



## **CONTACT INFORMATION**

Mining Records Curator  
Arizona Geological Survey  
1520 West Adams St.  
Phoenix, AZ 85007  
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[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

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Arizona Department of Mines and Mineral Resources Mining Collection

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PRINTED: 10-15-2012

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: BUCK MOUNTAIN PROSPECT

ALTERNATE NAMES:  
HOBBLE MTN. GROUP

COCONINO COUNTY MILS NUMBER: 555

LOCATION: TOWNSHIP 25 N RANGE 3 E SECTION 36 QUARTER  
LATITUDE: N 35DEG 30MIN 01SEC LONGITUDE: W 112DEG 01MIN 42SEC  
TOPO MAP NAME: HOBBLE TANK - 7.5 MIN

CURRENT STATUS: OTHER

COMMODITY:

BIBLIOGRAPHY:  
ADMMR BUCK MOUNTAIN PROSPECT FILE  
CLAIMS EXTEND INTO T24N R3E SEC 1, 2, 11, 12;  
T25N R3E SEC 23-27, 34-36; T25N R4E SECS 30  
31; T24N R4E SECS 6, 7

Arizona Department of Mines and Mineral Resources

VERBAL INFORMATION SUMMARY

May be Reproduced

1. Information from: Visit
- Address: \_\_\_\_\_
2. Mine: Buck Mountain Project 3. ADMMR Mine File AKA Williams Project  
Create Company File
4. County: Cocconino 5. District \_\_\_\_\_
6. Township 25N Range 3E Sec(s) 36 (land surrounding countryside)
7. Location: \_\_\_\_\_
8. No. of Claims - Patented \_\_\_\_\_ Unpatented 273
9. Owner (if different from above) Buck Mountain Properties Inc.
10. Address: 229 South State St, Dover, Delaware 19901
11. Operating Company: Represented by Alvin C. Johnson, Jr. Ph.D
12. Pertinent People and/or Firm: Exploration Geochemist, 1707 E. Weber, Suite B, Tempe AZ
13. Commodities: Precious Metals 55281
14. Operational Status: Raw Prospect
15. Summary of information received, comments, etc.:

On March 7, 1989 (at the invitation of John Gutierrez, AZ Zone Office, US Forest Service) I met with John Gutierrez; Robin Strathy, AZ Zone Office; Roger Marion, USFS Albuquerque; Tom Gillett, USFS Kaibab, Williams; Ken Broadhead, US Bureau of Mines, Reno Research Center; Gary Slusher, AZ Land Dept. and Mike Johnson and Dr. Alvin C. Johnson representing Buck Mountain Properties, Inc.

Samples were collected by the Forest Service in the vicinity of samples taken previously by Dr. Johnson as indicated on map. These samples were split & sent to separate labs (including BofM Reno Research Center). I took separate samples from these locations and had them assayed by the Iron King Assay office.

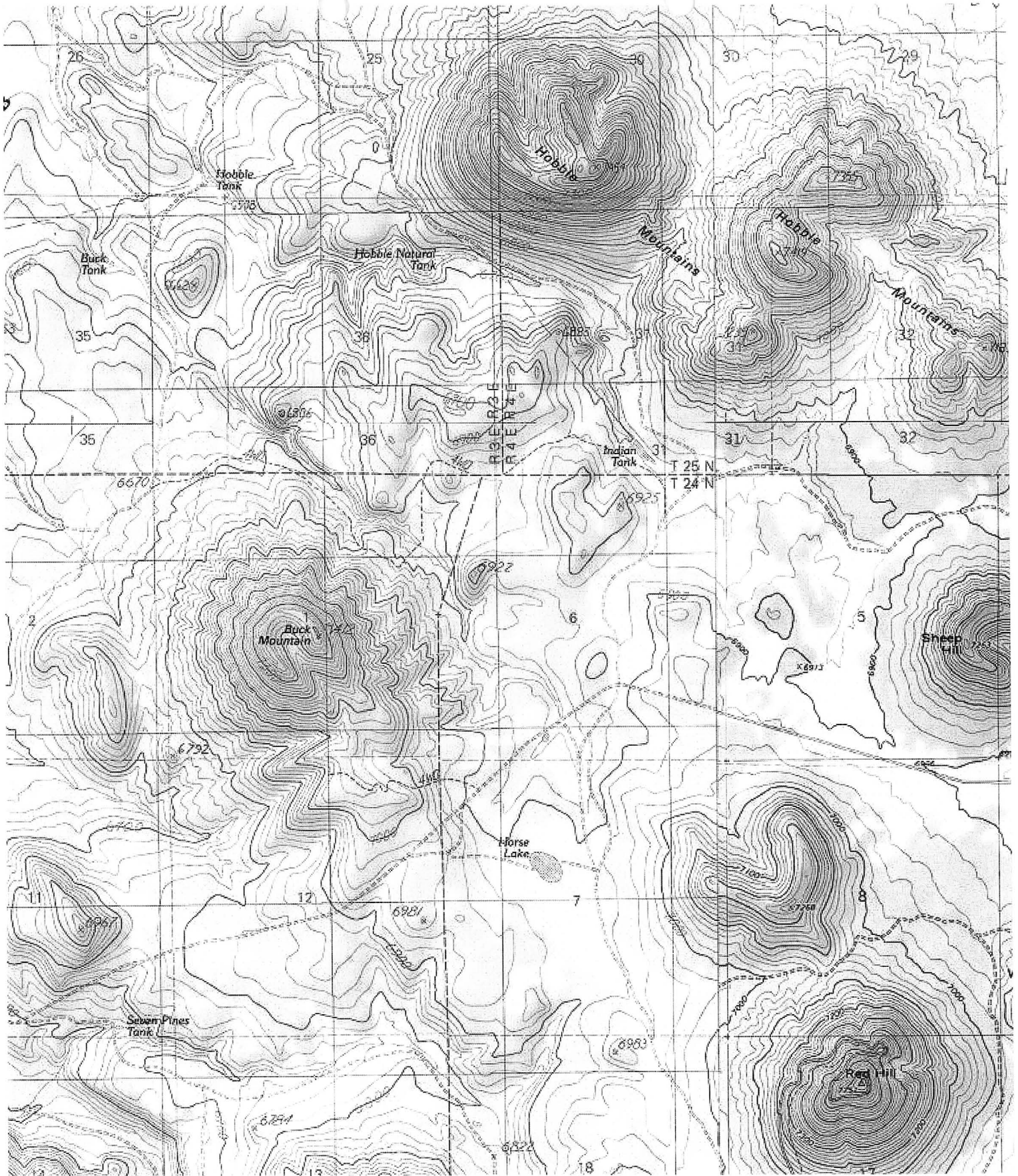
On March 8 the same group met at Dr. Johnson's lab to observe his procedure for assaying samples.

The assay results and comments on the procedure by Mr. Broadhead and Greg Springer of Boulder Clegg, Inc. are in file along with a report by Mr. Gutierrez and Dr. Johnson's procedure.

Date: 6/30/89

(Signature)

ADMMR



Buck Mountain Prospects

BULLOCK MTN PROPERTIES  
SAMPLING

Mar. 7 '89

John Gutierrez, USFS		AZ ZONE
Ken Broadhead	USBM	Reno NV
Mike Johnson	RESEARCH	TEMPE AZ
Dick Beard	AZ Dept. of Mines	Phoenix AZ
Gary Slusher	St. Land Dept.	Phoenix, AZ
Al Johnson	RESEARCH	Tempe, AZ
ROGER MARION	USFS	ALBUQ, NM.
Tom Gillett	USFS	Kaibab, Wms.
Robin Strathy	USFS	AZ ZONE, Phx

On March 7, 1989 at the invitation of John Gutierrez, AZ Zone Office of the U.S. Forest Service, I met with him; Robin Strathy of his office; Roger Marion, USFS Albuquerque, NM; Tom Gillett, USFS Kaibab, W. Arizona; Ken Broadhead, US Bureau of Mines, Reno Research Center; Gary Stisher, AZ State Land Dept.; Mike Johnson and Dr. Alvin E. Johnson of Tempe. After meeting at the Kaibab Forest Supervisors Office in W. Arizona, we proceeded to the Bell Mountain Mining Properties, Inc.

X CONDUIT

Participants	Sample Nos.
Purpose	# 1 28057
Location	# 2 28058
Discussion	# 3 28059
Assaying	# 4 28060
Assay Results	# 5 28061
Alvin E. Johnson -	# 6 28062 Ant Hill
Ken Broadhead	Ant Hill
Borcher Clegg	
Skyline	
Iron King	
Conclusions. SCAM	

Friday 13th  
Conclusions in Memo

C

Jim Bo

John Meekins

# COPPER STATE ANALYTICAL LAB, INC.



ARIZONA STATE CERTIFIED LAB NO. 0078  
710 E. EVANS • TUCSON, AZ 85713  
PH. (602) 884-5811 PH. (602) 797-0788

D.A. SHAH  
REGISTERED ASSAYER  
AZ REG. # 8888  
IN BUSINESS SINCE 1966

Mr. Alvin Johnson  
1707 East Weber Drive, Suite #8  
Tempe, Arizona 85281

Job: 19346  
Received: 03/10/89  
Reported: 03/15/89  
Sample No.: 7  
Elements: 2

Project:-William, AZ

Elements Units	Au OPT	Ag OPT
0.8mg - BM-4	0.022	1.34
1.6mg - BM-2	0.018	2.96
2.2mg - BM-1	0.024	4.60
20.6mg - BM-5	0.016	37.58
24.4mg - BM-3	0.90	46.48
46.5mg - BM-1	0.016	91.90
88.3mg - BM-6	0.012	173.32

NOTE:-Calculations are based on 15gm wt of sample. Client provided the dore from fire assay.



=====END REPORT=====



ALVIN C. JOHNSON, JR., PH.D.  
EXPLORATION GEOCHEMIST  
1707 EAST WEBER DRIVE, SUITE 8  
TEMPE, ARIZONA 85281

3/13/89

Mr. Richard Beard  
Mining Engineer  
Arizona Department of Mines and Mineral Resources  
Mineral Building  
Fairgrounds  
Phoenix, AZ 85007

Dear Dick:

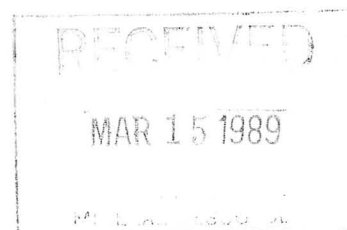
Enclosed please find a set of copies of the cupelled prills that we obtained from the fire assay demonstration that was performed for the U.S. Forestry last week. These prills were sent to Mr. D. A. Shah of Copper State Analytical for analysis and according to him the results should be ready this Wednesday.

Also enclosed is a copy of the assay procedure that was used during the above demonstration. As you will note, this fire assay method is rather standard except for the demanded use of an electric furnace and for the two sintering steps. Since the ores similar to the Williams ore typically have relatively large amounts of such elements as As, S, Sb, Hg, Tl, etc. this fire assay procedure also includes two sintering steps that we have found absolutely necessary for completion of a successful fire assay on this material.

When Mr. Shah completes his analysis of the above prills I will forward you a copy of the results.

Sincerely,

Alvin C. Johnson, Jr., Ph.D.







ALVIN C. JOHNSON, JR., PH.D.  
EXPLORATION GEOCHEMIST  
1707 EAST WEBER DRIVE, SUITE 8  
TEMPE, ARIZONA 85281

PROCEDURE FOR THE ANALYTICAL TESTING OF AU AND AG IN GEOLOGIC  
MATERIALS

Note: The following analytical procedure has been developed as a preliminary fire assay technique for certain refractory ores, specifically for basalt and related rock types. The furnaces that were used in this study were electric and the fluxes that are used in the following procedure were developed for the internal atmosphere of an electric furnace. In a relative sense, the internal atmosphere of an electric furnace might be considered as reducing and that of an air-blown, muffle-type furnace as oxidative. IT WOULD SEEM IMPORTANT, THEREFORE, THAT IN THE FOLLOWING PROCEDURE AN ELECTRIC FURNACE BE USED.

A. Matrix preparation.

1. Grind 15 grams of the sample to a fine powder ( $\pm 100$  mesh).
2. Mix thoroughly with 5 grams of  $\text{Na}_2\text{O}_2$  using a mortar and pestle.
3. Place in a clay crucible and sinter in furnace at  $\pm 850^\circ\text{C}$  for 1 hour. Rabble this sinter periodically.
4. Remove the sinter from the furnace and after cooling somewhat remove the sinter from the crucible. After the sinter has cooled to room temperature grind it to a fine powder.
5. Place the  $\text{Na}_2\text{O}_2$  sinter in a mortar and pestle and add 10 grams of litharge. Mix thoroughly and replace in the same crucible.
6. Roast in furnace at  $\pm 850^\circ\text{C}$  for 1 hour.
7. Sinter step #A-4.
8. Place the sinter in a mortar and pestle and add the following flux:
  - a. 40 gram litharge.
  - b. 30 gram sodium carbonate.
  - c. 30 gram borax.
  - d. 5 gram  $\text{SiO}_2$ .
  - e. 5 gram flour.

Mix thoroughly and replace in the same clay crucible.

9. Fuse at 1000°C for 45 to 60 minutes (or until the fusion becomes quiescent).
10. Pour in cast iron mold. Clean slag from the lead button. The lead button should weigh approximately 40 grams.

B. Scorification of lead button.

1. Place lead button in scorifying dish and add approximately 5 gram of assay lead. Cover the lead with borax and place in furnace at 1000°C. Scorify the lead until approximately one-half of the original lead remains. This step will take approximately 1.5 hours.
2. Clean the resulting lead button of slag and weigh. If the button does not weigh approximately 25 grams add sufficient assay lead to make up the difference.

C. Cupellation.

1. Prior to actual cupellation place the cupel in the furnace for  $\pm$  15 minutes in order to remove any water that may be sorbed in the cupel.
2. Place the lead button (and any makeup assay lead that might be necessary) in the cupel at a furnace temperature of 1000°C. Except for inspection, keep furnace door closed during the cupellation process.
3. Remove the cupel from the furnace and let it cool. Remove the prill and carefully clean it. Weigh and record.

The prill resulting from the above fire assay procedure may be analyzed for Au and Ag by normal parting and weighing procedures or by atomic absorption.

U.S. Forest Service Sample BM-1  
Soil  
Dore wt for 15 gm sample = 46.5mg

Williams, Az. Project

U.S. Forest Service Sample BM-1  
Basalt  
Dore wt for 15 gm sample = 2.2mg

Williams, Az. Project

U.S. Forest Service Sample BM-2  
Basalt  
Dore wt for 15 gm sample = 1.6 gm mg

Williams, Az. Project

RECEIVED

MAR 15 1989

DEPT. OF MINES &  
MINERAL RESOURCES

U.S. Forest Service Sample BM-3  
Basalt  
Dore wt for 15 gm sample = 24.4 mg

Williams, Az. Project

---

U.S. Forest Service Sample BM-4  
Basalt + soil  
Dore wt for 15 gm sample = 0.8 mg

Williams, Az. Project

---

"lost"

U.S. Forest Service Sample BM-5  
Soil  
Dore wt for 15 gm sample = 0.4 mg

Williams, Az. Project

U.S. Forest Service Sample BM-6  
Basalt  
Dore wt for 15 gm sample = 88.3 mg

Williams, Az. Project

U.S. Forest Service Sample BM-5  
Basalt  
Dore wt for 15 gm sample = 20.6 mg

Williams, Az. Project



ALVIN C. JOHNSON, JR., PH.D.  
EXPLORATION GEOCHEMIST  
1707 EAST WEBER DRIVE, SUITE 8  
TEMPE, ARIZONA 85281

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  - c. 30 gram borax.
  - d. 5 gram  $\text{SiO}_2$ .
  - e. 5 gram flour.

Mix thoroughly and replace in the same clay crucible.

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Buck



# United States Department of the Interior

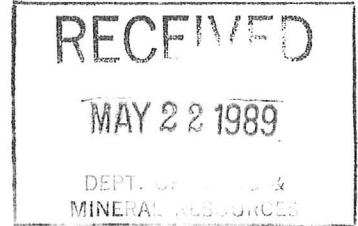
## BUREAU OF MINES

RENO RESEARCH CENTER

1605 EVANS AVENUE  
RENO, NEVADA 89512-2295

May 18, 1989

John Gutierrez  
U.S. Forest Service  
2324 East McDowell Road  
Phoenix, Arizona 85006-2497



Dear John,

Enclosed are the analytical reports on the rock and soil samples taken March 7, 1989, at the so called Buck Mountain Mining Project. The analyses are divided into two separate types, one to generally categorize and identify the material, and the other to quantify the precious metals content. The categorization tests as shown in exhibits 5, 6, and 7, show the volcanic cinders and soil to be primarily quartz, pyroxene and feldspars. There were no concentrations of elements present which would indicate that the samples would present any particular problems to standard fire assay techniques.

Exhibits 1 and 2 are fire assay results on my original splits for gold and silver. Exhibit 2 also shows the results following the procedure set forth by Alvin Johnson. A copy of this procedure is also enclosed as exhibit 8. Exhibit 3 shows regular fire assay results on your portions of material which I had re-requested from you and which had been forwarded to me by Bondar-Clegg. Exhibit 4 shows the results from a combined fire assay/ICP analysis for the platinum group metals.

Comments on exhibit 8: Dr. Johnson's assay procedure.

**General:**

The procedure is unduly long, time consuming and completely unnecessary.

**Specific:**

Steps 2 through 4: There is no reason for adding and sintering with sodium peroxide. There are no minerals present, or carbon or sulfur, which would require such an oxidizing agent.

Steps 5 through 7: No reason for the addition and sintering with PbO (litharge). I can not see the rational for such a step, particularly after the preceding peroxide fusion.



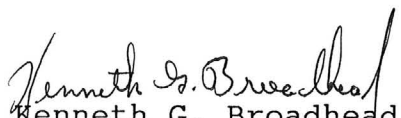
J. Gutierrez

Steps 8 through 13. Scorification. There is no reason for the use of the excess flour to produce a large lead button which must be later scorified. Scorification of lead buttons is used primarily to either reduce the size of the lead buttons or to remove impurities such as copper and nickel from the buttons so that they will cupel properly. The elements however are not present in this particular material. Therefore, the whole exercise of excess flour and scorification serves no useful purpose. However, it may be detrimental to the procedure since the use of excess flour creates a lead deficient slag which may cause problems.

C. Cupellation 2. The door cannot be completely closed so as to exclude air since the air or actually oxygen is a necessary ingredient in the process. Without oxygen the molten lead will not form litharge (PbO) which will be adsorbed into the cupel--the purpose of the process. The cupellation temperature of 1,000° C is excessive and will lead to silver losses.

Generally speaking values obtained by using Dr. Johnson's procedure showed no difference from those obtained from normal fire assay techniques. The results of our work showed no large amounts of either gold or silver. Sample BM-4, however, did show low but anomalous amounts of gold.

Sincerely,

  
Kenneth G. Broadhead  
Research Supervisor

Enclosures

cc: Dr. Al Johnson  
1707 East Weber Drive Suite 8  
Tempe, Arizona 85281

Dick Beard  
Department of Mines and Mineral Resources  
Mineral Building-State Fair Grounds  
Phoenix, Arizona 85007

SAMPLE ANALYSIS REPORT

Samples submitted by

BROADHEAD  
6Z-171

Date of Request 3 / 13 / 89  
Date Received 3 / 15 / 89  
by Fire Assay 3 / 15 / 89  
Month Day Year

Sample#	Au	Ag	Sample#	Au	Ag	Sample#	Au	Ag
BM-1	TR	0.1		.	.		.	.
-2	TR	—		.	.		.	.
-3	0.04	0.2		.	.		.	.
-4	0.02	0.1		.	.		.	.
-5	0.01	—		.	.		.	.
-6	TR	—		.	.		.	.
-7	TR	—	"Sholow Rock"	.	.		.	.
-8	TR	—	Ant hill material	.	.		.	.
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Remarks: REGULAR FIRE ASSAY Method.

Reported as: A. g/l B. mg/ml C. % D. ppm E. oz/ton  
 element oxide unless otherwise noted

Analyst F. Godsey Date Completed 3 / 16 / 89  
 Month Date Year

JPB

SAMPLE ANALYSIS REPORT

②

Samples submitted by BROADHEAD

Date of Request 3/13/89  
 Date Received 3/13/89  
 by Fire Assay 3/13/89  
 Month Day Year

AK Johnsons  
New Procedure

GZ-171

Reg. F.A. METHOD

Sample#	Au	Ag	Sample#	Au	Ag	Sample#	Au	Ag
GZ-171 #1	—	0.1		.	.	GZ-171 #1	—	0.1
2	TR	0.1		.	.	2	TR	0.1
3	0.04	0.4		.	.	3	0.04	0.2
4	TR	0.2		.	.	4	TR	0.1
5	TR	0.4		.	.	5	TR	0.3
6	TR	0.4		.	.	6	TR	0.3
* All Sample material for both methods rolled and split. All Sample wt's 1/2 A.T.								
After ROASTING. Step A. 6 material (Sample pulp) hardened.								
Pb. button. wt's. after.								
Step 10A.			B2.					
. #1	41.01	g's	#1	19.94	g's			
. 2	41.83		2	16.77				
. 3	41.98		3	19.09				
. 4	42.50		4	21.36				
. 5	42.22		5	18.66				
. 6	40.75		6	16.62				
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Remarks: Regular fire assay compared to AK Johnson's procedure

Reported as: A. g/l B. mg/ml C. % D. ppm E. oz/ton  
 element unless otherwise noted  
 oxide

Analyst F. Godsey Date Completed 3/24/89  
 Month Date Year

7/100

SAMPLE ANALYSIS REPORT

3

Samples submitted by BROADHEAD  
GZ-172

Date of Request 4/6/89  
Date Received 4/6/89  
by Fire Assay Month Day Year

Sample#	Au	Ag	Sample#	Au	Ag	Sample#	Au	Ag	
BM-1 +80	—	0.2	Basalt	.	.		.	.	
BM-1 -80	—	—	"soil"	.	.		.	.	
-2	—	—		.	.		.	.	
-3	0.03	0.2		.	.		.	.	
-4	—	—		.	.		.	.	
-5+80	—	0.1	Basalt	.	.		.	.	
-5-80	—	—	"soil"	.	.		.	.	
-6	—	—		.	.		.	.	
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Samples received from Bandar Clegg 4/6/89								.	.
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Remarks: Sample pulps rolled and split. -Regular assay

Reported as: A. g/l B. mg/ml C. % D. ppm E. oz/ton  
element unless otherwise noted  
oxide

Analyst F. Godsey Date Completed 4/7/89  
Month Date Year

Handwritten initials/signature

RENO RESEARCH CENTER - ICP LABORATORY REPORT

Submitted by: Broadhead Date Completed: 3/24/89

Date Submitted: 3/13/89 Analyst: W. Bay

62-171 Reported as: Oz/Ton (unless otherwise stated)

SAMPLE NUMBER

Element:	Pt	Pd	Rh	Au	Ag	Ir	Os	Ru	Co	Ni	Mo	W
BM-1	<.002	<.002	<.002									
2	"	"	"									
3	"	"	"									
4	"	"	"									
5	"	"	"									
6	"	"	"									
7	"	"	"									
8	"	"	"									

1/2 Ft. T. samples

SAMPLE ANALYSIS REPORT

X-ray Diffraction

Samples submitted by: Broadhead 62171 Date: 3/13/89

Sample No.	Qtz	Pyx	Fls	Mi	Amp	Ol	Hem	Und	Mag
Bm 1	M	m	m-t	m-t	Prob-t		pass-t	t	
2	M	M-m	m					t	
3	t	M-m	M					t	
4	m	t	M					t	
5	M	m	m	Pass-t	Pass-t		Prob-t	t	
6	M	m	m	Pass-t			Pass-t	t	
7		m	M			m			m
8	M	t	m-t	Pass-t			Pass-t		

X-ray Fluorescence

Semi quant. est. of elements Z > 12

	Al	Si	K	Ca	Ti	Cr	Mn	Fe	Sr	Zr	Ba
Bm 1	9.	32.	2.	3.	.6	.03	.1	5.	.07	.04	.06
2	9.	29.	2.	5.	.7	.04	.1	6.	.1	.03	.07
3	10.	30.	3.	4.	.6	.02	.09	5.	.09	.03	.07
4	12.	27.	.9	6.	1.	.03	.1	10.	.1	.02	.06
5	10.	28.	2.	6.	.8	.03	.1	7.	.08	.03	.06
6	9.	31.	2.	4.	.7	.03	.1	5.	.08	.03	.05
7	10.	23.	1.	7.	2.	.07	.1	12.	.1	.03	.04
8	9.	31.	2.	3.	.7	.04	.2	5.	.04	.05	.05

Qtz = Quartz      Amp = Amphibole      Und = unident  
 Pyx = Pyroxene      Hem = Hematite  
 Fls = Feldspar      Mag = Magnetite  
 Mi = Mica      Ol = Olivine

Remarks:

Reported as A. g/l      B. µg/ml      D. ppm      element unless otherwise noted.  
 C. %      E. oz/ton      oxide

M = major      prob = probable  
 m = minor  
 t = trace      poss = possible

Analyst: KB Date: 3/23/89

KB

RENO RESEARCH CENTER

INDUCTIVELY COUPLED PLASMA ANALYSIS

SUBMITTED BY: BROADHEAD

DATE SUBMITTED: 3/13/89

SAMPLE SET NO.: GZ-171 ANALYST: M.WICKES DATE COMPLETED: 3/20/89

SAMPLE	AG	AL	AS	BA	BE	BI	CA
BM-1	26	6.8% *	92	0.18%	< 0.2	210	4.3%
-2	30	7.6% *	120	0.22%	< 0.2	210	6.0%
-3	37	8.1% *	130	0.23%	< 0.2	230	5.5%
-4	* 13	9.5% *	73	0.10%	< 0.2 *	120	6.0%
-5	* 24	7.6% *	120	0.18%	< 0.2	190	6.0%
-6	* 20	6.7% *	91	0.20%	< 0.2	170	5.1%
-7	* 16	8.0% *	63	720	< 0.2 *	130	6.8%
-8	* 17	6.3% *	63	0.14%	< 0.2 *	130	3.2%

SAMPLE	CD	CO	CR	CU	FE	K	LA
BM-1	8.7	39	280	59	4.2%	2.5%	100
-2	9.0	42	350	67	4.7%	2.7%	120
-3	8.0	37	250	78	4.5%	3.6%	120
-4	6.5	48	75	41	7.7%	0.75%	53
-5	9.1	43	220	68	5.6%	1.9%	100
-6	6.5	38	320	53	4.5%	2.2%	95
-7	8.2	64	350	89	9.2%	1.2%	58
-8	6.0	46	320	44	4.3%	2.2%	76

SAMPLE	LI	MG	MN	MO	NA	NB	NI
BM-1	24	2.2%	0.11% *	23	2.2%	58	97
-2	23	3.2%	0.10%	27	2.9%	73	110
-3	25	2.6%	970	28	3.7%	66	92
-4	* 14	3.5%	0.13% *	14	1.9%	30	51
-5	33	2.7%	0.11% *	19	1.7%	57	93
-6	21	3.0%	0.10% *	18	2.1%	51	100
-7	* 6.7	6.4%	0.14% *	18	2.8%	49	260
-8	31	2.1%	0.19% *	15	1.4%	37	95

RESULTS ARE REPORTED IN PPM UNLESS OTHERWISE INDICATED  
(UG/ML=MICROGRAMS/ML; G-GRAMS/L)

NOTE: < INDICATES THAT THE RESULT IS LESS THAN THE GIVEN VALUE  
\* INDICATES THAT THE RESULT IS NEAR THE DETECTION LIMIT  
AND MUST BE INTERPRETED ACCORDINGLY

*MWS*

(6b)

RENO RESEARCH CENTER

INDUCTIVELY COUPLED PLASMA ANALYSIS

SUBMITTED BY: BROADHEAD

DATE SUBMITTED: 3/13/89

SAMPLE SET NO.: GZ-171 ANALYST: M. WICKES

DATE COMPLETED: 3/20/89

SAMPLE	P	PB	SB	SN	SR	TI	V
BM-1	0.17%	130 *	61	44	480	0.44%	160
-2	0.25%	140 *	73	61	650	0.53%	180
-3	0.27%	130 <	60	58	620	0.49%	170
-4	0.10%	73 <	60	24	660	0.99%	260
-5	0.24%	130 *	65	40	560	0.64%	180
-6	0.26%	92 <	60	27	520	0.51%	170
-7	0.24%	79 <	60	21	640	1.3%	270
-8	0.13%	90 <	60	18	290	0.48%	150

SAMPLE	W	Y	ZN	ZR
BM-1	* 120	26	270	140
-2	* 140	25	260	190
-3	150	26	380	180
-4	* 120	26	180	120
-5	* 150	28	280	140
-6	* 110	27	170	140
-7	* 120	27	190	200
-8	* 110	26	120	110

RESULTS ARE REPORTED IN PPM UNLESS OTHERWISE INDICATED  
(UG/ML=MICROGRAMS/ML; G=GRAMS/L)

NOTE: < INDICATES THAT THE RESULT IS LESS THAN THE GIVEN VALUE  
\* INDICATES THAT THE RESULT IS NEAR THE DETECTION LIMIT  
AND MUST BE INTERPRETED ACCORDINGLY

*Handwritten mark*



CARBON SULFUR ANALYSIS REPORT

Samples submitted by BROADHEAD Request Date 3/13/89

Type of Sample GZ-171

14:29 03/16/89

ID CODE	WEIGHT	CARBON%	SULFUR%	
C171000001	0.0308	0.6951	0.0218	
C171000002	0.0308	0.7008	0.0277	
C171000003	0.0301	0.1770	0.0294	
C171000004	0.0304	0.7789	0.0183	
C171000005	0.0308	1.138	0.0384	
C171000006	0.0301	0.7652	0.0327	
C171000007	0.0300	0.1055	0.0213	
C171000008	0.0301	1.176	0.0197	
C STD { C000000004	0.0301	0.9467	0.0227	} 0.9500 ± 0.05%
C000000003	0.0301	0.9533	0.0246	
S STD { C000000002	0.0303	0.2974	2.86	} 2.8 ± 1% RSD
C000000001	0.0300	0.2906	2.74	

Remarks TOTAL Carbon-Sulfur

Analyst F. Godsey Date Completed 3/16/89

208B



ALVIN C. JOHNSON, JR., PH.D.  
EXPLORATION GEOCHEMIST  
1707 EAST WEBER DRIVE, SUITE 8  
TEMPE, ARIZONA 85281

PROCEDURE FOR THE ANALYTICAL TESTING OF AU AND AG IN GEOLOGIC MATERIALS

Note: The following analytical procedure has been developed as a preliminary fire assay technique for certain refractory ores, specifically for basalt and related rock types. The furnaces that were used in this study were electric and the fluxes that are used in the following procedure were developed for the internal atmosphere of an electric furnace. In a relative sense, the internal atmosphere of an electric furnace might be considered as reducing and that of an air-blown, muffle-type furnace as oxidative. IT WOULD SEEM IMPORTANT, THEREFORE, THAT IN THE FOLLOWING PROCEDURE AN ELECTRIC FURNACE BE USED.

A. Matrix preparation.

1. Grind 15 grams of the sample to a fine powder ( $\pm 100$  mesh).
2. Mix thoroughly with 5 grams of  $\text{Na}_2\text{O}_2$  using a mortar and pestle.
3. Place in a clay crucible and sinter in furnace at  $\pm 850^\circ\text{C}$  for 1 hour. Rabble this sinter periodically.
4. Remove the sinter from the furnace and after cooling somewhat remove the sinter from the crucible. After the sinter has cooled to room temperature grind it to a fine powder.
5. Place the  $\text{Na}_2\text{O}_2$  sinter in a mortar and pestle and add 10 grams of litharge. Mix thoroughly and replace in the same crucible.
6. Roast in furnace at  $\pm 850^\circ\text{C}$  for 1 hour.
7. Sinter step #A-4.
8. Place the sinter in a mortar and pestle and add the following flux:
  - a. 40 gram litharge.
  - b. 30 gram sodium carbonate.
  - c. 30 gram borax.
  - d. 5 gram  $\text{SiO}_2$ .
  - e. 5 gram flour.

Mix thoroughly and replace in the same clay crucible.

9. Fuse at 1000°C for 45 to 60 minutes (or until the fusion becomes quiescent).
10. Pour in cast iron mold. Clean slag from the lead button. The lead button should weigh approximately 40 grams.

B. Scorification of lead button.

1. Place lead button in scorifying dish and add approximately 5 gram of assay lead. Cover the lead with borax and place in furnace at 1000°C. Scorify the lead until approximately one-half of the original lead remains. This step will take approximately 1.5 hours.
2. Clean the resulting lead button of slag and weigh. If the button does not weigh approximately 25 grams add sufficient assay lead to make up the difference.

C. Cupellation.

1. Prior to actual cupellation place the cupel in the furnace for  $\pm$  15 minutes in order to remove any water that may be sorbed in the cupel.
2. Place the lead button (and any makeup assay lead that might be necessary) in the cupel at a furnace temperature of 1000°C. Except for inspection, keep furnace door closed during the cupellation process.
3. Remove the cupel from the furnace and let it cool. Remove the prill and carefully clean it. Weigh and record.

The prill resulting from the above fire assay procedure may be analyzed for Au and Ag by normal parting and weighing procedures or by atomic absorption.



United States  
Department of  
Agriculture

Forest  
Service

Arizona  
Zone  
Office

2324 E. McDowell Road  
Phoenix, AZ 85006  
602 225-5261

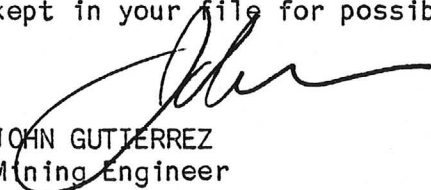
Reply To:2810

Date: June 28, 1989

Subject: Buck Mtn Sampling Map

To: T.Gillett, Kaibab NF

Attached you will find a map of the sample locations for the assaying work conducted recently near Hobble and Buck Mountain. Also included is Al Johnson's previous sample locations & results. This information should be kept in your file for possible future reference.

  
JOHN GUTIERREZ  
Mining Engineer

cc: R.Marion, Regional Office  
K.Broadhead, NV Bureau of Mines  
— D.Beard, AZ Department of Mines & Mineral Resources  
Gary Slusher, AZ Department of State Land & Mineral Resources

RECEIVED

JUN 29 1989

DEPT. OF MINES &  
MINERAL RESOURCES



Caring for the Land and Serving People

FS-6200-28(7-82)

# PLAT OF CLAIMS

OF  
**BUCK-HOBBLE GROUP**  
**HOBBLE MTN. GROUP**  
**BUCK MTN. GROUP**

- PORTIONS OF SECTIONS 1, 2, 11 & 12; T24N, R3E
- PORTIONS OF SECTIONS 6 & 7; T24N, R4E
- PORTIONS OF SECTIONS 23, 24, 25, 26, 27, 34, 35, & 36; T25N, R3E
- PORTIONS OF SECTIONS 30 & 31; T25N, R4E
- ALL OF THE GILA & SALT RIVER BASE & MERIDIAN COCONINO COUNTY, ARIZONA

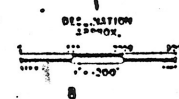
### SURVEYOR'S NOTES

1. ALL CLAIMS STAKED AT NOMINAL DIMENSION OF 395' X 1450'. CORNERS OF THE COMBINED BLOCK ARE SURVEYED BY CLASSICAL METHODS THROUGH THE USE OF THE THEODOLITE AND E.D.M.
2. DISCOVERY LINES RUN IN AS CONNECTED FROM MAGNETIC NORTH BY AN AVERAGE EAST DECLINATION OF 15° 30' ALONG A MAGNETIC BEARING OF N. 08° W.
3. EACH CLAIM CORNER POST IS INDIVIDUALLY MARKED WITH AN ALUMINUM TAG REFERENCED TO THE ALPHA-NUMERIC GRID. I.E. THE TAG MARKED B-5 IDENTIFIES THE CORNER COMMON TO BUCK-HOBBLE GROUP CLAIM 05 & 4, 9, 35 & 34.
4. ALL CLAIMS LOCATED WITHIN BUREAU OF LAND MANAGEMENT PINACATE MOUNTAIN DISTRICT, HAIKAB NATIONAL FOREST.
5. BASE MAP IS A PHOTOGRAPHIC REPRODUCTION OF U.S.G.S QUADRANGLES: WALLE, EBERT MTH., WILLIAMS, MORITZ RIDGE.

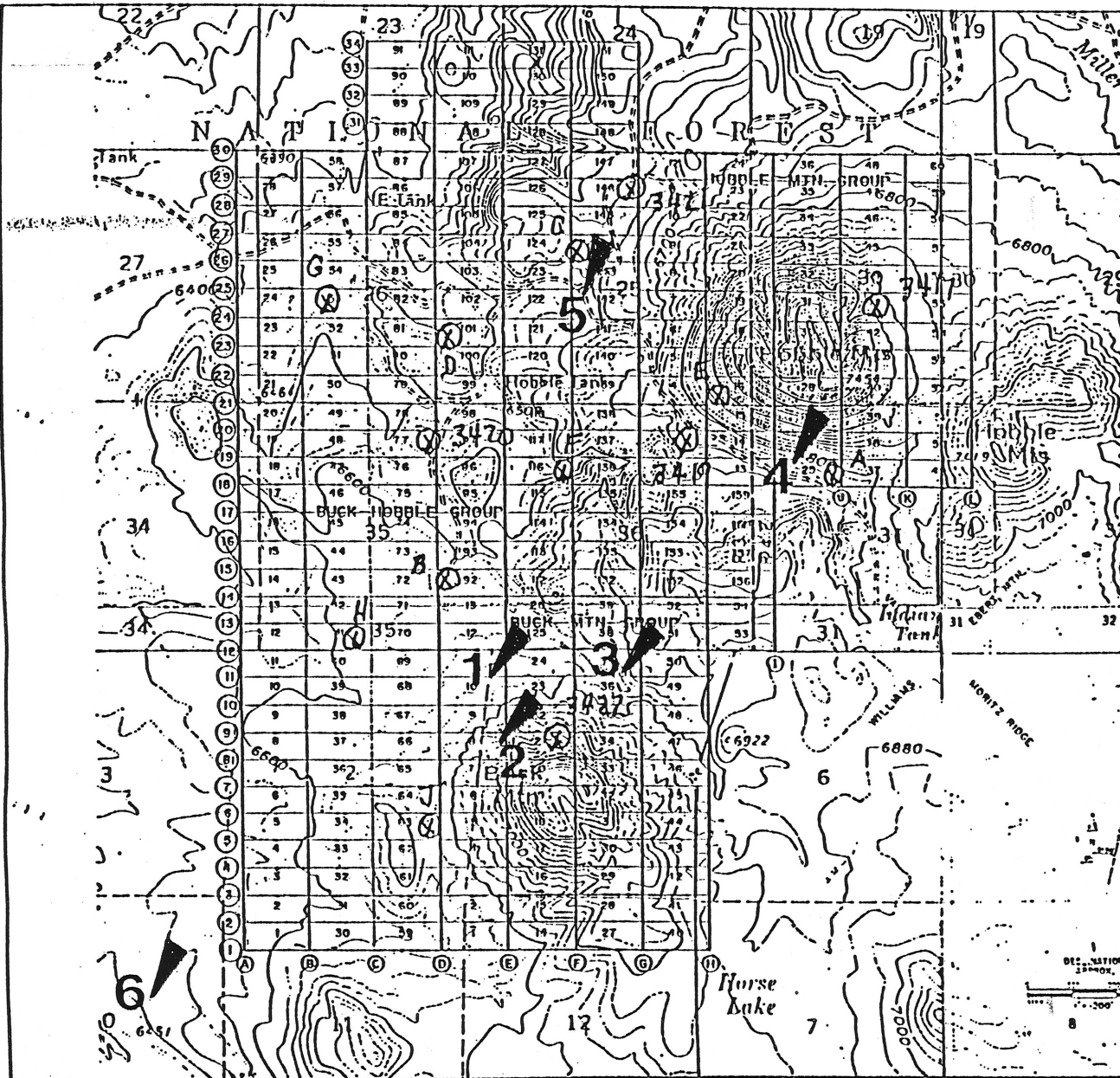
### CERTIFICATION:

I, JEFFREY L. JOHNSON, REGISTERED LAND SURVEYOR #1228, STATE OF ARIZONA, HEREBY CERTIFY TO BUCK MOUNTAIN PROPERTIES, INC. THAT THE SURVEY SHOWN HEREON WAS CONDUCTED UNDER MY SUPERVISION DURING THE MONTHS OF DECEMBER 1990 & JANUARY 1991, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

*Jeffrey L. Johnson*  
 SURVEYOR, A.C.S. #1228



<b>Andrew Atherton Inc.</b> Surveying and Mapping 229 South State St. Dover, Delaware 19901		<b>BUCK MOUNTAIN PROPERTIES, INC.</b> 229 SOUTH STATE ST. DOVER, DELAWARE 19901	
Station of B-6 DATE: 11-19-90 SHEET: 45-25	Station of B-5 DATE: 11-19-90 SHEET: 45-25	Station of B-6 DATE: 11-19-90 SHEET: 45-25	Station of B-5 DATE: 11-19-90 SHEET: 45-25



At Johnson's samples, (X) 3427  
 Locations are approximate

FS  
 3

Williams Project

Assay Summary Sheet (Fire Assay - 1/2 Assay Ton)

Sample ID	Dore Wt (mg)	Au (mg)	Ag (Troy oz/ton)	Au (Troy oz/ton)
A	6.2	0.1	12.2	0.2
	8.9	0.3	17.2	0.6
	18.2	0.2	32.4	0.4
B	9.8	0.4	18.8	0.8
	11.3	0.1	22.4	0.2
	8.7	0.2	17.0	0.4
C	22.2	0.4	43.6	0.8
	10.9	0.1	21.6	0.2
	16.1	0.1	32.0	0.2
D	10.2	0.2	20.0	0.4
	26.7	0.2	53.0	0.4
	25.4	0.1	50.6	0.2
E	18.1	0.2	35.8	0.4
	12.6	0.2	24.8	0.4
	16.0	0.1	31.8	0.2
F	20.9	0.3	41.2	0.6
	18.1	0.2	35.8	0.4
	15.4	0.2	30.4	0.4
G	8.2	0.1	16.2	0.2
	9.5	0.2	18.6	0.4
	11.4	0.1	22.6	0.2
H	24.7	0.2	49.0	0.4
	21.9	0.2	43.4	0.4
	18.0	0.2	35.6	0.4
J	15.2	0.1	30.2	0.2
	11.9	0.3	23.2	0.6
	12.0	0.4	23.2	0.8
3417	22.2	0.2	44.0	0.4
	25.2	0.1	50.2	0.2
	26.1	0.2	51.8	0.4
3419	*11.075	0.136	21.778	0.272
	9.2	0.1	18.2	0.2
	20.1	0.2	39.8	0.4
	11.8	0.1	23.4	0.2

(Co<sup>1</sup>)

Sample ID	Dore Wt (mg)	Au (mg)	A <sub>g</sub> (Troy oz/ton)	Au (Troy oz/ton)
3417	* 6.62	0.264	12,712	0.528
	* 6.38	0.082	12,596	0.164
	* 17.31	0.515	33,59	1.030
3420	10.8	0.2	21,20	0.4
	11.1	0.2	21,80	0.4
	14.0	0.3	27.40	0.6
3422	8.8	0.2	17.2	0.4
	12.5	0.1	24.8	0.2
	11.8	0.1	23.4	0.2

\* With these samples only the fire assay pills were sent to D.A. Shah of Copper State Analytical in Tucson, AZ. for analysis by atomic absorption. The pills were dissolved, the solution analyzed for Au, and the Ag determined by subtraction. Prior to analysis, Mr. Shah reweighed the pills on his balance, which in the <0.1 mg range is more accurate than ours.



STATE OF ARIZONA

DEPARTMENT OF MINES AND MINERAL RESOURCES

Mineral Building • State Fairgrounds • Phoenix, Arizona 85007

(602) 255-3791

March 22, 1989

Mr. Ken Broadhead  
Research Supervisor  
U S Bureau of Mines  
Reno Research Center  
1605 Evans Avenue  
Reno, Nevada 89512-2295

Dear Ken,

Just a quick note to convey a copy of the assay report on the samples that I took March 8, 1989 at the Buck Mountain Mining Project. Each one was taken near the respective sample taken by the Forest Service and are listed in the order in which they were taken. The split I gave you is from the last one (No. 28062). This was the ant hill.

I don't mean to second guess my own assayer but I will retain the rejects for possible reassay.

Hope your weather has been as nice as ours.

Sincerely,

Richard R. Beard  
Mining Engineer



# PLAT OF CLAIMS

OF  
 BUCK-HOBBLE GROUP  
 HOBBLE MTN. GROUP  
 BUCK MTN. GROUP

- PORTIONS OF SECTIONS 1, 2, 11 & 12; T24N, R3E
- PORTIONS OF SECTIONS 6 & 7; T24N, R4E
- PORTIONS OF SECTIONS 23, 24, 25, 26, 27, 34, 35, & 36; T25N, R3E
- PORTIONS OF SECTIONS 30 & 31; T25N, R4E
- ALL OF THE GILA & SALT RIVER BASE & MERIDIAN COCONINO COUNTY, ARIZONA

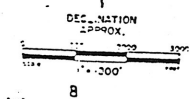
### SURVEYOR'S NOTES

1. ALL CLAIMS STAKED AT NOMINAL DIMENSION OF 595' X 1450'. CORNERS OF THE COMBINED BLOCK ARE SURVEYED BY CLASSICAL METHODS THROUGH THE USE OF THEODOLITE AND E.D.M.
2. DISCOVERY LINES RUN IN AS CORRECTED FROM MAGNETIC NORTH BY AN AVERAGE EAST DECLINATION OF 13° 30' ALONG A MAGNETIC BEARING OF N.08° W.
3. EACH CLAIM CORNER POST IS INDIVIDUALLY MARKED WITH AN ALUMINUM TAG REFERENCED TO THE ALPHA-NUMERIC GRID. I.E. THE TAG MARKED B-5 IDENTIFIES THE CORNER COMMON TO BUCK-HOBBLE GROUP CLAIM #5 4, 5, 33 & 34.
4. ALL CLAIMS LOCATED WITHIN BUREAU OF LAND MANAGEMENT'S PHOENIX MINING DISTRICT, KAIBAB NATIONAL FOREST.
5. BASE MAP IS A PHOTOGRAPHIC REPRODUCTION OF U.S.G.S QUADRANGLES: VALLE, EBERT MTN., WILLIAMS, MORITZ RIDGE

### CERTIFICATION:

I, JEFFREY L. ANDREWS, REGISTERED LAND SURVEYOR #12213, STATE OF ARIZONA, HEREBY CERTIFY TO BUCK MOUNTAIN PROPERTIES, INC. THAT THE SURVEY SHOWN HEREON WAS CONDUCTED UNDER MY SUPERVISION DURING THE MONTHS OF DECEMBER 1988 & JANUARY 1989, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

*Jeffrey L. Andrews*  
 JEFFREY L. ANDREWS, R.L.S. #12213



Andrews Atherton Inc. Surveying and Land Engineering Survey & Engineering Professionals Suite 1000, Phoenix, AZ 85004 Phone: 602-254-1111	PROJECT FOR: BUCK MOUNTAIN PROPERTIES, INC. 229 SOUTH STATE ST. DOVER, DELAWARE 19901
	DRAWN BY: D.A.K. CHECKED BY: J.L.A. SCALE: 1" = 1000' DATE: 01/1989

Locations are approximate



ALVIN C. JOHNSON, JR., PH.D.  
EXPLORATION GEOCHEMIST  
1707 EAST WEBER DRIVE, SUITE 8  
TEMPE, ARIZONA 85281

PROCEDURE FOR THE ANALYTICAL TESTING OF AU AND AG IN GEOLOGIC  
MATERIALS

Note: The following analytical procedure has been developed as a preliminary fire assay technique for certain refractory ores, specifically for basalt and related rock types. The furnaces that were used in this study were electric and the fluxes that are used in the following procedure were developed for the internal atmosphere of an electric furnace. In a relative sense, the internal atmosphere of an electric furnace might be considered as reducing and that of an air-blown, muffle-type furnace as oxidative. IT WOULD SEEM IMPORTANT, THEREFORE, THAT IN THE FOLLOWING PROCEDURE AN ELECTRIC FURNACE BE USED.

A. Matrix preparation.

1. Grind 15 grams of the sample to a fine powder ( $\pm 100$  mesh).
2. Mix thoroughly with 5 grams of  $\text{Na}_2\text{O}_2$  using a mortar and pestle.
3. Place in a clay crucible and sinter in furnace at  $\pm 850^\circ\text{C}$  for 1 hour. Rabble this sinter periodically.
4. Remove the sinter from the furnace and after cooling somewhat remove the sinter from the crucible. After the sinter has cooled to room temperature grind it to a fine powder.
5. Place the  $\text{Na}_2\text{O}_2$  sinter in a mortar and pestle and add 10 grams of litharge. Mix thoroughly and replace in the same crucible.
6. Roast in furnace at  $\pm 850^\circ\text{C}$  for 1 hour.
7. Sinter step #A-4.
8. Place the sinter in a mortar and pestle and add the following flux:
  - a. 40 gram litharge.
  - b. 30 gram sodium carbonate.
  - c. 30 gram borax.
  - d. 5 gram  $\text{SiO}_2$ .
  - e. 5 gram flour.

Mix thoroughly and replace in the same clay crucible.

9. Fuse at 1000°C for 45 to 60 minutes (or until the fusion becomes quiescent).
  10. Pour in cast iron mold. Clean slag from the lead button. The lead button should weigh approximately 40 grams.
- B. Scorification of lead button.
1. Place lead button in scorifying dish and add approximately 5 gram of assay lead. Cover the lead with borax and place in furnace at 1000°C. Scorify the lead until approximately one-half of the original lead remains. This step will take approximately 1.5 hours.
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1. Prior to actual cupellation place the cupel in the furnace for  $\pm$  15 minutes in order to remove any water that may be sorbed in the cupel.
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The prill resulting from the above fire assay procedure may be analyzed for Au and Ag by normal parting and weighing procedures or by atomic absorption.

# PLAT OF CLAIMS

OF  
 BUCK-HOBBLE GROUP  
 HOBBLE MTN. GROUP  
 BUCK MTN. GROUP

*Jeffrey Andrews*  
*4 BUCK Mountain Gold*  
*25 claims*

- PORTIONS OF SECTIONS 1, 2, 11 & 12; T24N, R3E
- PORTIONS OF SECTIONS 6 & 7; T24N, R4E
- PORTIONS OF SECTIONS 23, 24, 25, 26, 27, 34, 35, & 36; T25N, R3E
- PORTIONS OF SECTIONS 30 & 31; T25N, R4E
- ALL OF THE GILA & SALT RIVER BASE & MERIDIAN COCONINO COUNTY, ARIZONA

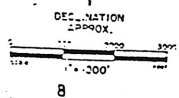
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1. ALL CLAIMS STAKED AT NOMINAL DIMENSION OF 595' X 1450'. CORNERS OF THE COMBINED BLOCK ARE SURVEYED BY CLASSICAL METHODS THROUGH THE USE OF THEODOLITE AND E.D.M.
2. DISCOVERY LINES RUN IN AS CORRECTED FROM MAGNETIC NORTH BY AN AVERAGE EAST DECLINATION OF 13° 30' ALONG A MAGNETIC BEARING OF N.08° W.
3. EACH CLAIM CORNER POST IS INDIVIDUALLY MARKED WITH AN ALUMINUM TAG REFERENCED TO THE ALPHA-NUMERIC GRID, I.E. THE TAG MARKED B-5 IDENTIFIES THE CORNER COMMON TO BUCK-HOBBLE GROUP CLAIM #5 4, 5, 33 & 34.
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5. BASE MAP IS A PHOTOGRAPHIC REPRODUCTION OF U.S.G.S QUADRANGLES: VALLE, EBERT MTN., WILLIAMS, MORITZ RIDGE

### CERTIFICATION:

I, JEFFREY L. ANDREWS, REGISTERED LAND SURVEYOR #12213, STATE OF ARIZONA, HEREBY CERTIFY TO BUCK MOUNTAIN PROPERTIES, INC. THAT THE SURVEY SHOWN HEREON WAS CONDUCTED UNDER MY SUPERVISION DURING THE MONTHS OF DECEMBER 1988 & JANUARY 1989, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

*Jeffrey L. Andrews*  
 J. L. ANDREWS, R.L.S. #12213



Andrews Atherton Inc. Surveying and Land Engineering State of Tennessee Jeffrey L. Andrews, P.E. Andrew & Atherton, P.C. P.E.'s	PROJECT NAME: BUCK MOUNTAIN PROPERTIES, INC. 229 SOUTH STATE ST. DOVER, DELAWARE 19901	
	DRAWING NO. 2416 SCALE: 1" = 1000' DATE: JAN 1989	SHEET NO. 1 OF 1

*Locations are approximate*

# IRON KING ASSAY INC.

Page 1

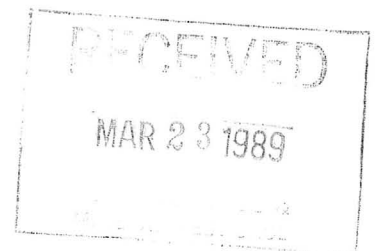
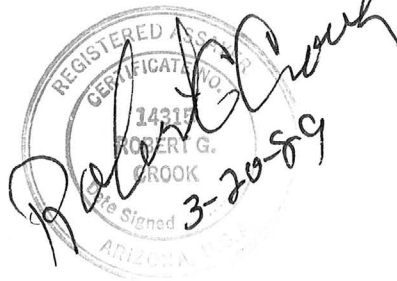
14-Mar-89

LAB JOB #: MSC03820  
Client name: AZ Dept. of Mines and Minerals No. Samples: 6  
Billing address: Mineral Building Date Received: 03-08-89  
Fairgrounds Submitted by: R. Beard  
Phoenix, AZ 85007  
Phone number: 255-3791

INVOICE ATTACHED

## ANALYTICAL REPORT

Client ID	Lab ID	Fire Assay	
		Au oz/ton	Ag oz/ton
MSC03820			
	28057 3-8-	1	0.011 <.10
	28058 3-8-	2	0.006 <.10
	28059 3-8-	3	<.001 <.10
	28060 3-8-	4	0.001 <.10
	28061 3-8-	5	<.001 <.10
	28062 3-8-	6	0.001 <.10



*Buck*

U.S. DEPARTMENT OF AGRICULTURE DATE *6/6/89*  
**REFERENCE SLIP**

TO  
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- ACTION
- APPROVAL
- AS REQUESTED
- FOR COMMENT
- FOR INFORMATION
- INITIALS
- NOTE AND FILE
- NOTE AND RETURN
- PER PHONE CALL
- RECOMMENDATION
- REPLY FOR SIGNATURE OF \_\_\_\_\_
- RETURNED
- SEE ME
- YOUR SIGNATURE

REMARKS *Enclosed for your information are the results of the joint sampling of cinder material from Buck Mountain properties on the Kaibab NF. John Gutierrez has summarized Forest Service minerals position on proper means of disposal of this material. The Kaibab forest intends to discuss these results with the claimants.*

FROM *AZ Zone Office*  
*US Forest Service*

**RECEIVED**  
JUN 08 1989  
MINERAL RESOURCES

United States  
Department of  
Agriculture

Forest  
Service

Arizona  
Zone  
Office

2324 E. McDowell Road  
Phoenix, AZ 85006  
602 225-5261

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Reply To: 2810

Date: June 1, 1989

Subject: Buck Mountain Properties

To: Dennis Lund, Kaibab NF

The assay results of the Buck Mountain sampling project have finally been received at the Arizona Zone Office in Phoenix. Briefly, the assays are results of an agreement between the Kaibab National Forest and Buck Mountain Properties to jointly sample and analyze volcanic materials for precious metals reportedly occurring on mining claims held by the latter. Prior to the sampling project, Buck Mountain Properties through their agent, Jefferey Andrews, agreed that the outcome of the sampling would determine what the company's next step would be towards development of the claims. The Forest Service' position is that the volcanic cinder material is a salable mineral and disposal is discretionary under 228 Subpart C regulations. Prior to the sampling effort, all parties understood that if assaying did not confirm the company's contention (.3 oz/ton gold and 30 oz/ton silver) of the presence of high gold and silver values, the Forest Service would insist upon the material's commonality. However, the Forest Service might consider sale of a limited quantity of similar volcanic material though not necessarily within the Buck Mountain claim block area.

As you might recall, the alleged valuable volcanic material has been previously sampled by Al Johnson, a consultant working for Buck Mountain. In order to duplicate earlier results, Johnson guided the recent sampling project to areas that were representative of the entire "deposit" and attempted to point out areas of the highest gold and silver values. Bulk samples were obtained from six locations within the claim block. These samples were later split using a standard rock/soil splitter and representative portions were distributed among the interested parties. Representatives from the U.S. Bureau of Mines, Arizona State Land Department, Al Johnson and the U.S. Forest Service each took a sample split to analyze for gold and silver content. A representative from the Arizona Department of Mines and Mineral Resources was also present but took separate samples of the volcanic material from areas nearby the bulk sample locations.

It was agreed that all samples would be sent to different laboratories in order to cross-check results by independent assayers using industry accepted fire assay procedures. Additionally, the Bureau of Mines agreed to assess Al Johnson's non-traditional assay procedures upon which Buck Mountain has relied exclusively to prove the presence of economic gold and silver.

The results of the sampling effort has been tabulated below. Unless otherwise specified, all samples were analyzed using standard industry accepted methods of fire assay:

Sample Number

Assayer	BM-1		BM-2	BM-3	BM-4	BM-5	BM-6
BuMINES							
Test #1	AU TR	TR	.04	.02	.01	TR	
	AG .1	Nil	.20	.1	Nil	Nil	
#2	AU Nil	Nil	.03	Nil	Nil	Nil	Nil
	AG .2	Nil	.2	Nil	.1	Nil	
#3	AU Nil (soil only)					Nil (soil only)	
	AG Nil (soil only)					Nil (soil only)	
#4	AU Nil	TR	.04	TR	TR	TR	TR
	AG .1	.1	.2	.1	.3	.3	
** #5	AU Nil	TR	.04	TR	TR	TR	TR
	AG .1	.1	.4	.2	.4	.4	
B-CLEGG	AU <.002	<.002	.029	<.002	<.002	<.002	<.002
	AG <.02	<.02	.24	<.02	<.02	<.02	<.02
IRON KING +	AU .011	.006	<.001	<.001	<.001	<.001	<.001
	AG <.10	<.10	<.10	<.10	<.10	<.10	<.10
SKYLINE	AU <.005	<.005	.13	<.005	<.005	<.005	<.005
	AG <.01	<.01	1.35	<.01	<.01	<.01	<.01

\*\* Denotes assay results using Dr. Alvin Johnson's modified assay procedures.

+ Denotes samples taken adjacent to but different from split sample.

TR = Trace or less than .005 oz/ton.

As can be seen, out of a total of the eighty-eight (88) assays processed, only Sample BM-3 reported low but anomalous values for gold and silver. The fact that all assayers but one found anomalous values in this sample tends to verify subeconomic amounts of precious metals are occurring. Skyline Laboratories reported a significantly higher precious metal content for BM-3, but this value was not duplicated by other assayers and thus is suspect. The remaining samples showed very low values, a trace of precious metals or minute quantities below the detection limitations of the equipment. The Bureau of Mines also conducted assay work for the platinum group metals using inductively coupled plasma analysis. Platinum, palladium and rhodium all recorded <.002 oz/ton readings. This extremely low figure is also below detection limitations of the equipment. Since the sample locations were



agreed to be representative of the volcanic material contained within the entire claim block, the results support the Forest Service position that Buck Mountain mining claims contain common variety cinder-like materials.

As previously stated, Buck Mountain relied solely upon Al Johnson's earlier assaying work of the mining claims using a non-industry recognized method. It was necessary to assess Johnson's assay procedures in light of the escalated precious metal values (refer to Attachments) he found that were unlike anything previously known to be contained in similar volcanic material. Bureau of Mines Test #4 and #5 (above) compare the same sample using standard fire assay methods and Johnson's method. As can be seen, the samples check within acceptable limits. Bureau of Mines Research Supervisor, Ken Broadhead, states in his letter of May 18, 1989:

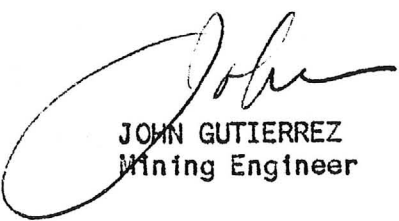
"...values obtained by using Dr. Johnson's procedure showed no difference from those obtained from normal fire assay techniques. The results of our work showed no large amounts of either gold or silver..."

Furthermore, Broadhead states that the new .."procedure is unduly long, time consuming and completely unnecessary".

Similarly, Bondar-Clegg, an internationally recognized leader in assaying was asked for their assessment of Dr. Johnson's assay procedures. In a letter dated March 28, 1989, Greg Sprenger, fire assay lab manager states:

"...Bondar-Clegg feels that this method offers no significant improvement over standard procedures routinely used in the assay industry. In fact, it is our opinion that the additional manipulations outlined in Dr. Johnson's procedure may increase the possibility for error in the analytical result."

Given the above data results and without further substantive evidence that economic gold and silver are contained in the volcanic material within the Buck Mountain claim group, it is my opinion that the material is common in nature. Therefore, disposal is discretionary and subject to regulations at 36 CFR 228 Subpart C. Buck Mountain Properties are not precluded from further exploration activities on their validly located mining claims even though the claims contain common volcanic materials. In the interest of fairness, I would recommend that the Forest sit down with the proponents to go over the assaying results and to discuss options available to them.



JOHN GUTIERREZ  
Mining Engineer

Attachments (3)

BC: Roger Marion, R.O.

CC: Ken Broadhead; NV BUMines

Dick Beard; AZ Dept Mines & Min Resources

Gary Skusker; AZ Dept of State Land, Minerals Division



# United States Department of the Interior

## BUREAU OF MINES

RENO RESEARCH CENTER

1605 EVANS AVENUE  
RENO, NEVADA 89512-2295

May 18, 1989

John Gutierrez  
U.S. Forest Service  
2324 East McDowell Road  
Phoenix, Arizona 85006-2497

Dear John,

Enclosed are the analytical reports on the rock and soil samples taken March 7, 1989, at the so called Buck Mountain Mining Project. The analyses are divided into two separate types, one to generally categorize and identify the material, and the other to quantify the precious metals content. The categorization tests as shown in exhibits 5, 6, and 7, show the volcanic cinders and soil to be primarily quartz, pyroxene and feldspars. There were no concentrations of elements present which would indicate that the samples would present any particular problems to standard fire assay techniques.

Exhibits 1 and 2 are fire assay results on my original splits for gold and silver. Exhibit 2 also shows the results following the procedure set forth by Alvin Johnson. A copy of this procedure is also enclosed as exhibit 8. Exhibit 3 shows regular fire assay results on your portions of material which I had re-requested from you and which had been forwarded to me by Bondar-Clegg. Exhibit 4 shows the results from a combined fire assay/ICP analysis for the platinum group metals.

Comments on exhibit 8: Dr. Johnson's assay procedure.

**General:**

The procedure is unduly long, time consuming and completely unnecessary.

**Specific:**

Steps 2 through 4: There is no reason for adding and sintering with sodium peroxide. There are no minerals present, or carbon or sulfur, which would require such an oxidizing agent.

Steps 5 through 7: No reason for the addition and sintering with PbO (litharge). I can not see the rational for such a step, particularly after the preceding peroxide fusion.

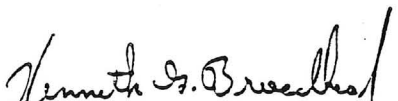
J. Gutierrez

Steps 8 through 13. Scorification. There is no reason for the use of the excess flour to produce a large lead button which must be later scorified. Scorification of lead buttons is used primarily to either reduce the size of the lead buttons or to remove impurities such as copper and nickel from the buttons so that they will cupel properly. The elements however are not present in this particular material. Therefore, the whole exercise of excess flour and scorification serves no useful purpose. However, it may be detrimental to the procedure since the use of excess flour creates a lead deficient slag which may cause problems.

C. Cupellation 2. The door cannot be completely closed so as to exclude air since the air or actually oxygen is a necessary ingredient in the process. Without oxygen the molten lead will not form litharge (PbO) which will be adsorbed into the cupel--the purpose of the process. The cupellation temperature of 1,000° C is excessive and will lead to silver losses.

Generally speaking values obtained by using Dr. Johnson's procedure showed no difference from those obtained from normal fire assay techniques. The results of our work showed no large amounts of either gold or silver. Sample BM-4, however, did show low but anomalous amounts of gold.

Sincerely,

  
Kenneth G. Broadhead  
Research Supervisor

Enclosures

cc: Dr. Al Johnson  
1707 East Weber Drive Suite 8  
Tempe, Arizona 85281

Dick Beard  
Department of Mines and Mineral Resources  
Mineral Building-State Fair Grounds  
Phoenix, Arizona 85007



March 28, 1989

John Gutierrez  
USDA, Forest Service  
Arizona Zone Office  
2324 E McDowell Road  
Phoenix, AZ 85006

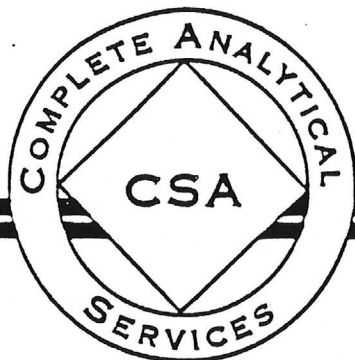
Dear Mr. Gutierrez,

Having reviewed the procedure by Dr. Alvin Johnson, "PROCEDURE FOR THE ANALYTICAL TESTING OF AU AND AG IN GEOLOGIC MATERIALS," which you enclosed with your recent submittal, Bondar-Clegg feels that this method offers no significant improvement over standard procedures routinely used in the assay industry. In fact, it is our opinion that the additional manipulations outlined in Dr. Johnson's procedure may increase the possibility for error in the analytical result.

Sincerely,

  
Greg Sprenger  
Bondar-Clegg, Inc.

# COPPER STATE ANALYTICAL LAB, INC.



ARIZONA STATE CERTIFIED LAB NO. 0078

710 E. EVANS • TUCSON, AZ 85713

PH. (602) 884-5811 PH. (602) 797-0788

D.A. SHAH  
REGISTERED ASSAYER  
AZ REG. # 0000

IN BUSINESS SINCE 1966

Mr. Alvin Johnson  
1707 East Weber Drive, Suite #8  
Tempe, Arizona 85281

Job: 19346  
Received: 03/10/89  
Reported: 03/15/89  
Sample No.: 7  
Elements: 2

Project:-William, AZ

Elements Units	Au OPT	Ag OPT
0.8mg - BM-4	0.022	1.34
1.6mg - BM-2	0.018	2.96
2.2mg - BM-1	0.024	4.60
20.6mg - BM-5	0.016	37.58
24.4mg - BM-3	0.90	46.48
46.5mg - BM-1	0.016	91.90
88.3mg - BM-6	0.012	173.32

NOTE:-Calculations are based on 15gm wt of sample. Client provided the dore' from fire assay.



=====END REPORT=====