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Arizona Department of Mines and Mineral Resources Mining Collection

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PRINTED: 06/15/2001

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: BLUEMOLY

ALTERNATE NAMES:

NAVAJO COUNTY MILS NUMBER: 217

LOCATION: TOWNSHIP 11 N RANGE 15 E SECTION 2 QUARTER C
LATITUDE: N 34DEG 22MIN 04SEC LONGITUDE: W 110DEG 42MIN 37SEC
TOPO MAP NAME: HEBER - 15 MIN

CURRENT STATUS: RAW PROSPECT

COMMODITY:
GEMSTONE ILSEMANNITE
MOLYBDENUM

BIBLIOGRAPHY:
ADMMR BLUEMOLY FILE

07/16/86

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: BLUEMOLY

ALTERNATE NAMES:

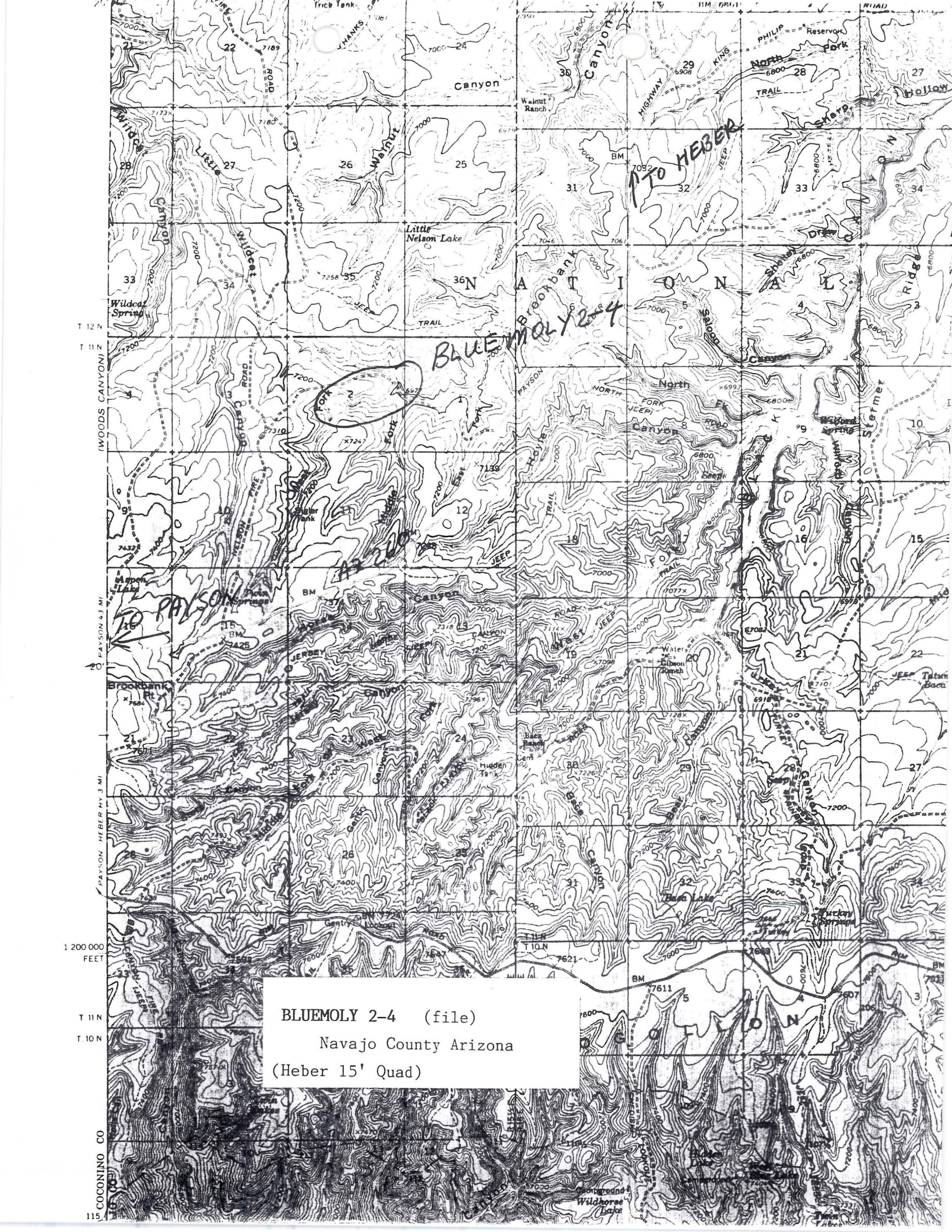
NAVAJO COUNTY MILS NUMBER: 217

LOCATION: TOWNSHIP 11 N RANGE 15 E SECTION 2 QUARTER C
LATITUDE: N DEG MIN SEC LONGITUDE: W DEG MIN SEC
TOPO MAP NAME: HEBER 15

CURRENT STATUS: RAW PROSPECT

COMMODITY:
GEMSTONE ILSEMANNITE
MOLYBDENUM

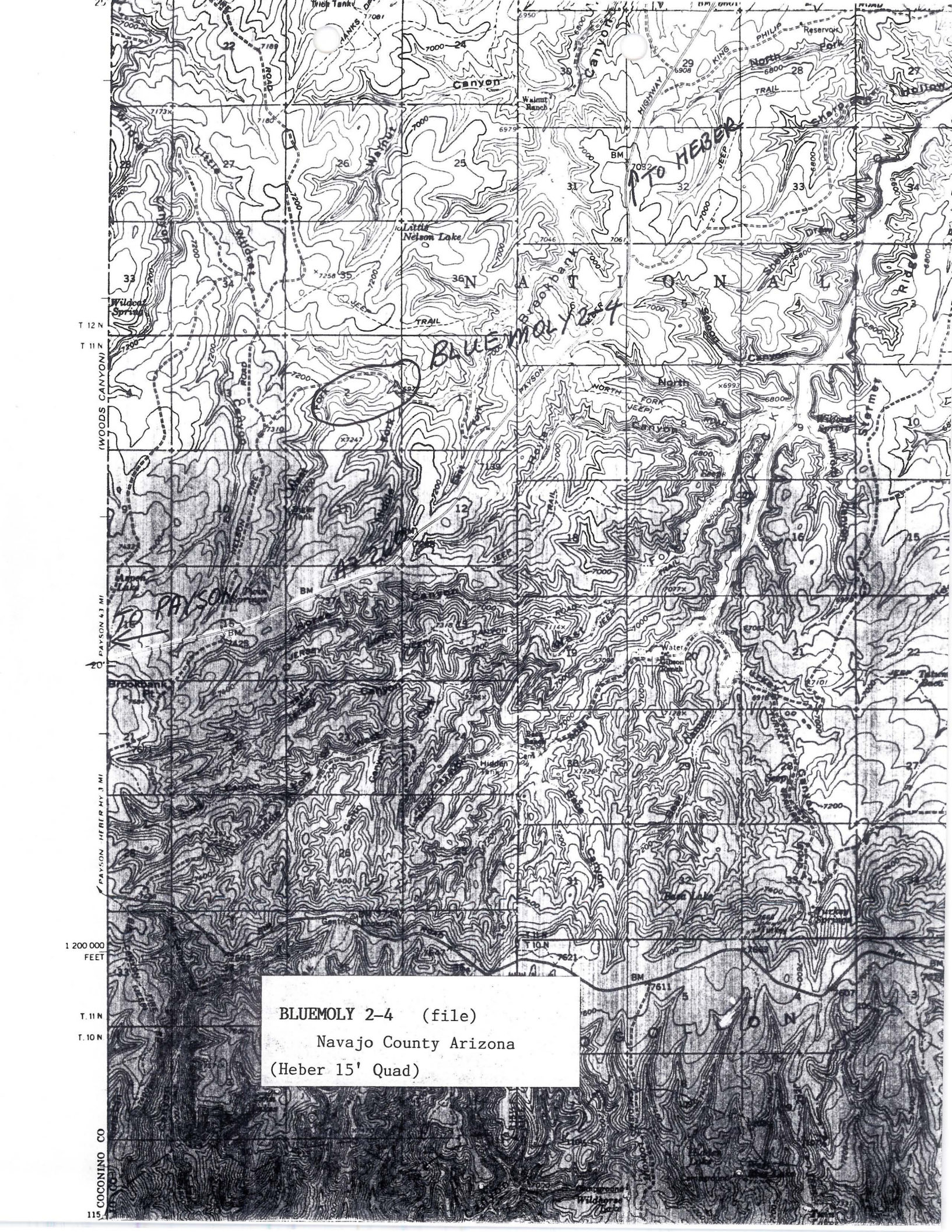
BIBLIOGRAPHY:
ADMMR BLUEMOLY ~~MINE~~ FILE



BLUEMOLY 2-4 (file)

Navajo County Arizona

(Heber 15' Quad)



BLUEMOLY 2-4 (file)

Navajo County Arizona

(Heber 15' Quad)

Arizona Department of Mines and Mineral Resources

INFORMATION FROM MINE CARDS IN MUSEUM

U.S.A.
ARIZONA
NAVAJO COUNTY
101 HEBER
HEBER QUAD
T 11N, R 15E, SEC 1-2
BLUE MOLY MINE
MILS # 217
O - AKA
BLUEMOLY (file)

card #1
MM M519 Ilsemannite

BLUEMOLY NAVAJO COUNTY

KAP WR 6/13/86: Jimmy Vacek, 49er Minerals, reported that samples of the blue mineral from the Bluemoly mine (file) Navajo County did not contain any molybdenum. This conflicts with both the results of my tests and those of the State Mineralogist, Robert O'Haire.

KAP WR 8/29/86: A visit was made to the Bluemoly (file), Navajo County. Chips of the blue molybdenum mineral, ilsemannite, were found scattered over an area 50 feet by 150 feet, but no material was found in place.

NJN WR 1/15/88: Monte Owens reports that he has been continuing to try and produce gem material from the Bluemony (file) Navajo County Deposit. He reports that the bulk of the material is close to alunite in composition and supplied some bulk composition and analytical reports for our file. Although he has a couple of people interested in buying the material as gemstones, he has been unable to produce for lack of an approved operating plan from the Forest Service. He was directed to some mineralogists to determine the mineralogy of his material and to see John Gutierriz, Forest Service Azone Geologist, for assistance in getting his operating plan approved.

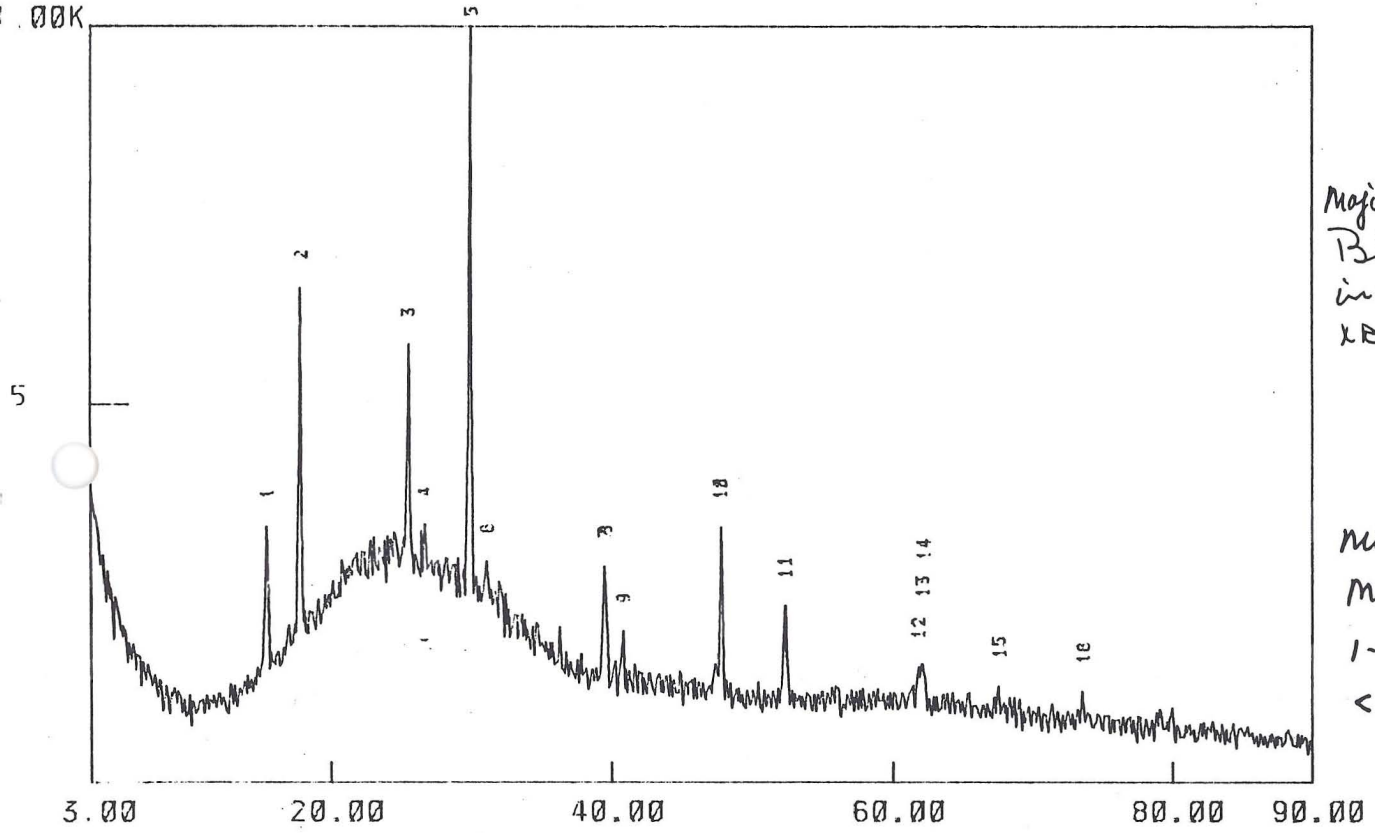
SAMPLE NAME: FLAGBLU
TARGET : Cu
VOL and CUR: 50KV 30mA
SLITS : DS 1 RS .3 SS 1
SCAN SPEED: 2 DEG/MIN.
STEP/SAMPL.: .02 DEG
PRESET TIME: 0 SEC
FILE NAME : XL34100
OPERATOR : YATES
COMMENT :

DATE: 87.11.12

SMOOTHING NO.: 9
THRESH. INTEN.: 61 CPS
2nd DERIV.: 487 CPS/(DEGxDEG)
WIDTH: .09 DEG
B.G. REDUCTION: NO EXECUTION
OUTPUT FILE :

No.	2-Theta	INTEN.	d	WIDTH	I/I
1	15.48	33	5.719	.24	2
2	17.88	65	4.955	.27	5
3	25.46	58	3.495	.27	4
4	26.64	33	3.342	.3	2
5	29.9	1266	2.985	.3	100
6	31.12	288	2.871	.24	22
7	39.46	232	2.281	.3	18
8	39.68	236	2.271	.18	18
9	40.08	197	2.249	.24	15
10	47.76	333	1.902	.24	26
11	52.34	230	1.746	.24	18
12	61.86	150	1.498	.18	11
13	62.1	154	1.493	.18	12
14	62.22	153	1.491	.24	12
15	67.52	125	1.386	.18	10
16	73.56	118	1.286	.27	9

Sample Name : FLAGBLU



✓ = ALUNITE ASTM 40865

Major mineral is definately Alunite.
Blue color is not explained and must be in such minor amount to not show up on XRD.

$KAl_3(SO_4)_2(OH)_6$

microprobe 7 Dec. 1987
major K, Al, S.
1-2% Sr, Mo, As
<1% Fe, Ni, Si, Na

BLUEMOLY (F)

NO Ilsemannite

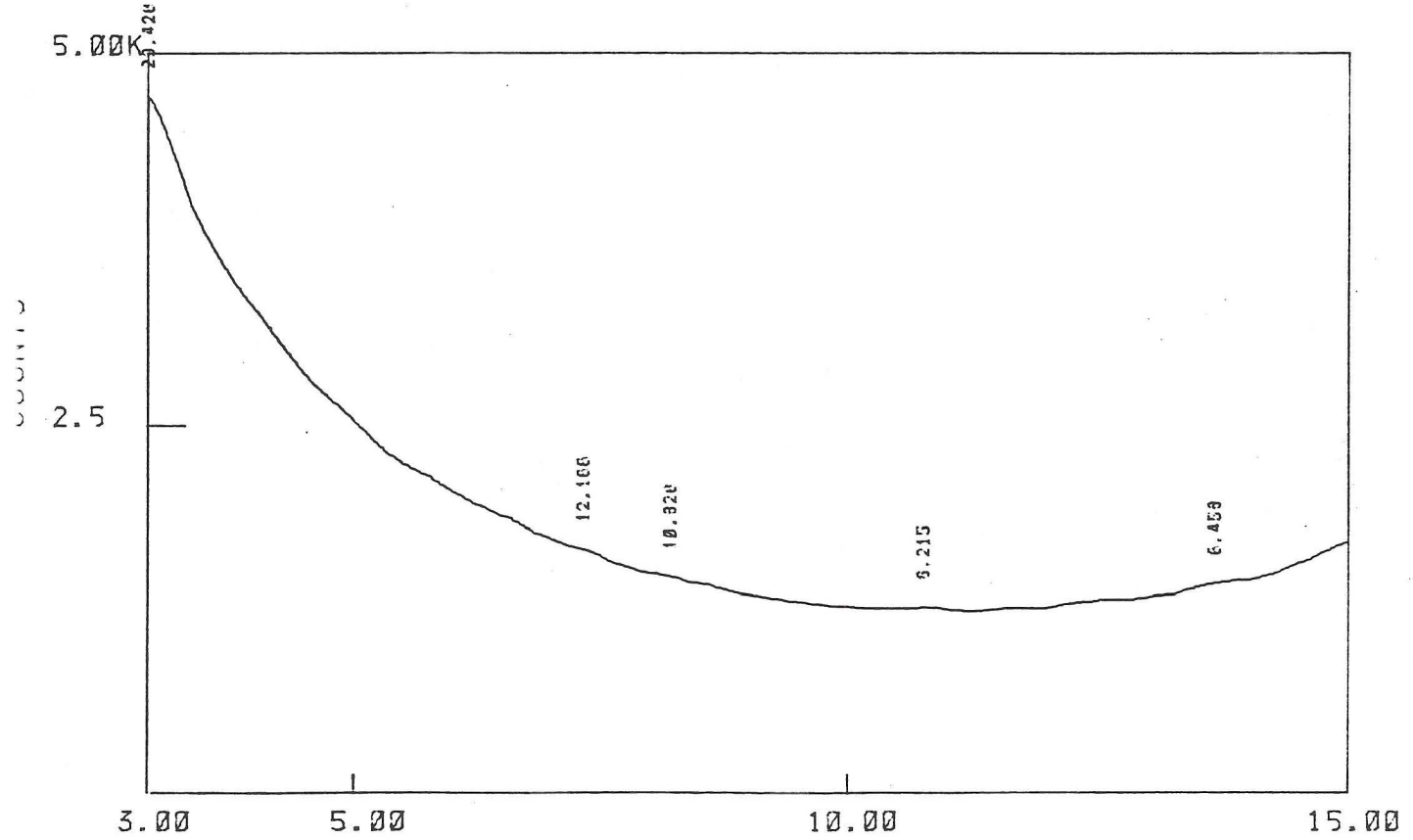
Monty Owens

SAMPLE NAME: FLAGBLU
TARGET : Cu
VOL and CUR: 50KV 30mA
SLITS : DS 1 RS .3 SS 1
SCAN SPEED: 1 DEG/MIN.
STEP/SAMPL.: .02 DEG
PRESET TIME: 0 SEC
FILE NAME : XL35100
OPERATOR : YATES (10)
COMMENT :

DATE: 87.11.17

SMOOTHING NO.: 45
THRESH. INTEN.: 53 CPS
2nd DERIV.: 0 CPS/(DEGxDEG)
WIDTH: .3 DEG
B.G.REDUCTION: NO EXECUTION
OUTPUT FILE :

Sample Name : FLAGBLU



COCONINO CO.

**** Peak Search conditions ****
SAMPLE or FILE NAME = AY40100 (VASELINE MOUNT)

Peak search result

No.	2THETA	INT.	FWHM	d	I/IO
1	15.080	60	***	5.870	3
2	15.460	358	0.150	5.727	16
3	17.860	892	0.180	4.962	40
4	20.740	90	***	4.279	4
5	20.840	123	0.120	4.259	6
6	25.180	71	***	3.534	4
7	25.400	570	0.180	3.504	25
8	26.580	2280	0.090	3.351	100
9	26.660	1769	0.090	3.341	78
10	29.860	1947	0.240	2.990	86
11	31.120	91	***	2.871	4
12	39.320	148	0.090	2.289	7
13	39.400	240	0.090	2.285	11
14	39.480	317	0.180	2.281	14
15	40.740	112	0.120	2.213	5
16	47.700	410	0.120	1.905	18
17	47.820	230	0.180	1.900	10
18	52.300	248	0.150	1.748	11
19	52.420	144	0.105	1.744	7
20	62.040	141	0.090	1.495	7
21	62.160	135	0.090	1.492	6
22	73.440	60	***	1.288	3

K Al S P_{tr}

Minamisite

$(Na, K, Ca)Al_3(SO_4)_2(OH)_6$

Na_2O 3.37 %

CaO 1.94 %

K_2O 2.17 %

ALUNITE

Vacek - June 1986

JCPDS FILE NAME	Card No.	U	S	CHEM	MINERAL	CHEMICAL FORMULA	R.F.
1	40865	8	12		ALUNITE		97
2	330130	7	17		GORCEIXITE		95
3	40661	7	18		SVANBERGITE		70
4	140136	11	18		ALUNITE		60

40865 ALUNITE

d	Int
1.901	~~100~~
1.751	88
3.012	85
2.288	73
3.509	32
2.262	28
5.000	20
2.481	20
2.899	17
5.747	9
2.212	8
2.041	6

330130 GORCEIXITE

d	Int.
3.003	100
5.747	80
3.521	70
2.283	70
1.912	70
2.874	60
2.488	60
2.222	60
1.757	60
1.294	60
2.033	50
1.681	50
1.393	50
1.658	40
1.515	40
1.328	40
1.215	40
0.961	40

40661 SVANBERGITE

d	Int.
2.976	100
2.222	100
5.747	90
3.521	90
1.908	90
1.751	90
1.449	50
2.778	20
2.481	20
2.020	20
1.639	20
1.490	20
1.460	20
1.410	20
1.370	20
4.975	15
1.709	15
1.600	15

140136 ALUNITE

d	Int.
2.994	100
2.890	100
2.294	80
1.927	70
4.950	55
1.504	35
5.780	30
1.905	30
3.484	20
1.745	16
5.714	14
1.495	10
2.475	6
2.212	6
1.508	4
2.037	2
2.020	2
1.761	2

	JCPDS FILE Card No.	U	S	CHEM	MINERAL	CHEMICAL FORMULA	R.F.
1	331161	10	18		QUARTZ LOW		111
2	190535	11	16		GORCEIXITE		75
3	270094	11	18		KEHOEITE		75
4	160713	10	16		GREIGITE		74

331161 QUARTZ LOW

d	Int.
3.344	100
4.255	22
1.818	14
1.541	9
2.457	8
2.283	8
1.372	8
1.376	7
2.128	6
1.381	6
2.237	4
1.980	4
1.672	4
1.183	3
1.181	3
1.658	2
1.289	2
1.255	2

190535 GORCEIXITE

d	Int.
2.976	100
5.714	90
3.521	80
1.905	70
2.217	60
1.757	60
2.273	50
2.857	30
2.451	30
2.020	30
2.012	30
1.490	30
2.475	20
1.675	20
1.511	10
1.650	5

COCONINO CO.

**** Peak Search conditions ****
SAMPLE or FILE NAME = AY39100 (PACKED SAMPLE)

Peak search result

No.	ANGLE 2THETA	INTENSITY INT.	FWHM	d-SPACING BETWEEN CRYSTAL d	I/IO
1	15.480	319	0.390	5.719	13
2	17.780	326	0.090	4.984	13
3	17.960	1305	0.360	4.935	51
4	20.920	666	0.165	4.243	26
5	25.520	770	0.285	3.487	30
6	26.700	1525	0.270	3.336	60
7	29.960	2569	0.360	2.980	100
8	31.240	206	0.105	2.861	8
9	36.380	151	0.090	2.467	6
10	36.660	118	0.150	2.449	5
11	39.480	395	0.090	2.281	16
12	39.580	787	0.195	2.275	31
13	39.740	735	0.105	2.266	29
14	39.800	526	0.090	2.263	21
15	40.880	262	0.210	2.206	11
16	41.060	102	0.090	2.196	4
17	47.840	992	0.240	1.900	39
18	48.040	495	0.090	1.892	20
19	50.280	238	0.150	1.813	10
20	50.420	127	0.150	1.808	5
21	52.420	705	0.180	1.744	28
22	52.600	412	0.165	1.738	16
23	60.120	115	0.090	1.538	5
24	61.500	126	0.090	1.506	5
25	61.580	107	0.105	1.505	5
26	61.960	254	0.090	1.496	10
27	62.160	410	0.090	1.492	16
28	62.300	441	0.120	1.489	18
29	62.400	304	0.150	1.487	12
30	67.820	225	0.120	1.381	9
31	68.260	105	0.090	1.373	4
32	68.460	160	0.180	1.369	7
33	73.540	187	0.105	1.287	8
34	73.680	232	0.150	1.285	9
35	73.820	148	0.135	1.283	6
36	79.200	121	0.150	1.208	5
37	79.500	114	0.105	1.205	5
38	79.980	114	0.090	1.199	5

INTENSITY PEAK Height
INTENSITY SUBS LINE

BLUE FROM SUBSTRAIGHT COPPER REFLECTION

SODIUM HALITE gives blue — COLOR CENTERS ELEMENT IN LATTICE

MINAMIITE DAVE SHANNON 962 6585 AM MW 82'

40661 SVANBERGITE

d	Int.
2.976	100
2.222	100
5.747	90
3.521	90
1.908	90
1.751	90
1.449	50
2.778	20
2.481	20
2.020	20
1.639	20
1.490	20
1.460	20
1.410	20
1.370	20
4.975	15
1.709	15
1.600	15

140136 ALUNITE

d	Int.
2.994	100
2.890	100
2.294	80
1.927	70
4.950	55
1.504	35
5.780	30
1.905	30
3.484	20
1.745	16
5.714	14
1.495	10
2.475	6
2.212	6
1.508	4
2.037	2
2.020	2
1.761	2

xxxxx
xxxxx RESULTS OF 1ST SEARCH MATCH xxxxx
xxxxx xxxxx

	JCPDS FILE NAME Card No.	U	S	CHEM	MINERAL CHEMICAL FORMULA	R.F.
1	40865	9	12		ALUNITE	140
2	140136	12	18		ALUNITE	106

40865 ALUNITE

d	2theta	Int.
1.901	47.805	100
1.751	52.188	88
3.012	29.635	85
2.288	39.342	73
3.509	25.364	32
2.262	39.811	28
5.000	17.725	20
2.481	36.170	20
2.899	30.823	17
5.747	15.405	9
2.212	40.752	8
2.041	44.351	6

140136 ALUNITE

d	2theta	Int.
2.994	29.817	100
2.890	30.915	100
2.294	39.249	80
1.927	47.130	70
4.950	17.903	55
1.504	61.628	35
5.780	15.316	30
1.905	47.708	30
3.484	25.544	20
1.745	52.384	16
5.714	15.494	14
1.495	62.039	10
2.475	36.263	6
2.212	40.752	6
1.508	61.422	4
2.037	44.447	2
2.020	44.828	2
1.761	51.893	2

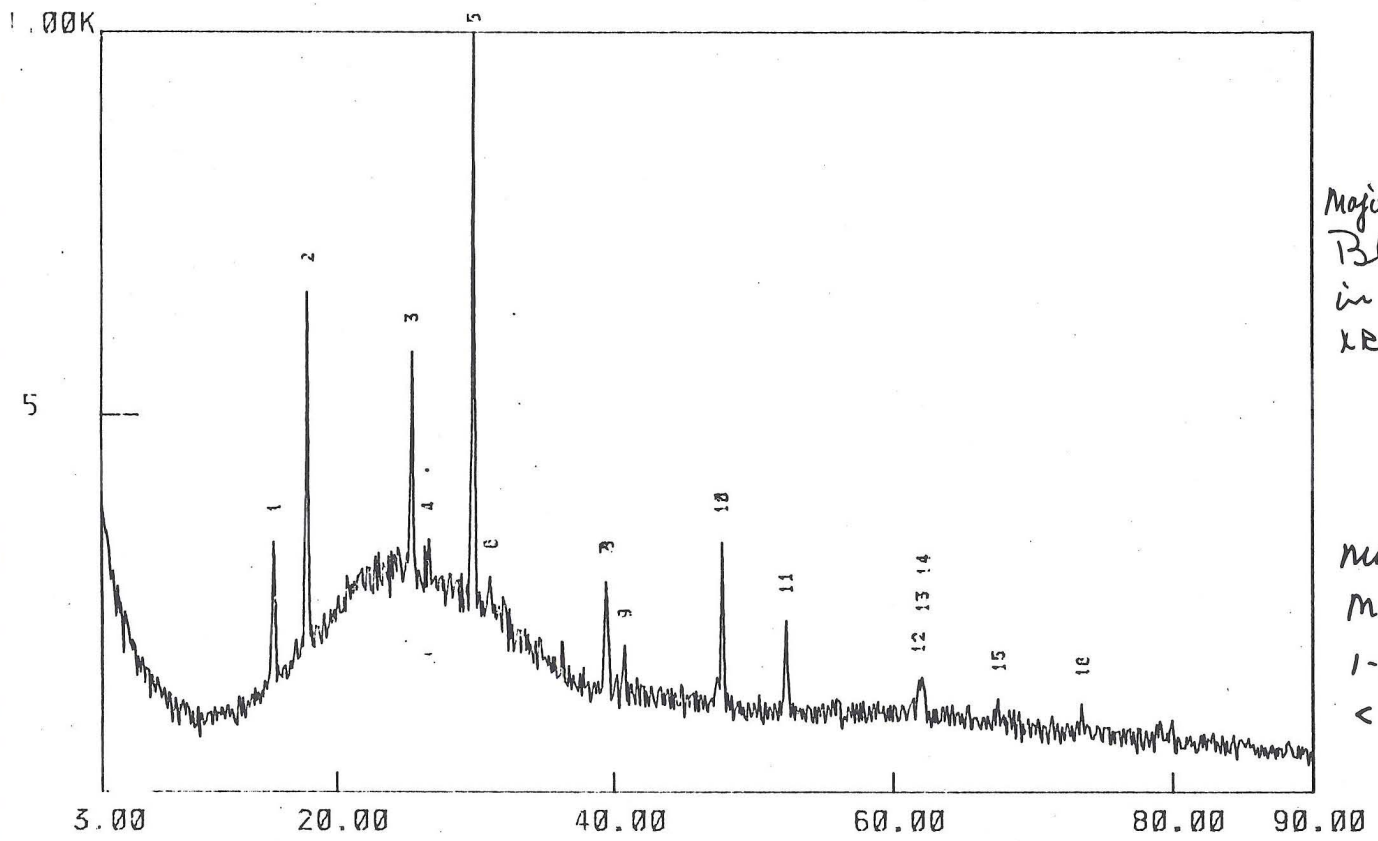
SAMPLE NAME: FLAGBLU
TARGET : Cu
VOL and CUR: 50KV 30mA
SLITS : DS 1 RS .3 SS 1
SCAN SPEED: 2 DEG/MIN.
STEP/SAMPL.: .02 DEG
PRESET TIME: 0 SEC
FILE NAME : XL34100
OPERATOR : YATES
COMMENT :

DATE: 87.11.12

SMOOTHING NO.: 9
THRESH. INTEN.: 61 CPS
2nd DERIV.: 487 CPS/(DEGxDEG)
WIDTH: .09 DEG
B.G. REDUCTION: NO EXECUTION
OUTPUT FILE :

No.	2-Theta	INTEN.	d	WIDTH	I/
1	15.48	333	5.719	.24	2
2	17.88	659	4.956	.22	5
3	25.46	583	3.495	.22	4
4	26.64	337	3.343	.3	2
5	29.8	1266	2.985	.3	10
6	31.12	289	2.871	.24	2
7	39.46	282	2.281	.3	2
8	39.68	236	2.274	.18	1
9	40.8	192	2.209	.24	1
10	42.76	333	2.092	.24	2
11	52.36	230	1.746	.24	1
12	61.86	150	1.498	.18	
13	62.1	154	1.493	.18	
14	62.22	153	1.49	.24	1
15	67.52	125	1.386	.18	1
16	73.56	118	1.286	.27	

Sample Name : FLAGBLU



✓ = ALUNITE ASTM 40865

Major Mineral is definately Alunite.
Blue color is not explained and must be in such minor amount to not show up on XRD.

$KAl_3(SO_4)_2(OH)_6$

Microprobe 7 Dec. 1987
Major K, Al, S.
1-2% Sr, Mo, As
<1% Fe, Ni, Si, Na

NO Ilsemannite

Monty Owens
838-1975

Recopy for inclusion into Blaemolyfib

KEN, I) THIS LOCATION CORRECT) NEITHER

1) THIS NAME CORRECT (1) IN MCL).

NO MINE ON QUAD AT THIS LOCATION.

ILSEMANNITE	CATALOG NO. MM M519
SPECIES Massive	
VARIETY Molybdenum Blue	
SIZE 7.0 x 3.5 x 3.0 cn 107.5 g	DATE OF ACQUISITION 5/13/86
LOCALITY Arizona, Navajo County, 101 Heber, 10 miles sw of Heber, Heber Quad, T 11N, R 15E, Sec 1-2 Blue Moly Mine	
COMPOSITION $MO_3O_8 \cdot nH_2O$ (?)	
FLUORESCENCE	DUPLICATE NO.
COLLECTOR Howard Owens	
DONOR: NAME Howard Owens	
ADDRESS Rt. 8 , Box 9 Flagstaff, AZ 86001	
ESTIMATED VALUE $8.00	COST Donation
DISPOSITION	

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY
May be Reproduced

1. Information from: Howard Owens
   Address: Rt. 8, Box 9, Flagstaff, Arizona 86001
   Phone 526-0881
2. Mine: BLUEMOLY 3. ADMMR Mine File: Bluemoly
4. County: Navajo MILS Number
5. District:(minning) (or mineral)
6. Township: 11N Range 15E Sec(s) 2 (Center)
7. USGS Topographic Map: Heber 15'
8. Location (descriptive): Approx. 10 miles southeast of Heber on Forest road 212 about 1.5 mi northwest of State Hiway 260
9. Number of Claims - Patented Unpatented 3
10. Owner(s) (if different from above) Howard Owens, and Kenny Harding
11. Address: same as above
12. Operating Company: None
13. Pertinent People and/or Firm:
14. Commodities: Gemstones [ilsemannite (Moly Blue)], molybdenum
15. Operational Status: Prospect
16. Summary of information received, comments, etc.:

Mr. Owens brought in samples of a cornflower blue massive material, some of which polished easily. A check with the spectroscope indicated the predominent element to be molybdenum. A sample was sent to the State Mineralogist (Bob O'Haire) for identification. See attached copy of letter to Howard Owens, dated May 30, 1986.

Mr. Owens caused samples to be delivered to Jim Vacek through Chuck Crawford who claimed to have lots of the material to market. Reportedly, Vacek had a piece "tested" at ASU and no molybdenum was reported.

Mr. Owens has thus far found only float material and is awaiting more encouraging news as to markets before trying to find an outcrop.

Date: July 1, 1986 Kenneth Phillips
(Signature) AzDMMR

May 30, 1986

Howard Owens
c/o Twin Arrows Trading Inc.
Rt. 8, Box 9
Flagstaff, Arizona 86001

Dear Mr. Owens:

This letter is regarding the sample of blue molybdenum mineral you left at our office for further evaluation.

Robert O'Haire, the State Mineralogist at Bureau of Mineral Technology reported the specimen contains the mineral ilsemannite. Ilsemannite is also known as "molybdenum blue". It is cryptocrystalline mineral whose formula is not fully known. The most commonly accepted formula is:

$$Mo_3O_8 \cdot nH_2O \ .$$

It is noteworthy that it does not contain any copper

The occurrence is a new one for Navajo County but not for Arizona. It occurs as the result of oxidation of other molybdenum minerals and when found is usually little more than an earthy blue coating on other rocks or the inside of old mine workings. Nearly all of the other Arizona occurrences are at uranium deposits. No radioactivity was detected in your samples.

As we both saw in the sample you left with us it can be polished to a pretty gemstone. It is however relatively soft so its use as a gemstone would be limited to those in which mounted stones would not be subject abrasion or impact. Such uses would include necklaces, bolo ties, bookends, etc.

Please contact me at your earliest convenience to discuss possible markets and further development. Make sure your mining claims are in good order and steer clear of unscrupulous promoters as they have a habit of ending up with all the money and the claims.

Sincerely,

Ken A. Phillips
Chief Engineer