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Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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Arizona Department of Mines and Mineral Resources Mining Collection

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PRINTED: 11/21/2001

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: LYLES DEPOSIT

ALTERNATE NAMES:
WHITE HILLS LITHIUM

YAVAPAI COUNTY MILS NUMBER: 305

LOCATION: TOWNSHIP 13 N RANGE 6 W SECTION 12 QUARTER ALL
LATITUDE: N 34DEG 29MIN 00SEC LONGITUDE: W 112DEG 50MIN 30SEC
TOPO MAP NAME: BISMARCK MESA - 7.5 MIN

CURRENT STATUS: PRODUCER

COMMODITY:
LITHIUM
CLAY BENTONITE
CLAY HECTORITE
MAGNESIUM

BIBLIOGRAPHY:
ADMMR LYLES DEPOSIT FILE
STATE OF AZ LAND DEPT LEASE 7723000 & 7724200
ELEVATORSKI, E.A.,1978, ARIZONA INDUSTRIAL MINERALS, ADMMR, P. 59
HOSTERMAN,J.W. & PATTERSON,S.H.,1992, BENTONITE & FULLER'S EARTH RESOURCES OF THE U.S., U.S. GEOL. SUR. PROF. PAPER 1522, P. 15, 20
MINED BY GSA RESOURCES TO PRODUCE HECTORITE

04/24/87

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

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ALTERNATE NAMES:
WHITE HILLS LITHIUM

YAVAPAI COUNTY MILS NUMBER: 305

LOCATION: TOWNSHIP 13 N RANGE 6 W SECTION 12 QUARTER ALL
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TOPO MAP NAME: BISMARCK MESA - 7.5 MIN

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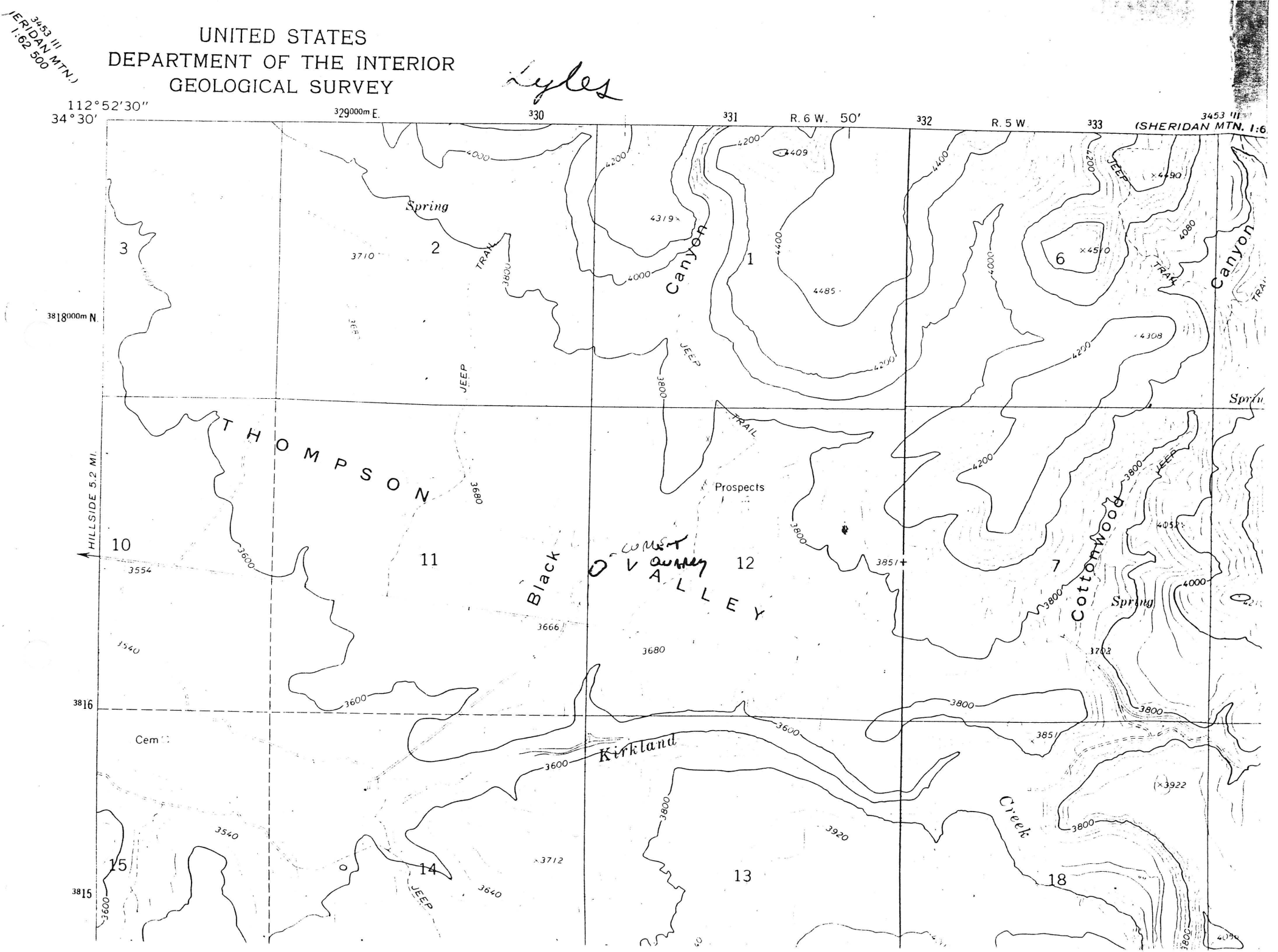
COMMODITY:
LITHIUM
CLAY BENTONITE
MAGNESIUM

BIBLIOGRAPHY:
USGS BISMARCK MESA QUAD
ADMMR LYLES DEPOSIT FILE
STATE OF AZ LAND DEPT LEASE 7723000 & 7724200
ELEVATORSKI, E.A. AZ INDUSTRIAL MINERALS
ADMMR PUBLICATION 1978 P 59
OPERATED BY GSA RESOURCES TO PRODUCE THE CLAY
MINERAL HECTORITE


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
3453 III
(SHERIDAN MTN. 1:62 500)
112°52'30"
34°30'
329000m E.
330
331
R. 6 W.
50'
332
R. 5 W.
333
3453 III
(SHERIDAN MTN. 1:6
3818000m N.
3816
3815
HILLSIDE 5.2 MI.
THOMPSON
Spring
TRAIL
JEEP
Canyon
Prospects
Black Canyon
Cottonwood
Spring
Kirkland
Creek
Cem
3
2
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4000
4200
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4319
4409
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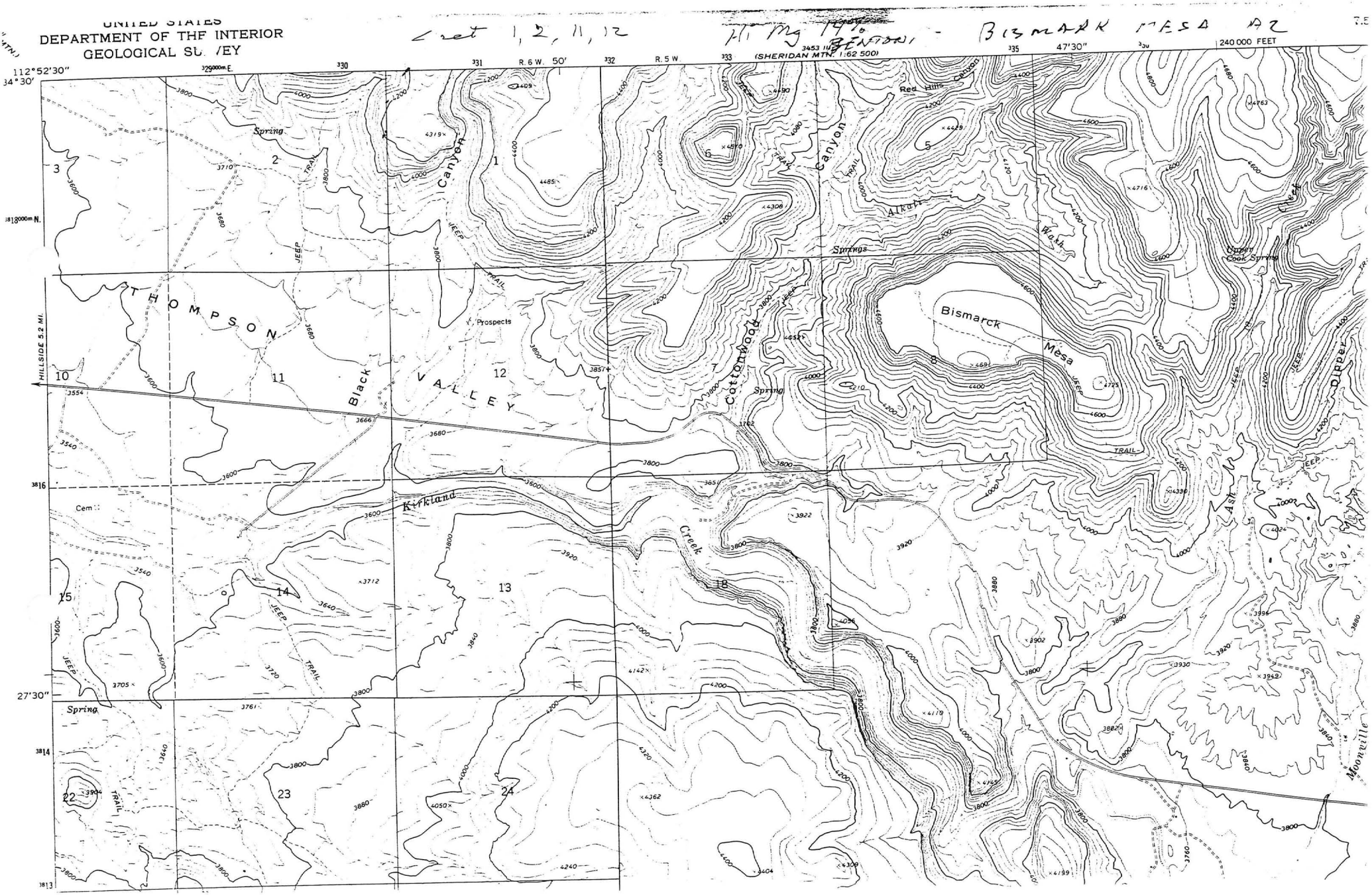
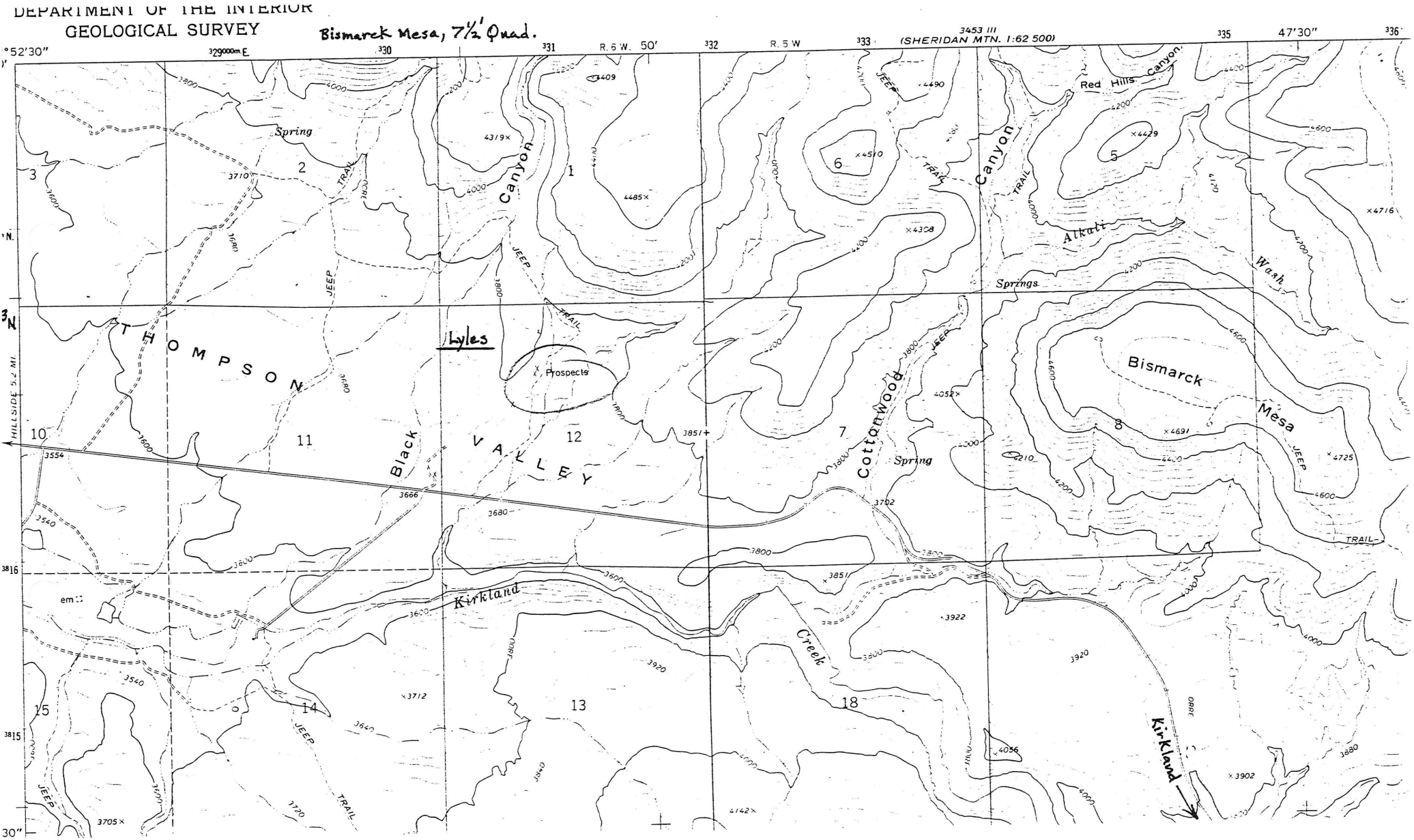

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Cret 1, 2, 11, 12
Hi Mg Pyro
BENTONI - BISMARK MESA AZ
112°52'30"
34°30'
R. 6 W.
R. 5 W.
(SHERIDAN MTN. 1:62 500)
47'30"
240 000 FEET
Red Hills Canyon
Canyon
Alkali
Wash
Springs
Upper Cook Spring
Bismarck
Mesa
Ridge
THOMPSON
Black
VALLEY
Cottonwood
Spring
Prospects
Kirkland
Creek
Ash
Moonville
HILLSIDE 5.2 MI.
Cem
Spring
TRAIL
JEEP


DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Bismarck Mesa, 7½' Quad.
3453 III
(SHERIDAN MTN. 1:62 500)
R. 6 W.
R. 5 W
47'30"
Red Hills Canyon
Canyon
Alkali
Wash
Springs
Spring
Lyles
Prospects
THOMPSON
Black
VALLEY
Cottonwood
Spring
Bismarck
Mesa
Kirkland
Creek
Kirkland
JEEP
TRAIL
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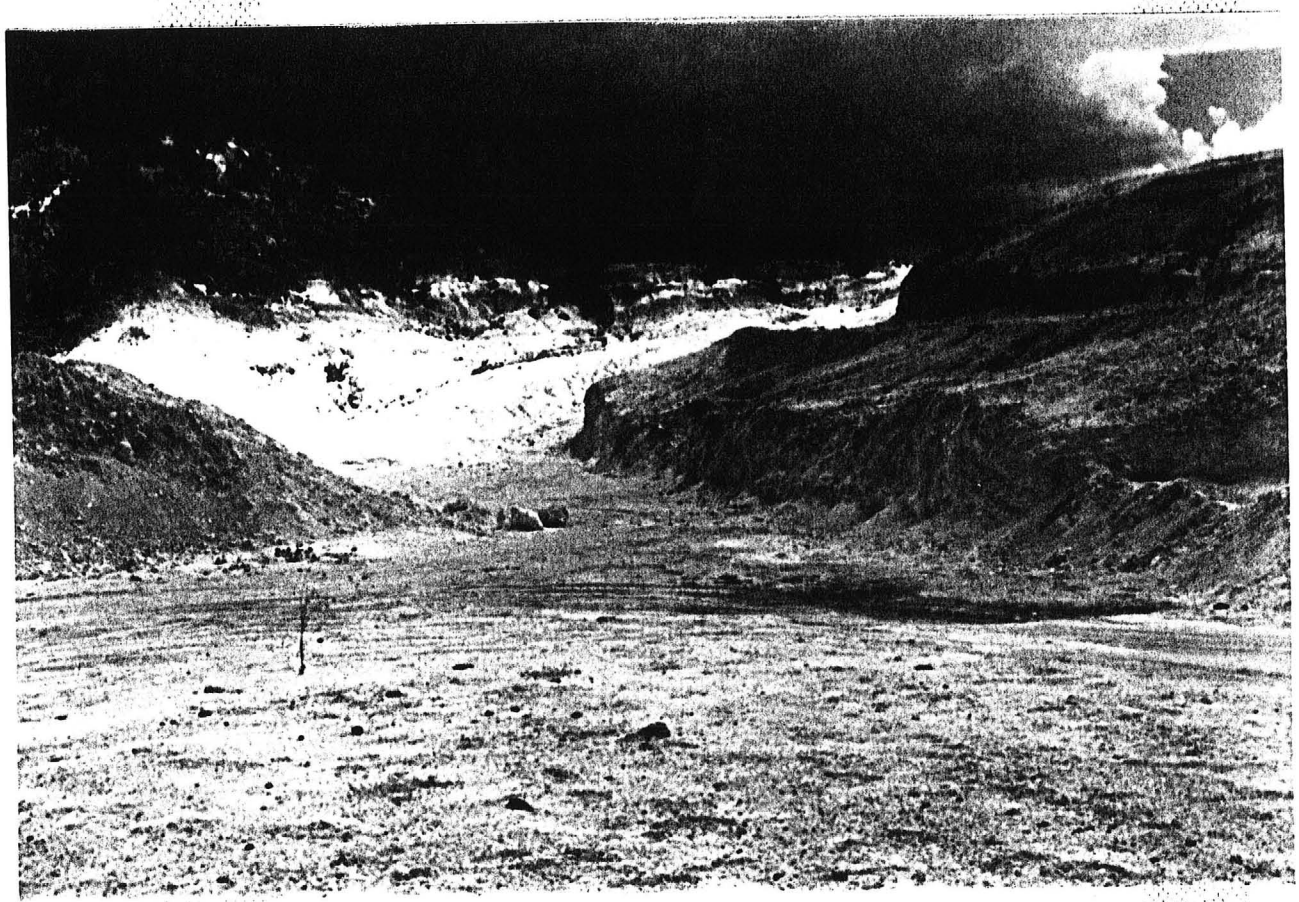
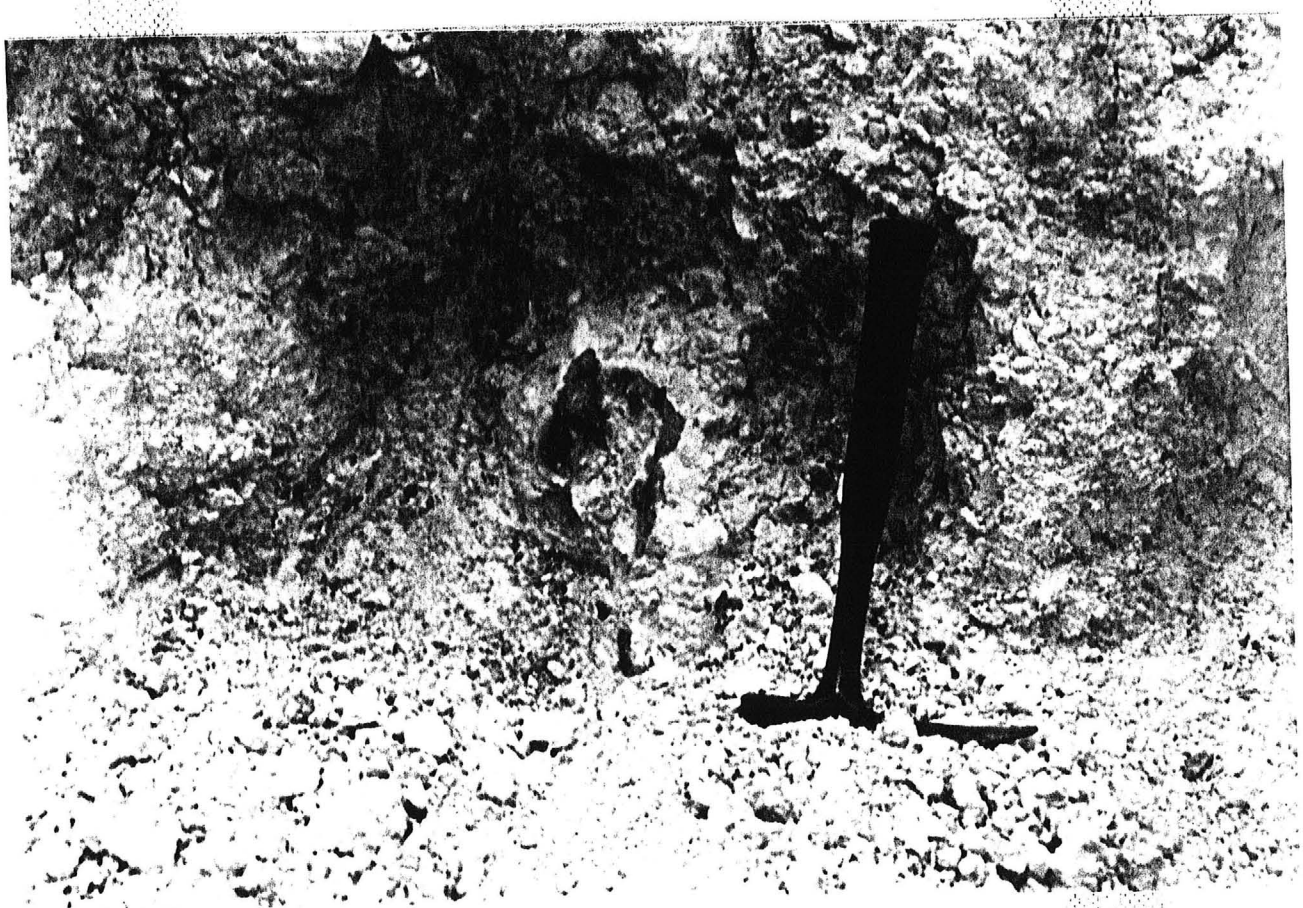


LYLES HECTORITE DAY MINE (looking NE)

YAVAPAI CO. 4/25/1987



CHALCEDONY CONCRETION (CENTER AND LEFT OF PICK)
VERY WHITE MATERIAL SURROUNNDING CONCENTETION IS
VERY PURE HECTORITE.

LYLES HECTORITE DAY MINE, YAVAPAI CO., 4/25/87

WHITE HILLS LITHIUM PROSPECT

YAVAPAI COUNTY
T13N R6W Sec 12

MILS #305

AKA: Lyles Deposit

Lithium Bearing Bentonite Deposit, Yavapai Co - Geology file

ABM Bull. 180, p. 329

USGS Prof. Paper 525-D, p. 163-166.

WHITE HILLS LITHIUM PROJECT YAVAPAI COUNTY

NJN WR 8/6/82: Harvey Hays with the James Stewart Company was in and asked for references on the lithium clay occurrence in Yavapai County, T12N R6W Sec 11 and 12. He said the James Stewart Co. owns the minerals while a rancher owns the surface. He has cut roads east to west across part of Section 11 and all of 12 at 1000' spacings. He is drilling now with an air tract and plans to do about a dozen holes in all.

MG WR 8/6/82: The James Stewart Co., 3033 N. Central Ave., Suite 707, Phoenix, Arizona 85012, has state prospecting permits on losts 7,8, and 10 in Sec 12, T13N R6W, where the White Hills deposit is located.

MG WR 10/25/85: The Lyles clay deposit is being developed by GSA Resources, Inc. (c). The clay is a lithium/magnesium bearing bentonite (hectorite) that occurs chiefly on State land north of the road between Kirkland and Hillside. The company reports that it shipped 45 tons of the clay for pilot tests this year and thus far the tests have been favorable. Plans call for more shipments next year. The mine is an open pit. The ADMMR file name for this property is White Hills Lithium prospect. It is MILS 305. A literature reference is USGS Prof. Paper 525-D, p. 163-166.

NJN WR 3/13/87: Received a field trip road log and deposit description for the Lyles Hectorite Deposit (White Hills Lithium Clay Deposit - file) Yavapai County. A copy has been placed in the file. The field trip is sponsored by AIPG (American Institute of Professional Geologists) and will be lead by Ted Eyde of GSA Resources. The trip will depart from Wickenburg on Saturday, April 25.

KAP WR 5/1/87: In the company of Nyal Niemuth and as part of an AIPG field trip a visit was made to the Lyles Mine (file) Yavapai County. Here Ted Eyde of GSA Resources mines hectorite. Hectorite is a clay used as a viscosifier in liquids, primarily cosmetics. The deposit is located on State Trust Lands. Last years production was 137 tons at an as-mined value of around $30 per ton. After processing it sells for $5 to $57 a pound. The deposit is one of three mined in the United States. Considerable exploratory drilling was done in the immediate area to establish the deposit location. The deposit is believed to occur as a magnesium metasomatized bentonite. The nearby prescence of dolomite travertine is perhaps significant. A mine visit report was assigned to Mike Greeley.

Lyles Deposit file

ABSTRACTED FROM ADMMR ACTIVE MINES DIRECTORY, 1992

GSA RESOURCES INC.

P.O. Box 509, Cortaro, AZ 85652 - Phone 297-4330 - Employees: 16 (including contractors).
President Ted H. Eyde
Vice President Daniel T. Eyde
Product Manager J. Micheal Canty
Lyles Mine T13N R6W Secs. 11, 12
Open pit clay mine located west of Kirkland - Hectorite clay -Used as viscosifiers and thickeners in pharmaceuticals and cosmetics.
Grace Chabazite Mine T12S R29E Secs. 1, 2, 12
Open pit mine located 13 miles north of Bowie - Chabazite - U sed for cation exchange media and specialty adsorbants and deodorizers - Shipped out of state for further processing.
Burro Creek Clay T14N R10W Sec. 7
Open pit clay mine located 8 miles southwest of Bagdad along Burro Creek - Saponite clay - Shipped out of state for manufacture into viscosifiers for industrial lubricants and coatings.

ABSTRACTED FROM ADMMR ACTIVE MINES DIRECTORY, 1991

GSA RESOURCES INC.

P.O. Box 509, Cortaro, AZ 85652 - Phone 297-4330 - Employees: (including contractors) 16.
President ..... Ted H. Eyde
Vice President ..... Daniel T. Eyde
Lyles Mine T13N R6W Secs. 11, 12
Open pit clay mine located west of Kirkland - Crude clay used as viscosifiers and thickeners in pharmaceuticals and cosmetics.

ABSTRACTED FROM ADMMR ACTIVE MINES DIRECTORY, 1990

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P.O. Box 509, Cortaro, AZ 85652 - Phone 297-4330 - Employees: (including contractors) 16.
President ..... Ted H. Eyde
Vice President ..... Daniel T. Eyde
Lyles Mine T13N R6W Secs. 11, 12
Open pit clay mine located west of Kirkland - Crude clay used as viscosifiers and thickeners in pharmaceuticals and cosmetics.

ABSTRACTED FROM ADMMR ACTIVE MINES DIRECTORY, 1989

GSA RESOURCES INC.

P.O. Box 509, Cortaro 85652 - Phone 297-4330 - Employees (including contractors) 16.

President ..... Ted H. Eyde
Vice President ..... Daniel T. Eyde

Lyles Mine T13N R6W Secs. 11,12

Open pit clay mine located west of Kirkland - Crude clay used as viscosifiers and thickeners in pharmaceuticals and cosmetics.

ABSTRACTED FROM ADMMR ACTIVE MINES DIRECTORY, 1988

GSA RESOURCES INC.

P.O. Box 509, Cortaro 85652 - Phone 297-4330 - Employees (including contractors) 16.

President ..... Ted H. Eyde
Vice President ..... Daniel T. Eyde

Lyles Mine T13N R6W Secs. 11,12

Open pit clay mine located west of Kirkland - Crude clay used as viscosifiers and thickeners in pharmaceuticals and cosmetics.

DEPARTMENT OF MINES & MINERAL RESOURCES

FIELD VISIT SUMMARY

ENGINEER: Nyal J. Niemuth

DATE: April 25, 1987

MINE: Lyles Deposit

COUNTY: Yavapai

In the company of engineers Ken Phillips and Mike Greeley, visited the Lyles Deposit (file) Yavapai County as part of the AIPG Field trip. The tour of property was led by Ted Eyde of GSA Resources Inc, operators of the property. Mr. Eyde reports that last year they shipped 137 tons of hectorite clay. The material is shipped to Imvite, Nevada for processing before being manufactured into cosmetics and pharmaceuticals in the eastern U. S. The deposit is located on State lands and the State receives a royalty of 5% of the value shipped out the gate. The material is sold for between $5 - $50 per pound.

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

FIELD VISIT

1. Information from: **Mike Greeley - Field Visit**
2. Mine or property name: **Lyles Hertorite Mine**
3. ADMMR Mine file: **Lyles Deposit**
4. County: **Yavapai**
5. MILS number: **Yavapai 305**
6. Operational Status: **Active**
7. Summary of information received, comments, etc.:

   The attached photographs were taken during an Arizona Geological Society field trip on April 25, 1987.

ABSTRACTED FROM ADMMR 1986
DIRECTORY OF ACTIVE MINES
April 24, 1987

GSA RESOURCES, INC.

P.O. Box 16509, Cortaro 85652 - Phone 297-4330.

President ..... Ted H. Eyde
Vice President ..... Daniel T. Eyde

Lyles Mine
Open pit clay mine located west of Kirkland - Crude clay used as feedstock for out of state plants.

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Mr. Ted Eyde & mine visit
   Address: GSA Resources, P.O. Box 16509, Cortaro, AZ 85652
2. Mine: LYLES (Yavapai Co.) 3. No. of Claims - Patented ____ Unpatented Yes
4. Location: Approximately 7 miles NE of Hillside (Bismark Mesa 7½' Quad.)
5. Sec N½ 12 Tp 13N Range 6W 6. Mining District Kirkland
7. Owner: GSA Resources (phone 297-4330)
8. Address: same as above
9. Operating Co.: GSA Resources
10. Address: Same as above
11. President: Ted Eyde 12. Gen. Mgr.: ____
13. Principal Metals: Hectorite clay 14. No. Employed: ____
15. Mill, Type & Capacity: ____
16. Present Operations: (a) Down ☐ (b) Assessment work ☐ (c) Exploration ☐ (d) Production ☒ (e) Rate ____ tpd.
17. New Work Planned: Mine is operated only when shipments are requested by buyer.
18. Miscl. Notes: For a good resume of the deposit, please see attached road log and description provided by GSA Resources.

The deposit appears to be quite restricted; drilling has not revealed further reserves nearby. Total reserves contained within the Lyles property may be about 1,000,000 tons. The deposit may be a remnant of a larger occurrence.

Approximately 40% of the hectorite mass is comprised of dolomite and chalcedony. The purest hectorite frequently occurs adjacent to the chalcedony concretions.

Ore is loaded, as is, into 20-ton trucks and shipped to Beaty, NV. There it is screened and sent, with other clay products, by Vanderbilt Minerals to Kentucky for final processing.

Date: April 25, 1987

Michael N. Greeley
(Signature) (Field Engineer)

COMPLETE AND MAIL TO:

STATE MINE INSPECTOR
1624 WEST ADAMS, ROOM 208
PHOENIX, ARIZONA 85007-2606

LYLES DEPOSIT (PLYMPA

STATE MINE INSPECTOR
JUN 1 1987

FOR OFFICE USE ONLY
START-UP NUMBER 7A413088
STATE NUMBER
MSHA NUMBER

Angel

NOTICE TO ARIZONA STATE MINE INSPECTOR

In compliance with the Arizona Revised Statute Section 27-303, we are submitting this written notice to the Arizona State Mine Inspector of our intent to start X stop ____ move ____ (Please check one) a mining operation.

If this is a move, please show last location: ____
If you have not operated a mine previously in Arizona, please check here: ____ If you want the Education and Training Division to assist with your mine safety training, please check here: ____
If this operation will use Cyanide for leaching, please check here: ____

COMPANY NAME: GSA RESOURCES INCORPORATED

DIVISION: ____

MINE OR PLANT NAME: LYLES CLAY MINE **TELEPHONE:** 297-4330 TUCSON

CHIEF OFFICER: TED H. EYDE

COMPANY ADDRESS: 1235 E. MOONRIDGE RD

CITY: TUCSON **STATE:** AZ **ZIP CODE:** 85718

MINE OR PLANT LOCATION: (Include county and nearest town, as well as directions for locating property by vehicle: W/2 NW SW SECTION 12 T13N R6W YAVAPAI COUNTY ARIZONA. THE PIT is 1300 ft north of Highway 96. The turnoff is directly across the highway and north of the Indian Rock Ranch road 6 miles northeast of Hillside.

TYPE OF OPERATION: SURFACE **PRINCIPAL PRODUCT:** HECTORITE (CLAY)

STARTING DATE: JUNE 15 **CLOSING DATE:** NOT KNOWN **DURATION:** NOT KNOWN

PERSON COMPLETING NOTICE: TED H. EYDE **TITLE:** PRESIDENT

DATE NOTICE MAILED TO STATE MINE INSPECTOR: ____

LOADING TRUCKS FROM STOCKPILE AT THE RATE OF 20 (A TRUCKLOAD) A MONTH. TRUCKS LOADED WHEN NEEDED BY DARYL BALLEW, BOX 25, SKULL VALLEY, AZ 86338 (602) 442-3348.

FORM 101-106 REV. 08/86

GSA Resources, Inc.

P.O. Box 16509
(602) 297-4330

Cortaro, Arizona 85652
Telex 5106001432

May 29, 1987

State Mine Inspector
James H. McCutchan
1624 West Adams, Room 208
Phoenix, Arizona 85007-2606

Dear Mr. McCutchan:

Attached to this letter are start up notices for the Lyles Clay Mine near Hillside, Arizona and the Grace Chabazite Mine near Bowie, Arizona. Production at both mines is intermittent. No explosives are used in the mining operations. Trucks are loaded from the stockpiles at both of the operations by local contractors.

Both mines are on State Mineral Leases. Also, both mines produce specialty industrial mineral products. Viscosifiers and thickeners from the Lyles hectorite and adsorbents and ion exchange media from the Grace chabazite. I have enclosed some background information on the deposits and the uses and applications of the processed industrial minerals produced from each of them. Please give me a call if you need any further information.

Very best regards,

Ted H. Eyde

Ted H. Eyde

THE/mce

AMERICAN INSTITUTE OF PROFESSIONAL GEOLOGISTS

ARIZONA SECTION

The first meeting of the Arizona Section AIPG for 1987 will be informal, held in conjunction with a field trip to the Lyles Hectorite Deposit, 24 miles northeast of Hillside and 60 miles north of Wickenburg.

We hope to begin our trip from the parking lot of McDonald's in Wickenburg, at 10 a.m. on Saturday, April 25.

Those planning on coming up from Tucson may wish to stay overnight in Wickenburg. The Rancho Grande (Best Western) Motel is convenient. Their number is 684-5445. Wickenburg is, of course, an hour and a half from Phoenix, and about four hours from Tucson (all depending on your specific driving habits and your particular route).

A packed lunch would be adviseable, as Hillside does not boast any Five Star Restaurants. Gourmets may of course wish to partake of a late afternoon lunch following the tour at either Prescott or Wickenburg.

We hope as many as possible will join us for this trip, which is being led by our eminent current President, Ted Eyde, of GSA Resources.

A road log and description of the Lyles Hectorite Deposit is attached.

The mailing list for this notice was compiled from three different sources. If your name is misspelled, or if your address is incorrect, please notify me as soon as possible at (602) 945-4630.

Carole A. O'Brien
Vice President &
Program Chairman

Mileage Total	Interval	
	0	
0		Intersection of US 89 and US 60-70, take US 89 north out of Wickenburg.
	5	
5		Junction US 89 and 93; bear right on US 89.
	9	
14		Congress Mine at 12:00. The Congress Mining District has produced a minimum of 388,000 ounces of gold from relatively high grade ore shoots in hypogene auriferous quartz veins. The district ranks second, next to the Vulture, in primary gold production in Arizona. Essentially all of the district's gold production has come from two vein systems: the Congress and Niagara veins. The original claims were located in 1887 and most of the gold production occurred between 1894 and 1911. The property is currently controlled by Echo Bay Exploration, Inc. who through Centennial Development, have completed a decline on the property to access the deeper mineralized veins.
	1	
15		Junction US 89 and SH 71; bear right on US 89 to Prescott.
	2	
17		Turn left on graded gravel road to Hillside - Bagdad.
	1	
18		Bear right at fork. The Weaver Mountains are to the northeast (right) and the Date Creek Mountains are to the southwest (left).
	18	
36		Town of Hillside. Rail loading facilities for the Bagdad Copper Mine, which is located approximately 15 miles northwest of here.
	18	
54		Bear right toward Prescott.
	4	
58		Lyles Hectorite Deposit at 2:00 (white area on hillside).
	1	
59		Kirkland Peak at 12:00.
	1	
60		<u>The Lyles Hectorite Deposit</u>

The Lyles hectorite deposit is one of only three deposits producing hectorite in the United States. The others are at Hector, California, operated by N.L. Chemicals; and at Imvite, Nevada, operated by IMV (Industrial Minerals Ventures), a subsidiary of Gulf Resources and Chemical Corporation. Sometime during the mid 1950's, Joseph Lyles of Yarnell discovered that the clay from the deposit contained detectable amounts of lithium. He brought the property to the attention of E.T. Turley of Phoenix, who explored the deposit with pits and auger holes. Later, Mr. Turley mined hectorite for use as a sealant for irrigation ditches and stock ponds.

The deposit was acquired in the early 1960's by the James Stewart Company of Phoenix, who were interested in the deposit as a source for lithium. In 1982, GSA Resources acquired the deposit and began a drilling program to evaluate the hectorite deposit. Bulk sampling and pilot plant testing were completed in 1985. In 1986, the first shipment was made from the deposit to a specialty clay producer.

The deposit is interbedded within a section of lacustrine clays at least 70 feet thick which is overlain by a 1 to 2 foot thick bed of vitric tuff, zeolitically altered to phillipsite. Another bed of vitric tuff, zeolitically altered to clinoptilolite occurs below the hectorite deposit. The zeolite beds are excellent marker horizons.

The hectorite bed is 8 to 35 feet thick. It is overlain and underlain by high alumina smectites. The hectorite, when freshly mined, ranges from a translucent, waxy white to a light yellowish white color. Much of the hectorite actually resembles white candle wax.

The hectorite horizon contains large concretions of chalcedony and dolomite. It appears that the hectorite deposit is, in fact, a hydrothermal clay deposit. A travertine mass crops out in the valley along the east side of the deposit. The relationship between travertine masses and high magnesium smectite has been noted at both the Imvite and Hector deposits, as well as at other deposits of saponite and high magnesium smectite.

The deposit appears to have formed when thermal spring waters, rich in magnesium, were introduced into the normal high alumina smectite in the lacustrine beds. The existence of the thermal springs is strongly suggested by the travertine deposits which are usually linear, vein-like structures. The hectorite bed actually may be the result of magnesium metasomatism of a high alumina smectite clay horizon. The silica and dolomite concretions may indicate the migration of thermal waters through the hectorite bed.

Hectorite is used as a thickener and viscosifier in many products such as paints, saltwater drilling muds, and liquid shampoos. Some hectorite products are organoclad with quaternary compounds which make the hectorite organophyllic. Organoclad hectorite is used in thickeners and viscosifiers in oil based paints, greases, oils and oil based drilling muds. Organoclad clay products, such as the Bentones and Benagels, manufactured by N.L. Chemicals, sell for over $1.00 per pound.

K WHITE HILLS LITHIUM (A)

Mileage Total	Interval	
	0	
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	5	
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	9	
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36		Town of Hillside. Rail loading facilities for the Bagdad Copper Mine, which is located approximately 15 miles northwest of here.
	18	
		Bear right toward Prescott.
	4	
58		Lyles Hectorite Deposit at 2:00 (white area on hillside).
	1	
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	1	
60		The Lyles Hectorite Deposit

April 25, 1987.

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AMERICAN INSTITUTE OF PROFESSIONAL GEOLOGISTS

ARIZONA SECTION

The first meeting of the Arizona Section AIPG for 1987 will be informal, held in conjunction with a field trip to the Lyles Hectorite Deposit, 24 miles northeast of Hillside and 60 miles north of Wickenburg.

We hope to begin our trip from the parking lot of McDonald's in Wickenburg, at 10 a.m. on Saturday, April 25.

Those planning on coming up from Tucson may wish to stay overnight in Wickenburg. The Rancho Grande (Best Western) Motel is convenient. Their number is 684-5445. Wickenburg is, of course, an hour and a half from Phoenix, and about four hours from Tucson (all depending on your specific driving habits and your particular route).

A packed lunch would be adviseable, as Hillside does not boast any Five Star Restaurants. Gourmets may of course wish to partake of a late afternoon lunch following the tour at either Prescott or Wickenburg.

We hope as many as possible will join us for this trip, which is being led by our eminent current President, Ted Eyde, of GSA Resources.

A road log and description of the Lyles Hectorite Deposit is attached.

The mailing list for this notice was compiled from three different sources. If your name is misspelled, or if your address is incorrect, please notify me as soon as possible at (602) 945-4630.

Carole A. O'Brien
Vice President &
Program Chairman

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: WHITE HILLS LITHIUM PROSPECT

Date: September 10, 1957

District: Kirkland - YAVAPAI COUNTY

Engineer: B. J. Squire

Subject:

Owner: Joseph Lyles, Yarnell, Arizona

Number of Claims: 50 State Leases - 2 on Federal ground.

Location: Approximately 8 miles Northwest of Kirkland on the right side of the Bagdad Highway.

Geology: The lithium deposit is a flat-lying bed of bentonitic tuff carrying from 0.4% to 1.0% Lithium oxide as an easily (diluted acid) soluble carbonate, along with a quantity of chalcedony modules.

Drilling and trenching indicate thickness of over 40' and a relatively uniform deposit over the entire area of the claims except a few places covered by surface gravels.

No blocking out of tonnage has been attempted but the indications are that the deposit is very large.

AMERICAN INSTITUTE OF PROFESSIONAL GEOLOGISTS

ARIZONA SECTION

RECEIVED JUL 19 1984

JOSEPH E. SHEARER, PRESIDENT
6821 E. Baker Street
Tucson, Arizona 85710
Tel. (602) 298-8125

RALPH E. WEEKS, VICE-PRES.
Sergent, Hauskins & Beckwith
3940 W. Clarendon
Phoenix, Arizona
Tel. (602) 272-6848

MEETING & FIELD TRIP ANNOUNCEMENT

The Arizona Section of the AIPG will hold its quarterly meeting at the Cottonwood Inn (Best Western Motel) in Cottonwood, Arizona at 8:30 p.m., August 17, 1984. Commencing at 8:00 a.m. on the following day, the AIPG will also sponsor a one-day field trip on the geology of the Verde Valley area. This field trip will be moderated by Dr. Dale Nations, Professor at Northern Arizona University.

Fifteen rooms at the Cottonwood Inn have been reserved for the night of August 17th. For those interested in staying overnight, please contact the inn at 602-634-5575 to confirm your reservation.

We encourage you to attend these AIPG-sponsored events. Please feel free to bring your family, as there are many points of interest for those who do not wish to participate in the field trip.

We will issue another meeting/field trip notice during the week of August 5th. At that time, more details will be provided as to the route and special features of the field trip.

To assist us in planning the transportation needed during the field trip, please return the enclosed form on or before July 30, 1984.

AIPG SUMMER MEETING & FIELD TRIP

August 17th & 18th, 1984

Participants	Telephone No.	I plan to attend the Meeting	Field Trip
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

	Yes	No
I plan to stay overnight at the Cottonwood Inn	_____	_____

Please return to:

Ralph E. Weeks
Sergent, Hauskins & Beckwith
3940 West Clarendon Avenue
Phoenix, Arizona 85019

on or before July 30, 1984.

Mileage Total	Interval	
	0	
0		Intersection of US 89 and US 60-70, take US 89 north out of Wickenburg.
	5	
5		Junction US 89 and 93; bear right on US 89.
	9	
14		Congress Mine at 12:00. The Congress Mining District has produced a minimum of 388,000 ounces of gold from relatively high grade ore shoots in hypogene auriferous quartz veins. The district ranks second, next to the Vulture, in primary gold production in Arizona. Essentially all of the district's gold production has come from two vein systems: the Congress and Niagara veins. The original claims were located in 1887 and most of the gold production occurred between 1894 and 1911. The property is currently controlled by Echo Bay Exploration, Inc. who through Centennial Development, have completed a decline on the property to access the deeper mineralized veins.
	1	
15		Junction US 89 and SH 71; bear right on US 89 to Prescott.
	2	
17		Turn left on graded gravel road to Hillside - Bagdad.
	1	
18		Bear right at fork. The Weaver Mountains are to the northeast (right) and the Date Creek Mountains are to the southwest (left).
	18	
36		Town of Hillside. Rail loading facilities for the Bagdad Copper Mine, which is located approximately 15 miles northwest of here.
	18	
54		Bear right toward Prescott.
	4	
58		Lyles Hectorite Deposit at 2:00 (white area on hillside).
	1	
59		Kirkland Peak at 12:00.
	1	
60		<u>The Lyles Hectorite Deposit</u>

The Lyles hectorite deposit is one of only three deposits producing hectorite in the United States. The others are at Hector, California, operated by N.L. Chemicals; and at Imvite, Nevada, operated by IMV (Industrial Minerals Ventures), a subsidiary of Gulf Resources and Chemical Corporation. Sometime during the mid 1950's, Joseph Lyles of Yarnell discovered that the clay from the deposit contained detectable amounts of lithium. He brought the property to the attention of E.T. Turley of Phoenix, who explored the deposit with pits and auger holes. Later, Mr. Turley mined hectorite for use as a sealant for irrigation ditches and stock ponds.

The deposit was acquired in the early 1960's by the James Stewart Company of Phoenix, who were interested in the deposit as a source for lithium. In 1982, GSA Resources acquired the deposit and began a drilling program to evaluate the hectorite deposit. Bulk sampling and pilot plant testing were completed in 1985. In 1986, the first shipment was made from the deposit to a specialty clay producer.

low in arsenic, low in lead

The deposit is interbedded within a section of lacustrine clays at least 70 feet thick which is overlain by a 1 to 2 foot thick bed of vitric tuff, zeolitically altered to phillipsite. Another bed of vitric tuff, zeolitically altered to clinoptilolite occurs below the hectorite deposit. The zeolite beds are excellent marker horizons.

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Lyles hectorite clay mine (looking NE)
Yavapai Co.
April 25, 1987

Chalcedony concretion (center and left of pick)
Very white material surrounding concretion is very pure hectorite.
Lyles hectorite clay mine, Yavapai Co., 4/25/87