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PRINTED: 03/18/2003

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: TWENTIETH CENTURY

ALTERNATE NAMES:

MOHAVE COUNTY MILS NUMBER: 125H

LOCATION: TOWNSHIP 23 N RANGE 18 W SECTION 14 QUARTER NW  
LATITUDE: N 35DEG 23MIN 18SEC LONGITUDE: W 114DEG 10MIN 41SEC  
TOPO MAP NAME: CHLORIDE - 7.5 MIN

CURRENT STATUS: UNKNOWN

COMMODITY:

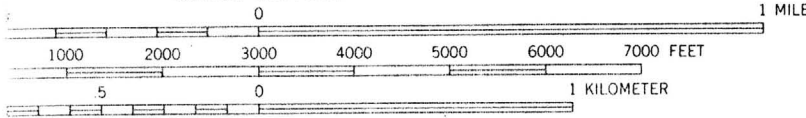
ZINC  
LEAD  
SILVER  
GOLD LODE  
IRON SULFIDE  
COPPER SULFIDE  
INDIUM  
IRON HEMATITE

BIBLIOGRAPHY:

ADMMR TWENTIETH CENTURY MINE FILE  
ADMMR MOHAVE CUSTOM MILL PROJECT  
AEC PRELIM. RECONN. RPT. 172-485, P. 55  
MALACH, R. "MOHAVE CO. MINES" P 51; 1977  
ADMMR MIDAS MINE FILE



(CERBAT)  
3154 1 SW  
SCALE 1:24 000



CONTOUR INTERVAL 40 FEET  
DATUM IS MEAN SEA LEVEL



QUADRANGLE LOCATION

P COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
GICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242  
IBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Chloride 7.5'

An ISO 9001 Certified Company

Laurence G. Stevens

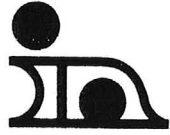
Consultant

38741 Jacobs Street

Lake Linden, MI 49945

Phone: 906-523-5234

email: lstevens@up.net



**INDIUM CORPORATION  
OF AMERICA®**

1676 Lincoln Avenue, Utica, NY 13502 USA

315-853-4900 or 800-4 INDIUM

FAX 315-853-1000 or 800-221-5759

lstevens@indium.com • <http://www.indium.com>

2/22/04  
Contract  
11/23/04

3/24

8-04

STILL OWNS



TWENTIETH CENTURY

MOHAVE COUNTY

NJN WR 7/24/87: Phil Blacet (card) reports that the Indium Corporation of America (card) has been involved in a property in the SE part of the Chloride District, Mohave County. Their interest is in gallium associated with sphalerite that occurs in veins. Consultant Dave Wahl (card) has been doing sampling for them.

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NJN WR 7/31/87: Dave Wahl (card) reported that he has recently been working at the 20th Century Mine (file) Mohave County with Indium Corp of America who has been the historic owner fo the property.

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RECNO M004196  
 REC\_TYPE S  
 REP\_DATE 79 11  
 FIL\_LINK USBM 004015 0793  
 REP JOHNSON, KRIS H. (CREASEY, S. C.)  
 REP\_AFF USGS  
 DIST WALLAPAI DISTRICT  
 COUNTY MOHAVE  
 STATE\_CODE AZ  
 CTRY\_CODE US  
 PHYS 12  
 DRAIN 15030103  
 LAND\_ST 49  
 QUAD1 CHLORIDE  
 Q1\_SCALE 24000  
 ELE\_V 4120 FT  
 UTM\_N 3919470  
 UTM\_E 756310  
 UTM\_Z +11  
 TOWNSHIP 023N  
 RANGE 018W  
 SECTION 14  
 SECT\_FRACT SE OF NW OF NW  
 MERIDIAN G&SR  
 POSITION 2 MILES SE OF CHLORIDE, ABOUT 2.5 MILES SW OF CHERUM PEAK  
 SITE TWENTIETH CENTURY MINE  


---

 LAT 35.3875  
 LONG -114.1783  
 CTRY\_NAME UNITED STATES  
 COMMOD ZN AG PB AU CU IN AS  
 ORE\_MAT SPHALERITE, GALENA, PYRITE, ARSENOPYRITE  
 MAJOR ZN  
 MINOR AG PB AU CU IN  
 CLH\_USE 93/12/15  
 TRACE AS  
 PROD S  
 STATUS 8  
 OWNER INDIUM CORP OF AMERICA (1965)  
 EXPL\_COM 9 PATENTED CLAIMS; PREVIOUS OWNERS AND OPERATORS INCLUDE  
 GEORGE A. BEEBE, WILLIAM S. MURPHY  
 DEP\_TYPE VEIN  
 DEP\_SIZE S  
 STRIKE N 60 W  
 DIP 86 NE  
 QUAD250 KINGMAN  
 DWORK\_COM 300 FT DEEP SHAFT; 260 FT OF DRIFTS AT 100, 200, 300 FT  
 LEVELS  
 MIN\_AGE LCRET-TERT  
 REG\_STRUCT PREC SCHISTOSITY N30E, LCRET VEINS, FISSURES, DIKES NW TO  
 NNW REGIONALLY  
 NAME JOHNSON, KRIS H. (CREASEY, S. C.)  
 DATE 11/01/79  
 CONT\_CODE NA  
 GEOL\_COM MINERALIZATION ASSOCIATED WITH PORPHYRY INTRUSION, LCRET  
 GEN\_COM INFO.SRC : 1 PUB LIT; 2 UNPUB REPT  
 REF DINGS, M.G., 1951, THE WALLAPAI MINING DISTRICT, CERBAT  
 MOUNTAINS, MOHAVE COUNTY, ARIZONA: U.S.G.S. BULL.  
 978-E|PRELIMINARY RECONNAISSANCE FOR URANIUM IN MOHAVE  
 COUNTY, ARIZONA, 1952 TO 1956 ; U.S. ATOMIC ENERGY  
 COMMISSION, RME - 158, 1970, P. 73

USGS MRDS DATA  
 (PRINTED IN 97)

May 27, 1957

No information on this property.

MARK GEMMILL

TWENTIETH CENTURY

Indium

Mohave

8 - 7

T 23 N, R 18 W

Anaconda Copper Co., Butte, Montana

'43

NAME: TWENTIETH CENTURY ✓

COUNTY: MOHAVE

T 23 N R 18 W SEC. 14 Elev 4100'

DISTRICT: WALLAPAI  
CCHLORIDE

Mineralization:

Geology:

Type Operation:

Production:

References: Tope 7 1/2

NAME: TWENTIETH CENTURY ✓

COUNTY: MOHAVE

T 23 N R 18 W SEC. 14 NW 1/4

DISTRICT: WALLAPAI

Mineralization: Zn Pb Au Ag (In)

Geology:

Type Operation:

Production:

References: clipping file

Mohave County Card File

March 12, 1943

MEMORANDUM

TO: W. C. Broadgate

FROM: E. M. Helfgott

This is in regard to your memorandum on Indium.

Indium is a metallic element of silver white color discovered in 1863 in arsenical ores. It is related to cadmium and zinc and both are associated with it in nature. It is found in many ores like tungsten and tin, but especially in zinc blende. It is soft, malleable, ductile and easily fusible. It is heavy, with a specific gravity of 7.1 to 7.4, an atomic weight of 114.8 and a melting point of 174 c (345 f).

Chemically indium resembles aluminum and gallium. Its use prior to 1940 was mainly experimental, according to the Bureau of Mines. There were in 1941 four domestic producers whose output totaled 7492.8 troy ounces. Shipments mounted to 8144.4 troy ounces. Present monthly productive capacity approximates the total 1941 output and can be raised to 22,440 troy ounces within 6 months if there were a great demand. Industry stocks on January 1, 1941 totaled 11,619.6 troy ounces and on January 1, 1942 totaled 10,968 troy ounces. In addition, producers had an inventory amounting to 96,000 troy ounces.

There is apparently no government control over this metal. It is found in Mojave County, Arizona. There is no information in regard to its relative importance. Its chief use is for platings on cadmium and other alloyed bearings for airplanes, automotive and Diesel engines. Other uses are dental castings, optical goods, light reflectors, surgical equipment, silverware and, recently, jewelry. It can replace chromium and nickel for decorative purposes. It is used also in electrical contacts and with easily fusible alloys. It integrates thoroughly with silver and nickel, producing an alloy with more than ordinary resistance to wear and tarnish. In general it can be said to add permanence and strength. The Arizona properties have been proved to a depth of 300 feet and may persist to 700 feet. The demand to date, however, has not been sufficient to warrant further development. It is produced chiefly as a by-product of electrolytic zinc. There is no immediate problem of supply in relation to requirements. It may have further uses as an alloy.

Its average price from 1931 to 1940 was \$95.00 per troy ounce. Its present price is \$12.50 per troy ounce.

In his "Metals Handbook", published in 1940, Dr. George Stuart Brady, late of BEW, now of the armed forces, said that it was valued as a plating metal because of its fine color and corrosion resistance. Indium plated light reflectors are highly effective. Indium oxide is used to give a beautiful yellow color to glass. Indium usually remains alloyed with the zinc in the reduction of zinc from its ores.

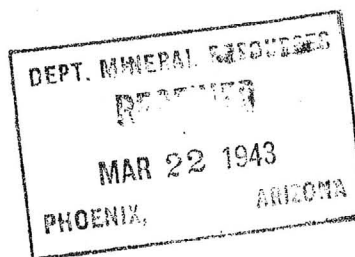
JAMES E. MURRAY, MONT., CHAIRMAN  
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TOM STEWART, TENN.   KENNETH S. WHERRY, NEBR.  
CLAUDE PEPPER, FLA.   C. DOUGLAS BUCK, DEL.  
JAMES G. SCRUGHAM, NEV.

CHARLES A. MURRAY, EXECUTIVE SECRETARY

## United States Senate

Special Committee to Study Problems of  
American Small Business

March 15, 1943



Mr. J. S. Coupal, Director  
Arizona State Department of Mineral Resources  
413 Home Builders Building  
Phoenix, Arizona

Dear Sam:

I am sending you herewith a memorandum on  
indium which refers to a property in Mojave County,  
Arizona.

If you have any further information on this  
mine, I should be very pleased to have it.

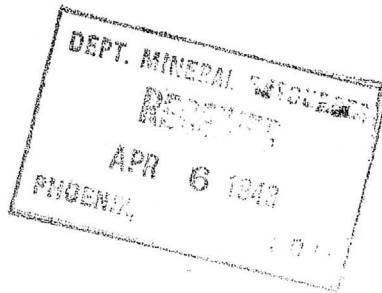
Sincerely yours,

*Bill Broadgate*

W. C. BROADGATE,  
Technical Consultant.

wcb/lm

*Indium Corporation of America*  
*Box 115 - Chloride, Ariz.*  
*(see Robinson's file)*  
*report 7-1-39*



Box 115,  
Chloride, Ariz.  
April 3, 1943

Mr. Sam Coupal,  
Dept. of Mineral Resources,  
413 Home Builders Bldg.,  
Phoenix, Arizona.

Dear Mr. Coupal:-

Pardon my delay in answering your letter of March 23, but I have been very busy with other matters.

The Indium property you speak of is the Twentieth Century, formerly owned by my uncle, the late George A. Beebe, of Chloride. The property lies 3 miles in a southeasterly direction from Chloride. There were originally five claims in the group but when the property was purchased by W. S. Murray, four claims were added for water rights. The property was purchased for \$ 40,000 in 1926 by W. S. Murray, a chemical engineer of Utica, N.Y. The property was patented in 1936 or 1937, the surveying work being done by L. S. Foster of Kingman, Arizona. The work done on the property consists of a 300' shaft, a tunnel on the vein 260 feet with drifts on the 100, 200 and 300 foot levels. Mr. Murray set up an experimental plant in Kingman and by electrolytic process recovered the indium from the fumes, I believe. I understand that the present supply is coming from the smelter in Great Falls, Montana. Stewart Thompson, who formerly was representative of Mr. Murray told me last summer that he believed that Anaconda now owned the 20th Century. However some years ago the Indium Corporation of America was formed and some of the officers were also officers of the Community Silver Plate Co. of Oneida, N.Y. Mr. Murray when last here said that he had perfected a process to treat bearings that gave them longer life through the use of indium. Lately the Indium Corporation of America was awarded both the Army and Navy E flags for ex-

cellence in production. No work has been done on the 20th Century since it was patented. I look after the property for Mr. Thompson who is now in Los Angeles, California.

The 20th Century is adjacent to the Pinkham mine on the west and the Bobby Burns on the southeast. A headframe, hoist and good buildings are on the property. Mr. William S. Murray can be contacted through Mr. Charles P. Elmer, Attorney of Kineman, Arizona.

With kind personal regards, I remain

Very truly yours.

*Harry C. Lemmon*



April 9, 1943

MEMORANDUM

Indium  
Mohave County

TO: W. C. Broadgate

FROM: J. S. Coupal

I am enclosing a copy of further information  
regarding the Indium which occurs in Mohave County.

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April 10, 1943

Mr. Harry C. J. Lennox  
Box 115  
Chloride, Arizona

Dear Harry:

Thank you for your letter of April 3.

I am forwarding the information you gave me on the indium property to Mr. Broadgate where it will pass into the proper hands.

With best wishes and kindest regards,  
I am

Very truly yours,

J. S. Coupal  
Director

JSC:kk

May 27, 1957

No information on this property.

MARK GEMMILL

TWENTIETH CENTURY

Indium

Mohave

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T 23 N, R 18 W

Anaconda Copper Co., Butte, Montana

'43

March 12, 1943

MEMORANDUM

TO: W. C. Broadgate

FROM: E. M. Helfgott

This is in regard to your memorandum on Indium.

Indium is a metallic element of silver white color discovered in 1863 in arsenical ores. It is related to cadmium and zinc and both are associated with it in nature. It is found in many ores like tungsten and tin, but especially in zinc blends. It is soft, malleable, ductile and easily fusible. It is heavy, with a specific gravity of 7.1 to 7.4, an atomic weight of 114.8 and a melting point of 174 c (345 f).

Chemically indium resembles aluminum and gallium. Its use prior to 1940 was mainly experimental, according to the Bureau of Mines. There were in 1941 four domestic producers whose output totaled 7492.8 troy ounces. Shipments mounted to 8144.4 troy ounces. Present monthly productive capacity approximates the total 1941 output and can be raised to 22,440 troy ounces within 6 months if there were a great demand. Industry stocks on January 1, 1941 totaled 11, 619.6 troy ounces and on January 1, 1942 totaled 10,968 troy ounces. In addition, producers had an inventory amounting to 96,000 troy ounces.

There is apparently no government control over this metal. It is found in Mojave County, Arizona. There is no information in regard to its relative importance. Its chief use is for platings on cadmium and other alloyed bearings for airplanes, automotive and Diesel engines. Other uses are dental castings, optical goods, light reflectors, surgical equipment, silverware and, recently, jewelry. It can replace chromium and nickel for decorative purposes. It is used also in electrical contacts and with easily fusible alloys. It integrates thoroughly with silver and nickel, producing an alloy with more than ordinary resistance to wear and tarnish. In general it can be said to add permanence and strength. The Arizona properties have been proved to a depth of 300 feet and may persist to 700 feet. The demand to date, however, has not been sufficient to warrant further development. It is produced chiefly as a by-product of electrolytic zinc. There is no immediate problem of supply in relation to requirements. It may have further uses as an alloy.

Its average price from 1931 to 1940 was \$95.00 per troy ounce. Its present price is \$12.50 per troy ounce.

In his "Metals Handbook", published in 1940, Dr. George Stuart Brady, late of BEW, now of the armed forces, said that it was valued as a plating metal because of its fine color and corrosion resistance. Indium plated light reflectors are highly effective. Indium oxide is used to give a beautiful yellow color to glass. Indium usually remains alloyed with the zinc in the reduction of zinc from its ores.

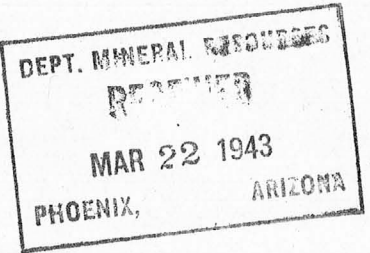
JAMES E. MURRAY, MONT., CHAIRMAN  
FRANCIS MALONEY, CONN.     ARTHUR CAPPER, KANS.  
ALLEN J. ELLENDER, LA.     ROBERT A. TAFT, OHIO  
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JAMES G. SCRUGHAM, NEV.

CHARLES A. MURRAY, EXECUTIVE SECRETARY

## United States Senate

Special Committee to Study Problems of  
American Small Business

March 15, 1943



Mr. J. S. Coupal, Director  
Arizona State Department of Mineral Resources  
413 Home Builders Building  
Phoenix, Arizona

Dear Sam:

I am sending you herewith a memorandum on  
indium which refers to a property in Mojave County,  
Arizona.

If you have any further information on this  
mine, I should be very pleased to have it.

Sincerely yours,

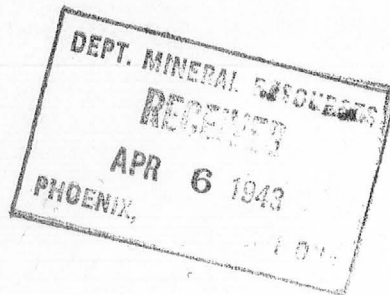
*Bill Broadgate*

W. C. BROADGATE,  
Technical Consultant.

wcb/lm

*Indium Corporation of America  
Box 115 - Chloride, Ariz.*

*(see Columbus (file)  
report 7-1-39)*



Box 115,  
Chloride, Ariz.  
April 3, 1943

Mr. Sam Coupal,  
Dept. of Mineral Resources,  
413 Home Builders Bldg.,  
Phoenix, Arizona.

Dear Mr. Coupal:-

Pardon my delay in answering your letter of March 23, but I have been very busy with other matters.

The Indium property you speak of is the Twentieth Century, formerly owned by my uncle, the late George A. Beebe, of Chloride. The property lies 3 miles in a southeasterly direction from Chloride. There were originally five claims in the group but when the property was purchased by W.S. Murray, four claims were added for water rights. The property was purchased for \$ 40,000 in 1926 by W.S. Murray, a chemical engineer of Utica, N.Y. The property was patented in 1936 or 1937, the surveying work being done by L.S. Foster of Kingman, Arizona. The work done on the property consists of a 300' shaft, a tunnel on the vein 260 feet with drifts on the 100, 200 and 300 foot levels. Mr. Murray set up an experimental plant in Kingman and by electrolytic process recovered the indium from the fumes, I believe. I understand that the present supply is coming from the smelter in Great Falls, Montana. Stewart Thompson, who formerly was representative of Mr. Murray told me last summer that he believed that Anaconda now owned the 20th Century. However some years ago the Indium Corporation of America was formed and some of the officers were also officers of the Community Silver Plate Co. of Oneida, N.Y. Mr. Murray when last here said that he had perfected a process to treat bearings that gave them longer life through the use of Indium. Lately the Indium Corporation of America was awarded both the Army and Navy E flags for ex-

cellence in production. No work has been done on the 20th Century since it was patented. I look after the property for Mr. Thompson who is now in Los Angeles, California.

The 20th Century is adjacent to the Pinkham mine on the west and the Bobby Burns on the southeast. A headframe, hoist and good buildings are on the property. Mr. William S. Murray can be contacted through Mr. Charles P. Elmer, Attorney of Kingman, Arizona.

With kind personal regards, I remain

Very truly yours,

*Harry C. Lemuel*



April 9, 1943

MEMORANDUM

Indium  
Mohave County

TO: W. C. Broadgate

FROM: J. S. Coupal

I am enclosing a copy of further information  
regarding the Indium which occurs in Mohave County.



20th Century

April 10, 1943

Mr. Harry C. J. Lennox  
Box 115  
Chloride, Arizona

Dear Harry:

Thank you for your letter of April 3.

I am forwarding the information you gave me on the indium property to Mr. Broadgate where it will pass into the proper hands.

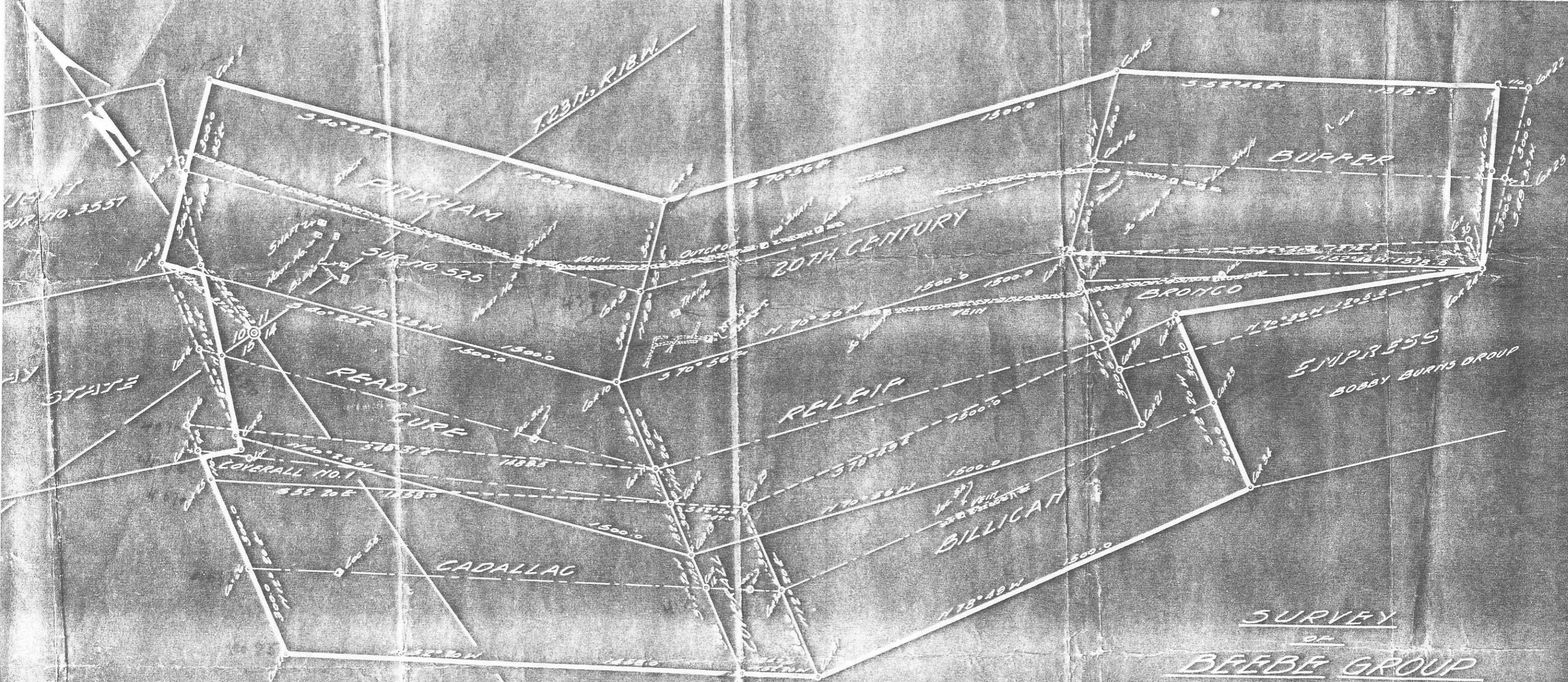
With best wishes and kindest regards,  
I am

Very truly yours,

J. S. Coupal  
Director

JSC:kk





SURVEY

OF  
BEEBE GROUP

WALLAPAI MINING DISTRICT  
MOHAVE CO., ARIZONA  
SCALE 1" = 300 FT.

ADMR 0238-001