CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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Record June 7, 1994

= no coordinates

= has coordinates

Sept. 84

991-C84 Orphan Mine

991-A-C84 - brownish gray, medium grained pure quartz sandstone with flattened coatings of green phosphate with some pleasant staining. Coarser sandstone. Well dressed sample provided by Dreams (Paul Adams) - collected from a dump on top of the Orphan Mine

Samples from Bill Chenoweth

991-B-C85 level 240' #125
Pyrite impregnated sandstone: olive-gray, v. fine grained, well sorted, argillaceous cement. HOT

991-C-C85 310' level #126
Sandstone copper-uranium ore: dark gray, v. fine grained, well sorted
HOT

991-D-C85 310' level #127
Sandstone uranium ore: light olive gray, v. fine grained, med. sorting calcareous cement, black mineral (galena?)
HOT

XRAY = Chalcocite, Digenite & Djurleite

991-E-C85 310' level #128

Sandstone uranium ore: pinkish gray to dk. gray, v. fine grained, well sorted, calcareous cement, black minerals (galena?, uraninite?) HOT 1 2 separate looking pieces 1) dk. gray

991-F-C85 310' level #132

Sandstone uranium ore: lt. olive gray, fine grained, poorly sorted, calcareous cement. HOT

991-G-C85 350' level #124

Sandstone uranium ore: med. gray, med. grained, well sorted. HOT

991-H-C85 450' level #129

Sandstone uranium ore: yellowish gray, fine grained, well sorted, calcareous cement.

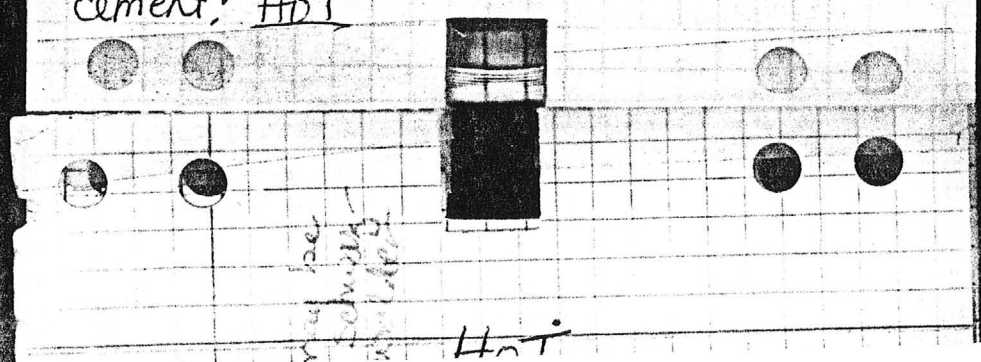
991-I-C85 450' level #130

Sandstone: med. gray, v. fine grained, well sorted, calcareous cement, "no ore minerals". HOT #123

991-J-C85 ← Sandstone uranium-copper ore: lt. gray, v. fine grained, well sorted, calcareous cement, black min. (galena?) "From outer annular ring fracture zone." HOT

991-K-C85 #131

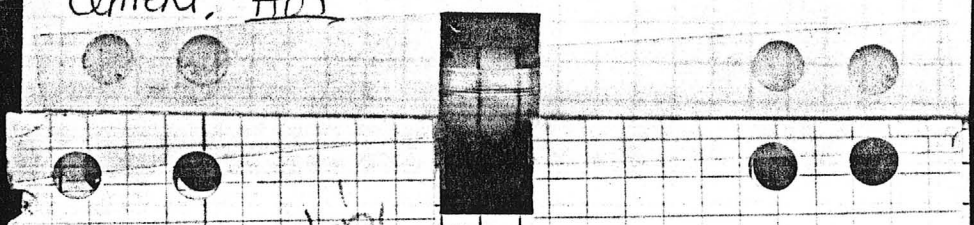
Sandstone uranium ore: light brownish gray, fine grained, well sorted, calcareous cement. HOT



HOT

991-K-C85 HOT #131

Sandstone uranium ore: light brownish gray, fine grained, well sorted, calcareous cement. HOT



991-L-C85 HOT

245' level - B ZONE

Sandstone uranium ore:
med. dark gray, fine-grained, mod. well-sorted.
abundant sulfides -
high uranium
(Supai Fm)
collected by E.W. Grutt (AEC) in 1961 @ a location selected by Erik W. Bruner, Mine Geologist

991-M-C86 Uranium ore from pipe shear zone on 100' level
Black ~~[illegible]~~ thite w/ "carbonized wood" appearance veined with carnotite.
- Gypsum present

991-N-C86 ore from the A stope, 175' level
Black, bedded "shale" w/ green U mineral

991-Q-C86 High grade U from 400 level - Annular Ring Zone, Sandstone w/ Uraninite matrix. mottled w/ hematite & Limonite

991-P-C86 - Galena xtals in pyritized sandstone

991-Q-C86 - 175' level - Uraninite & carnotite? impregnated sandstone

mow - Hoyt's & my April 87 trip - ~~before~~ after 1189

Nov. 84

992-C84

LISA-1 Claim of Pathfinder. Not quite certain-pipe on the

Orphan Mine - 99

April 23, 1987

~6 shots (end of roll of Kodachrome)

Ring fracture runs just (~8') beyond the second small adit which probably runs parallel to it + in the ring fracture zone. The fill within the pipe is embedded non calcareous Cocoinino (yet massive).

The second adit is filled with secondary Cu minerals. The first adit is filled shoulder deep with water. ~~Counts~~

Counts at cabins were 150 cps - in front of 2nd adit ~3' got to 1000 cps. mouth of 2nd adit = 1500 cps. Counts over massive Coconino inside the ring fracture got up to 100 cps.

There 2 adits at right on the strong Coconino contact. They are not shown on the mine map.

2nd adit is N60E for about 30' then N85E for about 20' + ends

Height in adit 3200 (at end)

~8 photos of outcrop at Orphan. All over the face the counts only went from 80-100 cps.

Malachite stalactites + stagmites.

~7 photos

Water is dripping out along the ring fracture + depositing

goethite stalactites

malachite stalactites. On the other side of the ring fracture is bleached highly fractured serpentinite (photo) & in one spot an unbleached spot remains (photo).

2 photos 80 level - end roll #2
Fe stained banding.
This level was mostly just Fe stained, unbleached serpentine with light yellow-green (probably decomposed pyrite) banding.

100 level - 991-R-C87 - similar to 991-S.
Mostly 2000 cps & 4000 cps near the B stope.

80 level - 991-S-C87 - fine grained & impregnated with pyrite.
This seems to be a real "pyrite cap" in the ceiling. As you walk away from the shaft going down to lower levels the veins of pyrite become oxidized toward the upper levels (see 2 photos above).
This oxidation exists mostly along the walls of the drift.
Mostly 2000 cps on this level. Bill Chenbarth does not have a map of this level.

991-T-C87- From Northern most rising fracture zone ~15' above 0 adit - top surface friable opaltic sand (probably Hermit). 2000 cps.

991-U-C87 - fine grained pyrite impregnated gray ss. 1000 cps Oliver

991-V1-C87 - yellow crust Jarosite 1000 cps

991-V2-C87 - ~~[illegible]~~ crust - ~ 8 ft from yellow crust unidentified $FeSO_4 \cdot H_2O$ close to (szomolnokite) basal fizz

991-W-C87 - fine banded pyrite impregnated ss. 0 level 1000 cps.

991- misc - Samples from Adit walls
- Chalcanthite ($CuSO_4 \cdot 5H_2O$)
- Szomolnokite ($FeSO_4 \cdot H_2O$)
- Coquimbite ($Fe_2(SO_4)_3 \cdot 9H_2O$)

5200
5400
5600
5800
6000
6200
5800
585
400
175
290
350
G = 420

Book 1

✓365-D-1 map area 430 bleam on E-W fracture
✓260-0-2 J3 stope, 14' annular ring
✓585-0-3 carbonate cement at base of ore

✓225-04 NE rib at head of raise term chal

✓245-9 X cut gray, sericite, cal, ss.
✓245-0-2 stat. 3x05 term tetra
✓245-01 Clay on slick in pipe

400 R-1 ss breccia and pipe fill
R-2 Cu bleam & Cu 4' from inner wall
R-3 Pyrite 6-7 from inner wall
R-4 Cu first contact R2 (5-6')
(all 36-40' east of station 400-77)

Book 2 —

Book 3 ✓ 365 X Nodules in zone of FeOx spots, pipe seds.
✓ 365 Y " " " " " "

Book 4,5 —

Book 6 ✓ 400-1 430 breccia pipe contact
xlz on 425 level

✓ 375 D-1 Mottled gray & red med gr ss silt

Samples across vein

✓	430	4	A	Vein blk dreamite *
✓		5		8" across vein and bleached rock *
✓		4	B	3' toward shaft 7

* chloride vein toward pipe

LIST

Locations

Book 1, 6	245 - 2	tenn & tetra	near north manway, station 3X05	(Book 1)
	245 - 11			
F	245 - 11 C			
Book 1	350 - 2	strong limonite carbonate, limonite fault		(Book 1)
	365 - STA 10		5490 ↓	6070 ↓ ?
Book 5	365 - 15			
—	400 - 2			
—	400 - 30			
Book 1	585 - 3	Ore in X bedded ss face of drift		(Book 1)

Sampler 36 - 40 feet VE of 77

R-1 breccia and pipe fill
R-2 wing fracture w/ cobalt
R-3 heavy pyrite
R-4 heavy cobalt bloom

Questions:

Put sample nos on geology tracings?

Will add "Geology by C. B. Bowles, 1964-1965" — Ok

Return colored prints of other geology lines to add above items & correct explanation of ⊠ ⊠ symbols. ?

	N		E		
✓320-7	6003		5695	✓	
✓320-8	5965		5686	✓	
✓75-1	6014		5524	✓	
991-N-C86	5981		5578		—
991-Q-C86	5939		5581	✓	
✓350-21	5770		5725	✓	
✓350-1	5743		5756	✓	
✓365-2	6130		5550	✓	
✓365-3	6130		5550	✓	
✓365-1	6144	6144	5524	✓	5524
✓365 X,Y	6069		5505	✓	
✓430-4A	6108		5617	✓	
✓430-4B	6108		5617	✓	
✓430-5	6108		5617	✓	
✓225-4	6015		5562	✓	
✓245-1-2	5920		5531	✓	
✓245-0-2	5842		5430	✓	
✓245-9	5823		5402	✓	
✓245-4	5792		5386	✓	
✓245-5	5794		5392	✓	
✓245-10	5842		5420	✓	

Sample No.	N	E
✓ 290-1	6060	5453
400 15-65	6098	5627
400 16-65	6098	5627
400 14	6097	5625
✓ 400 1	6056	5567 ✓
400 13-65	6137	5552
400 11-65	6093	5650
400 12 65	6087	5653
430-0-1	6108	5617
✓ 265-1	6013	5497 ✓
✓ 265-2	5989	5536 ✓
550-1	6138	5627
✓ 550-2	6138	5627 ✓
325-1	5906	5305
✓ 320-1 ?	5938	5518 ✓
✓ 320-1	5996	5709 ✓
✓ 320-2	5996	5709 ✓
✓ 320-3	5974	5701
✓ 320-4	5974	5701 ✓
✓ 320-5	5958	5692
✓ 320 6	5970	5697 ✓

✓	350 -365	6034	5470	✓
✓	375-D-1	5834	5367	✓
✓	585- 30	6130	5700	✓
✓	31	6127	5701	✓
✓	32	6125	5702	✓
✓	33	6124	5703	✓
	525- 33 (?)	6045	5650	✓

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adt M

225 4335

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- Computerized Testing & Training

245 4336 A, B

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4337 E, F G, DC

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- Bulk Rate Presort
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Orphan Mine Samples - Vivian Gornitz Thin Sections

100/5512
200/5512
300/5512
400/5512
500/5512
600/5512
800/5512
900/5512
1000/5512
1035/5512
1075/5512
1100/5512
1130/5512
1160/5512
720/5557
1000/5557
1035/5557
1075/5557
1100/5557
1135/5557
1100/5600
1090/5630
970/5640
1000/5640
1065/5640
1090/5640
760/5680
800/5658
850/5658
21'
19'
17
20
22
16
19
40'
43'

REFERENCES FOR SAMPLES

M=refer to map
F=refer to folders
#=refer to book number
(6 = Field Book # 6)

LEVEL	SAMPLE	LOCATION
B	1 (65)	6
B	2 (65)	6
BA	22	1
BA	40	6
BA	41	6
BA	42	6
BA	43	6
BA	44	6
BA	45	6
BA	46	6
BA	47	6
GC	1	4
GC	2	4
GC	3	4
GC	4a	4
GC	4b	4
GC	5	4
GC	6	4
GC	7	4
M-GS	1	4
M-GS	2	4
M-GS	3	4
M-GS	4	4
M-GS	5	4
M-GS	6	4
MO	1 (70)	4
MO	2 (70)	4
MO	3 (70)	4
MO	4 (70)	4
MO	5 (70)	4
MO	6 (70)	4
MO	7 (70)	4
MO	11 (70)	4
OS	1	1
OS	2	1
OS	3	1
OS	4	1
OS	5	1
OS	6	1
OS	7	1
OS	8	1
OS	9	1

LEVEL	SAMPLE	LOCATION
175	1	F
190	1	3
225	1	1,3
225	2	1
225	4	1
225	4b	1
225	5	1
225	6	1
245	N1	1
245	1	6
245	2	6
245	3	1,6
245	4	1,6
245	4a	1
245	5	1,6
245	6	1
245	7	1
245	7 (group)	F
245	8	1
245	9	1
245	10	1
245	11a	F
245	11b	F
245	11c	F
265	1	F
265	2	F
290	1	6
290	3	6
290	4	6
290	5	6
290	6	6
290	7	6
290	8	6
290	9	6
290	10	6
290	11	6
320	1	F
320	1	M
320	2	M
320	3	M
320	4	M
320	5	M
320	6	M
320	7	M
320	8	F,M

LEVEL	SAMPLE	LOCATION
325	1	3
325	3	3
325	4	3
350	1	1,F
350	2	1
350	20	3
350	21	M
365	N	F
365	X	3
365	Y	3
365	1	1,F
365	2	1,2,F
365	3	1,2
365	11 (65)	5,M
365	12 (65)	5,M
365	13 (65)	5,M
365	14 (65)	5,M
365	15 (65)	5
365	16 (65)	5,M
375	D-1	6,F
400	1 (63)	6
400	R1	1
400	R2	1
400	R3	1
400	R4	1
400	11 (65)	5,F
400	12 (65)	5,F
400	13 (65)	5,F
400	14 (65)	5,F
400	15 (65)	5,F
400	16 (65)	5,F
430	1A (65)	6
430	1B (65)	6
430	1G	5
430	1	1,F
430	2 (65)	6
430	3	6
430	4A	6
430	4B	6
430	5	6
430	6	6
430	7	6
430	8	6
430	9	6

LEVEL	SAMPLE	LOCATION
430	10	6
430	11	6
430	12	6
430	13	6
430	14	6
430	15	6
430	16	6
430	17	6
430	18	6
430	19	6
430	20	6
525	1	3
550	1	F
550	2	F
585	3	1
585	4	1
585	5	1
585	31	3
585	32	3
585	33	3

991- -C85

Field No	Level	Lab No.
123 ✓	—	J-C85
124 ✓	350	G-C85
125 ✓	240 ?	B-C85
126 ✓	310	C-C85
127 ✓	310	D-C85
128 ✓	310	E-C85
129 ✓	450	H
130 ✓	450	I
131 ✓	—	K
132 ✓	310	F

Sample Number	Mine Level	Pol. Sect.	Pol. Slab	Pol. Plug	Geo-chem.
1000/5557	175	X			
1090/6630	400	X			
11			X		
1150/5480	420	X(2)			
1190/5630	585	X			
12	chalcocite 400		X		
4			X		
5			X		
5'	190	X			
6'	400	X			
7	225	X			
760/5680	350	X			
8	420		X		
8'	400	X			
9	chalcopyrite 400		X		
900/5658	290	X			
991-0-2	0			X	X
991-0-3A	0	X			X
991-0-3B	0	X			X
991-00-1	0	X			X
991-175-1	175	X			X
991-190-1	190				X
991-225-4	225	X			X
991-245-0-2	? 245			X	
991-245-1	245	X			
991-245-10	245	X			X
991-245-11	245	X			X
991-245-11C	245	X			X
991-245-2 ?	245				X
991-245-4	245			X	
991-245-4A	245				X
991-245-4B	245				X
991-245-5	245			X	X
991-245-9	245	X			X
991-245-E	? 245	X			
991-265-1	265			X	X
991-265-1R	265				X

Gornite

Adit

175

190

225

245

265

Sample Number	Mine Level	Pol. Sect.	Pol. Slab	Pol. Plug	Geo-chem.
991-265-2	265	X		X	X
991-320	320	X			
991-320-1	320	X			X
991-320-2	320	X			X
991-320-4	320	X			X
991-320-6	320	X			X
991-320-7	320	X			X
991-320-8	320			X	X
991-320-8R	320				X
991-350-1	350	X			X
991-350-2	350	X			X
991-350-21	350			X	X
991-350-365	350-365	X			X
991-365-1	365				X
991-365-15	365	X			
991-365-2	365	X			
991-365-3	365	X			X
991-365-910	365	X			X
991-365-X	365	X			X
991-365-XR	365				X
991-365-Y	365	X			X
991-375-D-1	375	X			X
991-400-1	400			X(2)	X
991-400-1R	400				X
991-400-2	400	X			
991-400-30	400	X		X	X
991-400-R1	400				X
991-400-R3	400	X			X
991-400-R4	400			X	X
991-400R2	400	X			
991-430-4A	430	X			
991-430-4B-65	430			X	
991-430-5-65	430			X(2)	
991-525-33	525	X			X
991-550-2	550			X(2)	

585

Sample Number	Mine Level	Pol. Sect.	Pol. Slab	Pol. Plug	Geo-chem.
991-585-3	✓✗ 585			X	
✓ 991-585-31-64	585			X	
✓ 991-585-32	585	X			
✓ 991-585-33	585	X			
✓ 991-585-33A	585	X			X
✓ 991-585-33B	585	X			X
991-585-34 —	585	X		X	X
991-A-C84	N (dump)	X			
991-B'-C85	N 240	X			
991-B-C85	N 240	X			X
991-C'-C85	N 310	X			
991-C-C85	N 310	X			
991-D'-C85	N 310	X			
991-D-C85	N 310	X			X
991-DUMP2	(dump)	X			
991-E'-C85	N 310	X			
991-E-C85	N 310	X			X
991-F'-C85	N 310	X			
991-F-C85	N 310	X			X
991-G'	N 350	X			
991-G-C85	N 350	X			X
991-H-C85	N 450	X			X
991-I'-C85	N 450	X			
991-I-C85	N 450	X			X
991-J-C85	N outer annular ring	X			X
991-K-C85	N ?	X			X
991-R-C87	N 80	X			X
991-S-C87	N 80	X			X
991-T-C87	N 0+15				X
991-U-C87	N 0	X			X
991-W-C87	N 0	X			X

✓ = found sample location

— = have not located sample location, no description in books

✓✗ = location tied to a survey marker, need more info

N = No location available (AEC, KJW samples)

Reference OF 86-510

Sample No.	Location	Page No.
4335	225 level	A-19
4336 A	245 level	A-20
4336 B	245 level	A-20
4337 C	400 level	A-24
4337 D	" "	"
4337 E	" "	"
4337 F	" "	"

	L	85 ✓	245	A-34	59
991 —	M —	C 85 ✓	100	A-31	66
Ashwill	N ✓	"	175	A-32	—
	O ✓		400	A-35	64
	P	"			
	Q ✓	"	175	A-32	66

TEXT	MAP	SAMPLES		
140	Adit			
175	40			
245	75			
350	175	175	(1)	5557
400	190	190	(1)	5'
	225	225	(1)	7
	245			
	265			
	290	290	(1)	5458
	310			
	320			
	365	350	(1)	5680
	400	400	(3)	6', 8', 6630
	420	420	(2)	8, 5480
		585(?)	(1)	5630

UNKNOWN

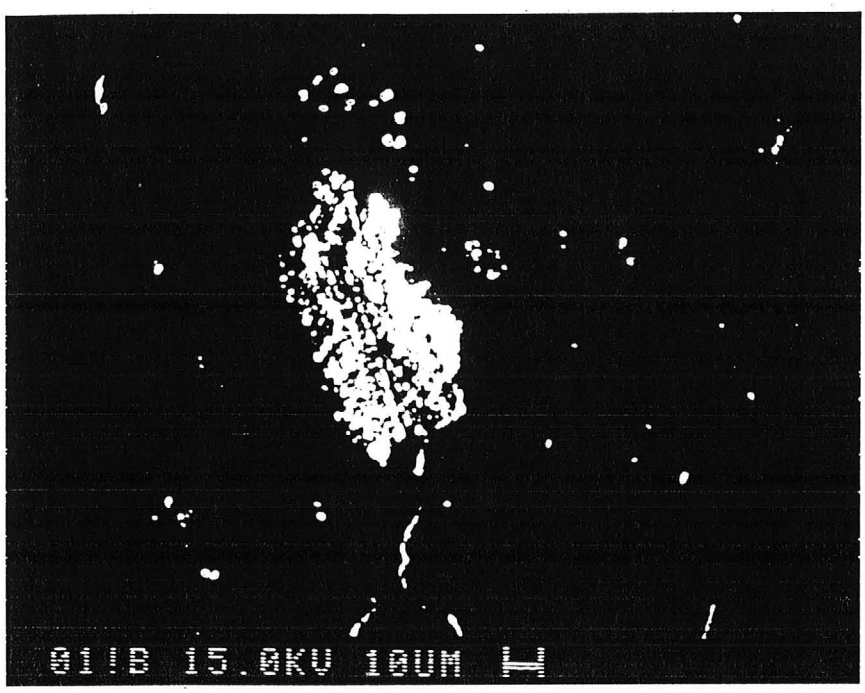
4

5

9

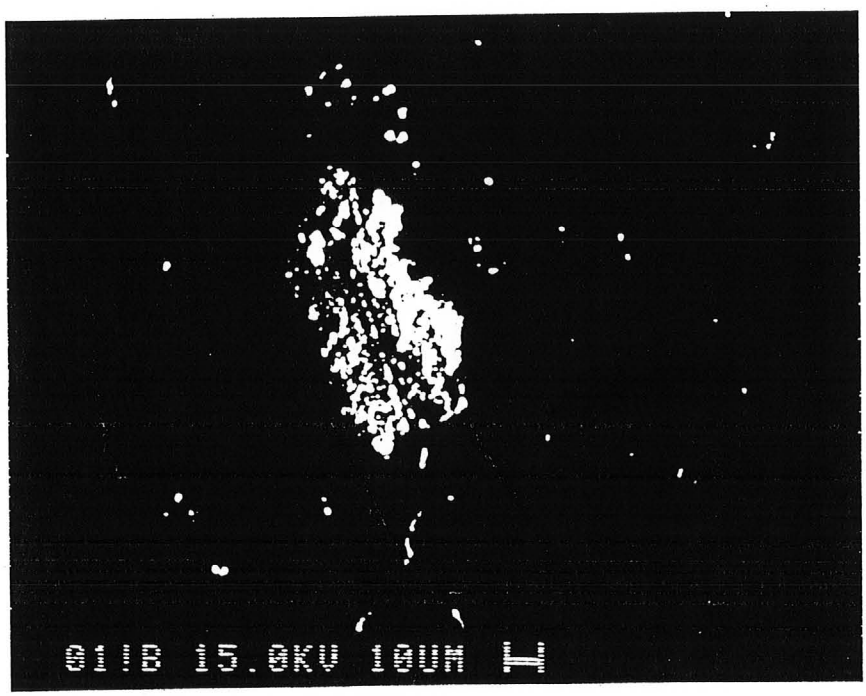
11

12



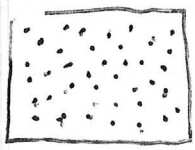
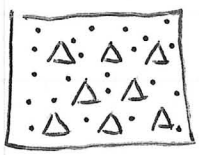
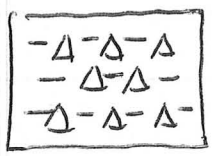
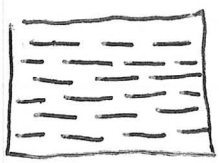
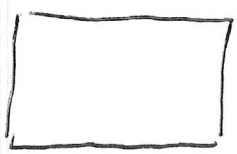
1150/5480 Orphan mine - Native Silver 610X

Yosemite sample from 420' level



1150/5480 Native Silver 610X

Symbols and colors from Gils maps

Symbol	Description	Color
	Pipe Gill, sandstone	Green
	Breccia, sandstone	Yellow
	Breccia, clay or mudstone	Orange
	Mudstone	Brown
	Breccia, mudstone w/ sand matrix	Yellow w/ orange stripes

no symbol
only color

Do you have any ideas regarding a good symbol

I considered ∴Δ∴Δ∴Δ∴, but don't really like it

From the desk of . . .
BILL CHENOWETH

DATE: _____

[redacted]	Terra Cotta	[redacted]	>1.0
[redacted]	[redacted]	[redacted]	.5-.99
[redacted]	[redacted]	[redacted]	.2-.49
[redacted]	[redacted]	[redacted]	.1-.19
[redacted]		[redacted]	.05-.09
[redacted]		[redacted]	<.05

GRADE	Color	Number
> 1.2		7
1. – 1.2		6
.5 – .99		5
.2 – .49		4
.1 – .19		3
.05 – .09		2
< .05		1
		NS

combine

BRECCIA PIPE REFERENCES

Reference list for breccia pipes in the Grand Canyon region, Arizona

Compiled by George H. Billingsley, Karen J. Wenrich, and Bradley S. Van Gosen

July 13, 1994

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Pigeon Pipe

MOENKOPI
KAIBAB
TOROWEAP
COCONINO SS
HERMIT
SUPAI
REDWALL
TEMPLE BUTTE
MUAV
BRIGHT ANGLE SH.
TAPEATS SS
PERMIAN
280-225
my.
PENN
320-280
my.
MISS
345-320
my.
DEVONIAN
395-345
CAMBRIAN
600-500
my.
PALEOZOIC

PIGEON MINE
FACT SHEET

SUPERINTENDENT: DAVID M. LIPKOWITZ

DATE DISCOVERED: 1980

SITE PREPARATION BEGAN MARCH, 1982

TOTAL SURFACE DISTURBANCE APPROXIMATELY 20 ACRES (8 Hectares)

MAIN SHAFT: ROTARY DRILLED BLIND FROM SURFACE;
SINGLE COMPARTMENT

DIMENSIONS:

INSIDE DIAMETER:	8.2 Ft. (2.5 m)
COMPLETED DEPTH:	1,500 Ft. (457 m)
FIRST STATION:	760 Ft. (232 m)
SECOND STATION:	960 Ft. (293 m)
THIRD STATION:	1,155 Ft. (352 m)
FOURTH STATION:	1,380 Ft. (421 m)
DISTANCE FROM SHAFT TO PIPE CONTACT:	90 Ft. (27 m)

MAIN VENTILATION SHAFT: ROTARY DRILLED BLIND FROM SURFACE

DIAMETER:	8 Ft. (2.4 m)
COMPLETED DEPTH:	736 Ft. (224 m)

HOIST: NORDBERG/1949;
ALTERNATING CURRENT, DOUBLE DRUM WITH COUNTERWEIGHT

CAPACITY:	400 HORSEPOWER, 12,000 POUNDS (5,443 k) LINE PULL
SPEED:	1,000 Ft. (305 m) PER MINUTE
COUNTERWEIGHT WEIGHT:	19,747 POUNDS (8,957 k)
SKIP CAPACITY:	5.25 TONS (4,763 m Tons)

HEADFRAME: HEIGHT: 90 Ft. (27 m)
TYPE: SINGLE SKIP WITH COUNTERBALANCE

COMPRESSORS:
4-EACH RECIPROCATING TYPE, INGERSOLL-RAND; 150 HORSEPOWER, 1,052 CFM ($29m^3$/min) @ 125 PSI (8.8 k/cm^2)

SORTER OPERATION:

AVERAGE GRADE OF MINE RUN ORE:	.63% U_3O_8
AVERAGE GRADE OF SORTED ORE:	.75% U_3O_8
REJECT MATERIAL:	20% OF TOTAL FEED
SORTER/CRUSHER TONS PER MANSHIFT:	100 TONS (100 TONS)

MAIN VENTILATION FAN: AXIVANE;
CAPACITY: 265,000 CFM (7,420 m^3m),
400 HORSEPOWER

ESCAPE HOIST: CAPACITY: 4 MAN, 710 Ft. (216 m) LIFT
50 HORSEPOWER

MINE WATER: PUMP CAPACITY: 20 GPM (76 l/min) 15 HORSEPOWER
AVERAGE DISCHARGE: LESS THAN 1.5 G.P.M. (5.7 L/MIN)

WATER WELL: DEPTH: 2,350 Ft. (716 m)
AQUIFER: REDWALL LIMESTONE
CAPACITY: 10 GPM (38 l/min)

ELECTRIC POWER REQUIREMENTS:
MONTHLY POWER DEMAND:

MINE:	220,000 KWH
CRUSHER/SORTER:	25,000 KWH
TOTAL:	245,000 KW
MAIN LINE VOLTAGE:	24,900 VOLTS

INTERNALLY BORED SHAFTS: 5-EACH, 6 Ft. (1.8m) DIAMETER;
COMBINED LENGTH: 2,923 Ft. (891 m)

ORE RESERVES: 476,000 TONS (431,824 m Tons)
AVERAGE GRADE: .630%
6,000,000 POUNDS (2,722 m Tons) U_3O_8

PRODUCTION:
INCEPTION THROUGH FEBRUARY,1988:
223,982 TONS (203,200 m Tons)
AVERAGE GRADE: .570%; 2,554,292 POUNDS (1,159 m Tons) U_3O_8

WORK FORCE:

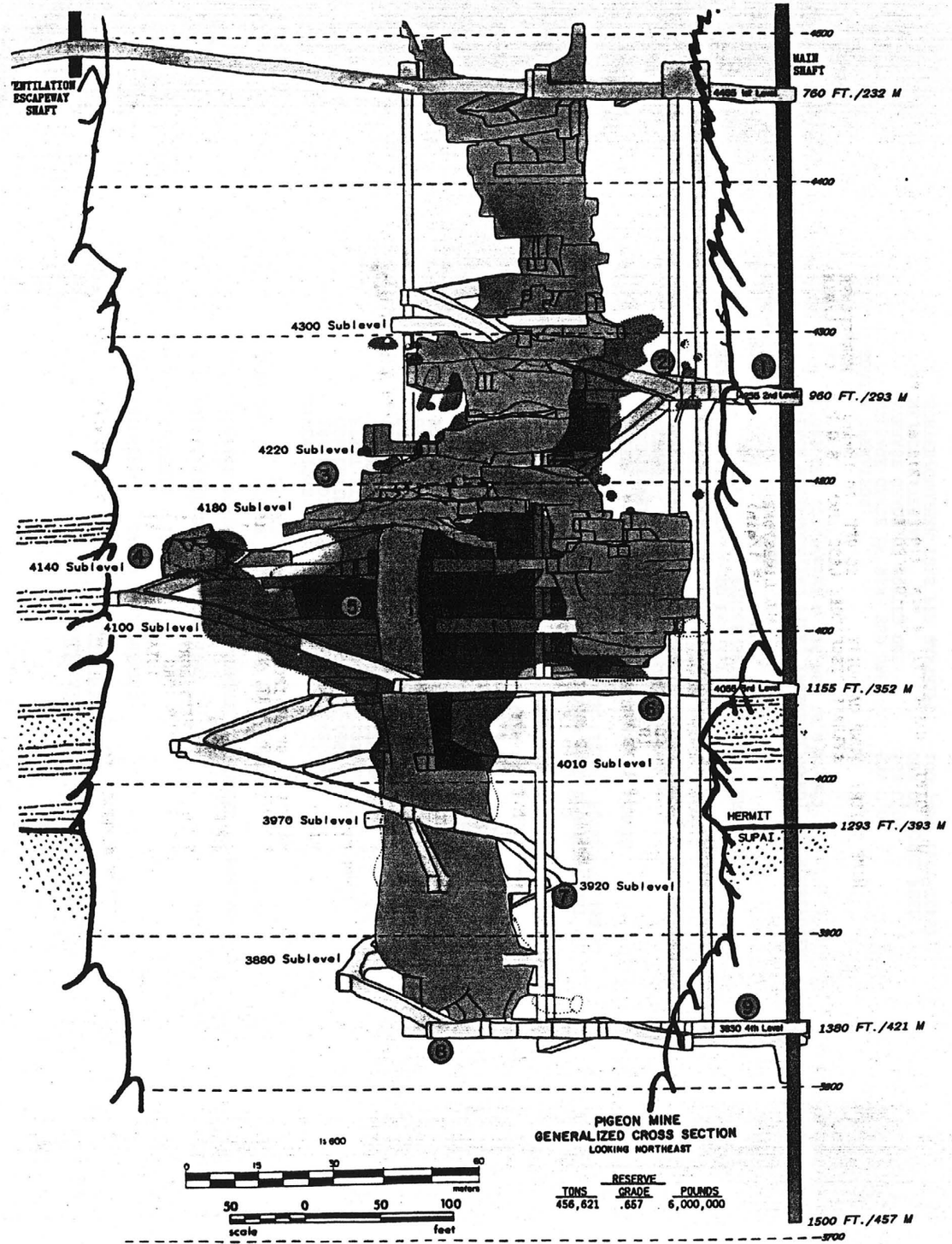
MINE:

SALARIED:	SUPERVISORY/GEOLOGY	6
HOURLY:	SUPPORT, MECHANICS	15
	MINERS	11

SORTER/CRUSHER

SALARIED:	SUPERVISORY	1
HOURLY:	OPERATORS	9
	TOTAL:	42

WORK SCHEDULE IS TWO, 8-HOUR SHIFTS/DAY, 5 DAYS/WEEK



PIGEON MINE
GENERALIZED CROSS SECTION
LOOKING NORTHEAST

RESERVE		
TONS	GRADE	POUNDS
456,621	.657	6,000,000

PIGEON MINE TOUR VIEW POINT NOTES POSTED ON MINE MAP

View Point Location	Explanation
1	THE 2ND MINE LEVEL IS 955 FT/291M BELOW THE SHAFT COLLAR. THE ATMOSPHERE IS MAINTAINED BY MOVING 265,000 CFM OF FRESH AIR THROUGH THE MINE USING A 400 HP VENTILATION FAN.
2	ALTERATION OF THE RED HERMIT SHALE TO A GRAY COLOR IS ADJACENT TO THE BRECCIA ORE CONTACT.
3	INITIAL MINING REMOVED ALL ORE ABOVE THIS ELEVATION USING A "SHRINK STOPE" MINING METHOD. PREVIOUSLY DRILLED RINGS OF HOLES ENABLE LARGE SCHEDULED BLASTS TO FREE THE REMAINING ORE USING "SLOT" MINING METHODS. ALL ORE FALLS TO A CENTRAL DELIVERY LOCATION AT THE BOTTOM MINE LEVEL.
4	SMALL ORE ZONES ARE REMOVED BY "SHRINK STOPE" MINING USING HAND HELD AIR OPERATED DRILLS AND RUBBER TIRED EQUIPMENT.
5	PREDRILLED RINGS OF HOLES 70 FT/21M IN LENGTH WILL PERMIT LARGE QUANTITIES OF ORE TO BE BLASTED AS SCHEDULED. A SINGLE BLAST MAY REQUIRE 28,000#/12,700 KG OF EXPLOSIVES TO BREAK 25,000 TONS OF ORE IN LESS THAN 1 SECOND.
6	ORE RESERVES ARE DEFINED BY DRILLING HOLES 250 FT/76M IN LENGTH, NECESSARY FOR INITIAL MINE PLANNING. ALL VENTILATION AND ORE TRANSFER SHAFTS WERE COMPLETED USING MODERN UPREAM DRILLING TECHNIQUES. AFTER DRILLING A SMALL DIAMETER HOLE, A LARGE BIT IS ATTACHED AND REAMED UPWARD ENLARGING THE HOLE TO FINAL DIMENSION.
7	DURING MINING, AN OPEN ROOM WAS ENLARGED TO 70 FT/21M IN DIAMETER AND 150 FT/45M IN HEIGHT, WHICH WILL BE EXTENDED DURING MINE LIFE TO A MAXIMUM DIAMETER OF 200 FT/61M AND 650 FT/200M VERTICALLY.
8	THE CENTRAL DELIVERY LOCATION RECEIVES ORE MINED FROM ABOVE, ENABLING RUBBER TIRED EQUIPMENT TO HAUL ORE TO HOLDING TRENCHES.
9	EQUIPMENT REMAINS CAPTIVE DURING MINE LIFE AND ALL MAINTENANCE IS CONDUCTED IN THE UNDERGROUND SHOP. A SMALL WINCH TRANSFERS ORE AND WASTE FROM HOLDING TRENCHES TO A COUNTER BALANCED BUCKET WHICH IS HOISTED TO THE SURFACE.

CHRONOLOGY

ORPHAN LODE MINE

893	-	Claim Located
06	-	Claim Patented
	-	Claim Sold
	-	Uranium Minerals Confirmed By USGS
9, 1953	-	Leased To Golden Crown Mining Co.
, 1955	-	Discovery of Major Uranium Deposit Announced
6	-	Initial Ore Shipment Via Tram

CHRONOLOGY (Cont.)

58	-	Special Use Permit To Drill From Stations In Park
59	-	Initial Production Via New Shaft
22, 1961	-	Ore Bin Collapsed, Mine Closed
962	-	PL 87-457 Signed by President Kennedy
20, 1962	-	Mining Resumed
1966	-	Stock Problems, Mine Closed

CHRONOLOGY (Cont.)

967	-	Cotter Purchased Claim and Campsite
7, 1967	-	Mining Resumed
9	-	Mine Closed - Final Time
1981	-	Campsite and Claim Purchased
7	-	Remaining Parcel of Claim to National Park

EMAINING RESOURCES

RESERVES
Above 400 Level

ons	0.11% U_3O_8	500,000 Pounds U_3O_8

RESOURCES
550 - 1,100 Level

Tons	0.02% U_3O_8	3,800,000 Pounds U_3O_8

ORE OCCURRENCES

ORPHAN LODE MINE

n Pipe Fill Sediments
(A, B, G Zones)

ssociation With Peripheral Shear Zone
(Annular Ring Zone)

- Within Shear Zone
- In Pipe Fill Sediments, Adjacent To Shear Zone
- Undisturbed Sediments, Outside Shear Zone

PRODUCTION

1956 - 1969

495,107 Tons of Ore

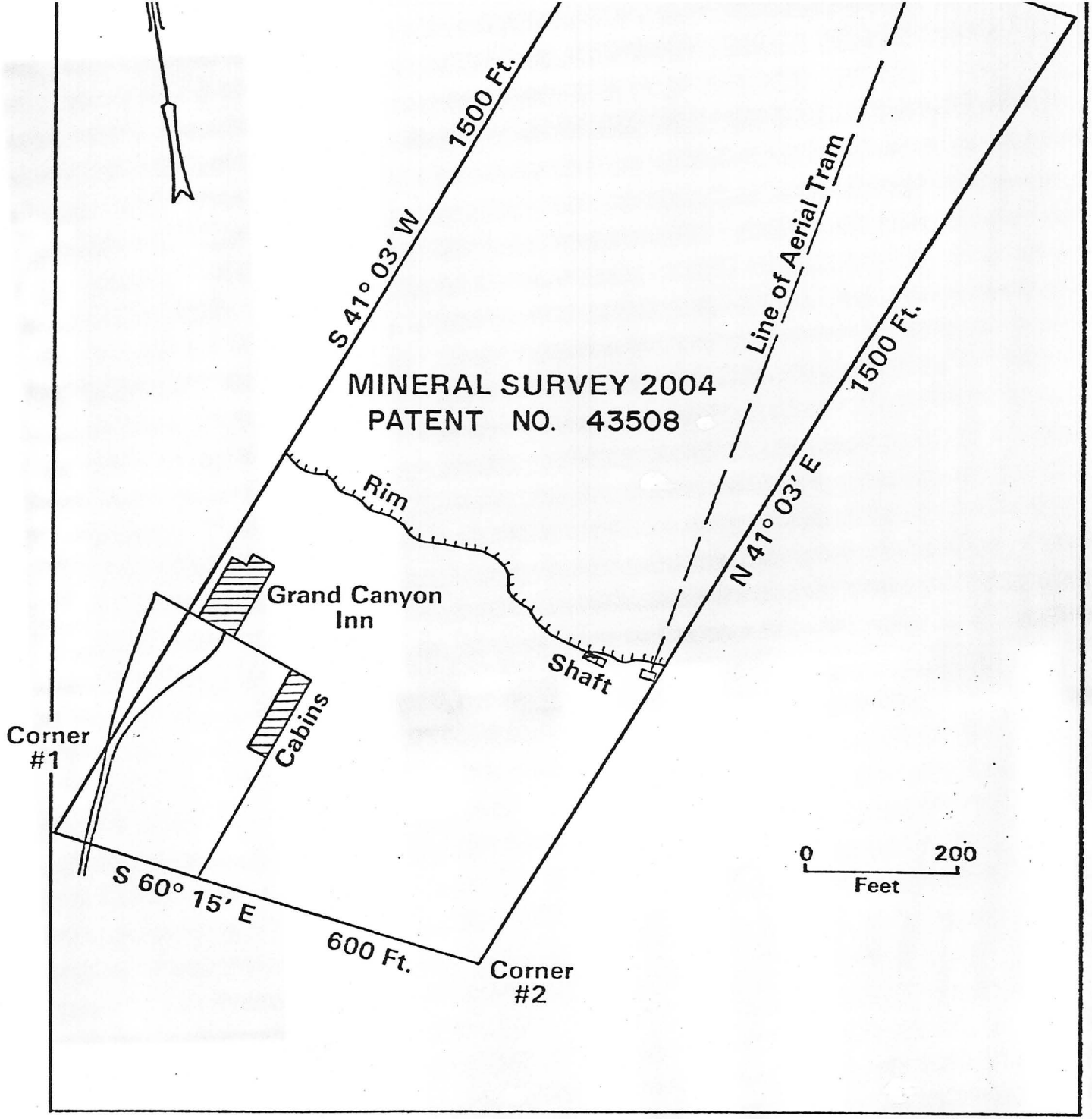
57, 571 Pounds Uranium Oxide

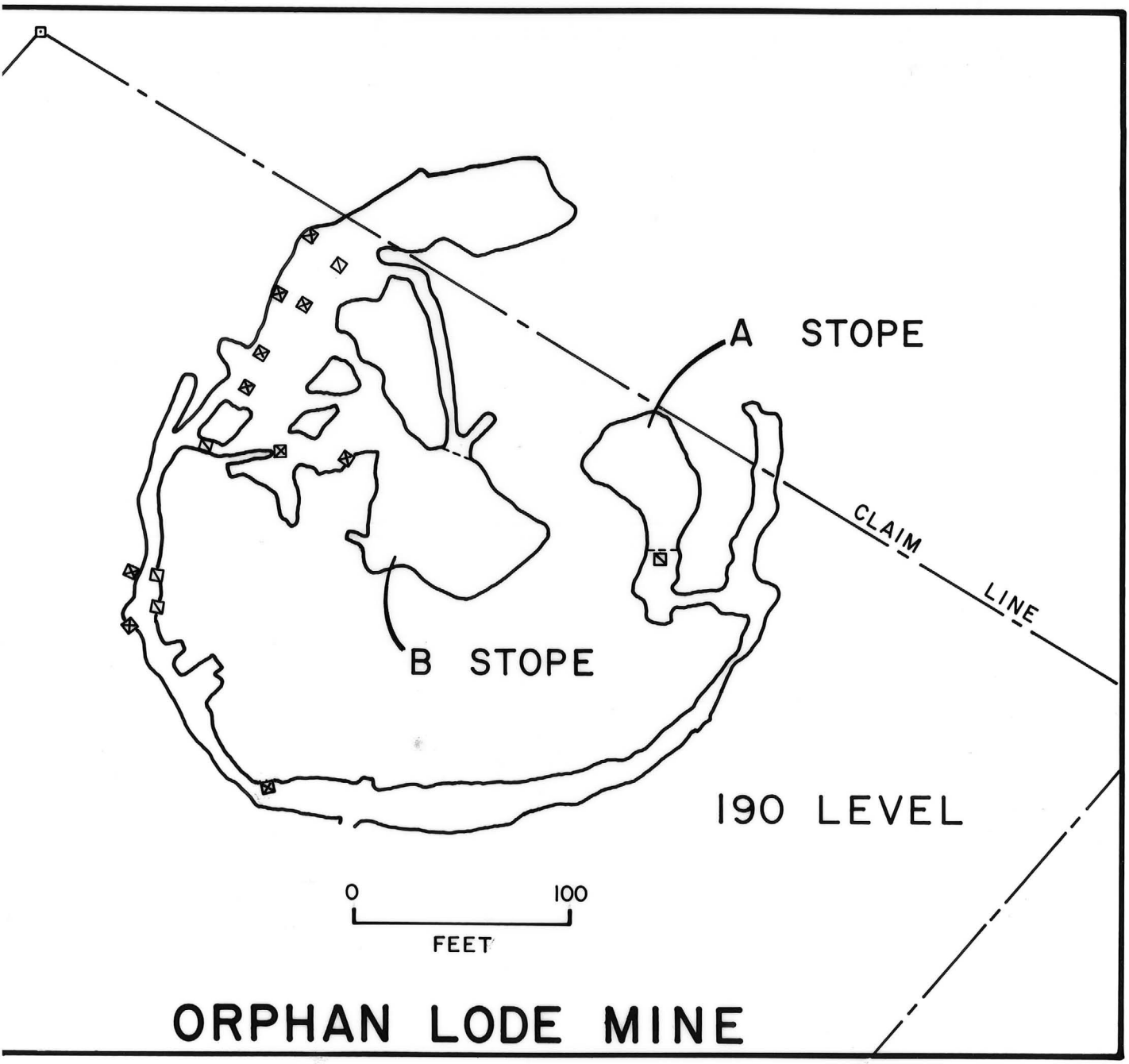
0.43% U_3O_8 Average Grade

PRODUCTION

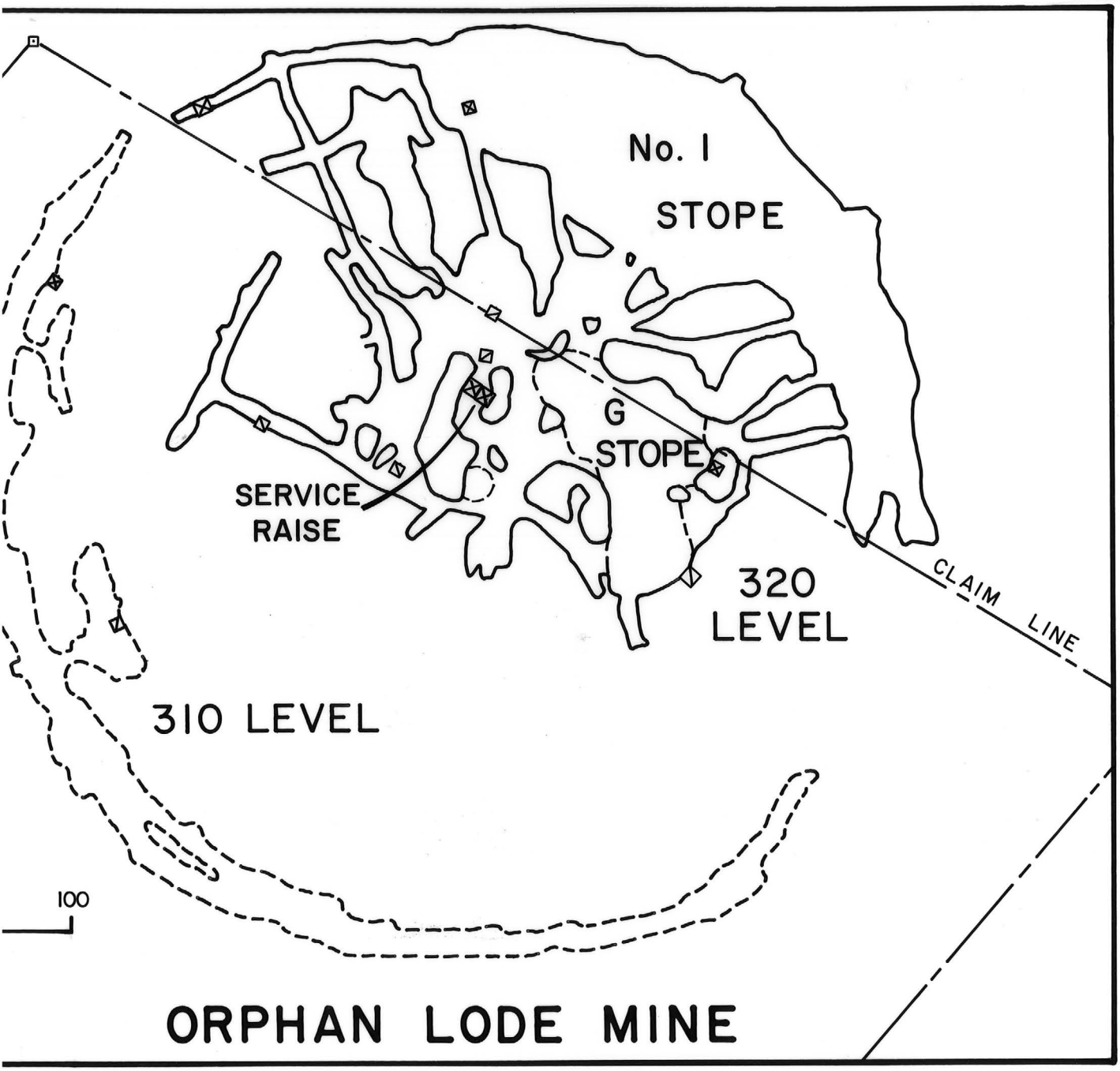
1962 - 1969

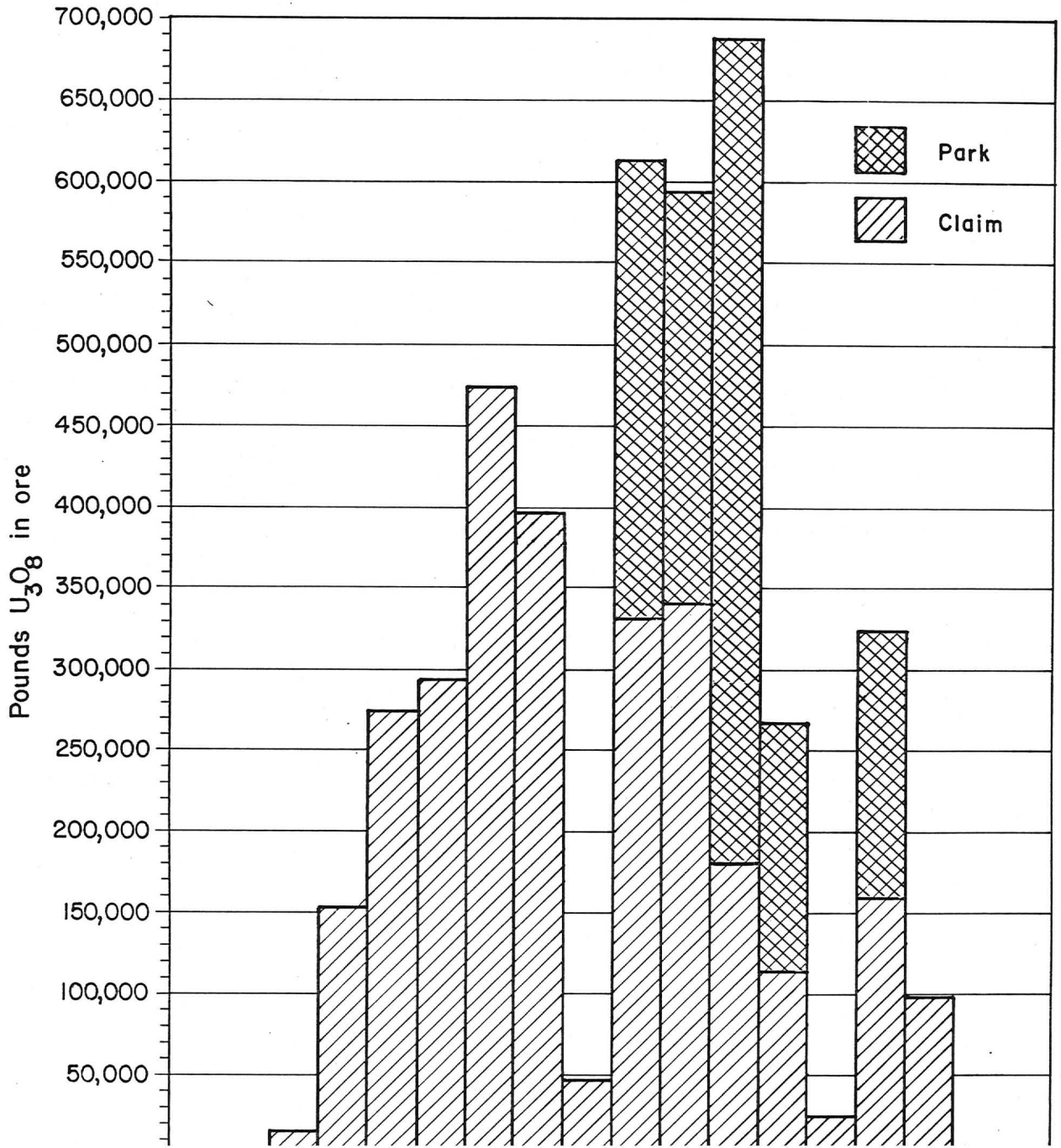
22,910	Tons of Ore
45,674	Pounds Uranium Oxide
31,000	Pounds Copper
06,553	Ounces Silver

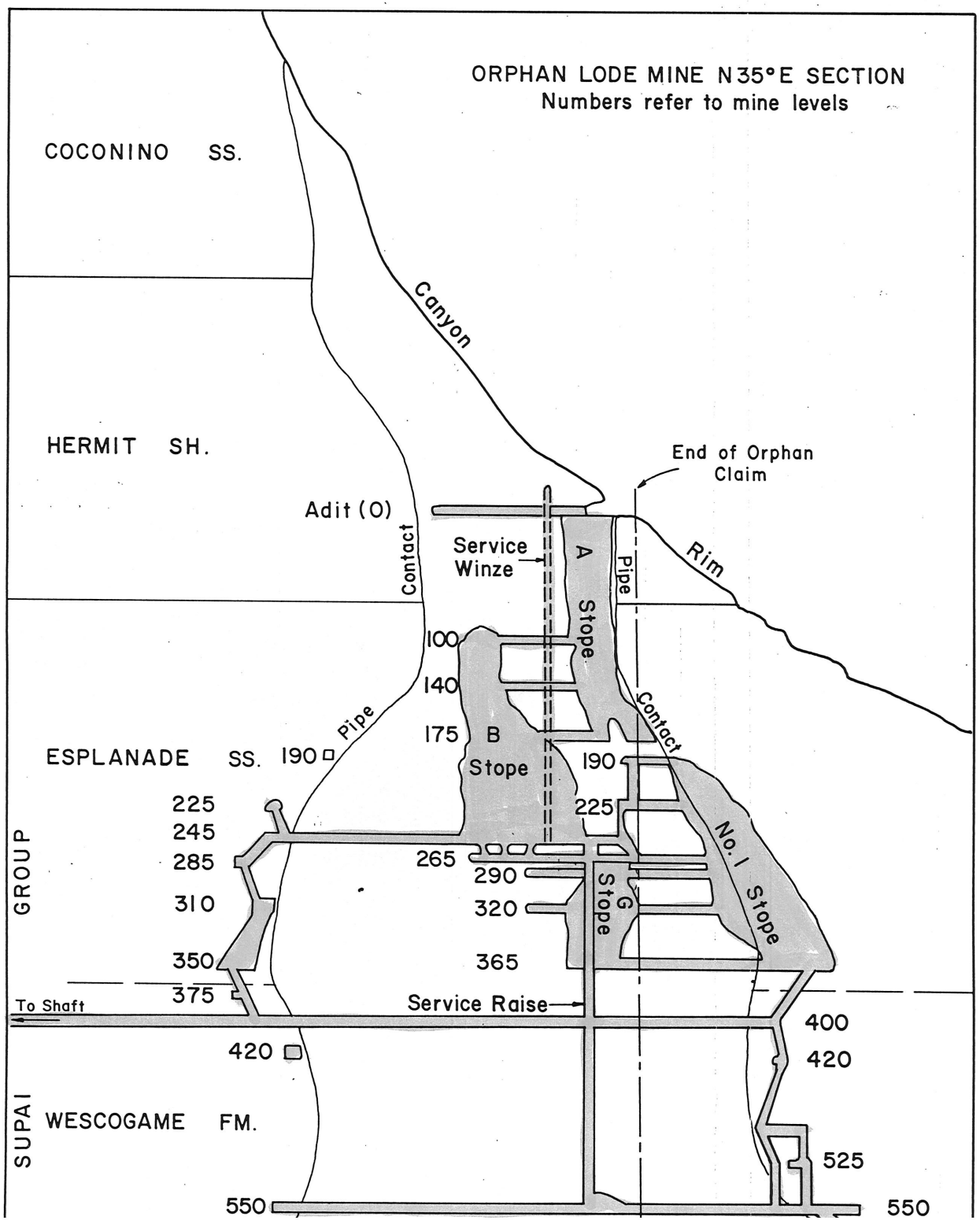

MINERAL SURVEY 2004
PATENT NO. 43508
S 41° 03′ W
1500 Ft.
Line of Aerial Tram
1500 Ft.
N 41° 03′ E
Rim
Grand Canyon
Inn
Shaft
Cabins
Corner
#1
S 60° 15′ E
600 Ft.
Corner
#2
0
200
Feet

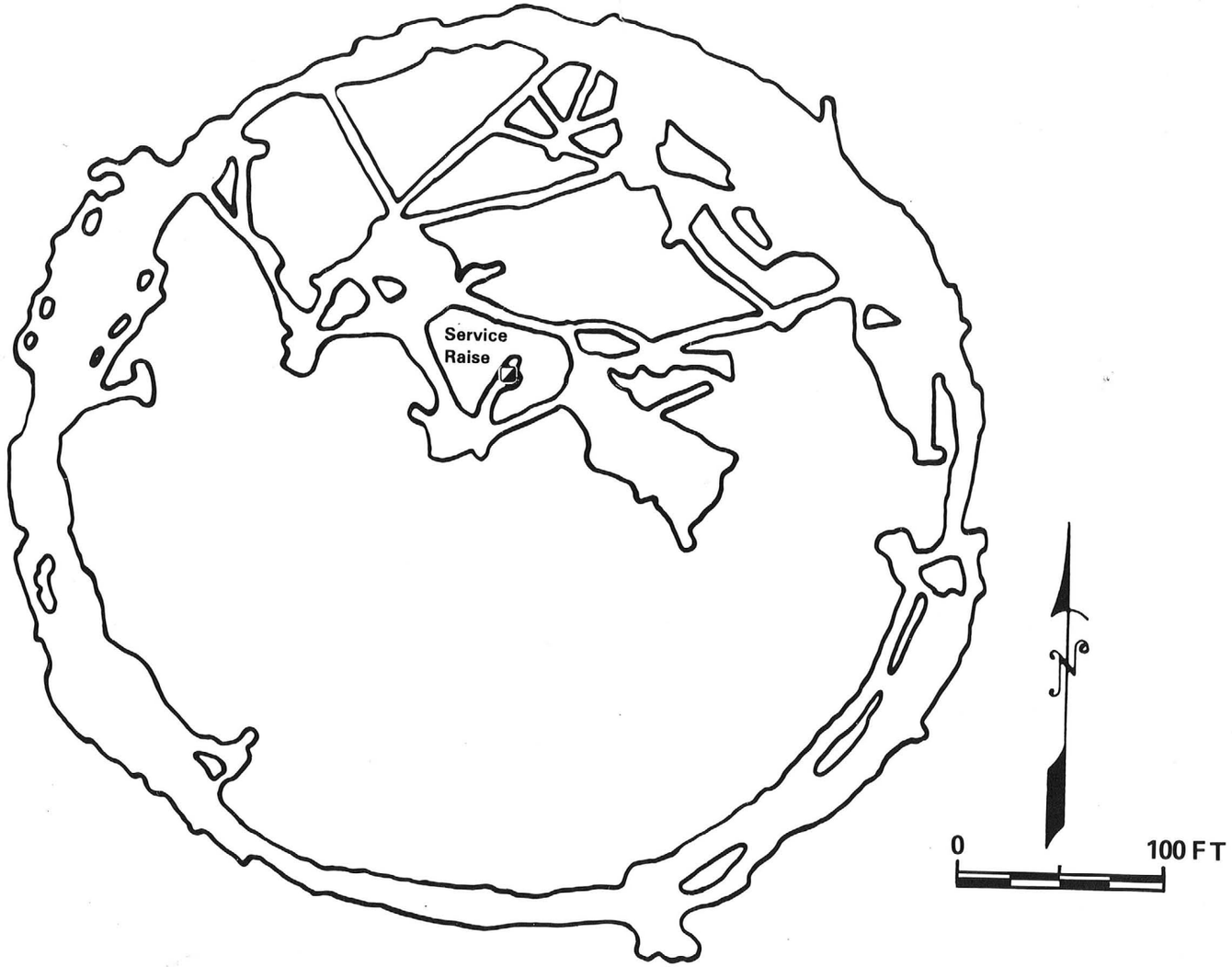


ORPHAN LODE MINE


No. 1
STOPE
G
STOPE
SERVICE
RAISE
320
LEVEL
CLAIM LINE
310 LEVEL
100
ORPHAN LODE MINE


700,000
650,000
600,000
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
Pounds U_3O_8 in ore
Park
Claim


ORPHAN LODE MINE N35°E SECTION
Numbers refer to mine levels
COCONINO SS.
HERMIT SH.
ESPLANADE SS.
SUPAI GROUP
WESCOGAME FM.
Canyon
Rim
End of Orphan Claim
Adit (O)
Contact
Pipe
Service Winze
A Stope
B Stope
G Stope
No. 1 Stope
Service Raise
To Shaft
100
140
175
190
225
245
285
310
350
375
420
265
290
320
365
400
525
550



ORPHAN LODE

PLAN MAP OF WORKINGS
350-365 LEVELS

ORPHAN LODE

NOTES

1958 - 1960

OPHAN LODE 11-9-60

Production

946	@.41		Phillips
6200	@.185	.11-.12%	TC
	.22		

Rave Metal grade higher next month

5 car per week to Phillip

— o — o — o —

Skip loader killed in skip-cage due to jammed chute and misunderstood signals 2½ hrs

— o —

N 24	30	
30	30	
1	30	
2	31	
3	29	
4	24	
5	20	
6	30	
7	40	
8	30	
9	30	
40	29	
1	28	
2	30	
3	30	
4	29	
5	30	
(17)	505	

350 level face

225	A1-A1	498
245	C1-C20	490
350	CL7-68	125
		1114

long hole

ORPHAN
10/10/60
TR. MK. REG. U.S. PAT. OFF.

ORIGINAL COPR. 1910 F. C. PARKER

K-13 - 400' 4.5 - .22%
K-7 10' - 3.20%
90' lower (490 level)

N series #6 to 28' 350 level
fans, each 30' in length seal in old

Production mining 350 245 ring
B stope

6294.165 dry tons total
5940.1365 FC .2586 12.561
314. P .36 20. +
lost

290 & 320 stoping slots for tabular retreat
will extend from 245 to 365
Raise flooded adit level while caused
fill to settle collapsing chute

Production down due to
cycles in stoping

Schaer wheel being installed on
400 level Alphada range

7000 @ .25 expected
for future

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

OPHAN
11-9-60
CONT
TR. MK. REG. U.S. PAT. OFF.

ORIGINAL COPR. 1910 BY J. C. PARKER

Exploration winze down about 40'
Station will be cut @ 150'

Tuba City ore diluted from B zone slect development

— o —

Ball Bros. Address

Repair in Grants

— o —

12-1-60

Tuba 6765 @.23 net ton
Phillips 770 @ .35 net ton
moisture 5%

Tuba ore 2 to 1 mixing ore to B zone

N series (350) 29-49 holes } are 30' each
M series (310) 1-33 holes 3

blocking out ore below 310
previously found by raise

Now on Amer Exchange

Winze about 95'

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

9-9-60
ORPHAN
WKC

TR. MK. REG. U.S. PAT. OFF.

ORIGINAL COPR. 1910 BY J. C. PARKER

ORPHAN

Drilling resumed from of holes because of spotty core in ring

K-11 170' } 400' barren
K-12 192

Long hole D & H & started 9/1/60

350	C-1 to C30	30'
190	A-1 to A16	40'
245	C-1 to C3	60'
290	A-1 to A3	90'
345	F-1 to F13	60'
310	1 to 11	90'
350	A1 to A3	90'
	B4 - B5	
320	A1 to A7	90'
	B1 to B4	

above are long hole samples in Mark's office

Production same places as last month

7,106.220 wet
6,680.522 dry

.275 %
all to TC 13.65 %
$CaCO_3$

Philly contract expired 1/1/61

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

9

5

Shinkolobwe deposit Belgian
Rep Koffend

Oscture for report

Wense stated

TR. MK. REG. U.S. PAT. OFF.

ORIGINAL COPY. 1910 BY L. G. PARKER

LEAX. PHILADELPHIA 7, PA. MADE IN U.S.A.

Orphan
8/23/40
B.N.M.

TR. MK. REG. U.S. PAT. OFF.

Orphan Reserves 4/1/40

355,000 @ 0.39
57,000 @ 0.30

412,000 @ 0.38

Park Service

175,000 @ 0.42
11,000 @ 0.39

186,000 @ 0.41

Pipe Total 412,000
186,000

598,000

8/23

Long hole drilling on 350 level.

5.25 (reduced freight rate 1.00)

DD on 400 level K series - down dip to NW parallel end line - results very discouraging - good sand horizon - no ore.

Koffard says "high grade ore on 310 & 350 levels is secondary ore - leached from upper levels - favorable rock below 400 may be barren"

7

ORIGINAL COPR. 1910 BY J. C. PARKER

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

8-9-60
ORPHAN
WHC

TR. MK. REG. U.S. PAT. OFF

ORIGINAL COPR. 1910 F. C. PARKER

ORPHAN LODE

7733.249 @ .31 16.10%
175 5.16 % H_2O
265 rain in 1 0-22 hole
located core

500 ton to Phillipsburg (3,000 tons)
dealing rail water 4/ton ?
specs 31% & 20%

365 { N 1 200
N 2 270
N 3 133
N 4 246
N 5 60
M-5 190 now completed
M-6 178 70' in June
1209 in July

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

9

8

ORIGINAL COPR. 1910 J. C. PARKER
LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.
TR. MK. REG. U.S. PAT. OFF.

July 8, 196
Dodson
WRC DNM

D.D. - June 1960

245 level ← May
J-22 154' Ore 130-140

310 level

M-1	160'	Ore 126.5-160'
M-2	189'	lower 59 to 81A
M-3	169'	Ore 121-129
M-4	108'	Ore 40-85'
M-5	70'	Incomplete results

@ v. 140

M4 indicates a production horizon in the SE segment of annular ring right under 245 level, and about 35 ft. high.

Long Hole drilling totalled 1510 ft. drilled on 350, 310, & 320 level.

M Series drilling in "B" zone of annular ring.

Wet production

B stope	2566	.22	
350	2270	.40	
320-240	2266	.25	
400	226	.07	
245	116	.10	
	7444	.28%	
	7228	.29	TC
some carryover	334	.45	Pb

7000 tons is about the maximum amount that can be mined & trucked to mill according to Castanyer

RIGINAL COPR. 1910 BY J. C. PARKER
MADE IN U.S.A.
LEFAX, PHILADELPHIA 7, PA.
TR. MK. REG. U S. PAT. OFF

6/10/60
Orphan
Dell M.
Rotford, Mar

Drilling 245 level
May 3 - started on J-21

Working 310
350 extended to FGD raises

320
290
245 } working on "B" stope.

Building 1000 Ton blending pad on surface.

J.21 } 245 level
J-22 } 154' E 65 ft from face of 245 level.

M series 310 level
Just started

Will maintain same production - about same grade.

Stock not yet listed on American Stock Exchange. Mng. Eng. for A.S.E requires reserves to be figured on channel samples of workings only. Rotford thinks reserves based on channel samples will only be about 10,000 Tons

8 11

5/10/60
Orphan
D.D.M. T.J.
R.M.

TR. MK. REG. U.S. PAT. OFF

April 18
245' level
J-19. - 155' flat hole (waiting
J-20 lost Rods - 123

Mon 3 - J-21.

Ore Run
4.50 @ .50% (Shaft Pillar)
15000 tons above 175' (Kaffard
@ 0.40%

Phillips April
(dry) 726 @ 0.65 247 lbs

7,008 dry tons total April
6288 Pounds .39
Fine 8.95 oz

ORIGINAL COPR. 1910 BY J. C. PARKER

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

J1	U_3O_8	Lime
26-28	0.16 c	0.26
32-34	0.11 c	0.21
86-90	0.39 c	

J-2

104-114	.05 e
114-125	.06 e

J-3 125-127	0.13 c
127-129	2.18 c
129-131	3.40 c
131-141	0.08 c

J-4

141-150	0.12 e

J-7

24-26	0.18 c
123-125	1.50 e

~~J-8 <.10~~

~~J-9 <.10~~

J-10 <.10

J-11 <.11

J-12 28-32 0.10 c

J-13 21-24 - 0.14 e

ORIGINAL COPR. 1910 BY J. C. PARKER

TR. MK. REG. U.S. PAT. OFF

J-15

12-18	0.42e	0.48 lim
18-23	"	0.51 "
36-42	0.43e	.04 lim
77-82	0.18e	

J-17

0-6	0.19e	
6-15	0.13e	
15-25	0.08e	
25-32	0.58	
32-40	0.06	
40-50	0.10	
60-70	.14	
119-125	0.14	13 lim
125-127	6.49	7.2 lim
127-132	0.32	
132-139	0.16	
139-145	0.07	

L-1

118-127	2½ lim

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

5/19/60
Grants
Orphan Blk.
D.N.M.

TR. MK. REG. U S. PAT. OFF

Reserves reported 4/1/60
W.G.&A.

Indicated	355,000	@ 0.39
Inferred	57,000	@ 0.30
Total	412,000	@ 0.38

Park Seam

Indicated	175,000	0.42
Inferred	11,000	0.39
	186,000	0.41

580
524/556

ORIGINAL COPR. 1910 BY J. C. PARKER
MADE IN U.S.A.
LEFAX, PHILADELPHIA 7, PA.

Scaning of adit & outcrop
along bench indicates no material
better than .10 - .12 % U_3O_8.
6½' back

Stockpile scaning - 0.05 to 0.08 %
Schmitz select sample of stockpile - 0.06 %

N 70° W from adit
to end of rd. on rim

5/2/60
Orpham
D.NM
(Winterhalter

	U_3O_8	CaO
H-5		
118-128	0.10	10.0
158-163	0.16	4.7
H-7		
48-55	0.17	20.9
101-105	0.11	14.2
105-109	0.28	16
H-8		
41-47	0.12	
183-190	0.14	7.0
215-220	0.06	11.5
220-221	0.43	17
		35
H-9		
41-46	0.10	
61-66	0.20	13.20
76-81	0.13	24.00
85-92	0.36	30.10
H-10		
80-83.5	0.12	31.15
86.5-90	0.10	
90-95	0.10	
95-100	0.11	
100-103	0.49	15.75
110-114	0.16	17.45
188.5-190	0.67	35.7
190-195	0.95	23.20

8/2/60

K series	U_3O_8		line
K7			
95-100	0.07		4.2
100-104	0.75	3.31	11.2
104-110	4.98		12.7
110-116	5.40		11.0
116-120	0.21		19.8
			53.7/13
K-9			
59-64	0.05	0.05	1.1
64-69	0.06		2.5
69-74	0.06		2.2
74-79	0.04		2.4
79-87	0.03		2.2
K-10			
80-85	0.02		2.8
85-94	0.02		3.0
94-96	0.37		1.9
96-99	0.06		20.1

5/2/40
Orphan
DNM
(Winterhalter)

TR. MK. REG. U.S. PAT. OF

ORIGINAL COPR. 1910 BY J. C. PARKER

J-15

36-42		0.43 hc	
77-82		0.18 c	

J-16

12-16			0.12	
16-21			0.85	0.69
21-27	14% lime	0.64	0.65	
27-31	10 lime	1.32	1.11	
31-40			0.01	
40-43	14 lime	0.50	0.51	0.51
91-99		3.03	2.65	
99-104	11.5		0.19	1.7 1.09
104-112			0.10	

J-18

0-5		0.29	
5-12		0.11	.18
12-18	0.18	0.21	
18-25		0.16	
25-31		0.10	.10
31-40		0.09	
40-47		0.07	
47-55		0.12	
140-144		0.11	.10
144-150		0.10	

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

	C.	CaO
H-1		
44 - 46	0.41	
46 - 48	0.27	
48 - 50	1.18	1.0
50 - 52	0.20	0.6
78 - 80	0.45	
80 - 82	0.89	
82 - 84	1.01	
84 - 86	0.68	
86 - 88	0.65	11.9
90 - 92	0.60	0.7
92 - 94	0.88	0.4
94 - 96	1.05	1.0
96 - 98	1.13	1.3
98 - 100	0.83	2.5
100 - 102	0.83	0.3
102 - 104	0.70	0.3
104 - 106	0.98	
106 - 107	1.03	
107 - 109	1.98	
109 - 111	0.71	
111 - 113	0.19	
H-2	[illegible]	
211 - 215	0.24	24.3
215 - 220	0.31	
220 - 224	0.22	27
224 - 228.5	0.71	

B
[illegible]
Bed

4/12/40
Orphan
DWM. WDS

March Production

600 dry Tons @ 0.442 Phillips R.R.

7,000 Tons @ 0.30 for Sept.

Kotford feels (& there is good data & geology to support hypothesis) that ammeterring is continuous from 310 to 400 level.
Ore (15'-high grade) developed on 350 level - E raise.

Sept. winze from 400 level postponed.

310 level ore going to Phillips.
A few ore bodies being mined (stoped)

Kotford & Castagne still feel that mining methods are still not in accordance with best & cheapest mining methods but that mining methods are dictated by Pryor - Cyanide engr.
Kotford & Castagne feel annularring should be stoped from 400 level up but present mining methods call for sept drifts on various levels & then substoping.

J-5

100-112	.19 line	0.67	.55
112-116		0.19	
116-121	.99 line	0.03	.44
121-128		0.49	

J-6

109-119	0.11	.14
119-124	0.07	
124-129	0.57	

J-13

	C	R	
12-18	0.48	0.42	
18-23	0.51	0.42	.32
23-30		0.07	
30-36	0.04	0.43	
77-82		0.18	

J-17

119-125	0.15	0.14	
125-127	6.49	6.3	.81
127-132		0.32	
132-139		0.16	
139-145		0.07	

J-12

22-28	0.17	.14
28-32	0.10	

J-14

34-39	0.11	.23
39-44	0.35	

3/9/40
Copley
D.W.M.
W.E.C.

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No drilling
E & F raises have encountered good
ore on 350 level.
Production from B stope & 310, 320 &
350 levels
Contract with Phillips (Grants via coast)
for 500 tons per month. Notified
by GT to ship to Phillips.

Exploration work on Pam 400 level
will stop this month.

4600 - Pb.
5000 @ 0.35 per Month

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

#3 sample @ 56'

2-1-60

J-17	77'	245 level
K-10	104' *	400 "
L-2	72 *	320 level

as of 1-12-60

o

L-3	-87	
L-4	-96	Buffalo Box gone
J-16	177	as driller
J-17	155'	long holing

4300 @ .45 TC Jan

4500 @ .35 Feb
6000 @ .35 March

— o —

#1 (Taking) } .16% # 5 no pay
#7 # 11 no pay

6

Orphan
TR. MK. REG. U S. PAT. OFF.
RIGINAL COPR. 1910 BY J. C. PARKER
MADE IN U.S.A.
LEFAX, PHILADELPHIA 7, PA.

Orphan

DD Holes. 245

J 17 – 77 ft on 7 1/12/89 ← Park

J 10 – 196
J 11 – 120
J 12 – 41
J 13 – 41
J 14 – 54
J 15 – 117
J 16 – 122 } → Park

K 1 – 190 400 level
K 2 – 177
K 3 – 208
K 4 –
K 5 –
K 6 –
7 –
8 – 79 to Dec
9 – 146
10 – 104

1/12/60
Orphan
WLC
DNM

Shipments cancelled to Grants by Youngberg.

Settle with Tuba before any more shipments to Grants says Youngberg.

Phillips told Orphan they would pay on recovery - 65%.

5000 dry tons for Jan
@ 0.41% Tuba - all Prod.

Dec.

Tuba	250	100%
Phillips	800	36%
Ravemetals		31%

Reynolds, Ravemetals finished scavenging.

1. Don't figure past 62. (Wait & see)
Therefore no steps will be taken by Ravemetals to change circuit.

87

1/12/40
Orphan
[illegible]
DWM

TR. MK. REG. U S. PAT. OFF

2. Koffard Told Rare Metals Orphan will try to hold to 15% $CaCO_3$,

Up to 12% does not hurt mill.

Blend "B" stope ore with High lime ore (what can be mined) to 12%.

Possibility of raising lime cut off to 8%. ??.

Cut off at .30 because of high lime penalties says Orphan.

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MADE IN U.S.A.
LEFAX, PHILADELPHIA 7, PA.
8

Cameron
1/11/69
D.M.

TR. MK. REG. U.S. PAT. OFF.

Diamond
General Litigation #2

Cameron Mining Co.

RIGINAL COPR. 1910 BY J. C. PARKER

MADE IN U.S.A.

LEFAX, PHILADELPHIA 7, PA.

8

29

Company Drill [Tom Kirkham]
L series 320 level

L1 -135 } Park
L2 - 72
L

J1 184 } NW
J2 - 125
J3 - 185
J4 - 162
J5 191
J6 - 172
J7 - 188
J8 - 248
J9 - 228

Production

Series Raise through to 295
Underhanding stoping on S 310
near Drain. N310 is to end
line & undercutting near end line
Drifting on 310 Fraise hole through to 310

30

Orphan Lode
Oct. 19, 1959
Tom Young GB
WLC DNM
TR. MK. REG. U.S. PAT. OFF.
ORIGINAL COPR. 1910 BY J. C. PARKER
MADE IN U.S.A.
LEFAX, PHILADELPHIA 7, PA.

1. Toured mine via Tram, adits 125, 245, 310 & 400 levels & exited through shaft. Tour included AEC personnel, Russel Richards, Maurice Castagne, Bob Hartman. Later, conversation was with Jim Young (asst. geologist & sampler)

2. New concepts advanced by company (about deposit)

a. Bedded deposit are control - vertical veins silling out into favorable beds. This may be important locally but it seems that the major ore control is still steaply dipping shears, fractures. Brecciation & large breccia blocks are not as evident in the annular ring & the pods of ore seperate from the "A" & "B" ore bodies.

b. My concept of the Orphan has changed since writing the resource rpt. This new concept has of course been developed from the additional expl. & dev. that has been done at the mine.

(1) Ore from adit 120' to about the 245 level (peters off below the 190' sublevel) is mostly confined to the Coconino ss. breccia. Within this confinement, vertical structures are important to ore bodies & feeders to the whole ore body for lower grade ore adjacent to the near vertical high grade ore bodies.

(2) Below the 190 & 245 sub levels the annular ring is an important source of ore but ore is also

being discovered, by dev. raises & drifts, in scattered pods & small ore bodies with very irregular outlines in the central part of the pipe. The shear zone, at least where explored by drifting & drilling, is not as sheared, brecciated, & altered as was originally thought. Some ore in the shear zone is confined to favorable lithology in relatively undisturbed beds. The shear outline is very erratic - possibly due to competent & incompetent beds in the lithology. The scattered pods of ore in the pipe are controlled by, probably, several factors & or a combination of these.

(a) Brecciated areas
(b) intersection of shears or fractures.
(c) Favorable host rock.

The occurence of ore in the shear & the pods makes for difficult mining & development (& exploration).

Thus, company officials report that development of the mine is no where nearly complete & mining rate thusly will be a maximum of 5,000 Tons per month (at least for the coming 6 or 8 months). All ore in the annular ring & scattered pods in the pipe is apparently high lime. No definite negotions have been made with the Tuba City Mill.

Ore in the past month has been market at Homestake Sapin & this month 4 car loads of ore will be shipped via R.R. to Phillips mill in Grants. No ore will be shipped to Texas-Zinc. Ore to Tuba, is still running about 12% $CaCO_3$. Penality is $1.00/ton for 1st 2% over 6% & $.30 for each % thereafter.

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LEFAX, PHILADELPHIA 7, PA.

Oct. 3, 1959
Overhauled
DNM
Kofford, Hartman
TR. MK. REG. U.S. PAT. OFF.

ORIGINAL COPR. 1910 P. A. G. PARKER

Geology.

310 level. Orcishard tomine. Rocks are relatively undisturbed. Ore occurs in bedded favorable host seperated by unfavorable type (barren) rock.

Production

3,125 @ 0.45 % WO_3 & ± 10 % $CaCO_3$ to Tuba mill.

3,500 @ 0.45

375 @ 0.60 % WO_3 & +10 % $CaCO_3$ to Homestake W.M.Rt. — This is trial shipment. Contract to be negotiated after results of shipment.

Phillips reported willing to give W.G.&Ur. contract for high lime ore

Planned on shipping some high grade ore to Texas Zinc but roads impassable. Will ship in Nov.

Production, 3/5 of came via shaft, came from upper levels, 310 level & 295 N. X cut raise.

Next months production (Nov) expected to be 4000 T. @ 0.45.
Prod. in Dec expected to be 200 T/day or 5,400/mo.
Prod after Dec. expected to be 100 % from shaft.
Kofford says mine is still being high graded but grade is controlled by high Co. officials.

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

prod 310 level, 245 N x cut raise
~~35~~ this is prod from shaft
all shaft by Dec 1. 200 T/day by Dec.
Oct. 3, '59 Orphan Lode D.N.M.

→ 4500 @ 45° expected by in Nov.

Diamond Drilling

J Series 245 level
7 188'
8 240'
9 228'
10 116' in Sept & 7 holes in Oct. on holes mining.
11 150'

J.12 — short (25'?)
13 41 ft.
14 54 ft.

K series 400 level
1 - 190
2 - 194
3 - 163 to Nov. 1st } mineralized low in Cl_3O_8 high in Pb.

310 level hard to mine - ore is bedded & favorable to favorable beds.

Negotiations with Cameron mining dropped.

3,500 Tons @ 0.45 Tube
- 395 @ 0.60 Homestake
3,125

35

ORPHAN LODE AUG. 28, 1959
MAGLEBY
SIAPNO

RUSS RICHARDS
HIT ORE 1' - 2' thick ON 400 ← SAME
LEVEL ON W SIDE OF RING.
NARROW BUT HIGH GRADE - HIGHEST
22%. "B" STOPE DRILLING
SHOWS SOME HIGH GRADE.
MAX OUT OF TOWN.
"A" STOPE GIVING TROUBLE. SHEAR ON
N SIDE CAVING, ALONG THE
"FOOT WALL" (MAY BE HANGING
WALL.
CONTRACT WITH TUBB NOT
FINALIZED. CURRENT THOUGHT TO SUPPLY 250 T/day
400-30 FACE 3' SEAM OF ORE ←
17' LONG IN BACK ON L SIDE
LOOKING AT FACE. SEAM GOES
INTO BRECCIA ZONE IN FACE.
CONSIDERABLE PB. SHOWING.
LIME CONTENT ABOUT 20%.
SEAM PITCHES 65° IN BACK
FLATTEN TO 53° IN FACE.
EMS-SWALLOW - PHONETIC (SP.?)
IN CHARGE OF DRILLING "S"
SERIES HOLES, TRYING TO HOLD
.40% TO .50% U_3O_8.
WENT DOWN SHAFT - LOOKED OVER
400 LEVEL.

J SERIES - HORIZONTAL

5 HOLES TOTAL

1 - 184'

2 - 125'

3 - ~~84~~ 116'

4 - 162'

5 - 191' - OUT OF ORE 150'

2 MEN & DRILL MACHINE

AVE. 60' PER SHAFT.

Orphan
July 31
DWM

Doubtful that Tuba will change circuit. May use acid water from tailings to help reduce acid consumption. Talked with Richards, Castagne, Hartman

$CaCO_3 = CaO$
0.56

Bruce Imswaler - Geological Dept.
Bob Hartman
Charles Winterhalter
Talks with Grand Junction.
Contract with Rare Metals to Marchler - All production (except south grade or High Ca)
80% $CaCO_3$ limit of Tuba ??
Blending to keep limedown or float off lime. ?? Other processes?
May move in some new equipment with Cameron in conjunction with Blakemore. ~~[illegible]~~ to help ship low lime ore to blend with Orphan.
July prod. .70
1500 @ 0.65 Tuba
1449 total went to Texas Zinc.
@ 0.80

Looking for
Surveyor - permanent - assistant to Geological Dept. Salary open??
Orphan considered contracts with:
Texas been cheating on moisture content - therefore no go.
Texas Zinc didn't offer enough to offset haulage.

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LEFAX, PHILADELPHIA 7, PA., W. IN U.S.A.

Aug. 3.

Recurring visits DNM WCC

M. Johnson #9 - Idle at time of visit, Signs of recent activity July production 246 Tons Equipment John Deere crawler w front end loader.

Elwood Canyon
Idle but signs of recent activity. Eq. Caterpillar compressor 250 cfm, Two dump trucks, timber July prod 453 Tons

Juan Nous #3
Idle - Signs of recent activity. Eqmt. Tractor mounted Jack Hammer. Pump. wheelbarrow

Jack Hardin #3
Lynch has taken out a prospecting permit. Two miners working in side of bottom of pit with jack hammer standing in the bucket of front end loader.

ORPHAN
7-7-59
TR. MK. REG. U.S. PAT. OF.

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JUNE PRODUCTION
2149 Dry tons of 1.1 +%

TC	875	T	wet	1.00 %
KMN	460	T	"	1.26 %
TZM	916	T	"	1.20 %
	2251		"	total

July Production
about 1800 @ .70 all
to TC

Resuming claim to the shaft and working corner etc altogether - Phoenix crew checking on cor work.

Long hole drill has located an new ore body within pipe on 200-230 level
55,000 - 56 000 E and
58,000 - 59 000 N approx NE 1/4

Raising to 245 level in both annular ring and B zone 15 feet need to go in ring survey may be wrong

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

Park Service reports trucks overloaded over of 3 tons each during past several months. If not corrected will turn data (weight slips from mills) over to Highway Dept for lawsuits

Mg wants all production to go to TZM - better deal than KMNF

Homestake reports high lime are not too amenable to carbonate circuit.

Production thru shaft still scheduled for Oct 1

Dupha
June 8
DNM. WLS
TR. MK. REG. U.S. PAT. OFF

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Amenability 2 45' bed
as reported in cho 2 45 & cuff

2½ ft @ 0.25% U_3O_8
Entrusterations (chan) 10 ft
wall energy – 03 to 05.

This entire southernmost
portion of the pipe will run 2.5 on

May – 1753 dry Ton .85 (TC

June 2000 T @ 1.00 +
⅓ to TZM over 1%00 +
same to KMN
300 T ?? .90
400

400' little one 1,000'

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Orphan

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2000 T @ 0.80 Tube

1100' Xcut from shaft.

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ORIGINAL COPR. 1910 BY J. C. PARKER

ORPHAN
MAY 11, 1959
TR. MK. REG. U.S. PAT. OFF.

Orphan Lode

all ore for May will go to TC

1500 tons @ .50%
much from development heading

Next month will ship high grade to Kermac

Homestake NM now full of Rio de Oro ore – no more good deals

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ORPHAN
MAY 4, 1959
TR. MK. REG. U.S. PAT. OFF.

ORIGINAL COPR. 1910 BY J. C. PARKER

OPPHAN LODE

April production
1310 Wet tons @ 40%
all to Rare Metals

April activity
Camp being moved to
BC Steak House

400' Crosscut 596 Ring 1
ave 15' / day

245 Crosscut completed
at 245 feet. now
drifting on the annular
ring. Ore 20' @ 1% ±

Lime Content will average
20% in annular ring
17% on north side
25% on south side

impossible to ship to TC

Rare Metals offered mill
half for million & half

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

Plans
High grade low lime to
Granite in May
1000 T @ 1% +
Richards to decide what
mill - chs order to build
up cash

AEC notified 300T @.26%
daily quota @ TC

Orphan
4/22
DNM
TR. MK. REG. U.S. PAT. OF.

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Ask: Permission for Harry Granger (USGS) representative of Park Service to be on distribution list of Flagstaff Section monthly rpt.

Why not shipping high grade to Grants this mo. Last shipment of high grade to Grants in mid March.

Maurice Castagne

400 Tons/day when in prod via shaft

Possible Markets Via Shaft { Texas Zinc (May buy int. rest) Tuba City (½ in tons 2½ mill) Homestake too much frt poor equip

340 ft. on main crosscut

Amalgamating encountered at 245' on 245 level drift. 20' x 8' in mag.

Shipping all to Tuba this mo Avg. grade of 0.50 to 0.70

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Grub
Howard
Luster

3-31-59

ORPHAN LODE

MARCH Production

1475	@ .40	RM
125	@ 1.32	HMN
1600		

DRILLING

H series completed

H-9	137'	good Cu low U
H-10	243	10' - 17% Cu 7' - 2% U_3O_8

Penetrated shear at 400 & 500 levels on eastern side of pipe

DEVELOPMENT

245 drift now 185' long trending S 55° W from shaft 50' more to shear zone. Encountering .05 - .10 all the way entire March TC production

Main crosscut making 17'/day just rounding curve 600' to shear 1200' to end line

Hauling costs

Gibbons charges 5½¢/ton mile to TC Park gets 75¢/T for this haul.

Jan mucking cost $11/T
Dec " " $14/T
Nov " " $11/T
Oct " " $8/T

Homestake has offered to buy ore FOB at mill for 400T/day @ .40% till 1966

Kermac pays 6.50/T hauling for ore over 1.25% shipped to Grants

Gibbons charges 12.50/T ore trucked to Grants

New shaft
Expected grade
200 T/day — .40
400 T/day — .25

based on 25 day month - 2 shifts

Mining costs
12.50/ton for 200T/day
9.25/ton for 400T/day

3-31-59

Orphan Lode (cont)

WG&U is investigating buying water from Santa Fe and bring it to GC in tank cars

Would cost 65¢ / 1000 gals plus haulage from Chino
Now cost $10 / 1000 gals plus $5 haulage for same from Williams

---

Mining costs (based on production to March 1, 1959)

Development	$13.16
Tramway operation	3.82
Direct mining	10.33
Other operating cost	5.32
	32.63

DRILLING TOTALS

"C" series (Company drill from 225 station)

C-1	139
C-2	168
C-3	63
C-4	140
C-5	69
	579

over

"H" Series (Boyles Bros from 175 level)

1	293	(est depth)
2	223	
3	271	
4	287	
5	320	
6	309	
7	141	
8	250	
9	137	
10	243	
	2,474	

Completed in mid March

3-10-59

ORPHAN LODE

Drilling

H-7 141'
H-6 250' 7' @ 2% 50% inc

Two more "H" holes planned

Production

Feb

273 T @ .71 - RM
769 T @ 1.00+ - KMN
1,042

166 T from "A stope"
876 T from B zone 245
1,042

Will begin shipping lower grade material next month
1,500 @ 6 to TC
Some 1+% to HNM

Plans
March 20 will start
XC from main shaft

Orphan
2-20-59
DWM
TR. MK. REG. U.S. PAT. OF

ORIGINAL COPR. 1910 P. L. C. PARKER

Most of the readings on the maps on long hole drilling is probing results. Dried sludge samples correlate very poorly & are usually lower than probing indicates except in ore near 1% probing tends to indicate less than sludge samples.

Kolfard says ore continuous, to 350 ft. including shear. No ore in shear below 450 because of unfavorable stratigraphy.

Ore Reserve Calculation DWM RVM
Grants 3/4/59

Park. Nov. 29, 58

Ind. 163,000 ~~175,000~~ @ 0.52 { 73,500 ~~86,000~~ @ 0.87; 89,500 @ 0.18

Inf. 65,000 @ 0.50

Total 228 ~~240~~,500 @ 0.51

Orphan Nov 29, 58

Ind. 251,500 @ 0.37 { 56,000 @ 1.04; 195,000 @ 0.18

Inf 45,000 0.40

Total 296,500 0.37

Resume 1-1-59

250,500 @ 0.37
45,000 @ 0.40
295,500 @ 0.37

Grand Total Ron Pipe
537,000 @ 0.44

Potential
100 - 200,000 Tons

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

Mason Park
Sec 9. 7lb.
50T @ .14

Cameron Totals
3145 Tons + J. Hughes #3

J. Hughes #3 ~~305T~~ 141
Elwood Thompson #1 (Hanco 33)
8-10 holes 100-110 ft
deep. several of
holes, all mineralized

Orphan
2-18-59
DNM
Mark
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X cut intersect 400 ft. level.

175' level probed with Bobbel calibrated with Grandjet. Engineering pole sleeve

Scale ratio x 3.

Bkg 60 3rd only

①	
5'	50 ~~cont~~ 204 Cq
10'	20
15'	10
20'	12
25'	50
30'	40
35'	10
40	10

②		③	
5'	30	5'	70
10'	22	10'	55
15'	18	15'	45
20'	18	20'	50
25'	22	25'	40
30'	30	30'	30
35'	22	35'	20
40'	18	40'	16
45'	15	45'	10 end.
50'	10	50'	
55	.05	55	
60	.05	60	
65	.059		

Bkg 60

56

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(10). Phy 50

5' 40
10' 30
15' 20
17 blurred

Rx in product from
x c in det.

Orphan
2-18-59
DNM
Max Collins

TR. MK. REG. U.S. PAT. OF

ORIGINAL COPR. 1910 BY J. C. PARKER

245 level

①

5' 20
10' 20
15' 10
20' 10 blocked

②

5' 10
10' 10
15' 10
20' 10
25' 15
30' 20
35' 20 blocked

100 ft level

5' .40
10 .70
15' .50
20' .30
25' .22 filled in
30' .20
35'
40'

②

5' 20
10' 25
15' 30
20' 25
25' 20
30' 30
35 .20

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

Need

Drilling results on 245 level.

Kolfard expressed opinion that mine was being high graded to satisfy N.Y. office & stockholders & Weston hold's position on stock exchange. Optimum (?) mining grade, or grade best results from blending, should be about 0.35 oz Au. New reserve figures to be figured by Kolfard will probably increase tonnage but lower grade. N.Y. office says ore reserves are 5-7 million.

Adit level. No short or long hole drilling but some ore indicated by sampling. Ore in adit may be extended to surface.

100 level. Some long & short hole drilling currently bringing in fill from near adit to fill in large stope between 100 & adit levels.

140 level. Not visited. Long & short hole info. not available.

175 level includes 178 incline & high grade ore on NE perimeter. All long hole info. made available. Bayles Drg. DD Rig drilling in S. crosscut.

245 level. Raise from 245 to 175 is in high grade - shipments to Kermac N.E. Large shale block (barren) in drift just W. of shaft. Shale block about 15-25' wide. Co. owned DD drilling from a st. in raise.

2 long holes drilled on 245' level.

Kolfard est. 200T/day prod. through shaft in Oct. Drift intersects workings at about 400'/week

Opham
1-2-59
DVM. WLC

TR. MK. REG. U.S. PAT. OF

1500 ft. level in shaft - cut & fill
will intersect 400' level in Mine

1240 wet tons 1.50 +
7-800 Tons Zinc
43 Kerr

X cut will be driven by C.D. Co. ??

Roof Bolts

Pb
Cu
Zn
Ag } $5.70
$3.00/Ton recovered with high grade $3.00

additional 440,000 Tons add 2% Cu.

2 holes Total 175' for mo dec.
175 level 400 to vein

2 holes on 225 level @ 135 ft.
30' one

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LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

60

$$\begin{array}{r} 48 \\ 38 \\ \hline 544 \\ 204 \\ \hline 2584 \\ 920 \\ \hline 3484 \end{array}$$

$$\begin{array}{r} 30 \\ 30 \\ \hline 900 \end{array}$$

$$\frac{3500 \text{ ft}^3}{15}$$

$$\begin{array}{r} 233 \\ 15\overline{)3500} \\ 30 \\ \hline 50 \\ 45 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 35 \\ 35 \\ \hline 175 \\ 105 \\ \hline 1225 \end{array}$$

ORPHAN VITRO PRODUCTION

1958

DEC	34 lbs	403 lbs
NOV	—	—
OCT	—	—
SEPT	384	13,835
AUG	627	13,697
JULY	117	842

LOCATION OF ORPHAN RESERVES

	IND T	IND GRADE	INF T	INF GRADE
RING	76,000	1.00%	45,000	.9%
(also 275,000 T @ 1.00 probable & possible)				
B ZONE	22,000	.53%	20,000	.53%
SHAFT PILLER				
	16,000	1.00%		
LOW GRADE (short hole drilling)				
175-350	55,000	.20%		
350-450			31,000	.20%
LOW GRADE (long hole drilling)				
adit - 175	57,000	.20%	30,000	.20%
175 - 450	316,000	.20%	600,000	.20%
TOTAL	542,000 Ind		726,000 Inf	
	1,268,000 T Total			

(275,000 @ 1.00% "possible & probable" not included - would be AEC potential)

12-3-58

NOV

249 T	TZM	2.761 %
800 T	TC	1.00+ %

now limited to 17,950 lbs at TC (increase of 1,000 lbs)

Western Gold has now gotten a special use permit to build about 2 miles of road from mine site to location on RR right of way where they are building a loading ramp

Negotiating with Vitro also Phillips in Spanish

Stations cut on 245 level and are being mined also between 140-100 level NE perimeter of pipe

Shaft down 1330 today may cut crosscut at 1450 level, unsettled on the ore will, downward, bottom of shaft will be 50' below station

64

reason of over

Reports one million tons
at .42%

RIM 7,000' elev
5450 elev proposed bottom
1550 of shaft

Lime ore runs about 25% CaCO3

11-4-58

ORPHAN MINE

OCTOBER 1000 T @ 1% ±
1/3 Texas-Zinc
2/3 Rare Metals
concelled contract w/ Vitro

— o —

SHAFT DOWN 1087 TODAY
difficult in Hermit shale ss lenses better

— o —

RIDEN/HOUR
Completed 710' (2nd hole)

moved rig to HACKS CANYON
MINE now drilling there

— o —

DRILLED ANOTHER
2,490 feet in Sept.

completed 3 more holes
and deepened 2 other (?)

One hole completely passed
thru, pipe at about
350' level - found ore
on backside of pipe
in shear zone pipe
6" @ 200%450' dia at this level
flares abruptly @ supai -
66 Hermit contact

another stope indicated at Supai - Redwall contact

HOLE #9 penetrated pipe @ 700' level encountered only mineralization less than .20% in shear

Now moving rig into 175' level to do angle drilling this winter

— o —

SINKING "LITTLE SHAFT" TO 235 level nearly completed will be mining on 5th level soon

— o —

HAVE BEEN MINING ON NW PERIMETER OF PIPE BETWEEN ADDIT LEVEL & 100 LEVEL LARGE STOPE CONNECTING TWO LEVELS. FILLING w/ WASTE FROM OUTSIDE AT PRESENT TIME

— o —

COMPANY is beginning to mine HIGH LIME ORE on 175' level to blend w/ regular ore. After one "high lime" shippment to Tuba. Co plans to keep lime just below penalty at mill

11-4-58

ORPHAN CONT'D

All ore going to TEX-ZINC must be 1% or over

— o —

VICE PRES RICHARDS starting economy drive at mine cutting down on
(1) idle men
(2) unnecessary vehicles
(3) unnecessary phone calls

— o —

Western Gold & Gibbons partners in Riverview drilling

MAX NEED KABAB & COCOMINO THICKNESSES FROM GRAY MT WATER WELLS

COOLEY

PK ~ 200' ±
Pc & Pt 600 ± top Ps sandy

10-9-58

Orphan Drilling

"B" sequence
holes inclined about 45°
from horizontal

60% core recovery

500
480
485
375
550
725
570
3,685 total to date
3,490
6,175 -10 holes
5 - 350' level all ore
2 - 570 level both min.

Shaft 893' today

completed by 1st of year

Crosscut should be completed
by July 1959 (500' level)

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10 Lines = 1 Inch

ORPHAN
LODE
NOTES

1961 - 1962

LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

ORPHAN
3-10-62

Castagna

Headframe going up 85% complete

No word on cleaning up sump or manway.
Manzo Kelle + 2 more doing odd jobs

P-13 1365± driller lost rods again

Ore bin question
shack or bin unsettled by Co.

Congressional Record - House
pp 1427-1434 (Feb 5)

4-5-62

1 P-13 1503 feet deep at 11:00 am today

2 Headframe is up and the cages are hung

3 New guides have been installed

2

(4) Will begin cleaning up mouthway, suppose etc next as well as repairing ore bunker

(5) Won't order ore bins until day bill passes

(6) After bill passes will take about 90 days to finalize details -

(7) Will be an integrated operation with profits split 50% with Rare Metals - Will have to work up a price schedule so Park Service can base royalty on it.

Backfill in mine

Estimated 25 - 30,000 tons at .12-.15%
Certain small areas will go .50% other are .80%

ORPHAN
12-19-61
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Castagne

Hoping for 6000 in Dec
but with weather may barely
get 4000

GJ (Kline) says tonnage up
grade down if WE wants
an allocation.

P-13 947' on 12/20/61
cold blowing gas

4800 @ 23 in Dec
6000 @ 26 in Jan

Need Cu recovery WE
dragging feet w/ Rare Metals

— o — 12-29-61

January 12 meeting in Phoenix
will decide future of the mine
(1) Reopen as soon as possible
(2) Wait f/ Pack ore
(3) Build hotel

Cu recovered as sulphide copper
flotation before acid leach

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Call to Castagne 1-15-62
Doing equipment maintenance underground
Surface mess cleaned up
Steel engineer coming Tomorrow

Koffford
P-13 at 1064 now
still drilling and hole is
blowing air
Estimated 100 psi @ time

Hole has been surveyed — is
nearly vertical

No word on plan — Prior
coming tomorrow.

———— o ———— 2-24-62

Gabelman —
Hole P-13 now at
1267' drilling in marine
re-X lized Redwall? — solution cavity

New order — Shut down
no mining planned for March

Headframe still being
fabricated in Pueblo

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ORPHAN

11-13-61

PRODUCTION TOOLS

WET ANNULAR RING STOPING

400	335	225	285	350	245	MONTH
	26 .16	344 .16	850 .33			O
		1344 .24	274 .22			S
				1808 .27		A
				820 .19		J
				884 .20		J
				3600 .39		M
				5334 .43	INCLUDES 245	A
				3581 .38		M
				2662 .30		F
				2886 .34		J
				3094 .34		D
				4170 .37	316 .20	N
				902 .48 264 .32 200 .27	812 .18	O

30,205 @ .36

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400		235		310		350		225		285		245	
732	86	222	.21	86	.10	68	.04	~~344~~	~~.16~~ ★	~~850~~	~~.33~~	202	.25
1126	.80	858	.15			356	.12	~~1344~~	~~.24~~	~~274~~	~~.22~~	626	.25
334	.61	720	.09			8	.12	890	.14	98	.22	458	.23
14	.23					68	.08	1448	.32	308	.19	316	.20
910	.60	1800	.13			1000	.30	1174	.39			812	.18
926	.12					472	42	558	.24			570	.15
834	.37					2886	.34					40	.08
262	.38					3581	.38	5758	.28	1530	.28		
14	.60					3184	.11						
24	.26					766	.36						
4,976	.55					910	.25						
						1080	.24						
						768	.14						
						906	.23						

★ PRODUCTION TONS

DEVELOPMENT
WET TONS

AUG 1960
TO
OCT 1961

ORPHAN
11-13-61

TR. MK. REG. U.S. PAT. OFF.

365	335	320	UPPER B	B ZONE	A	MONTH
1258 .13	22 .16	500 .12	1688 .12			O
668 .16	858 .15	1142 .15				S
	494 .13	320 .05		936 .17		A
				1354 .24		J
		206 .20		1352 .27		J
				2442 .21		M
				1836 .14		A
				2981 .17		M
				3990 .14		F
				4414 .23		J 61
				3184 .11		D 60
			1710 .11	556 .20		N
			2734 .11	1228 .17		O
				188 .13	931 .35	S
				TOTAL 24,461		

WET TONS

MONTHLY ASSAYS ON CAR SAMPLES

PRODCTION B & A ZONES

ORPHAN
10-11-61
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GRUTT CALL

1. Get new mining cost data
2. Consider all production to TC
3. Calculate Western & Park separate
4. Assume 1. Betty Park ore
   2. New TC contract
5. Allocation based on 440,000 lbs per year
   (Tabor Cit breakeven point is 380,000 lbs per year)

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11-13-61

May figure AR @ .40
B @ .13-.15

400 mg
365 B
320 B
310 E
225 W
Upper B
Raise to adit completed

Next month - shaft pillar
Dec - 1 shaft
5000 @ .30%

Save $20,000/mo by 1 shift

4" Casing in P-13
still seeing

Lower B stopped at economic
margin to South
Ore in pillar to W & E

Orphan Lode
10-10-61

P-13

Bottom at 812 in Mr breccia shale squeezing at top of Mr. Reaming casing stuck. Will ream entire hole and wire line core thru reaming steel. Can't restore circulation

$40,000 estimated cost

deepen shaft cost $235/foot
400 - 550

mg says to give 10¢/hr maximum keep mine open even at a loss.

Strike on 19th

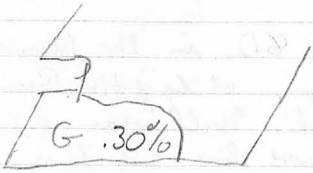
225 look good on west

200' last hole K-30

P-13 570 - 812 242'

$\boxed{\text{Vnin next on 19th}}$

11



HR - 9130

Senate Calender # 1021
Report # 1039
9-15-61
87 Congress 1st Session

B STOPE AVERAGED .12
B ZONE " .21

Orphan Lode
9-18-61

Last Drill Holes Copied

245	J-105
310	M-48
320	L-11
350	N-45
365	F-13
400	K-13

Need

J	52-70
K	14-26
R	1-4

United Steelworkers of America
Meeting 9-19-61
Get $2.60/hr.
Want 2.70/hr.

Board $3.50/day
Trailer space & utilities $15.00/mo

Adit Level
Adit stopped 150' above level
.14 .21 .16 .10 .10
much samples for found
100
Mining shaft pillar
190
Mining pod of high grade near end line.

245 exploring running on west side above level also below

225 go
Good ore to 205 (shale seam)
then stringer to 190

245 - 310 solid ore on southeast side of pipe

B zone

Extraction	Data	Wet term
936	.17	Oct based on cards
1354	.24	July & mos.
1352	.27	June
2042	.21	May
1836	.19	April
2981	.17	March
3990	.19	Feb
4414	.23	Jan
16,905	.21	

9-14-51

Reynolds painted grim picture
W G & V don't know how to
mine ore
Mixed an integrated operation
with mill

B zone less than .20%

6000 met @ .28 new
production rate

Mining on 225 245 320
335 400

Ahern new president
Dove now manager

put in Aug to be on Mg Edge

.27 break even point

P-13 414 — 570 (156')
200
356

608 ft. on 400 level

K-16 thru 26 10 holes

Stoping co drilling

August drilling total 764'

Orphan Lode

8-7-61

Drilling for July

Day drilling

1,160 feet – 2 holes
completed P-12 now
drilling on P-13

Co. drilling

425 feet – 3 holes

adit level
R-4 +44° N72W 152'

400 level
K-17 -14° S20°E 113'
K-18 -25° S20°E 160'

8-31-61

Co drilling about $2.35/foot

Longyear contract about $5.10/ft
includes water, standby, cementing
reaming etc

Now drilling 2000 ft hole

17 Ton below 400 level cut up to
40'

8-31-61 cont

225 level looks good
extend to 205

New 335 sublevel on
new B zone ore

Larcher quitting 9-2

Kofford reports Johnson
gave his approval to the bill
on 8-29 Revised addition
does not force AEC to buy the
ore

Locating some ore above adit
level

ORPHAN

7-11-61

Drilling in June

Deep exploration 1,316 feet

finished P-10 and completed P-11

No information available

Annular Ring 808'

10 holes

J-63 thru J-70

Two more holes: (R. 1 & 2)

June production down due to premature highgrading

Company seriously considering building a motel on property

announcement made to halt the decline of the stock.

14 headings

400
350
285
225
320
365

20

ORPHAN
LOUE
6-14-61
TR. MK. REG. U.S. PAT. OF

ORIGINAL COPR. 1910 P. J. C. PARKER

Castagne

6500 @ .24 to lead lien

June 5000 net
July 5500 net
August 6000 net

Told to leave 7/1/61

Applying for 1,000 p month
to Phillips

6-26

500 Tpm to Phillips
Gerringberg

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1

1,220,770.8 lbs to 1/1/61
461,600.9 lbs to 1/1/59

759,169.9 lbs for 2 years

Feb – May

Details – Mine Operation Cost

2 sheets / month

Men
Production (Stoller)
Supervisory
Clerical
Maintenance

6-1-61

May Production
Phillips 495 wet @ .30%
Tuba City 5359 dry @ .30%
From lower B and 350 areas
May ship some more in June
as TC contract is not signed

Joe Tolkler leaving 7/1/61

June production 5500 wet
25-30%

Company now requires 7000 @ .30
per month

P-10	247	(assay)	500' (est)
J-61	35		J-52 to 62
J-62	30		385'
L-8	78		
L-9	131		500
L-10	98		385
L-11	88		395
	395		1280

5-9-61

245

J-46	80	S70W	+20
47	71	S70W	+32
48	100	N77W	+32
49	116	N77W	+20
50	69	S27W	+25
51	60	S27W	+35
320	496		
L-5	123	N65W	+7
6	95	N65W	-20
7	105	N65W	-6
	323		
550			
P-9	220		

6446.3585 .365 47,095.43

24

Orphan
4-4-61
O.N.M.

D.D

"P" Series - 550 ft. level

P-7 -45° (parallel 140.5 centerline)
P-8 - 289 ft. -45°
(under P-2)
pipe at 725 ft level

400 level
3 holes 70 ft each

K 14 79 -30°
K 15 60 -44½°
K 16 65 -60°
} Pouch Horizon

K 11 -20° (Hanging Rim)
K 12 -30°

P-7 deepen 41 feet
to 141
P-8 -45° 289 feet
still in pipe @ 725 level
N segment negative

25

285 sub level on SE
segment

will start to drill
down 295 on SE
segment

Exploring on 190 level
good results

Open 190 level

Ave 15% Cu
1/3 B
2/3 Amber Ring
0.27%

(7,000 Tons total to T.C.)

570 Tons @ 0.30
Shallows
Can ship 3 more months

26

3-8-61
Dryhan
D. W. M.

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3,990 B zone
2,462 350 zone

6,452

245 NE trend 626 Tons
350 zone 1000 Tons

Phillips

510.982 Tons @ 0.29

7333.297 Tons @ 0.275

15.41666
line

Will continue to ship to
Phillips.

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LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

2-8-41
Dryhouse
S. Rick, T. Young
D. Magleby

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Adit level below Lower Unit
155'

West Gold seep: with Paul Sevin
on grade of product – 0.35 to 0.902

Basic pay 2.60/hr

1.1 ¢/gal: cost of water

Jan
Tulsa: 6,559.35 Tons @
0.29
38,337 #

Haulage to Grants: 5.35/ton R.R.
50% 0.75 Foundry
1.50 Unloading
7.10
.03¢ to Phoenix

add 30¢ for diesel

Tulsa City 5.52 AEC helps
5.10 to Tulsa

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28

Cannon Totals

1,096 Tons @ 0.19%

Asphur Totals

6,559.34	@ 0.293
456	@ 0.33
7,015	@ 0.30 %

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Lacy & McNew
1-19-61
DNM

State Land Office

School Section 16 / 27N / 10E

Stewart's Ranch	40.0	
		4.4
Turn left	44.4	
		0.4
" "	44.8	
		0.2
Turn rt.	45.0	
		2.6
Jct with State 70	47.6	
		24.4
Turn right.	22	
Jct. McDowell Rd	72.0	

State 70 (Beeline highway)

Carl Leroy Wilhelm

Harry G. Wilhelm. William B Brand.

S½ Section 30 Warbop.

Ryan Rm 425

R.C. Townsend Consulting Geo.

3643 E Colter

CR 9-0421

30

Orphan
1-31-41
O.N.M.
Larcher, Castagne, Lay

Stoping in Annular ring

350 Through to 310 around ring

325 Sub level

Started ring above 245' level

on NW section of Annular ring.

Started drilling on 550 level on 1-31-41

Difficult drilling, large breccia blocks surrounded by mylonite & black mud like material. First hole is to test downward extension of high grade feeder zone outlined on 400 ft. level.

Mine production for January — about 58% each from annular ring & B stope.

Annular ring - mostly from 350 level & 325 sub level & 310 level, just started in 245 annular ring. B stope - ore from 320 level & above.

Some high grade from shaft pillar above 245 level. This high grade used to blend to keep ore above 0.27% while shipping to Tabo-lity (while under contract with Phillips). Will continue shipments to Phillips at 500 Tons/month of high lime ore. Long hole drilling stopped — using old fan holes.

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Orpha
12-31-61
D.N.R.
Larchw. Geology
Log.

Jan. prod. to Phillips
456 (pr) dry tons @ 0.33 oz
3-4% moisture - ore shipped
to Phillips. (25 Tons not included - shipped but not sampled)

D.D. drilling - Jan

245' level (2 vertical stens now completed)

J. 30	- 30'	
31	- 30'	
32	- 100'	
33	- 90'	
34	- 88'	
35	- 30'	
36	- 30'	
37	- 41'	
38	- 95'	- 75' - .40 above ft
39	- 95'	
40	- 35'	
41	- 30'	
42	- 69'	
43	- 80'	
44	- 73'	
15	716 av. 61 ft.	

1 Drill (1462)
2nd Drill being set up on 550' level.
10 ft drilled as of 1/1/61.

32

½ million to change T.C. circuit to carbonate – W.G. would probably stand ½ cost of changing circuit.

Ore Sales Tax 1½ %

Severance Tax – subject to evaluation – may be as high as $50,000/yr. – may be $.00/ton

Fine Penalty has been averaging $3.16/ton

Spencer

Orphan
1/11/61
D.N.M.

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LEFAX, PHILADELPHIA 7, PA., MADE IN U.S.A.

Phillips. Dec.

696.25 daytum a 0.26

0.27 minimum at Rare Metals.

any grade to Phillips

B zone 365 wy - 245 up

350 SE

Orphan would like to ship 0.25.

400 Tons. shipped in Jan

to Phillips.

~~WGAU would pay half cost of~~ Orphan & Rare Metals negotiating charge-out

350 L Fan #9			245 L Fan #10		
N-55	+6°	30'	J-23 (ou)		30'
N-56	-35°	30'	J-24 (ou)	+30°	40'
N-57	+40°	30'	J-25 (ou)	+56°	90'
N-58	+53	30'	J-26 (ou)	+46°	95'
N-59	+36	30'	J-27 (ou)	+63°	97'
N-60	+3°	30'	J-28 (ou)	+76°	98'
N-61	-34°	29'	J-29 (ou)		10'
N-62	+43½°	30'			430
N-63	+55½°	40'			
N-64	+41°	30'			
		309	Total Dec.		1343'

34

Drilling on up holes from 295' level has encountered ore in ascending from 295 (level) to about 180 level

Drilling on N end of 295' drift

Check says ore reserves (changing)

80 Tons / linear ft. - about 70 ft approach along 295' drift

Station being at 550' level -

6 holes planned to test pipe at that level. - 3 holes below feeder zone at 900 level & 3 others for geological exploration

Will drill from 550 station in 2 or 3 wks.

Spencer, 4700 put restriction of maximum of 0.27% to be shipped to T.C. if also shipping to Phillips. Orphan will probably not ship any more to Phillips because restriction at T.C. is too high - would be better for Orphan & T.C. for 0.25% or minimum.