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PRINTED: 03-05-2013

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: SUGARLOAF BUTTE ALUNITE

ALTERNATE NAMES:
SUGARLOAF PEAK PROJECT
KRAG CLAIM

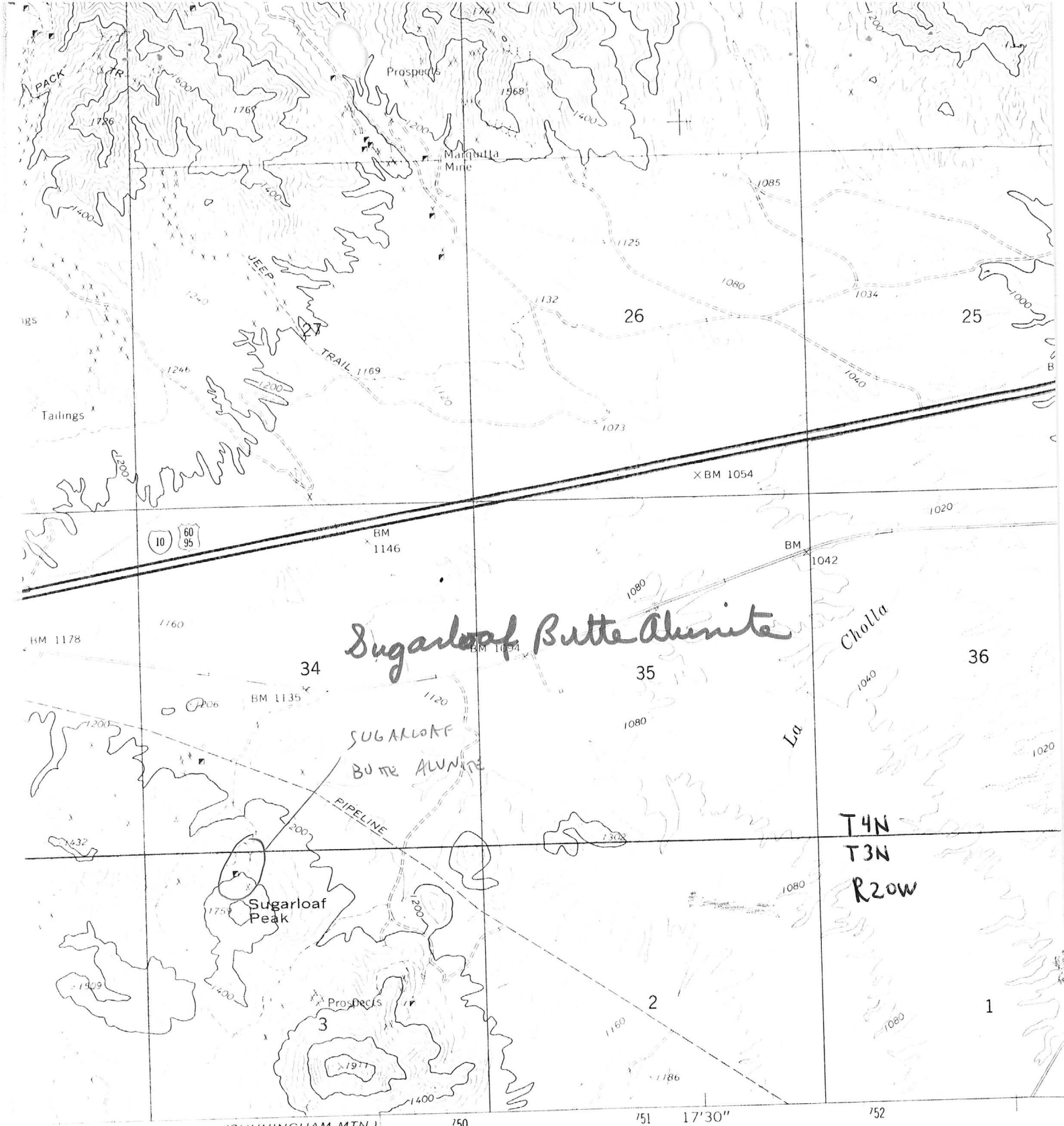
LA PAZ COUNTY MILS NUMBER: 258

LOCATION: TOWNSHIP 3 N RANGE 20 W SECTION 3 QUARTER NW
LATITUDE: N 33DEG 37MIN 59SEC LONGITUDE: W 114DEG 18MIN 56SEC
TOPO MAP NAME: MIDDLE CAMP MTN - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:
POTASH SULFATE
GOLD
ALUMINUM ALUNITE

BIBLIOGRAPHY:
ADMMR SUGARLOAF BUTTE ALUNITE FILE
AZ MNG JNL, V. 136, P 138-139; 1935
THOENE, J.R., 1941, USBM RI 3561
DARTON, N.H., AZBM BULL 119, P 219; 1925
JONES, E.L., USGS BULL 620, P 47; 1916
ROSS, C.P., USGS PP 122, P 183; 1922
AZBM BULL 180 P. 302
MINERAL MUSEUM SPECIMEN MMK118



MIDDLE CAMP MTN 7.5

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242
FOR DESCRIPTIONS OF TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

SUGARLOAF BUTTE ALUNITE

LA PAZ COUNTY
T3N R20W Sec 3 NW

MILS Yuma Index #258

AKA: Mineral Fertilizer

USGS Middle Camp Mtn 7.5 (Included in file)

USGS Bull. 451, 1911

USGS Bull. 620, p. 47, 1916

USGS PP 122, p. 183, 1922

USBM RI 3561, 1941, Thoene, J.R.

Eng. Min. Jnl, V 136, p. 138-139, Heineman, R.E. (Included in file)

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA:
La Pas Co.
Quartzsite Dist.
Sugar Loaf Butte
Ropp Group Surface

MM K118 Jarosite

T3N-R20-Sec3-NW¼

MILS #258
1-AKA
SUGAR LOAF Butte Alunite (file)

Sul-1

M[illegible] SPECIMEN FOR DEPARTMENT OF [illegible]RY AND ARCHIVES K 118

Mineral Fertilizer mine F.C.

(Do not write in this space)

Ore _____

Cabinet _____

No. _____

(Wrap each specimen separately, or place it in a substantial bag, by itself, with a number attached, identical with the number on this card.)

Specimen No. 1, collected by J. S. Coupal 5/15-40
Field Engineer

Name of ore ~~SULPHUR~~ JAROSITE

Minerals contained ~~NATIVE SULPHUR~~. (ALUNITE GROUP)

NJN 85 SEE LETTER IN FILE

Gangue SILICA.

Depth at which taken SURFACE

Approximate mineral content (in terms of average per ton) 20 %

Name of mine or claim

Group ROPP GROUP. Yuma Co LA PAZ

District QUARTZSITE

Location (distance and direction by highway from what town

Owner of property ROPP BROTHERS

Operator ROPP BROTHERS

Mine active or inactive INACTIVE

If inactive, when operated

Specimen presented by ROPP BROS.

Date 3/20/40 QUARTZSITE

Notes (Any general information regarding the history of the property.)

A LARGE DEPOSIT —

If more space is desired for notes, use other side.

This specimen is now in the ADMR Museum - see K numbers. 5/8/86 15.5 X 12.0 X 10.0 cm K118

SUGARLOAF BUTTE ALUNITE LA PAZ COUNTY

HM WR 2/6/88: Norm Dausinger (card) provided drill log and assay data to add to the Sugarloaf Butte Alunite file MILS #258, La Paz County AKA Sugarloaf Peak Project. The AKA Stray Elephant is incorrect. The Stray Elephant AKA S E Group or Gonzales Wash prospect lies to the west in T4N R20W Sec 32 S$\frac{1}{2}$ and Sec 31 SE$\frac{1}{4}$. The Stray Elephant is owned by W. Heinrichs while the Sugarloaf Butte is owned by Westworld Inc. and N. Dausinger.

NJN WR 6/17/88: INCO (card) has been drilling in the Quartzsite area south of Interstate 10, west of Sugarloaf Peak (Sugarloaf Butte Alunite - file).

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007

Interview with John Kerr and Mr. Ropp, 10/11/67.

Mr. John Kerr is (or was) the Assessor in the Quartzite area and hence is well acquainted. With him when I called was a Mr. Ropp now of Blythe, California.

Mr. Kerr Stated that the only mining activity in the Quartzite district is in the area both north and south of Sugarloaf Butte, which is about 5 miles west of Quartzite on the eastern slope of the Dome Rock Mountains. There Congdon and Carey, of Denver, have drilled some 15 holes over a three year period in search of a porphry copper deposit.

Part of the area held by Congdon and Carey is held by Mr. Ropp, who has three claims on the slope of Sugarloaf Butte, described as being in T3N, R19W. These claims were originally staked for alunite and at one time they were under option to a California group that proposed to sell the material for fertilizer.

Mr. Ropp states that of the 15 holes drilled, the shallowest went 750 feet and the deepest 3700 feet, with most of them about 2000 feet. All, he says, have been drilled into the basement granite. Some copper mineralization has been found, but Mr. Ropp says he does not believe an orebody has been found. They abandoned their option on Mr. Ropp's claims about a year ago, but renewed it some months later.

(Copy)
Sample #288I2

(Frank P. Baldi)
Assayer and Chemist, June 26-40.
406 South Main St,
Los Angeles, Calif.,

Certificate of Analyses Made on Ropp Bros. Ore,
Quartzsite, Arizona.

- -

Percentages of the Following.

Silica	(SiO2)	59.II %
Alumina	(Al2O3)	IO.4I %
Iron	(Fe2O3)	I.38 %
Titanium	(TiO2)	.75 %
Barium	(BaO)	2.I5 %
Lime	(CaO)	3.57 %
Magnesia	(MgO)	.66 %
Soda	(Na2O)	.87 %
Potash	(K2O)	4.96 %
Sulphur	(SO3)	3.20 %
Phosphoric Acid	(P2O5)	2.84 %

The following present as a trace,

Manganese- Thallium- Cerium.

Frank P. Baldi

The above is a complete assay, without roasting rock, Mine Run, This Material has been recomended by the Chamber of Commerce, as a first class Fertilizer for Alkali Grounds, is a large body and can supply any demand. Located near Colorado River.

MM-52

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA

OWNERS MINE REPORT

Date August 1, 1940

1. Mine Mineral Fertilizer

2. Mining District & County Plomosa, Yuma County

4. Location Quartzsite, Arizona

3. Former name A new discovery

5. Owner W. L. Ropp and J. N. Ropp (Died march-42)

6. Address (Owner) Quartzsite, Arizona

7. Operator not operating

8. Address (Operator)

9. President

10. Gen. Mgr.

11. Mine Supt.

12. Mill Supt.

13. Principal Metals (Eleven Elements)Silica,Alumina, Iron,Titanium,Barium,Lime,Magnesia,Soda,Potash,Sulphur, Phosphoric Acid

14. Men Employed

15. Production Rate

16. Mill: Type & Cap.

17. Power: Amt. & Type

18. Operations: Present Property is for lease, or sale, on very reasonable terms.

19. Operations Planned Operator to mine, mill, sack and market.

20. Number Claims, Title, etc. Three, title held by discovery and U.S. Mining Laws.

21. Description: Topography & Geography Located on S.E. Slope of Sugar-Loaf-Butte, 5 miles westerly of Quartzsite, Arizona, and one mile south of Highway No. 60. Easy of access to Highway. All assessments done and work up to date.

22. Mine Workings: Amt. & Condition Open cut, shovel operation.

Mineral Fertilizer

Yuma 14 - 4 T 3 N, R 19 W

J. N. Ropp, Quartzsite '40

23. Geology & Mineralization Deposit contains the following minerals: Silica, alumina, iron, titanium, barium, lime, magnesia, soda, potash, sulphur, phosphoric acid.
The following as a trace, Manganese, Thallium, Cerium.

24. Ore: Positive & Probable, Ore Dumps, Tailings Estimated at several million of tons.

24-A Vein Width, Length, Value, etc. Valuable as a mineral fertilizer.

25. Mine, Mill Equipment & Flow Sheet

26. Road Conditions, Route First-class.

27. Water Supply About 5 miles to Quartzsite, Arizona, from shallow wells.

28. Brief History

29. Special Problems, Reports Filed

30. Remarks

31. If property for sale: Price, terms and address to negotiate. Property for lease, or sale.
See the undersigned, sole owners.

32. Signed W. L. Ropp - J. N. Ropp

33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
MINE OWNER'S REPORT

Date August Ist 1940.

1. Mine Mineral Fertilizer
2. Location Quartzsite, Arizona.
3. Mining District & County Plomosa, Yuma County Arizona..
4. Former name A new Discovery.
5. Owner W. L. Ropp and J. N. Ropp
6. Address (Owner) Quartzsite,, Ariz.
7. Operator Not operating
8. Address (Operator)
9. President, Owning Co.
9A. President, Operating Co.
10. Gen. Mgr.
14. Principal Minerals Elevwn Elements.
11. Mine Supt.
15. Production Rate
12. Mill Supt.
16. Mill: Type & Cap.
13. Men Employed
17. Power: Amt. & Type
18. Operations: Present Property is for Lease, or sale, on very reasonable terms.
19. Operations: Planned Operatoř to mine,, mill, sack and market.
20. Number Claims, Title, etc. Three, Title held by discovery, and U. S. Mining Laws.
21. Description: Topography & Geography Located on S. E. Slope of Sugar-Loaf-Butte, 5 miles westerly of Quartzsite, Arizona, and one mile south of Hiway No. 60 Easy of access to Hiway. All assessments done and work up to date.
22. Mine Workings: Amt. & Condition Open Cut,, Shovel operation.

(over)

23. Geology & Mineralization Deposit contains the following Minerals: Silica, Alumina, Irom, Titanium, Barium, Lime, Magnesia, Soda, Potash, Sulphur, Phosphoric Acid.

The following as a trace, Manganese- Thallium-Cerium.

24. Ore: Positive & Probable, Ore Dumps, Tailings Estimated at several million of Tons.

24A. Dimensions and Value of Ore body Valuable as a Mineral Fertilizer.

25. Mine, Mill Equipment & Flow-Sheet

26. Road Conditions, Route First-class.

27. Water Supply About 5 miles to Quartzsite, Arizona. from shallow wells,

28. Brief History

29. Special Problems, Reports Filed

30. Remarks

31. If property for sale: Price, terms and address to negotiate. Property for lease, or Sale. ~~See~~ the

See the undersigned, Sole Owners.

32. Signature W. L. Ropp, J. N. Ropp,

33. Use additional sheets if necessary.

DUPLICATE

Laboratory Certificate

SMITH- EMERY - COMPANY

Chemical Engineers and Chemists
Metallurgical and Testing
Engineers
920 Santee Street
Los Angeles,

LABORATORY
No. I98665

Date March 9th I940.

Sample Rock

Received 3-2-40 Marked

Submitted by Ropp Bro.,
Quartzsite, Arizona.

DETERMINATIONS

Iron Oxide	(Fe_2O_3)	- - - - - - - - - 3.52%
Magnesium Oxide	(MgO)	- - - - - - - - - I.00%
Gypsum	($CaSO_4$. 2H_2O)	- - - - - - - - -none
Potassium Oxide	(K_2O)	- - - - - - - - - I.45%
Free Sulphur	(S)	None
Sulphuric Anhydride	(SO_3)	- - - - - - - - - 2.62)

Respectfully Submitted

SMITH - EMERY Co.,

CHEMISTS AND ENGINEERS
E O S

REPORT ON

ROPP BROS. MINERAL FERTILIZER GROUP.

Location.--

This group of three (3) full mining claims lying in a solid block, adjoining each other's side lines from Northerly to Southerly direction, making 1800 ft. from North to South, by 1500 ft., from East to West, or slightly over 60 acres, and are named the "Krag", "South Slope", and the "South Slope No.1", and are unpatented.

They were discovered and are presently owned solely by Ropp Brothers, who made the original and only locations, and are situated in the Plomosa Mining District, Yuma County, Arizona, one mile southerly from Highway 60, at a point 5 miles West of the Quartzsite Post Office, and 13 miles easterly from the Ehrenburg bridge on the Colorado river; and more particularly described as being in Township 3 N. Range 19 W. of the Gila 7 Salt River Meridian, but is not fractionally surveyed in Sections or sub-divisions of Sections ye

Transportation.--

The nearest railroad is at Blythe, Riverside Co. California, served by the Santa Fe R.R., and is 20 miles westerly from this property, over paved highway No.60.

The owners have a good dirt road from the highway to the property, 1 mile in length.

Elevation & Water.--

The elevation is approximately 1200 ft. above sea level, and water is available and abundant 5 miles distant at Quartzsite, Ariz. from shallow wells of from 25 to 35 ft. in depth.

General Description.--

This deposit of mineral fertilizer, which has a silica body of over 50% plus 10 other minerals as the other 50% (all of which are listed in the analysis sheet herewith attached) is just a large deposit, lying as a bed, slightly tilted upwards at the Westerly end, Surrounded by low peaks and hills of mixed formations composed of slates, quartzites, and some andesite and diorites, which appear as overburden or cover on some parts of these claims.

The deposit is seen plainly to cover not less than 15 acres in extent, besides showing thru the overburden to the south and eastern end, as well as the north, where the heaviest overburden occurs.

Nature has created a gulch running from the Northwesterly endline of the "South Slope" claim towards the South Easterly end of the same claim, that serves as an open cut cross-cut, varying from 15 ft. deep to as much as 50 ft. in depth, averaging more than 20 ft. deep, that can be followed for over 1000 ft. in length, showing this body of mineral continuously along its entire length; it shows very uniformly as to color and grade, with very little overburden or slide covering only small parts of it.

Besides this natural development there are several shallow pits from 6 to 10 ft. deep scattered over a large part of the "Krag" claim and the "South Slope No.1" claim that prove the deposit is a wide and continuous one and at a very conservative estimate shows not less than 500,000 tons can be mined that are in sight above the first 10 ft. in depth.

All of these pits are bottomed in the same material, showing it to go on down; and for each additional 10 ft. in depth another 500,000 tons can be potentially estimated, safely.

This an extremely large surface showing, and the contour of the ground lends itself to an ideal dragline operation. From the lowest point the land gradually slopes upwards toward the West to a height of over 150 ft. in a distance of 1000 ft. in length, and on a large scale operation the cost of mining should not exceed 50 cents per ton.

There is a good location for crushing plant at the lower end, with

ample room for plant and buildings.

The crushed product can be transported directly by truck to Los Angeles under contract, for about $3.50 per ton, or by rail road from Blythe Calif. for $2.00 per ton in carload lots.

Trucking from the property to Blythe, Calif. can be done for $1.00 per ton by contract.

It would be advisable To expend a few hundred dollars at first in sinking deeper the pits already mentioned, to at least 50 ft. each, to prove the continuance of the deposit; and as it will be sure to give a better analysis of the potash, sulphur and phosphoric acid content, as the surface mineral shows considerable leaching by the natural elements.

To Sum up:

This deposit in my judgment, has many millions of tons, potentially, of this mineral fertilizer, that can be mined as cheaply here as at any point in the United States, as soon as the power lines commence to function (which will be soon, according to the Government engineers in charge); Probably before the preliminary work of proving the depth of the deposit and the installation of the necessary machinery for mining and crushing the ore, the power will be available.

Respectfully Submitted,

E B Hart

Mining Supt. & Advisor.

Quartzsite, Arizona,
October 4, 1940.

COPY

REPORT ON

ROPP BROS. MINERAL FERTILIZER GROUP

****

LOCATION.

This group of three (3) full mining claims lying in a solid block, adjoining each lother's side lines from northerly to southerly direction, making 1800 ft. from north to south, by 1500 ft. from east to west, or slightly over 60 acres, and named the "Krag","South Slope", and the "South Slope No. 1", and are unpatented.

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TRANSPORTATION

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The deposit is seen plainly to cover not less than 15 acres in extent, besides showing thru the overburden to the south and eastern end, as well as the north, where the heaviest overburden occurs.

Nature has created a gulch running from the northwesterly endline of the "South Slope" claim towards the southeasterly end of the same claim, that serves as an open cut cross-cut varying from 15 ft. deep to as much as 50 ft. in depth, averaging more than 20 ft. deep that can be followed for over 1000 ft. in length, showing this body of mineral continuously along its entire overburden or slide covering only small parts of it.

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There is a good location for crushing plant at the lower end, with ample room for plant and buildings.

The crushed product can be transported directly by truck to Los Angeles unfrt contract, for about $3.50 per ton, or by rail road from Blythe Calif. for $2.00 per ton in carload lots.

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TO SUM UP:

This deposit in my judgment has many millions of tons, potentially, of this mineral fertilizer, that can be mined as cheaply here as at any point in the United States, as soon as the power lines commence to function which will be soon, according to the Government engineers in charge; probably before the preliminary work of proving the depth ofthe deposit and the installation of the necessary machinery for mining and crushing the ore, the power will be available.

Respectfully submitted,

E. B. Hart
Mining Supt. and Advisor.

Quartzsite, Arizona
October 4, 1940.

(Copy)
Sample #28812

(Frank P. Baldi)
A ssayer and Chemist, June 26-40
406 South Main St.,
Los Angeles, Calif.,

Certificate of Analyses Made on Ropp Bros. Ore,
Quartzsite, Arizona.

Percentages of the following:

Silica	(SiO_2)	59.11 %
Alumina	(Al_2O_3)	10.41 %
Iron	(Fe_2O_3)	1.38 %
Titanium	(TiO_2)	.75 %
Barium	(BaO)	2.15 %
Lime	(CaO)	3.57 %
Magnesia	(MgO)	.66 %
Soda	(Na_2O)	.87 %
Potash	(K_2O)	4.96 %
Sulphur	(SO_3)	3.20 %
Phosphoric Acid	(P_2O_5)	2.84 %

The following present as a trace,

Manganese- Thallium- Cerium.

Frank P. Baldi

The above is a complete assay, without roasting rock, Mine Run, This material has been recommended by the Chamber of Commerce, as a first class Fertilizer for Alkali Grounds, is a large body and can supply any demand. Located near Colorado River.

DUPLICATE

Laboratory Certificate

SMITH - EMERY - COMPANY

Chemical Engineers and Chemists
Metallurgical and Testing
Engineers
920 Santee Street,
Los Angeles,

LABORATORY
No. 198665

Date March 9, 1940

Sample Rock

Received 3-2-40 Marked

Submitted by Ropp Bro.,
Quartzsite, Arizona.

DETERMINATIONS

Iron Oxide	(Fe_2O_3)	3.52%
Magnesium Oxide	(MgO)	1.00%
Gypsum	($CaSO_4$). $2H_2O$)	none
Potassium Oxide	(K_2O)	1.45%
Free sulphur	(s)	none
Sulphuric Anhydride	(SO_3)	2.62)

Respectfully submitted

SMITH - EMERY - CO.,

CHEMISTS AND ENGINEERS
E O S

Mineral

October 14, 1940

W. Lee Ropp
Ropp Brothers
Quartzite, Arizona

Dear Mr. Ropp:

Your letter of the 10th with report on your Mineral Fertilizer property is received, for which many thanks.

This report will be added to the report sent on August 1st, and which we have in our files.

Yours very truly,

J. S. Coupal
Director

JSC:mm

Quartzsite, Arizona. IO-IO-$o.

Department of Minwral Resources

Phoenix, Ariz.,

Dear Mr Coupal:--

We are sending you an Engineers Report on our Mineral Fertilizer property, Will you kindly file it with Owners Mine Report that w sent in to the Bureau on August the Ist.

Yours very truly,

W. Lee Ropp

Ropp Bros/,

Quartzsite, Arizona.

Prescott, Arizona. 9-6-40.

Mr J. S. Coupal

Phoenix, Ariz.,

Dear Mr Coupal:--

I fear I overlooked answering your request, of August 6th, as to whether the yellow rock we called sulphur is the same as the assay determined by Mr Heineman as jarosite.

It is what we termed as Mineral Fertilizer in the Mine Owners Report listed Aug. Ist. and is the jarosite Mr Heineman assayed.

Pardon my neglect in not writing sooner as it was unintentional

Yours very truly,

W. Lee Ropp

Prescott, Ariz.,

6 August 1940

Mr. W. Lee Ropp,
Prescott,
Arizona.

Dear Mr. Ropp:

In your letter of August 1 you mention Mineral Fertilizer. Is this the yellow rock which we called sulphur and which assay determined to be jarosite?

Please advise me.

Yours very truly,

J. S. Coupal,
Director

JSC-jrf

Prescott, Arizona. August Ist 1940.

Mr J. S. Coupal,
Phoenix,
Arizona.

Dear Mr Coupal:

Yours of July 25th received, for which I thank you. I am enclosing a copy of the Mineral Fertilizer assay of which I failed to send you in my last letter. Am sorry for the omission.

I am sending some of the material to Mr Ralston, as per your suggestion , for knowledge as to its commercial uses, and how to eliminate the silica.

We also have an immense solid deposit of High-class purple slate, there is fully exposed some 4 or 5 acres, 20 feet above surface, can drive on to it, easy of access to hiway 60. Will send samples of it to you on our return to Quartzsite, about Aug. 20th. Should you have calls for slate please put us in touch with the party.

Thanking you for your assistance in getting our stuff going,

We are yours very truly,

ROPP BROS.

W. Lee Ropp

Prescott,
Arizona.

Wa x 0.6 silicate / amm

Hol / Jarosite?

Alunite
Ropp

October 27, 1941

Mr. Frank Eichelberger, President
Kalunite, Incorporated
81 Navajo Street
Salt Lake City, Utah

Dear Mr. Eichelberger:

While in the Quartzsite area last week I looked over the Ropp alunite property and I am enclosing a copy of several analyses by the U. S. Department of Interior.

This property has a good showing but requires certain development work in order to prove out the tonnage available. If, in the course of your work you contact anyone or if your company is desirous of developing additional tonnage of alunite, we would be very glad to assist in furthering such plans.

As stated, there is power available, railroad facilities, water, and suitable site for an aluminum plant at Parker. We have had very good information of other deposits of alunite in and about the northern part of Yuma County and are investigating the deposits to see whether or not they could add to production from the Ropp property.

Very truly yours,

J. S. Coupal

JSC:LP
Enc.

(copy)

UNITED STATES

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

October I3th I94I.

Metallurgical Division

I6oo East First South
Street, Salt Lake
City Utah.

Mr W. Lee Ropp,
Ropp Bros.,
Quartzsite, Arizona.

Dear Mr Ropp:

This is in reply to your letter of September 20th. to Dr Dean regarding three samples of alunite sent to us. These samples have been analyzed in our chemical laboratory. The analyses are given as follows.

	No. I.	No. 2.	No. 3.
Al_2O_3	35.5.	3I.6	35.6
K_2O	3.2.	7.7	4.I.
SO_3	39.7	37.0.	37.I
Fe_2O_3	.28	.50	0.I7
TiO_2	nil	nil	nil
SIO_2	6.4	2.I	3.9
P_2O_5	.II	.06	.05
Na_2O	6.5	3.6	I.5

These analyses show your deposit to be an exceptionally good grade alunite. We are doing some experimental work on a new process which we have worked out for treating alunite. I am having some tests run with your ore and will write you further when we have some preliminary results.

Very truly yours,

H. W. St. Clair,
Assistant to the Chief Engineer,
Metallurgical Division.

(copy)

UNITED STATES

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

Metallurgical Division October 13th 1941. 1600 East first souhh Street, Salt Lake City, Utah.

Mr W. Lee Ropp,
Ropp Bros.
Quartzsite, Arizona.

Dear Mr Ropp:

This is in reply to your letter of September 20th to Dr. Dean regarding three samples of alunite sent to us. These samples have been analyzed in our chemical laboratory. The analyses are given as follows:

	No. 1.	No. 2.	No. 3.
Al_2O_3	35.5	31.6	35.6
K_2O	3.2	7.7	4.1
SO_3	39.7	37.0	37.1
Fe_2O_3	.28	.50	0.17
TiO_2	nil	nil	nil
SiO_2	6.4	2.1	3.9
P_2O_5	.11	.06	.05
Na_2O	6.5	3.6	1.5

These Analyses show your deposit to be an exceptionally good grade alunite. We are doing some experimental work on a new process which we have worked out for alunite. I am having some tests run with your ore and will write further when we have some preliminary results.

Very truly yours,

H. W. St. Clair
Assistant to the Chief Engineer,
Metallurgical Division.

FREDERICK VAN NUYS, IND., CHAIRMAN
PATRICK MC CARRAN, NEV.
CARL A. HATCH, N. MEX.
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BEN STERN, CLERK
DIX W. PRICE, ASST. CLERK

United States Senate

COMMITTEE ON THE JUDICIARY

September 16, 1941

DEPT. MINERAL RESOURCES
RECEIVED
SEP 22 1941
PHOENIX, ARIZONA

Mr. E. W. Moffett, Secretary,
Northern Yuma County Chamber of Commerce,
Parker, Arizona

Dear Mr. Moffett:

Again referring to the alunite deposit near Parker, about which we have had some correspondence and a conversation during my recent visit in Arizona, I have just received from Mr. R. R. Sayers, Director of the Bureau of Mines, under date of September 15, a letter, copy of which I herewith enclose.

You will note Mr. Sayers' statement to the effect that the present deficiency in aluminum is due to inadequate plant capacity for production, rather than to any dearth of raw materials. This would indicate that any development of the properties would have to be by private capital rather than by the Government. However, it might be possible for responsible parties to be financed through the Reconstruction Finance Corporation.

If I can be of further assistance to you in this matter, please do not hesitate to command me.

With kind personal regards, I remain

Yours truly,

Ernest W. McFarland

Ernest W. McFarland

EWM/p

Ropp.

August 26, 1941

Ropp Brothers
General Delivery
Prescott, Arizona

Attention: Mr. W. Lee Ropp

Gentlemen:

I did not get your letter of August 15 as I have been in Washington and have just returned. I am very glad to have the additional data on your alunite deposit and it certainly looks good.

We have been in correspondence with the Kalunite people and we know that they are interested. Of course, I do not expect quick action on this, as I found out in Washington that while the RFC and the United States Bureau of Mines have approved of the process of Kalunite, they are not ready to plunge in with enormous plants until the process has been demonstrated in a smaller mill. For that reason their O.K. so far has only extended to a 250-ton plant to be erected in Marysvale, Utah. The idea, however, is that if this plant successfully produces aluminum at a reasonable cost, there will very promptly be other plants and larger ones.

We are going to keep in close touch with the situation as we are mighty anxious to have aluminum production in Arizona.

This excitement on aluminum has caused about everybody to get aluminum assays made, but most of them do not have alunite or bauxite and, therefore, their aluminum is of no value.

Thanking you again for your letter and hoping that it will all work out, I am

Yours very truly,

Chairman, Board of Governors
Arizona Department of Mineral Resources

CFW:LP

B

B

Prescott, Arizona. Aug. I5th -4I

Mr Chas, F. Willis

Phoenix, Ariz.

Dear Mr Willis:-- Yours of recent date at hand also of Aug. 8th, We are at Prescott, Ariz. till about Oct. Ist, on Doctors advice to keep out of heat. We are heartly grateful for your co-operatin in attempts to get our Alunite, Aluminum property going. Of course it is hard to know what Reynold's Co. will do, or how soon;

Were in correspondence with Kalunte people last April, and kno w them to be subst antial people. Am enclosing a copy of their Analyses, which looks good. Also copy of Ariz. Bureau of Mines, Dept. of Interior, U. S. A. and Bohn Aluminum & Brass Corp. assays.

I will write the Kalunite people and see how they stand. now. Want to keepin touch with your office on anything new coming up, and glad of you men's help.

Yours very truly,

W. Lee Ropp

Ropp Bros.,

Gen'l Deivery, Prescott, Ariz.

Lab. Rept. No. 8834
Date: 3-29-4I.
Analyst; E. E Sheldon
A. Fleisher
F. Davis
Record: 47 P. I66: 73, P. I7I - I75

Kalunit Co., Salt Lake City. Utah.

Sugar- Loaf Butte Alunite Ore, Quartzsite, Arizona.
5 Claims I9 miles East of Blythe, Calif.,owned by Ropp Bros.,
Quartzsite, Arizona. (Ore File E-9)
Submitted by W. Lee Ropp, Feb. 23. I94I.

Sample		Lab. No.	
Silica		SI02-%	I2655
Sesquioxide,	Total	R2o3-%	9.48
Iron Oxide,	"	FE203-%	36.48
Titania	"	TI/02 %	.I9
Phosphorus	#	P205-% %	.4I0
Alumina, total by diff.		Al203-%	35.I2
~~SXIEXX~~trioxide		S03-%	36.32
Sulfur/			
Potash	Direct	K20-%	2.97
Soda	"	Na20-%	5.09
Loss at I000 C		%	42.03

Routine Determinations

Loss At 600		%	I3.82
Available	R203	%	36.I4
"	FE203	%	0.9I
"	SI02	%	0.00
"	~~AL203~~ by ~~diff.~~	%	0.~~00~~ 47
	P205 / /		
	AL203 by diff.		34.76

AL203 Extracted, % of Total 99

Analyses of Alunite Samples,
in Percentages

From Sugar-Loaf Butte.

Ropp Bros., Sole Owners,
Quartzsote, Arizona.

Arizona Bureau of Mines, Analyses.

Al2o3	36.5 %
So3	38.I %
K2o	4.85 %
Na2o	4.3o %
SIo2	I.2 %

- - -- -- ---

Depattment of the Interior, United States Bureau of Mines,

Al2o3	37.34 %
SO3	34.7o %
K2O	3.36 %
Na~~o~~2o	4.o9 %
De2O3	.74 %
H2o	.II %
SIo2	5.94 %

- -

Bohn Aluminum Corporation, Analyses,

Al2o3	39.45 %
SIO2	2..78 %
K2O	3.60 %
FE2O3	3.o9 %
P2o5	O.I6 %
Na2O	7.83 %

- -- - - - - -- - - - - - - - - - - - - - ROPP BrOs.,
Quartzsite, Arizona

KALUNITE, INC.
81 NAVAJO STREET
SALT LAKE CITY
UTAH

August 12, 1941

Mr. Charles F. Willis, Chairman
Department of Mineral Resources
State of Arizona
518 Title and Trust Building
Phoenix, Arizona

Dear Mr. Willis:

This will acknowledge your communication of August 8th calling our attention to the possibility of alunite deposits in your state and furthermore the possibility of the availability of Boulder Dam power and other power from the Colorado River. This matter is of great and immediate interest to us and I am sure that you will hear from Mr. Frank Eichelberger, president of Kalunite, Inc., at the earliest opportunity which he will have to put his attention to this matter.

At the present time final decisions as to the plants which the Kalunite company will build have not been made and Mr. Eichelberger is actively on the job in Washington, D.C. until the final decision is reached.

We have already received samples from the Yuma County deposit owned by the Ropp Bros. With regard to the Graham County deposit, we shall write Mr. Charles H. Young from whom we received a letter just today at the same time as yours arrived.

Thanking you very kindly for calling this matter to our attention, we are,

Very truly yours,

A Fleischer
Arthur Fleischer

AF:fd

c.c. F. Eichelberger
F. S. Elfred, Jr.

Case

August 8, 1941.

Kalunite Company,
81 Navajo St.,
Salt Lake City, Utah.

Dear Sirs:

It has come to our attention that the Kalunite Company is constructing two alumina plants at Marysvale, Utah, and possibly a third one in the state of Washington for the purpose of extracting alumina from Alunite. We respectfully urge your investigation of the alunite deposits of Arizona which are located in central Yuma County. These alunite deposits were described by Robert E. S. Heineman in the Engineering and Mining Journal for March, 1935. They carry a higher alumina content than the Marysvale, Utah deposits and very much less silica.

If a satisfactory source of raw materials can be found in Arizona, the state offers splendid opportunities for an aluminum plant, particularly because of the ready availability of the Boulder Dam power and the prospects of considerable more power development on the Colorado River.

In case you desire to look up further this alunite deposit at Sugarloaf Butte, you will find data regarding it in United States Geological Survey Bulletin No. 620 entitled "Gold Deposits Near Quartzsite Arizona" by Jones; United States Geological Survey Professional Paper 129, "The Geology of the Lower Gila Region" by Ross; Arizona Bureau of Mines Bulletin No. 119, "The Resume of Arizona Geology" by Darton.

In case you do not have the files of Engineering and Mining Journal readily available we will be pleased to supply you with photostatic copies of the article by Mr. Heineman.

There is also another alunite deposit located about eleven miles south of Safford, Arizona, and while we do not have many details regarding it, the data which we do have indicates that it is well worth looking into.

The Yuma County alunite deposit is owned by Ropp Brothers, Quartzsite, Arizona, and the Graham County deposit is owned by Charles H. Young, 231 Ellis Bldg., Phoenix, Arizona.

Trusting that you will look into the possibilities of alumina manufacturing in Arizona and that we may be of further service to you, I am

Yours very truly,

Chairman, Board of Governors,
Department of Minerals Resources.

CFW-M

Bost

August 8, 1941.

Ropp Brothers,
Quartzsite, Arizona.

Dear Sirs:

The Kalunite Company, 81 Navajo Street, Salt Lake City, Utah have new patents on a process for manufacturing aluminum from alunite. They have been given final approval from OPM on plans for the construction of two alumina plants at Marysvale, Utah and are considering a third one in the State of Washington.

We have called to their attention the deposit of alunite owned by you in northern Yuma County urging their investigation, and if there is any data that you could send to them which would help in interesting them in making an investigation it would be very beneficial.

The Kalunite Company is a new organization but it is backed by old and substantial people. The company is controlled by the Olin Corporation, Franklin William Olin, president, which also controls the Western Cartridge Company of East Alton, Illinois, and the Winchester Repeating Arms Company of New Haven, Conn.

We are very anxious to get something started on aluminum manufacturing in Arizona, and if there is any way in which we can cooperate with you we would appreciate the opportunity.

Yours very truly,

Chairman, Board of Governors,
Department of Mineral Resources.

CFW-M

August 1, 1941

Geological Department
Reynolds Metals Corp.
Richmond, Virginia

Gentlemen:

The activities of the Reynolds Metals Corporation in building plants to make aluminum from alunite has come to our attention, and we respectfully urge your investigation of the alunite deposits of Arizona which are located in central Yuma County. These alunite deposits were described by Robert E. S. Heineman in the Engineering and Mining Journal for March, 1935. They carry a higher alumina content than the Marysvale, Utah deposits and very much less silica.

If a satisfactory source of raw materials can be found in Arizona, the state offers splendid opportunities for an aluminum plant, particularly because of the ready availability of the Boulder Dam power and the prospects of considerable more power development on the Colorado River.

In case you desire to look up further this alunite deposit at Sugarloaf Butte you will find data regarding it in United States Geological Survey Bulletin No. 620 entitled "Gold Deposits Near Quartzsite, Arizona" by Jones; United States Geological Survey Professional Paper 129, "The Geology of the Lower Gila Region" by Ross; Arizona Bureau of Mines Bulletin No. 119, "The Resume of Arizona Geology" by Darton.

In case you do not have the files of Engineering and Mining Journal readily available we will be pleased to supply you with photostatic copies of the article by Mr. Heineman.

Trusting that you will look into this alunite deposit and the possibilities of aluminum manufacture in Arizona, I am

Yours very truly,

Chairman, Board of Governors
Arizona Department of Mineral Resources

CFW:LP

COPY

REPORT ON

ROPP BROS. MINERAL FERTILIZER GROUP

****

LOCATION.

This group of three (3) full mining claims lying in a solid block, adjoining each other's side lines from northerly to southerly direction, making 1800 ft. from north to south, by 1500 ft. from east to west, or slightly over 60 acres, and named the "Krag","South Slope", and the "South Slope No. 1", and are unpatented.

Theywere discovered and are presently owned solely by Ropp Brothers, who made the original and only locations, and are situated in the Plomosa Mining District, Yuma County, Arizona, one mile southerly from highway 60, at a point 5 miles west of the Quartzsite Post Office, and 13 miles easterly from the Ehrenburg bridge on the Colorado river; and more particularly described as being in Township 3 N. Range 19 W. of the Gila 7 Salt River Meridian, but is not fractionally surveyed in Sections or sub-divisions of Sections .

TRANSPORTATION

The nearest railroad is at Blythe, Riverside Co. ,California, served by the Santa Fe R. R., and is 20 miles westerly from this property, over paved highway No. 60.

The owners have a good dirt road from the highway to the property, 1 mile in length.

ELEVATION & WATER.

The elevation is approximetely 1200 ft. above sea level, and water is available and abundant 5 miles distance at Quartzsite, Arizona from shallow wells of from 25 to 35 ft. in depth.

GENERAL DESCRIPTION.

This deposit of mineral fertilizer, which has a silica body of over 50% plus 10 other minerals as the other 50% (all of which are listed in the analysis sheet herewith attached) is just a large deposit, lying as a bed, slightly tilted upwards at the westerly end, surrounded by low peaks and hills of mixed formations composed of slates, quartzites, and some andesite and diorites , which appear as overburden or cover on some parts of these claims.

The deposit is seen plainly to cover not less than 15 acres in extent, besides showing thru the overburden to the south and eastern end, as well as the north, where the heaviest overburden occurs.

Nature has created a gulch running from the northwesterly endline of the "South Slope" claim towards the southeasterly end of the same claim, that serves as an open cut cross-cut varying from 15 ft. deep to as much as 50 ft. in depth, averaging more than 20 ft. deep that can be followed for over 1000 ft. in length, showing this body of mineral continuously along its entire overburden or slide coverihg only small parts of it.

Besides this natural development there are several shallow pits from 6 to 10 ft. deep scattered over a large part of the "Krag" claim and the "South Slope No. 1" claim that prove the deposit is a wide and continuous one and at a very conservative estimate shows not less than 500,000 tons can be mined that are in sight above the first 10 ft. in depth.

All of these pits are bottomed in the same material showing it to go on down; and for each additional 10 ft. in depth another 500,000 tons can be potentially estimated, safely.

This an extremely large surface showing, and the contour of the groundlends itself to an ideal dragline operation. From the lowest point the land gradually slopes upwards toward the west to a height of over 150 ft. in a distance of 1000 ft.

in length, and on a large scale operation the cost of mining should not exceed 50 cents per ton.

There is a good location for crushing plant at the lower end, with ample room for plant and buildings.

The crushed product can be transported directly by truck to Los Angeles unfrt contract, for about $3.50 per ton, or by rail road from Blythe Calif. for $2.00 per ton in carload lots.

Trucking from the property to Blythe, Calif. can be done for $1.00 per ton by contract.

It would be advisable to expend a few hundred dollars at first in sinking deeper the pits already mentioned to at least 50 ft. each, to prove the continuance of the deposit; and as it will be sure to give a better analysis of the potash, sulphur, and phosphoric acid content, as the surface mineral shows considerable leaching by the natural elements.

TO SUM UP:

This depositt in my judgment has many millions of tons, potentially, of this mineral fertilizer, that can be mined as cheaply here as at any point in the United States, as soon as the power lines commence to function which will be soon, according to the Government engineers in charge; probably before the preliminary work of proving the depth ofthe deposit and the installation of the necessary machinery for mining and crushing the ore, the power will be available.

Respectfully submitted,

E. B. Hart
Mining Supt. and Advisor.

Quartzsite, Arizona
October 4, 1940.

(Copy)
Sample #28812

(Frank P. Baldi)
A ssayer and Chemist, June 26-40
406 South Main St.,
Los Angeles, Calif.,

Certificate of Analyses Made on Ropp Bros. Ore,
Quartzsite, Arizona.

Percentages of the following:

Silica	(SiO_2)	59.11 %
Alumina	(Al_2O_3)	10.41 %
Iron	(Fe_2O_3)	1.38 %
Titanium	(TiO_2)	.75 %
Barium	(BaO)	2.15 %
Lime	(CaO)	3.57 %
Magnesia	(MgO)	.66 %
Soda	(Na_2O)	.87 %
Potash	(K_2O)	4.96 %
Sulphur	(SO_3)	3.20 %
Phosphoric Acid	(P_2O_5)	2.84 %

The following present as a trace,

Manganese- Thallium- Cerium.

Frank P. Baldi

The above is a complete assay, without roasting rock, Mine Run, This material has been recommended by the Chamber of Commerce, as a first class Fertilizer for Alkali Grounds, is a large body and can supply any demand. Located near Colorado River.

DUPLICATE

Laboratory Certificate

SMITH - EMERY - COMPANY

Chemical Engineers and Chemists
Metallurgical and Testing
Engineers
920 Santee Street,
Los Angeles,

LABORATORY
No. 198665

Date March 9, 1940

Sample Rock

Received 3-2-40 Marked

Submitted by Ropp Bro.,
Quartzsite, Arizona.

DETERMINATIONS

Iron Oxide	(Fe_2O_3)	- - - - - - - - - - - - 3.52%
Magnesium Oxide	(MgO)	- - - - - - - - - - - - 1.00%
Gypsum	($CaSO_4$). $2H_2O$)	- - - - - - - - - - - - none
Potassium Oxide	(K_2O)	- - - - - - - - - - - - 1.45%
Free sulphur	(s)	- - - - - - - - - - - - none
Sulphuric Anhydride	(SO_3)	- - - - - - - - - - - - 2.62)

Respectfully submitted

SMITH - EMERY - CO.,

CHEMISTS AND ENGINEERS
E O S

Sul-1

M[illegible] SPECIMEN FOR DEPARTMENT OF [illegible]RY AND ARCHIVES K 118

Mineral Fertilizer mine F.C.

(Do not write in this space)

Ore _____

Cabinet _____

No. _____

(Wrap each specimen separately, or place it in a substantial bag, by itself, with a number attached, identical with the number on this card.)

Specimen No. 1, collected by J. S. Coupal 5/15-40
Field Engineer

Name of ore ~~SULPHUR~~ JAROSITE

Minerals contained ~~NATIVE SULPHUR~~.
(ALUNITE GROUP)

Gangue SILICA.

Depth at which taken SURFACE

Approximate mineral content (in terms of average per ton)
20 %

Name of mine or claim

Group ROPP GROUP. Yuma Co LAPAZ

District QUARTZSITE

Location (distance and direction by highway from what town

Owner of property ROPP BROTHERS

Operator ROPP BROTHERS

Mine active or inactive INACTIVE

If inactive, when operated

Specimen presented by ROPP BROS.

Date 3/20/40 QUARTZSITE

Notes (Any general information regarding the history of the property.)

A LARGE DEPOSIT —

If more space is desired for notes, use other side.

NJN 85 SEE LETTER IN FILE

This specimen is now in the ADMR Museum - see K number.

5 18 8 08 15.5 X 12.0 X 10.0 cm K118

Sugarloaf Peak XRF Element Scans

Index	Reading No	Time	Type	Duration	Units	Sequence	SAMPLE	Mo	Mo Error	Zr	Zr Error	Sr	Sr Error
2	2	1/31/2007 16:26	BULK	52.52	ppm	Final	sampleA	3.23	4.07	139.68	10.65	64.37	5.76
3	3	1/31/2007 16:31	BULK	46.21	ppm	Final	sampleA	4.55	4.37	134.53	11.24	65.09	6.18
4	4	1/31/2007 16:33	BULK	44.49	ppm	Final	sampleA	5.13	4.45	132.6	11.37	63.64	6.21
5	5	1/31/2007 16:37	BULK	60	ppm	Final	sampleA	-0.56	3.71	137.91	9.94	66.04	5.46
6	6	1/31/2007 16:38	BULK	60	ppm	Final	sampleA	0.64	3.73	141.83	9.93	59.74	5.2
7	7	1/31/2007 16:45	BULK	60	ppm	Final	sampleAr	0.52	3.71	123.01	9.58	62	5.3
8	8	1/31/2007 16:46	BULK	60	ppm	Final	sampleAr	-0.08	3.75	147.22	10.14	63.02	5.36
9	9	1/31/2007 16:58	BULK	60	ppm	Final	WholeRock	7.96	4.52	137.58	14.74	840.06	19.44

sampleA and sampleAr are the same sample, just rotated and rescaned in the XRF unit

Error factor can be +/- the indicated reading for the element

Negative readings indicate elements which are below detection limits of the XRF

Rb	Rb Error	Pb	Pb Error	Se	Se Error	As	As Error	Hg	Hg Error	Zn	Zn Error	Cu
156.84	8.29	629.22	33.06	18.91	6.34	3.08	24.37	5.16	5.08	65.61	19.17	13.23
156.65	8.83	618.62	34.95	16.14	6.52	-11.6	25.46	9.57	5.83	69.25	20.69	7.85
149.99	8.79	602.81	35.09	15.98	6.59	-22.71	25.3	6.06	5.57	92.53	22.54	11.89
156.2	7.74	636.1	31.06	14.98	5.65	-17.79	22.52	12.32	5.34	81.22	18.9	14.96
159	7.76	607.48	30.23	15.26	5.61	-5.87	22.13	4.95	4.7	82.34	18.78	5.3
143.43	7.41	631.69	30.87	15.8	5.68	-39.3	21.96	8.77	5.03	75.76	18.47	11.57
155.7	7.74	616.3	30.68	18.31	5.88	-26.71	22.04	9.53	5.12	83.2	19	1.03
5.2	3.11	1127.34	45.21	-3.4	5.32	49.86	34.15	2.2	5.42	-21.26	14.1	1.85

Cu Error	Ni	Ni Error	Co	Co Error	Fe	Fe Error	Mn	Mn Error	Cr	Cr Error
19.31	2.78	36.02	22.73	72.9	6237.03	240.23	200.1	83.6	-122.31	118.57
20.04	-10.19	37.75	81.64	78.77	5940.66	250.33	193.06	88.61	-85.9	130.17
20.61	-31.94	36.04	40.72	77.02	5729.04	250.04	150.11	84.96	-145.94	124.9
18.24	-0.9	33.99	107.97	69.53	5807.99	217.24	154.09	75.38	-2.24	122.05
17.34	7.68	34.38	106.48	69.93	5991.41	219.25	136.23	73.39	-20.09	119.59
17.76	-30.66	31.74	120.67	69.3	5696.04	214.71	185.39	77.3	-21.81	119.66
17.01	-25.24	32.53	145.74	70.56	5691.57	215.62	189.95	79.77	153.8	135.54
20.66	-6.48	37.83	20.09	35.92	485.07	91.72	21.04	67.45	-104.54	130.03

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. UGJ 028
October 25, 1984
WW-2 235-240
BILLING NO. 09569

AMSELCO EXPLORATION INC.
Attn: Mr. George Moakley
17602 N. Black Canyon Hwy, Suite 105
Phoenix, Arizona 85023

Analysis of 16 Pulp Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au (oz/t)	Ag (oz/t)	Sb (ppm)	As (ppm)
1	WW-2 235-240	.015	<.01	<2.	<10.
2	WW-2 240-245	.020	<.01	<2.	20.
3	WW-2 245-250	.030	<.01	<2.	20.
4	WW-8 110-115	.020	.18	<2.	10.
5	WW-8 115-120	.040	.16	<2.	10.
6	WW-8 120-125	.020	<.01	<2.	30.
7	WW-8 125-130	.015	<.01	<2.	20.
8	WW-9 0-5	.010	.01	<2.	10.
9	WW-9 5-10	.020	.02	<2.	<10.
10	WW-9 10-15	.015	<.01	<2.	<10.
11	WW-9 15-20	<.005	<.01	<2.	10.
12	WW-9 20-25	.015	.01	<2.	10.
13	WW-9 195-200	<.005	<.01	<2.	<10.
14	WW-9 200-205	<.005	<.01	<2.	10.
15	WW-9 205-210	<.005	.02	<2.	10.
16	WW-9 210-215	<.005	<.01	<2.	10.

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UGJ 028
PAGE 3

ITEM NO.		SAMPLE NO.
9	=	WW-9 5-10
10	=	WW-9 10-15
11	=	WW-9 15-20
12	=	WW-9 20-25
13	=	WW-9 195-200
14	=	WW-9 200-205
15	=	WW-9 205-210
16	=	WW-9 210-215

ITEM	9	10	11	12	13	14	15	16
ELEMENT								
Fe	15%	15%	10%	15%	20%	15%	20%	15%
Ca	1.5%	.2%	.2%	.2%	3%	3%	3%	3%
Mg	1.5%	1.5%	2%	1.5%	2%	2%	2%	1.5%
Ag	<1	<1	<1	<1	<1	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500	<500
B	20	10	10	10	<10	50	200	15
Ba	200	200	200	300	500	500	300	300
Be	<2	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50	<50
Co	<5	<5	<5	<5	5	5	10	5
Cr	<10	<10	<10	<10	<10	<10	<10	<10
Cu	70	100	70	100	150	70	100	70
Ga	10	10	<10	15	15	15	10	10
Ge	<20	<20	<20	<20	<20	<20	<20	<20
La	<20	<20	<20	<20	50	50	<20	50
Mn	1000	700	700	1000	2000	2000	2000	1500
Mo	20	20	2	10	10	2	20	.20
Nb	<20	<20	<20	<20	<20	<20	<20	<20
Ni	<5	<5	<5	<5	5	<5	5	<5
Pb	1000	1000	500	700	1000	500	1000	1000
Sb	<100	<100	<100	<100	<100	<100	<100	<100
Sc	<10	<10	<10	<10	<10	<10	<10	<10
Sn	10	<10	<10	10	<10	<10	<10	<10
Sr	100	150	<100	<100	150	100	100	<100
Ti	7000	10000	10000	10000	10000	7000	10000	3000
V	200	200	100	300	300	150	300	150
W	<50	<50	<50	<50	<50	<50	<50	<50
Y	<10	<10	<10	<10	15	10	15	15
Zn	300	300	500	500	500	500	500	500
Zr	100	100	50	150	100	70	100	50

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SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UGJ 028
PAGE 2

ITEM NO.	SAMPLE NO.
1	WW-2 235-240
2	WW-2 240-245
3	WW-2 245-250
4	WW-8 110-115
5	WW-8 115-120
6	WW-8 120-125
7	WW-8 125-130
8	WW-9 0-5

ITEM	1	2	3	4	5	6	7	8
ELEMENT								
Fe	20%	20%	20%	20%	20%	15%	20%	15%
Ca	3%	3%	3%	2%	2%	3%	3%	3%
Mg	3%	2%	2%	2%	2%	2%	2%	2%
Ag	<1	<1	<1	10	30	<1	<1	<1
As	<500	<500	<500	<500	<500	<500	<500	<500
B	100	70	20	50	30	<10	<10	20
Ba	200	200	200	300	300	300	300	300
Be	<2	<2	<2	<2	<2	<2	<2	<2
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<50	<50	<50	<50	<50	<50	<50	<50
Co	50	30	20	20	30	30	50	<5
Cr	20	10	10	<10	10	<10	10	<10
Cu	100	100	70	100	70	150	200	100
Ga	10	10	<10	10	10	10	10	<10
Ge	<20	<20	<20	<20	<20	<20	<20	<20
La	<20	<20	<20	<20	<20	<20	<20	<20
Mn	1500	1500	2000	1500	1500	1500	2000	1000
Mo	30	70	5	100	50	30	200	10
Nb	<20	<20	<20	<20	<20	<20	<20	<20
Ni	50	20	20	5	15	10	15	<5
Pb	700	700	700	700	1000	500	500	1000
Sb	<100	<100	<100	<100	<100	<100	<100	<100
Sc	10	<10	<10	<10	<10	<10	<10	<10
Sn	20	20	10	15	15	10	10	<10
Sr	<100	<100	<100	<100	100	200	300	200
Ti	7000	7000	7000	10000	10000	7000	10000	7000
V	300	200	300	300	300	300	300	300
W	<50	<50	<50	<50	<50	<50	<50	<50
Y	15	10	10	10	10	<10	10	<10
Zn	300	300	300	700	1000	1000	2000	300
Zr	100	100	50	100	100	200	100	100

Charles E. Thompson
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SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UGJ 028
October 25, 1984

ITEM	SAMPLE NUMBER	Hg (ppm)	Te (ppm)	Tl (ppm)
1	WW-2 235-240	.07	.090	2.
2	WW-2 240-245	.19	.120	3.
3	WW-2 245-250	.09	.090	2.
4	WW-8 110-115	.20	.090	2.
5	WW-8 115-120	.10	.100	2.
6	WW-8 120-125	.05	.050	2.
7	WW-8 125-130	.11	.110	2.
8	WW-9 0-5	.13	.090	1.
9	WW-9 5-10	.09	.090	1.
10	WW-9 10-15	.12	.090	2.
11	WW-9 15-20	.08	.080	2.
12	WW-9 20-25	.15	.025	4.
13	WW-9 195-200	.08	.020	3.
14	WW-9 200-205	.07	.050	3.
15	WW-9 205-210	.08	.075	3.
16	WW-9 210-215	.09	.200	3.

cc: Amselco Exploration
Attn.: Mr. Tom Young
P.O. Box 427
Yuma, Arizona 85364

cc: Mr. N.E. Dausinger
9331 N. Magdalena Street
Tucson, Arizona 85710

REGISTERED CERTIFICATE No. 9425 WILLIAM L. LEHMBECK STATE OF ARIZONA U.S.A.

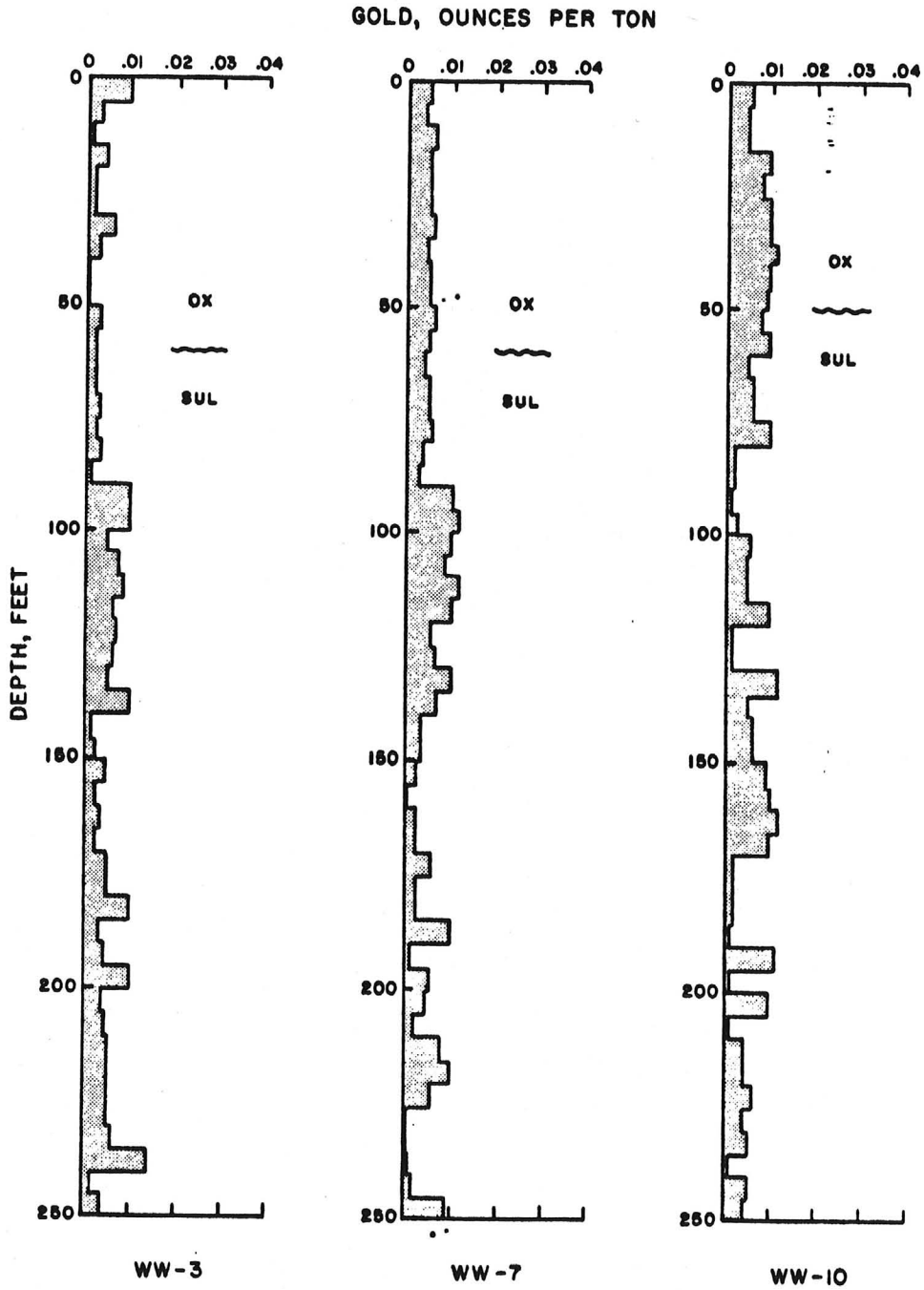

FIGURE 9. GRAPHIC GOLD ASSAY LOGS, HOLES WW-3, WW-7, AND WW-10

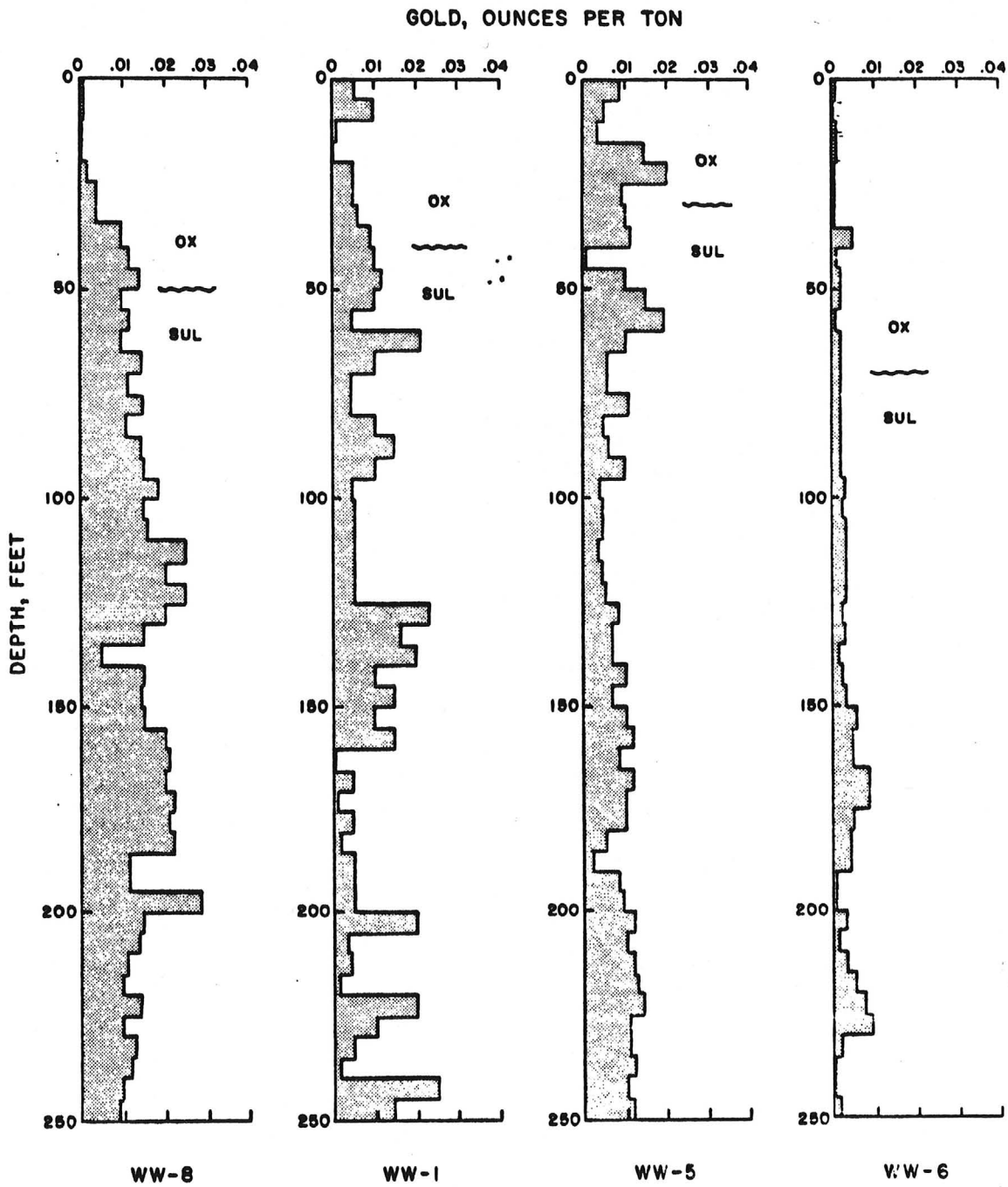

FIGURE 8. GRAPHIC GOLD ASSAY LOGS, HOLES WW-8, WW-1, WW-5, AND WW-6

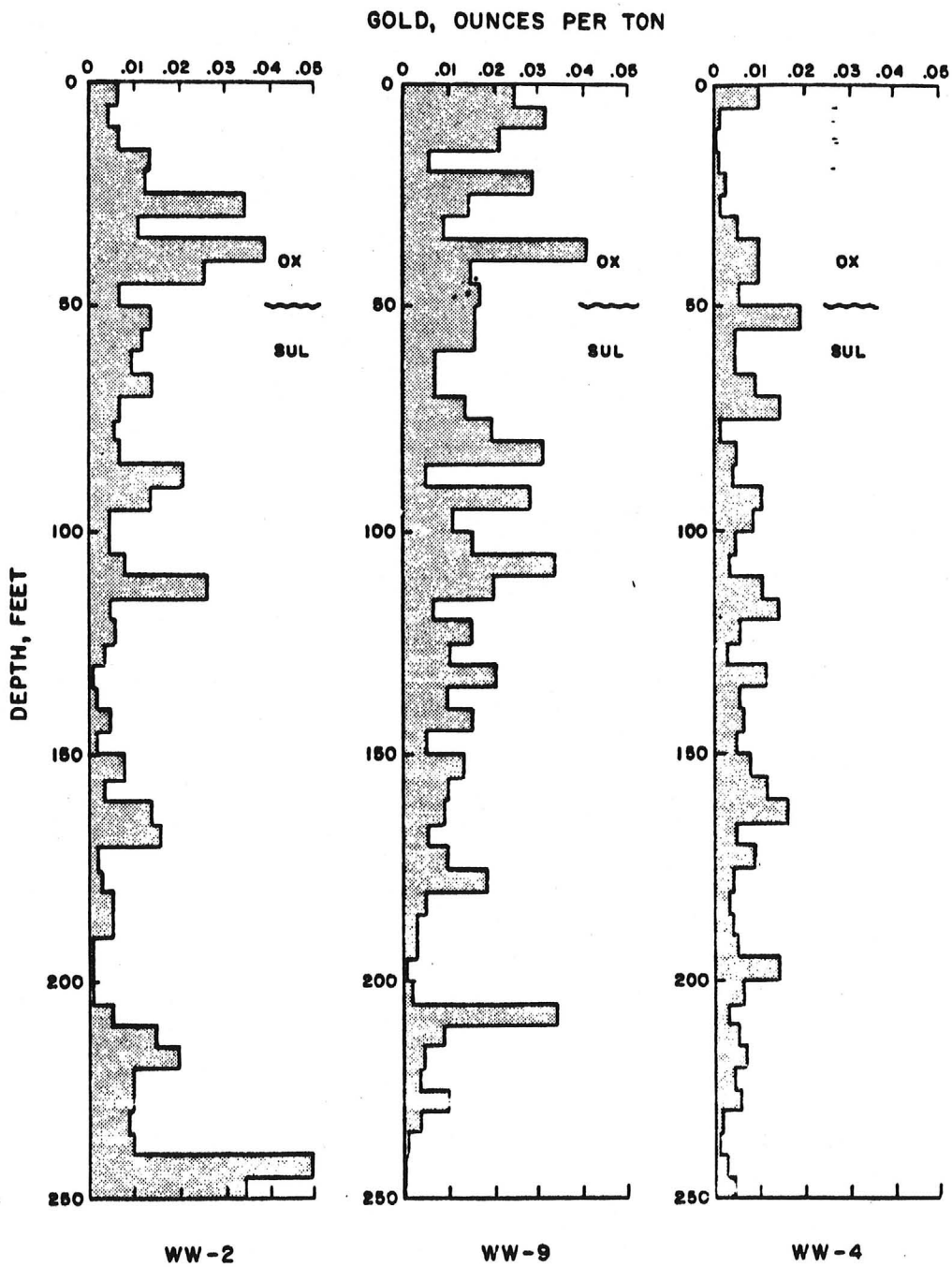

FIGURE 7. GRAPHIC GOLD ASSAY LOGS, HOLES WW-2, WW-9, AND WW-4

KERR-McGEE CORPORATION

Assay Log

strict Quartzite-Sugarloaf
ole Number DDH S-3
Spudded
mpleted Prior to July, 1965
tal Depth Approx. 2000'
Driller Congdon & Carey
gged By R. Ahern

County Yuma State Arizona
Claim Sec 3 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
50			NO SAMPLE						
50-100	50	127	260	70	41				B18901
100-150	50	104	260	45	220				B18902
150-200	50	145	970	115	30				B18903
200-250	50	132	700	185	61				B18904
250-300	50	170	1000	170	90				B18905
300-400	100	145	640	205	108				B18906
400-450	50	290	320	120	95				B18908
450-500			NO SAMPLE						
500-550	50	116	350	115	60				B18907
550-650			NO SAMPLE						
650-700	50	100	272	200	70				14714
700-750	50	118	180	72	48				B18909
750-800	50	83	70	80	95				B18910
800-850	50	100	420	130	43				B18916
850-900	50	178	190	170	90				B18911
900-950	50	180	150	150	95				B18912
950-1000	50	170	260	115	64				B18913
1000-1050	50		NO SAMPLE						

* Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum $ per pound; silver $ per ounce; and gold $35.00 per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH S-3

Hole Depth	Inter. Val.	Cu	Zn	Pb	Mo	Oz.Ag	Oz.Au	SAMPLE NUMBER
1050-1100	50	112	260	275	70			B18912
1100-1150	50	199	340	190	120			B18914
1150-1200	50	82	124	84	35			B18915, 23, 24
1200-1250	50	108	100	75	37			B18917
1250-1300	50	75	65	42	41			B18918
1300-1350	50	85	75	40	53			B18919
1350-1400			NO SAMPLE					
1400-1450	50	91	80	44	24			B18920, 21
1450-1500	50	95	65	30	33			B18920
1500-1550	50	80	80	50	27			B18925
1550-1600	50	166	73	40	66			B18926, 34
1600-1650	50	105	125	35	45			B18927
1650-1700	50	123	90	33	30			B18928
1700-1750	50	202	70	38	24			B18930
1750-1800	50	195	80	31	33			B18931
1800-1850	50	120	72	32	31			B18932 + 3
1850-1900	50	248	104	80	ND			14715

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH S-1 NEAR WW-1
Spudded
Completed Prior to July, 1965
Total Depth Approx. 2,000!
Driller Congdon & Garay
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 1N R. 20W
Elevation
Hole Size BX 0-1616'; BX 1616-2000'.
Core Size BX 0-550'; 700-1616'; BX 550-700'; 1616-200
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0								Schist	White, fine-grained	Discernable superimposed	Pyrite, 10% in schistosity. No oxidation,
74									quartz-sericite, gently	alteration limited to	no chalcocite.
									dipping schistosity.	alunite-pyrite-calcite.	
100	26	100%	18984	90	51	210	+1000		Occasional calcite vein-	Local zones of silica	
									lets. No mafic minera	s.flooding.	
142	42	100%	18985	92	48	335	+1000				
161	19										
181	20	100%	18986	93	50	315	+1000		Gray, phyllic schist		Abundant disseminated pyrite with minor
210	29								cut by veinlets of		local molybdenite.
250	40	40%	18987	97	93	145	+1000		quartz,pyrite, and cal-	Quartz-pyrite veins more	
									cite. 2" quartz-calcite	abundant below 250'. Alunite	
300	50	60%	18988	116	41	135	+1000		vein at 317'.	veins persist, occasional	
										serpentine coating frac-	
350	50	60%	18989	69	70	265	+1000			tures.	
400	50	60%	18990	101	60	190	+1000		Light grey quartz schist,	Quartz flooding with	
									shattered and badly	rare secondary orthoclase.	
450	50	60%	18991	163	160	116	+1000		broken.		
456	4	0							Medium grey quartz feld-	Alunite replacing feld-	
500	44	80%	18992	165	190	135	+1000		spar schist, no mafics	spar, quartz veins and	
										silica flooding: alunite	
550	50	80%	18993	202	100	210	500			quartz-pyrite zone at 465'	
	---- BEGIN BX CORE ----										
620	10	100%	14716	112	30	120	264				
627		0									
637	10	100%	18994	120	67	83	340				

District Quartzite - Sugarloaf Hole Number DDH SL-1 Page Number 2 of 4

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
700		NX CORE						Argillic Schist	Grey, micaceous, fine-grained; locally brecciated.	Difficult to distinguish from metamorphism; chlorite and very rare calcite are possible alteration minerals.	Pyrite in veinlets and stringers along schistosity.
730								Fault Breccia	Rounded schist in clay matrix.		
750	50	100%	18995	96	66	545	600				
765								Schist	Medium greenish grey, fine-grained micaceous	Quartz-sericite chlorite; anhydrite(?) at 768'.	Prominent quartz veins cross-cutting schistosity.
793	43	100%	18996	120	52	55	210				
# 860	10	100%	14734	76	ND	90	216				
884		0						Schist	Quartz-sericite schist breccia.	Calcite veins with minor alunite, occasional quartz-pyrite veinlets.	Pyrite disseminated along schist planes and forming veins. Sulfides [illegible] 10%.
900	16	100%	18997	130	67	100	230				
914											3" quartz vein at 915'. Sharply reduced sulfide content, 3 to 5%.
920	20	100%	18998	143	54	100	230				
991								Phyllic Schist	Greenish grey, fine-grained.	Quartz-sericite-alunite; feldspar replaced by alunite.	Pyrite 5-10% in schist planes.
1000	9	100%	18999	171	57	115	220				
1050	50	90%	19000	137	47	100	330				
# 1060	10	100%	14736	80	20	110	236				
1070										Quartz-alunite-sericite with chlorite-pyrite and clay.	Pyrite 10% to 20%: larger quartz-pyrite veins, 1 or 2 per foot.
1100	30	100%	18951	146	55	100	170				
1117		0									Reduced sulfide content.
1150	33	100%	18952	100	59	65	165				
1200	50	100%	18953	225	36	155	320	Quartz Schist	Dark grey, dense, hard.	Clay, chlorite, gypsum.	Pyrite 5-10%.

District Quartzite - Sugarloaf Hole Number DDH SL-1

Depth	Int.	Core Recvy	Samp. No.	Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1250	50	40% B	18954	100	72	85	145	Schist	Quartz-chlorite metasediments.	Sericite-epidote.	Pyrite 3-5%.
1300	50	90% B	18955	100	110	170	325				Pyrite and quartz-pyrite veins more pronounced but total sulfides still less than 5%.
1350	50	90% B	18956	105	46	140	200				
1400	50	40 B	18957	90	53	90	195	Quartz Schist		Quartz, chlorite, pyrite.	
1419								Schist	Core is badly broken, maybe fault zone.	Introduced chlorite is abundant.	
1428	9	100% B	18960	120	70	105	175				
* 1440	10	100%	14735	60	ND	60	160				
1447								Porphyroblastic Schist	Dark grey flasile, schistosity is nearly horizontal. 2' quartz vein.	Abundant epidote after former feldspar, also veinlets	Quartz-pyrite-sphalerite-calcite veins, intense chalcopyrite tarnish in veins, 10%.
1454											
1466								Quartz Schist	Medium grey, dense, massive.	Epidote replacing feldspar, chlorite along fractures, increases with depth.	Pyrite disseminated along planes of schist, 30-50%. Pyrite content increases to 10% below 1476'.
1490								2' Fault Breccia			
1500	53	100% B	18961	103	65	95	175	Chlorite Schist	Porphyroblastic texture locally discernable.		Pyrite 5%.
1523	23	100% B	18962	70	105	45	115				
1606								Quartz-Chlorite Schist	Medium-greenish grey; locally well healed breccia texture.		Low sulfide content, 2-5%.
1616			BEGIN BX CORE								
1627								Breccia			
1650	23	100% B	18963	65	37	55	75				
1658								Quartz Schist Breccia	Dense, massive, dark grey schistosity not apparent; breccia texture persists.	Quartz, secondary orthoclase; 2" quartz vein at 1664'.	5% pyrite in quartz-pyrite veins and disseminated.

District Quartzite-Sugarloaf Hole Number DDH SL-1 Page Number 4 of 4

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1700	50	100%	18964	55	41	100	85	Schist Breccia	Dense, massive, medium to dark grey.	Quartz-secondary orthoclase, with minor epidote and chlorite in fractures. Occasional calcite veinlets.	3% pyrite disseminated along schist planes, increased to 5-8% below 1740'.
1750	50	100%	18965	80	25	80	105				
1770									Rock is badly broken up.		
1800	50	100%	18966	100	52	50	110				
1835								Hornfels	Dense, massive, dark grey; no schistosity visible.		
1850	50	80%	18967	80	31	45	100	Quartz Schist	Somewhat porphyroblastic, massive with moderate brecciation.	Quartz-chlorite-pyrite.	
1900	50	100%	18968	80	44	60	110	*Breccia	Alternating zones of greenish grey schist and massive dark grey, siliceous rock; possibly intrusive monzonite.	Schist-chlorite-clay-monzonite-quartz flooding with biotite and quartz-calcite pyrite stringers.	Pyrite 10-15% with minor chalcopyrite tarnish. Molybdenite in quartz vein at 1666'.
1920-1925	5	100%	14713	68	5	80	144				
1950	50	100%	18969	80	58	50	80				

* Samples taken and described by R. M. Corn.

KERR-McGEE CORPORATION

Assay Log

strict Quartzite-Sugarloaf
ole Number DDH S-2
pudded
pleted Prior to July, 1965
tal Depth Approx. 900'
riller Condon & Carey
gged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

ole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
-100	100	130	1400	70	51		.73		B18971
100-150	50	125	1800	95	55		.88		B18972
150-200	50	220	2700	95	112		[illegible]		B18973
00-250	50	135	1200	55	100		1.7		B18974
250-300	50	90	185	100	165		[illegible]		B18975
0-350	50	125	120	70	93		[illegible]		B18976
350-400	50	190	165	55	100		1.8		B18977
400-450	50	105	160	95	100		1.0		B18978
50-500	50	110	185	130	100		.77		B18979
500-550	50	175	140	85	260		3.1		B18980
50-600	50	185	110	50	85		1.7		B18981
00-650	50	90	145	70	115		1.6		B18982
650-700	50	85	165	100	80		.80		B18983
00-750	50	100	335	110	52		.77		B18984
750-800	50	120	260	115	68		.57		B18985
00-850	50	72	136	40	30		.75		14743
50-900	50	95	155	95	53		.56		B18986

* Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum $ per pound; silver $ per ounce; and gold $35.00 per ounce.

KERR-McGEE CORPORATION

Assay Log

istrict Quartzite-Sugarloaf
Hole Number DDH SL-15
Spudded
ompleted
otal Depth > 3650'
Driller Congdon & Carey
ogged By R. Ahern

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size Rotary 0-533'
Core Size NX 533-2000'; BX 2000-3650'
Hole Angle
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
-50'	50'	530	680	255	20	[illegible]			18921
50-100'	50'	66	810	135	22	[illegible]			18922
100-150'	50'	122	910	125	24	[illegible]			18923
150-200'	50'	82	620	175	19	[illegible]			18924
200-250'	50'		NO SAMPLE						
250-300'	50'	85	580	145	22	[illegible]			18925
300-350'	50'	73	300	90	24	[illegible]			18926
350-400'	50'	72	250	80	30	[illegible]			18927
400-450'	50'	73	260	95	32	[illegible]			18928
450-500'	50'	66	260	95	33	[illegible]			18929
500-550'	50'	95	104	30	33	[illegible]			18930 & B18988
550-600'	50'	250	185	100	45	[illegible]			B18989
600-650'	50'	80	155	85	41	[illegible]			B18990
650-700'	50'	40	300	50	31	[illegible]			B18991
700-750'	50'	145	170	62	87	[illegible]			B18992
750-800'	50'	65	135	45	50	[illegible]			B18993
800-850'	50'	110	740	80	55	[illegible]			B18994
850-900'	50'	70	225	75	52	[illegible]			B18995
900-950'	50'	100	130	50	75	[illegible]			B18996

* Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum $ per pound; silver $ per ounce; and gold $35.00 per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SI-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
950-1000'	50'	70	85	35	45	[illegible]		B18997
1000-1050'	50'	90	205	130	155	[illegible]		B18998
1050-1100'	50'	70	140	155	155	[illegible]		B18999
1100-1150'	50'	100	115	40	44	[illegible]		B19000
1150-1200'	50'	160	125	65	75	[illegible]		C18901
1200-1250'	50'	110	95	35	40	[illegible]		C18902
1250-1300'	50'	75	60	35	53	[illegible]		C18903
1300-1350'	50'	115	85	55	87	[illegible]		C18904
1350-1400'	50'		NO SAMPLE					
1400-1450'	50'	145	115	60	46	[illegible]		C18905
1450-1500'	50'	650	90	55	67	[illegible]		C18906
1500-1550'	50'	620	95	155	56	[illegible]		C18907
1550-1600'	50'		NO SAMPLE					
1600-1650'	50'	165	70	35	96	[illegible]		C18908
1650-1700'	50'		NO SAMPLE					
1700-1750'	50'	215	55	40	55	[illegible]		C18909
1750-1800'	50'	250	90	40	150	[illegible]		C18910
1800-1850'	50'		NO SAMPLE					
1850-1900'	50'	205	60	35	155	[illegible]		C18911
1900-1950'	50'	250	80	45	120	[illegible]		C18912
1950-2000'	50'	175	65	40	68	[illegible]		C18913
2000-2050'	50'	285	70	50	125	[illegible]		C18914
2050-2100'	50'	320	50	50	117	[illegible]		C18915
2100-2150'	50'	110	70	25	34	[illegible]		C18916

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
2150-2200'	50'	155	240	350	29	[illegible]		C18917
2200-2250'	50'	205	75	40	45	[illegible]		C18918
2250-2300'	50'	185	175	45	330	[illegible]		C18919
2300-2350'	50'	185	85	15	57	[illegible]		C18920
2350-2400'	50'	200	100	35	31	[illegible]		C18921
2400-2450'	50'	110	165	20	58	[illegible]		C18922
2450-2500'	50'	130	95	10	35	[illegible]		C18923
2500-2550'	50'	115	100	10	66	[illegible]		C18924
2550-2600'	50'	95	80	10	26	[illegible]		C18925
2600-2650'	50'	50	140	10	28	[illegible]		C18926
2650-2700'	50'		NO SAMPLE					
2700-2750'	50'	105	55	35	45	[illegible]		C18927
2750-2800'	50'	105	55	25	27	[illegible]		C18928
2800-2850'	50'	65	55	5	40	[illegible]		C18929
2850-2900'	50'	100	60	15	26	[illegible]		C18930
2900-2950'	50'	110	50	7	49	[illegible]		C18931
2950-3000'	50'	75	50	10	29	[illegible]		C18932
3000-3050'	50'	60	55	15	34	[illegible]		C18933
3050-3100'	50'	175	75	45	35	[illegible]		C18934
3100-3150'	50'	550	90	45	50	[illegible]		C18935
3150-3200'	50'	80	65	5	28	[illegible]		C18936
3200-3250'	50'	80	55	5	27	[illegible]		C18937
3250-3300'	50'	95	70	10	37	[illegible]		C18938
3300-3350'	50'	215	65	15	43	[illegible]		C18939

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf

Hole Number DDH SL-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz. Ag	Oz. Au	SAMPLE NUMBER
3350-3400'	50'	190	80	20	33	[illegible]		C18940
3400-3450'	50'	115	75	15	35	[illegible]		C18941
3450-3500'	50'	110	110	20	36	[illegible]		C18942
3500-3550'	50'	160	70	30	64	[illegible]		C18943
3550-3600'	50'	320	70	20	39	[illegible]		C18944
3600-3650	50'	190	95	20	43	[illegible]		C18945

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-15
Spudded
Completed
Total Depth 3650'
Driller ~~McIntire - Porcupine~~
Logged By R. Ahern

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size ~~5 7/8"~~ Rotary to 533'
Core Size NX 533-2000'; BX 2000-3650'
Hole Angle
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
0											
		ROTARY CUTTINGS									
50	50		18921	530	20	255	680				
		NX CORE						Quartz Sericite Schist	Medium-grey, medium-grained metasediments cut by quartz-pyrite and gypsum veinlets with minor chlorite along fractures.	Quartz-sericite-pyrite-gypsum veinlets parallel to schistosity while quartz-pyrite veinlets cross-cut it.	Pyrite disseminated and in veinlets; partial oxidation.
62	12		18987	95	290	210	+1000				
100	38		18922	66	22	135	810				
150	50	NO SAMPLE									
200	50		18923	122	24	125	910				
250	50	NO SAMPLE									
300	50		18924	82	19	175	620				
350	50		18925	85	22	145	580				
400	50		18926	73	24	90	300				
450	50		18927	72	30	80	250				
500	50		18928	73	32	95	260				
533	33		18929	66	34	95	260				
		NX CORE									
550	17	100%	18988	90	50	60	200	Porphyroblastic Schist	Dark grey, subhedral feldspar, chlorite and clay along schist planes. 1" quartz vein at 556'	Pyrite, very minor epidote and quartz, possible clay. 2" epidote-quartz-pyrite vein at 560'.	Unoxidized, 5-7% pyrite, mostly in veinlets parallel to schistosity; minor chalcopyrite-bornite tarnish; numerous epidote-quartz-pyrite veinlets cross-cut schistosity.

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	% Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
550											
600	50	80%	318998	250	45	100	185	Porphyro-blastic Schist		Most former feldspar replaced by epidote.	
634									Minor brecciation		
650	50	100%	318999	80	41	85	155				
663	13		318999	40	31	50	300				
		NOT SALVAGED									
709								Quartz Sericite Schist	Medium to fine-grained metasediments, cut by calcite veins.		
729								Porphyro-blastic Schist	Dark grey, fine-grained groundmass of quartz and chlorite with sub- to euhedral feldspar.	Quartz-epidote-pyrite veinlets and epidote replacing former feldspar.	Prominent vein at 738'.
750	50	40%	318992	145	87	62	170				
800	50	60%	318993	65	50	45	135				
850	50	60%	318994	110	55	80	740			Massive chlorite associated with pyrite veinlets.	10-20% pyrite disseminated and in veinlets.
									Core is badly shattered below 785'.		

District Quartzite-Sugarloaf Hole Number DDH SL-15 Page Number 3 of 6

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
900	50	60%	B18995	10	52	75	225	Porphyblastic Schist	Medium-grey.	Chlorite-quartz-epidote-chlorite is in 1/8 to 1/2" borders along pyrite and quartz-pyrite veins, epidote with quartz-pyrite veins and replacing feldspar, occasional calcite veinlets.	5-10% pyrite, occasional 1-2" pyrite-quartz-epidote veins.
950	50	80%	B18996	100	75	50	130				
1000	50	20%	B18997	70	45	35	85				
1050	50	30%	B18998	90	155	130	205				
* 1050			14749	60	5	110	216				
1065	15	100%	B18999	70	155	155	140				
	-----	NOT SALVAGED	-----								
1116								Quartz-Sericite Schist with Local Brecciation	Thin-bedded, obscurring original texture. Core is dense and massive. Sericite-clay along fractures.	Epidote replacing feldspar quartz flooding.	Pyrite veinlets in schist planes.
1150	34	90%	B19000	100	44	40	115				
1200	50	20%	C18901	160	75	65	125				
1250	50	40%	C18902	110	40	35	95				
1300	50	40%	C18903	75	53	35	60	Schist Breccia	Fragments of up to several inches in quartz-sericite-chlorite matrix.	Quartz-epidote-gypsum.	Pyrite filling fracture plane bounding and cutting through breccia fragments.
1350	15	100%	C18904	115	87	55	85				
1407											
1450	43	80%	C18905	145	46	60	115			Quartz-chlorite-calcite veins.	Prominent quartz-pyrite veins exhibit good chalcopyrite tarnish.
1500	50	40%	C18906	650	67	55	90				
1550	50		C18907	620	56	155	95				
	-----	NOT SALVAGED	-----								
1600								Quartz Sericite Schist Breccia	Medium to dark grey, mottled looking with veinlets and fractures abundant.	Quartz-chlorite-pyrite.	5-10% pyrite with occasional 1-2" quartz-pyrite veins.
1650			C18908	165	96	35	70				
	-----	NOT SALVAGED	-----								

District Quartzite-Sugarloaf Hole Number DDH SL-5 Page Number 4 of 6

Depth	Int.	% Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1737								Quartz Sericite Schist	Dark grey fine-grained chlorite and calcite lining fractures; mottled breccia appearing on outside surface.	Quartz-epidote-chlorite; quartz-pyrite veinlets.	Pyrite and quartz-pyrite veinlets cross-cutting schist.
1747	10	100%	C18909	215	55	40	55				
1764											
1784	20	90%	C18910	250	150	40	90				
	-----	NOT SALVAGED	-----								
1867										Occasional calcite veins, chlorite lined fractures abundant.	Low sulfide content, 3-5%
1900	33	80%	C18911	205	155	35	60				
1950	50	30%	C18912	250	120	45	80				
2000	50	30%	C18913	175	68	40	65		3' quartz vein at 1990' bounded by zones of abundant chlorite.		
	-----	DX CORE	-----							Local zones of intense silication and pyritization.	
2050	50	60%	C18914	285	125	50	70				
2100	50	60%	C18915	320	117	50	50				
2125								Schist Breccia	Scattered zones of porphyroblasts.	Quartz-epidote-chlorite.	
2150	50	80%	C18916	110	34	25	70				
2200	50	10%	C18917	155	29	350	240				
2250	50	80%	C18918	205	45	40	75			More numerous quartz-epidote pyrite vein zones and sinuous fractured filled veins with fine-grained quartz and pyrite.	Quartz-pyrite veins exhibit minor occurrences of molybdenum.
2300	50	100%	C18919	185	330	45	175				
2350	50	70%	C18920	185	57	15	85	Massive Quartz Sericite Schist	No visible brecciation. Porphyroblasts not altered.		Very low sulfide content.
2400	50	80%	C18921	200	31	35	100				
2450	50	80%	C18922	110	58	20	165				
2500	50	80%	C18923	130	35	10	95				
2550	50	20%	C18924	115	66	10	100				

District Quartzite-Sugarloaf Hole Number DDH SL-15 Page Number 5 of 6

Depth	Int.	% Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
2559								Quartz Schist	Dense, massive; few fractures coated with chlorite.	Quartz-pyrite-epidote veins numerous.	Pyrite disseminated weakly; and in quartz pyrite-epidote veinlets.
2600	50	80%	C18925	95	26	10	80				
2650	50	10%	C18926	50	28	10	140				
2700											
2750	50	30%	C18927	105	45	35	55			Quartz-epidote vein 6" at 2756'.	Pyrite 10-20%.
2800	50	80%	C18928	105	27	25	55				
2850	50	60%	C18929	65	40	5	55				
2900	50	20%	C18930	100	26	15	60			Extreme silica flooding; numerous quartz-chlorite-pyrite veinlets; occasional epidote veins.	Minor sphalerite in a few of the pyrite veinlets.
2950	50	100%	C18931	110	44	7	50				
3000	50	40%	C18932	75	29	10	50				
3050	50	60%	C18933	60	34	15	55		Dark grey, dense quartz-chlorite schist.	Numerous quartz and epidote stringers filling fractures.	
3100	50	60%	C18934	175	35	45	75				
* 3110			14750	44	<5	60	104				
3150	50	80%	C18935	550	50	45	90	Schist * Breccia ●	Somewhat shattered; numerous chlorite lined fractures.	Quartz-epidote-pyrite-epidote-quartz matrix and occasional epidote fragments.	
3200	50	80%	C18936	80	28	5	65				
3250	50	100%	C18937	80	27	5	55			Extreme silica flooding at 3260-3280'.	
3280								Chlorite Schist	Horizontal fractures, 5±10 per inch coated with chlorite.		
3300	50	100%	C18938	95	37	10	70				
3319								Porphyroblastic Schist	Dark grey, dense, massive. Former feldspar replaced by epidote, quartz-pyrite and quartz-epidote fracture fillings.		Occasional 1" quartz-epidote-pyrite veinlets contain sphalerite and rare molybdenite.
3350	50	100%	C18939	215	43	15	65				

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
3377								Quartz Schist	Dark grey, dense, massive, very siliceous.	Quartz-epidote-pyrite.	Very low sulfide content.
3400	50	80%	C18940	190	33	20	80				
* 3425			14751	280	5	30	152				
3430								Quartz Sericite Schist	Dark grey, minor fracturing; breccia texture on outer surface.		
3440	10	100%	C18941	115	35	15	75				
3455											
3500	45	25%	C18942	110	36	20	110		Local highly fractured zones exhibit abundant chlorite.		Occasional quartz-pyrite veins.
3550	50	30%	C18943	160	64	30	70				
3600	50	20%	C18944	320	39	20	70				
3650	50	15%	C18945	190	43	20	95				

KERR-McGEE CORPORATION

District Quartzite - Sugarloaf
Hole Number DDH S-2
Spudded
Completed Prior to July, 1965
Total Depth Approx. 200'
Driller Gondon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 13 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0		PLUGGED (NO CORE)									
25		NX CORE						Schist	Tan to light grey, vuggy; quartz and biotite quartz; feldspar porphyroblasts weathered to clay.	Calcite-chlorite-pyrite. gypsum noted in fractures.	Completely oxidized iron flooding and black hematite filling fractures and schist planes indicating 15% pyrite.
43											Only slight oxidation along fractures. Near vertical quartz-pyrite veinlet crosscuts horizontal veinlets following schistosity at 50'.
52									Fine-grained, no visible texture.		Very minor disseminated pyrite.
73								Schist	Gently dipping, mottled looking.		Pyrite stringers following schistosity predominate with quartz-pyrite veinlets crosscutting 10% pyrite. No chalcocite or chalcopyrite noted.
77									Shattered zone.		Partially oxidized.
100	75	65%	18971	130	51	70	+1000				
120									Light to medium grey; platey to massive.	Intense quartz-pyrite with minor chlorite and epidote; no calcite.	Only minor oxidation, sulfides equal 15-20%.
137									Massive, fine-grained.		10% pyrite in stringers along schistosity.
150	50	100%	18972	125	55	95	+1000				
* 170	10	100%	14741	192	30	35	440				
183										Numerous gypsum veinlets accompany quartz-pyrite alteration.	10-15% pyrite, no chalcocite or chalcopyrite: local massive pyrite-gypsum veinlets.
200	17	100%	18973	220	112	95	+1000		Light to medium grey; fine-grained.		

District Quartzite-Sugarloaf Hole Number DDH S-2

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
204								Schist	Porphyroblasts of orthoclase.	Abundant quartz-pyrite-quartz veinlets; porphyroblasts by epidote.	Pyrite 10%.
230									Core is badly broken.		Partial oxidation.
250	50	80%	18974	185	100	55	+1000				
269								Schist	Fine-grained, medium grey.	Pyrite-chlorite-epidote.	5-10% disseminated pyrite; 15-20% below 296'.
296											
300	50	60%	18975	90	165	100	185	Porphyroblastic Schist.	Feldspar replaced by epidote in quartz matrix.	Quartz-epidote-pyrite with minor epidote.	15% pyrite disseminated and in veinlets.
315-325	10	100%	14717	180	10	90	184				
348									Massive quartz-pyrite-epidote zone.		
350	50	100%B	18976	125	93	70	120	Schist	Fissil, dark-grey, only rare porphyroblasts.	Quartz-pyrite-epidote.	5-10% pyrite in veinlets and finely disseminated with occasional ½" quartz-pyrite veins.
370								Porphyroblastic Schist		Epidote replacing former feldspar; quartz flooding and veins.	
400	50	80%D	18977	190	100	55	165				
450	50	60%B	18978	105	100	95	160				
488								Quartz Schist	Dark grey, dense, massive, fine-grained.	Quartz flooding and in veinlets; epidote lining veinlets with locally massive epidote.	Massive pyrite in quartz veins.
500	50	80%	18979	110	100	130	185				
532									Micaceous schist, thin laminations, greenish-grey.		Sparsely disseminated pyrite and quartz-pyrite veinlets.
550	50	100%	18980	175	260	85	140				
564								Porphyroblastic Schist	Dark grey and green.	Epidote replacing former feldspar, locally massive epidote associated with quartz-pyrite zones.	
600	50	80%	18981	185	85	50	110				

District Quartzite-Sugarloaf Hole Number DDH S-2

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
600								Quartz Schist	Massive, medium-grey.	Quartz-epidote; no calcite	Prominent white quartz vein at 604 contains abundant pyrite and minor molybdenite.
612								Phyllic Schist	Fine-grained, thinly laminated.	Quartz-epidote-pyrite.	
650	50	80%	18982	90	115	70	145				
700	50	100%	18983	85	80	100	165	Porphyroblastic Schist	Dark grey, fine-grained chlorite-quartz groundmass.	Quartz-epidote-chlorite alteration; epidote in quartz-pyrite veins and replacing former feldspar; minor chlorite along fractures; quartz flooding and occasional white quartz vein.	10% pyrite disseminated and in veins; pyrite content increases with depth.
750*	50	100%	18984	100	52	110	335				
800	50	40%	18985	120	68	115	260				
830	10	100%	14743	72	30	40	136				
848											
850	42	70%	18986	95	53	95	155				
					-LAST	BOX-					

* Samples taken and described by R. H. Corn.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH S-3
Spudded [illegible]
Completed Prior to July 1965
Total Depth Approx. 2000'
Driller Congdon & Carey
Logged By A. Grant

County Yuma State Arizona
Claim Sec 3 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0											
83	NX	CORE						Schist	Very porous		
104	21	65%	118901	127	41	70	260		Schistosity at 90° to core.	Intense quartz-sericite; oxidized iron on fractures.	Abundant cubic pyrite.
119										Abundant talc.	
131	12	20%	118902	104	220	45	260	Schist	No iron stain, abundant pyrite; abundant talc.		1/16" molybdenite veinlet at 35° to schistosity.
187											
196	9	70%	118903	145	30	115	970	Schist	Argillic schist.	Weak sericite; minor quartz.	Pyrite cubes; fine pyrite veinlets at 35° to schistosity; minor chalcopyrite.
* 225	10	100%	147[illegible]	128	-5	130	404				
233											
251	18	70%	118904	132	61	185	700	Schist	Argillic schist.	Chlorite-biotite micas; minor quartz-sericite.	Steep pyrite veinlets which cross at 90° and 45° to schistosity; minor chalcopyrite tarnish.
279											
303	9	70%	118905	170	90	170	4000		Argillic schist; numerous unorientiated porphyroblasts.	Quartz-sericite; abundant pyrite.	Near vertical 1½" bull quartz vein; steep pyrite veinlets with sphalerite. Some pyrite veinlets appear lenseidal.
337										338 - Slightly increased chlorite.	Abundant pyrite mostly in schist planes. Minor chalcopyrite tarnish; small graphite veinlet.
364	27	60%	118906	145	108	205	640			340-350 Intense silicification with occasional bull quartz vein.	
412								415-419		More chlorite than above-quartz-sericite.	More abundant pyrite.
421	9	100%	118907	290	95	120	320	Fault Zone			
* 435	10	100%	147[illegible]	104	ND	100	244				
492-									Argillic Schist.	Intense quartz-sericite.	Small specs of dark mineral, likely tourmaline; some minor chalcopyrite tarnish.
535	36	80%	118907	116	60	115	350		Schistosity at 90° to core.	Abundant pyrite steep chlorite veinlet; tourmaline. Strong local silification.	

District Quartzite - Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
655	10	100%	14714	100	70	200	272				
709									Dark grey argillic schist to 727'. Light grey argillic schist to 764'. Dark schist may be result of biotite(?).	Strong silicification, few quartz veinlets. Quartz vein 1/3" at 30° to schistosity. Possibly contains pale yellow-green epidote.	Abundant pyrite; minor chalcopyrite tarnish on pyrite.
764	55	65%	118909	118	48	72	180				
770	10	100%	14744	48	-5	30	176				
793											
802	9	60%	118910	83	95	80	70		Light grey.	Anhydrite and massive chlorite veinlets; anhydrite also noted in groundmass.	- Minor chalcopyrite stain, however it is more than above.
849											
859	10	40(?)	118916	100	43	130	420				858 - Calcite cuts across bull quartz which also contains large crystals of red sphalerite.
887								Medium to light grey Quartz Schist.	Medium to grey quartz schist; porphyroblastic texture. Below 907' color is light grey.	Quartz alteration groundmass seems to be mixture of quartz and biotite. Contains numerous grains of yellow-green epidote; inclusion of anhydrite with faint ring of chlorite.	Abundant disorientiated pyrite veinlets. Occasional quartz-pyrite almost parallel to schistosity.
916	29	100%	118911	178	90	170	190		Medium grey to greenish grey schist.	Open quartz veinlets; abundant small anhydrite veinlets which cross schistosity. Minor sericite, possibly secondary biotite. Minor chlorite-quartz-sericite.	915 Quartz-pyrite 1/4" veinlet at 30° from vertical. Abundant disseminated and veinlet pyrite. - Occasional bull quartz veins. Small grains of molybdenite in pyrite veinlet within bull quartz at 933.5'. At 950' note massive fine-grained chlorite veinlet with large grain of chalcopyrite.
955	39	100%	118912	180	95	150	150	Medium to dark grey schist.	Mildly porphyroblastic texture.	Several vertical vuggy quartz and calcite veinlets. Pale yellow-green epidote throughout groundmass. Fine-grained blebs of chlorite and/or biotite in groundmass. Open veinlets show very minor oxidation.	Quartz-pyrite veinlets with very minor chalcopyrite. Pyrite veinlets seem to be lined with chlorite. At 970' 3/4" quartz-pyrite veinlet in which the pyrite is well disseminated.
982	27	100%	118913	170	64	115	260				
1015	10	100%	14747	80	-5	115	188				

District Quartzite-Sugarloaf

Hole Number DDH 3-3

Depth	Int.	%Core Recv'y	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1082								Schist	Quartz schist	Quartz-sericite. Chlorite in groundmass along schist planes.	Quartz-pyrite veinlets.
1090	8	80%	018922	112	70	275	260				
1115								Dark grey Schist	Weak to moderate porphyroblastic texture; low sericite content.	Grains of calcite in groundmass; abundant grains of pale yellow-green epidote. Quartz-alunite. Abundant fine-grained chlorite throughout.	Disseminated and veinlet pyrite. Minor chalcopyrite in quartz-pyrite veinlets.
1140	25	90%	018910	199	120	190	340		Good porphyroblastic texture.	Phenocrysts are likely feldspars partially altered to alunite.	Pyrite-quartz veinlets; minor disseminated pyrite.
1160	20	80%	018923	70	33	140	200	Medium green grey schist	Good porphyroblastic texture.	Abundant greenish-yellow epidote in porphyroblastic texture. Quartz alteration. Calcite on veinlets.	Abundant pyrite. Quartz occasionally occur in large grains. A 1" quartz-pyrite veinlet is well surrounded by layer of epidote.
1180	20	40%	018915	70	40	80	120	Dark grey Schist	Below 1194 color is light grey with increased quartz.	Abundant biotite-quartz. Abundant feldspars.	Good fine pyrite and minor fine chalcopyrite.
1205	25	80%	018920	102	30	62	90	Quartz Schist	Quartz schist light-grey.	Occasional quartz-pyrite vein or veinlet. Several fine quartz veinlets; less epidote than above. Calcite on fractures. 1208 Bull quartz with secondary orthoclase.	Bull quartz with inclusions of epidote-feldspar mixture containing fair disseminated chalcopyrite.
1215											
1259	44	80%	018917	108	37	75	100				
1269											
1280	11	70%	018918	75	41	42	65		Argillic Schist	Quartz-sericite; calcite on fractures and in groundmass. Abundant calcite on veinlets. Minor epidote. Fair chlorite. Iron oxidation evident at 1353 and 1358'. Probable anhydrite.	Quartz-pyrite veinlet system is mostly parallel to schistosity. Possibly increased fine chalcopyrite associated with pyrite veinlets. Anhydrite and chlorite associated with possible epidote.
1304								Schist	Argillic schist which is well broken and fractured.		
1365	19	100%	14748	36	-5	60	109				
1367	63	75%	018919	85	53	40	75				
1412									Porphyroblastic texture of quartz-epidote with chlorite, pyrite and minor chalcopyrite.	Abundant quartz with biotite and/or chlorite; probable secondary orthoclase. Entire groundmass is recrystallized.	1412-1429 Fair chalcopyrite (?-C) with secondary biotite and epidote. Sample was all of the split core in the interval.
1429	17	95%	018920	71	23	50	80				

District Quartzite-Sugarloaf Hole Number DDH 3-3

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1431								Medium to Dark Grey Schist	Weak to medium porphyroblastic texture; altered groundmass seems to contain inclusions of original dark schist. Below 1458 rock is light grey quartz schist.	Quartz-sericite with biotite. Abundant epidote throughout groundmass. Occasional grain of anhydrite. Secondary orthoclase in small amounts.	Good disseminated pyrite with weak chalcopyrite. Occasional chlorite-pyrite veinlet.
1460	29	95%	318921	110	26	40	80				
1469								Medium to Light grey Schist	Quartz schist.	Intense silicification with minor epidote, calcite on fractures. Possible secondary K-feldspar.	Fair chalcopyrite along with fine-grained disseminated pyrite.
1480	11	75%	318929	92	33	30	65				
1495									Quartz schist.	Probable secondary feldspar. Epidote and chlorite in groundmass. Silicification is less intense below 1516'.	Fine disseminated pyrite with fair chalcopyrite. Below 1516' sulfide content drops.
1515	10	100%	14712	48	ND	40	128				
1541	46	70%	318922	80	27	50	80	Medium to Dark Grey Schist.			
1563											
								Medium Grey Schist	Argillic Schist	Calcite in groundmass and on fractures; minor oxidation on a few fractures.	Low total sulfide.
1579	16	80%	318926	189	40	32	55		Quartz sericite.		
1587	8	80%	318934	120	120	58	110				
1606								Quartz Schist		Quartz-sericite; partially argillic.	Minor chalcopyrite. 1607 - 1" quartz-pyrite vein with good molybdenite stringers. Pyrite is in center of quartz vein.
1616	10	90%	318927	105	45	35	125				
1646								Quartz-Sericite Schist	1660-1672 - Fault zone	Phyllic to argillic	Low total sulfide.
1685	39	100%	318928	123	30	33	90				

District Quartzite-Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Recv	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
1685									Medium to dark grey schist.	Mostly quartz with abundant thin calcite on fractures. Abundant chlorite in schist planes.	1732 Quartz-chalcopyrite veinlet parallel to schistosity. Sulfide level slightly higher than above.
1734	49	50%	318930	202	24	38	70	Quartz Schist	As above	As above with less calcite. A few fractures are weakly oxidized.	Generally very low total sulfide. Occasional large quartz vein.
1788	54	60%	31893	195	33	31	80		Dark grey quartz schist.	Epidote in fair amount chlorite or possible biotite. Calcite on fractures. Calcite or anhydrite(?) with chlorite and pyrite in schist planes.	Increased sulfides with notable chalcopyrite. Quartz veinlets have pyrite at center with chlorite lining. Most of the pyrite is in schist planes. 1801.5 - Small specks of molybdenite in massive quartz vein.
1832	44	75%	31893	135	33	27	70		Quartz schist, medium to light grey. Below 1840' schist is light grey with quartz and low sulfide.	Strong silicification. Chlorite and/or secondary biotite found with quartz grains and quartz veinlets.	Increased total sulfide to 1840'. Below 1840' total sulfide is low. Rock material is well broken with occasional fault zone.
1855	23	60%	31893	96	30	42	75				
* 1860	5	100%	14715	248	ND	80	104				

DEEPEST CORE FOUND WAS 1857'.
TOTAL DEPTH IS UNKNOWN.
2000' PROBABLE TOTAL DEPTH.

* Samples taken and described by C. N. Corn.

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-5
Spudded
Completed Prior to July, 1965
Total Depth 651.3'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX 0-500 BX 500 to 651
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	68	33	115	15				18964
50-100'	50'	60	250	70	14				18965
100-200'	100'		NO SAMPLE						
200-250'	50'	1380	360	35	200				18966
250-300'	50'	137	900	70	180				18967
300-350'	50'	163	250	65	55				18968
350-400'	50'	164	270	60	150				18969
400-450'	50'	170	250	100	82				18970
450-500'	50'	112	95	60	120				18971

* Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum $ per pound; silver $ per ounce; and gold $35.00 per ounce.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-5
Spudded
Completed Prior to July, 1965
Total Depth 651.3'
Driller Condon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX(0-500) BX 500-651.3
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0											
20	20	--Not	Cored	----				Schist	Chloritic schist with	Chlorite, clay, weak.	Oxidized; disseminated; pyrite less than 3%.
									blebs of feldspar and		
50	30	100%	18964	68	15	115	33		quartz: occasional zones		
100	50	100%	18965	60	14	70	250		of quartzite, dark		
	----	Not	Cored	----					greenish-grey.		
229	129								Light grey: original	Alunite-sericite-quartz.	20% oxidized, pyrite stringers coated
									mineralogy destroyed		with minor chalcocite; quartz-pyrite
									by alteration.		vein at 240': pyrite in veinlets not
											disseminated.
245								Arkosic	Grey to greenish grey.		Pyrite veins and stringers in planes
								Schist			of schistosity.
250	31	100%	18966	1380	200	35	360				
282	32		18967	137	180	70	+1000				
	----	Not	Calvaned	----							
342	60							Argillic	Light to medium grey:	quartz-alunite-gypsum	Pyrite in veinlets and in schist planes:
								Schist	greenish grey.		no chalcocite tarnish noted.
350	8	46%	18968	163	55	65	250				
365											
387	----	Not	Galvaned	----							
400	50	56%	18969	164	150	60	270				Occasional chalcopyrite tarnish noted
											on non-crystalline pyrite.
420									Porphyroblastic texture.		
450	50	70%	18970	170	82	100	250				
474										More quartz veins with	
493	43	100%	18971	112	120	60	95			chlorite along fractures.	
	----	Not	Galvaned	----							
651'	----	----	----	----	----	----	TOTAL DEPTH	----	----		

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-6
Spudded
Completed Prior to July, 1965
Total Depth 697'
Driller Gondon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 34 T. 4N R. 20W
Elevation
Hole Size ~~NX 0-466'; BX 466-696'~~
Core Size NX 0-466'; BX 466-697'
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	44	70	90	23				18971
50-100'	50'	144	1400	250	16				18972
100-150'	50'	123	3000	265	28				18973
150-200'	50'	80	1700	650	34				18974
200-250'	50'	125	1500	255	54				18975
250-300'	50'	60	800	240	40				18976
300-350'	50'	71	800	485	80				18977
350-400'	50'		NO SAMPLE						
400-450'	50'	101	700	220	60				18978
450-500'	50'	118	1000	140	57				18979
500-550'	50'	110	1000	270	48				18980
550-600'	50'	84	2300	465	59				18981
600-650'	50'	92	1600	335	90				18982
650-~~700'~~ 697	50'	91	1800	375	35				18983

* Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum $ per pound; silver $ per ounce; and gold $35.00 per ounce.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-6
Spudded
Completed Prior to July, 1965
Total Depth 696'
Driller Condon and Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 34 T. 4N R. 20W
Elevation
Hole Size HX 0-466'; BX 466-696'
Core Size HX 0-466'; BX 466-696'
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0	----NO CORE----										
25								Schist	White, chalky brecciated with numerous quartz-pyrite veinlets.	Quartz-clay.	Limonite after pyrite in fractures only; completely oxidized.
45	20	100%	18971	44	23	90	70				
	----NOT SALVAGED----										
75									Light grey, brecciated below 86'.	Quartz-clay-pyrite-sericite.	Pyrite disseminated and in veinlets; very minor chalcocite coating pyrite; partially oxidized. 2" quartz-pyrite vein at 186' shows abundant pyrite with chalcocite tarnish.
100	25	100%	18972	144	16	250	+1000				
150	50	100%	18973	123	28	265	+1000				
167								Quartz Sericite Schist	Tan to grey: minor oxidation: numerous breccia zones: schistosity nearly horizontal.	Quartz-sericite-pyrite; quartz-gypsum veinlets with pyrite. Intense quartz-alunite-pyrite 198-202'.	Abundant pyrite stringers in schist planes with chalcopyrite tarnish: pyrite 5%.
198											
200	10	100%	14737	80	50	200	2400				
200	50	65%	18974	80	34	650	+1000				
225	25	100%	18975	125	54	255	+1000				
	----NOT SALVAGED-----										
253	28							Phyllic Schist	Light grey, speckled with pyrite: open zones of fault breccia.	Sericite-quartz-pyrite with occasional gypsum veinlets.	Pyrite is 10-20%, disseminated uniformly throughout.
278	25	100%	18976	60	40	240	+1000				
303	25	NOT SALVAGED-----						Schist	Light grey; no mafic minerals.	Quartz-sericite-pyrite with numerous gypsum veinlets.	Pyrite veinlets exhibit chalcopyrite tarnish; some disseminated pyrite locally.
350	47	100%	18977	71	80	485	+1000				
355	10	100%	14738	28	100	190	224				

District Quartzite-Sugarloaf Hole Number DDH SL-6

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
415								Phyllic Schist	Light grey, schistosity generally horizontal. Prominent massive quartz vein 434-478'.	Quartz-sericite-pyrite-alunite with occasional veinlets of gypsum after anhydrite.	Pyrite stringers along schist planes equal 10%.
450	35	100%	18978	101	60	220	+1000	Fault Breccia 447-451'.			
466		REDUCE TO BX CORE									
474								Quartz Vein			Pyrite 10% to 20% disseminated and along schistosity: some sulfide grains exhibit chalcopyrite tarnish; pyrite more abundant at 470': quartz-pyrite-sphalerite-galena vein at 480'.
481											
495			14739	48	48	400	4720	Quartz Schist	Rock is mostly quartz with occasional porphyroblasts of chloritic material.	Quartz-pyrite with minor clay.	Pyrite is 10-20% occurring as stringers in gently dipping planes of schistosity.
500	50	90%	18979	118	57	140	+1000				
550	50	90%	18980	110	48	270	+1000				
553								Phyllic Schist	Light grey, pearly sheen on all surfaces. No veinlets; minor stringers of chlorite.	Quartz-sericite-pyrite with clay; graphite at 600'.	Pyrite approximately 10%: in schist planes.
600	50		18981	84	59	465	+1000				
650			18982	92	90	335	+1000				
* 660	10		14711	68	15	600	2800				
* 690			14740	64	10	840	3680				
696			18983	91	35	375	+1000				
								TOTAL DEPTH - 696'			

* Samples taken and described by R. M. Corn

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-4
Spudded
Completed Prior to July, 1965
Total Depth 790'
Driller Congdon & Carey
Logged By A. Grant

County Yuma State Arizona
Claim Sec 4 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	48	35	150	35				B18935
50-100'	50'	60	2200	160	68				B18936
100-150'	50'	68	2000	260	68				B18937-8
150-200'	50'	125	1600	255	100				B18939
200-250'	50'	112	1200	280	112				B18940
250-300'	50'	82	1700	270	57				B18944
300-350'	50'	110	2800	620	48				B18941
350-400'	50'	98	1100	250	44				B18942
400-450'	50'	110	1000	280	61				B18943
450-500'	50'	67	800	225	45				B18945
500-550'	50'	75	900	145	65				B18946
550-600'	50'	88	510	135	35				B18947
600-650'	50'	100	510	200	33				B18948
650-700'	50'	90	400	165	46				B18949
700-750'	50'	105	800	125	55				B18950
750-800'	50'	120	395	110	50				B18958-9

* Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum $ per pound; silver $ per ounce; and gold $35.00 per ounce.

SUGARLOAF PEAK PROJECT -- assay results from reverse circulation drilling

Hole: SWR-10
Bearing: 170°
Inclination: -70°
Completed: 12-2-84

Interval	Au (oz/t)	Interval	Au (oz/t)	Interval	Au (oz/t)
0- 5	no sample	150-155	.004	300-305	.003
5- 10	.005	155-160	.004	305-310	.003 (.003)*
10- 15	.001	160-165	.005	310-315	.003
15- 20	.010	165-170	.005	315-320	.002
20- 25	.010	170-175	.018	320-325	.004
25- 30	.003	175-180	.007 (.008)**	325-330	.003
30- 35	.002	180-185	.008	330-335	.004
35- 40	.004 (.005)**	185-190	.011	335-340	.006
40- 45	.007	190-195	.011	340-345	.002
45- 50	.003	195-200	.003	345-350	.002
50- 55	.002	200-205	.002 (.002)*	350-355	.010
55- 60	.002	205-210	.004	355-360	.004 (.006)*
60- 65	.004	210-215	.006	360-365	.007
65- 70	.006	215-220	.004	365-370	.005
70- 75	.005	220-225	.004	370-375	.013
75- 80	.004	225-230	.013	375-380	.006 (.010)*
80- 85	.005	230-235	.016	380-385	.009 (.009)*
85- 90	.004 (.002)*	235-240	.006	385-390	.005 (.010)*
90- 95	.003	240-245	.006	390-395	.003
95-100	.004	245-250	.003 (.004)**	395-400 TD	.004
100-105	.004	250-255	.005		
105-110	.003	255-260	.004		
110-115	.002	260-265	.003 (.003)*		
115-120	.001	265-270	.004		
120-125	.008	270-275	.003		
125-130	.006	275-280	.003		
130-135	.004	280-285	.003		
135-140	.008	285-290	.003		
140-145	.008	290-295	.005		
145-150	.003	295-300	.006		

(assay repeat) * Amsolco Lab
** Monitor Lab

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-4 NEAR NW 2 of 9
Spudded
Completed Prior to July, 1965
Total Depth 790'
Driller Congdon & Carey
Logged By A. Grant

County Yuma State Arizona
Claim Sec 4 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0								Schist	Quartz-sericite: bleached white.	Abundant jarosite on fractures. Quartz veinlets with quartz grains in groundmass.	
30	30								Bleached argillic schist.	Intense quartz-sericite-alunite.	Abundant pyrite.
49	19	40%	318935	48	35	150	35			Intense quartz-sericite: good alunite in schist planes; minor epidote.	Abundant pyrite with minor chalcopyrite in schist planes.
100	51	80%	318936	60	68	160	+1000		Quartz-sericite schist	Pyrite is weakly oxidized.	Fair chalcopyrite on pyrite.
118	18	80%	318937	67	70	270	+1000		110-118' Rock is highly fractured.	Jarosite on most of the pyrite. Wide spread "bleeding" not apparent.	
147											
157	11	100%	318938	73	53	230	+1000				
184											
200	36	50%	318939	125	100	255	+1000		Quartz-schist.	Strong quartz-sericite-alunite. No mafic minerals.	Minor chalcopyrite on widespread pyrite.
212											
252	40	40%	318940	112	112	280	+1000		Quartz-schist.	Groundmass is 100% quartz, sericite. Occasional quartz veinlet.	Abundant pyrite, some with fair chalcopyrite tarnish.
261	9	100%	318941	82	57	270	+1000				
* 310	10	100%	14730	88	85	450	5600				
319									Quartz-schist.	Intense quartz-sericite-alunite. Coarser quartz than noted above.	Abundant pyrite. Occasional pyrite veinlet with associated epidote.
347	29	75%	318941	110	48	620	+1000				Occasional chalcopyrite on pyrite.

District Quartzite Hole Number DDH SL-4

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
375									Quartz schist.	Intense quartz-sericite-alunite. More quartz than above. Minor limonite on occasional fracture.	Abundant disseminated pyrite and pyrite veinlets. Minor chalcopyrite tarnish on both kinds of pyrite.
404	29	60%	B18942	98	44	250	+1000				
422									Quartz schist.	Intense quartz-sericite-alunite. Quartz is coarse in some places.	Abundant pyrite, some chalcopyrite tarnish.
460	38	85%	B18943	110	61	280	+1000				
* 485	10	100%	14731	64	5	430	2880		Light medium grey quartz schist.	Note: Introduction of chlorite; may be slightly argillic.	5% pyrite with less chalcopyrite stain. Gently dipping veins following schistosity.
500	40	70%	B18945	67	45	225	800		2" quartz vein at 509'.	Weak oxidation along some veinlets.	
550	50	100%	B18946	75	65	145	+1000			More intense silicification below 560'.	Pyrite as abundant thin stringers in schist planes.
600	50	100%	B18947	88	35	135	510				
* 600	10	100%	14733	60	<5	125	416				
626	26	80%	B18948	100	33	200	510				Blebs of pyrite disseminated throughout with minor chalcopyrite staining.
673								Quartz Schist	Porphyroblastic	Porphyroblasts altered to alunite.	Quartz-pyrite-sphalerite veinlets in schist planes.
692	20	100%	B18949	90	46	165	400				
703										Chlorite introduced along fractures.	
723	20	100%	B18950	105	55	125	800				
* 710-715	5	100%	14710	432	20	280	2000				
747								Quartz Sericite Schist	Light Grey		Quartz-pyrite sphalerite veins cross-cutting schist; disseminated pyrite throughout.
757	10	100%	B18951	100	56	225	505				
* 760	10	100%	14733	68	<5	160	440				
784								Quartz Schist	Micaceous banding.	Not discernable.	Quartz-pyrite veinlets.
790	7	100%	B18952	140	44	190	285				
								-790' - TOTAL DEPTH-			

* Samples taken and described by R. M. Corn