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08/12/86

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: BLACK JACK MINE

ALTERNATE NAMES:

PIMA COUNTY MILS NUMBER: 105

LOCATION: TOWNSHIP 11 S RANGE 2 E SECTION 36 QUARTER SW  
LATITUDE: N 32DEG 26MIN 40SEC LONGITUDE: W 112DEG 07MIN 16SEC  
TOPO MAP NAME: GU ACHI - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

MANGANESE DIOXIDE  
SILICON


BIBLIOGRAPHY:

S.B. KEITH, AZBM BULL. 189, 1974, P. 115  
ADMMR BLACK JACK MINE FILE  
ADMMR FREEMAN SILICA FILE

## Visit -

At the Stovall Manganese Company's blending plant at Casa Grande, Virgil Short, the foreman, stated that the rate of shipment of blended ore was stepped up considerably. He mentioned that the Socorro concentrates were averaging about 50% Mn, the Christofferson jig concentrates were running nearly 50% Mn, and that the Stella Maris and Black Jack ores were ranging from 43 to 51% Mn. Magma was somewhat less. He also stated that the Red Mountain deposit near Cochran, 15 miles east of Florence, was developing rapidly. Del Rios had the lease and Stovall is taking the ore at present. This mill will employ sink float. The ore is of very good grade and the reserve has increased to 3000 tons in sight from a few hundred within a short time. Red McCutchen of Globe, is now foreman at Stella Maris and Owen Wade is foreman at the Black Jack. Stella Maris is producing about 20 tons of ore with 10 men and the Black Jack's output is about 60 tons put out by 20 or more men working 2 shifts.

LAS WR 5-15-59



5-14-58

BLACK JACK MINE

ALJ MEMO

Mr. "Buck" Richardson says that the  
BLACK JACK MINE is working again.

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See: MINING WORLD, Dec. 1958, p 58

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Mr. Young says  
property under litigation  
in courts at Tucson.

Black Jack + Mangrove

King - same property

(separate files)

(ALJ says not same mine 2-1959)

11/8/41

# DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

## FIELD ENGINEERS REPORT

Mine Black Jack and Stella Maris Mines

Date March 10, 1959

District Vekol Mountains, Pima County

Engineer Lewis A. Smith

Subject: Geological mapping of the immediate area.

The Black Jack is operated by the Blue Jester Mining Co., H. C. Smith, Box 347, Globe, Arizona, Russell A. Wright, 4839 Osborne Road, Phoenix.

The Stella Maris is operated by the Stovall Manganese Co.

The region in the immediate area consists of a Paleozoic series which consist of:- -

- Granite (basal)
- Quartzite (recrystallized)
- Shaley limestone
- Dark gray limestone
- Cap rocks (Tertiary volcanics)

These have been warped into a long sinuous anticline whose axis trends from EW to N 68° E in a flat crescent. The anticlinal formations were intruded by porphyry dikes on both flanks. There are a series of transverse fractures which offset the anticlinal formations, but movement along these has been relatively light. Intense silicification following strong brecciation, occurred along these breaks. Reopening, in turn, brecciated the silicified fracture zones. The manganese mineralization followed this reopening. The manganese minerals psilomelane, manganite and pyrolusite formed in openings in 3 stages in the order listed, giving the ore a more or less concentric banded appearance. Calcite in crystalline bands or vug linings accompanied or followed the pyrolusite or last stage. This mineralization favored certain favorable limestone beds. The accompanying sketch map shows the dips, strikes, and general structure. The best and cleanest ore lies between the silicified cross fractures, the silica content increasing as the fractures are approached. The breccia in the silicized zones is cemented by manganese minerals. The quartzite was almost completely recrystallized as was the limestone bordering the fractures. The limestone and shaley limestone are probably of upper Paleozoic Age, but in the absence of recognizable fossil material, this is problematical. Numerous chertified blebs in this limestone looked as if they may have been derived from spirifers and crinoids (both of which would indicate Carboniferous or Devonian).

The Stella Maris ore zone appears to occupy a curving fault which has a very sharp curve on its west end where it butts against a porphyry dike which appears to be of post-silicification age. It swings SE apparently intercepting the Black Jack ore zone at about 300-350' east of the Black Jack shaft. Drift exploration, on the 1st level of the Black Jack, revealed a general petering out of the manganese mineralization at about 100' east of the shaft. The ore zone west of the shaft has been explored for 150-160' with good results. The surface relations indicate that manganese mineralization in varying degrees appears to extend for 1500', at least, to the west of the shaft. Manganese minerals cross the shaley limestone-quartzite barrier along the transverse fractures, but between the fractures these formations are only slightly mineralized. It is thus surmised that the shaley limestone and the quartzite generally act as a dam to the manganese bearing solutions except where the cross fractures have been reopened.

To the south of the quartzite at a distance of several hundred feet a dike, probably similar in composition to the one north of the Stella Maris, cuts the limestone. It is nearly vertical and trends nearly parallel to the strike of the limestone except on the

east end where it swerves into a more NE trend. It was untraceable past the inferred position of the Stella Maris fault fracture. It shows no notable mineralization, but a thin coat of iron and manganese oxides on the fractures.

Results of samples from the bottom level of the Black Jack (153' on a 68° incline) indicate that the SiO<sub>2</sub> content of the ore is higher than nearer the surface. This may possibly be an indication of the termination of the better ore in depth provided that the silica increase is consistent. Development thus far is insufficient to prove this one way or another. However, the calcite content is also increasing somewhat. As to which way the manganese solutions moved is problematic, since they may have originated on the Black Jack side and moved toward the Stella Maris along the curving fault (shown on the plan map) or they may have moved in a reverse direction. The evidence as seen by the brief study, seems to favor the Black Jack side. However, the two areas are mineralogically similar as far as the manganese minerals are concerned. They appear to have replaced a similar bed in the limestone series. This suggests a third alternative would be that the two areas were connected before erosion removed the crest of the anticline as indicated by the cross section, with additional fault controls. In this case much valuable manganese would have been removed by erosion. This is indicated by the presence of considerable manganese oxide float down the arroya for at least a half mile below the present outcrop.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine

Stella Maris & Black Jack  
Vekoi Dist.

Date

3-10-58

District

Engineer

Lewis A. Smith

Subject:

Sketch Geology Map





DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

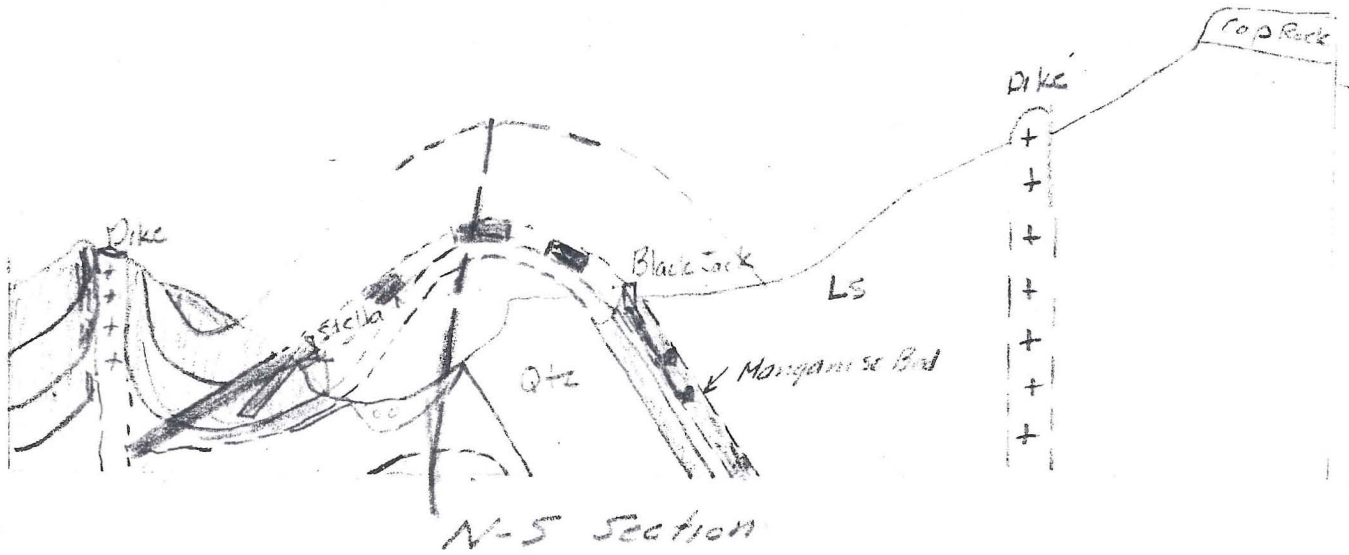
Mine *Stella Maris and Blackjack*

Date *3-10*

District *Vekol, Pinal Co.*

Engineer *Lewis A Smith*

Subject: *Sketch Geologic Map  
Cross Section*



# DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

## FIELD ENGINEERS REPORT

Mine Black Jack

Date 1-13-59

District Cimarron (Vekol), Pima County

Engineer Lewis A. Smith

Subject: Supplementary Mine Visit

A visit to the Blackjack Mine revealed that their new mill plant is in operation and that they had completed the deepening of the shaft to 180 feet.

The mill consists of a storage bin which is capped by a grizzly made of rails. The bin discharges onto a conveyor belt which feeds a multiple cylindrical shaking screen which has four separate units (8, 10, 18 and 36 mesh). A 1/2 inch screen removes all +1/2 inch material before it goes into the shaking screen, and delivers the +1/2 inch material to a small jaw crusher which in turn reduces it to 1/4 inch. Each unit of the cylindrical screen delivers its product to separate bins. The light mesh material is delivered by a Universal bucket conveyor system to Buffalo air separation tables (similar to the Davis type). The tables produce a 40%+ concentrate. The coarser "high" grade is separated before the ore reaches the plant and runs in excess of 40%. The bulk of finer screen products are stored for shipment to a sinter plant, but some are mixed with the coarser ore especially to 10 & 18 mesh. A cyclone dust separator removes small material and collects it.

The mine now has two levels of elevation, 90 and 170 feet respectively from the collar. On the 90 foot level a drift to the southwest is 170 feet long, and one to the northeast is about 80 feet long. Another angles to the northwest for about 100 feet.

Stoping is now being done on the 90 foot level. Long hole drilling is in progress on both levels.

22 men are employed on two shifts but it is planned to return to 3 underground shifts.

A 315 Worthington Compressor furnishes the air for the mine. A Cummings diesel engine and direct connected generator furnish electricity to run the plant and for lights.

The vein dips southeast and occupies the south wing of an apparent anticline and the ore lies in a limestone formation. A certain bed appears to have been selectively replaced by lenticular bodies. The Stella Maris lies on the north wing of the anticline.

FILED

FEB 4 1959



DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Black Jack Mine (H. C. Smith)

Date 9-9-58

District Cimmaron Mountains District (Vekol)  
42 miles SW of Casa Grande

Engineer Lewis A. Smith

Subject: Supplement report of mine visit

Operator: H. C. Smith and Assoc., Globe

This mine lies across the canyon from the Stella Maris, and the vein is parallel to the Stella Maris, and like the Stella Maris lies in a replaceable limestone bed. This bed dips SW at about 60° and strikes NW-SE. The ore occurs in lenticular bodies, like peas in a pod, causing reserve uncertainties.

Access is gained by means of a 90 ft. 60° inclined shaft and drifts each way from the shaft on the 90' level. The hoist is gasoline engine driven and is equipped with a 3/8" cable and a skip-bucket. A bin with a truck capacity is used for storage.

The mine employs 11 men, 5 on the day shift and 6 on the night shift. Production rates vary. The ore is being taken by Stoval at Casa Grande.

The ore averages about 50% but contains considerable fines. It is largely manganite.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Black Jack

Date Sept. 1, 1955

District Cimarron Mts. District. --- Pima Co.

Engineer Axel L. Johnson

Subject: Field Engineers Report. Personal Visit and information from Mr. Brewer, Lessee.

Location About 50 miles north of Sells. Drive 22 miles north of Sells on Highway 86. Turn right (north) on the Covered Wells- Casa Grande road, and drive 22 1/2 miles to road signs "Black Jack Mining" & "Stella Maris No. 1". Turn left & drive 6 miles to the mine.

Owners ✓ C. C. Waterbury, Box 1, Apache Jct., Ariz.  
✓ Hugh Nichols, Rte. # 1, Higlee, Ariz.

Lessee and Operator ✓ H. P. Brewer, Box 943, Casa Grande, Ariz.

Principal Minerals ✓ Manganese ore.

Number of Men Employed 3 (1 shift)

Production Rate From 100 to 125 tons per week.

Geology The ore deposition is found in rhyolite rock, near a rhyolite-limestone contact. The ore showing is about 9 ft. wide, and dips about 60 degrees south.

Ore Values The ore runs from 30 to 42 % Manganese. Average may be ~~xxx~~ about 35 %.

Ore in Sight and Probable No ore blocked out yet. Operators are now drifting on the 100 ft. level in order to develop ore reserves. Probable ore seems to be considerable, but no estimates have been made on same.

Milling and Marketing Facilities Trucking ore to Casa Grande, for shipment to the Deming manganese depot.

Present Mine Workings (1) 1 -- inclined shaft (incl. 60 deg. S) ---- 100 ft. deep on incl.  
(2) 1 drift east on the 40 ft. level about 35 ft. long, and stopes above same.  
(3) 1 drift recently started on the 100 ft. level in order to block out ore.

Present Operations Stoping out ore from the 40 ft. level, hoisting same through the incl. shaft, trucking ore to Casa Grande, and shipping same to the Deming manganese depot.

Proposed Plans Operator is planning on shipping the ore on the Car Lot Program, after the Deming Manganese Depot closes. Operator expects to construct a mill to concentrate the ore to government car lot specifications, before shipping on the car lot program, as he does not believe enough ore running over 40 % would be available for shipment.

DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date: October 8, 1941.

- 1. Mine: BLACK JACK NOS. 1, 2 and 3.
- 2. Location: 42 miles south of Casa Grande.
- 3. Mining District & County: Quijotoa Mining District, Pima County.
- 4. Former Name:
- 5. Owner: Elmer Lambert ✓
- 6. Address (Owner): Casa Grande, Arizona.
- 7. Operator:
- 8. Address (Operator):
- 9. President, Owing Co:
- 9A. President, Operating Co:
- 10. Gen. Mgr:
- 14. Principal Minerals: Manganese
- 11. Mine. Supt:
- 15. Production Rate:
- 12. Mill Supt:
- 16. Mill - Type & Cap:
- 13. Men Employed:
- 17. Power - Amt. & Type:  
Compressor, jack hammer, hose, steel, water pressure tank, track, cars and camp equipment.
- 18. Operations - present: None.
- 19. Operations - Planned: Development.
- 20. Number Claims, Title, etc: 3 claims, unpatented.
- 21. Description - Topography & Geography: Low hills and rugged country.
- 22. Mine Workings - Amt. & Condition: 100 ft. tunnel; raise up to surface; shaft down 12 or 14 ft and 2 or 3 open cuts!

RECEIVED  
MINE DEPARTMENT  
CASA GRANDE, ARIZONA

32. 11/12/41

23. Geology & Mineralization: In limestone and quartz formation.
24. Ore - Positive & Probable, Ore Dumps, Tailings: 100 tons of ore on dump ready to ship. 40 per cent and better. Analysis showed 44% (assays were 41, 42 and 43 per cent); silica not over 6%; alunite 8%; no iron.
- 24A. Dimensions and Value of Ore body: Do not know - must be developed.  
100 ft. of vein showing on surface and about 3,000 ft. long.
25. Mine, Mill Equipment and Flow Sheet:
26. Road Conditions, Route: Good road. Go out Sells road 36 miles to sign - BLACK JACK MINE - turn right up hills 6 miles to mine. Last 6 miles slow.
27. Water Supply: No water on property; water about 1 mile.
28. Brief History: New discovery.
29. Special Problems, Reports Filed: Must be developed.
30. Remarks: Shipped 5 carloads to Tennessee - 40.11%.
31. If property for sale - Price, terms and address to negotiate: Will sell, lease or ship ore if can get contract.  
For sale: \$35,000.00 - Apply for terms.
32. Signature: (SIGNED) ELMER LAMBERT  
Casa Grande, Arizona

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

Geology & Mineralization

MB-70

Date Oct 8th - 1941

1. Mine Black Jack Nos 1-2-3  
3. Mining District & County Duchesne, Linja  
4. Former name Dighton  
5. Owner Elmer Lambert  
7. Operator Same  
9. President, Owning Co. Same  
10. Gen. Mgr. Same

2. Location Casa Grande, Az  
42 miles south of Casa Grande.  
Go out Sells Road 36 miles to  
sign - Black Jack Mine - turn  
right up hills 6 miles to mine  
6. Address (Owner) Casa Grande, Az  
8. Address (Operator) Same  
9A. President, Operating Co.  
14. Principal Minerals Manganese

11. Mine Supt.  
12. Mill Supt.  
13. Men Employed 2  
18. Operations: Present

15. Production Rate  
16. Mill: Type & Cap.  
17. Power: Amt. & Type  
Compressor - jack hammer  
hose - steel - water  
pressure tank  
track, cars -  
camp equipment

19. Operations: Planned  
Development

20. Number Claims, Title, etc. 3 Claims separate

21. Description: Topography & Geography  
Low hills & rugged country

22. Mine Workings: Amt. & Condition  
100 ft tunnel - raise up to surface  
shaft down 12 or 14 ft  
2 or 3 openings (over)

Use additional sheets if necessary.



23. Geology & Mineralization

In limestone of gray formation

~~Magnesian~~

DEPARTMENT OF MINERAL INDUSTRIES  
STATE OF ARIZONA  
THE OWNER'S REPORT

24. Ore: Positive & Probable, Ore Dumps, Tailings

100 tons of ore on dump  
ready to ship - 40% + better x  
analysis showed 44% silica not over 10% alumina 8% x no iron.

24A. Dimensions and Value of Ore body

is not known  
Must be developed

25. Mine, Mill Equipment & Flow-Sheet

~~None~~

26. Road Conditions, Route

Book - 36 miles from Casa Grande  
13 miles on Seals road, turn off at sign  
+ go 6 miles to right (Combs). 2nd  
6 miles slow.

27. Water Supply

~~None~~  
no water on property. Water about 1 mile

28. Brief History

~~None~~ new discovery.

29. Special Problems, Reports Filed

~~None~~ omit re development  
100 ft of vein shown on  
surface + about 3000 ft long.

30. Remarks

car loads to Tennessee  
40.11%

31. If property for sale: Price, terms and address to negotiate.

~~99500~~  
will sell, lease or ship  
ore if can get contract x  
for sale 35000 x apply for terms.

32. Signature

Elmer Lambert

33. Use additional sheets if necessary.