CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
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FILE

William B. Roberts CONSULTING MINING ENGINEER & GEOLOGIST

1405 SOUTH ELM ST. DENVER, COLORADO 80222 TEL.(303)756-7090

Viva Gold Property
T 12N, R 14W
N. Boundary Mtn.
Mohave Co., AZ

Mr. James D. Sell, Southern Expl. Mgr.
Asarco, Inc.
P.O. Box 5747
Tuscon, AZ 85703-0747

May 9, 1989

Dear Mr. Sell,

In compliance with your request I am sending you the following additional data on the Viva Gold Property:

1. GFMC trench sample analyses
2. GFMC misc. surface ore sample analyses
3. Composite geochem map - south
4. Composite geochem map - north

This data together with the data you already have constitutes all of the sampling data in our possesion. The Amax data includes the only sample descriptions we recieved and you already ahve these.

It must be concluded that the results of GFMC's exploration were not impressive. We feel, however, that they missed the most attractive areas. As shown on figure 5 of the report, large parts of all three target areas remain unexplored.

Thank you for your interest in the Viva Gold Prperty. We look forward to hearing from you.

Yours truly,

Bill Roberts

William B. Roberts

ASARCO Incorporated
MAY 15 1989
SW Exploration

JDS

ASARCO

Exploration Department
Southwestern United States Division

James D. Sell
Manager

April 25, 1989

Mr. William B. Roberts
Consulting Geologist
1405 So. Elm St.
Denver, CO 80222

Viva Gold Property
Northern Rawhide Mtns.
Mohave County, AZ

Dear Mr. Roberts:

Thank you for the map and drill hole data on your property.

It is very disappointing that the drill holes failed to find any values compared to the surface sample values shown.

Did any of the Dozer Trench (T-series) cut any substantial width of gold values similar to the adjacent cuts and dumps?

Any further information, such as the trench sample values, would be appreciated prior to our visit, now scheduled for early summer at the earliest.

Sincerely,

James D. Sell

James D. Sell

JDS:mek

cc: W.L. Kurtz
M.A. Miller

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

JDS

ASARCO

Exploration Department
Southwestern United States Division

James D. Sell
Manager

February 14, 1989

Mr. William B. Roberts
Consulting Mining Engineer & Geologist
1405 South Elm Street
Denver, Colorado 80222

Viva Gold Property
Northern Rawhide Mtns.
Mohave County, AZ

Dear Mr. Roberts:

Thank you for the packet of information on your Viva Gold Property in Arizona.

I have taken the liberty of copying the data and am returning your packet.

At the present time our group is very busy and cannot make a visit until later this spring.

Although the drill holes were not too encouraging or perhaps not readily decipherable, I believe they would be of interest to Asarco when evaluating the area. If you could sent a copy of the locations and logs, it would be appreciated.

Sincerely,

James D. Sell

James D. Sell

JDS:
Attachment
(Report returned)

cc: W.L. Kurtz

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

9DS

William B. Roberts CONSULTING MINING ENGINEER & GEOLOGIST
1405 SOUTH ELM ST. DENVER, COLORADO 80222 TEL.(303)756-7090

Viva Gold Property
T12N, R14W
N. Rawhide Mtns
Mohave Co, AZ

Mr. Jim Sell, Southern Expl. Mgr.
Asarco, Inc.
PO Box 5747
Tucson, AZ 85703

January 18, 1989

ASARCO Incorporated
JAN 20 1989
SW Exploration

Dear Jim,

I am sending you a copy of a report on the Viva Gold Property located in west-central Arizona. The report and accompanying maps are the result of several weeks of field work I did in the spring of 1988. I believe the report will give you a good overview of the property.

As I told you over the phone, my partner and I own 125 unpatented mining claims in Ester Basin in the northern Rawhide Mountains. The assessment work for the year 1988 has been done and the appropriate notices have been recorded.

I am including copies of some geochemical data generated by Amax, US Borax, and Goldfields. Goldfields leased the property from April 1985 to April 1986 and drilled several holes and dug some trenches. Most of their work was done on the Lola patent. We feel the most attractive areas received little or no attention. This is explained in the report. Copies of the drill-hole logs and some additional geochemical data are available upon request.

We suspect that the geologists in charge of this work were unfamiliar with the geology of the area and did not realize that the Viva Property is underlain by the Buckskin - Rawhide fault. As explained in the report, the presence of this fault in the subsurface makes it likely that the most favorable sites for ore mineralization are below the present surface.

We wish to lease the property to a reliable mining company that will do some drilling. Our terms for the property are as follows: an initial payment of $25,000, a 5% NSR royalty, and $20,000 per year in advance royalty payments for the first two years with escalating payments thereafter.

You have our permission to inspect the property and take samples. We do expect, however, to receive a map showing the locations of any samples collected and copies of the assay results.

Thank you for your interest in the Viva Gold Property. We look forward to hearing from you.

Yours truly,

Bill Roberts

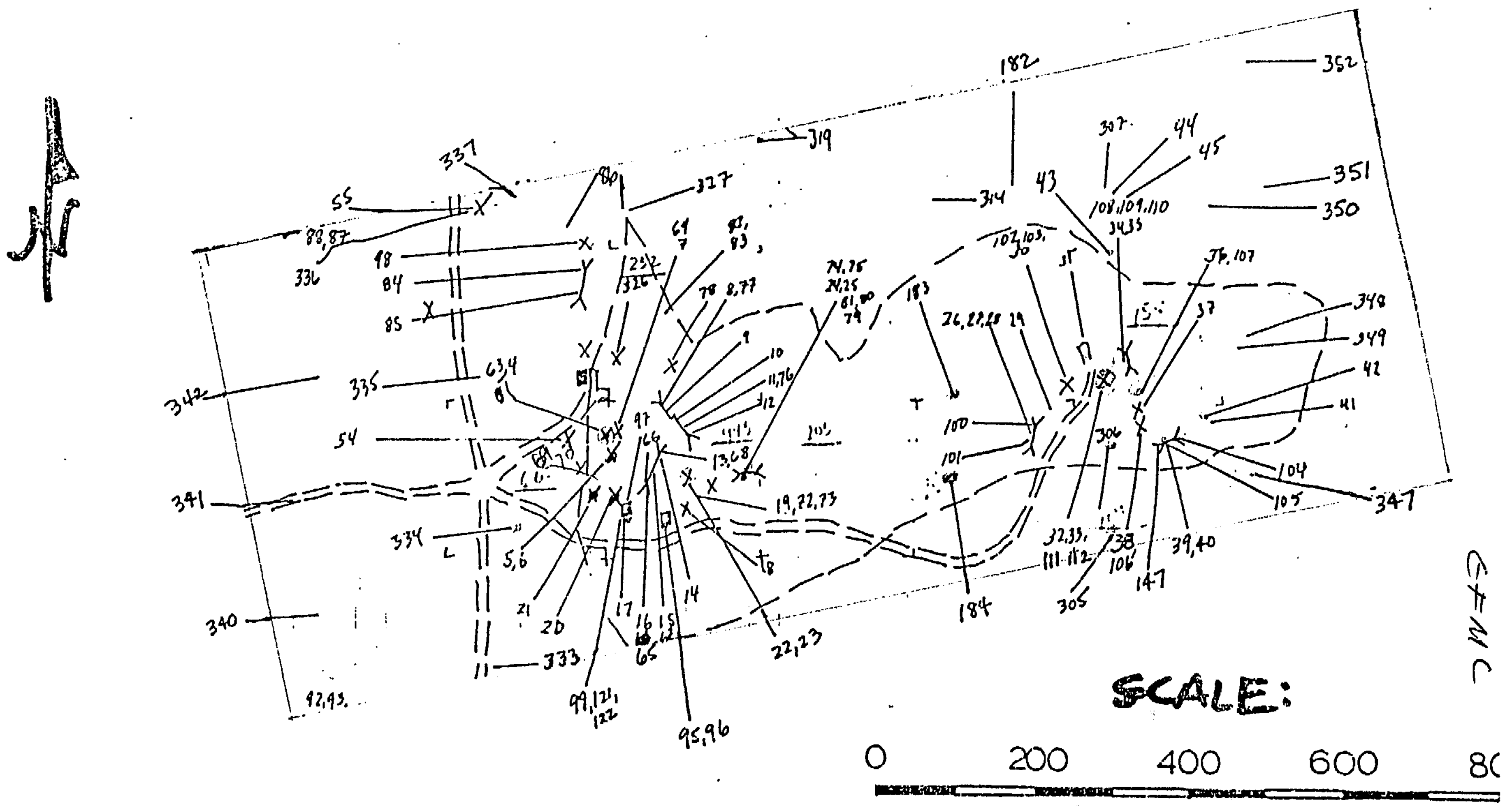
William B. Roberts

GOLD FIELDS

Lola Prospect

Sec. 28, T. 12 N., R. 14 W., Mohave Co., Arizona

Surface Sample Location Map



GFMC

GARRETT

LULA

ITEM	DRILL HOLE OR ID		FROM	TO	AA/FA Au ppb	Ag ppm
1	SMZ-53	1			10	2
2	SMZ-53	2			10	<1.
3	SMZ-53	3			18	2
4	SMZ-53	4			9.09ppm	8
5	SMZ-53	5			1.63ppm	8
6	SMZ-53	6			15.2ppm	<1.
7	SMZ-53	7			1.63ppm	9
8	SMZ-53	8			38	5
9	SMZ-53	9			20	10
10	SMZ-53	10			20	13
11	SMZ-53	11			18	2
12	SMZ-53	12			648	2
13	SMZ-53	13			128	6
14	SMZ-53	14			80	4
15	SMZ-53	15			50	3
16	SMZ-53	16			532	<1.
17	SMZ-53	17			2.53ppm	4
18	SMZ-53	18			2.88ppm	4
19	SMZ-53	19			1.54ppm	5
20	SMZ-53	20			7.29ppm	7
21	SMZ-53	21			5.73ppm	4
22	SMZ-53	22			32	<1.
23	SMZ-53	23			1.63ppm	3
24	SMZ-53	25			2.72ppm	5
25	SMZ-53	26			1.01ppm	2
26	SMZ-53	27			1.51ppm	4
27	SMZ-53	28			826	3
28	SMZ-53	29			1.56ppm	5
29	SMZ-53	30			1.51ppm	4
30	SMZ-53	31			60	4

MAY 10 1985

Key : S = sand sample
2 = avg of two assays, etc.

Approved R. L. Gustin

Gold Field

GFMC 3

ITEM	DRILL HOLE OR ID		FROM	TO	AA/FA Au ppb	Ag ppm
31	SMZ-53	32			.018 618	4
32	SMZ-53	33			.002 72	3
33	SMZ-53	34			.003 100	4
34	SMZ-53	35			.001 26	1
35	SMZ-53	36			.002 72	2
36	SMZ-53	37			.027 916	4
37	SMZ-53	38			10	1
38	SMZ-53	39			.011 358	5
39	SMZ-53	40			12	3
40	SMZ-53	41			.007 220	3
41	SMZ-53	42			.023 772	2
42	SMZ-53	43			.003 98	2
43	SMZ-53	44			.019 628	2
44	SMZ-53	45			.006 212	3
45	SMZ-53	46 ✓			.047 1.62ppm	3
46	SMZ-53	47 ✓			.006 200	4
47	SMZ-53	48 ✓			.019 650	5
48	SMZ-53	49 ✓			.003 114	1
49	SMZ-53	50 ✓			.057 1.96ppm	4
50	SMZ-53	51 ✓			.0004 14	2
51	SMZ-53	52			4	6
52	SMZ-53	53			8	3
53	SMZ-53	54			.001 48	<1.
54	SMZ-53	55			4	<1.
55	SMZ-53	56 ✓			.004 134	<1.
56	SMZ-53	57 ✓			.170 5.83ppm	<1.
57	SMZ-53	58 ✓			.005 176	<1.
58	SMZ-53	59			.003 116	<1.
59	SMZ-53	60 ✓			.033 1.12ppm	<1.
60	SMZ-53	61 ✓			.008 284	<1.
61	SMZ-53	62			.004 120	<1.
1	SMZ-53	63			0.10 3.26ppm	2
2	SMZ-53	64			.003 114	<1.
3	SMZ-53	65			.043 1.45ppm	<1.
4	SMZ-53	66			.033 1.1ppm	<1.
5	SMZ-53	67			.005 164	<1.
6	SMZ-53	68			.005 152	<1.
7	SMZ-53	69			.30 10.ppm	4
8	SMZ-53	70			.002 54	<1.
9	SMZ-53	71			[illegible] 40	<1.
10	SMZ-53	72			[illegible] 54	<1.

Gold Fil

GFMC 4

ITEM	DRILL HOLE OR ID		FROM	TO	oz.	AA/FA Au ppb	Ag ppm
11	SMZ-53	73			.0005	52	<1.
12	SMZ-53	74			.001	35	<1.
13	SMZ-53	75			–	20	<1.
14	SMZ-53	76			–	19	<1.
15	SMZ-53	77			–	22	<1.
16	SMZ-53	78			–	14	<1.
17	SMZ-53	79			.166	5.6ppm	7
18	SMZ-53	80			.004	138	<1.
19	SMZ-53	81		25	.007	244	<1.
20	SMZ-53	82		12	.001	26	<1.
21	SMZ-53	83			–	18	<1.
22	SMZ-53	84			–	12	<1.
23	SMZ-53	85			–	10	<1.
24	SMZ-53	86			.081	2.73ppm	11
25	SMZ-53	87			–	6	<1.
26	SMZ-53	88			–	4	<1.
27	SMZ-53	89			.004	126	2
28	SMZ-53	90			–	4	1
29	SMZ-53	91			–	18	<1.
30	SMZ-53	92			–	6	<1.
31	SMZ-53	93			–	6	2
32	SMZ-53	94 ✓			.060	2.07ppm	2
33	SMZ-53	95			.005	180	<1.
34	SMZ-53	96			.083	2.84ppm	6
35	SMZ-53	97			.079	2.7ppm	4
36	SMZ-53	98			0.037	1.25ppm	2
37	SMZ-53	99			.024	808	3
38	SMZ-53	100			.002	74	2
39	SMZ-53	101			.003	90	<1.
40	SMZ-53	102			.006	194	1
41	SMZ-53	103			.011	354	2
42	SMZ-53	104			.012	388	3
43	SMZ-53	105			.007	205	2
44	SMZ-53	106				4	<1.
45	SMZ-53	107			.008	255	<1.
46	SMZ-53	108			–	12	<1.
47	SMZ-53	109			.009	292	4
48	SMZ-53	110			.001	40	3
49	SMZ-53	111			.006	218	<1.
50	SMZ-53	112			.004	126	<1.
51	SMZ-53	113 ✓			.0016	58	<1.
52	SMZ-53	114 ✓			.0008	26	<1.
53	SMZ-53	115 ✓			.027	938	<1.
54	SMZ-53	116 ✓			.0003	12	<1.
55	SMZ-53	117 ✓			.0003	10	<1.
56	SMZ-53	118 ✓			.0019	64	<1.
57	SMZ-53	119 ✓			–	9	<1.
58	SMZ-53	120 ✓			–	8	<1.

Gold

GFMC

5

ITEM	DRILL HOLE OR ID		FROM	TO		AA/FA Au ppb	Ag ppm
59	SMZ-53	121				8	<1.
60	SMZ-53	122				8	<1.
61	SMZ-53	123 ✓			.033	1.13ppm	<1.
62	SMZ-53	124 ✓			.006	210	<1.
loc? 63	SMZ-53	125			.006	192	<1.
64	SMZ-53	126			.013	455	<1.
65	SMZ-53	127 ✓			.119	4.06ppm	3
66	SMZ-53	128 ✓			.026	878	<1.
67	SMZ-53	129 ✓			0.030	1.03ppm	<1.
68	SMZ-53	130 ✓			—	10	<1.
69	SMZ-53	131 ✓			—	6	<1.
70	SMZ-53	132 ✓			.005	172	1
71	SMZ-53	133 ✓			—	10	<1.
72	SMZ-53	134 ✓			.0017	53	<1.
73	SMZ-53	135 ✓			.107	3.65ppm	2
74	SMZ-53	136 ✓			—	18	<1.
75	SMZ-53	137 ✓			0.036	1.24ppm	1
76	SMZ-53	138 ✓			.003	182	3
77	SMZ-53	139 ✓			.005	174	2
78	SMZ-53	140 ✓			.002	80	<1.
79	SMZ-53	141 ✓			.186	6.32ppm	2
80	SMZ-53	142 ✓			.001	34	1
81	SMZ-53	143 ✓			—	10	3
82	SMZ-53	144 ✓			—	8	2
83	SMZ-53	145 ✓			—	10	2
84	SMZ-53	146 ✓			—	2	<1.
85	SMZ-53	147			.0002	28	3
86	SMZ-53	148 ✓			.330	11.3ppm	3
87	SMZ-53	149 ✓			.0008	28	<1.
88	SMZ-53	150 ✓			.038	1.3ppm	3
89	SMZ-53	151 ✓			.0015	54	2
90	SMZ-53	152 ✓			.005	178	2
91	SMZ-53	153 ✓			—	8	3
1	SMZ-53	154 ✓			—	12	<1.
2	SMZ-53	155 ✓			—	4	2
3	SMZ-53	156 ✓			.024	815	<1.
4	SMZ-53	157 ✓			—	36	<1.
5	SMZ-53	158 ✓			—	4	<1.
6	SMZ-53	159 ✓			—	20	3
7	SMZ-53	160 ✓			—	2	1
8	SMZ-53	161 ✓			—	9	<1.
9	SMZ-53	162 ✓			—	6	<1.
10	SMZ-53	163 ✓			—	18	<1.
11	SMZ-53	164 ✓			.004	170	<1.
12	SMZ-53	165 ✓			—	10	<1.
13	SMZ-53	166 ✓			—	8	<1.
14	SMZ-53	167 ✓			.0018	52	1
15	SMZ-53	168 ✓			—	4	<1.

This hole [illegible] 30 [illegible]

Gold Field

GFMC

ITEM	DRILL HOLE OR ID		FROM	TO		AA/FA Au ppb	Ag ppm
16	SMZ-53	169				8	<1.
17	SMZ-53	170			.093	3.17ppm	4
18	SMZ-53	171				2	2
19	SMZ-53	172				4	<1.
20	SMZ-53	173				2	<1.
21	SMZ-53	174				2	<1.
22	SMZ-53	175				14	<1.
23	SMZ-53	176				20	2
24	SMZ-53	177				18	2
25	SMZ-53	178				6	2
26	SMZ-53	179				2	<1.
27	SMZ-53	180				10	<1.
28	SMZ-53	181				6	<1.
29	SMZ-53	182				4	2
30	SMZ-53	183			.002	76	2
31	SMZ-53	184			.007	2.51ppm	3
32	SMZ-53	185				8	<1.
33	SMZ-53	186			.001	44	<1.
34	SMZ-53	187				14	1
35	SMZ-53	188				4	1
36	SMZ-53	189				2	<1.
37	SMZ-53	190			.002	76	<1.
38	SMZ-53	191				8	<1.
39	SMZ-53	192				4	2
40	SMZ-53	193				18	2
41	SMZ-53	194			.0018	64	<1.
42	SMZ-53	195				<2.	<1.
43	SMZ-53	196				4	<1.
44	SMZ-53	197			.005	172	<1.
45	SMZ-53	198			.034	1.18ppm	<1.
46	SMZ-53	199				6	<1.
47	SMZ-53	200				<2.	2
48	SMZ-53	169	SAND			2	<1.
49	SMZ-53	183	SAND			2	<1.
50	SMZ-53	200	SAND			2	<1.
	SMZ-53	201				<20	0.3
		202				<20	0.2
		203				30	0.3
		204				<20	<0.2
		205				<20	<0.2
		206				<20	<0.2
		207				<20	0.4
		208				<20	0.2
		209				<20	0.2
		210				<20	<0.2
		211				<20	0.2
		212				<20	0.2
		213				<20	0.2
		214				<20	0.3

Gold Field

GFMC

7

ITEM	DRILL HOLE OR ID	FROM	TO	AA/FA Au ppb	Ag ppm
	215			<20	0.4
	215S			<20	<0.2
	216			<20	0.3
	217			<20	0.2
	218			<20	0.4
	219			<20	0.2
	220			<20	0.2
	221			<20	0.2
	222			<20	0.4
	223			<20	<0.2
	224			<20	0.2
	225			<20	<0.2
	226			<20	0.2
	227			.001 50	0.3
	228			<20	0.3
	229			.001 60	3.0
	230			<20	0.5
	230S			<20	<0.2
	SMZ-53 231			.017 590	1.1
	232			<20	0.6
	233			<20	<0.2
	234			<20	<0.2
	235			<20	<0.2
	236			<20	0.2
	237			<20	0.3
	238			<20	0.2
	239			<20	<0.2
	240			<20	0.2
	241			<20	0.2
	242			40	0.2
	243			40	0.5
	244			.320 11300	5.7
	244S			<20	<0.2
	301			<20	0.2
	302			.001 50	0.4
	303			<20	0.2
	304			<20	0.4
	305			.004 140	0.4
	306			.002 80	0.4
	307			.001 30	1.2
	308			<20	0.7
	309			.001 60	<0.2
	310			<20	0.3
	311			<20	<0.2
	312			<20	0.3
	313			<20	0.2
	314			<20	0.2
	315			<20	0.2
	315S			<20	<0.2
	316			<20	0.2

Gold Field

Sample #		Au	Ag
SMZ-53-317 ✓	.213	300	5.4
.318 ✓	—	20	0.3
.319 ✓	.001	40	0.4
.320	—	<20	<0.2
.321 ✓	—	<20	<0.2
.322 ✓	—	<20	<0.2
.323 ✓	.030	1030	27.7
.324 ✓	—	<20	0.3
325		<20	0.2
.326	.034	1130	0.5
.327		<20	0.2
.328 ✓	—	20	0.3
.329 ✓	.011	360	0.3
.330 ✓	0.187	6400	2.0
330S –	—	20	<0.2
.331 ✓	—	<20	0.2
.332 ✓	.001	40	0.2
.333		<20	0.3
.334	.001	40	0.2
.335		<20	<0.2
.336		20	0.2
.337		<20	0.2
338	—	<20	0.3
.339 ✓	—	<20	0.3
.340		<20	0.4
.341		<20	0.2
.342		<20	0.2
343		<20	0.2
.344 ✓	—	<20	0.2
.345 ✓	—	<20	0.2
345S ✓	—	<20	<0.2
346	.001	30	0.2
.347	.007	250	0.5
348		70	0.2
349		<20	0.2
.350	.032	1080	2.0
.351		<20	0.2
.352		<20	0.3
.353 ✓	—	<20	0.2
.354 ✓	.007	240	12.4
.355 ✓	—	<20	0.2
.356 ✓	—	<20	0.2
.357 ✓	.004	120	1.1
SMZ-53-358	.001	30	0.4
359		20	<0.2
360		<20	<0.2
361		20	0.3

Gold File

GFMC

Sample #		Au	Ag
362		<20	<0.2
362S		20	<0.2
403		<20	<0.2
404		<20	<0.2
405		<20	<0.2
406		<20	<0.2
407		<20	<0.2
408	.001	50	<0.2
409		<20	<0.2
410	.001	30	0.2
411		<20	<0.2
412		<20	<0.2
413		<20	<0.2
414		<20	0.2
415		<20	<0.2
416		<20	<0.2
417		<20	<0.2
417S		<20	<0.2
418		<20	0.5
419		<20	<0.2
420		<20	<0.2
421		<20	<0.2
422		<20	<0.2
423		<20	0.2
424		<20	0.3
425		20	0.2
SMZ-53-426		<20	<0.2
427		<20	<0.2
428		<20	0.2
429	.001	30	<0.2
430		<20	<0.2
431		<20	<0.2
432		<20	<0.2
432S		20	<0.2
433		20	<0.2
434	.001	60	<0.2
435	.001	50	<0.2
436	.007	250	<0.2
437		<20	<0.2
438	.001	40	<0.2
439	.082	2820	0.8
440		<20	<0.2
441	.003	110	0.2
442		<20	<0.2
443		<20	<0.2
444		<20	0.2
445	.001	40	0.4
446		<20	<0.2
447		20	0.3
447S		<20	<0.2
448		<20	<0.2
449	.005	180	0.4
450	.017	570	0.2
451		<20	<0.2
452	.005	180	6.2
453		<20	0.6

Goldfield

GFMC 10

Sample #		Au	Ac
SMZ-53-454	.016	552	0.4
455	—	<20	<0.2
456	—	<20	<0.2
457	—	30	<0.2
458	—	<20	<0.2
459	—	<20	<0.2
460	—	<20	<0.2
460S	—	<20	<0.2

ppb?

Sample #		Au	Ac
SMZ-53-501	0.034?	1150	0.9
502	—	20	0.3
503	.021	720	0.6
504	—	30	<0.2
505	.102	3500	1.6
506	.001	60	0.3
507	.002	80	0.4
508	—	<20	0.4
509	.003?	100	0.2
510	—	30	0.2
511	.011	360	0.3
512	.063	2150	0.4
513	—	<20	0.5
514	—	20	0.4
515	.126	4300	2.7
515S	—	20	<0.2
516	.064	2210	2.8
517	.056	1920	3.6
518	—	<20	0.2
519	.068	2330	1.9
520	.161	5500	3.2
521	.085	2900	8.1
522	.033	1130	17.9
523	.065	2240	5.3
524	.223?	7700	6.8
525	.126	4300	6.7
526	.008	260	1.0
527	.001	60	4.8
528	.073	2490	1.2
529	.093	3200	1.5

Sample #		Au	Ag
SMZ-53-530	.283	9700	3.6
530S	—	20	<0.2
531	.032	1080	1.5
532	.219	7500	3.0
533	—	40	0.3
534	.008	260	0.2
535	.008	270	0.5
536	.0035	120	<0.2
537	.030	1030	0.5
538	—	20	0.3
539	—	<20	<0.2
540	—	<20	0.3
541	—	30	<0.2
542	—	20	0.2
543	—	<20	0.4
544	—	<20	0.2
545	—	<20	0.2
545S	—	<20	<0.2
546	—	40	<0.2
547	—	20	0.2
548	—	20	<0.2
549	—	<20	<0.2
550	.073	2500	0.5
551	.0085	290	0.2
552	.292	10,000	11.6
553	.0029	100	0.6
554	.178	6100	7.6

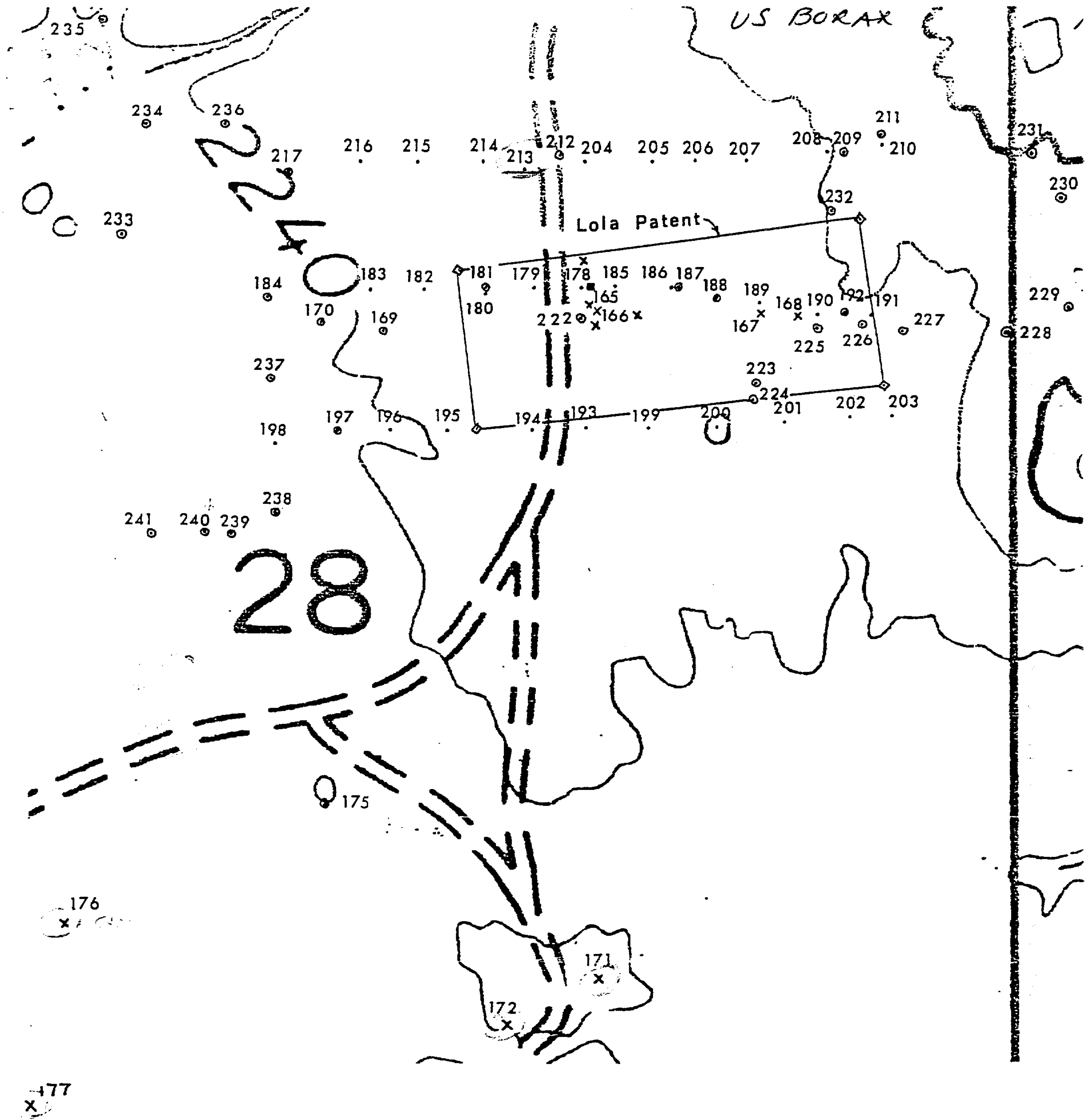


Figure 1. Geochemical sample data (in ppm) for in the Lola mine area, Rawhide Mountains, Mohave County, Arizona. x 174

Scale: 1" = 500'

x Dump sample x 173 site

⊙ Silica-carbonate vein sample site

• Rock chip sample site

US Borax

US BORAX 2

USBRC CHEMICAL ANALYSIS REPORT

19-FEB-85
SET NUMBER : AZ85RC07
REMARKS :

PROJECT: AZ REC 85
SUBMITTED BY: RS

FIELD NUMBER	MO PPM	oz/T	AU/AA PPM	AG/AA PPM	CU PPM	PB PPM	ZN PPM
L-171	20.	.38	13.20	5.0	14600.	53.	223.
L-172	10.	.39	13.30	7.2	13300.	180.	437.
L-173	6.	.06	2.07	7.2	4690.	862.	493.
L-174	5.	.14	4.67	8.6	3610.	1840.	54.
L-175	<5.		0.14	3.4	51.	67.	44.
L-176	<5.	.14	4.94	4.1	8730.	125.	366.
L-177	12.	.39	13.50	11.0	21700.	1000.	886.
L-193	<5.		<0.02	<0.2	24.	183.	111.
L-194	<5.		<0.02	<0.2	7.	149.	91.
L-195	<5.		<0.02	<0.2	15.	103.	116.
L-196	<5.		<0.02	<0.2	7.	60.	80.
L-197	6.		<0.02	2.4	13.	74.	46.
L-198	<5.		<0.02	0.7	10.	86.	136.
L-199	<5.		<0.02	0.2	10.	64.	18.
L-200	<5.		<0.02	0.2	<5.	26.	9.
L-201	<5.		<0.02	3.1	14.	228.	117.
L-202	<5.		<0.02	0.7	12.	221.	162.
L-203	<5.		<0.02	1.4	25.	377.	327.
L-204	<5.		0.29	1.0	456.	401.	141.
L-205	5.		<0.02	1.2	63.	250.	266.
L-206	6.		<0.02	1.2	12.	168.	123.
L-207	<5.		<0.02	1.2	14.	382.	168.
L-208	<5.		<0.02	1.0	12.	216.	220.
L-209	9.		0.08	17.5	20.	382.	23.
L-210	5.		<0.02	0.7	7.	144.	153.
L-211	8.		0.05	1.9	17.	226.	68.
L-212	14.		0.11	2.9	3310.	809.	217.
L-213	6.	.08	2.67	3.4	3330.	1950.	450.
L-214	<5.		<0.02	0.5	39.	137.	132.
L-215	5.		<0.02	0.7	80.	118.	127.
L-216	<5.		<0.02	0.5	17.	125.	108.
L-217	18.		0.73	1.4	6780.	646.	358.

US Bo...
4/85

US BORAX

USBRC CHEMICAL ANALYSIS REPORT

21-MAR-85
SET NUMBER : AZ85RC13
REMARKS :

PROJECT: AZ REC 85
SUBMITTED BY: RS

FIELD NUMBER	AU/AA PPM	AG/AA PPM	AS PPM	SB PPM	HG PPM
L-227	0.05	1.9	5.	<2.	<0.05
L-228	0.05	5.3	26.	<2.	0.18
L-229	0.21	4.6	4.	<2.	0.14
L-230	0.14	4.3	13.	<2.	0.18
L-231	0.21	4.8	11.	<2.	0.18
L-232	0.06	3.4	29.	<2.	0.21
L-233	<0.02	3.1	5.	<2.	0.31
L-234	<0.02	3.4	2.	<2.	0.36
L-235	<0.02	2.6	3.	<2.	0.25
L-236	<0.02	2.9	2.	<2.	0.21
L-237	0.05	4.1	5.	<2.	0.35
L-238	0.15	3.8	5.	<2.	0.28
L-239	0.09	2.4	2.	<2.	0.21
L-240	0.31	3.1	2.	<2.	0.38
L-241	0.08	2.6	<2.	<2.	0.25

U.S. Borax Data

US BORAX 4

USBRC CHEMICAL ANALYSIS REPORT

21-MAR-85
SET NUMBER : AZ85RC13
REMARKS :

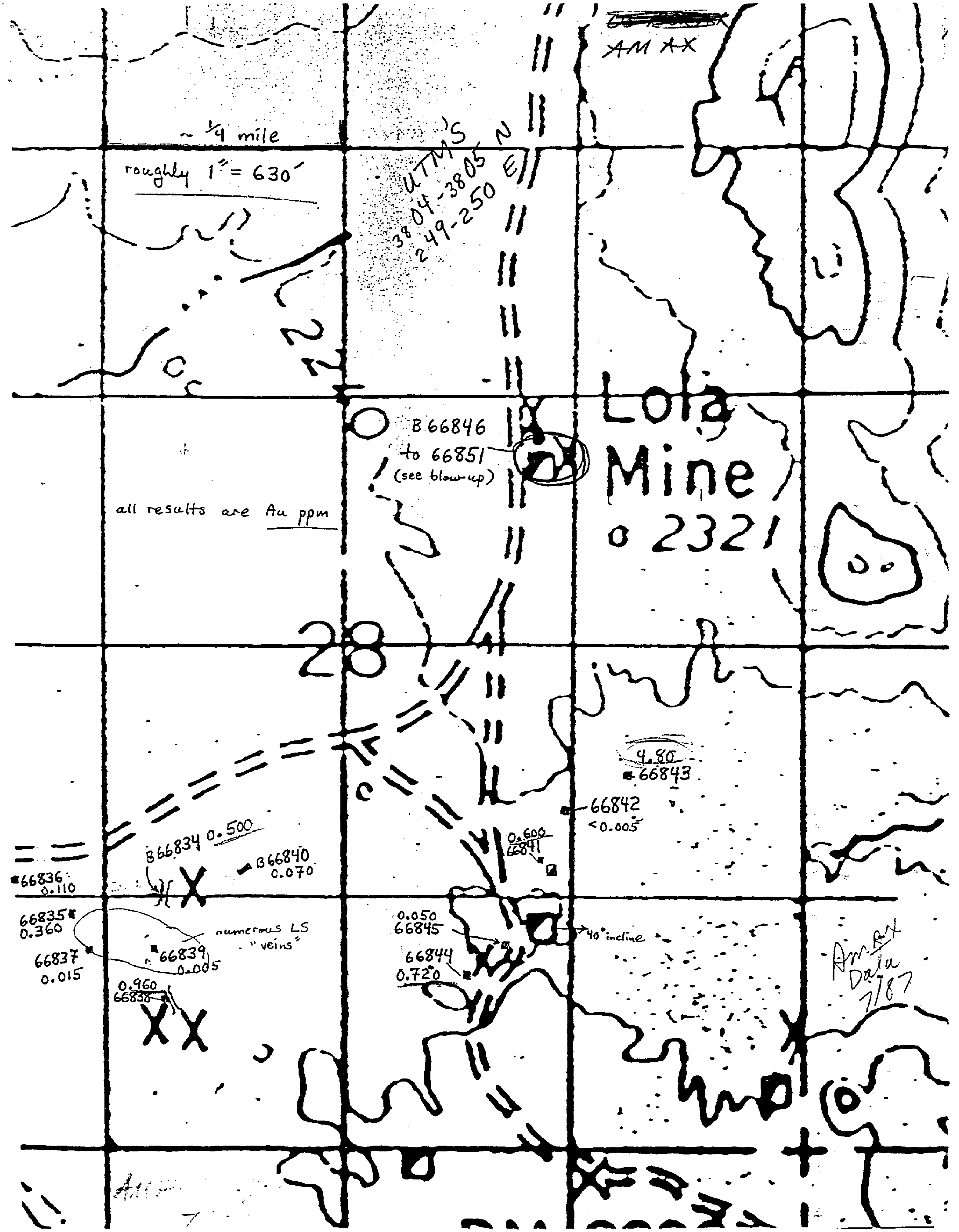
PROJECT: AZ REC 85
SUBMITTED BY: RS

FIELD NUMBER	CU PPM	PB PPM	ZN PPM	MO PPM
L-227	15100.	758.	102.	14.
L-228	67.	295.	32.	8.
L-229	9230.	732.	107.	8.
L-230	895.	1030.	120.	10.
L-231	314.	509.	89.	8.
L-232	291.	226.	43.	8.
L-233	13.	43.	114.	<5.
L-234	21.	91.	52.	6.
L-235	12.	55.	53.	6.
L-236	11.	56.	90.	6.
L-237	28.	242.	130.	<5.
L-238	11.	62.	99.	6.
L-239	19.	65.	77.	8.
L-240	23.	72.	83.	8.
L-241	34.	84.	84.	8.

RECEIVED
MAR 27 1985
U.S. BORAX EXPLORATION
TUCSON OFFICE

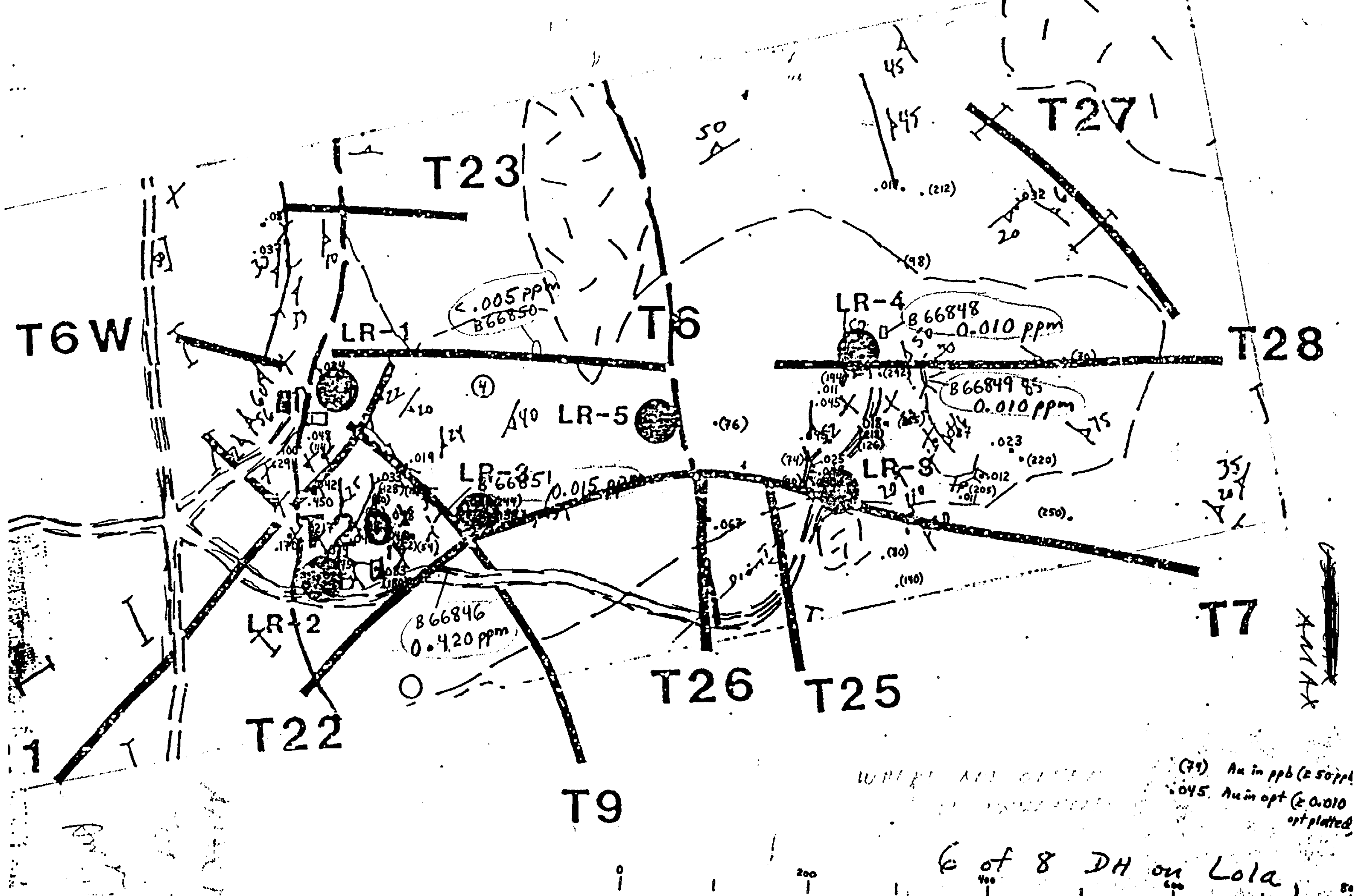
U.S. Borax Data 4/7

BORAX DATA 4/


AMAX
~ 1/4 mile
roughly 1" = 630'
UTM'S N
3804-3805 N
249-250 E
22
B 66846
to 66851
(see blow-up)
Lola
Mine
o 2321
all results are Au ppm
28
4.80
66843
66842
<0.005
B66834 0.500
B66840
0.070
66836
0.110
0.600
66841
66835
0.360
numerous LS
"veins"
66839
0.005
66837
0.015
0.050
66845
40° incline
66844
0.720
0.960
66838
AMAX
Data
7/87

W.
na

Lola Prospect Geochem



6 of 8 DH on Lola, poor results

-Clegg, Inc.
Spice Island Drive
Building 1, Unit A
Sparks, Nevada
U.S.A. 89431
Phone: (702) 359-9330

BONDAR-CLEGG

Geochemical Lab Report

AMAX

REPORT: 067-2574 PROJECT: 30160

SAMPLE NUMBER	ELEMENT UNITS	Au PPM	Au/wt G
R2 B 66821		[illegible]	30.00
R2 B 66822		[illegible]	30.00
R2 B 66823		[illegible]	30.00
R2 B 66824		[illegible]	30.00
P4 B 66825		[illegible]	30.00
R2 B 66826		[illegible]	30.00
R2 B 66827		[illegible]	30.00
R2 B 66828		[illegible]	30.00
R2 B 66829		[illegible]	30.00
R2 B 66830			30.00
R2 B 66831		[illegible]	30.00
P4 B 66832			30.00
R2 B 66833			30.00
R2 B 66834		0.500	30.00
R2 B 66835		0.360	30.00
R2 B 66836		0.110	30.00
R2 B 66837		0.015	30.00
R2 B 66838		0.960	30.00
R2 B 66839		0.005	30.00
R2 B 66840		0.070	30.00
R2 B 66841		0.600	30.00
R2 B 66842		<0.005	30.00
R2 B 66843	.14oz/T	4.800	30.00
R2 B 66844		0.720	30.00
R2 B 66845		0.050	30.00
R2 B 66846		0.420	30.00
P4 B 66847		0.220	30.00
R2 B 66848		0.010	30.00
R2 B 66849		0.010	30.00
R2 B 66850		<0.005	30.00
R2 B 66851		0.015	30.00

M+M

Viva-Lola-MWO

Viva-Lola-MWO, Mohave Co., Ariz. AMAX 4

Sampler John R-Stroud

DATE 5/6/87

Sample No.	Location	Description	Altrn.			PPM	
B 66834	Map:		Blch	Jsp		Au	.500
(R) D Vn Vg		E side cut has qtz vein, ~N25E 25°SE,	Prp	(Hm)		Ag	
S W SS		massive milky, highly frac. w/hema. W	Arg	Jar		As	
Rsd	~16' chip/channel,	side (sample) highly alt pЄ gran/Gn,	AA	Goe		Hg	
Tpd	W wall of trench	sheared, silic spots + qtz pods, much	Phy	Car			
Area	from "road" to	punky/arg; where text shows best	(Sil)	Py			
Den	wash	highly chlor, remnant Ksp. Hem, Cu stns.	Pot	Cu			
B 66835	Map:	Fracture localized, slightly sheared,	Blch	Jsp		Au	.360
(R) D Vn Vg		appears to follow Db dike in pЄ gr. Bleached	Prp	(Hm)		Ag	
S W SS		arg along frac, coarse stkwk w/Fe stn. on	Arg	Jar		As	
Rsd	6'+ wide chip/channel on	fracs; spotty silic. microbrx(?) w/hema,	AA	Goe		Hg	
Tpd	NW end of 2 trenches	Cu stn. Alt/min zone appears ~2½	Phy	Car			
Area	on shear zone	ft wide. ~N25W 70°NE.	Sil	Py			
Den			Pot	Cu			
B 66836	Map:	shear/alt augen gn/Gr, most dark	Blch	Jsp		Au	.110
(R) D Vn Vg		red stn. w/arg (white) plag, Ksp occas.	Prp	(Hm) wx		Ag	
S W SS		quite fresh. A couple narrow (1-2")	(Arg)	Jar		As	
Rsd	~25' chip/channel	mafic app- "veins" cut thru, w/qtz +	AA	Goe		Hg	
Tpd	in bank of wash.	CO_3. Bio fresh in one area, mostly →	Phy	Car			
Area		chl or totally. shot CO_3 on joints/fracs,	Sil	Py			
Den		minor qtz. Not min. appearing.	Pot				
B 66837	Map:	Prob. LR's "limest. veins". Dark reddish	Blch	Jas		Au	.015
(R) D Vn Vg		brown stained, weathers to surface between	Prp	Hm		Ag	
S W SS		LS + gossan in appear. Case hardened on	Arg	Jar		As	
Rsd	Several spots chipped	surface, CO_3 only in fracs; on fresh surf.	AA	Goe		Hg	
Tpd (Slicks present)	along ~70' of length,	red-brn, finely xlline qtz-calc. App. up to	Phy	(Car)			
Area	discontinuous o.c.	3' wide, ~N60-70°W, no feel for dip.	Sil	Py			
Den		Either splays or parall zones ~50+ apart.	Pot				
B 66838	Map:	sheared, highly alt pЄ. Variable	Blch	Jas		Au	.960
(R) D Vn Vg		spots just frac/red stained; argill,	Prp	(Hm)		Ag	
S W SS		bleached, punky; or silic. w/qtz	Arg	Jar		As	
Rsd	~30' chip/channel	pods, hema, microbx, tr. Cu minerals	AA	Goe		Hg	
Tpd	in N30W trending	Trench @ acute angle to min. zone,	Phy	Car			
Area	trench, W wall	probably not this wide. CO_3 freq.	Sil	Py			
Den			Pot	Cu			
B 66839	Map:	Deeply wx gran. gneiss, white/arg	Blch	Jas		Au	.005
(R) D Vn Vg		fsp, red grndmass, minor hema	Prp	Hm		Ag	
S W SS		on fracs. Cut appeared to	Arg	Jar		As	
Rsd	~7'+ rough channel	follow N-S hi ∠ frac w/hema	AA	Goe		Hg	
Tpd	across back of	+ CO_3, tr. qtz.	Phy	Car			
Area	small N trending		Sil	Py			
Den	cut into hill (E-W sample)		Pot				
B 66840	Map:	Granitic gneiss as above with	Blch	Jas		Au	.070
(R) D Vn Vg		numerous x-cutting 1" LS veins	Prp	Hm		Ag	
S W SS		frac filling of red-brown, finely	Arg	Jar		As	
Rsd	from ~40' E of cut	xlline CO_3 - qtz, tr. hema	AA	Goe		Hg	
Tpd	w/Cu stned qtz, rough		Phy	(Car)			
Area	channel for 25' to		Sil	Py			
Den	E.		Pot				

Viva-Lola-MWO, Az Sampler J.R. Stroud XM AR 5

DATE 5/6/87

Sample No.	Location	Description	Altrn.		PPM	
B 66841	Map:	Stope dip ~45° nearly due E, on sheared,	Blch	Jsp	Au	.600
(R) D Vn Vg		highly altered (+ brx) zone in Gr/Gn.	Prp	(Hm)	Ag	
S W SS		~same attitude as open stope to S, but this	(Arg)	Jar	As	
Rsd	>25' rough channel	one either offset E or zone curves. Argill	AA	Goe	Hg	
Tpd	on cut to N of stope,	(punky greenish-gray) Gr w/ irreg. zones	Phy	(Car)		
Area	~E-W channel. 15'	w/Cu staining, qtz in distinct pods +	(Sil)	Py		
Den	+ true thickness	some silic. thru out zone. Some Db here ≠ to E, Shears may follow Db	Pot	Cu		
B 66842	Map:	Mostly typ. reddish granitic gneiss	Blch	Jsp	Au	<.005
(R) D Vn Vg		w/avg. lt. gray fsp phens. Also minor	Prp	~~Hm~~	Ag	
S W SS		red phyllitic material, tr. Db.	~~Arg~~	Jar	As	
Rsd	Grab sample of	"Typical" country rock. (?)	AA	Goe	Hg	
Tpd	material piled		Phy	~~Car~~		
Area	along T 12.		Sil	Py		
Den			Pot			
B 66843	Map:	N15E trending "LS vein", dark	(Blch)	Jsp	Au	4.80
(R) D Vn Vg		red-brn, trace Cu, ~3-4' wide,	Prp	~~Hm~~	Ag	
S W SS		also Gneiss (+ phyll?) wall,	(Arg)	Jar	As	
Rsd	~20' wide rough	wk-mod arg, mod silic w/small	AA	Goe	Hg	
Tpd	channel across	qtz stringers; lt gray, bleached,	Phy	(Car)		
Area	struc.	tr. hema.	(Sil)	Py		
Den			Pot			
B 66844	Map:	~N-S strike, 25°E dipping "vein".	Blch (tr)	Jas	Au	.720
(R) D Vn Vg		Shear zone in red phyll(?); shows	Prp	(Hm)	Ag	
S W SS		white arg. elong. fsp in a couple layers,	~~Arg~~	Jar	As	
Rsd	6'+ channel (vertical)	may be phyllonite. ~1' thick vein where	AA	Goe	Hg	
Tpd	on S side of inclined	argill, quite strongly silicif, abund. Cu	Phy	(Car)		
Area	prospect/failed adit.	stains + CO_3; MnO, hema locally,	(Sil)	Py		
Den		some vuggy FeOx vugs. Most of sample red meta HW	Pot	Cu		
B 66845	Map:	Mostly red Gn, minor red/yell phyll,	Blch	Jas	Au	.050
(R) D Vn Vg		all deeply wx. Incl. minor Db,	Prp	~~Hm~~	Ag	
S W SS		dark qtz-calc vein, and 2" thick	~~Arg~~	Jar	As	
Rsd	~70' long quick+dirty	N15W, mod SW dipping bull	AA	Goe	Hg	
Tpd	chip channel of fairly	qtz vein. Crosses small cut	Phy	~~Car~~		
Area	continuous exposure	made into bank on stained Gn.	~~Sil~~	Py		
Den	in road bank/bed		Pot			
B 66846	Map:	~30° E dipping Cu stn, silic. shear	Blch	Jas	Au	.420
R D Vn Vg		zone (?) in granitic Gn, min Db	Prp	(Hm)	Ag	
S W SS		E end. Stained/silic. zone 1-1½'	~~Arg~~	Jar	As	
Rsd	~18' chip/channel	thick, FW somewhat argill. w/a	AA	Goe	Hg	
Tpd	@ cut with JMZ-	few qtz pods/stringers. Sparse	Phy	(Car)		
Area Lola	53 - 24 and 81.	¼" (sideritic) CO_3 veinlets. Quite	(Sil)	Py		
Den Mine		well frac. Hema.	Pot			
B 66847	Map:		Blch	Jas	Au	.220
R D Vn Vg		CONTROL	Prp	Hm	Ag	
S W SS			Arg	Jar	As	
Rsd		Au 75 = 21 ppm	AA	Goe	Hg	
Tpd			Phy	Car		
Area			Sil	Py		
Den			Pot			

looks spotty

Viva-Lola-MWO, Az

Dreamer, Uintah Co, Utah

Sampler ____________

DATE 5/6/87

Sample No.	Location	Description	Altrn.		PPM	
B 66848	Map:	Frac./stained Gn w/one or more	Blch	Jsp	Au	.010
(R) D Vn Vg		hi angle, ~N30W trending 1"-2" vnlts.	Prp	(Hm)	Ag	
S W SS		of qtz w/Cu stains, hema, MnO.	~~Arg~~	Jar	As	
Rsd	~15' long, 5' wide	Also ½-1" thick black calc-qtz	AA	Goe	Hg	
Tpd	area of o.c. random	veins. Trend of o.c. acute to veins,	Phy	(Car)		
Area	chipped.	so sample only across ~5' true width,	(Sil)	Py		
Den	Lola Mine	mostly along strike, prob. excess vein mater.	Pot			
B 66849	Map:	Alt. augen granitic Gn over Db dike,	Blch	Jsp	Au	.010
R D Vn Vg		7 or more distinct fracs w/silic and	Prp	(Hm)	Ag	
S W SS		2° Cu minerals, ½-3" thick, dip	(Arg)	Jar	As	
Rsd	rough channeled whole W wall of 30' plus	@ varying to NW attitudes, abund hema,	AA	Goe	Hg	
Tpd	trench, previous	some comb text qtz; also black CO_3	Phy	~~Car~~		
Area Lola	samples SMZ-53-	vnlts. Qtz + hema also on many	(Sil)	Py		
Den Mine	110, 109, 108	fracs. w/o Cu. Fsp arg.	Pot			
B 66850	Map:	Country rock, granitic gneiss, red	Blch	Jsp	Au	<.005
(R) D Vn Vg		w/bleached/argill plag. Tr qtz	Prp	~~Hm~~	Ag	
S W SS		on fracs. Tr brown-black	~~Arg~~	Jar	As	
Rsd	Random chip, 12 ×	calcite vnlts.	AA	Goe	Hg	
Tpd	6' area of outcrop.		Phy	~~Car~~		
Area	Lola Mine		~~Sil~~	Py		
Den			Pot			
B 66851	Map:	Red stn/alt Gn, ~1' thick	Blch	Jas	Au	.015
(R) D Vn Vg		gently SE dipping light gray	Prp	~~Hm~~	Ag	
S W SS		silic layer, mod chlor, abund	~~Arg~~	Jar	As	
Rsd	~35' quick	calc. in fracs. No Cu minerals	AA	Goe	Hg	
Tpd	channel, W wall	seen in place although some in	Phy	(Car)		
Area	of trench w/#-76	trench float. Tr qtz blebs/vnlts.	~~Sil~~	Py		
Den	Lola Mine	Minor hema.	Pot			
	Map:		Blch	Jas	Au	
R D Vn Vg			Prp	Hm	Ag	
S W SS			Arg	Jar	As	
Rsd			AA	Goe	Hg	
Tpd			Phy	Car		
Area			Sil	Py		

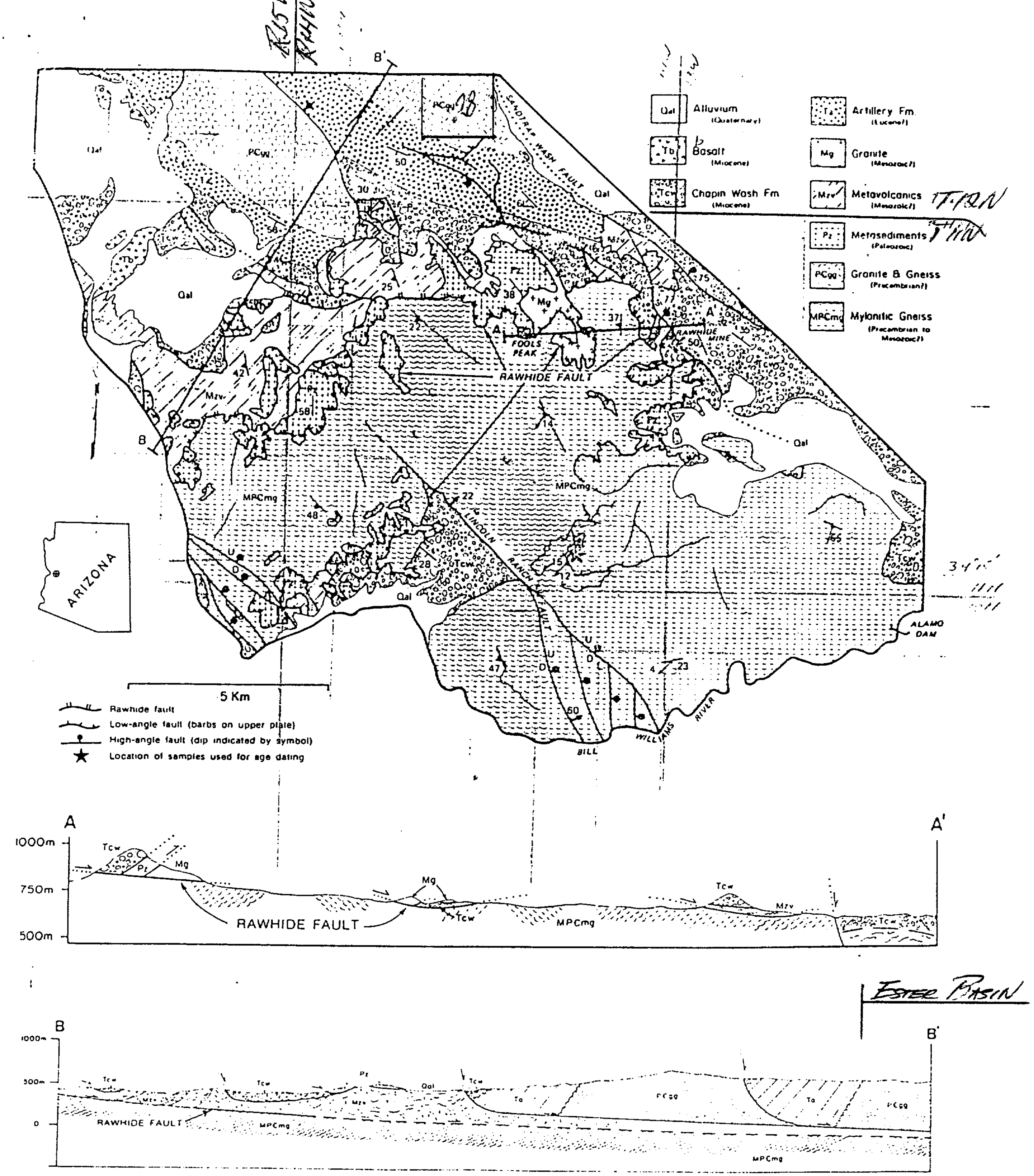


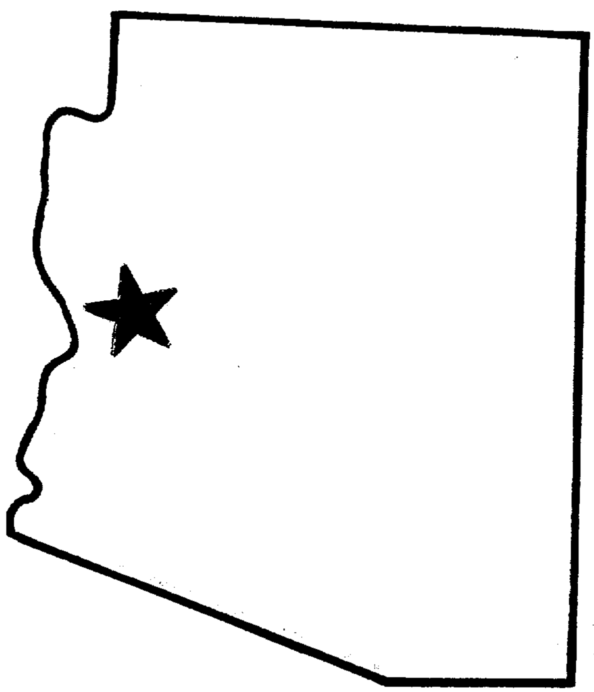
Figure 1. (Top) Geologic sketch map, Rawhide Mountains, Arizona. Star indicates location of dated gneiss samples. (Center) Cross section A–A′ through eastern part of denudation complex. (Bottom) Cross section B–B′ through western part of denudation complex. Note presence of two major structural sheets. No vertical exaggeration.

From Shackelford

GEOLOGIC REPORT
on the

VIVA GOLD PROPERTY

MOHAVE COUNTY, ARIZONA



BY

WILLIAM B. ROBERTS

MINING ENGINEER-GEOLOGIST

GEOLOGIC REPORT

ON THE

VIVA GOLD PROPERTY

MOHAVE COUNTY, ARIZONA

by

WILLIAM B. ROBERTS

MINING ENGINEER & GEOLOGIST

1405 South Elm Street
Denver, Colorado 80222
(303) 756-7090

December 8, 1988

CONTENTS

ILLUSTRATIONS

INTRODUCTION

The Viva Gold Property consists of a group of unpatented mining claims located in Ester Basin, west-central Arizona (see Figure 1). Scattered occurrences of gold have encouraged prospecting and small-scale mining for many years. New concepts regarding the geology of the area have implications for the occurrence of commercially viable gold deposits.

The chief purpose of this report is to elucidate those possibilities and to generate additional geologic information in what is believed to be the area of greatest economic potential. Another purpose is to integrate existing geochemical data with newly developed geologic data with the intent of delineating attractive drilling targets. Other purposes are to compare the geology of the property with that of nearby deposits of the same general type, to satisfy government requirements for annual assessment work, and to assemble the pertinent data in a single package.

The investigation focused on the Basement Complex in the southern half of section 28 because previous geological and geochemical studies indicate that this area has the greatest potential for the occurrence of ore. The Artillery Formation was not studied in detail because it exhibits little evidence of mineralization. Fieldwork consisted of examining outcrops and surface excavations, delineating formations, tracing faults, and recording the location and attitude of the many veins that criss-cross the area.

Field mapping was done on a single enlarged black and white aerial photograph (scale 1"=approx. 520'). A base map showing roads and

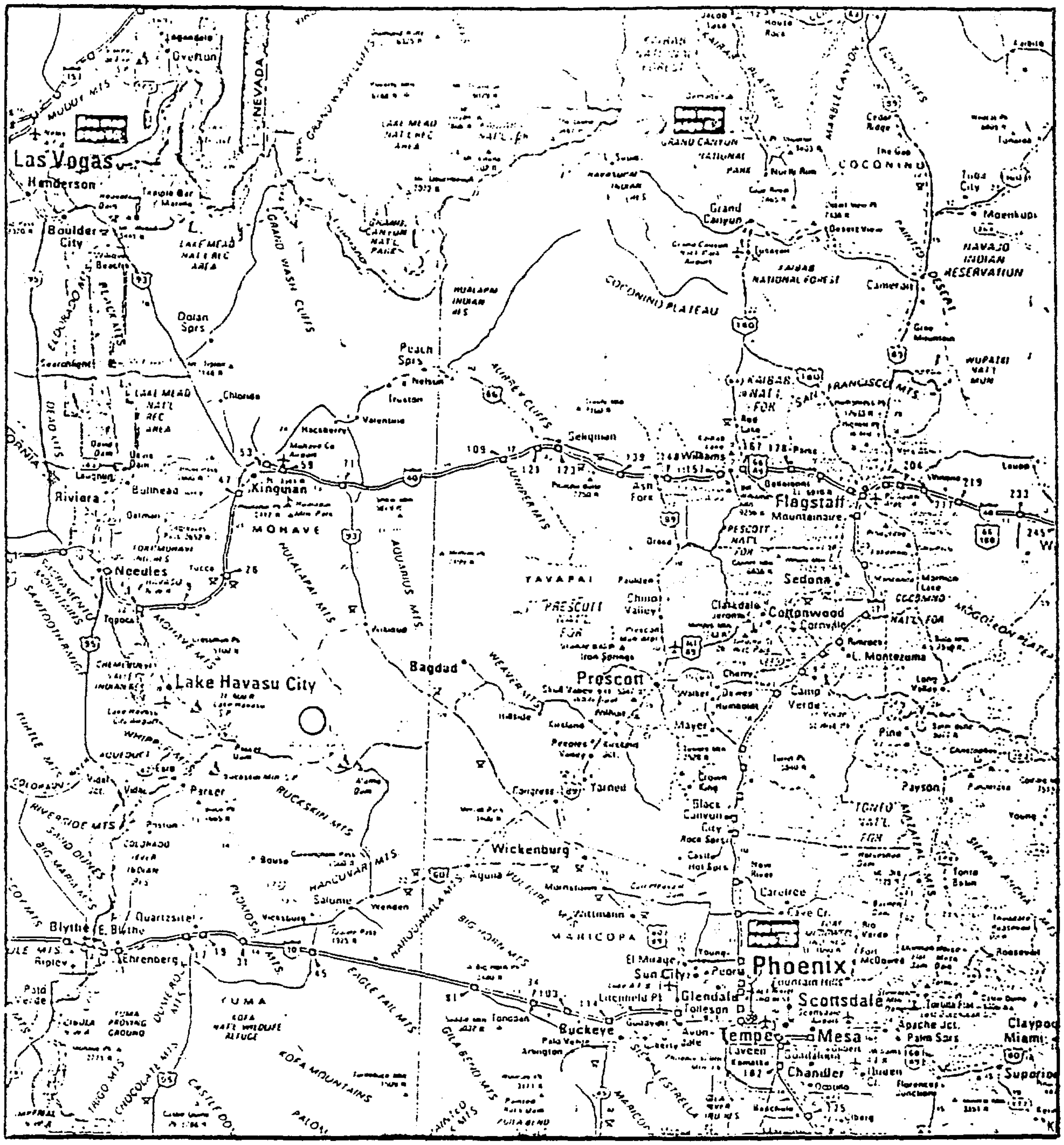


FIGURE 1 LOCATION MAP

drainage was prepared directly from this photograph without adjustment for topographic irregularities. A land map, geologic map, and map showing surface workings and the location of geochemical samples were made as overlays, and are included in this report.

Shackelford (1976) mapped the structural geology of the Rawhide Mountains, and Ester Basin is included in the northernmost part of the area he mapped. His interpretation of the structure of this area is relevant to the economic potential of the Viva Gold Property.

LOCATION AND ACCESS

The Viva Gold Property is in Ester Basin at the northern end of the Rawhide Mountains in the southern part of T12N, R14W, G&SRBL&M, Mohave County, west-central Arizona (see Figure 1).

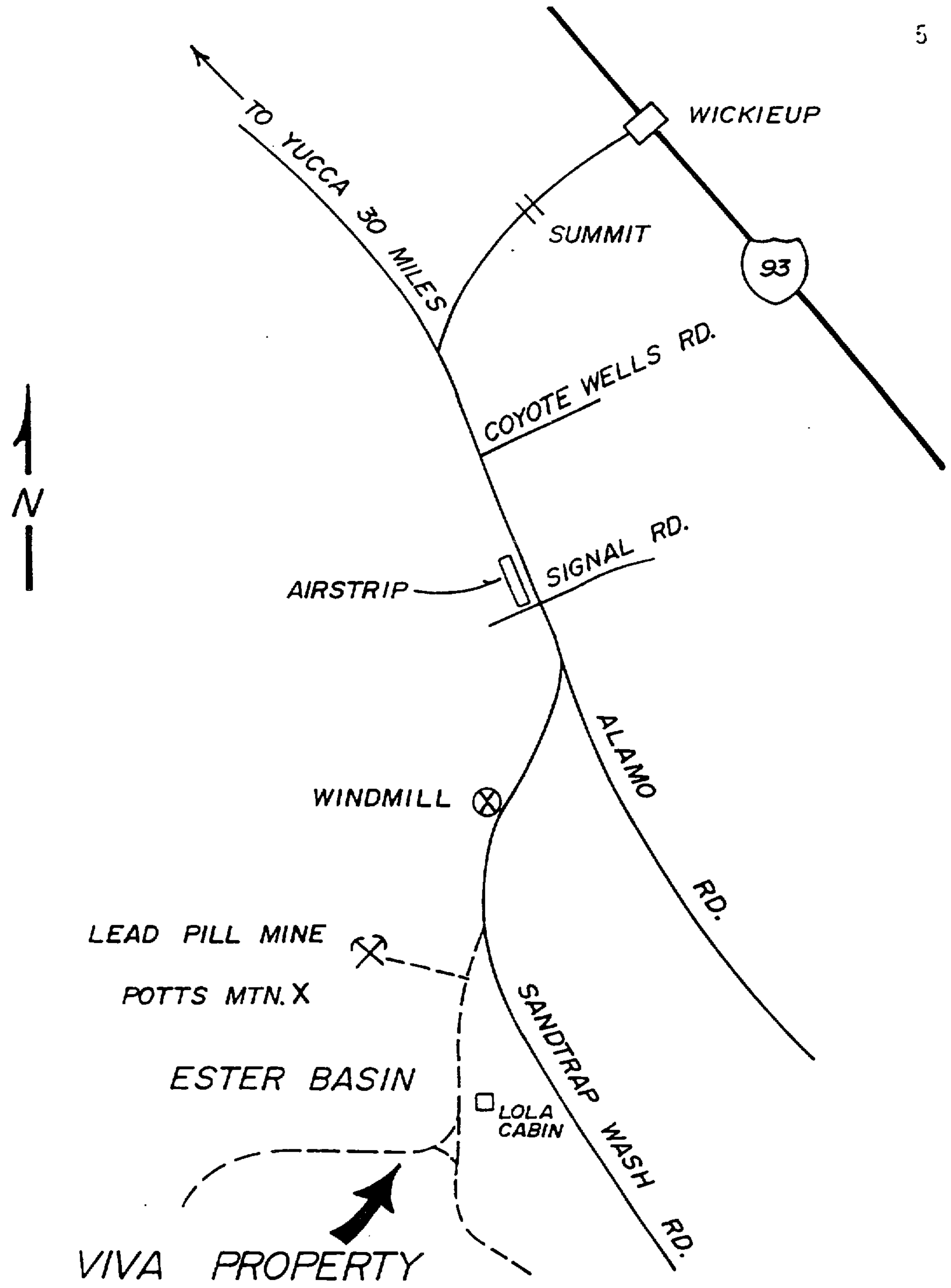
Ester Basin is indicated on the USGS Artillery Peak Quadrangle (15 min.) and the Artillery Peak SW Preliminary Quadrangle (7½ min. blueline).

Several jeep roads cross the property and numerous sandy washes provide easy access by four-wheel drive vehicle to most parts of it.

Wickieup, the nearest settlement, has a general store, motel, three gas stations, and several restaurants. Kingman, the nearest town of appreciable size, is 50 miles northwest of Wickieup via a paved highway.

To reach the property from Wickieup, one drives west through the Hualapai Mountains, thence south along a graded dirt road about 31 miles (see Figure 2). The final two miles into Ester Basin is on a rough but readily negotiable dirt road. Distances along this route are tabulated below:

	Miles from Wickieup
Wickieup	0
Yucca Road	13.9
Coyote Wells Road	18.5
Signal Road	23.6
Windmill	27.8
Ester Basin Road	30.7
Viva Gold Property	32.8



GENERALIZED LOCATION MAP

VIVA GOLD MINING PROPERTY

T12N, R14W, G & SR BL & M
MOHAVE COUNTY, AZ.

FIGURE 2

CLIMATE AND TOPOGRAPHY

Summers in Ester Basin are hot; sometimes the temperature reaches 120°F. Winters are cool and occasionally the nighttime temperature drops below freezing. Rainfall averages nine inches a year.

The elevation in the eastern part of the basin where the property is located is about 2200 feet. Low rolling hills separated by sandy washes characterize this part of the basin. Local relief rarely exceeds 50 feet.

Ester Basin is bordered on the south and east by low hills. Potts Mountain at the north edge is 3378 feet in elevation and is the highest hill in the vicinity.

Vegetation is typical of southwestern Arizona. Saguaro, ocatillo, palo-verde, mesquite, cholla, and creosote bush are the more common plants. In general, these plants are widely-spaced, thereby permitting easy access.

LAND STATUS AND OWNERSHIP

The Viva Gold Property consists of two contiguous groups of claims: the Viva and the MWO (see Plate II).

The Viva group consists of 44 unpatented mining claims: 36 are full-sized (600' x 1500') and eight are partial claims. The group aggregates about 780 acres. They were located in November 1983 and surveyed by pace and compass. The corners, end-centers, and discoveries are marked by 2x2 wood posts.

The MWO group consists of 81 unpatented mining claims: 27 are full-sized (600' x 1500') and 54 are partial claims. The group aggregates about 1100 acres. They were located in May 1985 and surveyed by pace and compass. The corners, end-centers, and discoveries are marked by 4x4 wood posts with painted orange tops.

The Viva and MWO claims are owned jointly by Louis R. Reimer and Carol Reimer, 50 percent, and William B. Roberts, 50 percent. Louis R. Reimer and Carol Reimer have a 51 percent executive right. The owners have agreed to pay Bruce E. Pitts and Vicki P. Pitts ten percent of any royalties or proceeds from the sale or lease of the claims. The annual assessment work for the year 1988 for the Viva and MWO claims has been completed and the appropriate notices have been recorded.

The Lola Mine (see Plate II) is a patented mining claim and is not part of the Viva Gold Property. The owner of this parcel wishes to remain unaffiliated, but he has in the past leased it on reasonable terms.

GEOLOGY

General

Ester Basin is underlain by a Basement Complex of Precambrian(?) crystalline rocks. The hills that border the basin on the south are formed by sedimentary rocks of the Tertiary Artillery Formation. Volcanic rocks of Tertiary and Quaternary age border the basin on the north (see Plate I). Most of the known mineralization occurs within the Basement Complex.

Artillery Formation

The Artillery Formation is a vari-colored sequence of non-marine sedimentary rocks consisting of arkose, limestone, sandstone, siltstone, and shale, all more or less tuffaceous, of probable Eocene Age.

The basal member of the formation is a massive unit of arkose composed chiefly of debris derived from porphyritic granite of the underlying Basement Complex. In places the contact between the arkose and porphyritic granite is difficult to pinpoint because the two rocks are quite similar. Elsewhere the contact is easily located because it is marked by a basal conglomerate of well-rounded cobbles and boulders ranging up to 18 inches in diameter. Clasts of porphyritic granite are the most common, but clasts of vein quartz, limestone, quartzite, aplite, and diorite are also present.

Some geologists have postulated a detachment fault surface at this horizon. Evidence for such a surface is entirely lacking in Ester Basin. Indeed, the sedimentary nature of this contact is obvious where it is well-exposed just north of the road in section 29 (see Plate I).

Basement Complex

The Basement Complex consists of granitic gneiss and phyllite intruded by porphyritic granite and alaskite. These rocks in turn are intruded by two swarms of diorite dikes. The alaskite intrusives and the diorite dikes were mapped separately, but it was deemed impractical to differentiate the granitic gneiss, phyllite, and porphyritic granite.

Granitic Gneiss & Phyllite

The oldest rocks in the mapped area are granitic gneiss and phyllite. These rocks are extensively intruded by porphyritic granite, but no contact aureole is discernible. The granitic gneiss is thin-banded with a streaky mineral lineation. It consists of quartz, feldspar, muscovite, and chlorite. The rock is intensely fractured and deeply weathered. The weathered color is tan to light green. The closely associated phyllite has a well-developed slatey cleavage, and cleavage surfaces exhibit a characteristic sericitic sheen. The rock weathers reddish-brown. Granitic gneiss and phyllite are more resistant than porphyritic granite and tend to form low rounded hills. Shackelford (1976) assigned the granitic gneiss and phyllite to the Precambrian(?) based on occurrences of similar rock elsewhere in western Arizona and southeastern California.

Porphyritic Granite

Porphyritic granite is the most abundant rock in the mapped area. It is characterized by large phenocrysts of K-feldspar that range up to two inches in length and make up a large part of the rock. Plagioclase and quartz are subordinate and biotite is the chief accessory mineral. Locally, the rock exhibits thin-banded gneissic layering. It weathers pink to purplish-brown and is less resistant than the closely associated granitic gneiss and phyllite, and consequently tends to form topographic "lows."

In many places the porphyritic granite is intensely fractured and the phenocrysts fragmented, making it more difficult to identify. Where deeply weathered, the rock consists of a pinkish argillaceous groundmass with white streaks and pods of feldspar and quartz.

Shackelford assigned the porphyritic granite to the Precambrian(?) based on occurrences of similar rock elsewhere in western Arizona and southeastern California.

Alaskite

Alaskite is the term applied to a distinctive light-colored igneous rock that forms the prominent hill in the southeastern corner of the mapped area (see Plate I). A smaller hill of this material is located in the eastern part of section 28. The rock is similar in composition to the porphyritic granite, but is richer in quartz and contains muscovite instead of biotite. Scattered small grains of magnetite were observed in some specimens. The texture is granitic and locally the rock exhibits thin-banded gneissic layering. It lacks the large K-feldspar phenocrysts of the porphyritic granite. The alaskite is more resistant than other rocks of the Basement Complex and as a consequence forms prominent hills. Shackelford (1976) applied the term luecocratic granite to this rock and regards it as a phase of the porphyritic granite. He assigned it to the Precambrian(?) because of its affinity to the porphyritic granite.

Diorite Dikes

Diorite dikes intrude all rocks of the Basement Complex, but do not intrude the Artillery Formation. They consist chiefly of hornblende and plagioclase and exhibit granitic texture. Propylitic alteration is common and the resulting chlorite imparts a distinctive green color to the rock. The dikes tend to form hills and ridges, especially where the enclosing rock is porphyritic granite. They range up to 200' in width. One swarm of these dikes has a N50°W alignment and a second swarm is aligned N30°W.

The age of these dikes is uncertain. They are younger than other rocks of the Basement Complex, but older than the Artillery Formation. Shackelford (1976) provisionally assigned similar rocks nearby to the Mesozoic(?).

Structure-Regional

This summary of the regional structure of west-central Arizona and adjacent southeastern California was abstracted from the literature.

Detatchment faults are the dominant structural feature of a 100km wide corridor of crustal extension along the lower Colorado River. In latest Oligocene(?) and early Miocene time, crustal extension, estimated at 50km, resulted in a system of low-angle detatchment faults that dip gently northeastward and root under the Colorado Plateau. They shoal at the western edge of the corridor in southeastern California. Mid-crustal metamorphosed lower plate rocks moved southwestward and were juxtaposed beneath near-surface unmetamorphosed upper plate rocks. Extension and thinning of the upper plate was accomplished by shingling of the rocks along northeast dipping listric normal faults that merge with the underlying detachment surface. The upper plate blocks were consistently rotated downward to moderate to steep southwest dips. Block tilts and degree of extension increase northeastward across the corridor in the direction of transport.

The lower plate is composed chiefly of Precambrian metamorphic rocks and exposes progressively deeper level rocks northeastward. In the Rawhide Mountains the lower plate consists of mylonitic gneiss. The upper plate consists of Tertiary volcanic and sedimentary rocks and metamorphic and plutonic rocks of Precambrian, Mesozoic, and locally Paleozoic age.

Isostatic upwarp brought lower plate rocks to the surface from paleodepths of 8-10km to form so-called "core complexes." Originally the detatchment surfaces were probably nearly planar, but are now undulating. Synforms and antiforms on this undulating surface trend northeastward in the direction of upper plate transport.

Post-extensional sediments and basalts dated 10-15 m.y.BP lap across highly faulted rocks of the extensional terranes. The extensional terranes and overlying post-extensional sediments and basalts are cut by later Basin and Range type high-angle faults.

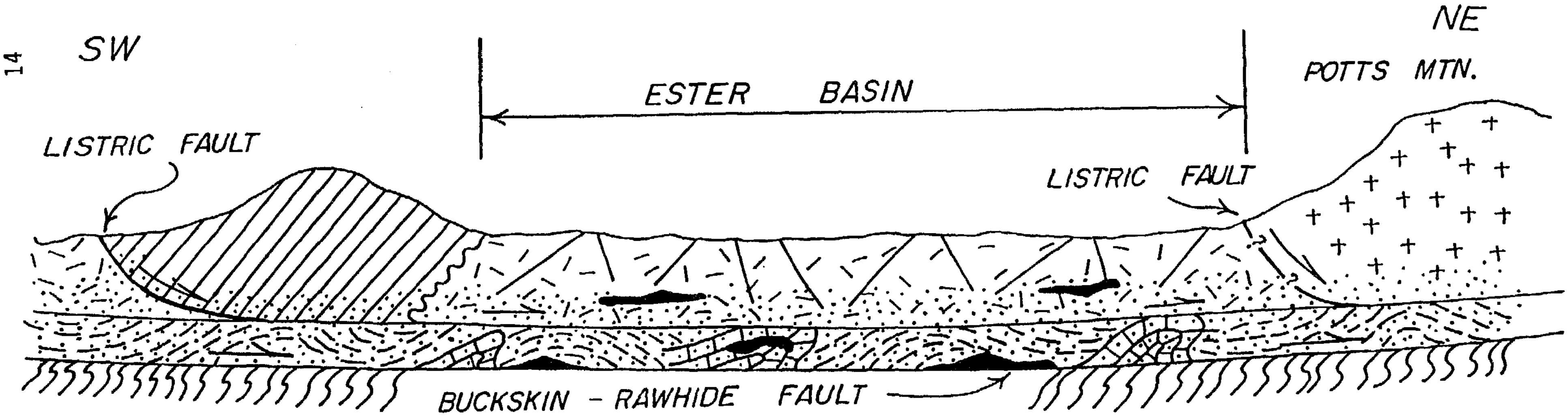
The basal detatchment surface is marked by a flinty brown-weathering microbreccia that grades downward into a zone of mylonitic gneiss that is brecciated and pervasively chloritized (chlorite breccia). Above the basal detatchment surface the rocks are intensely brecciated, dilated, and imbricated through a zone ranging up to several hundred feet in thickness.

Shackelford's (1976) map of the Rawhide Mountains indicates that the Buckskin-Rawhide fault in the Cleopatra and Rawhide districts just south of Ester Basin is overlain by an intermediate plate containing a diverse assemblage of partially metamorphosed rocks, and an upper plate consisting of unmetamorphosed Tertiary Artillery and Chapin Wash Formations and Precambrian(?) granite and gneiss. The most northerly exposure of the Buckskin-Rawhide fault is about 2½ miles south of Ester Basin. At this point both detatchment surfaces dip gently northward. Thus Ester Basin is underlain by upper plate rocks at the surface and by middle(?) and lower plate rocks at depth. These relationships are illustrated by Figure 3.

Local Structure

The Viva Gold Property is underlain near the surface by upper plate rocks consisting of the Tertiary Artillery Formation, the Precambrian(?) Basement Complex of Ester Basin, and the Potts Mountain volcanics (see Figure 3). The Artillery Formation and Basement Complex constitute a discrete upper plate tilt block that dips about 60° southwest and strikes N60°W. This block was rotated downward along a listric normal fault that dips northeastward and strikes northwestward, and presumably merges with the detatchment fault at depth. It is inferred that the Potts Mountain volcanics similarly rotated downward on a similar listric fault at the northern edge of Ester Basin. Since no mapping was done in this part of the area, these structural relationships are as yet conjectural.

The most prominent fault in Ester Basin is a northeast-trending normal(?) fault that displaces the Artillery-Basement contact about 350 feet northeastward (see Plate I). It dips about 35° southeast and is unmineralized except for a short segment near the southeast corner of section 28.



IDEALIZED CROSS-SECTION THROUGH ESTER BASIN
SHOWING RELATIONSHIP OF HYPOTHETICAL
ORE DEPOSITS TO BUCKSKIN - RAWHIDE DETACHMENT SURFACE
MODIFIED FROM SHACKELFORD ET AL

LEGEND

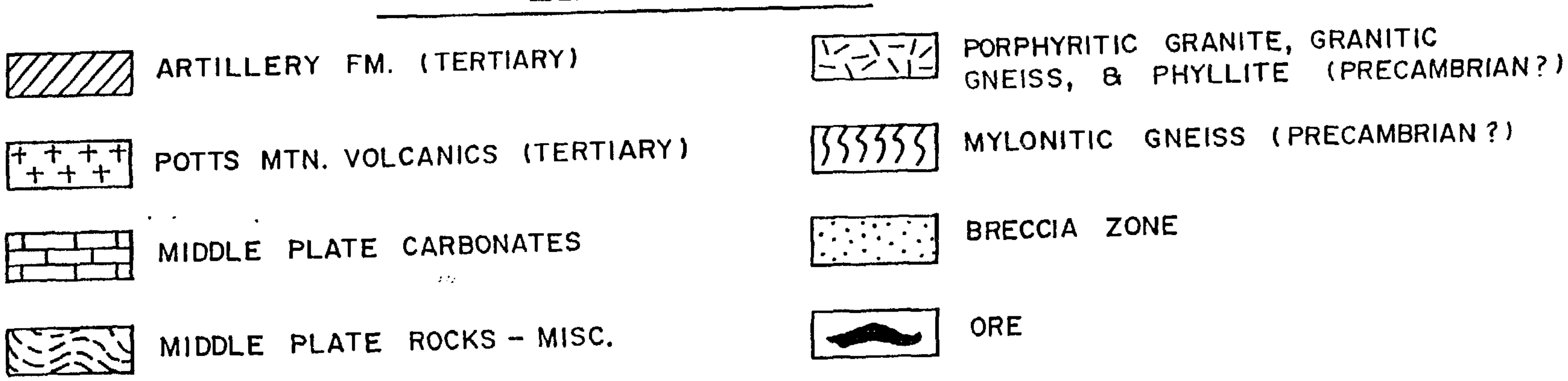


FIGURE 3

The east-trending veins that dip 30°-60° northward in section 28 are, of course, mineralized faults (see Plate I). Displacement appears to be small since they cut but do not appreciably offset diorite dikes. Their orientation suggests that they are sympathetic to the listric normal faults.

The Artillery-Basement contact is cut by several faults of small displacement (see Plate I). They are mineralized, but the mineralization appears to die out as they extend into the Artillery Formation. Surficial deposits of caliche mark the traces of some of these faults.

Elsewhere the Basement Complex is cut by many faults and fractures of every orientation. Again, displacements are small because they do not appreciably offset the Artillery-Basement contact. The term gash vein is applied to these mineralized faults.

It is inferred that these pre-mineral faults resulted from movement during emplacement of the upper plate.

Two faults shown on Plate I are post-mineral faults. The Sandtrap Wash fault shown at the extreme northeast corner of the map was mapped by Shackelford (1976). He regards it as an oblique-slip normal fault of the Basin and Range type since it cuts the extensional terranes and overlying post-extensional sediments and basalts. He observed that it is covered by Holocene alluvium, but in part is expressed topographically.

The prominent fault that trends N75°W across section 28 can be traced on aerial photographs for more than a mile (see Plate I). It cuts the alaskite intrusive. It is unmineralized, and its displacement is unknown. Its eastern extremity appears to be covered by Holocene alluvium. These relationships and its location and orientation suggest that is is a branch of the Sandtrap Wash Fault.

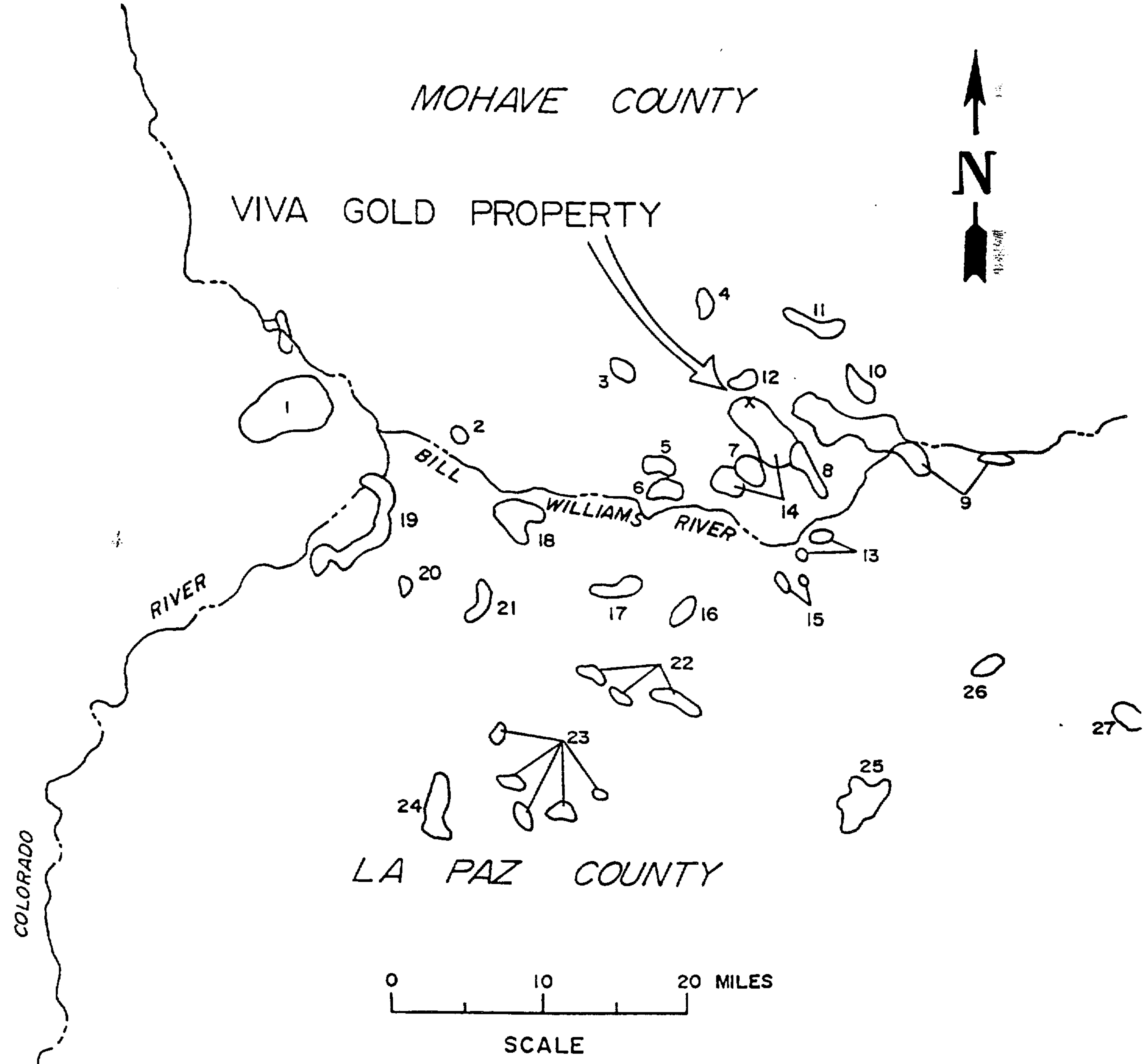
Mineral Deposits Associated with Detatchment Faults

Mineral deposits associated with detatchment faults constitute a distinct and separate class of mineral deposits. Known deposits along the Buckskin-Rawhide detatchment fault such as Swansea-Copper Penny, Planet-Mineral Hill, and Copper Basin have been described in the literature and their characteristics are fairly well-known (see Figure 4). The following account has been abstracted from the literature:

Most of the deposits occur along the detatchment surface in the upper plate, or in some cases in an intervening plate. The deposits range from small to very large. Iron is the dominant metal, but the deposits also contain a large amount of copper. Lesser amounts of manganese, lead, zinc, uranium, silver, and gold generally occur lateral to and above the main copper-iron deposit. Ore minerals are specular hematite, chalcopyrite, manganese oxides, argentiferous galena, sphalerite, and native gold. Also, in the upper plate malachite and chrysocolla are common ore minerals. Sulfide mineralization generally preceded oxide mineralization. Gangue minerals are quartz, calcite, barite, fluorite, and occasionally gypsum. Chlorite is the dominant alteration mineral.

Texture studies reveal that ore minerals were deposited both during and after movement on the detatchment surface. This has resulted in brecciated and smeared-out massive and disseminated ore bodies.

Open-space filling by ore minerals was the chief depositional style, but replacement of reactive rocks (carbonates) was also important. Distension and lateral displacement caused by movement along the



1. Copper Basin
2. Triple
3. Castenada
4. McCracken
5. Mesa
6. Owens
7. Black Burro
8. Rawhide
9. Artillery
10. Artillery Peak
11. Madril Peak
12. Lead Pill
13. Alamo
14. Cleopatra
15. Lincoln Ranch
16. Clara
17. Swansea
18. Planet
19. Cienega
20. Mammon
21. Pride
22. Midway
23. Bouse
24. No. Plomosa
25. Cunningham
26. Burnt Well
27. Bullard

MINING DISTRICTS OF WEST-CENTRAL ARIZONA AND SOUTHEASTERN CALIFORNIA

FIGURE 4

detatchment surface resulted in intense brecciation of upper and middle plate rocks and to a lesser degree lower plate rocks. The resulting breccia zone, which in places ranges up to several hundred feet in thickness, constitutes a zone of enhanced permeability that contains sites favorable for ore mineral deposition. Also, breccia zones associated with listric faults in the upper plate constitute sites favorable for ore mineral deposition.

The detatchment surface is not planar and the favored site for mineralization is along synforms on the detatchment surface. These synforms and complementary antiforms trend northeastward in the same direction the upper plate moved along the detatchment surface. The combination of a synformal trough overlain by a thick upper plate sequence containing a layer of brecciated rock above the fault surface constitutes a favorable site for the occurrence of an ore deposit. The large deposits at Swansea-Copper Penny, Planet-Mineral Hill, Copper Basin, and Cienega exhibit this configuration.

Fluid inclusion studies indicate the ore-forming solutions were hot brines. The mineralization temperature ranged from 150°-325°C and the salinity from 10-23% NaCl. The solutions were reducing at the time of sulfide deposition and oxidizing at the time of oxide deposition. Mineralization took place 17 to 18 m.y.BP at paleodepths of 1 to 3km.

It is inferred that isostatic upwarp resulting from crustal extension rapidly brought hot lower plate rocks upward and juxtaposed them against cool near-surface upper plate rocks creating an environment favorable for ore mineral deposition. One theory postulates that hot solutions contained in the lower plate leached metals from mafic minerals in the lower plate and deposited them when they mixed with relatively cool solutions in the upper plate. The heat was probably derived from friction generated by movement of the upper plate along the detatchment surface and from latent heat in the lower plate rocks after undergoing 8 to 10km of rapid uplift. The heat did not result from magnetic activity.

Local Mineralization

Mineralization at the Viva Gold Property is most apparent in the many veins that criss-cross the property. At the surface oxidized minerals predominate and sulfide minerals are rare. Specular hematite is by far the most common metallic mineral. Small amounts of manganese oxides are present in most veins. Pyrite and chalcopyrite are rare, but boxworks containing goethite pseudomorphs after pyrite and chalcopyrite are common. Malachite and chrysocolla occur at many localities. The writer has collected dump specimens that contain small but recognizable flecks of native gold.

Gangue minerals are calcite, quartz, chert, and barite. Fluorite is rare. There are two types of vein fillings: siliceous and calcitic, but all gradations between these types exist. Indeed, calcitic veins grade into siliceous veins along strike at several localities. A typical calcitic vein weathers dark-brown and resembles a limestone bed. Generally, these veins contain irregular bands of dark-brown to black-weathering chert. The dark color is imparted by fine-grained specular hematite and manganese oxide. The prominent east-trending veins in south central section 28 are of this type. In places dark-brown chert grades into white chert and the vein assumes a conspicuous banded appearance.

Veins filled with white quartz occur at many localities. Mineralization in these veins consists of fracture surfaces thinly coated with red brown hematite.

EXPLORATION - PRODUCTION

Regional Production

Table I summarizes metal production from several mineral districts related to detatchment faults in west-central Arizona and adjacent southeastern California (see Figure 4).

Local Production

Exploration and small-scale mining has taken place in Ester Basin for many years. The owner of the Lola Mine reports that he shipped several tons of ore during the 1950s.

The Lead Pill district located on Potts Mountain just north of Ester Basin is partially included in the MWO group of claims. Between 1923 and 1948, four small mines in this district produced 1,400 tons of ore containing 500 ounces of gold, 2,000 ounces of silver, 405,000 pounds of lead, and 28,000 pounds of copper.

Recent Drilling and Sampling

In 1982 the Anschutz Mining Company made a reconnaissance of the Rawhide Mountains and collected some samples in Ester Basin. US Borax Company performed geological and geochemical studies in the area in early 1985.

Goldfields Mining Company (GFMC) leased the Viva Gold Property and the Lola Mine from April 1985 to April 1986. During this time they drilled eight rotary reverse-circulation holes to a depth of 300 feet and sampled each five-foot interval. Six of these holes are on the Lola Mine property and two are on the Viva Gold Property (see Plate III).

TABLE 1. MINERAL DISTRICTS RELATED TO DETACHMENT FAULTS IN WESTERN ARIZONA AND SOUTHEASTERN CALIFORNIA

District name and tons ore produced	Metal production	Deposit description
Alamo 700 tons ore	38,000 lbs Cu 16,000 lbs Pb 1,300 oz Ag 100 oz Au	Copper carbonates, silicates, and oxides, and hematite-quartz-calcite-fluorite in NW-trending high-angle shear zones in lower-plate gneiss
Artillery 243,300 tons ore	95,108,000 lbs Mn	Stratabound sedimentary and local vein manganese oxides within Miocene siltstone, sandstone, conglomerate, and tuff
Bullard 17,000 tons ore	610,000 lbs Cu 6,000 oz Ag 3,600 oz Au	Copper-stained fault breccia and gouge with quartz-hematite-calcite-barite-fluorite, hosted by upper-plate Miocene andesite and sandstone
Burnt Well	Unknown-minor	Chrysocolla-quartz-hematite-calcite filling fractures in Miocene(?) upper-plate siltstone, sandstone, and conglomerate adjacent to detachment fault
Cienega 19,000 tons ore	1,714,000 lbs Cu 1,600 oz Ag 12,000 oz Au	Upper-plate igneous and metamorphic rocks host replacement bodies of copper silicates, carbonates, and oxides, with quartz-specularite in NW-trending upper-plate shear zones
Clara 50,000 tons ore	4,669,000 lbs Cu 2,000 oz Ag <100 oz Au	Chrysocolla-malachite-quartz-specularite-calcite mineralization along, or within several tens of metres of, the detachment fault
Cleopatra 19,700 tons ore	491,000 lbs Cu 260,000 lbs Pb 23,000 lbs Zn 20,000 oz Ag 2,000 oz Au	Chrysocolla and malachite with quartz-specularite-calcite-manganese oxide-fluorite gangue forming replacements and fracture fillings in upper-plate metasedimentary rocks and Tertiary sandstone and conglomerate. Also NW-trending high-angle shear zones in lower-plate mylonitic gneiss hosting chrysocolla-quartz-specularite-calcite
Lincoln Ranch 68,700 tons ore	24,000,000 lbs Mn	Black, manganiferous conglomerate, sandstone, and siltstone along shear zones and as stratabound deposits within reddish-brown, upper-plate, middle Tertiary sedimentary rocks
Mammon 800 tons ore	87,000 lbs Cu 100 oz Ag <100 oz Au	NW-trending, steeply dipping shear zones containing chrysocolla-malachite-specularite-calcite in lower-plate mylonitic gneiss adjacent to detachment fault
Midway 200 tons ore	9,400 lbs Cu <100 oz Ag <100 oz Au	Chrysocolla-malachite-specularite-quartz-calcite-manganese oxide mineralization along the detachment fault and in lower-plate, high-angle shear zones
Northern Plomosa 7,500 tons ore	346,000 lbs Cu 25,000 lbs Pb 7,000 oz Ag 5,000 oz Au	Chrysocolla-malachite-specularite-quartz veins and replacements hosted by upper-plate Mesozoic(?) limestone, shale, and welded tuff, and Miocene volcanic rocks
Planet 1,010,000 tons ore	19,520,000 lbs Cu 600 oz Ag 400 oz Au	Copper carbonates, silicates, and sulfides with quartz and calcite occur in disseminations, veinlets, and replacement bodies of specularite along the detachment fault and in NW-trending, upper-plate shear zones
Pride 40 tons ore	20 lbs Cu <100 oz Ag <100 oz Au	Malachite-chrysocolla-specularite-quartz mineralization along the detachment fault and in NW-trending, high-angle, lower-plate shear zones. Host rocks are upper-plate carbonates and lower-plate gneiss
Swansea 545,000 tons ore	26,457,000 lbs Cu 33,000 oz Ag 500 oz Au	Specularite-chrysocolla-quartz-calcite as replacements in upper-plate marble breccias adjacent to detachment fault
Whipple† 5,000 tons ore	230,000 lbs Cu 1,200 lbs Pb 200 lbs Zn 9,500 oz Ag 1,300 oz Au	Fractures along and adjacent to upper-plate normal faults and the Whipple basal detachment fault contain specular hematite, pyrite, chalcopyrite, chrysocolla, malachite, quartz, epidote, and chlorite

Whipple = Copper Basin

Gold values were low; only one interval in hole No. 8 exceeded 1000 ppb.

GFMC cut several trenches with a bulldozer, and collected chip samples from them. They also collected a number of chip samples from various outcrops. A total of several hundred samples were collected and assayed. Again, most of this work was done on the Lola Mine Property. Each of the sample locations is marked in the field by a numbered metal tag. Also, each of the sample locations and analytical results are recorded on a large scale assay map. These data are available for inspection.

Plate III is a small scale map that shows the location of surface workings and trenches. Also, it shows the location of samples that contained gold values of .05 oz/ton or more.

DISCUSSION AND CONCLUSIONS

As explained in the section titled Regional Structure, the Buckskin-Rawhide detatchment surface unquestionably extends beneath Ester Basin and the Viva Gold Property. Its depth below the surface, however, is unknown. Projecting the detatchment surface northward under Ester Basin from the nearest outcrop (2½ miles south) probably would not provide a reliable estimate of its depth. Drilling logs of the eight holes drilled by GFMC to a depth of 300 feet give no indication that the surface was penetrated. It is, of course, possible it was penetrated but not recognized, since the rocks above and below are somewhat similar.

A review of the literature regarding mineral deposits associated with detatchment faults in the lower Colorado corridor of crustal extension generated the following thoughts:

Brittle deformation of the rocks overlying the detatchment surface resulted in a thick zone of brecciated rock that provided avenues for the migration of mineralizing solutions and sites for the deposition of ore minerals. Rocks at the surface at the Viva Gold Property are broken by many faults and fractures, but are not brecciated. On this basis, it is inferred that the breccia zone lies below the present surface, and accordingly, the most favorable sites for ore mineralization are likewise below the present surface (see Figure 3).

Gold mineralization typically occurs within the breccia zone but well above base metal mineralization, i.e., comparatively high in the breccia zone. Since gold mineralization occurs at the surface of the Viva Gold Property, it seems reasonable to expect that it will intensify with depth as fracturing and faulting increase as the breccia zone is approached.

Replacement ore bodies in reactive host rocks (marble breccia) are well-documented at Planet-Mineral Hill, Swansea-Copper Penny, and Copper Basin. The abundant calcite gangue in many veins at the Viva Gold Property suggest a subterranean source for this mineral. Since the upper plate in the Ester Basin area lacks carbonate rocks (except limestone beds in the Artillery Formation which are some distance from the calcite-rich veins), it is suspected that the source of this calcite is marble breccia contained in an underlying middle plate. This implies that host rocks favorable for replacement ore bodies occur at depth at the Viva Gold Property.

It is well-documented in the literature that synforms or troughs on the detatchment surface are favored sites for ore deposition. At Swansea-Copper Penny, Planet-Mineral Hill, Cienega, and Copper Basin ore deposits occur in middle and upper plate rocks in northeast-trending synforms on the detatchment surface. Two and one-half miles south of Ester Basin the detatchment surface is at an elevation of about 2000 feet and is dipping gently northward beneath Ester Basin. This suggests that the Viva Gold Property overlies a synform or is close to one.

These thoughts when applied to the geologic setting at the Viva Gold Property indicate conditions favorable for the occurrence of ore deposits, and that the favorability increases with depth.

If the Buckskin-Rawhide detatchment surface at Ester Basin is near the surface, i.e., within 500 feet, the search for ore would be facilitated and the chance of finding a base metal deposit of commercial size and grade would be augmented. If, on the other hand, the fault and any deposits along it were too deep for profitable mining, the attractiveness of the property would be lessened but there would still be a good chance of finding an overlying precious metal deposit higher in the breccia zone and within the depth range for profitable mining.

Based on the above geological reasoning and scattered occurrences of gold at the surface, the writer believes the Viva Gold Property has good potential for containing commercial deposits of gold and perhaps base metals.

PROPOSED DRILLING PROGRAM

An analysis of the geological and geochemical data indicate three areas that warrant further investigation. These are designated target areas A, B, and C on Figure 5.

Target Area A contains several north-dipping carbonate veins and many gash veins of diverse orientation. It also contains an inclined shaft and numerous trenches and prospect holes. Of 45 geochemical samples collected from outcrops, dumps, and prospect holds, 16 assayed at .05 ozs/ton or more in gold. These results are shown on Plate III.

Target Area B contains several mineralized veins that converge in the northern part of the area. Several prospect holes and trenches show mineralization. Of 13 geochemical samples collected from outcrops and prospect holes, six assayed .05 ozs/ton or more in gold.

Target Area C contains an east-dipping vein that appears to have been offset by several transverse faults. Two inclined shafts and some underground workings are on this vein. Of 26 geochemical samples collected, nine assayed .05 ozs/ton or more in gold.

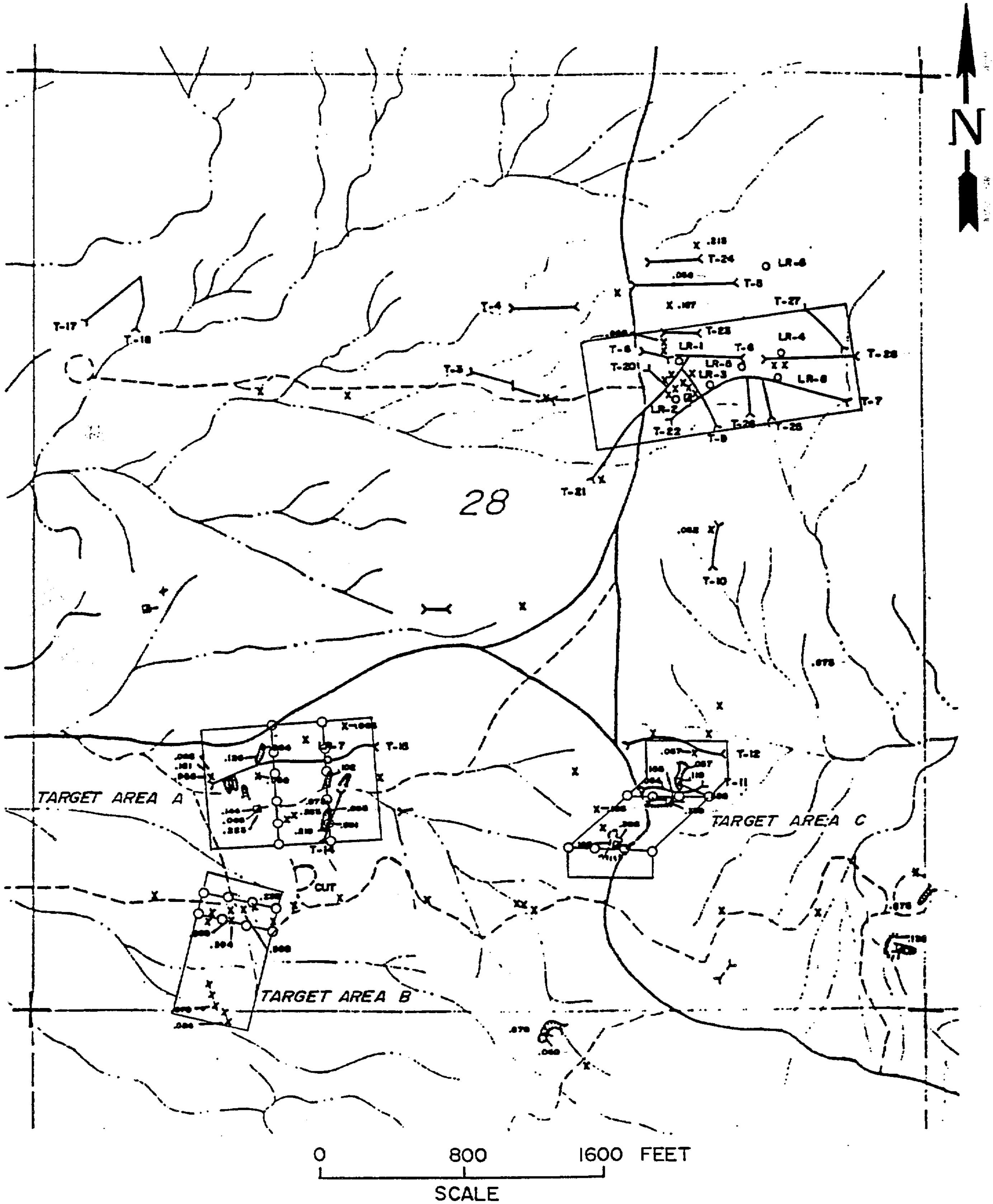
We propose the following three-phase drilling program to prospect these target areas: Phase I consists of three holes, one in each target area, drilled to determine the depth and orientation of the dislocation surface. These holes will be drilled 50 feet into the mylonitic gneiss of the lower plate or to a depth of 500 feet, whichever is encountered first. The geologist who supervises this work should be thoroughly familiar with the rocks composing the several tectonic units of the Rawhide Mountains.

Phase II consists of 28 holes drilled to a depth of 400 feet. The layout of the holes is shown on Figure 5 and their footage and spacing is tabulated below:

Phase II

	Target Areas		
	A	B	C
No. of fences	2	2	2
No. of holes along fence	6	4	4
Orientation of fences	N5°W	N80°W	E-W
Spacing of holes	150'	150'	150'
Depth of holes	400'	400'	400'
Total footage	4800'	3200'	3200'

Phase III will consist of 13,000 feet of drilling and will be undertaken only after Phase I and II drilling data have been thoroughly analyzed. The location and depth of Phase III holes is indeterminate at this time.



PROPOSED DRILLING PROGRAM

FIGURE 5

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JDS

ASARCO

Exploration Department
Southwestern United States Division

James D. Sell
Manager

May 15, 1989

Mr. William B. Roberts
1405 South Elm St.
Denver, CO 80222

Viva Gold Property
N. Rawhide Mtns.
Mohave County, AZ

Dear Mr. Roberts:

Thank you for the additional geochem data on the trenches dug on your property. We have not yet made an examination of your group due to other pressing work loads, but it is on our list to visit.

Although, as you say, the GFMC's results are low values, the additional data will aid in our evaluation of the property.

Sincerely,

James D. Sell

James D. Sell

JDS:mek

cc: M.A. Miller
W.L. Kurtz

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

JDS

ASARCO

Exploration Department
Southwestern United States Division
James D. Sell
Manager

July 14, 1989

Mr. William B. Roberts
Consulting Geologist
1405 South Elm St.
Denver, CO 80222

Dear Sir:

Thank you for the note on the Viva Property in Mohave County.

I'm sure Phelps Dodge Exploration will do some interesting work in the area.

In a year or so if PD doesn't find what they are looking for, I hope you will dig out this letter and recontact Asarco for their interest.

Sincerely,

James D. Sell

JDS:mek

cc: W.L. Kurtz

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

FILE

JDS

William B. Roberts CONSULTING MINING ENGINEER & GEOLOGIST

1405 SOUTH ELM ST. DENVER, COLORADO 80222 TEL.(303)756-7090

July 11, 1989

Mr. James D. Sell, Exploration Manager
Asarco Incorporated
P O Box 5747
Tucson, AZ 85703-0747

Dear Mr. Sell:

This letter is to inform you that we have just leased the Viva Gold Property to the Phelps Dodge Corporation. We therefore ask that you cease any exploration activities that you may have underway on this property.

Thank you for your interest in the Viva Gold Property.

Yours truly,

William B. Roberts

William B. Roberts

ASARCO

Exploration Department
Southwestern United States Division

July 31, 1990

Mr. William Roberts
1405 S. Elm St.
Denver, Colorado 80222

Viva Gold Property
Mohave County, AZ

Dear Mr. Roberts:

With regard to your letter to J.D. Sell of July 17, 1990, please send the data from the Phelps Dodge drilling so that we can fully evaluate the Viva property.

Thank you.

Respectfully,

Mark A. Miller
Geologist

MAM:mek

cc: J.D. Sell

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1150 North 7th Avenue (602) 792-3010