HOLE NO. TMP-74-RC-32 TMC PROJECT

PAGE 1

COLLAR ELEVATION [illegible] [illegible] COUNTY. PIMA

BY Daniel Carr

COORDINATES

BEARING INCLINATION VERT SCALE

DEPTH 10 STARTED Aug 14 74 COMPLETED Aug 14, 74

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY
					SURFACE COBBLES, BOULDERS CEMENTED BY CALICHE. 4 3/4" TRICONE W/ AIR

ALTERATION

- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION

- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

CORE ASSAYS

INTERVAL FROM	INTERVAL TO	MINERAL			

DRILL HOLE NO. [illegible] PROJECT [illegible]
COLLAR ELEVATION 4315± [illegible] COUNTY. [illegible]
COORDINATES

PAGE [illegible]
BY [illegible]

BEARING ____ INCLINATION VERT SCALE ____
DEPTH 185 STARTED Aug 18, 1974 COMPLETED Aug 22 74

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					SURFACE BISBEE SCH. 9' ARGILLITE (GREY) w/ QUARTZ VEINS CONTAINING TRACES OF FeS_2O MnO SANDSTONE CLAYS - LIGHT BROWN - GREEN FeS_2O MnO FeO ARGILLITE DARK GREEN CLAYS MnO FeS_2O FeO 16 CLAY - [illegible] MATERIAL [illegible] PROBABLE FAULT GOUGE 17 ARGILLITE [illegible] - SUBSTANTIAL AMOUNTS MnO + TRACES OF FeS_2O, Fe 20 FINE - MED GRAIN QUARTZITE w/ [illegible] FeS_2O + MnO MANGANESE DAMP 34 [illegible] MnO TRACES OF FeO - FeS_2O 37 FINE GRAINED QUARTZITE SUBSTANTIAL AMOUNTS OF MnO w/ TRACES OF FeS_2O (DAMP) FINE GRAIN SANDSTONE [illegible] SOFT CLAY MINERALS MnO FeO FINE GRAIN SANDSTONE 74 [illegible] MINERALS 79 [illegible] FINE GRAINED QUARTZITE TRACES OF MnO, FeO + FeS_2O						

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. TMC-74 #13 TMR #13 PROJECT

COLLAR ELEVATION 4315± Cochise COUNTY. Ariz.

COORDINATES

PAGE 135

BY [illegible]

BEARING ____ INCLINATION Vert. SCALE ____

DEPTH 185' STARTED Aug 13 '74 COMPLETED Aug 22 '74

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					80 CLAY [illegible] weathered [illegible] WHITE Quartzite [illegible] MnO [illegible] Sandstone [illegible] oxidized [illegible]						
					100 [illegible] in Fe oxide						
					101 BACK INTO ALTERED CLAY LESSER AMOUNTS OF Fe OXIDE TRACES OF FeS2 OXIDATION						
					115 QUARTZ VEINS w/ Fe OXIDE + [illegible]						
					117 INCREASE IN Fe OXIDE TRACES OF [illegible] MINERALIZE - RED CLAY - → FeS2 OXIDATION						
					121 WHITE CLAY TRACES OF Fe S2 OXIDATION mg + Fe OXIDE						
					131 QUARTZ [illegible]						
					133 SOFT CLAY Fe OXIDE ↓ DECREASE TRACES Fe S2 OXIDATION (DAMPER)						
					134 QUARTZ w/ Fe OXIDE						
					135 MnO w/ Fe [illegible] Hit [illegible] 135						
					145 [illegible] AMOUNTS OF MnO AND FeO STAINING DRILL FLUID [illegible] COLORED - CLAY RICH						
					160 ARKOSIC SANDSTONE [illegible] RED FeO						
					170 FINE - MEDIUM GRAIN SIZE ARKOSIC SANDSTONE CLAYS WHITE [illegible] MnO FeO FeS2O						
					183 SANDSTONE RED (INCREASE IN FeO) MnO FeS2O						

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. [illegible] PROJECT

COLLAR ELEVATION [illegible] COUNTY [illegible]

COORDINATES

BY [illegible]

BEARING ____ INCLINATION [illegible] SCALE 1" = 10'

DEPTH 185' STARTED [illegible] COMPLETED [illegible]

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					180						
					183 ARKOSIC SANDSTONE RED FeO TRACE OF MnO						

ALTERATION

- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION

- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. TMR-74-RD43 PROJECT TMR PAGE 1

COLLAR ELEVATION [illegible] COUNTY [illegible] BY Daniel [illegible]

COORDINATES

BEARING ____ INCLINATION VERT SCALE 1"=10'

DEPTH 185 STARTED Aug 5 1974 COMPLETED Aug 22 1974

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL
					SURFACE			
					GREY ARGILLITE w/ QUARTZ VIENS CONTAINING TRACES OF FeO + MnO (4¾" TRICONE w/ AIR) BISBEE			
					9 ALTERED SANDSTONE w/ LIGHT BROWN - YELLOW CLAYS FeO, MnO			
					14 ALTERED ARGILLITE w/ PALE GREEN CLAYS FeO, MnO			
					16 CLAY - PROBABLE FAULT GOUGE			
					17 ARGILLITE w/ QUARTZ VIENLETS - SUBSTANTIAL AMOUNTS OF MnO - FeO TRACES			
					20 FINE TO MEDIUM GRAINED QUARTZITE SMALL VIENLETS OF FeO.			
					34 HARD QUARTZITE w/ MnO - TRACES OF FeO			
					37 FINED GRAINED QUARTZITE SUBSTANTIAL AMOUNTS OF MnO W/ TRACES OF FeO (DAMP)			
					38 FINE GRAINED YELLOW SANDSTONE w/ CLAY MINERALS			
					ALTERED w/ TRACES OF MnO, FeO INCREASE AS CLAY TURNS BROWN			
					74 FINE GRAINED SANDSTONE WITH BROWN CLAY MINERALS			
					79 FINE GRAINED QUARTZITE w/ TRACES OF MnO + FeO			

ALTERATION

- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION

- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. TMR-74-RD #3 TMR PROJECT

PAGE 2

COLLAR ELEVATION 4315 ± Carson COUNTY. [illegible]

BY Daniel Cole

COORDINATES

BEARING ____ INCLINATION VERT SCALE 1" = 10'

DEPTH 185 STARTED Aug 15 1974 COMPLETED Aug 27 1974

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					90 WHITE QUARTZITIC SANDSTONE ALTERED W/ CLAY MINERALS, MnO + FeO						
					100 INCREASE IN FeO						
					101 ALTERED CLAYS - LESSER AMOUNTS OF FeO PROBABLY FAULT GOUGE						
					115 QUARTZ VEIN W/ FeO + Fe_2O						
					117 INCREASE IN FeO TRACES OF MnO RED CLAY						
					121 WHITE CLAY - TRACES OF FeO + MnO						
					131 QUARTZ VEIN						
					133 SOFT CLAY - FeO (DAMP)						
					134 QUARTZ W/ FeO						
					135 HIT WATER						
					145 SUBSTANTIAL AMOUNTS OF MnO + FeO STAINING - DRILL FLUID DARK COLOR CLAY-RICH						
					160 ARKOSIC SANDSTONE RED FeO INCREASE IN MnO						
					169 FINE - MED. GRAINED ARKOSIC SANDSTONE						

ALTERATION

- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION

- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

TMR #3

DATE	FOOTAGE	DRILLING FROM	DOWN TIME
8-19-74	19'	HOLE NARROWS	
8-20-74	69'	CHANGE BITS	
8-21-74	87'	34'-GRAY/H	
8-21-74		37-BLACK/S-WET	
		38-GRAVEL YELLOW/S	
		-	
		74 BROWN/S	
		131 WHIT/H	
		133 PINK/PS	
		134 PINK/M	
		180	
		HOLE 185	
		CLOSED	

CIR HR

HOLE 90°

BIT CHANGE
STARTER BIT 105 + 19
USED BIT 19'
NEW BIT 88'
NEW BIT 172

PIPE DATA

1-15
2-30
2-45
4-60
5-75
6-90
7-105
8-120
9-135
10-150
11-165
12-180

DRILL HOLE NO. TMR-74-RD #4 — TMR PROJECT

PAGE 138

COLLAR ELEVATION 4315 — Pacific COUNTY. Grant

BY Daniel Berk

COORDINATES

BEARING ____ INCLINATION VERT SCALE 1" = 10

DEPTH 32 STARTED Aug 22 1974 COMPLETED Aug 26, 1974

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					SURFACE						
					COBBLES, BOULDERS + SAND — 4 3/4" TRICONE W/ AIR						
					10 RED SAND STONE FRAG						
					13 BEDROCK - RED SANDSTONE W/ QUARTZ VIENLETS FeO + MnO						
					18 QUARTZ VIEN						
					19 FAULT GOUGE						
					20 GREEN ARGILLACEOUS QUARTZITE W/ TRACES OF MnO + FeO						
					28 INCREASE OF MnO FeO						
					30 QUARTZITE W/ FeO TRACES OF MnO						
					32 PULL OUT — TO HARD						

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. TMR 74 #4 TMR (RD) PROJECT

COLLAR ELEVATION 4315± COCHISE COUNTY. ARIZ

COORDINATES

PAGE 1

BY DANIEL COOK

BEARING INCLINATION VERT SCALE

DEPTH 32 STARTED Aug 22, 1974 COMPLETED Aug 26, 1974

% Core Recovery	Structure	Alteration	Mineralization	Rock Type

GEOLOGY

SURFACE
COBBLES, BOULDERS + SAND

10 BISBEE – RED SANDSTONE FRAG

13 BEDROCK – RED SANDSTONE
w/ w/ QUARTZ VIENLETS
MnO + FeO

18 QUARTZ VIEN
FAULT GOUGE

20 GREEN ARGILLACEOUS QUARTZITE
w/ TRACES of MnO, FeO, Fe_2S_2O

28 INCREASE FeO + Fe_2S_2O

30 QUARTZITE w/FeO TRACES OF MnO + Fe_2S_2O

32

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

CORE ASSAYS

INTERVAL FROM	INTERVAL TO	MINERAL			

TMR #4
139

DEPT	FOOTAGE	D.R.	DT				
26-74 7/5	28'	0-10 O.BRED/S		CIR-AIR			
27-74 7/		10-13 RED/S		HOLE 90°			
		13-15 /S		BIT CHANGE			
		18'-GREEN/S		STARTER 13' -38			
		22 GREEN/NH		NB 25'			
				PIPE DOWN			
				1-15			
				2-30			

HOLE BOTTOM 31 FEET

CLOSED

DRILL HOLE NO. TMR-74 #5 TMR (RD) PROJECT

COLLAR ELEVATION 4310± COCHISE COUNTY. AZ

COORDINATES

BY Daniel Cook

PAGE 142 1

BEARING ____ INCLINATION VERT SCALE ____

DEPTH ____ STARTED Aug 27, 1974 COMPLETED ____

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL
					SURFACE			
					UNCONSOLIDATED SANDS 4¾ TRICONE ROTARY DRILL W/ AIR.			
					18 ARGILLICEOUS BOULDERS.			
					19 UNCONSOLIDATED SANDS			
					32 UNCLE SAM PORPH UNALTERED			
					38 ALTERED YELLOW VIEN W/ CLAY MINERALS + FeO TRACES OF MnO			
					39 ALTERED RED VIEN W/ FeO TRACES OF MnO			
					40 UNCLE SAM PORPH			
					42 ALTERED YELLOW VIEN W/ CLAY MINERALS + FeO TRACES OF MnO			
					48 ALTERED RED VIEN W/ CLAY MINERALS + FeO TRACES OF MnO			
					65 FEWER CLAY MINERALS - ALTERED UNCLE SAM PORPH			
					73 UNCLE SAM PORPH ALTERED ~ RED-BROWN COLOR - FeO, TRACES OF MnO			
					77 UNCLE SAM DECREASE IN ALTERATION			
					80 ALTERED - YELLOW W/ CLAY MINERALS + FeO			
					81 UNALTERED UNCLE SAM PORPH			
					82 ALTERED YELLOW W/ CLAY MINERALS + FeO			
					83 UNALTERED UNCLE SAM			
					86 ALTERED YELLOW W/ CLAY MINERALS + FeO TRACES OF MnO			
					98 ALTERED WHITE W/ TRACES OF FeO			
					102 ALTERED BROWN-YELLOW W/ CLAY MINERALS + FeO TRACES OF MnO			
					104 ALTERED GREY-BROWN W/ CLAY MINERALS + FeO			

ALTERATION

- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION

- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. TMR-74 #5 TMR PROJECT PAGE 2

COLLAR ELEVATION 4310 ± Cochise COUNTY. Ariz BY David Cook

COORDINATES

BEARING ____ INCLINATION VERT SCALE ____

DEPTH 500' STARTED Aug 17, 1974 COMPLETED Aug 13, 74

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					105 ALTERED GREY-BROWN W/ CLAY MINERALS + FeO (MORE CONSOLIDATED) TRACES OF MnO						
					109 ALTERED YELLOW - W/ CLAY MINERALS AND FeO						
					113 ALTERED GREY - BROWN W/ CLAY MINERALS + FeO (MORE CONSOLIDATED) TRACES OF MnO						
					118 ALTERED YELLOW W/ CLAY MINERALS + FeO						
					126 ALTERED GREY - BROWN W/ CLAY MINERALS + FeO MORE CONSOLIDATED TRACES OF MnO						
					146 MUD BALLS - CAVING (~~YELLOW~~) ALTERED CLAY MINERALS						
					150 USE 4 3/4 TRICONE W/ MUD GEL (BENTONITE						
					156 ALTERED RED CLAY MINERALS W/ FeO						
					175 ALTERED UNLIKE SAME PORPHYRY OXIDIZED YELLOW ORANGE + BROWN LIMONITE-AFTER PYRITE						
					210 SAME W/ GRADUALLY INCREASING AMOUNTS OF GREY, FINE GRAINED SiO_2 PROBABLY INDICATING AN INCREASE OF SILICIFICATION - SOME DECREASE IN PYRITE ALSO NOTED A CORRESPONDING INCREASE IN DARK RED LIMONITE AFTER PYRITE						
					225 SAME NO SIGN OF FRESH PYRITE						
					396 FRESH PYRITE IN [illegible] W/ S. [illegible] SMALL FLECKS LOCKED IN SiO_2						
					[illegible] 500'						

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

NC 1

Tank 7 Ej
144

DATE	FOOTAGE	D.R.	D.T.
9-10-74/730	105	18' BR. /H	30 min 9-10-74 Clean fuel pump on Rig
9-09-74/7/30	45	17' SAND/S	
9-30-74/7/3	45	32 FMC/M	
9-74/7/3	45	38 YELLOW/S	
9-74/7/3	45	39 - RED/S	
9-5-74/7/30	90	49 YELL/S	
9-6-74/7/30	30+5	46 BRO/S	
9-74/7-30	30+5	48 RED/S	
10-74/7/3	20	65 GRY-GLS	
10-11-74/7/3	45	235 - RED/S	
10-12-74/7/3 -	5	245 GRY G/S	

500'
CLOSED

CIT - 1IK
HOLE 90°
BIT CHANGE
STATION BIT 38'
NO 18'
NE 195'
NO 420'

FIRE DOWN

1	45
2	30
3	45
4	60
5	75
6	90
7	105
8	120
9	135
10	150
11	165
12	180
13	195
14	210
15	225
16	240
17	255
18	270
19	285
20	300
21	315
22	330
23	345
24	360
25	375
26	390
27	405
28	420
29	435
30	450
31	465
32	480
33	495 + 5'
	500

DRILL HOLE NO. [illegible] PROJECT [illegible]

COLLAR ELEVATION [illegible] COUNTY [illegible]

COORDINATES

PAGE 145

BY [illegible]

BEARING ____ INCLINATION [illegible] SCALE [illegible]

DEPTH ____ STARTED [illegible] COMPLETED ____

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL
					[illegible] ALTERED [illegible] w/ OXIDIZED [illegible] + TRACES OF MnO (BROWN IN COLOR) CLAY MINERALS PRESENT			
					LESS ALTERATION IN U.S BECOMES GREEN - FeO + TRACES OF MnO			
					50 INCREASE OF [illegible] 55 - [illegible] 58 [illegible] (GREEN COLOR) VEIN [illegible]			
					Fe_2O_3 REPLACING FeS_2O CUBES SiO_2 VIENLETS w/ Fe_2O_3 + MnO [illegible]			
					97 - [illegible] FAULT ZONE			

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. TMR-74-RD 116 TMR PROJECT

COLLAR ELEVATION 4500± [illegible] COUNTY. [illegible]

COORDINATES

PAGE 146

BY [illegible]

BEARING ____ INCLINATION VERT. SCALE 1" = 10'

DEPTH 105 STARTED Sept 1 '74 COMPLETED Sept 27 '74

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL
					SURFACE			
					ALTERED UNCLE SAM PORPHYRY w/ OXIDIZED PYRITE + TRACES OF MnO (BROWN IN COLOR) CLAY MINERALS PRESENT			
					4 3/4" TRICONE w/ MnO			
					30 LESS ALTERATION IN U-S. BECOMES GREEN - FeS_2O + TRACES OF MnO			
					50 INCREASE IN Fe CUBES			
					55 SiO_2 VIENLETS w/ FeS_2O - MnO TRACES			
					56 HARDER - LESS ALTERATION GREEN COLOR VACANT FeS_2O CUBES VISIBLE			
					Fe_2O_3 REPLACING FeS_2O CUBES			
					SiO_2 VIENLETS w/ Fe_2O_3 + MnO			
					INCREASING FeS_2O + CLAY MINERALS			

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

RD 1 147
TAR M #6

DATE	FOOTAGE	DF	DT
1-17-74 1300	25'	1 BIT 40' CUTTER (L.U.)	3 DAYS KELLY B.
1-23-74 0800	90'	1 BIT 5' CUTTER (L.U.)	
1-24-74 17-3	15'	7½ VH HOLE BROWN	
1-25-74 17-3	30'	85' H HOLE BROWN DULL	
1-26-74 B	15'	88' S	
1-27-74 17-		90' - H	

CIR AVR. 30 FL.
HOLE 90°

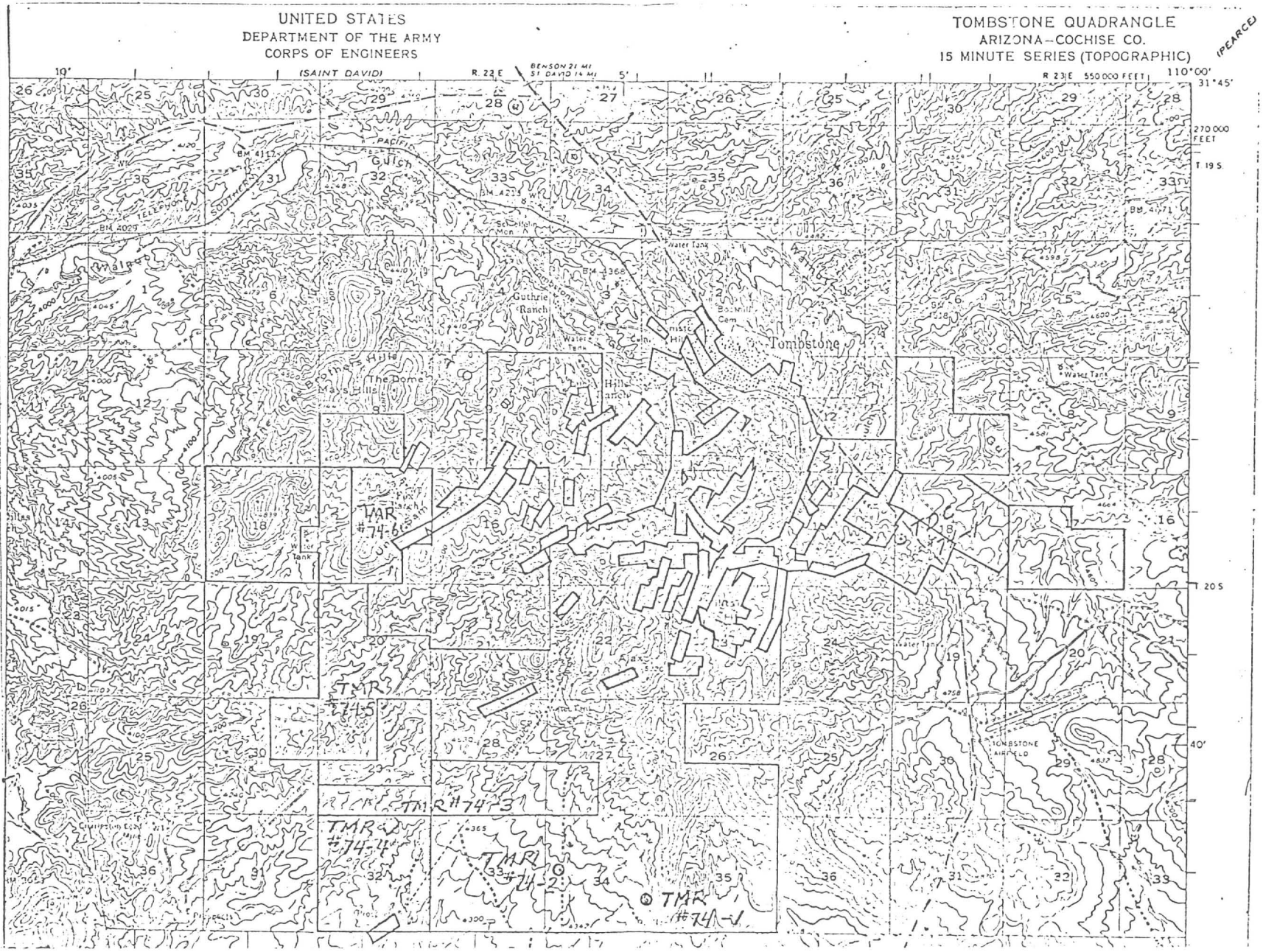
BIT CHANGES
SB 90 TO
NB-15 - CUTTER LOCKED T 40'
NB-60 - CUTTER LOCKED T 5'
UB 90 -
NB-105

PIPE DOWN
1-15
2-30
3-45
4-60
5-75
6-90
7 105

CLOSED
FEET.

Hole Location Map

Drill Hole o



HOLE #	DATE	TYPE	DEPTH	INCLINATION	BY	LOCATION	
TMR 1	9/73		90	-90°	Sierra	CAB-61	Sect. 28
2	"		"	"	"	CAB-69	Sect. 28
3	"		"	"	"	"	"
4	"		"	"	"	"	"
5	"		"	"	"	"	"
6	"		"	"	"	"	"
7	"		"	"	"	"	"
8	"		"	"	"	"	"
9	"		"	"	"	"	"
TMR 10	"		"	"	"	CAB 92	Sect. 22
MS 1	9/73		71	-45°	"	STATE OF Maine	
2	"		90	"	"	"	
3	"		100	"	"	"	
4	"		100	"	"	"	
5	"		100	"	"	"	
6	"		100	"	"	"	
MS 7	"		?	"	"	"	
		— this may be 1974 & NOT 1973					
TDC	7/9/~~74~~3	Rotary	400	-90°	Sierra	TDC #1	
TMR 1	9/73	Rotary	608	-90°	"	CAB-43	Sect. 36
P.H. 1	"	"	270	"	"	Fox 6	Sect 17
STIA							
RDH 101	2/1976	Rotary	75?	-90°	Sierra	SKIP SHAFT AREA	
102	3/1976	"	105	"	"	Sec. 29	
103	"	"	105	"	"	Sec 32	
104	"	"	120	"	"	"	
105	"	"	100	"	"	"	
TMR 74			8'			RAY 45	Sect 34
TMR 74-1			98'			RAY 38	Sect. 34
KMCN 8	1952	Diamond	300'	-45°	Newmont	Wide West Claim	
DH 1		See claim Map of Humphrey claims 1953			- ?	✓	
2					- ?	✓	

DRILL HOLE NO. TDC-74-RD-41 TDC PROJECT

COLLAR ELEVATION 4670± COCHISE COUNTY, ARIZONA

COORDINATES

Some drill holes as Rangan PAGE 1 121

BY Log

BEARING ____ INCLINATION VERT SCALE ____

DEPTH ____ STARTED 7/Aug/74 COMPLETED ____

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL
					SURFACE ALTERED FRAGMENTS + KAOLIN PYRITE OXIDIZED 8' GREEN ARKOSE BEDROCK GREEN ARKOSE → W/ PYRITE OXIDIZED 13' DARK GREY QUARTZITE SMALL QUARTZ VEINS 23' QUARTZ (ARKOSE) (QUARTZITE) W/OXIDIZED PYRITE 31' GRANODIORITE 34' QUARTZ (ARKOSE) 44' TRACE AMOUNTS OF OXIDIZED PYRITE GREY-GREEN ARGILLITE W/ MINOR QUARTZ VIENLETS 58 PALE GREY-GREEN SANDSTONE TRACES OF MANGANESE - OXIDE → GREY-GREEN ARKOSE 69' QUARTZITE-GREY 72 ARGILLITE W/SMALL VIENS 80 CLAYS WITH PYRITE OXIDIZED ALTERATION SILICA VIENLETS OXIDIZED PYRITE BIOTITE 81' GRANODIORITE BIOTITE QUARTZ FELDSPAR OXIDIZED PYRITE 100 PRESENCE OF CLAY FRAG. INDICATION PROBABLE SMALL FAULT 105 ALT. GRANODIORITE + SILICIFIED SED 108 ALT. GRANODIORITE 112 SILICIFIED SED 123 ALT GRANODIORITE 128 SILICIFIED SED				

ALTERATION

SERICITE
KAOLIN
SILICA
CHLORITE
GARNET
SERPENTINE

MINERALIZATION

PYRITE
CHALCOPYRITE
CHALCOCITE
MOLYBDENITE
MAGNETITE
GALENA
SPHALERITE
SPECULARITE

ALTERNATINGS THIN BEDS OF ARGILLITE AND QUARTZITES COLOR: VARYING FROM PALE GREEN TO DARK GREY

CONTACT

LAYERS OF ALTERNATING SILICIFIED SED. AND QUARTZ MONZONITE

ALT GRANODIORITE + SILICIFIED SED.

CLAYS W/ OXIDIZED PYRITE + SILICA VIENLETS BECOMING INDICATING CONTACTS POSSIBLE DRILLING ALONG CONTACT

MEW BIT

REERED

FLT

See TMR DRILL HOLE MAP

DRILL HOLE NO. TDC #1-24 TDC PROJECT PAGE 2/122

COLLAR ELEVATION COUNTY BY D.

COORDINATES

BEARING INCLINATION SCALE

DEPTH 210 STARTED COMPLETED Aug 13, 74

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL
					130			
					143 GRANODIORITE SLIGHT INCREASE IN SILICIFIED PYRITE			
					158 SILICIFIED SED PALE GRY GREEN → BLACK ARGILLITE			
					170 NORMAL GREENER COLOR TRACES OF MANGANESE			
					174 QUARTZITE CLAY-SIZE (WHITE)			
					INCREASE IN GRAIN SIZE (QUARTZITE) TRACES OF OXIDIZED PYRITE			
					183 GREY - BLACK SILICIFIED SED (ARGILLITE)			
					193 PALE GREEN GREY- (ARGILLITE) SILICIFIED SED.			
					196 GREY ARGILLITE			
					199 CLAY (WHITE - QUARTZY) ↓ GRADES INTO 203 COARSER GRAINED QUARTZITE CLAY COARSE } ENTRY CONDITIONS IN CHANGING ENVIR.			
					207 CLAY W/ OXIDIZED PYRITE			
					209 PALE GREY - GREEN - BLACK ARGILLITE			
					210 CAP OFF			

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

DRILL HOLE NO. TDC '74 - RD-71 PROJECT TDC

COLLAR ELEVATION 4670 ± COUNTY Cochise ARIZONA

COORDINATES

BY David Cook

BEARING ____ INCLINATION VERT SCALE 1" = 10'

DEPTH 260 STARTED Aug 7, 1974 COMPLETED Aug 13, 1974

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					SURFACE						
					ALTERED FRAGMENTS 4¾ TRICONE W/ AIR						
					8' BEDROCK GREEN ARKOSE ~ w/ OXIDIZED PYRITE.						
					13' DARK GREY QUARTZITE W/ SMALL QUARTZ VIENS						
					23' ARKOSE, QUARTZITE W/ OXIDIZED PYRITE						
					31' GRANODIORITE						
					34' ARKOSE						
					44' GREY-GREEN ARGELLITE W/ MINOR QUARTZ VIENLETS - TRACE AMOUNTS OF OXIDIZED PYRITE.						
					58' PALE GREY-GREEN SANDSTONE W/ TRACES OF MANGANESE OXIDE						
					60' GREY-GREEN ARKOSE						
					69 GREY-QUARTZITE						
					72' ARGILLITE W/ SMALL VIENLETS OF QUARTZ						
					ALTERATION, SILICA VIENLETS CLAY W/ OXIDIZED PYRITE } CONTACT						
					80'						
					81'						
					GRANODIORITE OXIDIZED PYRITE BIOTITE QUARTZ FELDSPAR (PLAGIOCLASE) } ALTERNATING LAYERS OF SILICIFIED SED. + QUARTZ MONZONITE						
					90						

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

ALTERNATING THIN BEDS OF ARGILLITES AND QUARTZITES COLOR - VARYING FROM PALE GREEN TO DARK GREY

DRILL HOLE NO. TDC '74-RD-#1 TDC PROJECT PAGE 2

COLLAR ELEVATION 4670± Cochise COUNTY. ARIZONA BY David Cook

COORDINATES

BEARING ____ INCLINATION VERT SCALE 1" = 10'

DEPTH 210 STARTED Aug 7, 1974 COMPLETED Aug 13, 1974

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					90 GRANODIORITE						
					100 CLAY FRAG - INDICATION OF PROBABLE SMALL FAULT ~ ALTERNATING GRANODIORITE AND SILICIFIED ALTERED SEDIMENTS						
					105						
					108 ALTERED GRANODIORITE						
					112 SILICIFIED SED. (ARGILLITE)						
					123 ALTERED GRANODIORITE						
					128 SILICIFIED SED. (ARGILLITE)						
					143 ALTERED GRANODIORITE W/ SLIGHT INCREASE IN OXIDIZED PYRITE						
					168 SILICIFIED SED (ARGILLITE) PALE GREY-GREEN — BLACK						
					170 INCREASE IN GREEN ARGILLITE TRACES OF MANGANESE						
					174 QUARTZITE (WHITE) FINE GRAIN ↓ INCREASE IN GRAIN SIZE OF QUARTZITE TRACES OF PYRITE						

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

ALTERNATING GRANODIORITE AND ARGILLITE — CLAYS W/ OXIDIZED PYRITE AND SILICA ALONG VEINLETS MAY INDICATE THAT DRILL HOLE IS ALONG CONTACT.

DRILL HOLE NO. TDC #1 RD-#1 PROJECT TDC

COLLAR ELEVATION 4670± COUNTY. COCHISE ARIZONA

COORDINATES

PAGE 3 125

BY Daniel Cook

BEARING ____ INCLINATION VERT SCALE 1" = 10'

DEPTH 210 STARTED Aug 7, 1974 COMPLETED Aug 13, 1974

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL			
					180						
					183 GREY-BLACK SILICIFIED SED (ARGILLITE)						
					193 PALE GREY-GREEN ARGILLITE						
					196 GREY ARGILLITE						
					199 FINE GRAINED QUARTZITE						
					202 COARSER GRAINED QUARTZITE						
					FINE " "						
					COARSE " "						
					207 CLAY W/ OXIDIZED PYRITE						
					209 PALE GREY-GREEN-BLACK ARGILLITE						
					210						

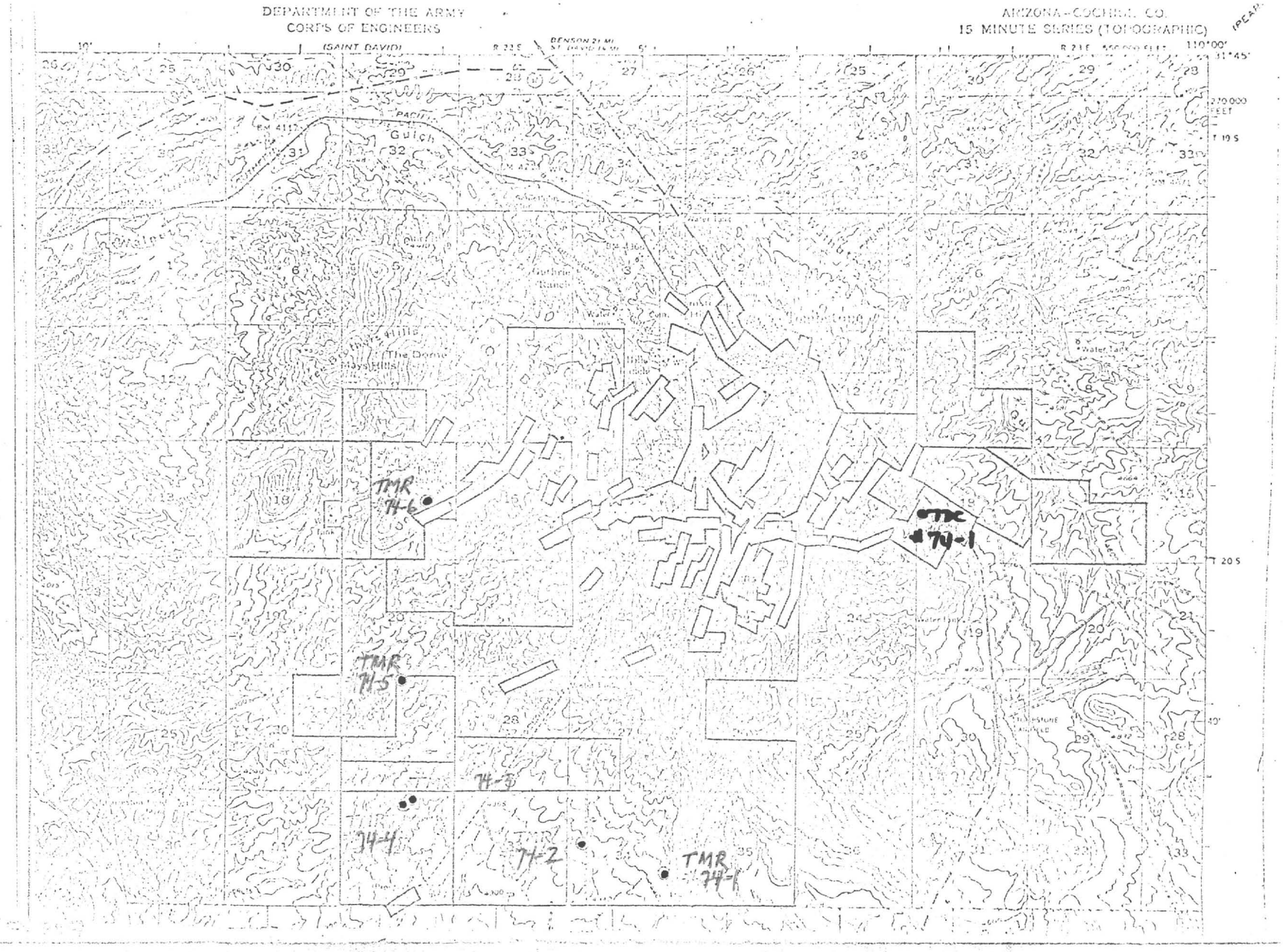
CHANGING ENERGY CONDITIONS

ALTERATION
- SERICITE
- KAOLIN
- SILICA
- CHLORITE
- GARNET
- SERPENTINE

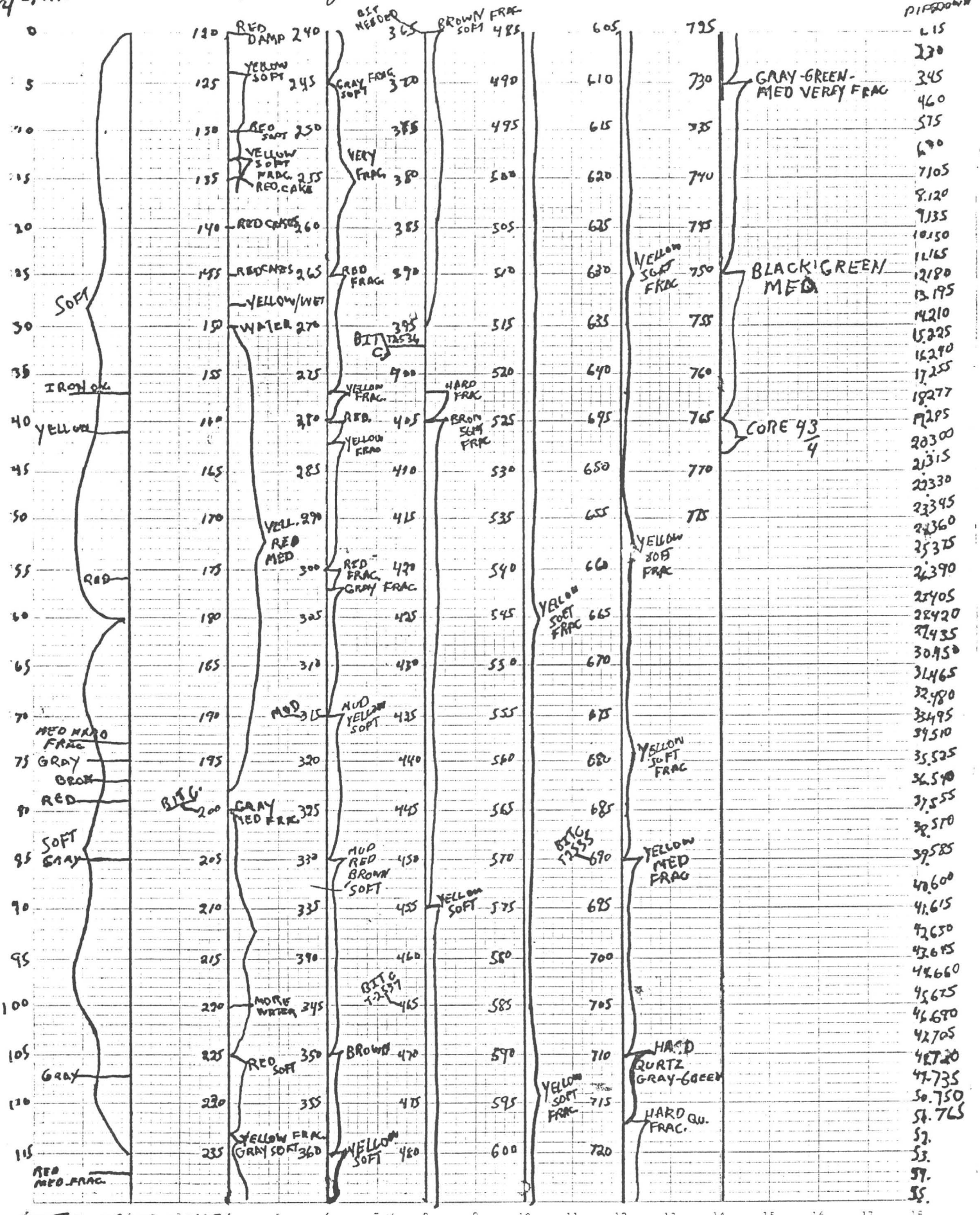
MINERALIZATION
- PYRITE
- CHALCOPYRITE
- CHALCOCITE
- MOLYBDENITE
- MAGNETITE
- GALENA
- SPHALERITE
- SPECULARITE

HOLE LOCATION MAP

DRILL HOLE ○



CAG-#1-75
7-2 4 3/4 -AIR. 315'-MUD- ~~Probably THR~~



BIT-T-2536-397-465
BIT-T-2537-465-560
BIT.T-2539-560-690
BIT.T-2535-690-

BOTTOM
768

DRILL HOLE NO. Fox #1-75 PROJECT Tomiyasu

COLLAR ELEVATION 2437.7 COUNTY. BY

COORDINATES

BEARING INCLINATION VERT SCALE

DEPTH 175' STARTED 8/15/75 COMPLETED 8/18/75

% Core Recovery	Structure	Alteration	Mineralization	Rock Type	GEOLOGY	CORE ASSAYS INTERVAL FROM	TO	MINERAL
					SURFACE			
					5 BEDROCK			
					11' GOUGE			
					3/4" TRICONE ROTARY			
					20			
					UNCLE SAM PORPHYRY ALTERED (QUARTZ LATITE)			
					30			
					59 SOFT GOUGE - PROBABLY FAULT			
					60			
					ALTERED			
					MODERATE AMOUNTS OF FeO & MnO			
					90			
					100			
					110			
					140			
					144 WATER			
					160			
					175 STOP			
					180			

ALTERATION

	SERICITE
X	KAOLIN
X	SILICA
X	CHLORITE
	GARNET
	SERPENTINE

MINERALIZATION

	PYRITE
	CHALCOPYRITE
	CHALCOCITE
	MOLYBDENITE
	MAGNETITE
	GALENA
	SPHALERITE
	SPECULARITE

AUG. 15-75 DIL. 4 SIMPLE 604
FOX #1-75
90° AIR
8-15-75

NEW 135

COMPANIES
8-15-75 S 184854
8-16-75 F16 5739
8-16-75 S 1693-1

150

PIPE DOWN
K 15
1.30
2.45
3.60
4.75
5.90
6.105
7.120
8.135
9.150
10.165
11.

(HUNG AT 170 (ROCK)

N.S. RIG.-30 gal (G.)
8-16-75 COMP.-55 gal (D.)

DOWN 175
WATER AND AIR
EQUAL-170

BOTTOM FILLIN.

SOFT
POR.
HARD
SOFT
NEW BIT
WATER
NS
WATER AIR =
8-16-75
SOFT
DS

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115

120 125 130 135 140 145 150 155 160 165 170 175 180 185 190

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

DRILLING REM.

8-18 DRILLING GOOD

8-19 TOP HOLE WASH.

SET APOX. 10'-6" OD CASEING

CORE APOX 3½' PLUGED OIT

DOWN TIME

8-19- 2hr KELLEY YOKE

8-20 3hr ELECT. SHORT IN RIG.

8-22- 20 min SWIVEL PACKING.

8-23-8-26. SWIVEL BEARINGS-OUT-REPLACED

LAND CONTROLLED BY SIERRA METALS

TMR UNPATENTED CLAIMS; RAY, STAR & CAB GROUPS

TDC UNPATENTED CLAIMS; TDC #1-18

ESCAPULE UNPATENTED CLAIMS; FOX GROUP

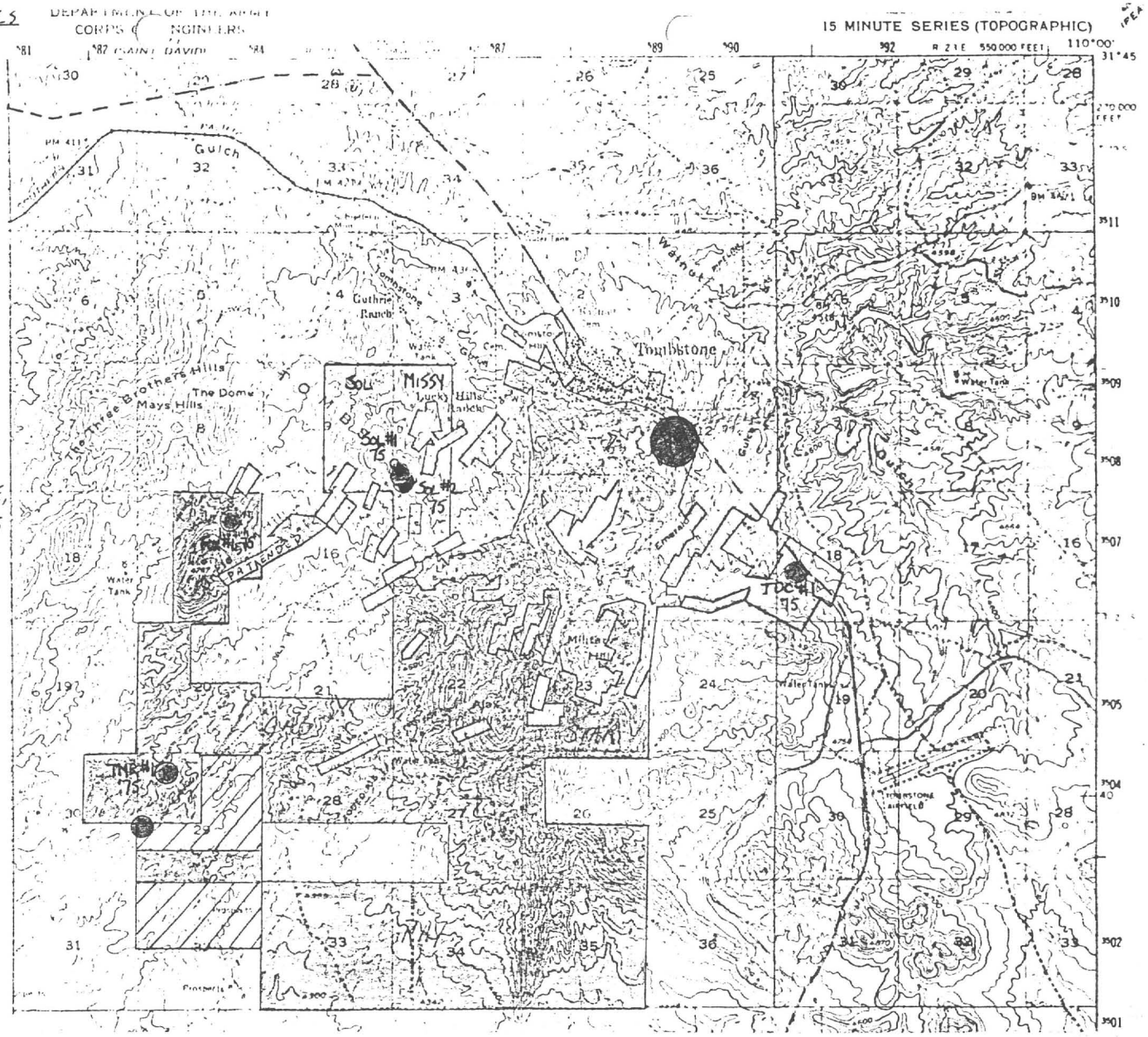
ESCAPULE UNPATENTED CLAIMS; MISSY, SOLSTICE, & SOLSTICE EXTENSION GROUPS

TDC PATENTED CLAIMS

DRILL HOLES IN 1975
SOL #1-75 SOL #2-75

STATE LAND PROSPECTING PERMITS.

'71 MINERALS HEAP LEACHING FACILITY



TAB 30M
FIELD NOTES

June 18, 1973

Note 1 - n1

State of Maine Vein cropping out in addit, vein dips 36 degrees west strikes degrees magnetic slickensided fault was point of measurement below which is gougee zone 3 feet thick. Magneese crops out in fault but is pinched to none existence at breast height, tunnel, more correctly addit penetrates approximately 75 feet beyond this point showing too moderate argillic alteration and patchy stronger alteration with MNOX along sheer fractures at the end of the tunnel Alteration seems to fade lightly but workings intersect slickenside zone approximately parellel to addis lenghth. In portal and road a distance of approximately 40 feet rock is highly sheared and bleached directly below in the footwall of the gougee zone is maganeferous zone caused by maganeese stringers approximately six to eight feet in thickness these stringers are spaced several to the foot and dip approxximately 72 degrees west parelleling strike directions approximately of the more shallowly dipping veinlet or vein other stringers between the magganeese zone and the road show approximately the same dip suggesting that the shallow dipping stringer may be post mineral movemnet and continues to the road where it is covered by NQAL T237 cut around both sides of portal 243 the footwall of the slickenside over approximately ten foot thickness end n-1

n - 2

At this location a short incline goes down approximately 30 to 40 feet hwere it flattens and disappears from sight in darkness I didn't go to the bottom although it may extend another 20 to 50 feet following the vein which strike about north 50 to 60 degrees east magnetic and dips at approximately 20 degrees and appears to flatten with depth. Vein is actually a breecha zone between one and six feet wide with altered wall rocks it pinches and swells in a manner that suggests over thrusting. It isn't clear whether this is part of the Maine Vein system or possibly a fracture zone enchlon with the triple XXX vein system at any rate because of the low dip the strike will probably vary greatly Sample 241 across 2 feet at the collar T240 30 feet down the incline n - 1 At the shaft a linenite stained vein approximately 2 to 3 feet in thickness is exposed in the footwall the hanging wall is very poorly altered being essentially fresh with a few little stains of limenite, hematite and maganeese on it. The main vein strikes 178 degrees magnetic dipping approximately 35 this is very close to the strike of the vein at the State of Maine shaft andc in all likelihood this is the vein with the other features between here and the State of Maine Shaft being subsidiary fractures striking more north= easternly and probably being tear fractures associated with the over thrusting

N - 4

At the Uncle Sam incline shaft with wood faced and metal rails going down the incline the vein here appears to be striking about north 5 east magnetic and dipping about 35 degrees and ranging from about a foot too about 4 feet in width Although the walls are very dirty and it is very difficult to see the vein exactly which is almost due north and the inclination makes it appear that this is also the State of Maine Vein but north 4 the oldd back hoe cuts in the top of the Uncle Sam Dump put in by Austral Oil indicate that this dump is well sampled probably the best I have seen so far the back hoe cuts go approximately 3 feet deep and 2 feet wide and are on every branch of the various dumps. Branch 5 at this shaft which is vertical to about 20 feet and then dips down probably along the State of Maine Vein we see parallel shear zones striking approximately parallel to the maine vein that is 5 degrees magnetic north dipping 43 degrees to the west. Not well altered but somewhat bleached containing maganeese and limenit the projection of the Maine Vein from the Uncle Sam incline would suggest that the shafts to the and the prospects pits to the south east of

N - 5

shaft would intersect the vein however the shafts and prospects only intersected fresh rock this suggest that wither these are faults which off set the vein or it changes drastically in strike and then straightens out again giving it a braided or weaving nature since all the ground is covered in between these two veins. We can only speculate on which case it might be. The dump with be sampled by number 294 end n -5

N- 6

At this point we have a shallow shaft approximately 20 feet deep the shaft intersects moderate to strong alteration including rather strong maganeese oxide the bottom of the shaft veers to the north and west or to the west to form a drift following this maganeese and a small pile of the highgrade MNOX material is piled on the west side of the shaft. Sample 299 represents this material while sample 298 represents mine run dump material. At this point and in this area between north 5 and north 6 we are still on the State of Maine Vein at a point 297 the vein appears to flay out and broaden due to] topographic affect this being a very flat spot it looks as though it may be up to 100 feet wide and float indicates this. This is merely and affect of the flow angel of the vein and the flat topography end N - 6

**** Summary

Geologic work for June 18, 1973

From approximately 11:30 to 6:30 geologic traverses were made along the State of Maine Vein from the State of Maine Shaft in a northerly direction tol the Fox Creek road between the main shaft and note point ***** n -3 several low

angle veins and faults breechia zones are exposed however none of these appear to be the State fo Maine instead the State of Maine appears to lie under alluvial cover and the exposed veins are more easterly trending shear fractures associated with the Maine Vein and indicative of right latteral over thrusting movement the Maine vein is again exposed at point n -3 and also to the north in some of the workings in the Uncle Sam Mine and it is apparently trasable north of the Uncle Sam Mine by leached float in tailis alluvium on the hills at point n -6 the vein flays out and to the north this cretaceous Bisbee group sediments are exposed. The vein can not be traced into theses sediments although it projects into them or into this area although the whole northern slope of this hillside shows reasonable alteration with quite a few alluvial fragments of black shale material. There are therr possibilities as to what has become of the vein 1- It may continue and be hard to trace because of the varried nature of the cretaceous sediments. 2 - It may be diverted such that it follows the contact between the Uncle Sam Porphyry and the cretaceous dediments thas becoming very very low angle in nature adn becoming essentially a horizonaal plain or 3 - It could become so defuse in the cretaceous Bisbee group that it looses its identity as a vein and only regains that where it encounters the more competnet Uncle Sam Porphyry. This hillside should receive some deep bulldozer scraper cuts to explore for continuing of the vein below the aluvium. To the north of this and across the Fox Creek road are exposed quartsite which is probably the equivalent of the navaculite of the Tombstone basin and strongly breechiated sediments along a northeast trending zone showing strong maganeese oxide as seen in some shaft areas the veins are very hard to discern in the sediments and are very hard to trace on the surface. end comments for June 18, 1973

Field notes June 22, 1973

N - 7

At a rhyolite outcrop this point the rhyolite shows swirlley circular flow texture something that has not been noted in the same rhyolite dike in other areas this suggest this spot may be a circular vent area. This putcrop argillic alteration with limeniteestaining after about two percent finely crystalline pyrite.

N - 8 June 28, 1973

At the clipper shaft just south of the half section line section 16 at this location one two compartment vertical shaft one incline shaft one caved incline shaft along the same structure the rock seems more composed of breachia than other dumps I have examined there is a father high magneese ocide content or more correctly samomoline (Psislomene which for the total dumps would fall in the range of between ten and twenty per cent content in addition there is some pitachiao green unidentified mineral which occurs with the Psislomene the limenite content is probably five to fiftee percent with alot of jarosite being in evidence. In addition to the magneese occurance the rock here seems to be much more siliciifed than it was in the State of Maine Vein in the incline shaft there is a low angle structure striking magnetic north dipping approximately 32 degrees west whcih appears to cut off a northwesterly vein dipping 70 degrees the northwest trending vein is rather moderately silicifide showing strong argiliaation and hematite after limenite where as the magnetic north striking fracture zone is strongley brechiated and looks as though it may be a later feature even a late or post mineral structure although maganeese and strong iron stain seems to negate this possibility.

N - 9 June 29, 1973

In this area crataceous Bisbee group sediments are exposed they are for the most part shales of various types intriculated with one or possibly two thin limestone horizone the shale material has been largely altered to hornfels with containign quite a bit of chorletic materail and other hornfelsic alteration sweets the limestone has been altered to marble and in a few places appears to have possible cala-silicate mineralization although this is weak these sediments are apparently located in the footwall of the State of Maine Vein and below in the vein projection and its poor outcrop on the top of the hill there is a rather strong limenite staining and maganeese and silicififcation of the sediments a bulldozer cut will be required in this area to expose what the float suggest may be relatively good mineralization just south of the Fox Creek road the sediments are less altered but there is an anticlineal feature just south of the read which appears to be very much like one of the roles of the Tombstone district the limestone marker horizon is folded quite tightly and with out careful exmmination the realtions appear rather complex the role pitches to the east and at the nose of the anticline there appears to be some rather good maganees veining a few inches wide this would probably be a good spot for a test hole that is on the axel plaine of the anticline

N - 10

At this point there are some large cobbles or boulders of limestone occuring as xenoliths in the Uncle Sam porphry these limestone fragmenst are upto a foot in length above this there are apparently some large quartziete fragments this suggest forceful intrusion of the Uncle Sam with tearing off of chunks of th underlying Bisbee group sediments.

N - 11

At this point there is outcropping a blue limestone breccia with a very small exposure of quartzite on its eastern edge the breccia appears to be sedimentary feature how ever it could be a tectonic intrusive origin there is a outcrop approximately two feet square in the bottom of the wash of what looks to be Oracle type granite this is the only exposure of this rock I have seen in the Tombstone District it may be classed with the limestone quartzite breccia its contacks are inconclusive this area only sparatically altered with a small amount of limenite stains for the msot part the limestone is unmarbledlized.

N - 12

At this point is a small pod of heavy green garnet skarn associated with a blue limestone the other surrounding Bisbee group sediments are dark grey hornfels and where they carry sulfides or where they carry sulfides they are colored medium red from limenite products the Uncle Sam Porphry contack is about fifty feet to the south but does not appear to be related to heavy garnet skarn neither is the skarn apparently relatedto an exposed structural feature it is significant in that this is the first occasion that I have seen intense development of garnet

Thoughts on the State of Maine area:

The State of Maine area itself consists of the State of Maine shaft Brother Johnathan and Uncle Sam shafts which are assentially located on the State of Maine Vein there are othere systems which parrellel this and total number of major veins exposed to date are four in mumber they include the State of Maine Vein the Wood Collare Shaft Vein the FRee Coinage Clipper VEin and Chance Vein all of thhsee systems and we might also include the San Pedro Vein although this seems to dip more steeply all these systems strike north northeasterly and dip from thirty to fifty degrees to the west the dip generally being ~~forth~~ thirty eight to forty two degrees with consderable amount of consistency apparent between the vein systems. vein systems occur in both Uncle Sam Porphry and crotashish Bisbee group sediments. There apprears to be a subsidiary related vein system which strikes northeasterly and dips more steeply in the range of 50 to seventy degrees. The growth appect of these verins systems suggest thrust volting activity with movembnt from the southwest to the northeast and a right lateral throw along the fault structures it is apparent the vautl movement was premineral and occured allong several plains. These plains being previous mentioned veins. Veins were seen on the surface appreared to be one to five feet in thickness the main thickness being in the range to two to three feet are of course intermediate subsideary and related eshilon vains however by enlarge the rock in betwwen the major vein systems is relatively fressh and unaltered. The preceeding observation suggest that there is little potenttial for larger diseminated orbodies minable by balk methods either underground or surface. This conclusion might be negated if the veins tend to flatten and coless depth however this is a mear speculation and that possibilty would have to be tested by further exploration drilling and subsurface geologic work. Thus encumbant of the preceeding observations that the potental in this area is for Bonanza type vein minerailiza tion along rather shallowy dippy strutures. These structures may be imminable mining by some sort of trackless mining system involved in the shrinagke stopping or other semi-bulk methods. However, their explotation will be expensive both from an exploration and a mining veiw point. And a critical factor in the economic explotation of the mineralization will be close attention to cost cutting. There are a couple of subilities for this one being variations of trackless miningand shrinkage stoping of one type or another Another solution might be to sink a shaft to the present water table drive raises along the veins and either drill and blast them in place or start shrinkage stop operations leaving the muck in place. After sufficeint quantity of muck has been broken and loosened sionide solution could be perculated through the ore the broken ore and collected in a sub at the bottom of the shaft or on various sub levels.

This type of

This type of insitu leech operation the ore might never have to be mined if the metallic values could be recovedred in place. Below the water table leeching would be impossible because of the action of the intermingling solvent solution and the ground water unless the ground water is lowered by pumpong . On the other hand the nature of the ore may change to lead-zinc solfides which are not minable to sionide leeching and thus it may be possible or it may be necessary to mine the ore in and hoist it for processing through a normal flotation plant. Nation of these mining may be may make the deposit economicly feasible. A considerable tonage of ore should be present in the various veins systems. Ation should consist of continued detailed surface mapping and sampling done prior and contemperainiously on a continuing basis with vertical drilling by rotary drills followed by vertical or incline drilling by diamond drill rigs.

Monday July 30 N-13

At this point exposed in a shallow prospect pit is a very intensly altered light or andisight porfree dike of the silver lily type . The feld spars and ground masks have gone to cerisight with very finly diseminated hymitight points diseminatede throughout. This occurs with a north , northeast trending sheer zone with abundant liminight staining. This is one of the few places so far seen that this type of dike is strongly altered in other areas similar apprearing rock is fresh ajjacent to strong alterations suggest that it might be postmineral. Either this dike is not postmineral or this is a different age feature but similar in composition.

N-14

Ex posed at this point in a shallow inclined propsect shaft added is a vault stucture along a quartz vien in which quotatish arcos is dropped down on the hanging wall and quotashish shales are up thrown on the handging wall showing a thrust fault or reverse fault. And that is on the order of 6 to 10 feet although corelity beds could not be matched up exactly. Erzone is from 3 to 6 inches wide and lined with vuggy quartz a couple of plaines it is not strongly prchiated . This is another line of evidence towards my idea proposed Idea of north thrusting-from the southwest to the northeast.

N - 15

At this point exposed in the bottom of the wash is pinkish Uncle Same Porfree the ground mass of this exposure appears quite pink in relation to that exposed at Uncle Sam hill where it is dark gray to almost black where ~~it is~~ fresh. This pinkis color may be due to hemitite staining in the feltspars however the feltspars appear quite pink as though there is more poggiclay than is present in the Uncle Sam Hill area. Slightly to the northwest down the creek is the contack between the Uncle Sam and the Cotashish shales at approximately on the contact is a silver lily type indisight dike fresh completely unalteredexcept for exotic liminite stainning. After a dilligent search around the surrounding area no more exposures of this Uncle Sam porfree ore found and thus it is concluded that iseither a dike or anapothosy of the larger Uncl Sam porfree cell. This may account for its differeence in color and texture and possibly composition.

13, 1973 N- 13
Near the Fox Ranch

At this point we have a contact exposed between the Uncle Sam Laytipe porfree and what are probably crotashish Bisbee group sediments. The contact is somewhat grayashinal with hornfelsed limestone grating into dirty xenolithic Uncle Sam profree which then grades into dark Uncle Same profree which then grades into the normal fresh Uncle Sam porfree cell. The contact appears to be very low the exposure is not good enough to be accurate but it appears to dip in the range of 20 degrees or less to the west. This is the first good clean or the cleanest contact I have seen and it looks like an ignious feture suggesting that the Uncle Sam is a rather shallow cell and it is certainly not faulted at this point.

N - 21

At this point we have another contact between Uncle Sam porfree and Bisbee group sedimentsz . Here the appearcance of the porfree is the same in that it is very xenolithic and dirty looking . The rock has be cloritized apparently the xenolith tended to become cloretic from deuteric alteration while the limey rocks at the contact are brieccited and have been somewhat horfelsed however the alteration in either rock is not intense . This is further evidence that this is outcrop of sediment is actually a window in the sill and not an upfaulted or fault fragment.

Saturday July 14, 1973

n - 22

At this point there is exposed a shadder zone which appears to be either late or postmineral even though it has some liminite stain on the fractures it strikes almost due north slightly west of north and looking towards the dome it appears as though this may be the projection of the mile long fault zone visable on areal photographs. This is not here been before noted in the feild but this exposure may be part of it.

N - 23

At this point is exposed a composit dike consisting of an older andisight dike parallell and broken by a younger riolite dike. The riolite occurs on both the harging and foot wall of the andisight profree dike . It is composed of five to seven feet on either side and has toren off and cimilated around spherical fragments of the andisite profree. The andisite porfree is the silver lily or silver thread type porfree and it is definitly younger than the riolite they both have apparently the same strike in dip and they cut unaltered Uncle Sam porfree little or no alterarion being evident caused by the dikes.

Wednesday July 18, 1973
Subject: Tmr Drilling Equipment

The equipment visited at Steve Henderson's porta-drill 40 acre ranch site on the middle March Pass road. Equpment consists of 1 porter drill 500 which is approximately equivilent to a Faline 1500, mounted on a 1962 Ford truck with dual rear wheels dual rear tires, the mast has been lengthened and strengthened with three Sheel failing

wheels so that it can pull a 30 foot lenth of drill pipe . The capability of the rig is approximately 1800feet using 23/8 drill pipe . Steve Henderson suggest for air drilling we should purchase 27/8 drill pipe . We have essentially no drill pipe that is unworen on hand approximately 800 feet which may have about 500 feet of air drilling or less in it before it is completely unusable. There is no air compresser which would be required for air drilling approxmiatly a 600 CFM unit there is a air hammer 61/2 inch size. There is no core barrell but the rig is capable of doing some light core drilling. In addition there is a Ford (62 age) flat bed truck with a water bed mounted on it and side over head racks for drill steel . A 194[illegible] (probable) vintage Ford winch truck with an a-frame mounted on the back with an extension so that it is 15 to 20 crane . An old studebaker panel truck with a Willy's Jeep 4-wheel drive frame and axle under it and an old (probable 1955) vintage Chevy 6-cylinder 5ton flat bed truck with dual rear wheels on a single axle side boards on this truck would make it capable of it hauling a good diverse (hayload. There is also a 1962 3/4 ton For truck which is in ok running condition but needs rubber under it. Value of the four micellaneous trucks and including a pick-up truck for a total of five would probably be about $2,000 to $2,500 . The drill rig seems to be in reasonable condition Steve figures a new string of 1.000 foot drill pipe to 27/8 inch diamiter and miscellaneous equipment reparis needed on the rig would run about $10,000 at least $7,000 of that being cost for pipe. He would like about $5 per hour and is interested in running the rig and operation.

Wednesday JUly 18, 1973

N - 24
Located South of the San Padreo Shaft.

At this point the San Padreo vein is trenched the vein itself is probabely at least 20 feet wide although dumps and aloovium cover its true extent and it is poorly exposed. However this trench is cut on a 3 foot wide manginiferous breccha zone which is somewhat better mineralized than the more silisous parts of the vien, In the foot wall of this smaller zone, which dips appproximately 80 to the west, is exposed oxide copper with the magenese.

N - 25

Exposed on the dump of the San Padreo shaft are fragments of sulfide bearing Uncle Sam porfree . It is obvious that the San Padreo shaft has intersected the sulfide zone which is obviously in the Uncle Sam Porfree . The Uncle Sam is altered to rather strong serisite, farly typical pyritic mezothermal zone-the pirite is very ~~yellow or~~ brassy to white in color-very little indication of contained copper. No tarnishing or introduction of calcocite or argentiite.

Notes July 26 1973

N - 26

At this point exposed in a bulldozer cut is a north 70 degree magnetic east vein dipping 42 to the northwest. Previous examination of this suggest that it might be the continuation of the State of Maine vein. The dip is approximately the same however the strike is much more easterly than the State of Maine at the State of Maine shaft. Red hemitite along the vein and rather strong clay cerisite along a width of 10 feet suggests resonable alteration antethitic faulting or pointing dipping into the viein at 48 degrees but dipping at an opposite direction suggest that this structure has suffered left lateral strain. ~~xxxxxxxxxxxxxxxx~~ Alteration exposed in this dozer cut varies from weak to moderate to strong along the vein structure.

RICHARD LEHRER
ON FIELD VISIT

KENYON RICHARD
Mining Geologist
1501 MIRACLE MILE
TUCSON, ARIZONA 85705

602-622-0953

A43

August 9, 1973

Mr. Richard F. Hewlett
Sierra Mineral Management
4741 East Sunrise Drive
Skyline Bel Aire Plaza
Tucson, Arizona 85718

Tombstone District
Arizona

Dear Sir:

Two days were spent in the Tombstone District, July 5 with Jim Briscoe and July 11 with you and Briscoe.

Beforehand I had reviewed Butler and Wilson's U. of A. --Arizona Bureau of Mines Bulletin on Tombstone, Jan. 1938. The authors of this bulletin must have had many old mine maps in order to portray the geologic structure, the stratigraphy and the mine workings in such remarkable detail. They show no assays, probably because the map (and property?) owners would not permit publication of such data.

I get the impression from reading the history that, despite the fairly substantial gross production of $37 million, profit was mostly non-existant. Cost-price ratios were not much different than they are today, even with the current high silver price. The reason I believe that relative costs were so high during the district's hey-day was that too many feet of underground workings had to be driven for each ton of ore discovered and extracted. They did not have diamond drills, modern pumps or bulldozers.

Therefore, it seems to me that exploration today has a chance----rather long-shot----to find small but commercial ore bodies.

In order to accomplish this, old maps showing assays must be found. You have said that you expect to get maps of this kind from property owners with whom you are dealing.

The western part of the district where you are setting up your present operations received but little old-time mining activity as compared to the main, eastern portion. This doubtless was due to the presence of stronger surface expressions of mineralization in the east than in the west. This is meant in the overall mineralization sense, not just more small pockets of horn silver at the surface which was the principal ore guide of the earliest prospectors. The miners and engineers who quickly appeared in the district were, for the most part, good "mining geologists" by experience, though the name, as such, was not respected, nor was the capability even admitted except by crude terms like, "He has a nose for ore."

These early miners had good recognition of stratigraphy, structure, mineralogy, vein intersections, and the economic differences and significance between hypogene and supergene minerals.

The point is, you cannot beat these old operators at their own game, except (1) by consolidation of properties, (2) by reconstruction of the geometry of all mineral occurrences (in this connection Briscoe's detailed current field mapping is

very important), (3) by determination of the actual distribution of values in the old mines and prospects, and (4) by use of bulldozers and diamond drills.

You will be lucky if you can keep your mill running very long. But the above four points will improve your luck quite a bit.

Without old assay maps in hand for analysis, it seems likely that, at best, actual undiscovered ore bodies are very small exploration targets in either the western or eastern portions of the old district. When all information has been put together, I would expect that a few relatively shallow drillholes will be recommended.

The large area of alteration with several small breccia pipes and dikes situated between the Tombstone and Charleston Districts proper is quite interesting. It is by far the strongest and largest zone of hydrothermal activity in the region. (I have not yet seen the old Charleston District.) It has several characteristics of porphyry copper deposits. (A reminder: There are a number of long, expensive steps between "deposit" and "ore" body----and longer financial steps between "ore body" and "production at continuing profit.")

The occurrence of small, relatively higher grade base and precious metal ore bodies is common around the fringes of some porphyry copper districts. Tombstone and Charleston may be in this category.

There are practically no surface occurrences of oxidized copper or silver minerals in this large alteration zone. This may have been due to a larger proportion of pyrite over copper, silver and other sulphides, with acid leaching having removed the latter from the surface and near-surface. Also, a good deal of the altered area is covered by alluvium.

There is a little limonite-after-chalcocite in local fracture zones and breccia pipes in the alteration zone, but not enough to indicate that substantial amounts of ore-grade material existed in the leached outcrops. Quartz-sericite alteration is fairly strong in most places.

The alteration mostly is in Uncle Sam porphyry, although some altered outcrops appeared to have clastic textures. In any case clastic units of the Bisbee Group are known to exist nearby. Much of the ore in the Tombstone (and maybe the Charleston) Districts occurred as hypogene replacements in limey beds in the lower horizons of the Bisbee and in the upper Paleozoic carbonate beds.

In the western part of the Tombstone area the Uncle Sam porphyry seems to be a thick sill. I would expect, though, that in the altered area under consideration it is a stock.

I would expect the altered stock and surrounding altered clastic sediments to contain disseminated pyrite with some chalcocite and chalcopyrite. These might constitute relatively shallow ore bodies, and that possibility is interesting enough to warrant drilling. First, though, the mapping should be

finished, particularly the reconnaisance mapping including the Charleston area, which was discussed when we all were in the field.

Since you mentioned that several drillholes have been put down in the Charleston District, a couple of which had deep but long intercepts of 0.7(?)% Cu, I have been thinking that those intercepts might be mineralization in favorable carbonate beds in the lower Bisbee or the Paleozoic formations. This thought certainly enhances exploration possibilities where the same horizons probably extend into the alteration zone described above. Reconnaisance mapping of the region probably will give us a fair idea as to the depth of these limey beds. Even if surface exposures of these beds are too far away or too widely spaced to permit reasonable estimations of depth, this exploration possibility is sufficiently good right now, even with my presently rather limited knowledge of the region, for me to recommend two drillholes: (1) 1000' deep, inside the alteration zone in the Uncle Sam porphyry--preferably within one of the breccia pipes and (2) 2000' deep, outside of the porphyry but near it and hopefully, inside the alteration zone in carbonate rocks. The alteration zone should spread out in the carbonate horizons.

This drilling would not be conclusive, unless only disseminated pyrite is encountered.

Yours very truly,

Kenyon Richard

Kenyon Richard

Copies: one extra to Hewlett

MISC

Phone No. 542-9514
Office at
320 West A St.

788

No. 5811 L

Date September 25, 1975

WALTER ASSAY COMPANY

CHARLES WALTER
P. O. Box 160
Lordsburg, New Mexico

THIS CERTIFIES
That samples submitted for assay by Hanson and Associates

The following results were obtained

Marks	Silver ozs.	Silver 10ths.	Gold ozs.	Gold 100ths.	Percentages		Remarks
SB-3 (#1)	1	00		Nil			
SB-4 (#1)	0	70	0	010			
(#2) cut cross vein	2	70		*Trace			
SB-5 surface cut	7	50	0	0005			
SB-6 (#1) cut in shaft	1	60	0	010			
(#2)	32	50	0	065			
SV-1 (#1)	40	50	0	085			
(#2)	16	80	0	020			
SV-5(#1) shallow shaft		Trace		Trace			
SV-6 (#1) in shaft south center		Trace		Nil			
re-run		Nil		Nil			
SV-7 (#1)		Nil		Nil			
SV-9 (#1)	1	50	0	015			
(#2)	4	00	0	005			
SV-10 (#1)	0	05	0	005			
(#2)		Trace		Nil			
SV-11 (#1)	1	40	0	005			
SV-12 (#1)	0	60		Trace			
SV-13	45	40	0	080			
SV-14	45	80	0	100			
SV-15	12	50	0	005			
SV-16 (#1)	32	70	0	025			
(#2)	33	40	0	075			

Charges $ 100.00 Tax $4.00 total $104.00 Assayer Charles Walter

NO. 5814 L

ite September 29, 1975

WALTER ASSAY COMPANY

CHARLES WALTER
P. O. Box 160
Lordsburg, New Mexico

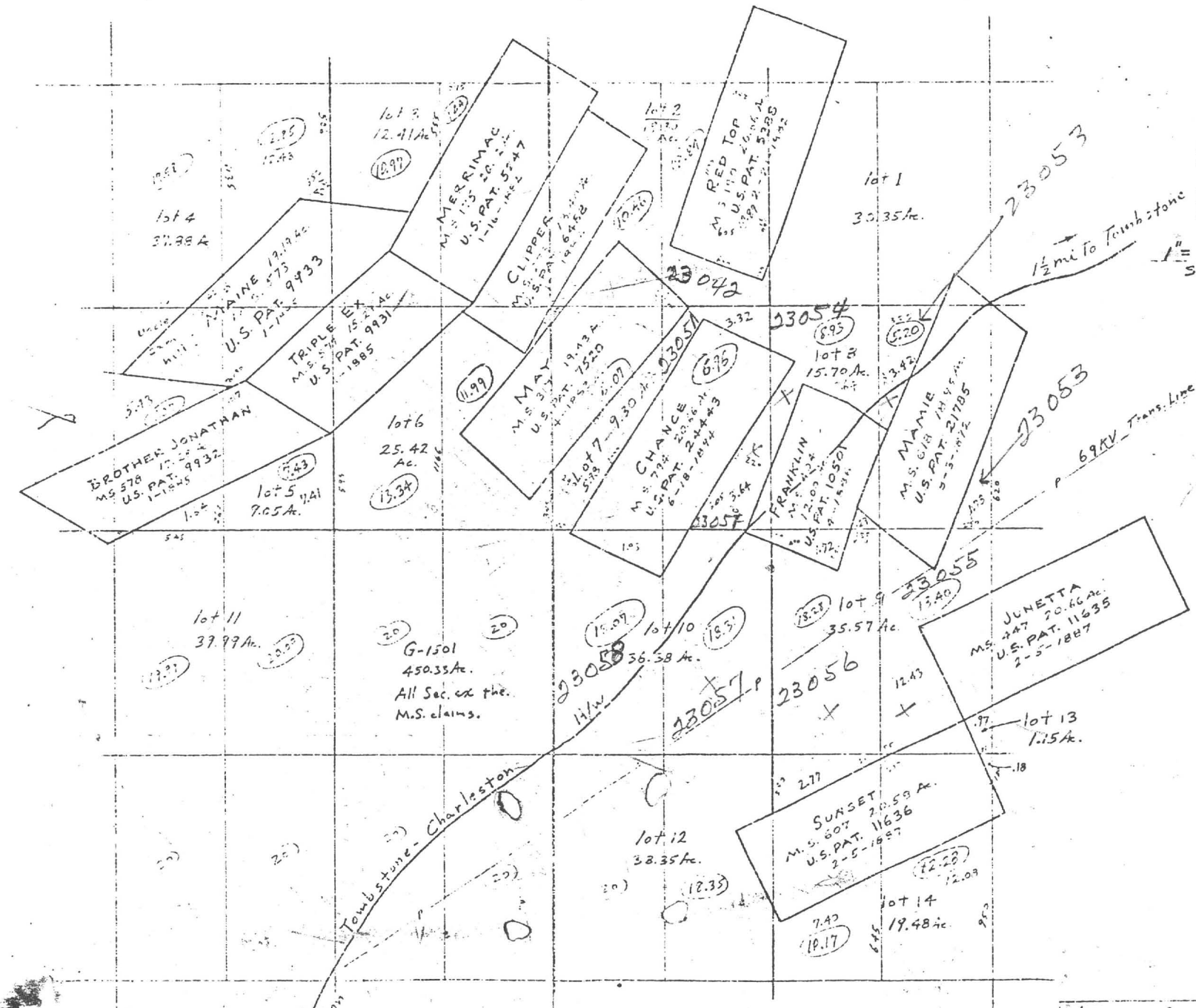
Phone No. 542-9514
Office at
320 West A St.

THIS CERTIFIES
That samples submitted for assay by Hanson and Associates The following results were obtained

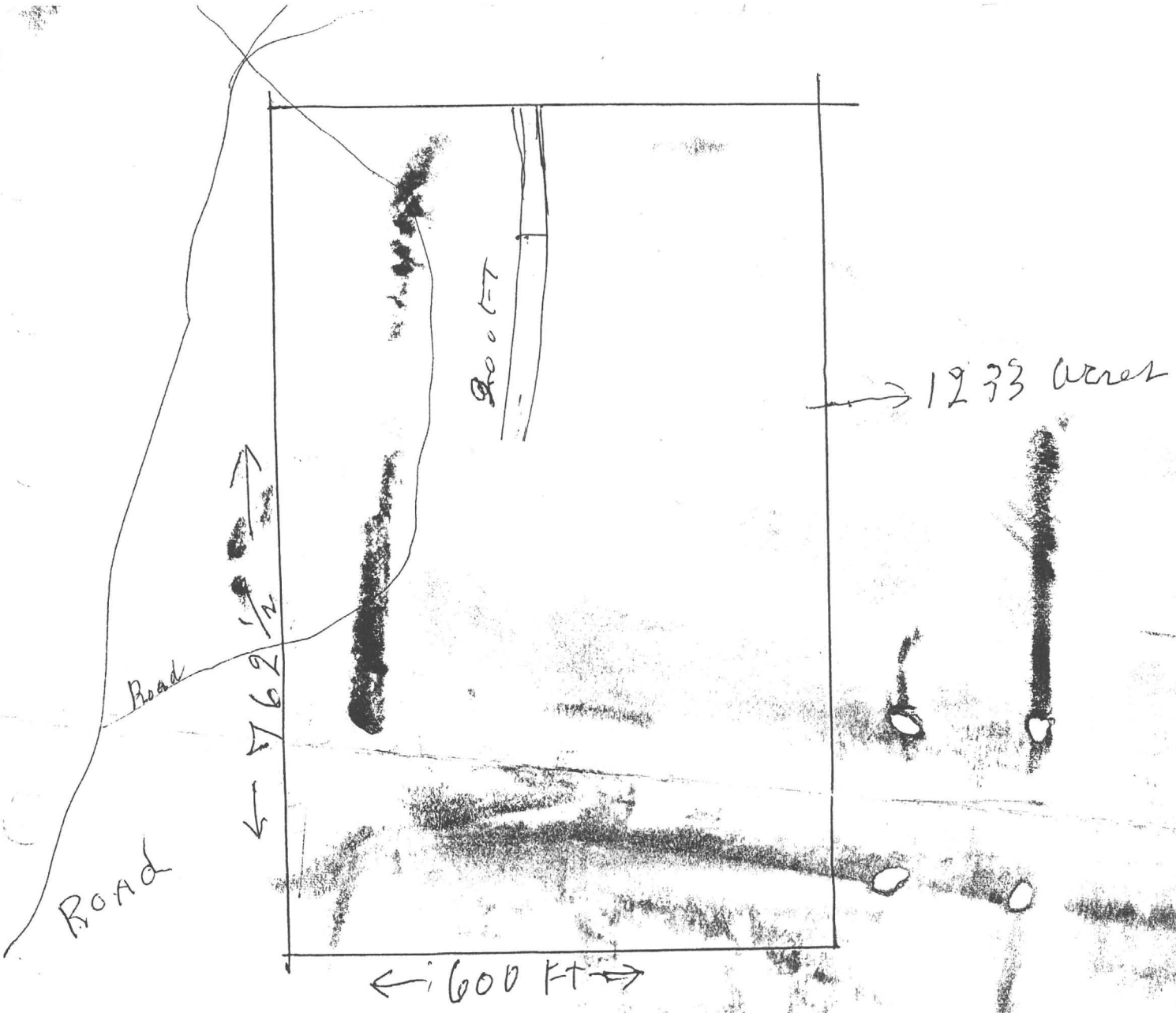
Marks	Silver ozs.	Silver 10ths.	Gold ozs.	Gold 100ths.	Percentages		Remarks
SB-2 shaft and cut	2	50	0	040			
SB-3 bulldozer cut	2	20	0	035			
SB-9 surface cut altered trend	1	70	0	025			
SV-5 (#2) small trench	0	20		Trace			
(#3) shallow shaft in sandstone		Trace		Nil			
SV-6 (#1)	0	10		Nil			
SV-11 (#2) small shaft near highway	0	10		Trace			
SV-12 (#1) small shaft in red ground	0	10		Trace			
(#2) cut across vein in small shaft	0	10		Nil			

Charges $ $45.00 Tax $1.80 total $46.80 Assayer Charles Walter

Sec. 16 - 20 - 22E

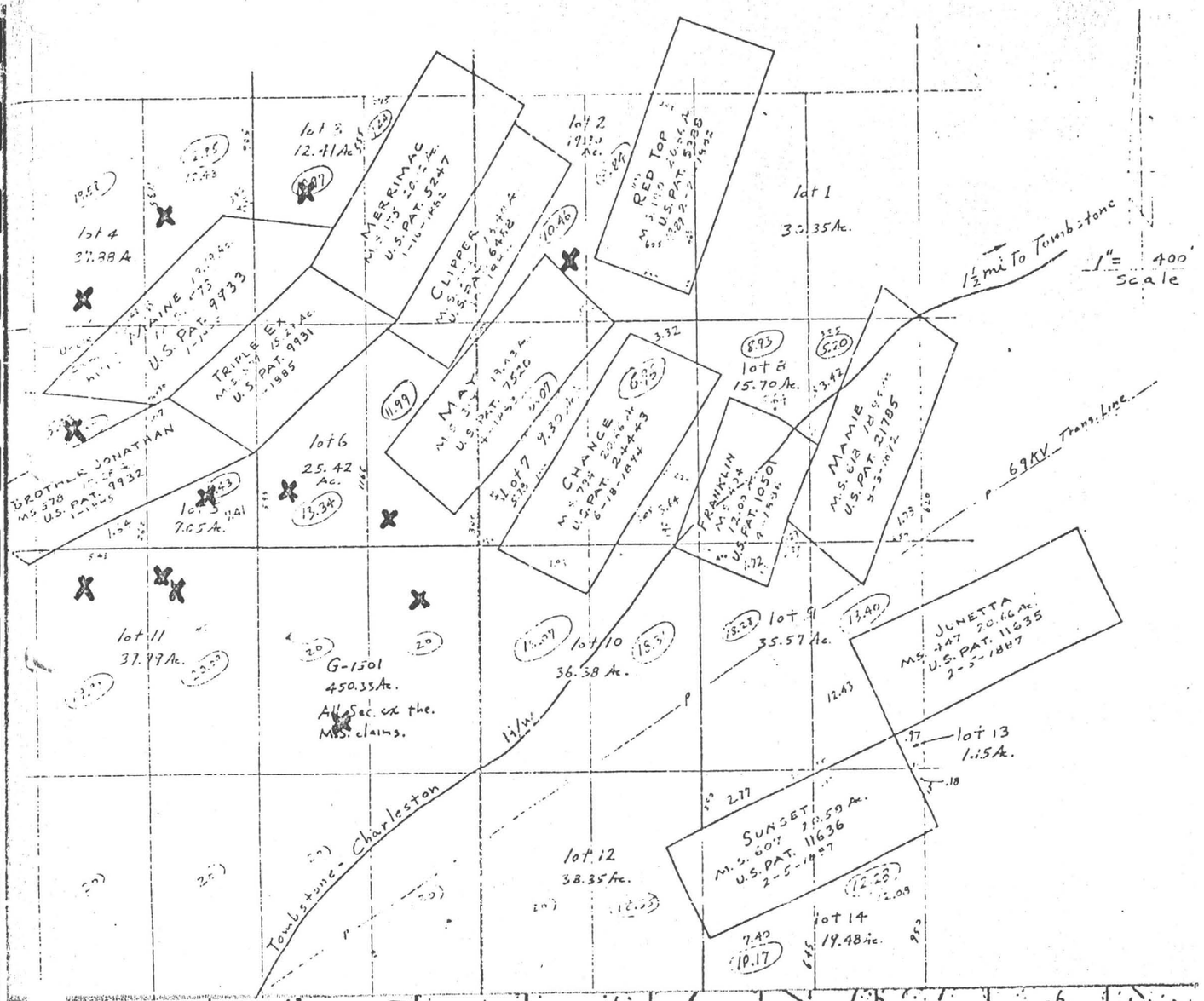


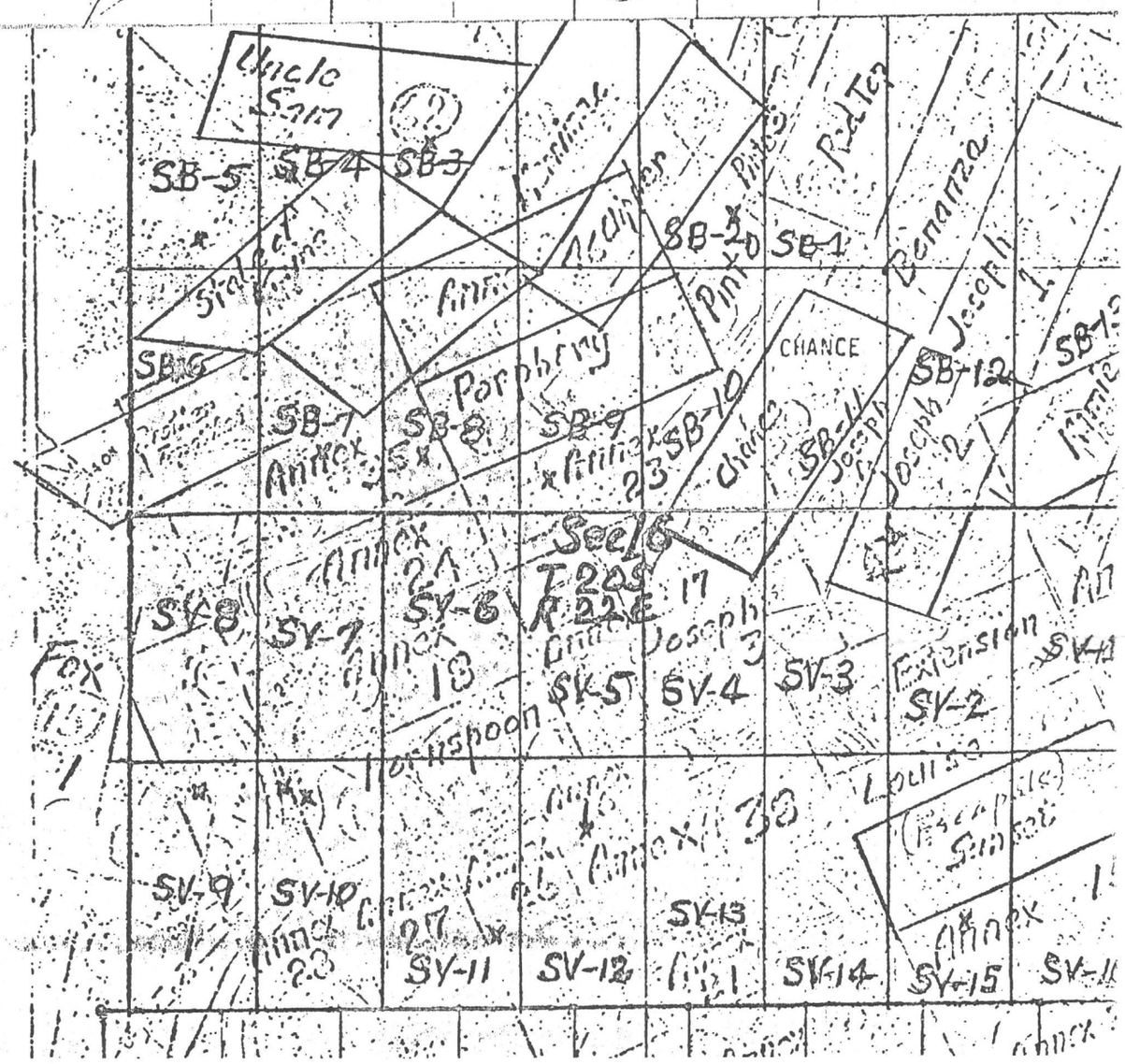
ARIZONA STATE LAND DEPT
Sec. 16-20S, 22E
Cochise County
Tombstone - Charleston
Tombstone Mining Dist.

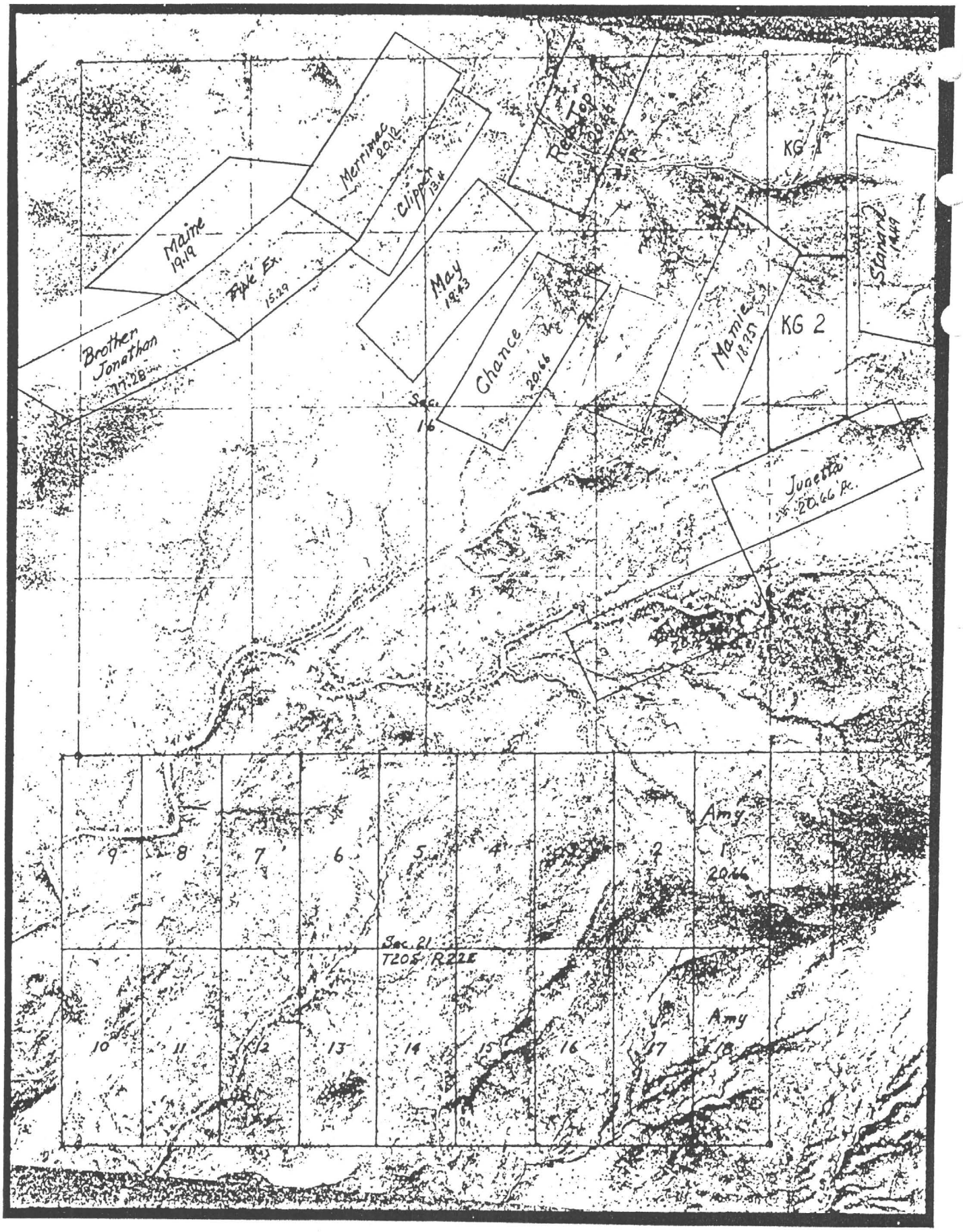


200 FT. 14 FT DEEP. 40 FT WIDE

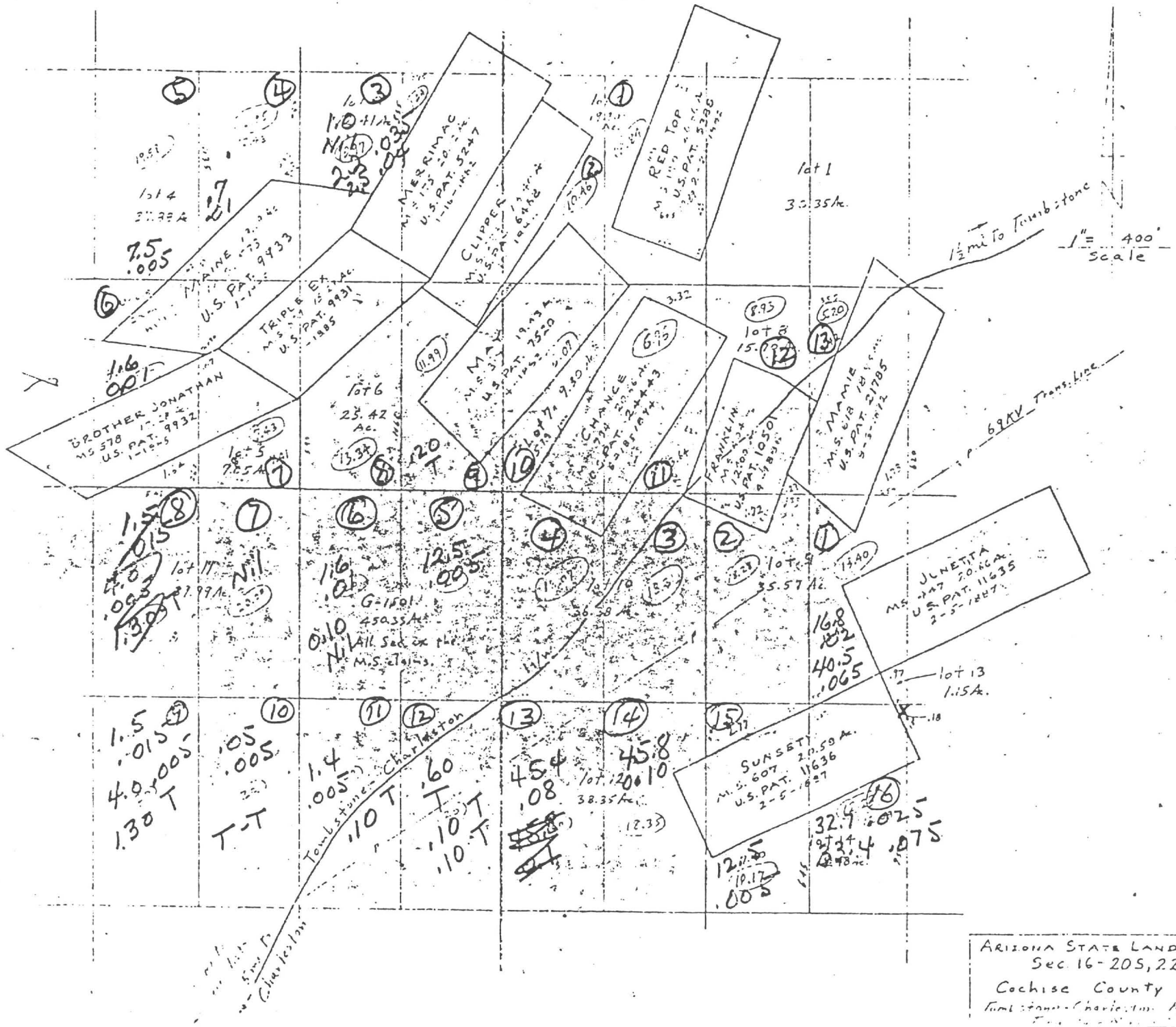
Sec. 16 - 20S, 22E





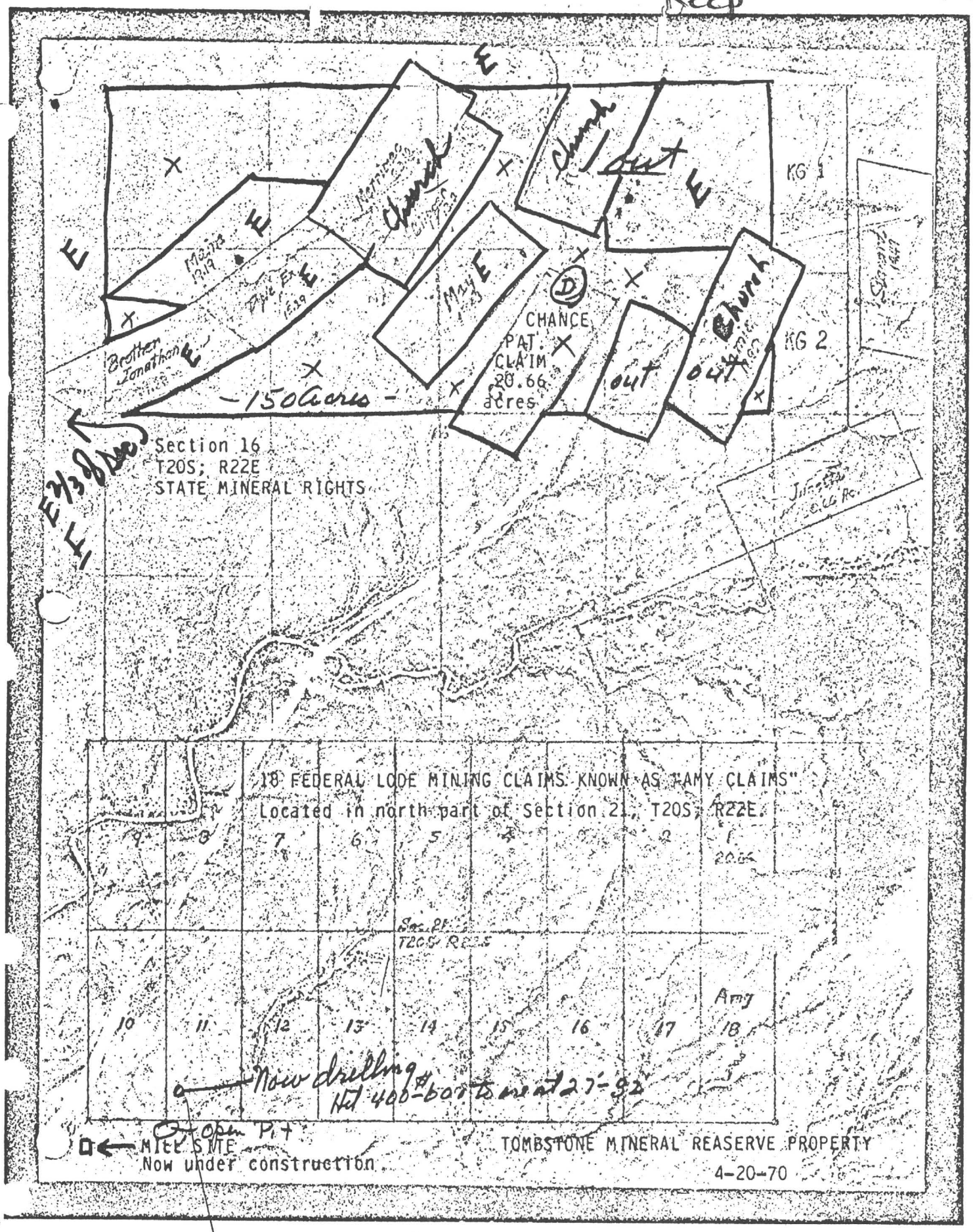

Merrimac
20.12
Clipper
13.14
Red Top
20.66
KG 1
Maine
19.19
Pike Ex.
15.29
May
18.43
Standard
14.49
Chance
20.66
Mamie
18.35
KG 2
Brother Jonathon
17.28
Sec. 16
Juanita
20.66 Ac.
Amy
1
20.66
9
8
7
6
5
4
2
Sec. 21
T20S R22E
10
11
12
13
14
15
16
17
18
Amy

Sec. 9
Sec. 16
Sec. 17
U.S.M.M.
3
NECESSITY LODE
1043
PERRENOUD
2241
FREECOINAGE MINE
1037 PAT.
CLIPPER
273 PAT.
MERRIMAC
GEN. 175 PAT.
MAY
317 PAT.
CHANCE
PAT.
RED TOP
GEN. 190 PAT.
BONANZA LODE
1044
FRANKLIN
404
MAMIE PAT.
618
JUNETTA PAT.
447
SUNSET PAT.
607
NINETY EIGHT
MAINE
579 PAT.
TRIPLE
577 PAT.
BROTHER JONATHAN
578 PAT.
LOWELL PAT.
797
THREE BROTHERS
887
TRUE BLUE GEN 183
SAN PEDRO
GEN. 255 PAT.



ARIZONA STATE LAND DEPT.
Sec. 16-20S, 22E
Cochise County
Tombstone - Charleston Hwy

Keep


Section 16
T20S; R22E
STATE MINERAL RIGHTS
E 2/3 of Sec
CHANCE
PAT.
CLAIM
20.66
acres
-150 Acres-
Church
out
KG 1
KG 2
Brother Jonathan
18 FEDERAL LODE MINING CLAIMS KNOWN AS "AMY CLAIMS"
Located in north part of Section 21, T20S, R22E.
Amy
Now drilling #
Hit 400-bar to end at 27-92
Open Pit
Mill SITE
Now under construction
TOMBSTONE MINERAL REASERVE PROPERTY
4-20-70
Hole #3

GEOLOGIST, CPG 988
1205 NO. MESILLA ST. LAS CRUCES, N. MEX. 88001
505 523-1206

Keep

September 29, 1975

Not part of Lee Report

Mr. W. W. Grace
8238 East Indian School Road
Scottsdale, Arizona, 85251

Dear Mr. Grace:

This is a report in respect to our joint effort in prospecting for silver and gold in section 16, T20S, R22E, Tombstone Mining District, Conchise County, Arizona.

Mineral samples were taken by me and under my supervision on each of the mining claims listed herein. Enclosed is a mining claim map on which the approximate sample sites are indicated.

Name of claim	Silver (oz.)	Gold (oz.)
SB-3	1.0	Nil
SB-4	0.70	0.010
SB-5	7.50	0.005
SB-6	1.60	0.010
SV-1(#1)	16.80	0.020
(#2)	40.50	0.065
SV-5(#1	12.50	0.005
SV-6	1.60	0.010
SV-7(#1)	Nil	Nil
SV-9(#1)	1.50	0.015
(#2)	4.00	0.005
(#3)	1.30	Trace
SV-10 (#1)	0.05	0.005
(#2)	Trace	Trace
SV-11 (#1)	1.4	0.005
SV-12 (#1)	0.60	Trace
SV-13	45.40	0.080
SV-14 (#1)	45.80	0.100
SV-15 (#1)	12.50	0.005
SV-16 (#1)	32.70	0.025
(#2)	33.40	0.075

The samples were submitted to the Walter Assay Company, Lordsburg, New Mexico, for silver and gold assay. The assay certificate is enclos

Keep 43

Additional samples taken from the state mining claims have been submitted for assay. These samples are as follows:

Name of claim		Silver (oz.)	Gold (oz.)
SV- 5 (#2)	Shallow shaft sandstone	Trace	Nil
12	Small shaft (red)	0.10	Trace
SV-12 (#2)	Vein in shaft	0.10	Trace
SV-6 (#1)	Vein in small shaft	0.10	Nil
21(#2)	Small shaft near highway	0.10	Trace
SB (#3)	Shaft	2.20	0.035
SB (#2)	Shaft	2.50	0.04
SV-5 (#1)	Small trench	1.70	0.025
SB-9	(Surface) NE trend	0.20	Trace

The assay certificate will be mailed directly to you by Mr. Walter.

Further prospecting and exploration, in an effort to develop a paying mine, is now intended.

Hoping the information and data obtained by our effort will be sufficient to qualify the State Mining claims for lease.

Sincerely yours,

William D. Tipton

William D. Tipton

SAMPLING

HEWLETT-RICE

SURFACE VEINS-OPEN PIT

SECTION 16 - SOUTH HALF

SV- 8		SV- 7		SV- 6		SV- 5		SV- 4		SV- 3		SV- 2		SV- 1	
AU	AG	AU	AG	AU	AG	AU	AG	AU	AG	AU	AG	AU	AG	AU	AG
				TR	0.10	TR	0.20	TR	2.70	.035	2.20	.040	2.50	.085	40.50
				.010	1.60									.020	16.80
				.065	32.5										

SV- 9		SV-10		SV-11		SV-12		SV-13		SV-14		SV-15		SV-16	
AU	AG	AU	AG	AU	AG	AU	AG	AU	AG	AU	AG	AU	AG	AU	AG
.015	1.50	.005	0.05	TR	0.10	TR	0.10	.080	45.40	.100	45.80	.005	12.50	.025	32.70
.005	4.00			.005	1.40	TR	0.10							.075	33.40
.025	1.70					TR	0.60								