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Arizona Department of Mines and Mineral Resources Mining Collection

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PRINTED: 04/29/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: OMEGA IRON DEPOSIT

ALTERNATE NAMES:
- ARKOTA STEEL PLACER
- RED ROCK GROUP
- GARPAK
- BLACK HILLS
- ROYAL
- BLACK SANDS DEPOSIT
- OWLHEAD MAGNETITE PROSPECT

PINAL COUNTY MILS NUMBER: 509

LOCATION: TOWNSHIP 8 S RANGE 12 E SECTION 3 QUARTER C
LATITUDE: N 32DEG 45MIN 55SEC LONGITUDE: W 111DEG 05MIN 36SEC
TOPO MAP NAME: NINETYSIX HILLS SE - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

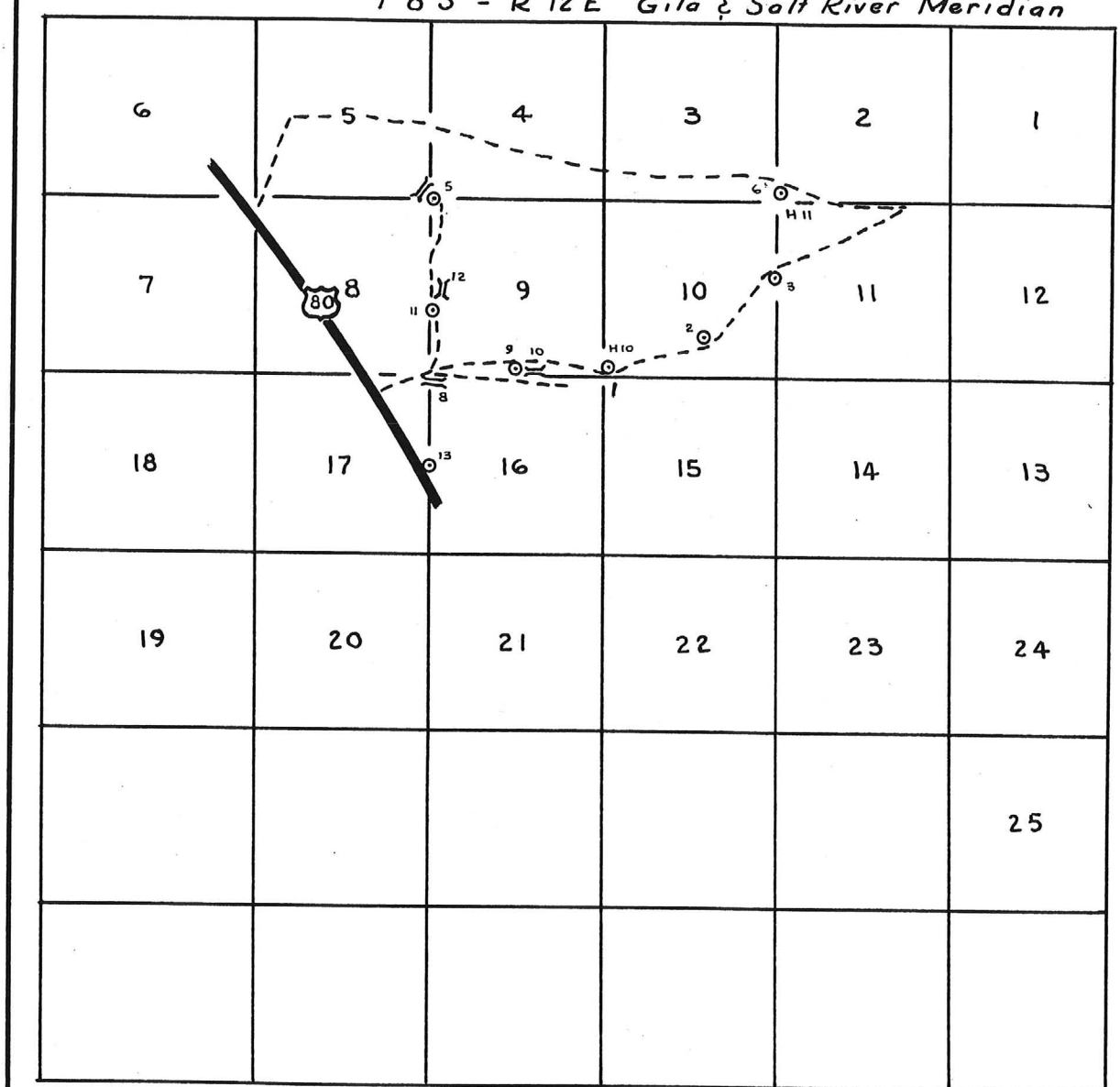
COMMODITY:
- IRON
- TITANIUM

BIBLIOGRAPHY:
- ~~ADMMR OMEGA (PART II) FILE~~
- ADMMR OMEGA IRON PLACER DEPOSIT
- ADMMR U FILE
- ADMMR TIAGO MINING CO. FILE
- ABGMT MIN MAP NOTES
- ADDITIONAL LOC SEC 7, 8, 17 & 20

OMEGA IRON PLACER DEPOSIT

PINAL COUNTY
T7,8,9S R4-12E

See: Arkota Steel Corp Plant (file)



PROPERTY OF OMEGA MINES INC., PINAL COUNTY, ARIZ.

Dem magnetite DRW 10

OMEGA MINES INC.

2419 So. 5th
Suite 9
Las Vegas, Nev.

516 Atlas Bldg.
Salt Lake City
Utah

1914 South Raymond Ave.
Los Angeles
California

1340 North Country Club
Tucson, Arizona

OFFICIALS

J. W. Martin ..... *President*

W. H. Martin ..... *Vice-President*

Harry Ulmer Jr. ..... *Secretary-Treasurer*

Paul J. Sugar ..... *Executive Vice-President*

Max Ingalls ..... *Vice-President*

L. H. Shoemaker ..... *Vice-President*

Clifford A. Jones ..... *Vice-President*

John H. Page & Co. ..... *Legal Counsel*
516 Luhrs Bldg.
Phoenix, Arizona

ENGINEERING & PERSONNEL

W. H. Martin ..... *Field Supt.*

B. H. Martin ..... *Geology & Engineering*

J. B. Linn ..... *Laboratory Control*

R. W. Downend ..... *Production Control Engineer*

Walt Bilicke.....*Engineers Syndicate LTD. Research and Design*

Dr. Harrison Schmitt ..... *Consultant*

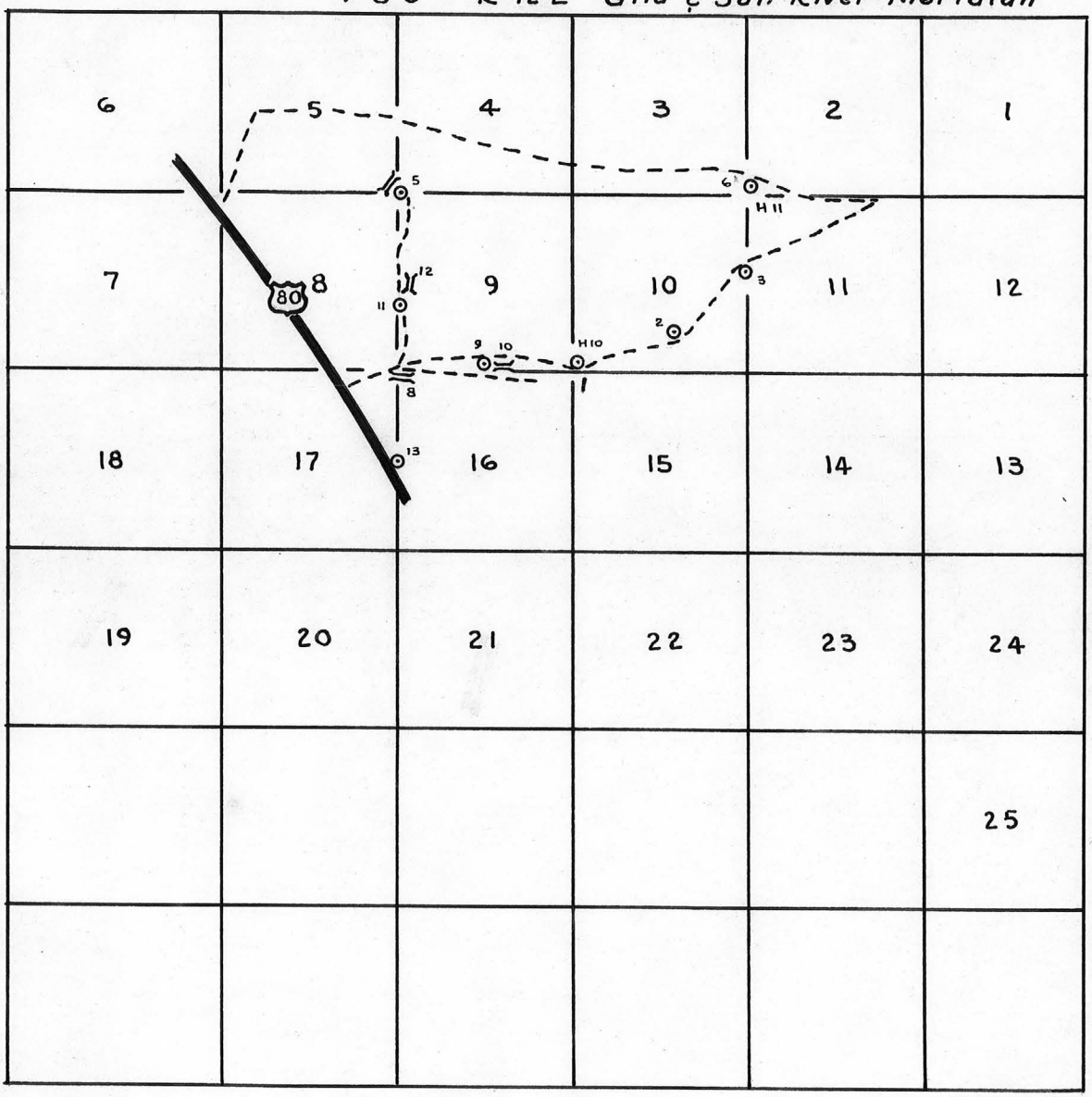
Garpac Inc. .... *Exploration and Engineering*
Las Vegas, Nev.

Richard J. Kroecker ..... *Excavating*
Tucson, Arizona

Long Drilling Co. ..... *Test Drilling*
Phoenix, Arizona

B. Franklin Soffe & Associates ..... *Sales*
Export—Import—Brokers
Los Angeles, California

T 8 S - R 12 E Gila & Salt River Meridian



⊙ Test hole with photo number

⩫ Bulldozer cut with photo number

---- Road

Oct. 1956
Jan. 11 1957

PROPERTY OF OMEGA MINES INC., PINAL COUNTY, ARIZ.

OMEGA 4 1764

Iron magnetite DRW 10

OMEGA MINES INC.

2419 So. 5th
Suite 9
Las Vegas, Nev.

516 Atlas Bldg.
Salt Lake City
Utah

1914 South Raymond Ave.
Los Angeles
California

1340 North Country Club
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B. Franklin Soffe & Associates ..... *Sales*
Export—Import—Brokers
Los Angeles, California

OMEGA IRON PLACER DEPOSIT PINAL COUNTY

RRB WR 8/8/86: Assisted Alan Rabinoff of the BLM investigate the black sand property southeast of Florence. Omega Iron Placer Deposit, Pinal County. It is involved in a land exchange between the State Land Dept. and the BLM.

OMEGA IRON PLACER PINAL COUNTY

MG WR 5/9/86: Mr. Joe Blankinship, 333 E. River Rd, Tucson, Az. 85704, phone, 887-9465, reports that in 1985 he shipped about 40 tons of magnetite from his Arkota claims (Omega iron placer, Pinal Co) to some Amish farmers in the eastern U.S. The magnetite is used as a soil additive to help reduce large temperature flucuations.

RRB WR 2/20/87: Steve Herring, 862-4109 is looking for magnetite with very precise specifications to be shipped from the Pacific coast and thought that the Lakeshore mine was a source. He needs a 6000 ton shipment twice a year. I referred him to the Omega Iron Placer Dpsoit (file) Pinal Co.

KAP WR 2/27/87: Marlynn Pierce called regarding royalties she felt she should be receiving from iron ore production. She said her father or grandfather had invested in the Black Hills Property (see Omega Iron Placer Deposit) file, Pinal County in about 1957 and was supposed tobe receiving a royalty. Explained that although there have been some shipments for the Omega Iron Placer Deposit she would need to research through Corporation Commission and Pinal County Courthouse Records to determine if there is any connection between current operators and those in which she might have a royalty interest.

ARKOTA STEEL
(OMEGA IRON)

PINAL COUNTY

Visited Arkota Steel plant. Two men at plant. Mr. Bischoff, Supt., said they were going to make a test run to produce pellets. Iron concentrates said to assay 70% Fe. with minor amount of TiO_2. Chem Metals have option on property, but are making feasability studies. Arkota is mining on limited scale (2 men) E of the Highway near the missile site. The gate to the pit was locked. According to Mr. Bischoff, Powdered Metals Corp. were going to build a plant on the Industrial Complex given publicity in a recent Eloy Newspaper article. The Complex is a short distance - ½ - mile north of the Arkota Plant. There was no sign of activity in the area.

FTJ WR 2/10/67

Abstract from "Arizona Iron Ore Deposits" in IRON COMMODITY file: The Omega Magnetite Placer Deposit, Pinal County, is located about halfway between Florence and Oracle Junction (Sec. 1-24, T8S, R12E and some in T8S, R11E) and is reported to comprise over 20,000 acres in an area 8 miles long and 4 miles wide. It lies along side the Highways 80 and 89. The deposit consists of stream gravels, which are reported to contain 3 to 15 percent of magnetite but to average 4-5 percent. The gravels also contain considerable illmenite (TiO_2) which must partly be eliminated from the concentrates to make them suitable for pig iron. The milling will consist of screening and magnetic separation. Arkota Steel Company is erecting a Madaras Process Mill at Coolidge to produce sponge iron and pig iron from the magnetite concentrate which is estimated to contain 65-67 percent iron and the resultant sponge iron is calculated to run 95 percent iron and 5 percent of sand. The sand can be fluxed off in an electric furnace to make pig iron (Southwest Iron and Steel Industries, Inc., 406 Valley National Bank Building, Tucson, owns the Omega.)

The Kelly Magnetite Placer covers a large area west and southwest of the Omega Deposit and is reported to be similar to it in character. (S.L. Kelly, 2426 N. Castro Street, Tucson, Arizona, owns this.)

NJN WR 10/19/84: Joe Blankinship (c), and Tom Haas visited. Mr. Blankinship has placer iron claims called Arkota #124-145 located in T9S R11E. Secs. 3-5, 9-11, northeast of Red Rock, Pinal Co. (Omega Iron Placer Deposit (). Mr. Haas is a partner with Southwest Resources Associates, 2627 E. Benson Highway, Tucson, Arizona 85706. Southwest Resources has a mobile concentrating plant on the property but has their main office in Tucson. Both invited us to visit their office and reported they have lots of engineering and test data which they would welcome us to copy. They would like to be producing and so are currently trying to develop 3 martkets for the placer iron concentrates: 1. Export to Mexico for iron plants, 2. Use as thermal mass in energy conservation designs, 3. Use as soil additive in agriculture (increases growth?)

Arkota Steel Mill

Coolidge, Pinal Co.

Vance stated, due to Tom Slick's death in plane accident this week, that things were more or less up in the air. He also stated that a Japanese group were negotiating with Dynamics Research and Arkota Steel Co. for the mill and Omega Mine. However, this is still in the negotiation stage. Meanwhile, both the plant and mine are idle.

Interview with Vance Bacon of Dynamics Research, Inc.

MEMO - LEWIS A. SMITH - 10-9-62.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine	Arkota Steel Co. (Omega Mine)	Date	January 12, 1962
District	Owlshead District, Pinal Co.	Engineer	LEWIS A. SMITH

Subject: Interview with David Shaw, Geologist for Dynamic Research Co., 1444 S. 27th St. Phoenix 34

Mr. Shaw stated that 17 holes, 100 feet deep, had been drilled at Omega in 2 lines at 1/4 mile intervals. The results, excepting two scattered holes, show very consistent magnetite distriction and that preliminary tests indicated 5-7 per cent magnetite. If these tests show satisfactory results, a larger and more closely spaced program will be undertaken. This would seem to indicate that the grade is a little higher than previously supposed.

See: MINING WORLD, Jan. 1962, p 58.

Feb. 1, 1962 - Visited the office, plant and yard of Dynamic Research Inc. 1444 So. 27th St., Phoenix 34, with which is affiliated Dynamic Iron & Steel Co. which recently took over Arkota Mining Co. the current supplier of magnetite iron ore to the Arkota Steel Plant at Coolidge. The principle of the patent jaw crusher is the use of unbalanced high frequency vibratory actuation of the jaws.

TRAVIS P. LANE - Weekly Report - Feb. 3, 1962

OMEGA IRON PLACER DEPOSIT

PINAL COUNTY
BLACK MTN. DIST.

S. L. Kelly, Tucson, says that Patrick Feeney, lessee is bringing in a Madras Plant from Texas to be located at the property for the manufacture of sponge iron.

AXEL L. JOHNSON, 7-23-60 - WR

This property active 9-1960

See: ARKOTA STEEL CO. Temporary file

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Omega Iron Placer Date Apr. 6, 11, & 21, 1964

District Black Mountain District, Pinal Co. Engineer Axel L. Johnson

Subject: Mine Visit. Info. by telephone from Wm. E. Strickland, & H. D. Martin at mine visit.

References Report of June 22, 1962, Feb. 14, 1962, and previous.

Owners Southwestern Iron and Steel, Inc., Tucson, Ariz.

Lessees Arkota Steel Co., Box 1437, Coolidge, Ariz.

Sub-Lessees Black Hills Mining Co.
Operators John W. Martin, Manager
William E. Strickland, attorney

Principal Minerals Magnetite ore

Present Mining Activity Excavating iron placer material and concentrating same by means of 2 magnetic separators. The material is first run through a large magnetic separator with 2 magnetic drums, and the resulting concentrates are then run through the second magnetic separator (smaller, with one magnetic drum). The condentrates obtained from this second magnetic separator runs from 55% to 57 % iron, averaging about 56 %. Production now is at a rate of about 350 to 400 tons per month. 3 men are working, day shift, 5 or 6 days per week.

According to Mr. Martin, Arkota Steel Co. has a contract to deliver 6,000 tons of magnetite iron ore to Kennecott Copper Co. Hayden, Ariz. This contract calls for a minimum of 55 % iron at so much per ton f. o. b. mine. The hauling of the ore to Hayden is paid for by Kennecott Copper Co., Cecil Trucking Co., of Globe, Ariz. doing the hauling on contract.

ALJ WR 6/29/64 Omega Mines visit - not working.

Arkota Steel plant and mine optioned to Dotson Minerals, Box 115, Socorro, N. Mex.

Carl Dotson, Pres., Julius D. Madaras, designer of the plant, is consultant.
2 men employed in plant, no one at the mine.

F.T. Johnson WR 6/11/65

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

RECEIVED
JUN 2 0 1962
DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

Mine Omega Iron Placer Date June 22, 1962

District Black Mountain District, Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from Roy Greene, Dynamics Research.

References Report of Feb. 14-19 and previous reports.

Present Activity None. Mr. Greene is the only man on the property, and he is serving as a watchman.

Recent Operations Mr. Greene reports that Dynamics Research, Inc. drilled for about two months on the property, and operated a pilot plant while drilling, running the drill samples through the pilot plant. Mr. Greene said that they used a clam shell drilling arrangement of their own design, and said that the holes were from 50 to 90 ft. deep.

Mr. Greene did not have the information regarding the number of holes drilled, the spacing of the holes, or the average analysis of the samples taken. He said that this information could be supplied by the Phoenix office, located at 1444 S. 27th St., Phoenix, Ariz.

Future Plans Mr. Greene did not know of any future plans in regard to future operations, but seemed to think that meetings, now being held, might result in some decision.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine: Omega Iron Placer — Date: June 11, 1962

District: Black Mountain Dist., Pinal Co. — Engineer: Lewis A. Smith

Subject: Interview with Vance Bacon, Dynamics Research 6-5-62

Mr. Bacon reported that Dynamics Research had drilled a square mile of the Omega placer to 100 feet of depth in 8 holes on a grid pattern. The samples showed 6.3 percent of recoverable rough concentrate of magnetite, which ran 53 percent iron. The placer ground had an indicated grade of 4 to 46 percent iron. This area constituted an adequate reserve for several years for the Arkota Steel Mill. He also stated that the Arkota people planned to produce reduced pellets and electric furnace steel. They are trying to finance for a considerable mill expansion.

LEWIS A. SMITH - memo - 6-11-62

OMEGA - IRON
Information from Vance Bacon

Dynamics Research Inc., has proven up one square mile which averages 142 lbs. of 70% Fe pellets per cu yd or 6½ million long tons of these pellets in 100 ft depth.

Drilling on ¼ mi centers their results to 100 ft depth correspond with Sundness' results to 25 ft depth, if averages of several holes of each are compared. Such average, of say 6 holes, would be about 3.35% Fe = about 4⅓% magnetite.

FPK Note 7/31/62

See: Arkota Steel Corp. (file) for Memo of Axel Johnson re Black Hills Mining Co., contracted for the mining and concentrating for Arkota Steel.

MEMO ALJ 4/6/64

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Omega Iron Placer Date Feb. 14, 1962 & Feb. 19, 1962

District Black Mountain District, Pinal County Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from John Peters (2/14/62) and W. E. Strickland (2/19/62)

References Report of Sept. 28, 1961 and previous.

Contractors Arkota Mining Co., Box 176, Coolidge, Ariz.
Bernard Cadwell, Field Manager in charge.
Contract calls for the payment of so much per ton of rough concentrates produced f. o. b. mine by the Arkota Steel Co., Box 1437, Coolidge, Ariz.

Principal Minerals Iron placer

Present Mining Activity Excavating iron placer material and concentrating same. The concentrates are stockpiled, and later trucked to the Arkota Steel Co. for treatment by the Madaras Process. 4 men working at the property.

The placer material is first run through a Schrader dry magnetic separator (portable), which concentrates the material to from 28 to 40 % iron. It is then run through a Barber-Greene Dryer, which reduces the moisture to about 1/2 %, after which it is further concentrated in a second dry magnetic separator. Then it is run through a set of screens, which screen out the oversize material, after which it is run through a third dry magnetic separator. The material from the t hird magnetic separator is run on a stockpile, from where it is loaded into trucks for hauling to the Arkota Steel plant. This final dry concentrate averages about 66 % iron, but contains a high phosphorus content, and is also high in ilmenite. The concentrates are further treated in the Arkota Steel plant at Coolidge, most of the phosphorus and ilmenite is removed, and the average iron content increased. (See reports on the Arkota Steel Plant.)

Exploration William E. Strickland of the Southwestern Iron and Steel Industries reported on Feb. 19 that 5 sections of the property had been drilled by Dynamics Research, Inc., Phoenix, Ariz. on agreement with Patrick Feeney, a rotary drill being used for this work. The results were reported as satisfactory.

Possible Future Plans William E. Strickland also reported that Dynamics Reasearch, Inc. is negotiating for the purchase of Arkota Mining Co., but, as yet, no deal has been consummated. If Dynamics Research acquires the Arkota Mining Co. equipment and contract, they plan on making a deal with Arkota Steel Co. to furnish them with concentrates in pelletized form. He states that Dynamics Research is considering dredging the iron placer deposit.

Oct. 1961

Arkota Mining Co. has contract to mine & concentrate @ so much per ton fob mine to be delivered to Arkota Steel Co. This is a separate company with G. H. Lindekugel & Sons and J. L. Healy Construction Co. as owners & operators.

A.L.Johnson

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Omega Iron Placer Date Sept. 28, 1961

District Black Mountain District, Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from Bernard Cadwell.

References: Feb. 15, 1961, Sept. 19, 1960 and previous reports.

Owners: Southwestern Iron and Steel Industries, Inc.
155 East Alameda, Tucson

William E. Strickland, Secretary

Lessees: Arkota Steel Co., Box 1437, Coolidge, Ariz.

Mathew Rose, Project Engineer

Contractors: Arkota Mining Co., Box 176, Coolidge, Ariz.

Bernard Cadwell, Field Manager

This company is principally owned by G. H. Lindekugel & Sons and J.L. Healy Construction Co.

Contract calls for the payment of so much per ton of concentrates f.o.b. mine by Arkota Steel Co.

Principal Minerals: Iron placer.

Present Mining Activity: Concentrating a placer material stockpile by means of magnetic separators, a rotary dryer and vibrating screens. 3 men working. This stockpile was acquired about 2 or 3 months ago by excavating nearby washes and is reported by Mr. Cadwell to run about 8.5% in iron. Present operation was started about 6 weeks ago.

The concentrates produced are stockpiled for the time being, and stockpiling will be continued until the Arkota Steel Co. mill at Coolidge will be ready to start operations.

Mr. Cadwell reports that they now have a concentrate stockpile of 3,300 to 3,400 tons, which averages 66.4% Fe.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Omega Iron Placer Date Feb. 15, 1961

District Black Mountain District, Pinal Co. Engineer Axel L. Johnson

Subject: Present Status. Information ffom August Wrage, caretaker.

References Report of Sept. 19, 1960 and previous reports.

Present Status No operations at the present time. Operations will be started, as soon as the Arkota Steel Co. plant at Coolidge is finished, which will be in from 2 to 3 months. See report of Arkota Steel Co.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Omega Iron Placer — Date September 19, 1960 & Nov. 15, 1960

District Black Mountain Dist., Pinal Co. — Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from H.D. Martin, et al

References: Report of May 13, 1960 and previous reports.

Owners: Southwestern Iron and Steel Industries, Inc.
406 Valley National Bank Bldg., Tucson, Arizona

Lessees & Operators: Patrick Feeney, Pierre, S. Dak. & associates
G. H. Lindekugel & Sons, Mitchell S. Dak.

Present Activity: Moving Madras sponge iron plant in from Longview, Texas to be installed on new site at the old Coolidge Air Base, between Coolidge & Florence. Construction of concrete footings at new mill site. Opening up an office in Florence.

Plant Installation: The Madras sponge iron plant being moved up from Longview, Texas is a pilot plant of 150 tons of sponge iron per day capacity. It is being installed at the Coolidge Air Base, where favorable gas and electric rates have been obtained and where some water is also available from the old airport well. It is expected that the pilot plant installation will be completed and in operation by April, 1961.

Future Plans: Future plans call for the installation of a larger sponge iron plant, with a capacity of about 1400 tons of sponge iron per day, to be completed some time in 1962.

The installation of a rolling mill, at the same location, is also being considered.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Omega Iron Placer Date May 13, 1960

District Black Mountain District, Pinal Co. Engineer Axel L. Johnson

Subject: Present Status. Information from S. L. Kelly.

References: Report of April 27, 1960 by Frank P. Knight.
Report of March 9, 1960.
Previous reports.

Present Status: Operations idle and closed down.

According to Mr. Kelly, these were the developments: Patrick Feeney, Pierre, South Dakota, the lessee of the property, induced G. H. Lindekugel, Mitchell, South Dakota to take over the operations for a share in the profits.

Mr. Lindekugel later concluded that, on account of the large royalties, 5% to the State of Arizona and large royalty to S.W. Iron & Steel Industries (reported as high as $5.00 per ton), that there would be no profits left over.

Accordingly Mr. Lindekugel is now pulling out the equipment and transporting it back to South Dakota for operations there.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine	OMEGA IRON PLACER	Date	APRIL 27, 1960
District		Engineer	FRANK P. KNIGHT
Subject:	Personal visit		

No admittance sign on Southwest Iron and Steel Industries Co. property near Bogaard Wash on State Highway 789, Pinal County. Name on sign is G. H. Linde Kugel & Sons So. Three trailer houses and a shed on the property. Not operating.

Quigley of Tucson Mica said that former South Dakota contractors (Moore Bros.?) spent $180,000. on the property. They evidently were the ones who excavated the east side pit which is about 300 ft long, 200 ft wide and 30 ft at deepest point in middle, grading to 0 ft at the ends. (About 55,000 cu. yds.)

Not for publication

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Omega Iron Placer Deposit Date March 9, 1960

District Black Mountain District, Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from Elzie M. Moore, and personal visit.

References: Reports of Dec. 11, 1959, July 15, 1959, Apr. 21, 1959, Mar. 30, 1959 & prev.

Owners Southwestern Iron and Steel Industries, Inc., 406 Valley Nat'l Bank Bldg., Tucson.

Lessees & Operators Patrick Feeney, Pierre, S. Dak. & associates
Elzie M. Moore, 3331 N. Wilson, Tucson ---- manager.
The lease is reported to contain a clause, whereby no royalties will be paid to S. W. Iron & Steel Industries for a period of 2 years, after which royalties will be paid according to the Iron content in the placer sand. As the claims are on State lands, royalties will also have to be paid to the State.

Present Mining Activity Installation of concentrating equipment by G. H. Lindekugel, Mitchell, S. Dak. 6 men working.

Review of Operations At the present time, a Barbe Green Dryer is being installed, which will dry the concentrates at a temperature of 300 deg. F., reducing the moisture to less than 1/2 %. This dryer will have a capacity of 180 tons per hour.

Other equipment now on the property consists of
(1) Schrader Dry Magnetic Separator (portable) of 50 tons per hour capy.
(2) Stearns Rogers Dry Electro-Magnetic Separator of 50 tons per hour capy.
(3) Impact Mill of 75 tons per hour capy.

Additional plans call for the installation of 1 additional Schrader Dry Magnetic Separator and 1 additional Stearns Rogers Dry Electro-Magnetic Separator to bring the capacity up to 100 tons per hour.

Metallurgical Tests

(1) The old concentrate stockpile, estimated at 10,000 to 14,000 tons, has been tested by the Arizona Bureau of Mines by George Roseveare, et. al. According to Mr. Moore, it is expected that the titanium content in the stockpile, which now runs about 1.5 %, can be reduced to 0.5 % by means of a variable electro magnet.

(2) Tests of the "madrigal process", which makes a direct reduction to steel, have been made at the Western Rolling Mills, Tempe, Ariz. Another test will be made soon on this process at the Tempe plant. Western Knapp Engineering Co. is also reported to be working on the "madrigal process".

(3) Western Knapp Engineering Co. is reported to be experimenting with a wet process of magnetic separation for concentrating the ore, and also methods of sintering the ore.

Future Metallurgical Tests & Plans of Operation

(1) Company plans to take 200 tons of the concentrates to the Mohave Mining & Milling Co. of Wickenburg, Ariz. to make tests on sintering. If these tests prove successful, the intention is to purchase the Mohave Mill sintering equipment and move it down to the Omega Mine site, or the future location of the concentrating plant.

(2) Contract to the Western Knapp Engineering Co. for a sintering plant is also being considered.

(3) The feasability of dredging operations will also be considered. Water for dredging operations will have to be pumped from the vicinity of Red Rock. After the clay, dirt and sand is washed out, the concentrates will go through a magnetic separator, mounted on the dredge. Capacity of this operation would be 200 to 300 tons/hr.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine OMEGA IRON

Date DECEMBER 11, 1959

District Black Mountain

Engineer FRANK P. KNIGHT

Subject: Mine Visit

Talked with Leon Estes in charge for Moore Bros. Contruction Co., contractor who has concentrated somewhere in the neighborhood of one thousand tons of magnetite in a stockpile.

The property was idle but some heavy equipment, 4 trailer houses and the Omega magnetic concentrating equipment were still at the property. Future operations, according to Mr. Estes, were very uncertain. There probably is pending a contract for delivery of 100 tons per day of magnetite concentrates to the Western Rolling Mills Plant at Tempe, but Mr. Estes was not at all sure that they would start deliveries in January.

He said his firm was negotiating for extraction of pumice in California and that they were associated with the Church of the Open Door.

1-W

Not for Publication

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

RECEIVED
JUL 31 1959
DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

Mine Omega Iron Placer Deposit & adjoining deposits — Date July 15, 1959 & July 30, 1959

District Black Mountain District, Pinal Co. — Engineer Axel L. Johnson

Subject: Present Status. Information from Milford Kay on July 29, 1959
" " William Strickland on July 30, 1959
" " Odin Sundness on July 30, 1959
Visit to the property on July 15, 1959.

References Reports of April 21, 1959, March 30, 1959, April 6, 1959, and previous.

Present Status

(1) Personal visit to the property on July 15, 1959.

On my visit to the property on this date, I found no one working. The Kolman Portable Dry Magnetic Concentrator had been removed from its operating base, and had been parked behind the shops, offices and trailers. A stockpile of concentrates, approximately 10,000 tons in size, was stocked nearby. This was evidently the concentrates obtainedd from the magnetic concentrator when it was in operation. There was a considerable amount of sand in the concentrates, and I should judge that it would run somewhere between 50 to 55 % Fe. I found no one at the property who had been in charge of the operations.

(2) Information from Milford Kay, past Secretary of the company.

Mr. Kay informed me that he was no longer the Secretary, and that the Secretary was now William Strickland. He also informed me that the address of the office had now been changed to 1016 Valley National Bank Building, Tucson.

Mr. Kay stated, however, that a contract was now in the process of being drawn up for the sale of 250,000 tons of concentrates through a broker, this being the first sale, with more to follow later. He did not state who was buying the concentrates. He said as soon as this contract was drawn, the 10,000 tons now in stockpile would be rerun through the pilot plant described in my report of May 2, 1958, (consisting of 2 magnetic drums and a Stearns M. D. Electro Magnetic Separator, etc.)

(3) Information from William Strickland, acting Secretary of the company.

Mr. Strickland stated that he was acting Secretary, taking care of the secretarial duties temporarily. Later on, he stated, a permanent professional Secretary would be appointed, and he would then be Asst. Secretary.

Mr. Strickland stated that a contract for the sale of the condentrates is now being drawn up by their attorney in Phoenix by the name of George Hill. This contract specifies certain requirements as to the grade of the ore, and the concentrate pile would have to be sampled and tested before any of the concentrates are delivered. Mr. Strickland also intimated that it was sold through a broker, and did not state who was buying the concentrates. He said that a contract for the mining and concentrating to Elzie Moore of the Moore Bros Construction Co. was being considered.

(4) Information from Odin Sundness, consulting engineer.

Mr. Sundness stated that he had been engaged by the company to sample the concentrate pile, and to make screen tests of the ore. He made the statement that it would perhaps run about 52 to 53 %, and had too much fines to comply with the specifications which had been laid down by the purchasers. Consequently, this pile would have to be retreated to come up to specifications.

Mr. Sundness also stated that he understood that Haliburton Oil Co. was the prospective purchasers of the concentrates, and that the first contract was for 100,000 tons, to be followed by additional contracts of 100,000 tons per year thereafter. Mr. Sundness, as well as Mr. Kay and Mr. Strickland did not know about any plans considered at the present time to construct a wet magnetic concentrator plant and a Madras sponge iron plant at Red Rock, which was reported to me earlier (Report 3/30/59/

Not for publication

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Omega Iron Placer Deposit & adjoing deposits

Date July 15, 1959 & July 30, 1959

District

Engineer

Subject: (continued)

Comclusions

The information, which I received from the parties interviewed would indicate that future operations at the property is very indefinite:

(1) The contract for the sale of the concentrates has not been, as yet, fully agreed on.

(2) There seems to be somewhat of a doubt that the specifications required by the prospective purchasers can be met.

(3) The informants are not in agreement as to the tonnage specified in the contract. It may be 250,000 tons, or it may be only 100,000 tons.

(4) The informants are not in agreement as to who is buyin g the concentrates.

(5) The small tonnage involved would evidently not warrant the construction of the large wet magnetic concentrator plant at Red Rock, which was reported to be under consideration previously (see my report of March 30, 1959.

(6) Nothing is being mentioned now by any of the informants regarding the proposed Madras sponge iron plant at Red Rock.

Not for Publication

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: Omega Iron Placer Deposit & adjoining deposits — Date: April 21, 1959

District: Black Mountain Dist., Pinal Co. — Engineer: Axel L. Johnson

Subject: Field Engineers Report. Personal Visit & information from W. H. Martin

References: Report of March 30 and April 6, 1959

Present Activity: Completing the installation of a Kolman Portable Dry Magnetic Concentrator. Stripping of overburden by bulldozers, preparatory to open pit mining operations.

Description of the Operations of the Kolman Portable Dry Magnetic Concentrator: The plant is manufactured by Kolman Manufacturing Co., Sioux Falls, S. Dakota.

The mine run ore is dumped on a grizzly and is moved by conveyor belts over a set of 5 - 5' x 10' double deck shaker screens, screening the material to plus and minus 10 mesh. The oversize from these screens is moved by belt conveyor to a reject pile, and the undersize goes by belt conveyor which feeds it over a magnetic separator. The magnetic product from the separator drops on a conveyor belt, which drops it in the rough concentrate pile, and the non-magnetic product is removed by another belt conveyor which moves it to a reject pile.

The rough concentrates will then be loaded into trucks for haulage to the wet magnetic concentrating plant to be located at Red Rock.

Mr. Martin stated that if it is found by subsequent tests, that the 10 mesh screens will not provide the maximum recovery, larger screens will be tried. will be lowered

Mr. Martin also stated that, as soon as practical, the portable plant/20 ft. to the 20 ft. level, then later on to the 40 ft. level, and finally to the 60 ft. level, which will be the main operating level.

Mr. Martin promised the field engineer a copy of the flow sheet of the wet magnetic concentrator to be erected at Red Rock by Jeffrey Manufacturing Co., Columbus, Ohio. He stated that a feature of this plant is the use of Baum Jigs, which remove most of the waste material in the rough concentrate, and the final separation of the excess titanium in the magnetic separator.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

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APR - 6 1959
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PHOENIX, ARIZONA

Not for publication

Mine Omega Iron Placer Deposit & adjoining deposits
Date Mar. 30, 1959 & April 6, 1959
District Black Mountain Dist., Pinal Co.
Engineer Axel L. Johnson

Subject: Field Engineers Report. Personal visit & information from Milford Kay and Fred Moore.

Name Mr. Milford Kay made the statement that the name "Omega" would refer to only a part of their properties. He stated that the Southwestern Iron & Steel Industries own four different properties, viz. Omega, Garpak, Black Hills and Royal. However, he did not have a name for the entire holdings.

References Report of May 2, 1958

Number of Claims (Acreage) Mr. Kay stated that the company has x State of Arizona leases for 490 State claims, amounting to 9,800 acres, and in addition have Federal claims to about 16,000 acres. The Omega, Garpak and Black Hills properties are mostly on State lands, but also contain some Federal, while the Royal properties are all on Federal land.

Owners Southwestern Iron and Steel Industries, Inc. 406 Valley National Bank Bldg., Tucson, Ariz., a closed dorporation. --- recently reorganized.

Following, are now the officers of the company:

S. Y. Guthrie,	President,	Dallas, Texas
Dr. Julius Madras,	Vice-Pres.,	Longview, Texas
Harley Graff,	"	Dallas, Texas
Paul J. Sugar,	"	Salt Lake City, Utah
John W. Martin,	"	Tucson, Ariz. (now at Western Hotel)
Milford Kay,	Secretary	406 Valley National Bank Bldg., Tucson, Ariz.
Harry K. Ulmer	Treasurer	Salt Lake City, Utah

Board of Directors are composed of all of the above, with the exception of Paul J. Sugar; and in addition Walter Burke, Pierre, S. Dak., Dr. John Jenkins, Dallas, Texas, Robert Powers, Detroit, Mich., and George Hill, an attorney at Phoenix, Ariz.

In addition to the above mentioned, the following persons own stock in the company ---- W. H. Martin, Robert E. Heineman, Harry S. Bacal, James H. Freudenthal, and Harry M. Warren, all of Tucson, Ariz.

Mr. Kay reported that John W. Martin and W. H. Martin have sold most of their stock, which they originally held, to some of the other stockholders mentioned above, and now have very little to say regarding the affairs of the company.

Mr. Kay also stated that, in contrast to the publicity which the Martin Bros. distributed and encouraged, the new management is discouraging publicity of their operations, until such a time as they will be in actual production.

Contract for mining & concentrating Moore Bros. Construction Co. (Fred Moore and Elzie ~~L. G.~~ Moore) has been given a contract by the Southwestern Iron and Steel Industries, Inc. to mine the magnetite placer sands and to concentrate same, delivering to the S. W. Iron & Steel the iron concentrate. This does not include the pelletizing of the concentrate. The contract price paid to Moore Bros. is on a price per ton of concentrate basis, and this price is based on the number of iron units and the selling price of the concentrate.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Not for publication

Mine Omega Iron Placer Deposit & adjoining deposits (continued) Date

District Engineer

Subject:

Present Activity

(1) Dismantling of the old pilot plant at the mine site. Some of the conveyor belts and magnets will be used later in the Dirty Concentrate plant to be erected.

(2) Assembling machinery to be used later in the mining of the placer sand.

(3) Sampling and concentrate tests to supplement the work done previously by Odin Sundness.

(4) Negotiations with Jeffrey Manufacturing Co. for the erection of the magnetic concentrating plants.

Proposed Plant Construction A contract is in process of negotiation for the construction of magnetic concentrating plants by Jeffrey Manufacturing Co., 861 N. 4th St., Columbus, 16, Ohio. It is hoped that these plants will be completed in about 60 days.

The plants planned are viz:

(1) A Dirty Magnetic Concentrator plant to be erected at the mine site. This will be a dry concentrator of 350 tons per hour capacity. This will concentrate to about 50 % Fe, or to ~~from~~ 80 ~~%~~ to 90 % magnetite. Plant will have screens for screening out oversize material, but no crushing or grinding equipment.

(2) A Wet Magnetic Concentrator plant will be erected at Red Rock. This will have a capacity of 150 tons per hour. It is planned to add another 150 ton unit to this plant later. This plant will have crushing and grinding equipment to crush and grind to ~~from~~ 60 ~~mesh~~ ~~to~~ 80 mesh, which is considered to be fine enough to separate the titanium oxide from the magnetite. Water for the plant will be developed near Red Rock.

In addition to these two plants to be constructed by Jeffrey Manufacturing Co., the following plants will be constructed by Southwestern Iron & Steel:

(1) A Madras sponge iron plant to be erected at Red Rock. Capacity of this plant was not given by the informants, and I presume it has not yet been decided on.

(2) Pelletizing plant to be erected at Red Rock for fusing the fine iron concentrate into usable size for the iron furnace.

A 14 mile road from the mine to Red Rock will also be constructed for hauling the dirty concentrates to the final concentrating plant at Red Rock.

Proposed Operations These were described by Fred Moore to be as follows:

(1) Bulldozers will push the magnetite sands on belt conveyors. 4 bulldozers will be used, which are expected to provide a capacity of 350 tons per hour.

(2) Screening out some of the oversize materials.

(3) Treating the placer ~~xxxxxx~~ sand in the Dirty Concentrating plant at the mine site. This plant will be located about 600 to 800 ft. S. of Hwy # 80.

(4) Hauling the dirty concentrates to Red Rock by trucks.

(5) Treating the dirty concentrates at the wet concetrating plant at Red Rock.

(6) Pelletizing the concentrates for use in furnaces or the Madras process.

(7) Treating a part of the finished product in a Madras sponge iron plant.

Markets Mr. Kay states that the company will market their own ore, aided to some extent by brokers. He expects to export some of the ore to Japan, shipping same from the port of Guaymas, if satisfactory arrangements can be made with Mexico; otherwise from San Diego or Los Angeles harbors. He expects to obtain several domestic markets for the product, among those being Sheffiekd Steel, Geneva Steel, Kaiser Steel, & C. F.& I.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Omega Iron Placer Deposit Date Jan. 14, 1959

District Black Mountain District, Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineer's Report. Information from Tucson office of the Co.

References: Report of May 2, 1958, et al.

Location: About 44 miles NW of Tucson on both sides of Highway #80.

Status: No activity at present, but company hopes to be able to get operations started in 30 to 60 days. Company is negotiating now with a Moore Construction Co. for a contract to operate the property. The Madaras Process for the production of sponge iron is planned for construction at Red Rock.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

(Copy)

Mine Omega Iron Placer Deposit (also called Owlhead Magnetite Prospect) Date May 2, 1958

District Black Mountain District ---- Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report. Personal visit & Information from John W. Martin & W.H. Martin

References: Report of field engineer July 15, 1957. Also reports in the Phoenix office of the Dept. of Mineral Resources, submitted by Omega Mining & Exploration Co. Sept. 1956.

Location: About 44 miles NW of Tucson on both sides of Highway 80. See report of 7/15.

Number of Claims: See report of July 15, 1958.

Owners: Southwestern Iron and Steel Industries, Inc., 1016 Valley National Bank Bldg., Tucson, Ariz., a closed corporation with 11 incorporators, viz: John W. Martin, Pres.; W. H. Martin, Vice-Pres., both of the above address; Robert E. Heineman, Milford Kay, Harry S. Bacal, James H. Freudenthal, & Harry M. Warren, all of Tucson, Ariz.; Harley Graff, Dallas, Tex.; Dr. Julius Madaras, Longview, Tex.; Paul J. Sugar, Salt Lake City, Utah; and Harry K. Elmer, Jr., also of Salt Lake City, Utah.

Mr. Martin reported that the above corporation has bought out all the interests of Garpac, Inc., the Omega Mining and Exploration Co., and the Black Hills Co.

Principal Minerals: Magnetite placer sand

Present Mining Activity: Company is now operating a magnetic separation pilot plant, and making tests and assays of the concentrates recovered, mill recovery, etc. Company has constructed a laboratory on the mill site, and has employed Joe Linn, Henderson, Nev. as a chemist to run the mill tests.

Present Operations The pilot plant, now in operation, has a reported capacity of 250 tons per 12 hour shift of placer sand. This plant consists principally of 2 -- 15" x 12" dia. magnetic drums; 1 Tornado Impact crusher (Werco Co., Chicago); 1 - 48" x 24" dia. Stearns M.D. Electro Magnetic Separator--- all connected with conveyor belts.

The feed for the pilot plant is, at present, obtained from a stockpile of screened material, which had previously been screened to minus 1/4 in. by the Garpac Co. Mr. Martin estimates that this stockpile runs about 20% magnetite, having been upgraded by screening from about 10% placer sand. The screened material is pushed by a bull-dozer into a small ore hopper, which feeds it on a conveyor belt, which drops it over the 2-- 15" x 12" dia. magnetic drums. The waste from these drums drops on a conveyor belt, which conveys it to the waste dump, and the concentrates, now running about 50% magnetite and 2.5% ilmenite drops on another conveyor belt, feeding into a 38 ton hopper. From this hopper, the ore is fed into a Tornado Impact Crusher, which crushes to minus 42 mesh. This minus 42 mesh product is fed by means of a conveyor belt to a 48" x 24" dia. Stearns M.D. Electro Magnetic separator, which further upgrades the product. This separator also removes most of the ilmenite by varying the intensity of the magnetism by means of a control mechanism. The ilmenite and other waste products are removed to a waste dump by a conveyor belt, while the concentrates, now reported to run about 65% magnetite are conveyed into a 34 ton storage hopper.

The concentrate product from this storage hopper is rerun through the entire circuit a second time in order to upgrade the concentrate still further. The resulting concentrate, according to Mr. Martin, now runs about 69% iron, with less than 0.5%

titanium. Mr. Martin estimates that the cost of the pilot plant operation is about $9.00 per ton of concentrates obtained.

Proposed Plans: Mr. Martin reports that they have a contract with W.R. Skousen of Phoenix and Tempe, Ariz. for the mining and concentrating of the placer sand, and hauling the concentrates to Red Rock. This contract calls for a base price of $4.82 per ton of concentrates, delivered at Red Rock, based on a 5% pit run, with a sliding scale increase, if the pit run is below a 5% of magnetite.

Mr. Martin states that the W.R. Skousen Co. plans to install a magnetic separation plant at the mine site, with a capacity of 200 tons of concentrates per hour, or 4,800 tons of concentrates per day. This will be a dry magnetic separation plant, similar to the pilot plant, except that it will take a 2 in. feed, and that the concentrates will not be run through a second time. He reports that Hewitt Robins, through the Gallagher Co., is now designing this plant, and construction is planned to start in about 90 days.

A sponge iron plant is also planned for construction at Red Rock, which will employ the Madaras Sponge Iron process. The Southwestern Iron and Steel Industries, Inc. will have a working interest in this plant. The estimated tonnage, which will be treated in the sponge iron plant is about 3,000 tons per day.

The remaining 1,800 tons per day obtained from the magnetic separation plant will be shipped to steel producers in California and Texas. Mr. Martin reports that the prices paid by these companies is about 25 cents per iron unit delivered at the steel plant or at Los Angeles harbor. He also reports that the freight from Red Rock is $5.00 per ton to the Los Angeles harbor, $3.00 per ton to Guaymas, Mexico and $8.00 per ton to the Sheffield Steel at Houston, Texas.

Additional Remarks: The plan of mining by the W.R. Skousen Co. is reported to be principally by conveyor belts, with possibly drag lines feeding to the conveyor belts.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Not for publication

Mine Omega Iron Placer Deposit (also called Owlhead Magnetite Prospect) Date July 15, 1957

District Black Mountain District- Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report. Personal Visit & Information from Odin Sundness, Cons. Engr.

References Reports in the Phoenix office of the Dept. of Mineral Resources, submitted by Omega Mining and Exploration Co., 516 Luhrs Bldg., Phoenix, Ariz. Sept. 1956. (68 pp.)

Location About 44 miles NW of Tucson, on both sides of Hwy. 80, around Brady, Bogard and Durham washes. Deposit reported to be 8 miles long by 4 miles wide, with most of the ground in Secs. 1 to 24 -- T 8 S -- R 12 E (15, 360 acres). Level terrain, cut by several washes, and covered with mesquite, saguaros, and different varieties of cactus.

Number of claims Most of the ground located covers Sects. 1 to 24 -- T 8 S -- R 12 E (15,360 acres). Some ground also located in T 8 S -- R 11 E. Part of the locations are on Federal land, and some are covered by State of Arizona leases.

Owners Omega Mining and Exploration Co. reported to own most of the claims. Mr. Sundness ~~xxxx~~ reports that ~~xx~~ Black Hills Co. also owns a number of claims.

Lessees Garpac, Inc., Suite 102, Mayer Heard Bldg., Phoenix, Ariz.

Option Murmanill Corp., P. O. Box 4795, Dallas, Texas. Gerald Mann, President.

Principal Minerals Magnetite ~~placerx~~ sand.

Present Mining Activity Sampling and ore testing under the direction of Odin Sundness, Consulting Engineer for Murmanill Corp. 10 men employed. 6 men sampling (3 on each shift), and 4 men working at the Arizona Bureau of Mines testing laboratory.

Geology & Mineralization A magnetite placer deposit, which has been formed by the erosion of biotite granite rock and deposition as sand. Bed rock has been estimated to be 500 to 1,000 ft. below the present surface of the deposit.

Ore Values Average ore values not yet accurately determined, as the deposit is very spotty, and also contains alternating layers of high grade and low grade values. Previous samples (as reported by Omega Mining and Exploration Co.), no doubt, was accidentally salted, to some extent, on account of the magnetite particles, being heavier, running into the sample from the adjacent sides. These previous samples ran all the way from 3.2 % to 29.5 % of magnetite in the sand, and averages of sets of samples ran from 7.1 % to 13.47 % of magnetite. Mr. B. H. Martin, in his report, stated, however, that he believed an estimate of 5 % of magnetite in the sand would be conservative. Mr. Sundness has not yet announced the results of his sampling program.

Ore in Sight and Probable No "developed" ore estimated as yet. No "probable ore" estimated. Mr. B. H. Martin, in his report, estimates ~~xxx~~ 56,202,854 tons of placer sand, containing 5 % magnetite, on 1/2 of the available area, as "possible ore". The exploration work and sampling done to justify his estimate, however, was very limited. Nor has it yet been determined if a 5 % magnetite placer sand is commercial ore.

Milling and Marketing Facilities Operator must install milling equipment to concentrate the product. This may also have to include a plant to manufacture pig iron or sponge iron, on account of the high freight rates to sea ports.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Not for publication

Mine Omega Iron Placer Deposit (continued) Date July 15, 1957

District Black Mountain District- Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report (continued from page 1)

Past History None. Recently located by Omega Mining and Exploration Co.

Past Operations Work done last year (1956) included about 50 holes, varying from 16 in. to 42 in. in diameter, with sampling of same, and some open cuts and bull dozer work.

Present Operations Work done by Murmanill Corp. under direction of Odin Sundness:

(1) Long Drilling Co., 17 W. Camelback Rd., Phoenix, Ariz. drilled 52 or 53 holes of 42 inch diameter, using a custom built earth boring machine, with teeth on bottom and sides and a round cylinder bucket 42 in. dia. by 24 in. in height. These holes were drilled at regular intervals 1/2 mile apart, and were each 28 ft. deep, and covered an area of 10 square miles.

(2) These holes are now being sampled by the Murmanill Corp. under the direction of Odin Sundness, Santa Rita Hotel, Tucson, Ariz. Operations are as follows:

A 24 ft. length of 36 in. diam. corrugated metal highway culvert, with 24 in. wide staggered slots cut in same to allow for sampling, is lowered inside the 42 in. dia. hole by means of a portable gasolene driven hoist and boom mounted on a truck. This culvert is inserted in the hole to protedt the sampler from injury from sluffing and caving ground, and to minimize salting of the sample taken. The sampler, seated on a sampling chair, is lowered and raised to the desired height by means of the hoist, as the samples are taken. The samples cut are 4 in. wide x 4 in. deep x 5 ft. in length, a sampling scoop, 4 in. wide with a 4 in. penetration mark being used to facilitate this operation. Each sample thus contains approx. 0.55 cu. ft. of material weighing about 69 lbs.

The samples are taken to the Arizona Bureau of Mines laboratory at the University of Arizona for testing. The following tests are made: (a) The coarse material plus 14 mesh to plus 20 mesh is screened out; (b) Dry magnetice separation is used on the material of minus 14 mesh to minus 20 mesh (some tests made for minus 14 mesh material and some for minus 20 mesh material), yielding a rough concentrate, running from 20 to 40 % in iron content; (c) Rough concentrates then crushed in a ball mill to 60 mesh or 80 mesh (some tests made on 60 mesh and some on 80 mesh); (d) Magnetic Separation (wet magnetic separation) is now made on this product. The concentrates from the wet magnetic separation runs about 65 % in iron content, ~~by~~ but Mr. Sundness reports that the recovery is very low.

Special Difficulties Tests to date is reported to have shown a very low recovery of the iron units contained in the sand, and especially those contained in the rough concentrates. It is believed that a considerable amount of the iron in the sand is in the form of iron-magnesium silicates, such as biotite and amphibles. Other iron units may be in the form of hematite and FeO. It is reported that tests will be made for determining the possibilites of recovering a greater proportion of the iron content found in the sand. Roasting may be attempted as a possible solution.

Proposed Plans A Madras Sponge Iron processing plant, located at the mine site, is being considered for treating the iron concentrates and reducing them to sponge iron. This is a deoxidizing process ---- a hydrogen carbon monoxide reduction, using gas at a temperature of 800 degrees Fahr., resulting in a sponge iron of about 96 % Fe.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

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PHOENIX, ARIZONA

Mine Omega Iron Placer Deposit (also called Owlhead Magnetite Prospect) Date May 2, 1958

District Black Mountain District ---- Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report. Personal visit & Information from John W. Martin & W. H. Marti

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Location About 44 miles NW of Tucson on both sides of Highway # 80. See report of 7/15.

Number of Claims See report of July 15, 1958.

Owners Southwestern Iron and Steel Industries, Inc., 1016 Valley National Bank Bldg., Tucson, Ariz., a closed corporation with 11 incorporators, viz: John W. Martin, Pres.; W. H. Martin, Vice-Pres., both of the above address; Robert E. Heineman, Milford Kay, Harry S. Bacal, James H. Freudenthal, & Harry M. Warren, all of Tucson, Ariz.; Harley Graff, Dallas, Tex.; Dr. Julius Madras, Longview, Tex.; Paul J. Sugar, Salt Lake City, Utah; and Harry K. Elmer, Jr., also of Salt Lake City, Utah.

Mr. Martin reported that the above corporation has bought out all the interests of Garpac, Inc., the Omega Mining and Exploration Co., and the Black Hills Co.

Principal Minerals Magnetite placer sand

Present Mining Activity Company is now operating a magnetic separation pilot plant, and making tests and assays of the concentrates recovered, mill recovery, etc. Company has constructed a laboratory on the mill site, and has employed Joe Linn, Henderson, Nev. as a chemist to run the mill tests.

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Omega Iron Placer Deposit Date May 2, 1958

District Black Mountain District --- Pinal Co. Engineer Axel L. Johnson

Subject: Field Engineers Report (continued)

Proposed Plans Mr. Martin reports that they have a contract with W. R. Skousen of Phoenix and Tempe, Ariz. for the mining and concentrating of the placer sand, and hauling the concentrates to Red Rock. This contract calls for a base price of $ 4.82 per ton of concentrates, delivered at Red Rock, based on a 5 % pit run, with a sliding scale increase, if the pit run is below a 5 % of magnetite.

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Additional Remarks The plan of mining by the W. R. Skousen Co. is reported to be principally by conveyor belts, with possibly drag lines feeding to the conveyor belts.