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Arizona Department of Mines and Mineral Resources Mining Collection

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PRINTED: 01-21-2004

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: HARQUAHALA GYPSUM MINE

ALTERNATE NAMES:

HARQUAHALA MOUNTAINS  
DESERT MOUNTAIN GYPSUM  
EVELAND  
SALOME GYPSUM

LA PAZ COUNTY MILS NUMBER: 395

LOCATION: TOWNSHIP 5 N RANGE 11 W SECTION 30 QUARTER SW  
LATITUDE: N 33DEG 44MIN 43SEC LONGITUDE: W 113DEG 26MIN 42SEC  
TOPO MAP NAME: LONE MOUNTAIN - 15 MIN

CURRENT STATUS: PRODUCER

COMMODITY:

GYPSUM  
STONE LIMESTONE

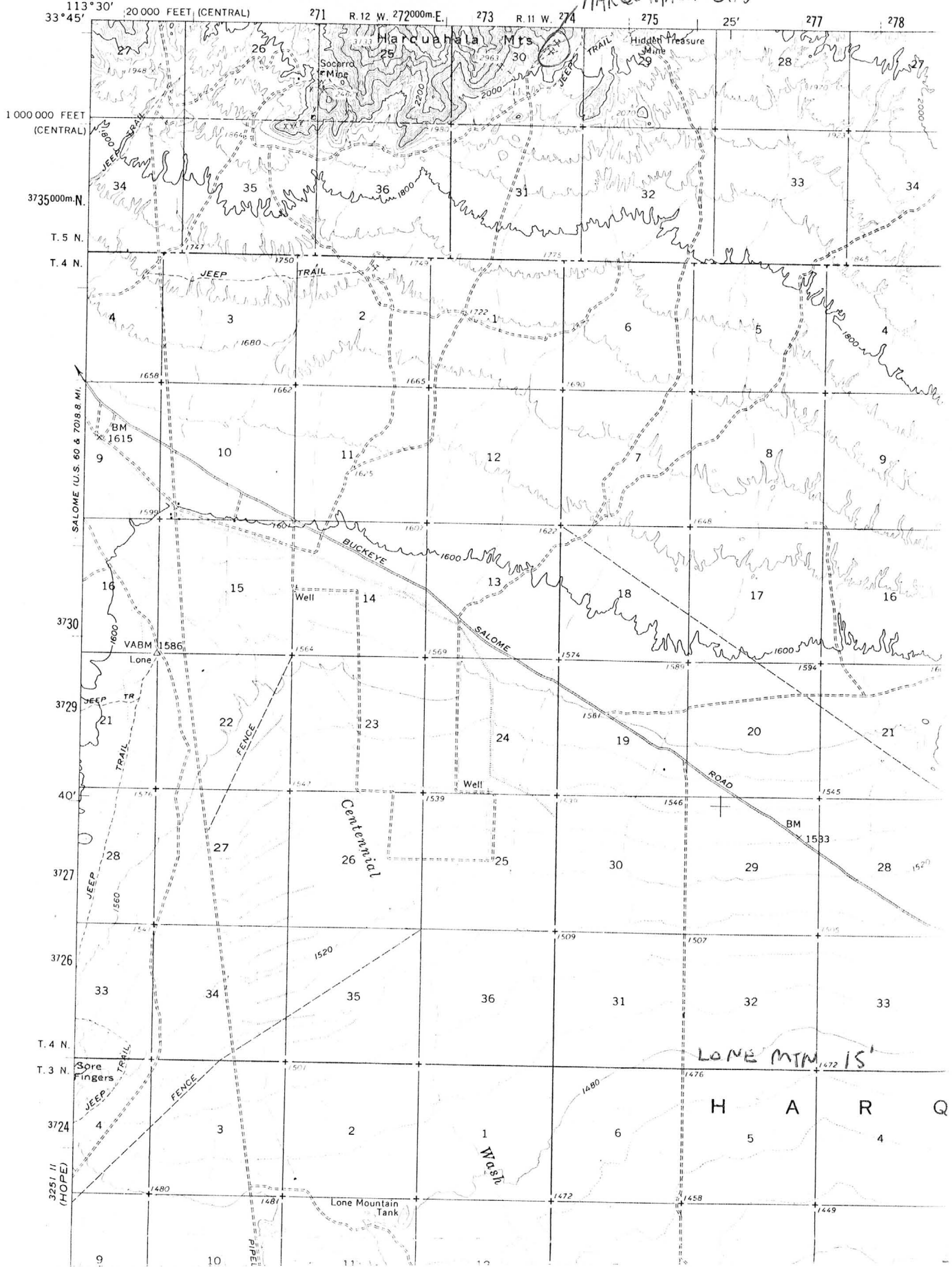
BIBLIOGRAPHY:

ELEVATORSKI, E.A., 1978, ARIZONA INDUSTRIAL  
MINERALS, P.68 (CALLED HARQUAHALA MOUNTAINS)  
ADMMR HARQUAHALA GYPSUM MINE FILE

3251 (SALOME)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

HARQUANLA Gypsum



ABSTRACTED FROM ADMMR ACTIVE MINES DIRECTORY, 1992

*Harquahala Gypsum Mine*

*Salome*

*La Paz County*

WESTERN ORGANICS INC.

**Salome Gypsum Mine T5N R11W Sec. 30**

P.O.Box 6876, Phoenix 85005 - Plant located at 27th Avenue and Lower Buckeye Road in Phoenix - Employees: 100 - Open pit gypsum mine operated by contractors - Gypsum for agricultural and horticultural uses, bagged and bulk - Used directly and in blends - Markets in western United States.

President J. D. Porter

Vice President/Operations Manager

D. C. Porter

Sales Manager Dennis Reynolds

Office Manager Adrian Cluff



## HARQUAHALA GYPSUM

(also known as Salome Gypsum, Western Organics Inc. Gypsum, Western Gypsum [not to be confused with Western Gypsum of St. George, Utah])

## LA PAZ COUNTY

Adrian Cluff at Western Organics was contacted for information to update the *Directory of Active Mines in Arizona*. Adrian reported that they are currently purchasing their gypsum requirements from United Metro Materials - Superior Materials because it is less expensive than mining their own at their Harquahala Gypsum claims. They are maintaining the claims on the deposit and regularly review mining and transportation costs from their own deposit verses the purchasing gypsum.

On June 3<sup>rd</sup> in the company of Ralph Costa with the State Office of the Bureau of Land Management a visit was made to the Harquahala Gypsum Mine. Mr. Costa took a large number of photographs that will be added to this report when they are received and a select sample for analysis.

Current information for the Directory of Active Mines is:

### WESTERN ORGANICS INC.

420 East Southern, Tempe, AZ 85282, P.O. Box 25406, Tempe, AZ 85285-5406 - Phone (480) 966-4442 - Plants located on 51<sup>st</sup> Avenue between Van Buren and Buckeye Roads and at 27th Avenue and Lower Buckeye Road in Phoenix - 625 S. 51<sup>st</sup> Avenue, Phoenix, AZ 85043 Phone (602) 269-5756 - Fax (602) 269-7621 - and 2807 S. 27<sup>th</sup> Avenue, Phoenix, AZ 85009 - Phone (602) 269-5784 - Employees: 100.

President

James Porter

Vice President/Operations Manager

Doug Henchett

Marketing

Paul Hess

Sales Manager

Dave Diehnelt

Office Manager

Adrian Cluff

Controller

David Hancock

**Salome Gypsum Mine T5N R11W Sec. 30**

Open pit gypsum mine operated by contractors - as needed. Gypsum for agricultural and horticultural uses, bagged and bulk - Used and sold directly and in horticultural blends.

The following information is from the June 3, 2002 field visit, June 4, 2002 and June 27, 2002 telephone conversations with Adrian Cluff and Paul Hess of Western Organics and a review of the Arizona Dept. of Mines and Mineral Resources (ADMMR) Harquahala Gypsum file.

The stockpile of crushed gypsum has all been shipped and no new material has been mined. The last of the stockpile was shipped in 2001. The old underground room and pillar workings are still open and appear to be standing well. Production over the last 20 plus years has been from open quarries. Quarry faces in the open pit portion of the deposit are partially developed. It site, measurable, open pit ore is exposed over a 500 foot length, 40 feet wide, with an exposed depth of 70 feet. This equals nearly 100,000 tons. There are surface exposures developed by trenching and indications of drilling that likely indicate a much larger resource. Estimates of reserves reported to the Arizona Department of Mines and Mineral Resources by previous owners and promoters have ranged around 3,000,000 tons of gypsum.

Development of the mine by underground methods began in the mid 1940s. In the mid 1960s it was operational at approximately 100tpd, but only operating on an intermittent basis. Initial development was for any possible gypsum use in the Phoenix area. By the mid to late 1960s the market was for agricultural gypsum in the Harquahala and McMullen valleys.

Western Organics acquired the mine in the late 1980s to supply gypsum for their agricultural and horticultural mix production that is done at their Phoenix manufacturing plant. They hired contractors to mine, crush, and stockpile gypsum that was hauled to Phoenix as needed. They are currently buying their gypsum from the Superior Materials division of United Metro in Winkelman. They buy a grade of material, which too low for use in Portland cement, for \$8.00 per ton plus \$10.00 per ton in transportation. J & B Trucking provides hauling.

Western Organics has in the past bought a lower grade gypsite from National Gypsum's screened undersize. It contained 50 to 70 percent gypsum and they paid \$5.00 per ton plus transportation. Western Organics consumes approximately 6,000 tons of 80% gypsum annually. They have attempted to use scrap wallboard as a gypsum source, but have never used more than a very small amount.

Western Organics produces a number of horticultural and agriculture products, all in the soil conditioner, soil amendment, fertilizer, mulch, and compost line. This product line includes gypsum package in 40-pound bags with a labeled minimum sulfur analysis of 14.9 percent, which is equivalent to 80 percent gypsum. Arizona Revised Statutes require that label claims as to nitrogen, phosphorus, potassium, and sulfur (NPKS) contents of fertilizer or agriculture minerals sold for agricultural or horticultural uses conform to stated label contents. The State Chemist function of the Arizona Department of Agriculture has the authority to collect samples, and analyze such products for their NPKS content. Manufactures are required to pay a \$0.25 per ton fee to the Arizona Department of Agriculture for agricultural mineral and fertilizer products sold in Arizona.

Date Printed: 04/26/93

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

Information from: **Dean Porter**

Company: Western Organics Inc.

Address: P.O. Box 6876

City, State ZIP: Phoenix, AZ 85005

Phone: 602-269-5756

**MINE:** Harquahala Gypsum Mine

ADMMR Mine File: Harquahala Gypsum Mine file

County: La Paz

AzMILS Number: 395

SUMMARY

Dean Porter reported that Western Organics, formerly Wapco (Western Agricultural Products Company) has acquired complete ownership of the Harquahala Gypsum mine from Alton Powell et. al. They plan additional production in the near future. Past mining has been by contractors to produce a stockpile at the mine from which Western Organics obtains gypsum as needed for their production of horticultural products. As the gypsum is a constituent in their products they do not report or pay fertilizer fees on the gypsum to the Arizona Department of Agriculture, but instead on the finished horticultural product composition.

Ken A. Phillips, Chief Engineer

Date: April 26, 1993

HARQUAHALA GYPSUM MINE

LA PAZ COUNTY

KAP WR 6/12/87: Discussed the Harquahala Gypsum Mine (file) La Paz County with Ted Eyde, GSA Resources, Inc., P O Box 16509, Cortaro, Arizona 85652. He has just done a very short project on the deposit for the new California owners (see previous comments in file). Mr. Eyde felt that based on current and previous investigations the banded gypsum and limestone occurrence exhibits isoclinal folding and is within the Harrisburg Member of the Kaibab formation.

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HARQUAHALA GYPSUM MINE

LA PAZ COUNTY

KAP WR 11/15/85: A visit was made to the Desert Mountain Gypsum operation at the Harquahala Gypsum Mine - file, La Paz County. The property has been developed to produce agricultural gypsum by open cut methods. Dilution with overburden and wall rock appears to be a significant problem due to the mining method. The previous operators (during the mid 1960's ) avoided the problem by careful underground mining. Equipment on site includes a D-8 Cat, 966 Loader, Motor Grader, 300+ hp Gen Set, stacker belts, hammer mill and bottom dump tractor semi-trailer trucks. Larry Vernon is living on site and is the operator. He reported the operation and equipment is owned by Tim Hansen. Mr. Vernon requested help in finding local markets for some immediate shipments of agricultural gypsum.

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KAP WR 1/24/86: In the company of Tim Whitney of Murco Wall Products of Buckeye, a visit was made to the Harquahala Gypsum Mine (file) in La Paz County. Samples were taken by Mr. Whitney for testing to determine if the gypsum could be ground to make white filler for wall board products. Contamination by limestone which would hamper the gypsum's use for agricultural purposes is not a problem for a filler as long as it grinds white. Larry Vernon who still resides at the property said that neither he nor the property owner, Alton Powell of Aguila, has been paid for labor or rent since early last fall. / The gypsum is interbedded with limestone.

P.O. Box 202 - Aguila 85320 685-2476

KAP WR 3/21/86: Larry Vernon reported he was moving off of the Harquahala Gypsum (file) as he had not been paid past wages and didn't feel he should stay there even as a caretaker. He will retain the same Salome P O Box number. He explained that he will be prospecting a talc occurrence and a kyanite occurrence in the area.

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KAP WR 3/20/87: Scott Souder, Euramex Resources Ltd., P O Box 25791, Santa Ana, California 92799, phone (714) 850-1924 called and report his firm now owns the Harquahala Gypsum Mine (file) La Paz County. He said that Tim Hansen is no longer involved in the property and that previous owners claim to have drilled out 3 million tons of gypsum. He wanted our comments and suggestions on the property which were provided. He wants to put the property in production. It was suggested that he contact an industrial minerals consultant. He was going to get in touch with Ted Eyde.

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O'Leary said that they are now mining and milling 50-70 tons of ground gypsum per day. The 100 mesh gypsum is almost all being marketed in the Harquahala valley.

In the mine the northwest stope has been advanced to 85 feet from the grizzly adit, and 70 feet to the east-southeast. The gypsum bed is 20 feet thick at both drift faces. O'Leary believes the gypsum was deposited between two limestone beds that might be part of an overturn. An oblique fault crosses the limestone and gypsum bed at the grizzly position and this may have rotated the gypsum bed southeast of the grizzly so that it trends 25-30 degrees more toward the east, that is the trend to the northwest. Drilling has established a workable thickness of gypsum over a length of 1400-1500 feet. 6 men working.

O'Leary hopes to work into the Parker market also.  
Memo LAS 10-13-64

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Mr. Evans said that Harquahala Gypsum was working steadily and that 6 men were employed. He had been there the week before. Time did not permit a visit. John Brusco, who works part time down there, verified this and said that most of the gypsum was consumed in the Harquahala Valley farming area. (Brusco owns the Three Musketeers tungsten property northeast of McVay, Granite Wash Mountains). Production was estimated at 60 to 100 tpd.

Conference with "Flip" Evans LAS 2-9-65

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Both Flip Evans and Del Peterson stated that the Harquahala Gypsum is still active. Time did not permit a visit. LAS Memo 6-8-65

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According to Salome people and U.S. Marble officials the Gypsum mine and plant has been active most continuously during the winter so far. Their truck was seen as it turned into one of the larger McMullen Valley ranches with a load of gypsum. The plant is now delivering to the Harquahala Valley area as well. Memo LAS 1-16-66

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Closed down. LP 7-20-66

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GYPSUM DEPOSIT (SE OF SALOME)

YUMA COUNTY

Interviews with Vernon Law and Del Peterson (U.S. Marble Corp.)

Law holds a group of marble and copper claims near to the gypsum. He stated that a group of farmers, headed by Phillip Brubaugh, had given a contract to John Allen and Lew Smith who will mine and grind the gypsum to 100 mesh for a soil conditioner. Del Peterson said that he heard that the product will be used locally for the near future (2-3 years). The mine and mill are located 35 miles by road from Salome and lies directly south of the U.S. Marble Corp. marble quarry. Allen and Smith both worked with Jack Stewart at Cibola during the manganese programs. Both Law and Peterson reported that the deposit is reported to be a good sized one. The mill should be completed in a short time. Memo LAS 2-7-64

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine HARQUAHALA GYPSUM MILL & MINE

Date 6/9/64

District Ellsworth Dist., Yuma County

Engineer Lewis A. Smith

Subject: Mine Visit 6/9/64

LOCATION: Travel 11 miles along the Salome-Buckeye county road, thence left 4 miles to the east, to the southwest base of the Harquahala Mountains.

PROPERTY: 2 Claims.

OPERATOR: Harquahala Gypsum Co., Dorman O'Leary, President, Wickenburg, (684-2287) is in Charge.

MINERAL: Gypsum.

WORK: The development consists of a 35-ft adit connected to 2 drifts. The east drift is 70 feet long and splits then into 2 short 30-ft branches. The west drift extends 70 feet. The drifts feed a grizzly that terminates the entry adit. The grizzly overlies a pocket that feeds a belt conveyor. The broken muck is slushed to the grizzly with electrically controlled automatic scrapers. The gypsum bed is about 30 feet wide at the grizzly and is vertical. At the time of this visit both drifts were partly filled by stock-piled gypsum.

PLANT: The plant consists of a belt conveyor from the underground grizzly (pitched at about 25-30 degrees). The belt is on a steel carriage and is about 20 inches wide. The belt discharges into a jaw crusher (12x20 inches), preceded by a screen. The crushed gypsum then is belt conveyed to a Raymond roller mill that reduces the feed to 100-325 mesh. This mill is equipped with a dust collector. The finished gypsum is stored in a bin for truck loading. (see picture in Republic 6/14/64, Sec. 10-C, under business).

GEOLOGY: The deposit trends nearly N-S and is vertical the west wall is a schistose rock and the east wall is altered limestone. It could have formed by sulphate solutions acting on that part of the limestone that is susceptible to conversion. It is finely granular and runs about 90 per cent calcium sulphate. While it is 30 feet thick at the adit it appears to horsetail into two or more beds to the south. Test drilling indicates that a substantial tonnage is present. Time did not permit the tracing of the gypsum zone, it is said to have been uncovered by bulldozer stripping and drilling for a length of at least several hundred feet. O'Leary states that a reserve for ten years appears certain depending, of course, upon sales rates.

ECONOMICS: The Company has spreader trucks for distributing the gypsum in the fields where it is used to neutralize sodium carbonate and sodium chloride (alkalies) that eventually build up in the soil as a result of repeated irrigations. 1 ton, per acre, of gypsum is added. The gypsum reacts with the alkalies to yield sodium sulphate which is leached out of the soil. It also can form calcium carbonate. The lime sometimes is beneficial to the soil and sometimes acts mainly as a neutralizer. It appears that marketing will be the major problem at first, until farmers get their ground properly prepared to accept the gypsum. A large acreage of cultivated land is nearby and good access is available to the Yuma-Blythe and Parker areas. The present sales price ranges from \$7.00 to \$7.50 per ton at the mine.



HARQUAHALA GYPSUM DEPOSIT

YUMA COUNTY  
ELLSWORTH DIST.

Interview with Dorman O'Leary 5/15/64

LOCATION: S29, T5N, R11W

OPERATORS: Harquahala Gypsum Co. Dorman O'Leary, Wickenburg, Principal.  
Arizona Corp. (New York People) are financial supporters for the project.

MINING CONTRACTORS: Wes Allen, and Lew Smith, Salome (previously of Blythe).

WORK: Work consists of a 50-foot adit transverse to the mineralized zone. The zone is 100 feet wide and has 2 gypsum bands, 18 & 40 feet respectively. Mining is in 2 50-foot drifts to the NE and SW from the adit. These are on the 18-ft band, that lies along the hangingwall of the zone. A belt conveyor moves the gypsum to the crusher hopper from the hopper at the drift-adit junction. This hopper is fed by a slusher from the stope faces. The mill consists of a 10x20 inch jaw crusher No. 5057 Raymond Mill with 5 rolls, and a double wizzer air separator is used for classification. No screens will be used. The product is 100-mesh and costs about \$3.50 per ton to mine and mill.

The gypsum zone strikes NE-SW and dips about 80 deg. NW. The zone is bordered on both sides by limestone whose bedding planes are parted by thin beds of shale. The same material separates the two gypsum beds within the zone.

There are about 40,000, or more, acres of ground under cultivation in the McMullen Valley and according to O'Leary each acre should use 1 ton of gypsum annually.

MEMO LEWIS A. SMITH 5/15/64

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine        EVELAND GROUP

Date        September 17, 1945

District    Ellsworth, Yuma County

Engineer    A. C. Nebeker

Subject:    Gypsum showing on above claims

Location: The Eveland Group of claims is located 22 miles southeast of Salome by road and 5 miles south of Love siding which is on the railroad 2 miles east of Wenden, Yuma County, Arizona. They are on the south slope of Harquahala Mountains.

Owner: Mr. Roy R. MacDonald of Wenden is the sole owner of these claims which consists of eight locations, located so they are three claims wide and three long.

Roads: To reach the property by auto one takes the old Phoenix road going south from Salome until one gets around the west end of the mountains, and then turn off the main road and follow rather rough road east along the foothills, following this road to the end and then walk about 1-1/2 miles up the wash to the property.

Another road could be built to the property by taking off the main oiled highway about three miles east of Wenden going south across the valley to the hills about 4 miles distance and then cross the range by going through a low pass to the property, a total distance of about 6 miles. The cost of making either one of these, good for truck hauling is estimated at between \$4000 and \$5000.

Geology and Mineral: The formation is limestone and quartzite which has been faulted and twisted so it stands with a steep dip and erosion has cut deep gullies through the property.

The gypsum is in the limestone and both walls are lime. The thickness of the gypsum bed has not yet been fully determined, however it appears to be 40 feet or better thick. It is a white granular gypsum as shown by the present workings which are only surface workings. When the workings get deep enough to get away from the surface influences, it may be more rock form gypsum. There is very little impurities shown in the present face. The face which is about 8 feet high and 4 feet wide shows a 6-inch seam of reddish gray material. On the surface the indications appear that the Gypsum bed is several hundred feet long and has a shallow overburden.

Development: Consists of one 4 x 7 tunnel about 40 feet in, with gypsum in the face, and both walls as well as in the back and bottom. Across the wash about 60 feet from the first tunnel is a 30 ft. crosscut tunnel which has gypsum in the face. There are two other surface pits but not in the gypsum.

There is not enough work done so tonnage can be measured, but visible indications indicates that there is a large tonnage.

By use of a road blade or bulldozer to remove the overburden, and a power shovel for mining a large tonnage can be mined at a very low cost, and by making a good truck road to Love siding, trucking should not exceed 75 cents per ton.

The cost of producing a ton of gypsum will depend on several factors some of which are the type of road over which the material is hauled, the size of operations, and the type of equipment installed.

Sept. 17, 1945

Water: There is no water at the property but water for operations could be hauled in as back freight by the trucks hauling ore out.

Uses: Gypsum is used for wallboard, sheathings, building plaster, cement retarder, agricultural gypsum (land plaster) and many other industrial uses.

Prices: In 1943 average plant value for agricultural gypsum, California was \$2.25 per ton, and \$6.28 in southeast states where rock and by-product gypsum are used. Gypsum for building material from \$13 to \$17 per ton.

Suggestions: Before going to much expense test out the deposit some more by pits on other points along the croppings. Investigate the market and freight rates.

/s/ A. C. Nebeker  
E.M.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine        EVELAND GROUP

Date        September 17, 1945

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Engineer    A. C. Nebeker

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Location: The Eveland Group of claims is located 22 miles southeast of Salome by road and 5 miles south of Love siding which is on the railroad 2 miles east of Wenden, Yuma County, Arizona. They are on the south slope of Harquahala Mountains.

Owner: Mr. Roy R. MacDonald of Wenden is the sole owner of these claims which consists of eight locations, located so they are three claims wide and three long.

Roads: To reach the property by auto one takes the old Phoenix road going south from Salome until one gets around the west end of the mountains, and then turn off the main road and follow rather rough road east along the foothills, following this road to the end and then walk about 1-1/2 miles up the wash to the property.

Another road could be built to the property by taking off the main oiled highway about three miles east of Wenden going south across the valley to the hills about 4 miles distance and then cross the range by going through a low pass to the property, a total distance of about 6 miles. The cost of making either one of these, good for truck hauling is estimated at between \$4000 and \$5000.

Geology and Mineral: The formation is limestone and quartzite which has been faulted and twisted so it stands with a steep dip and erosion has cut deep gullies through the property.

The gypsum is in the limestone and both walls are lime. The thickness of the gypsum bed has not yet been fully determined, however it appears to be 40 feet or better thick. It is a white granular gypsum as shown by the present workings which are only surface workings. When the workings get deep enough to get away from the surface influences, it may be more rock form gypsum. There is very little impurities shown in the present face. The face which is about 8 feet high and 4 feet wide shows a 6-inch seam of reddish gray material. On the surface the indications appear that the Gypsum bed is several hundred feet long and has a shallow over burden.

Development: Consists of one 4 x 7 tunnel about 40 feet in, with gypsum in the face, and both walls as well as in the back and bottom. Across the wash about 60 feet from the first tunnel is a 30 ft. crosscut tunnel which has gypsum in the face. There are two other surface pits but not in the gypsum.

There is not enough work done so tonnage can be measured, but visible indications indicates that there is a large tonnage.

By use of a road blade or bulldozer to remove the overburden, and a power shovel for mining a large tonnage can be mined at a very low cost, and by making a good truck road to Love siding, trucking should not exceed 75 cents per ton.

The cost of producing a ton of gypsum will depend on several factors some of which are the type of road over which the material is hauled, the size of operations, and the type of equipment installed.

Sept. 17, 1945

Water: There is no water at the property but water for operations could be hauled in as back freight by the trucks hauling ore out.

Uses: Gypsum is used for wallboard, sheathings, building plaster, cement retarder, agricultural gypsum (land plaster) and many other industrial uses.

Prices: In 1943 average plant value for agricultural gypsum, California was \$2.25 per ton, and \$6.28 in southeast states where rock and by-product gypsum are used. Gypsum for building material from \$13 to \$17 per ton.

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/s/ A. C. Nebeker

E.M.

(11)

**DEPARTMENT OF MINERAL RESOURCES**  
**STATE OF ARIZONA**  
**FIELD ENGINEERS REPORT**

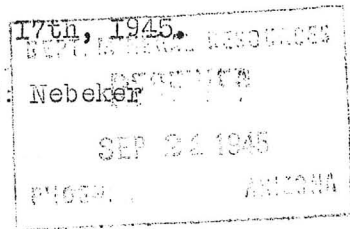
Mine Eveland Group

Date Sept, 17th, 1945.

District Ellsworth, Yuma Co.

Engineer A. C. Nebeker

Subject: Gypsum showing on above claims.



**LOCATION:**

The Eveland group of claims is located 22 miles southeast of Salome by road and 5 miles south of Love siding which is on the railroad 2 miles east of Wenden, Yuma Co, Arizona. They are on the south slope of Harquahala Mountains.

**OWNER:**

Mr Roy R. MacDonald of Wenden is the sole owner of these claims which consists of eight locations, located so they are three claims wide and three long.

**ROADS:**

To reach the property by auto one takes the old Phoenix road going south from Salome until one gets around the west end of the mountains, and then turn off the main road and follow rather rough road east along the foot hills, following this road to the end and then walk about  $1\frac{1}{2}$  miles up the wash to the property.

Another road could be built to the property by taking off the main oiled highway about three miles east of Wenden going south across the valley to the hills about 4 miles distance and then cross the range by going through a low pass to the property, a total distance of about 6 miles. The cost of making either one of these, good for truck hauling is estimated at between \$4000 and \$5000.

**GEOLOGY and MINERAL:**

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**DEVELOPMENT:**

Consists of one 4X7 tunnel about 40 feet in, with gypsum in the face, and both walls as well as in the back and bottom. Across the wash about 60 feet from the first tunnel is a 30 ft X cut tunnel which has gypsum in the face. There are two other surface pits but not in the gypsum.

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The cost of producing a ton of gypsum will depend on several factors some of which are, the type of road over which the material is hauled, the size of operations and the type of equipment installed.

Welan d Group  
Gypsum.

----- 2-----

Sept 17th, 1945  
A.C.Nebeker

**WATER:**

There is no water at the property, but water for operations could be hauled in as back freight by the trucks hauling ore out.

**USES:**

Gypsum is used for wallboard, sheathings, building plaster, cement retarder, agricultural gypsum ( land plaster) and many other industrial uses.

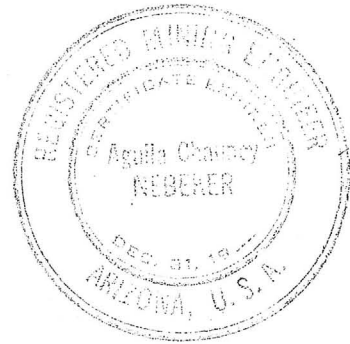
**Prices ;**

In 1943 average plant value for agricultural gypsum, California was \$2.25 per ton, and \$6.28 in southeast states where rock and byproduct gypsum are used. Gypsum for building material from \$13 to \$17 per ton.

**SUGGESTIONS:**

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A. C. Nebeker E.M.





## HARQUAHALA GYPSUM

## LA PAZ CONTY

(also known as Salome Gypsum, Western Organics Inc. Gypsum, Western Gypsum [not to be confused with Western Gypsum of St. George, Utah])

Adrian Cluff at Western Organics was contacted for information to update the *Directory of Active Mines in Arizona*. Adrian reported that they are currently purchasing their gypsum requirements from United Metro Materials - Superior Materials because it is less expensive than mining their own at their Harquahala Gypsum claims. They are maintaining the claims on the deposit and regularly review mining and transportation costs from their own deposit verses the purchasing gypsum.

On June 3<sup>rd</sup> in the company of Ralph Costa with the State Office of the Bureau of Land Management a visit was made to the Harquahala Gypsum Mine. Mr. Costa took a large number of photographs that will be added to this report when they are received and a select sample for analysis.

Current information for the Directory of Active Mines is:

### WESTERN ORGANICS INC.

420 East Southern, Tempe, AZ 85282, P.O. Box 25406, Tempe, AZ 85285-5406 - Phone (480) 966-4442 - Plants located on 51<sup>st</sup> Avenue between Van Buren and Buckeye Roads and at 27th Avenue and Lower Buckeye Road in Phoenix - 625 S. 51<sup>st</sup> Avenue, Phoenix, AZ 85043 Phone (602) 269-5756 - Fax (602) 269-7621 - and 2807 S. 27<sup>th</sup> Avenue, Phoenix, AZ 85009 - Phone (602) 269-5784 - Employees: 100.

President	James Porter
Vice President/Operations Manager	Doug Henchett
Marketing	Paul Hess
Sales Manager	Dave Diehnelt
Office Manager	Adrian Cluff
Controller	David Hancock

#### **Salome Gypsum Mine** T5N R11W Sec. 30

Open pit gypsum mine operated by contractors - as needed. Gypsum for agricultural and horticultural uses, bagged and bulk - Used and sold directly and in horticultural blends.

The following information is from the June 3, 2002 field visit, June 4, 2002 and June 27, 2002 telephone conversations with Adrian Cluff and Paul Hess of Western Organics and a review of the Arizona Dept. of Mines and Mineral Resources (ADMMR) Harquahala Gypsum file.

The stockpile of crushed gypsum has all been shipped and no new material has been mined. The last of the stockpile was shipped in 2001. The old underground room and pillar workings are still open and appear to be standing well. Production over the last 20 plus years has been from open quarries. Quarry faces in the open pit portion of the deposit are partially developed. It site, measurable, open pit ore is exposed over a 500 foot length, 40 feet wide, with an exposed depth of 70 feet. This equals nearly 100,000 tons. There are surface exposures developed by trenching and indications of drilling that likely indicate a much larger resource. Estimates of reserves reported to the Arizona Department of Mines and Mineral Resources by previous owners and promoters have ranged around 3,000,000 tons of gypsum.

Development of the mine by underground methods began in the mid 1940s. In the mid 1960s it was operational at approximately 100tpd, but only operating on an intermittent basis. Initial development was for any possible gypsum use in the Phoenix area. By the mid to late 1960s the market was for agricultural gypsum in the Harquahala and McMullen valleys.



Western Organics acquired the mine in the late 1980s to supply gypsum for their agricultural and horticultural mix production that is done at their Phoenix manufacturing plant. They hired contractors to mine, crush, and stockpile gypsum that was hauled to Phoenix as needed. They are currently buying their gypsum from the Superior Materials division of United Metro in Winkelman. They buy a grade of material, which too low for use in Portland cement, for \$8.00 per ton plus \$10.00 per ton in transportation. J & B Trucking provides hauling.

Western Organics has in the past bought a lower grade gypsite from National Gypsum's screened undersize. It contained 50 to 70 percent gypsum and they paid \$5.00 per ton plus transportation. Western Organics consumes approximately 6,000 tons of 80% gypsum annually. They have attempted to use scrap wallboard as a gypsum source, but have never used more than a very small amount.

Western Organics produces a number of horticultural and agriculture products, all in the soil conditioner, soil amendment, fertilizer, mulch, and compost line. This product line includes gypsum package in 40-pound bags with a labeled minimum sulfur analysis of 14.9 percent, which is equivalent to 80 percent gypsum. Arizona Revised Statutes require that label claims as to nitrogen, phosphorus, potassium, and sulfur (NPKS) contents of fertilizer or agriculture minerals sold for agricultural or horticultural uses conform to stated label contents. The State Chemist function of the Arizona Department of Agriculture has the authority to collect samples, and analyze such products for their NPKS content. Manufactures are required to pay a \$0.25 per ton fee to the Arizona Department of Agriculture for agricultural mineral and fertilizer products sold in Arizona.

Date Printed: 04/26/93

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

Information from: **Dean Porter**

Company: Western Organics Inc.

Address: P.O. Box 6876

City, State ZIP: Phoenix, AZ 85005

Phone: 602-269-5756

**MINE:** Harquahala Gypsum Mine

ADMMR Mine File: Harquahala Gypsum Mine file

County: La Paz

AzMILS Number: 395

SUMMARY

Dean Porter reported that Western Organics, formerly Wapco (Western Agricultural Products Company) has acquired complete ownership of the Harquahala Gypsum mine from Alton Powell et. al. They plan additional production in the near future. Past mining has been by contractors to produce a stockpile at the mine from which Western Organics obtains gypsum as needed for their production of horticultural products. As the gypsum is a constituent in their products they do not report or pay fertilizer fees on the gypsum to the Arizona Department of Agriculture, but instead on the finished horticultural product composition.

Ken A. Phillips, Chief Engineer      Date: April 26, 1993

HARQUAHALA GYPSUM MINE

LA PAZ COUNTY

KAP WR 6/12/87: Discussed the Harquahala Gypsum Mine (file) La Paz County with Ted Eyde, GSA Resources, Inc., P O Box 16509, Cortaro, Arizona 85652. He has just done a very short project on the deposit for the new California owners (see previous comments in file). Mr. Eyde felt that based on current and previous investigations the banded gypsum and limestone occurrence exhibits isoclinal folding and is within the Harrisburg Member of the Kaibab formation.

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KAP WR 11/15/85: A visit was made to the Desert Mountain Gypsum operation at the Harquahala Gypsum Mine - file, La Paz County. The property has been developed to produce agricultural gypsum by open cut methods. Dilution with overburden and wall rock appears to be a significant problem due to the mining method. The previous operators (during the mid 1960's ) avoided the problem by careful underground mining. Equipment on site includes a D-8 Cat, 966 Loader, Motor Grader, 300+ hp Gen Set, stacker belts, hammer mill and bottom dump tractor semi-trailer trucks. Larry Vernon is living on site and is the operator. He reported the operation and equipment is owned by Tim Hansen. Mr. Vernon requested help in finding local markets for some immediate shipments of agricultural gypsum.

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KAP WR 1/24/86: In the company of Tim Whitney of Murco Wall Products of Buckeye, a visit was made to the Harquahala Gypsum Mine (file) in La Paz County. Samples were taken by Mr. Whitney for testing to determine if the gypsum could be ground to make white filler for wall board products. Contamination by limestone which would hamper the gypsum's use for agricultural purposes is not a problem for a filler as long as it grinds white. Larry Vernon who still resides at the property said that neither he nor the property owner, Alton Powell of Aguila, has been paid for labor or rent since early last fall. / The gypsum is interbedded with limestone.

*P.O. Box 202 - Aguila 85320 685-2476*

KAP WR 3/21/86: Larry Vernon reported he was moving off of the Harquahala Gypsum (file) as he had not been paid past wages and didn't feel he should stay there even as a caretaker. He will retain the same Salome P O Box number. He explained that he will be prospecting a talc occurrence and a kyanite occurrence in the area.

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KAP WR 3/20/87: Scott Souder, Euramex Resources Ltd., P O Box 25791, Santa Ana, California 92799, phone (714) 850-1924 called and report his firm now owns the Harquahala Gypsum Mine (file) La Paz County. He said that Tim Hansen is no longer involved in the property and that previous owners claim to have drilled out 3 million tons of gypsum. He wanted our comments and suggestions on the property which were provided. He wants to put the property in production. It was suggested that he contact an industrial minerals consultant. He was going to get in touch with Ted Eyde.

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HARQUAHALA GYPSUM MINE

YUMA COUNTY

O'Leary said that they are now mining and milling 50-70 tons of ground gypsum per day. The 100 mesh gypsum is almost all being marketed in the Harquahala valley.

In the mine the northwest stope has been advanced to 85 feet from the grizzly adit, and 70 feet to the east-southeast. The gypsum bed is 20 feet thick at both drift faces. O'Leary believes the gypsum was deposited between two limestone beds that might be part of an overturn. An oblique fault crosses the limestone and gypsum bed at the grizzly position and this may have rotated the gypsum bed southeast of the grizzly so that it trends 25-30 degrees more toward the east, that is the trend to the northwest. Drilling has established a workable thickness of gypsum over a length of 1400-1500 feet. 6 men working.

O'Leary hopes to work into the Parker market also.  
Memo LAS 10-13-64

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Mr. Evans said that Harquahala Gypsum was working steadily and that 6 men were employed. He had been there the week before. Time did not permit a visit. John Brusco, who works part time down there, verified this and said that most of the gypsum was consumed in the Harquahala Valley farming area. (Brusco owns the Three Musketeers tungsten property northeast of McVay, Granite Wash Mountains). Production was estimated at 60 to 100 tpd.

Conference with "Flip" Evans LAS 2-9-65

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Both Flip Evans and Del Peterson stated that the Harquahala Gypsum is still active. Time did not permit a visit. LAS Memo 6-8-65

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According to Salome people and U.S. Marble officials the Gypsum mine and plant has been active most continuously during the winter so far. Their truck was seen as it turned into one of the larger McMullen Valley ranches with a load of gypsum. The plant is now delivering to the Harquahala Valley area as well. Memo LAS 1-16-66

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Closed down. LP 7-20-66

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GYPSUM DEPOSIT (SE OF SALOME)

YUMA COUNTY

Interviews with Vernon Law and Del Peterson (U.S. Marble Corp.)

Law holds a group of marble and copper claims near to the gypsum. He stated that a group of farmers, headed by Phillip Brubaugh, had given a contract to John Allen and Lew Smith who will mine and grind the gypsum to 100 mesh for a soil conditioner. Del Peterson said that he heard that the product will be used locally for the near future (2-3 years). The mine and mill are located 35 miles by road from Salome and lies directly south of the U.S. Marble Corp. marble quarry. Allen and Smith both worked with Jack Stewart at Cibola during the manganese programs. Both Law and Peterson reported that the deposit is reported to be a good sized one. The mill should be completed in a short time. Memo LAS 2-7-64

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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine HARQUAHALA GYPSUM MILL & MINE

Date 6/9/64

District Ellsworth Dist., Yuma County

Engineer Lewis A. Smith

Subject: Mine Visit 6/9/64

LOCATION: Travel 11 miles along the Salome-Buckeye county road, thence left 4 miles to the east, to the southwest base of the Harquahala Mountains.

PROPERTY: 2 Claims.

OPERATOR: Harquahala Gypsum Co., Dorman O'Leary, President, Wickenburg, (684-2287) is in Charge.

MINERAL: Gypsum.

WORK: The development consists of a 35-ft adit connected to 2 drifts. The east drift is 70 feet long and splits then into 2 short 30-ft branches. The west drift extends 70 feet. The drifts feed a grizzly that terminates the entry adit. The grizzly overlies a pocket that feeds a belt conveyor. The broken muck is slushed to the grizzly with electrically controlled automatic scrapers. The gypsum bed is about 30 feet wide at the grizzly and is vertical. At the time of this visit both drifts were partly filled by stock-piled gypsum.

PLANT: The plant consists of a belt conveyor from the underground grizzly (pitched at about 25-30 degrees). The belt is on a steel carriage and is about 20 inches wide. The belt discharges into a jaw crusher (12x20 inches), preceded by a screen. The crushed gypsum then is belt conveyed to a Raymond roller mill that reduces the feed to 100-325 mesh. This mill is equipped with a dust collector. The finished gypsum is stored in a bin for truck loading. (see picture in Republic 6/14/64, Sec. 10-C, under business).

GEOLOGY: The deposit trends nearly N-S and is vertical the west wall is a schistose rock and the east wall is altered limestone. It could have formed by sulphate solutions acting on that part of the limestone that is susceptible to conversion. It is finely granular and runs about 90 per cent calcium sulphate. While it is 30 feet thick at the adit it appears to horsetail into two or more beds to the south. Test drilling indicates that a substantial tonnage is present. Time did not permit the tracing of the gypsum zone, it is said to have been uncovered by bulldozer stripping and drilling for a length of at least several hundred feet. O'Leary states that a reserve for ten years appears certain depending, of course, upon sales rates.

ECONOMICS: The Company has spreader trucks for distributing the gypsum in the fields where it is used to neutralize sodium carbonate and sodium chloride (alkalies) that eventually build up in the soil as a result of repeated irrigations. 1 ton, per acre, of gypsum is added. The gypsum reacts with the alkalies to yield sodium sulphate which is leached out of the soil. It also can form calcium carbonate. The lime sometimes is beneficial to the soil and sometimes acts mainly as a neutralizer. It appears that marketing will be the major problem at first, until farmers get their ground properly prepared to accept the gypsum. A large acreage of cultivated land is nearby and good access is available to the Yuma-Blythe and Parker areas. The present sales price ranges from \$7.00 to \$7.50 per ton at the mine.

HARQUAHALA GYPSUM DEPOSIT

YUMA COUNTY  
ELLSWORTH DIST.

Interview with Dorman O'Leary 5/15/64

LOCATION: S29, T5N, R11W

OPERATORS: Harquahala Gypsum Co. Dorman O'Leary, Wickenburg, Principal.  
Arizona Corp. (New York People) are financial supporters for the project.

MINING CONTRACTORS: Wes Allen, and Lew Smith, Salome (previously of Blythe).

WORK: Work consists of a 50-foot adit transverse to the mineralized zone. The zone is 100 feet wide and has 2 gypsum bands, 18 & 40 feet respectively. Mining is in 2 50-foot drifts to the NE and SW from the adit. These are on the 18-ft band, that lies along the hangingwall of the zone. A belt conveyor moves the gypsum to the crusher hopper from the hopper at the drift-adit junction. This hopper is fed by a slusher from the stope faces. The mill consists of a 10x20 inch jaw crusher No. 5057 Raymond Mill with 5 rolls, and a double wizzer air separator is used for classification. No screens will be used. The product is 100-mesh and costs about \$3.50 per ton to mine and mill.

The gypsum zone strikes NE-SW and dips about 80 deg. NW. The zone is bordered on both sides by limestone whose bedding planes are parted by thin beds of shale. The same material separates the two gypsum beds within the zone.

There are about 40,000, or more, acres of ground under cultivation in the McMullen Valley and according to O'Leary each acre should use 1 ton of gypsum annually.

MEMO LEWIS A. SMITH 5/15/64



DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine        EVELAND GROUP

Date        September 17, 1945

District   Ellsworth, Yuma County

Engineer   A. C. Nebeker

Subject:   Gypsum showing on above claims

Location: The Eveland Group of claims is located 22 miles southeast of Salome by road and 5 miles south of Love siding which is on the railroad 2 miles east of Wenden, Yuma County, Arizona. They are on the south slope of Harquahala Mountains.

Owner: Mr. Roy R. MacDonald of Wenden is the sole owner of these claims which consists of eight locations, located so they are three claims wide and three long.

Roads: To reach the property by auto one takes the old Phoenix road going south from Salome until one gets around the west end of the mountains, and then turn off the main road and follow rather rough road east along the foothills, following this road to the end and then walk about 1-1/2 miles up the wash to the property.

Another road could be built to the property by taking off the main oiled highway about three miles east of Wenden going south across the valley to the hills about 4 miles distance and then cross the range by going through a low pass to the property, a total distance of about 6 miles. The cost of making either one of these, good for truck hauling is estimated at between \$4000 and \$5000.

Geology and Mineral: The formation is limestone and quartzite which has been faulted and twisted so it stands with a steep dip and erosion has cut deep gullies through the property.

The gypsum is in the limestone and both walls are lime. The thickness of the gypsum bed has not yet been fully determined, however it appears to be 40 feet or better thick. It is a white granular gypsum as shown by the present workings which are only surface workings. When the workings get deep enough to get away from the surface influences, it may be more rock form gypsum. There is very little impurities shown in the present face. The face which is about 8 feet high and 4 feet wide shows a 6-inch seam of reddish gray material. On the surface the indications appear that the Gypsum bed is several hundred feet long and has a shallow over burden.

Development: Consists of one 4 x 7 tunnel about 40 feet in, with gypsum in the face, and both walls as well as in the back and bottom. Across the wash about 60 feet from the first tunnel is a 30 ft. crosscut tunnel which has gypsum in the face. There are two other surface pits but not in the gypsum.

There is not enough work done so tonnage can be measured, but visible indications indicates that there is a large tonnage.

By use of a road blade or bulldozer to remove the overburden, and a power shovel for mining a large tonnage can be mined at a very low cost, and by making a good truck road to Love siding, trucking should not exceed 75 cents per ton.

The cost of producing a ton of gypsum will depend on several factors some of which are the type of road over which the material is hauled, the size of operations, and the type of equipment installed.

Sept. 17, 1945

Water: There is no water at the property but water for operations could be hauled in as back freight by the trucks hauling ore out.

Uses: Gypsum is used for wallboard, sheathings, building plaster, cement retarder, agricultural gypsum (land plaster) and many other industrial uses.

Prices: In 1943 average plant value for agricultural gypsum, California was \$2.25 per ton, and \$6.28 in southeast states where rock and by-product gypsum are used. Gypsum for building material from \$13 to \$17 per ton.

Suggestions: Before going to much expense test out the deposit some more by pits on other points along the croppings. Investigate the market and freight rates.

/s/ A. C. Nebeker

E.M.



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E.M.



JW

**DEPARTMENT OF MINERAL RESOURCES**  
**STATE OF ARIZONA**  
**FIELD ENGINEERS REPORT**

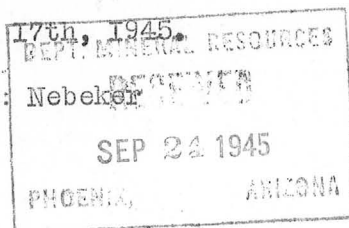
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Welan d Group  
Gypsum.

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Sept 17th, 1945  
A.C.Nebeker

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**USES:**

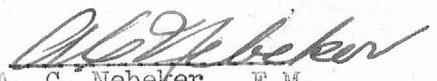
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