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01/05/95

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SANTA FE MANGANESE MINE

ALTERNATE NAMES:

YUCCA
CHAPIN MANGANESE
J H JONES MINE

MOHAVE COUNTY MILS NUMBER: 302A

LOCATION: TOWNSHIP 15 N RANGE 20 W SECTION 17 QUARTER SE
LATITUDE: N 34DEG 38MIN 08SEC LONGITUDE: W 114DEG 22MIN 25SEC
TOPO MAP NAME: FRANCONIA - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

MANGANESE
IRON
BARIUM BARITE
CLAY

BIBLIOGRAPHY:

ADMMR SANTA FE MANGANESE MINE FILE
ADMMR MOHAVE CUSTOM CARD FILE
ADMMR PARKER CUSTOM MILL STUDY FILE
WILSON, E.D., & G.M. BUTLER, MANGANESE ORE
DEPTS IN AZ. AZBM BULL 127, 1930, P. 78-81
FARNHAM, L.L., & STEWART, L.A., MANGANESE
DEPTS. OF WESTERN AZ. USBM IC 7843, 1958, P55
AZ. STATE LAND DEPT. MINERAL MAP
GJBX-213 (82)
AZBM BULL 129, P. 91 (SAME INFORMATION AS
AZBM BULL. 127 ABOVE)
ADMMR MINE MAP D-001-0041 (GEOLOGICAL MAP)

SANTA FE MANGANESE MINE

MOHAVE COUNTY

ABM Bull. 127 p. 71

ABM Bull. 129 p. 91

IC 7843 p. 44

ABM Bull. 180, p. 217

GJBX-213(82) Geology and Mineral Resources of the Los Angeles, Needles, Salton Sea, San Bernardino, and Trona 1 x 2 NTMS Quadrangles, Pg. 81, Yucca Mine

Parker Custom Mill Study - Manganese Ores (file)
USGS Needles Map

Az State Land Dept Mineral Map
USBM IC 7843 1958 P. 55

TOPOCK GROUP

MOHAVE COUNTY

Manganese - See: USGS Bull. 710-D Page 156

Topock 1 763
15N. 20W. 6NW
Topock 2 764
16N. 20.5W. 26SW

VERDUN GROUP

MOHAVE COUNTY

Manganese - See: USGS Bull. 710-D Page ~~155~~156

Frank Turack - map
others are not
for Verdun, Powell
& Topock

POWELL GROUP

MOHAVE COUNTY

Manganese - See: USGS Bull. 710-D Page 157

GATES & BROWN GROUP

MOHAVE COUNTY

Manganese - See: USGS Bull. 710-D Page 158

neither in people

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

*note by G.F. Reed:
I went over this property
& saw Hows holder, this
copy - replaced with my
report on Santa Fe
mine 10-13-39*

Date: July 27, 1939 (Corrected 8/13/40)

*made it in
form of owners report*

1. Mine: Chapin Manganese Deposit
2. Mining District & County: Chemehuevis Mng. Dist.
3. Former name: Mohave Co.
4. Location: 8 miles SE of Topock, Ariz. Sec. 17, T. 15 N., R. 20 W
5. Owner ~~W.~~ J. H. Jones and Rae L. Johnston (Lessee) *→ Deceased*
6. Address (Owner) c/o Rae L. Johnston 1514 - 19th Ave., Seattle, Wash.
7. Operator
8. Address (Operator)
9. President
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals: Manganese
14. Men Employed
15. Production Rate: Unlimited
16. Mill: Type & Cap
17. Power: Amt. & Type
18. Operations: Present: Virgin property with manganese deposits exposed by several open cuts, short tunnel and prominent outcrops.

19. Operations Planned: Can be easily developed to produce 300 tons per day, or more.

20. Number Claims, Title, etc.: Four claims: Blackjack No. 1, 2, 3, 4. *No claims U. S. patented to Santa Fe Ry.*

upset. patented this name in Owens or Chem. Dist 9 mi S.W. of Pannel - loc. by Glenn A. Grant July 1936

21. Description: Topography & Geography: Deposits are at an altitude ranging from 1000 to 1200 ft., about 200 ft. lower than summits of adjacent hills. Gently rolling to flat topog. Precipitation light, about 3" yearly.

22. Mine Workings: Amt. & Condition: At north end one pit 10 feet deep exposing manganese bed 7-8 feet thick. At northeast edge prominent outcrop of manganese 7 feet thick. 200 feet to south of north pit, a short tunnel again exposes same bed. 130 feet SE of tunnel another pit exposes at least 8 feet of thickness, this not being the limit at this point.

23. **Geology & Mineralization:** Underlying rocks are Pre-Cambrian granite & gneiss overlain by sandstone beds, lava flows, volcanic ash and breccias. The sandstone beds have been impregnated or in places entirely replaced by manganese oxides. These beds dip about 25.
24. **Ore: Positive & Probable, Ore Dumps, Tailings:** The limited workings and outcrops expose at least 25,000 tons that average, from extensive sampling, 20% manganese, 35% insoluble and 3.5% iron. If these beds maintain continuity on their dip underneath the surface wash and detrital, an enormous tonnage of similar grade is possible.
- 24A. **Vein Width, Length, Value, etc.**
25. **Mine, Mill Equipment & Flow Sheet:** No equipment.
26. **Road Conditions, Route:** Reached by 8 miles from Topock, Arizona, over good county road to Powell, a station on the A.T. & S.F. Ry., thence 8 miles over unimproved road. A direct haul good road with easy grades some 12 miles in length could be constructed from the property to Powell at nominal cost.
27. **Water Supply:** From the Colorado River, two miles distant and involving a lift of 7,800 ft.
28. **Brief History:** Preliminary work done during world war period, further development awaiting better prices and capital.
29. **Special Problems, Reports Filed:** Necessary to determine best method of beneficiation. Report on this property contained in Arizona Bureau of Mines Bulletin No. 127.
30. **Remarks**
31. **If property for sale: Price, terms and address to negotiate:** Desire to become affiliated with the necessary capital to develop and place on production basis on a participating basis, or will give lease and option to purchase.

Communicate with: Rae L. Johnston, Oatman, Arizona

Signed: Rae L. Johnston

Name of Mine or Prospect: Yucca	Township 15N	Range 10W	Section 17dcd	Priority B
Principal Minerals: Psilomelane, Pyrolusite	1:250,000 Quad Needles		7.5' - 15' Quad Topock	
Associated Minerals: Calcite, Barite	District Chemehuevis		Principal Product Manganese	
Type of Operation: Surface: Open Pit	County Mohave	State AZ	Type of Deposit Sedimentary Host	

Ownership or Controlling Interest:
Santa F Pacific Railroad Co. (fee simple)

Access: From Lake Havasu City proceed north on Arizona 95 for 15 miles. Turn left on unimproved road for 3.5 miles. Turn left at fork and proceed south for 4 miles. Mine is shown on topographic quadrangle.

Structural Control or Geological Association:

"The rocks in the region include granite, sandstone, tuff, and volcanic flows. The manganese deposits in the area occur as bedded deposits in sandstones and also in steeply dipping zones of shearing and faulting in volcanic rocks. The principal manganese minerals in the fault zone are psilomelane and pyrolusite. Fragments of brecciated country rock, calcite, barite, and iron oxides are the chief gangue constituents."²

Age of Mineralization:

Production History	Geochemical Analyses
<p>54 holes drilled by Mineral Materials Division of Vinnell Mining and Minerals Co. in 1955 indicated 137,000 tons of ore at 15.7% Mn; primarily in bedded wad deposit.⁴</p> <p>Beneficiation tests were conducted by the U.S. Bureau of Mines in 1947.⁵</p>	<p>Sample 16-XI-79-4 (in ppm)³</p> <p>Ag 1.0 Au 0.01 Pb 1650. As 180. Sb 50.</p>

References

- 1) ABM (1969) Bull. 180, pp. 211-225
- 2) Farnham & Stewart (1958) pp. 55-56
- 3) Liggett & Crutchfield (1979) field reconnaissance.
- 4) Santa Fe Pacific Railroad Co: Crutchfield File #19.0037
- 5) Havens & others (1947) U.S. Bureau of Mines R.I. 4147

from: W.H. Crutchfield Jr. Mohave County Prospect Assessment Compilation (post 1982)

Name of Mine or Prospect:	Township	Range	Section	Priority
Santa Fe Manganese Mine	15N	20W	17	C
Principal Minerals:	1:250,000 Quad		7.5' - 15' Quad	
Manganese Oxides	Needles		Topock	
Associated Minerals:	District		Principal Product	
	Topock		Manganese	
Type of Operation:	County	State	Type of Deposit	
Surface: Open Pit	Mohave	Ar.	Sedimentary Host	

Ownership or Controlling Interest:
 Santa Fe Pacific Railroad; (lessee) Fred Smith, 1317 S. Chester St., Bakersfield, Ca.

Access: From Topock, Ar. proceed east on National Old Trails Road for 5 miles. Turn right on unimproved road and travel south for 11 miles. Mine is not shown on topographic quadrangle.

Structural Control or Geological Association:

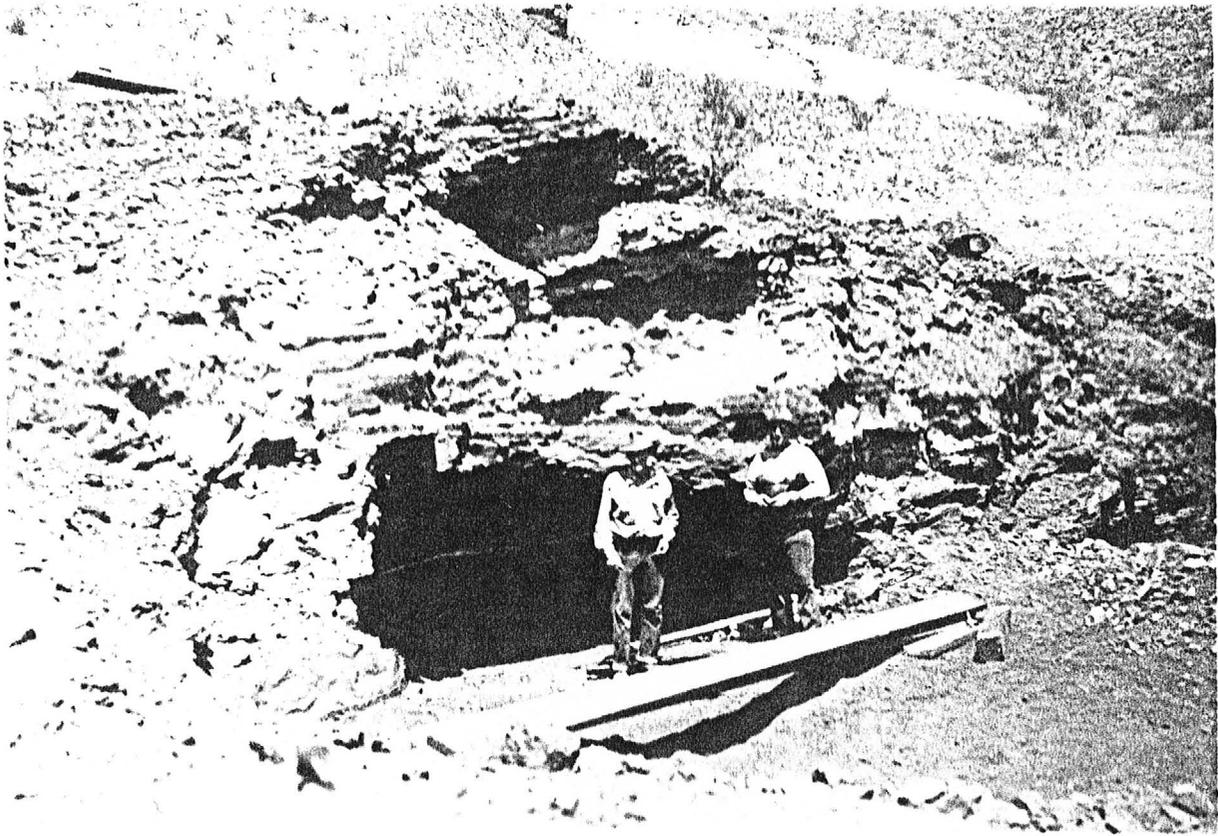
"Volcanics and possibly sediments dipping about 25° underlain by a rhyolite flow. A bed of sandstone has been replaced by soft Mn oxide in bands up to 2 feet wide. The footwall is cherty and above the rhyolite a bed of fragmented lava 6-10 feet thick has been replaced by hard manganese oxides. Hanging wall appears to be andesite."¹

Age of Mineralization: Tertiary

Production History	Geochemical Analyses
1950 ¹ 1 car load	<u>Assay¹ ore</u> 36.69% Manganese

References

- 1) ADMR file, Phoenix, Ar.



A-180-25

(J. H. JONES?) (CHARIN?)

1953



A-180-24

SANTE FE MANGANESE MINE

1953

SANTA FE MANGANESE

MOHAVE COUNTY
TOPOCK DIST.

Visited the manganese plant of Waughtel Mining Co. (Santa Fe Mine) at Topock. No activity in evidence and the buildings are locked up. I learned locally that operations were suspended 3 weeks ago and resumption seemed unlikely.

TRAVIS P. LANE - WR - 5-23-59

Visited the idle Waughtel Mining Co. plant (for the Santa Fe Manganese Mine) at Topock to check into the status of the machinery. The crushing equipment and most conveying equipment has been removed. There remains most of some conveyors, jigs, a log washer (never installed), and the Dye and Bathrick H M plant. This was rented for a time but not used.

TRAVIS P. LANE - Wr - 10-26-59

Kingman Mining Project, Chapin Exploration Company, Claim map 1, 11/16/76

✓ Jones Md.

TISH R20W

~~20~~ Sec 17

Mohave County

South of

1514 19th Ave.,
Seattle, Washington.
June 30, 1940

Mr. J. H. Jones,
Oatman, Arizona.

Dear Sir:

Pursuant to your recent request, I made an examination of the Chapin Manganese deposits, and herewith offer you my report thereon:

LOCATION

The deposit is located eight miles in an air line south east of Topock, Mohave County, Arizona, on the southeast side of a group of pinnacled peaks known as the Needles. It is included in the area mapped by the U.S.G.S. as the Needles Quadrangle. The nearest shipping point is Powell, a station on the Sante Fe railroad eight miles to the north. At present the property is reached by an eight mile drive over a good country road, the Topock-Yucca highway, thence eight miles over unimproved road. A direct haul, good road with easy grades some 12 miles in length could be constructed from the property to Powell at a nominal cost.

CLAIMS

The group is comprised of 4 claims, held by possessory title, known as the Black Jack No. 1,2,3, and 4, included in Sec. 17 T15NR20W.

ECONOMIC FEATURES

During the development period, power would have to be generated locally by Diesel installation. Later, for a large scale operation, it might be advisable to bring in electric power from Park Dam. Timber and mining supplies and materials can be obtained in Los Angeles and delivered in Topock by freight trucks or at Powell by railroad freight. Ample, experience labor would be available from the nearby mining camp at Oatman. There is no equipment on the property.

GEOLOGY

These deposits are at altitudes ranging from 1100 to 1200 feet above sea level, about 200 feet lower than the summits of adjacent hills. Precipitation is light, about 2.5 to 3 inches a year. The nearest source of water supply for a commercial operation would be the Colorado River, about 2 miles distant, and would involve a lift of some 600 feet.

The Arizona Bureau of Mines Bulletin No. 127 cite the Geology as follows: "The rocks range in age from Pre-Cambrian to Quaternary. The Needles are composed chiefly of lava flows, Volcanic ash, and breccias of Tertiary age, but in places these effusive rocks have been eroded and the underlying pre-Cambrian granite and gneiss have been exposed. One such area of Pre-Cambrian rocks is north of the manganese district, on both sides of the road that goes to Powell. The mesas and detrital plains that partly surround the low hills in the manganese district are underlain by sandstone beds, exposed ~~south~~ where arroyos have cut through the overlying rock debris. Some of these beds dip about 25 degrees SW. and others lie flat. They are younger than the lavas and evidently were deposited during a stage of aggradation in Colorado River. This formation is probably the same as that which occurs extensively along the Colorado River.

Extensive faulting has occurred in the manganese area. The faults are difficult to trace, but are indicated by the tilted lava flows and sandstone beds and the isolated hills of lava surrounded by detritus of sandstone. Some of the faulting occurred after the deposition of the Temple Bar conglomerate and

is of Quaternary age."

"Mr. Alvin B. Carpenter, who made a geologic study of this district during May, 1929, in the interests of the Chapin Exploration Co., gives the following information: Probable andesite is overlain in many places by tuff, tuffaceous shale, and sandstone. Above this tuff is a thick bed of gray-colored rhyolite with, at its base, a breccia which at the north end of the area shows a thickness of more than 100 feet, yet does not appear at any point south of the steep canyon which terminates at the upper end of the manganese deposit. Covering the gray rhyolite and the andesite, and extending northwestward over a considerable area with a thickness of more than 200 feet, is a red volcanic agglomerate. Small, irregular deposits of manganese oxides occur scattered through lower portions of this formation as partial replacements of the cementing material. The proportion of manganese to the included andesite and rhyolite of the coarser agglomerate is low, but, in the finer-grade beds, the replacement has included a large part of the finer grains as well as the cementing material."

DEVELOPMENT

At the north end of the deposit is a pit some 8 to 10 ft deep exposing a bed, which is about 7 to 8 feet thick at this point. This consists of a sandstone bed that has been completely replaced by manganese oxides. This occurrence outcrops prominently and can be identified for 200 to 300 feet to the South. Mr. Carpenter's sample from this pit returned 25% Manganese, 35% Insoluble, 3.5% Iron.

Approximately 200 feet to the South, a short tunnel again cuts this occurrence. Ore from here gave an analysis of 30% Mn., 25% Insoluble and 1.8% Iron.

Another shallow pit, 130 feet southeast of the tunnel exposes mineralized bed dipping southeast beneath the surface detrital and wash. A sample of this ore ran 19% Mn., 37% Insoluble and 2% Fe. The thickness of this bed was not delimited by the cut, but at least 8 feet was exposed.

This latter exposure is definitely terminated by a major, nearly vertical fault. Between this and the tunnel is a zone of smaller parallel faults. In this fault zone the manganese and iron content varies widely, ranging from 4 to 22% manganese and 2 to 30% Iron.

CONCLUSIONS

The very limited workings, but extensive croppings, expose a tonnage of 45,000 to 50,000 tons of probable ore, even giving it very little continuity on the dip of the beds. From Mr. Carpenter's sampling, this tonnage averages approximately 20% Mn, 35% Insoluble and 3.5% Iron. However, the major potentialities of the property are in the possibility, and there is no reason to conclude otherwise at present, that if the bed exposed in the southeast pit, that is dipping SE, out under the surface wash and detrital, maintains its continuity, it can contain an enormous tonnage of similar grade. With the proper type of beneficiation and under favorable market conditions, the property has major commercial potentialities.

Yours very truly,

/sd/ Rae L. Johnston
Rae L. Johnston

RLJ/M

1614 19th Ave.,
Seattle, Washington.
June 30, 1940

CHAPIN MANGANESE DEPOSITS

This is an estimate of the program and funds required to develop and place upon a 100 ton per day production basis the Chapin Manganese deposit which I have under lease, Due to the topography, continuity of the outcrops and general economic features it can be advantageously developed from five or six points at once, and I recommend the following:

5 shafts 1½ comp. each 200 feet - total 1000 ft. of (60 days) sinking at \$40 per foot	\$40,000.
500 feet of connecting drifts on 200 level at \$12 -(30 days)	6,000.
Two weeks start 10 raises and prepping up - - - - -	6,000.
Total Development expenditure - - - - -	<u>\$52,000.</u>
Capital expenditure required for above program:	
600 cu ft Compressor - Diesel driven - - - - -	\$ 4,000.
5 light sinking hoists at \$600 - - - - -	3,000.
6 mine cars at \$75 - - - - -	450.
Pipe, fittings, track, ties, etc. - - - - -	1,000.
Bin, structures - - - - -	2,500.
Rock drills - - - - -	1,500.
Drill steel, hoses, jackbits, parts -- - - -	750.
Misc. small tools, road repair, installations - - -- -	1,000.
Pick-up truck - - - - -	<u>800.</u>
TOTAL CAPITAL EXPENDITURE for supplies, equipment - -	\$15,000.

Much of the above could be rented or obtained as servicable second-hand equipment, but for a company that would possibly have other properties to move this to in event of cessation of operation, I recommend new, first class machinery and equipment.

Yours very truly,

/sd/ Rae L. Johnston
Rae L. Johnston
Mining Engineer.

RLJ/M

Chapin Manganese Deposit

1514 - 19th Avenue,
Seattle, Washington.
August 2nd., 1940.

Mr. J.S. Coupal, Director,
Department of Mineral Resources,
Capitol Building,
Phoenix, Arizona.

Dear Mr. Coupal:

I am enclosing copies of mine owners' reports on The Chapin Manganese Deposit and the Big Horse Shoe properties, which I now have under lease. I am including a report and estimate covering the Chapin Manganese Deposit. Relative to this property, I note in Paydirt of July 22nd., under "Float" requests about manganese listed as Box MIS-24 and MIS-27. You might refer them to this.

Since rendering the report on the Big Horse Shoe, new work on an adjoining claim, the Ayra, now also included in the group, has exposed a commercial orebody. A report covering this development is enclosed and I am inviting financing to participate with me in placing this upon production.

Thanking you for your cooperation, and with kindest personal regards,

Yours very truly,

Rae L. Johnston

Rae L. Johnston.

DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

Date October 13, 1952.

1. Mine: Sante Fe Manganese Mine
2. Location: Sec. 17 Twp. 15N Range 20W Nearest Town Topock & Powell Sta.
Powell.
Distance 7 miles Direction South of Road Condition Fair dirt road along power line
3 1/2 miles from hwy. 66, then West at sign "Yucca Mn. Ming. Co." for 3 and 3/4 miles.
3. Mining District & County: Chemehuevas District, Mohave County.
4. Former Name of Mine: J.H. Jones Mine
5. Owner: Sante Fe Railroad leased to Fred Smith
Address: 1317 So. Chester, Bakersfield, Calif.
6. Operator: Yucca Manganese Mining Co. Att'n. H.L. Porter
Address: P.O. Box 818, Oildale, Calif.
7. Principal Minerals: Manganese Oxides, both hard and soft.
8. Number of Claims: Section 17 is leased from the Sante Fe. Placer
Patented _____ Unpatented _____
9. Type of Surrounding Terrain: Rolling to rugged hills. About 1300 feet elev.
10. Geology & Mineralization: Volcanics and possibly sediments dip about 25 degrees. Below
a Rhyolite flow a bed of sandstone has been replaced partially by soft, punky Mn
oxide in bands up to 2' wide. Footwall is cherty. Above the Rhyolite, a bed of frag-
mental lava 6-10 feet thick has been replaced by hard oxide of Mn. Hanging wall is
redish, possibly Andesite. This may run 15 to 25%, as a guess, and might be concentrated
by gravity. ??
11. Dimension & Value of Ore Body: Nothing definite. The last named bed above can
be seen in cuts, etc., for a few hundred feet.

See Page 9, U.S. Bur. Mines R.I. 4147 on
Havasu Lake Dist.

12. Ore "Blocked Out" or "In Sight":..... Faces of ore along outcrop, only.

.....
.....
.....

Ore Probable:..... Depends on sampling results and economics. What grade is "ore"?

.....
.....

13. Mine Workings—Amount and Condition:..... Open cuts, only.

No.	Feet	Condition
Shafts.....
Raises.....
Tunnels.....
Crosscuts.....
Stopes.....

14. Water Supply:..... Colorado River, 3 miles distant, 700-800 feet lower, or probably Powell Station, 8 miles by road. Topock about 13½ miles by road.

.....
.....

15. Brief History:..... Outcrops have been opened up by hand dug pits and by power shovel now on the ground. Property at present on watchman status.

.....
.....
..... E. Ross Housholder, Kingman, Arizona is Cons. Engr. for operators and furnished part of above information. He can be contacted for further detail & report.

He says one car shipped for sample ran 41 tons @ 36.69% Mn. (10-23-1950)

.....
.....
.....

16. Signature:.....

17. If Property for Sale, List Approximate Price and Terms:..... Not interested?

.....

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

*note by G.F. Keefer:
I went over this property
& saw Householder, chief
engr. - replaced
report on Santa Fe
mine 10-13-37*

Date: July 27, 1939 (Corrected 8/13/40)

- 1. Mine: Chapin Manganese Deposit
- 2. Mining District & County: Chemehuevis Mng. Dist.
- 3. Former name: Mohave Co.
- 4. Location: 8 miles SE of Popock, Ariz. Sec. 17, T. 15 N., R. 20 W
- 5. Owner ~~J.~~ J. H. Jones and Rae L. Johnston (Lessee) *Deceased*
- 6. Address (Owner) c/o Rae L. Johnston 1514 - 19th Ave., Seattle, Wash.
- 7. Operator
- 8. Address (Operator)
- 9. President
- 10. Gen. Mgr.
- 11. Mine Supt.
- 12. Mill Supt.
- 13. Principal Metals: Manganese
- 14. Men Employed
- 15. Production Rate: Unlimited
- 16. Mill: Type & Cap
- 17. Power: Amt. & Type
- 18. Operations: Present: Virgin property with manganese deposits exposed by several open cuts, short tunnel and prominent outcrops.

made it in form of owners report

19. Operations Planned: Can be easily developed to produce 300 tons per day, or more.

20. Number Claims, Title, etc.: Four claims: Blackjack No. 1, 2, 3, 4. U. S. patented to Santa Fe Ry. *No claim*

repat. patented this name in Owens or Chem. Dist 9 mi S.W. of Powell - loc. by Glenn A. Grant, July 1936

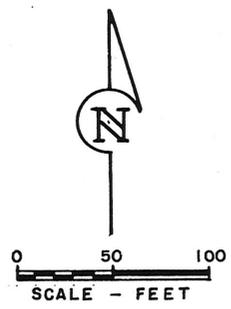
21. Description: Topography & Geography: Deposits are at an altitude ranging from 1000 to 1200 ft., about 200 ft. lower than summits of adjacent hills. Gently rolling to flat topog. Precipitation light, about 3" yearly.

22. Mine Workings: Amt. & Condition: At north end one pit 10 feet deep exposing manganese bed 7-8 feet thick. At northeast edge prominent outcrop of manganese 7 feet thick. 200 feet to south of north pit, a short tunnel again exposes same bed. 130 feet SE of tunnel another pit exposes at least 8 feet of thickness, this not being the limit at this point.

23. Geology & Mineralization: Underlying rocks are Pre-Cambrian granite & gneiss overlain by sandstone beds, lava flows, volcanic ash and breccias. The sandstone beds have been impregnated or in places entirely replaced by manganese oxides. These beds dip about 25.
24. Ore: Positive & Probable, Ore Dumps, Tailings: The limited workings and outcrops expose at least 25,000 tons that average, from extensive sampling, 20% manganese, 35% insoluble and 3.5% iron. If these beds maintain continuity on their dip underneath the surface wash and detrital, an enormous tonnage of similar grade is possible.
- 24A. Vein Width, Length, Value, etc.
25. Mine, Mill Equipment & Flow Sheet: No equipment.
26. Road Conditions, Route: Reached by 8 miles from Topock, Arizona, over good county road to Powell, a station on the A.T. & S.F. Ry., thence 8 miles over unimproved road. A direct haul good road with easy grades some 12 miles in length could be constructed from the property to Powell at nominal cost.
27. Water Supply: From the Colorado River, two miles distant and involving a lift of 7,800 ft.
28. Brief History: Preliminary work done during world war period, further development awaiting better prices and capital.
29. Special Problems, Reports Filed: Necessary to determine best method of beneficiation. Report on this property contained in Arizona Bureau of Mines Bulletin No. 127.
30. Remarks
31. If property for sale: Price, terms and address to negotiate: Desire to become affiliated with the necessary capital to develop and place on production basis on a participating basis, or will give lease and option to purchase.

Communicate with: Rae L. Johnston, Oatman, Arizona

Signed: Rae L. Johnston



BRUNTON-TAPE SURVEY
FEB. - 1956



FAULT ZONE
OLD ADIT

CHAPIN CLAIM NO. 17
CHAPIN CLAIM NO. 16

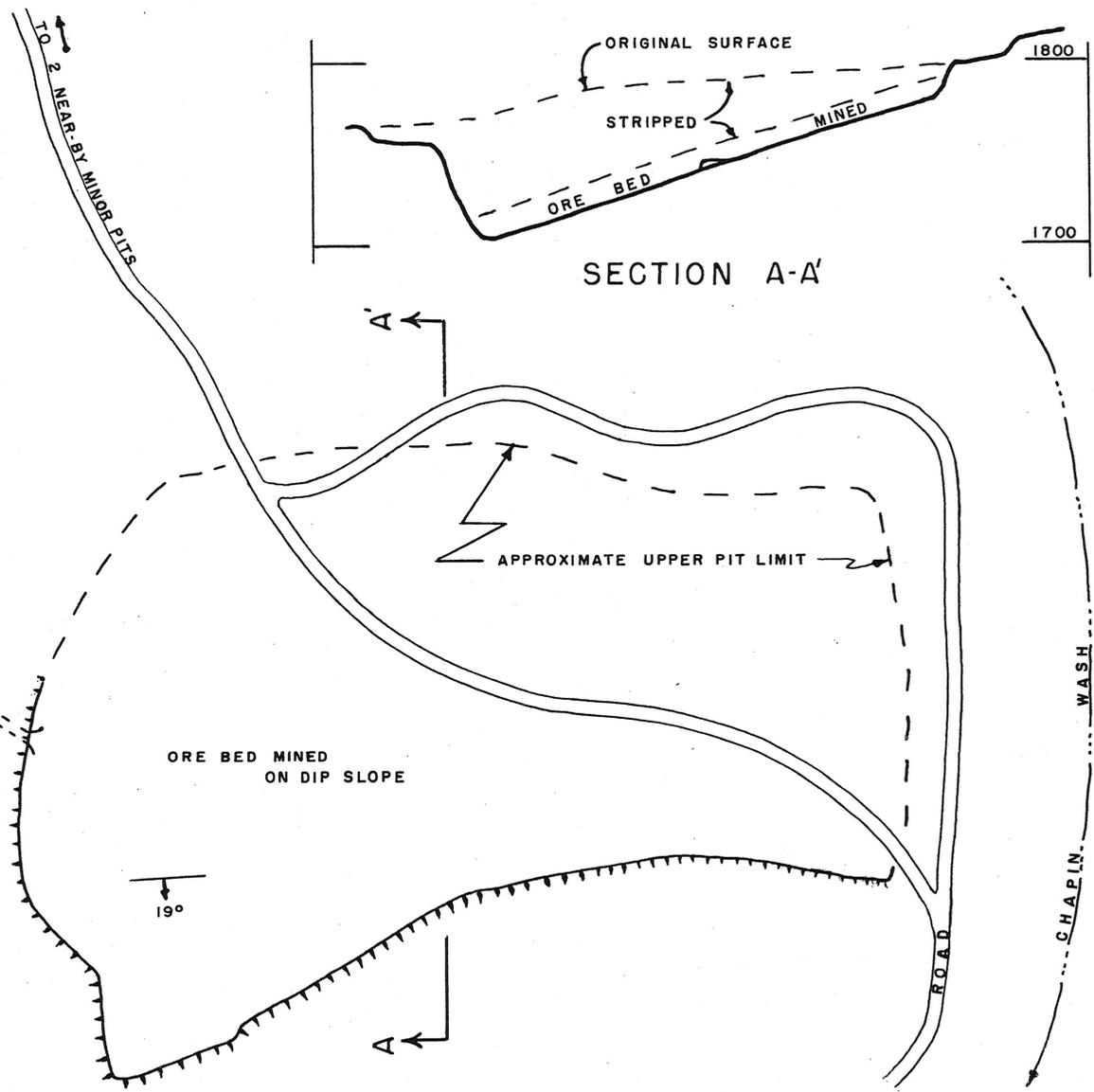


FIG. 20 PLAN & SECTION, LAKE PIT - AL STOVALL, LESSEE

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date July 27, 1939 (Corrected 8-13-40)

1. Mine Chapin Manganese Deposit
2. Mining District & County Chemehuevie Mng. Dist. ^{\$}
3. Former name *Mybase County*
4. Location 8 miles SE of Topock, Ariz.
Sec. 17, T. 15 N., R. 20 W
5. Owner J.J.H. Jones and Rae L. Johnston
(Lessee)
6. Address (Owner) c/o Rae L. Johnston
1514 - 19th Ave., Seattle, Wash.
7. Operator
8. Address (Operator)
9. President
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals Manganese
14. Men Employed
15. Production Rate Unlimited
16. Mill: Type & Cap.
17. Power: Amt. & Type
18. Operations: Present Virgin property with manganese deposits exposed by several open cuts, short tunnel and prominent outcrops.
19. Operations Planned Can be easily developed to produce 300 tons per day, or more.
20. Number Claims, Title, etc. [✓] Four claims: Blackjack No. 1, 2, 3, 4.
U. S. patented to Sante Fe Ry.
21. Description: Topography & Geography Deposits are at an altitude ranging from 1000 to 1200 ft, about 200 ft lower than summits of adjacent hills. Gently rolling to flat topog. Precipitation light, about 3" yearly.
22. Mine Workings: Amt. & Condition At north end one pit 10 feet deep exposing manganese bed 7-8 feet thick. At northeast edge, prominent outcrop of manganese 7 feet thick. 200 feet to south of north pit, a short tunnel again exposes same bed. 130 feet SE of tunnel another pit exposes at least 8 feet of thickness, this not being the limit at this point.

23. **Geology & Mineralization** Underlying rocks are Pre-Cambrian granite & gneiss overlain by sandstone beds, lava flows, volcanic ash and breccias. The sandstone beds have been impregnated or in places entirely replaced by manganese oxides. These beds dip about 25°.
24. **Ore: Positive & Probable, Ore Dumps, Tailings** The limited workings and outcrops expose at least 25,000 tons that average, from extensive sampling, 20% manganese, 35% insoluble and 3.5% iron. If these beds maintain continuity on their dip underneath the surface wash and detrital, an enormous tonnage of similar grade is possible.
- 24-A **Vein Width, Length, Value, etc.**
25. **Mine, Mill Equipment & Flow Sheet** No equipment.
26. **Road Conditions, Route** Reached by 8 miles from Topock, Arizona, over good county road to Powell, a station on the A.T.&SF Ry., thence 8 miles over unimproved road. A direct haul, good road with easy grades some 12 miles in length could be constructed from the property to Powell at nominal cost.
27. **Water Supply** From the Colorado River, two miles distant and involving a lift of 7,800 ft.
28. **Brief History** Preliminary work done during world war period, further development awaiting better prices and capital.
29. **Special Problems, Reports Filed** Necessary to determine best method of beneficiation. Report on this property contained in Arizona Bureau of Mines Bulletin No. 127.
30. **Remarks**
31. **If property for sale: Price, terms and address to negotiate.** Desire to become affiliated with the necessary capital to develop and place on production basis on a participating basis, or will give lease and option to purchase.
 Communicate with: Rae L. Johnston, Oatman, Arizona.
32. Signed...../sd/ RAE L. JOHNSTON.....
33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

MC-20

Date July 27, 1939

Mine Chapin Manganese Deposit ✓

District Chemehuevis Mng. Dist.

Location 8 miles SE of Topock, Ariz.
Sec. 17, T. 15 N., R. 20 W.

Former name

Owner JJ. H. Jones and Rae L. Johnston ✓

Address c/o Rae L. Johnston,
Oatman, Arizona.

Operator

Address

President

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Manganese ✓

Men Employed

Production Rate unlimited

Mill: Type & Cap.

Power: Amt. & Type

Operations: Present Virgin property with manganese deposits exposed by several open cuts, short tunnel and prominent outcrops.

Operations Planned Can be easily developed to produce 300 tons per day, or more.

Number Claims, Title, etc. Four claims: Blackjack Nos. 1,2,3, and 4.
Held by possessory title.

Description: Topog. & Geog. Deposits are at an altitude ranging from 1000 to 1200 feet, about 200 feet lower than summits of adjacent hills. Gently rolling to flat topog. Precipitation light, about 3" yearly.

Mine Workings: Amt. & Condition At north end one pit 10 feet deep exposing manganese bed 7-8 feet thick. At northeast edge, prominent outcrop of manganese 7 feet thick. 200 feet to south of north pit, a short tunnel again exposes same bed. 130 feet SE of tunnel another pit exposes at least 8 feet of thickness, this not being the limit at this point.

Geology & Mineralization Underlying rocks are Pre-Cambrian granite & gneiss overlain by sandstone beds, lava flows, volcanic ash and breccias. The sandstone beds have been impregnated or in places entirely replaced by manganese oxides. These beds dip about 25°.

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Mine, Mill Equipment. & Flow Sheet No equipment.

Road Conditions, Route Reached by 8 miles from Topock, Arizona, over good county road to Powell, a station on the A.T. & Santa Fe Ry., thence 8 miles over unimproved road. A direct haul, good road with easy grades some 12 miles in length could be constructed from the property to Powell at nominal cost.

Water Supply From the Colorado River, two miles distant, and involving a lift of 7-800 feet.

Brief History Preliminary work done during world war period, further development awaiting better prices and capital.

Special Problems, Reports Filed Necessary to determine best method of beneficiation. Report on this property contained in Arizona Bureau of Mines Bulletin No. 127.

Remarks

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Signed..... RAE L. JOHNSTON,

OC MC 20
DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

SPECIAL

Date July 27 - 1939

Mine Chapin Manganese Deposit ✓

District Chemehuevis Mng. Dist.

Location 8 miles SE of Topock, Ariz.
Sec 17 T 15 N R 20W

Former name ✓

Owner J. H. Jones and
✓ Rae L. Johnston

Address C/ Rae L. Johnston
Oatman, Arizona

Operator - -

Address

President

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Manganese ✓

Men Employed

Production Rate unlimited

Mill: Type & Cap.

Power: Amt. & Type

Operations: Present

Virgin property with manganese deposits exposed by several open cuts, short tunnel and prominent outcrops.

Operations Planned Can being easily developed to produce 300 tons per day or more.

Number Claims, Title, etc. Four claims: Blackjack Nos. 1, 2, 3 and 4.
Held by possessory title. ✓

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(over)

Geology & Mineralization Underlying rocks are Pre-Cambrian, overlain by sandstone beds, lava flows, volcanic ash and breccias. The sandstone beds have been impregnated or in places entirely replaced by manganese oxides. These beds dip about 25°.

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Mine, Mill Equipment & Flow Sheet No equipment

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Brief History Preliminary work done during world war period, further development awaiting better prices and capital.

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Remarks

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Signed Rae L. Johnston

DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

Date October 13, 1952.

1. Mine: Sante Fe Manganese Mine
2. Location: Sec. 17 Twp. 15N Range 20W Nearest Town Topock & Powell Sta.
Powell.
Distance 7 miles Direction South of Road Condition Fair dirt road along power line
3 1/2 miles from hwy. 66, then West at sign "Yucca Mn. Ming. Co." for 3 and 3/4 miles.
3. Mining District & County: Chemehuevas District, Mohave County.
4. Former Name of Mine: J.H. Jones Mine
5. Owner: Sante Fe Railroad leased to Fred Smith
Address: 1317 So. Chester, Bakersfield, Calif.
6. Operator: Yucca Manganese Mining Co., Att'n. H.I. Porter
Address: P.O. Box 848, Oildale, Calif.
7. Principal Minerals: Manganese Oxides, both hard and soft.
8. Number of Claims: Section 17 is leased from the Sante Fe. Placer
Patented _____ Unpatented _____
9. Type of Surrounding Terrain: Rolling to rugged hills. About 1300 feet elev.

10. Geology & Mineralization: Volcanics and possibly sediments dip about 25 degrees. Below
a Rhyolite flow a bed of sandstone has been replaced partially by soft, punky Mn
oxide in bands up to 2' wide. Footwall is cherty. Above the Rhyolite, a bed of frag-
mental lava 6-10 feet thick has been replaced by hard oxide of Mn. Hanging wall is
redish, possibly Andesite. This may run 15 to 25%, as a guess, and might be concentrated
by gravity. ??
11. Dimension & Value of Ore Body: Nothing definite. The last named bed above can
be seen in cuts, etc., for a few hundred feet.

See Page 9, U.S. Bur. Mines R.I. 4147 on
Havasu Lake Dist.

12. Ore "Blocked Out" or "In Sight":..... Faces of ore along outcrop, only.

Ore Probable:..... Depends on sampling results and economics. What grade is "ore"?

13. Mine Workings—Amount and Condition:..... Open cuts, only.

No.	Feet	Condition
Shafts.....		
Raises.....		
Tunnels.....		
Crosscuts.....		
Stopes.....		

14. Water Supply:..... Colorado River, 3 miles distant, 700-800 feet lower, or probably Powell Station, 8 miles by road. Topock about 13 $\frac{1}{2}$ miles by road.

15. Brief History:..... Outcrops have been opened up by hand dug pits and by power shovel now on the ground. Property at present on watchman status.

..... E. Ross Housholder, Kingman, Arizona is Cons. Engr. for operators and furnished part of above information. He can be contacted for further detail & report.

..... He says one car shipped for sample ran 41 tons @ 36.69% Mn. (10-23-1950)

16. Signature:.....

17. If Property for Sale, List Approximate Price and Terms:..... Not interested?

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

Date: July 27, 1939 (Corrected 8/13/40)

1. Mine: Chapin Manganese Deposit
2. Mining District & County: Chemehuevis Mng. Dist.
3. Former name: Mohave Co.
4. Location: 8 miles SE of Topock, Ariz. Sec. 17, T. 15 N., R. 20 W
5. Owner J. J. H. Jones and Rae L. Johnston (Lessee)
6. Address (Owner) c/o Rae L. Johnston 1514 - 19th Ave., Seattle, Wash.
7. Operator
8. Address (Operator)
9. President
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals: Manganese
14. Men Employed
15. Production Rate: Unlimited
16. Mill: Type & Cap
17. Power: Amt. & Type
18. Operations: Present: Virgin property with manganese deposits exposed by several open cuts, short tunnel and prominent outcrops.
19. Operations Planned: Can be easily developed to produce 300 tons per day, or more.
20. Number Claims, Title, etc.: Four claims: Blackjack No. 1, 2, 3, 4. U. S. patented to Santa Fe Ry.
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24. **Ore: Positive & Probable, Ore Dumps, Tailings:** The limited workings and outcrops expose at least 25,000 tons that average, from extensive sampling, 20% manganese, 35% insoluble and 3.5% iron. If these beds maintain continuity on their dip underneath the surface wash and detrital, an enormous tonnage of similar grade is possible.
- 24A. **Vein Width, Length, Value, etc.**
25. **Mine, Mill Equipment & Flow Sheet:** No equipment.
26. **Road Conditions, Route:** Reached by 8 miles from Topock, Arizona, over good county road to Powell, a station on the A.T. & S.F. Ry., thence 8 miles over unimproved road. A direct haul good road with easy grades some 12 miles in length could be constructed from the property to Powell at nominal cost.
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Communicate with: Rae L. Johnston, Oatman, Arizona

Signed: Rae L. Johnston

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
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STATE OF ARIZONA
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STATE OF ARIZONA
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Communicate with: Rae L. Johnston, Oatman, Arizona

Signed: Rae L. Johnston

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Santa Fe Date March 31, 1959
District Topock (Chamehuevas), Mohave Co. Engineer Travis P. Lane
Subject: Visit of March 19, 1959

Owner: Santa Fe RR

Operator: Waughtel Mining Co., a joint venture composed of Waughtel Mining Co., Rico Mining Co. and Moshwa Minerals Co. (of Texas) Box 2, Topock, Arizona.

Manager:	Roy V. Waughtel
Asst. Mgr.:	Doug Evans of Rico Mining Co.
Mine Supt.:	(until recently), "Flip" Evans of Rico Mining Co.
Assayer:	Bill Kern
Secretary:	Irma Sramek

The property (sometimes known as the Chapin Manganese deposit, or the J. H. Jones Mine) is located in Sec. 17, T. 15 N., R. 20 W. and is approximately 13 miles southeast from Topock.

The present operators leased the mine in the latter part of 1958 after it had been idle for a number of years. They have built a concentrator on a spur of the Santa Fe RR on the edge of the settlement of Topock. The plant consists of a portable crusher, a portable set of rolls, a heavy media unit (leased from Dye and Bathrick) and jigs, together with screens, conveyors, etc.

The mine is in a low hill area and the workings consist of numerous scattered cuts, trenches and pits opening a series of low-dipping bands of manganese with interlayers of sandstone and cherty rhyolite all in andesite country rock. The thickness of the beds ranges from 2 to 8 or 10 feet, and the manganese ore varies greatly in character as also do the accompanying gangue minerals. While considerable hard manganese is present there is also much punky soft material and some masses of wad.

The mill started up on Feb. 2, 1959 and ran intermittently until March 16 when operations were suspended pending a revamping of the circuit to improve recoveries which to that point had been uneconomic. The principle difficulty is an excessive slime content of the ore which adversely affects recovery and the making of a good grade of concentrate. Barium and iron in portions of the feed contribute to the recovery difficulties. At the time of visit Mr. Waughtel and Mr. Evans were away in the southern part of the state running down a log washer unit to install ahead of the hm and jig sections to eliminate the clay slime. They believe that the log washer together with more selective mining will overcome the treatment problems. It seems that the concentrate will for the most part need to be sent to another plant such as Mohave Mining & Milling Co. at Wickenburg for grading up to market specification by flotation and or sintering.

Chapin Manganese Deposit

1514 - 19th Avenue,
Seattle, Washington.
August 2nd., 1940.

Mr. J.S. Coupal, Director,
Department of Mineral Resources,
Capitol Building,
Phoenix, Arizona.

Dear Mr. Coupal:

I am enclosing copies of mine owners' reports on The Chapin Manganese Deposit and the Big Horse Shoe properties, which I now have under lease. I am including a report and estimate covering the Chapin Manganese Deposit. Relative to this property, I note in Paydirt of July 22nd., under "Float" requests about manganese listed as Box MIS-24 and MIS-27. You might refer them to this.

Since rendering the report on the Big Horse Shoe, new work on an adjoining claim, the Ayra, now also included in the group, has exposed a commercial orebody. A report covering this development is enclosed and I am inviting financing to participate with me in placing this upon production.

Thanking you for your cooperation, and with kindest personal regards,

Yours very truly,

Rae L. Johnston

Rae L. Johnston.

C O P Y

1514 19th Ave.,
Seattle, Washington.
June 13^{1st}, 1940.

Mr. J. H. Jones,
Oatman, Arizona.

Dear Sir:

Pursuant to your recent request, I made an examination of the Chapin Manganese deposits, and herewith offer you my report thereon:

LOCATION

The deposit is located eight miles in an air line Southeast of Topock, Mohave County, Arizona, on the southeast side of a group of pinnacled peaks known as the Needles. It is included in the area mapped by the U.S.G.S. as the Needles Quadrangle. The nearest shipping point is Powell, a station on the Santa Fe Railroad, eight miles to the north. At present the property is reached by an eight mile drive over a good country road, the Topock-Yucca highway, thence eight miles over unimproved road. A direct haul, good road with easy grades some 12 miles in length could be constructed from the Property to Powell at a nominal cost.

CLAIMS

The group is comprised of 4 claims, held by possessory title, known as the Black Jack No. 1, 2, 3, and 4, included in Sec. 17 T15 NR20W.

ECONOMIC FEATURES

During the development period, power would have to be generated locally by Deisel installation. Later, for a large scale operation, it might be advisable to bring in electric power from Parker Dam. Timber and mining supplies and materials can be obtained in Los Angeles and delivered in Topock by freight trucks or at Powell by Railroad freight. Ample, experienced labor would be available from the nearby mining camp of Oatman. There is no equipment on the property.

GEOLOGY

These deposits are at altitudes ranging from 1100 to 1200 feet above sea level, about 200 feet lower than the summits of adjacent hills. Precipitation is light, about 2.5 to 3 inches a year. The nearest source of water supply for a commercial operation would be the Colorado River, about 2 miles distant, and would involve a lift of some 600 feet.

The Arizona Bureau of Mines Bulletin No. 127 cite the Geology as follows: "The rocks range in age from Pre-Cambrian to Quaternary. The Needles are composed chiefly of lava flows,

Volcanic ash, and breccias of Tertiary age, but in places these effusive rocks have been eroded and the underlying pre-Cambrian granite and gneiss have been exposed. One such area of Pre-Cambrian rocks is north of the manganese district, on both sides of the road that goes to Powell. The mesas and detrital plains that partly surround the low hills in the manganese district are underlain by sandstone beds, exposed where arroyos have cut thru the overlying rock debris. Some of these beds dip about 25 degrees SW., and others lie flat. They are younger than the lavas and evidently were deposited during a stage of aggradation in Colorado River. This formation is probably the same as that which occurs extensively along the Colorado River.

Extensive faulting has occurred in the manganese area. The faults are difficult to trace, but are indicated by the tilted lava flows and sandstone beds and the isolated hills of lava surrounded by detritus of sandstone. Some of the faulting occurred after the deposition of the Temple Bar conglomerate and hence is of Quaternary age."

"Mr. Alvin B. Carpenter, who made a geologic study of this district during May, 1929, in the interests of the Chapin Exploration Co., gives the following information: Probable andesite is overlain in many places by tuff, tuffaceous shale, and sandstone. Above this tuff is a thick bed of gray-colored rhyolite with, at its base, a breccia which at the north end of the area shows a thickness of more than 100 feet, yet does not appear at any point south of the steep canyon which terminates at the upper end of the manganese deposit. Covering the gray rhyolite and the andesite, and extending northwestward over a considerable area with a thickness of more than 200 feet, is a red volcanic agglomerate. Small, irregular deposits of manganese oxides occur scattered thru lower portions of this formation as partial replacements of the cementing material. The proportion of manganese to the included andesite and rhyolite of the coarser agglomerate is low, but, in the finer-grade beds, the replacement has included a large part of the finer grains as well as the cementing material."

DEVELOPMENT

At the north end of the deposit is a pit some 8 to 10 feet deep exposing a bed, which is about 7 to 8 feet thick at this point. This consists of a sandstone bed that has been completely replaced by manganese oxides. This occurrence outcrops prominently and can be identified for 200 to 300 feet to the South. Mr. Carpenter's sample from this pit returned 25% Manganese, 35% Insoluble, 3.5% Iron.

Approximately 200 feet to the South, a short tunnel again cuts this occurrence. Ore from here gave an analysis of 30% Mn., 25% Insoluble and 1.8% Iron.

Another shallow pit, 130 feet southeast of the tunnel exposes a mineralized bed dipping southeast beneath the surface detrital and wash. A sample of this ore ran 19% Mn, 37% Insoluble and 2% Fe.

The thickness of this bed was not delimited by the cut, but at least 8 feet was exposed.

This latter exposure is definitely terminated by a major, nearly vertical fault. Between this and the tunnel is a zone of smaller parallel faults. In this fault zone the manganese and iron content varies widely, ranging from 4 to 22% manganese and 2 to 30% Iron.

CONCLUSIONS

The very limited workings, but extensive croppings, expose a tonnage of 45,000 to 50,000 tons of probable ore, even giving it very little continuity on the dip of the beds. From Mr. Carpenter's sampling, this tonnage averages approximately 20% Mn, 35% Insoluble and 3.5% Iron. However, the major potentialities of the property are in the possibility, and there is no reason to conclude otherwise at present, that if the bed exposed in the southeast pit, that is dipping SE; out under the surface wash and detrital, maintains its continuity, it can contain an enormous tonnage of similar grade. With the proper type of beneficiation and under favorable market conditions, the property has major commercial potentialities.

Yours very truly,



Rae L. Johnston

RLJ/M

COPY

1514 19th Ave.,
Seattle, Washington.
June 30, 1940

Mr. J. H. Jones,
Oatman, Arizona.

Dear Sir:

Pursuant to your recent request, I made an examination of the Chapin Manganese deposits, and herewith offer you my report thereon:

LOCATION

The deposit is located eight miles in an air line south east of Topock, Mohave County, Arizona, on the southeast side of a group of pinnacled peaks known as the Needles. It is included in the area mapped by the U.S.G.S. as the Needles Quadrangle. The nearest shipping point is Powell, a station on the Sante Fe railroad eight miles to the north. At present the property is reached by an eight mile drive over a good country road, the Topock-Yucca highway, thence eight miles over unimproved road. A direct haul, good road with easy grades some 12 miles in length could be constructed from the property to Powell at a nominal cost.

CLAIMS

The group is comprised of 4 claims, held by possessory title, known as the Black Jack No. 1, 2, 3, and 4, included in Sec. 17 T15NR20W.

ECONOMIC FEATURES

During the development period, power would have to be generated locally by Diesel installation. Later, for a large scale operation, it might be advisable to bring in electric power from Park Dam. Timber and mining supplies and materials can be obtained in Los Angeles and delivered in Topock by freight trucks or at Powell by railroad freight. Ample, experience labor would be available from the nearby mining camp at Oatman. There is no equipment on the property.

GEOLOGY

These deposits are at altitudes ranging from 1100 to 1200 feet above sea level, about 200 feet lower than the summits of adjacent hills. Precipitation is light, about 2.5 to 3 inches a year. The nearest source of water supply for a commercial operation would be the Colorado River, about 2 miles distant, and would involve a lift of some 600 feet.

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Extensive faulting has occurred in the manganese area. The faults are difficult to trace, but are indicated by the tilted lava flows and sandstone beds and the isolated hills of lava surrounded by detritus of sandstone. Some of the faulting occurred after the deposition of the Temple Bar conglomerate and

is of Quaternary age."

"Mr. Alvin B. Carpenter, who made a geologic study of this district during May, 1929, in the interests of the Chapin Exploration Co., gives the following information: Probable andesite is overlain in many places by tuff, tuffaceous shale, and sandstone. Above this tuff is a thick bed of gray-colored rhyolite with, at its base, a breccia which at the north end of the area shows a thickness of more than 100 feet, yet does not appear at any point south of the steep canyon which terminates at the upper end of the manganese deposit. Covering the gray rhyolite and the andesite, and extending northwestward over a considerable area with a thickness of more than 200 feet, is a red volcanic agglomerate. Small, irregular deposits of manganese oxides occur scattered through lower portions of this formation as partial replacements of the cementing material. The proportion of manganese to the included andesite and rhyolite of the coarser agglomerate is low, but, in the finer-grade beds, the replacement has included a large part of the finer grains as well as the cementing material."

DEVELOPMENT

At the north end of the deposit is a pit some 8 to 10 ft deep exposing a bed, which is about 7 to 8 feet thick at this point. This consists of a sandstone bed that has been completely replaced by manganese oxides. This occurrence outcrops prominently and can be identified for 200 to 300 feet to the South. Mr. Carpenter's sample from this pit returned 25% Manganese, 35% Insoluble, 3.5% Iron.

Approximately 200 feet to the South, a short tunnel again cuts this occurrence. Ore from here gave an analysis of 30% Mn., 25% Insoluble and 1.8% Iron.

Another shallow pit, 130 feet southeast of the tunnel exposes mineralized bed dipping southeast beneath the surface detrital and wash. A sample of this ore ran 19% Mn., 37% Insoluble and 2% Fe. The thickness of this bed was not delimited by the cut, but at least 8 feet was exposed.

This latter exposure is definitely terminated by a major, nearly vertical fault. Between this and the tunnel is a zone of smaller parallel faults. In this fault zone the manganese and iron content varies widely, ranging from 4 to 22% manganese and 2 to 30% Iron.

CONCLUSIONS

The very limited workings, but extensive croppings, expose a tonnage of 45,000 to 50,000 tons of probable ore, even giving it very little continuity on the dip of the beds. From Mr. Carpenter's sampling, this tonnage averages approximately 20% Mn, 35% Insoluble and 3.5% Iron. However, the major potentialities of the property are in the possibility, and there is no reason to conclude otherwise at present, that if the bed exposed in the southeast pit, that is dipping SE, out under the surface wash and detrital, maintains its continuity, it can contain an enormous tonnage of similar grade. With the proper type of beneficiation and under favorable market conditions, the property has major commercial potentialities.

Yours very truly,

/sd/ Rae L. Johnston
Rae L. Johnston

RLJ/M

1614 19th Ave.,
Seattle, Washington.
June 30, 1940

CHAPIN MANGANESE DEPOSITS

This is an estimate of the program and funds required to develop and place upon a 100 ton per day production basis the Chapin Manganese deposit which I have under lease, Due to the topography, continuity of the outcrops and general economic features it can be advantageously developed from five or six points at once, and I recommend the following:

5 shafts 1½ comp. each 200 feet - total 1000 ft. of (60 days) sinking at \$40 per foot	\$40,000.
500 feet of connecting drifts on 200 level at \$12 -(30 days)	6,000.
Two weeks start 10 raises and prepping up - - - - -	6,000.
Total Development expenditure - - - - -	\$52,000.

Capital expenditure required for above program:

600 cu ft Compressor - Diesel driven - - - - -	\$ 4,000.
5 light sinking hoists at \$600 - - - - -	3,000.
6 mine cars at \$75 - - - - -	450.
Pipe, fittings, track, ties, etc. - - - - -	1,000.
Bin, structures - - - - -	2,500.
Rock drills - - - - -	1,500.
Drill steel, hoses, jackbits, parts -- - - -	750.
Misc. small tools, road repair, installations - - -- -	1,000.
Pick-up truck - - - - -	<u>800.</u>
TOTAL CAPITAL EXPENDITURE for supplies, equipment - -	\$15,000.

Much of the above could be rented or obtained as servicable second-hand equipment, but for a company that would possibly have other properties to move this to in event of cessation of operation, I recommend new, first class machinery and equipment.

Yours very truly,

/sd/ Rae L. Johnston
Rae L. Johnston
Mining Engineer.

RLJ/M

1514 19th Ave.,
Seattle, Washington.
June 31st, 1940.

✓
CHAPIN MANGANESE DEPOSITS

This is an estimate of the program and funds required to develop and place upon a 100 ton per day production basis the Chapin Manganese deposit which I have under lease. Due to the topography, continuity of the outcrops and general economic features it can be advantageously developed from five or six points at once, and I recommend the following:

5 shafts $1\frac{1}{2}$ comp. each 200 feet - total 1000 ft. of (60 days) sinking at \$40 per foot	\$40,000.
500 feet of connecting drifts on 200 level at \$12 - (30 days)	6,000.
Two weeks start 10 raises and prepping up - -	<u>6,000.</u>
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Capital expenditure required for above program:	
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Pick-up truck - - -	<u>800.</u>
TOTAL CAPITAL Expenditure for supplies, equipment -	\$15,000

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Yours very truly,

Rae L. Johnston
Rae L. Johnston

Mining Engineer.

RLJ/M

1514 19th Ave.,
Seattle, Washington.
June 30, 1940

Mr. J. H. Jones,
Oatman, Arizona.

Dear Sir:

Pursuant to your recent request, I made an examination of the Chapin Manganese deposits, and herewith offer you my report thereon:

LOCATION

The deposit is located eight miles in an air line south east of Topock, Mohave County, Arizona, on the southeast side of a group of pinnacled peaks known as the Needles. It is included in the area mapped by the U.S.G.S. as the Needles Quadrangle. The nearest shipping point is Powell, a station on the Santa Fe railroad eight miles to the north. At present the property is reached by an eight mile drive over a good country road, the Topock-Yucca highway, thence eight miles over unimproved road. A direct haul, good road with easy grades some 12 miles in length could be constructed from the property to Powell at a nominal cost.

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ECONOMIC FEATURES

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GEOLOGY

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Yours very truly,

/sd/ Rae L. Johnston
Rae L. Johnston

RLJ/M

1614 19th Ave.,
Seattle, Washington.
June 30, 1940

CHAPIN MANGANESE DEPOSITS

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500 feet of connecting drifts on 200 level at \$12 -(30 days)	6,000.
Two weeks start 10 raises and prepping up - - - - -	6,000.
Total Development expenditure - - - - -	\$52,000.
Capital expenditure required for above program:	
600 cu ft Compressor - Diesel driven - - - - -	\$ 4,000.
5 light sinking hoists at \$600 - - - - -	3,000.
6 mine cars at \$75 - - - - -	450.
Pipe, fittings, track, ties, etc. - - - - -	1,000.
Bin, structures - - - - -	2,500.
Rock drills - - - - -	1,500.
Drill steel, hoses, jackbits, parts -- - - -	750.
Misc. small tools, road repair, installations - - -- -	1,000.
Pick-up truck - - - - -	800.
TOTAL CAPITAL EXPENDITURE for supplies, equipment - -	\$15,000.

Much of the above could be rented or obtained as servicable second-hand equipment, but for a company that would possibly have other properties to move this to in event of cessation of operation, I recommend new, first class machinery and equipment.

Yours very truly,

/sd/ Rae L. Johnston
Rae L. Johnston
Mining Engineer.

RLJ/M

SANTA FE MANGANESE

MOHAVE COUNTY
TOPOCK DIST.

Visited the manganese plant of Waughtel Mining Co. (Santa Fe Mine) at Topock. No activity in evidence and the buildings are locked up. I learned locally that operations were suspended 3 weeks ago and re-summption seemed unlikely.

TRAVIS P. LANE - WR - 5-23-59

Visited the idle Waughtel Mining Co. plant (for the Santa Fe Manganese Mine) at Topock to check into the status of the machinery. The crushing equipment and most conveying equipment has been removed. There remains most of some conveyors, jigs, a log washer (never installed), and the Dye and Bathrick H M plant. This was rented for a time but not used.

TRAVIS P. LANE - Wr - 10-26-59

Kingman Mining Project, Chapin Exploration Company, Claim map 1, 11/16/76

✓ Jones Md.

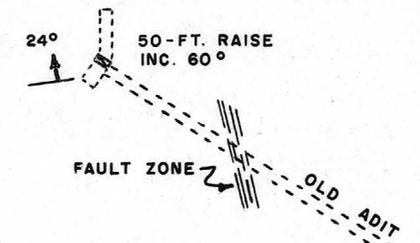
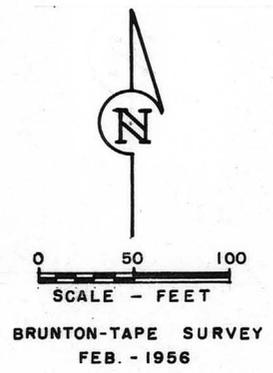
T 15H R 20W

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Dec 17

Mohave County

South of



CHAPIN CLAIM NO. 17
CHAPIN CLAIM NO. 16

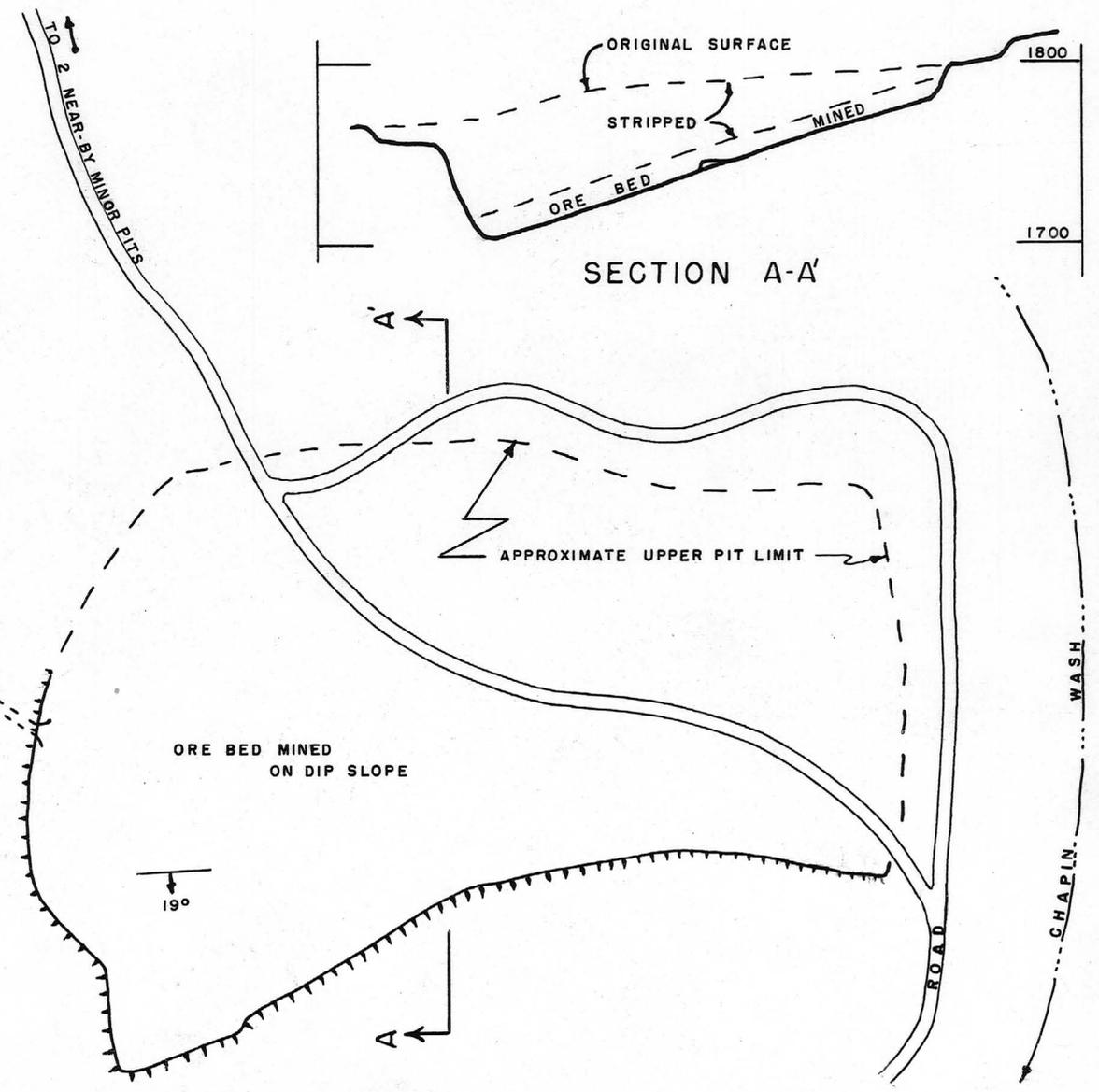


FIG. 20 PLAN & SECTION, LAKE PIT -AL STOVALL, LESSEE