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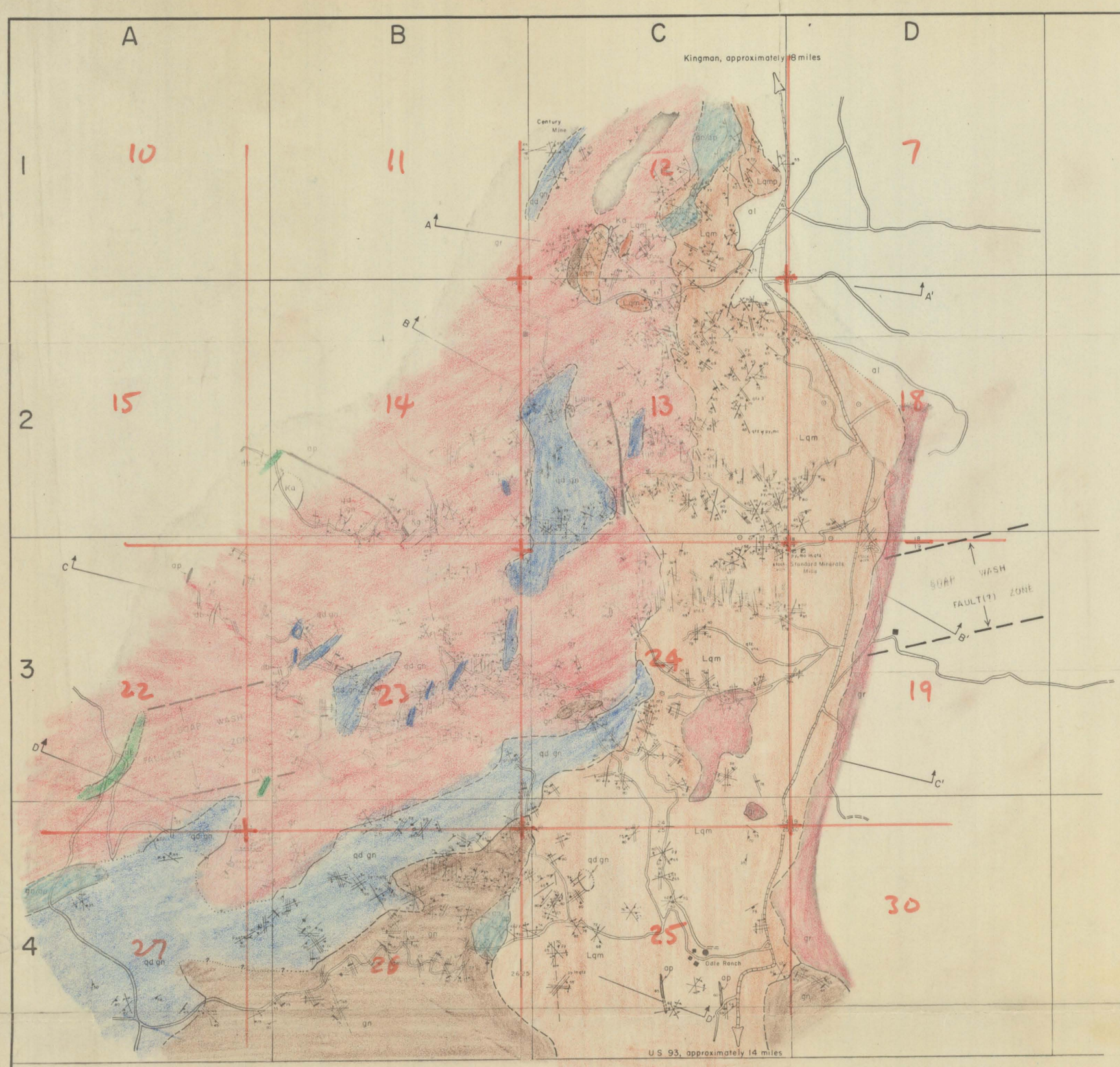

EXPLANATION

al	alluvium	Cenozoic
Lqmp	quartz monzonite porphyry	Laramide (?)
Lqm	quartz monzonite, with aplite dikes	
ap	aplitic dikes	Cretaceous (?)
db	diabase	Precambrian
gr	granite, with aplite dikes and pods	
qd gn	quartz diorite gneiss	
gn/ap	aplite / pegmatite granitic gneiss	
gn	granitic gneiss, with localized schist inclusions	

SYMBOLS

Contact, dashed where inferred, dotted where concealed or unknown

Faults, showing strike and dip, dashed where inferred

Mineralization, showing strike and dip, dashed where inferred, pyritized unless otherwise noted as:

qtz	quartz
CuOx	copper oxides
Cp	chalcopyrite
py	pyrite
mo	molybdenum
sph	sphalerite
gl	galena

(veins) (inclined) (vertical)

(disseminated)

(veinlets)

Low intensity, <2 fractures per 10 feet

Moderate intensity, approximately 2 to 5 fractures per 10 feet

High intensity, >5 fractures per 10 feet

Joints (unmineralized), showing strike and dip, intensity as above

Foliation, showing strike and dip

Adit

Shaft

Drillhole

Section corner

Quarter corner

Roads (county) (other)

Cross-section line A A'

CROSS SECTION EXPLANATION

Attitude and subsurface extent of faults, veins and mineralization are generalized in cross section views.

Mineralized structures

Fault, arrows indicate relative movement on faults.

OTHER SYMBOLS AS ABOVE

elevations above mean sea level

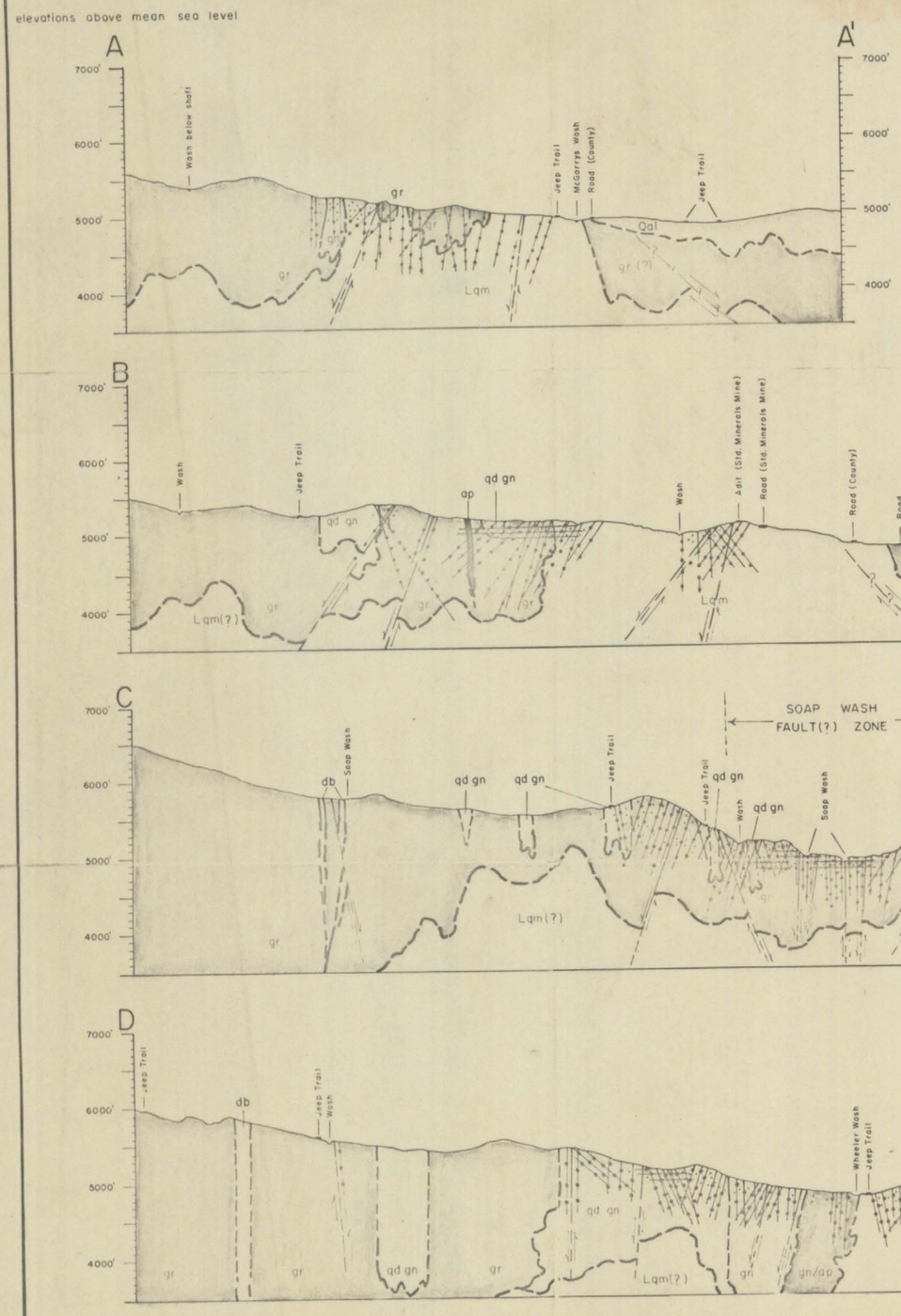

FIGURE 2

WHEELER WASH, MOHAVE CO., ARIZONA

GEOLOGIC MAP & CROSS SECTIONS

Jonn S. Vuich

0 500 1000 2000 5000 feet

Scale Approximate

Horizontal scale equals vertical scale

Grid interval: 5000 feet

Vuich, 1974

Thesis, Geological Engineering

PROPERTY OF

Heinrichs Georg

Arkla Ex

Bogiana Area

F/22/66

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X-1751

BORIANA
ARKLA
8/15/66

TRADE MARK REG. U.S. PAT. OFF.

BORIANA PROJECT

ARKLA EXPORATION

KINGMAN (HUALIPAI MTS) ARIZ

HAND MAG SURVEY

FRED W HEINRICHS

KIRT S IJAMS

8/15/66

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(1)

	STA	TIM	POL RANGE
B1	B1		+1
	B2		+1
	B1		+1
	B2		+1

LINE ONE TRAVERSE
S 60° E

100	9:30	+1
200		"
300		
400		
500		
600		
400		
500		
600		
700		
800		
900	10:00	
1000		
100		
200		
300		
400		
500		
600	10:30	
700		
800		

Boriana

8/16/66

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

(2)

FINAL

READ	X	BC	DRIFT	REMARKS
76	760	760	760	
78	760	780	780	
75	750	760	760	
77	770	780	780	
70	700		710	
74	740		750	
69	690		700	
70	700		710	
73	730		740	
68	680		690	
74	740		750	
69	690		700	
75	750		760	
72	720		730	POWER LINE
72	720		730	
68	680		690	
66	660		670	
79	790		810	
82	820		840	
69	690		710	
82	820		840	
76	760		780	
76	760		780	
77	770		790	
72	720		740	

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(3)

	STA	TIME	POLARIS
1	900		
2	000		
	100		
	200		
	300		

B2

LINE 2 TRAVERSE
N 60° W

1	100	12:30	
	200		
	300		
	400		
	500		
	600		
	700		
	800	1:15	
	900		
1	000		
	100		
	200		
	300		
	400		
	500		
	600		
	700		
	800		
	900		

BORIANA

8/16/66

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

(4)

FINAL

READ	D	BC	DRIFT	REMARKS
72	720		740	
70	700		720	
70	700		720	
69	690		710	
74	740		760	
76	760	780	780	
70	700	720	720	
69	690	710	710	
75	750	770	770	
69	690	710	710	
70	700	720	720	
73	730	750	750	CAN YON
74	740	760	760	
73	730	750	750	
75	750	770	770	X
70	700	720	720	
72	720	740	740	
76	760	780	780	
68	680	700	700	
66	660	680	680	
68	680	700	700	
76	760	780	780	out crop
69	640	660	660	
70	700	720	720	
66	660	680	680	First Granite

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5

STA

LINE 3 TRAVERSE

S 60° E

100
200
300
400
500
600
700

B2

B1

LINE 4 TRAVERSE

N 60° W S

100 9°30
200
300
400
500
600
700
800
900
1000

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Borings

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(6)

Read	X	BC	Final Drift	
70	700	720	720	
73	730	750	750	
80	800	820	820	
73	730	750	750	
74	740	760	760	
78	780	800	800	
75	750	770	770	
76	760	780	780	
73	730	760	760	8/17/66
71	710	740	750	
76	760	790	800	
71	710	740	750	CAR 50 N
80	800	820	830	
76	760	790	800	
101	1010	1040	1050	Torn down Building
74	740	770	780	
61	610	640	650	DUMP
77	770	790	800	
80	800	830	840	

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(7)

STA		
1	100	
	200	
	300	
	400	
	500	
	700	
	800	11:05
	900	
2	000	
	100	
	200	
	300	
	400	
	500	
	600	
	700	
	800	
	900	
3	000	
	100	
	200	
	300	12:10

B1

BORIANA

8/17/66

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8

FINAL

READ				
52	520	550	570	DUMP
45	450	480	500	MILL SITE
94	940	970	990	MILL ROAD
72	720	750	770	
67	670	690	710	
70	700	730	750	
70	700	730	750	
72	720	750	770	
74	740	770	790	
79	790	820	840	
74	740	770	790	
73	730	760	790	
74	740	770	800	
77	770	800	830	X
73	730	760	790	
79	790	820	850	
72	720	750	780	
75	750	780	810	
75	750	780	810	
76	760	790	820	
80	800	830	860	
69	690	720	750	
70	700	760	760	

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(9)

LINE 5 TRAVERSE

N 60° W

0 2:00
100
200
300
400
500
600
700 3:00
800
900
1 000
100
200
300
400
500
600
700
800 3:30
900
2 000
100
200
300
400
500

BORIANO

8/17/66

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(10) FINAL

69	690		750
70	700		760
74	740		800
68	680		740
71	710		770
72	720		770
70	700		750
68	680		730
68	680		730
71	700		750
74	740		780
73	730		770
66	660		700
72	720		760
70	700		740
75	750		790
92	920		960
70	700		730
73	730		760
67	670		700
77	770		800
77	770		800
79	790		810
80	800		820
106	1060		1070
104	1040		1050
100	[illegible]		[illegible]

GRANITE
OUT CROP

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B1

B2

LINE 6 TRAVERSE

3 60° N

0 9:30

100
200
300
400
500
600 10:00
700
800
900
1000
100
200
300
400
500 6:15
600
700
800
900
2000
100

RORIANA
8/17/66
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FINAL (12)

76	760	760
70	700	780
74	740	750
68	680	760
69	690	770
71	710	790
73	730	810
65	650	730
68	680	760
69	690	770
72	720	800
68	680	760
70	700	780
68	680	760
69	690	770
64	640	720
63	630	710
67	670	750
68	680	760
63	630	710
66	660	740
65	650	730
57	570	650
64	640	720
65	650	730

SAMPLES ON LINE 5

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B2

B3 LINE 7, TRAVERSE
N 60° W

100	12.15
200	
300	
400	
500	
600	
700	
800	7.05
900	
1000	

BORIANA

8/18/66

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(14)

			BC + Draft FINAL	
71	710		790	
70	700		780	
76	760		760	
73	730		730	
120	1200		1200	MINE SIZE
82	820		820	
70	700		700	
74	740		740	
74	740		740	
68	680		680	
75	750		750	
70	700		700	
78	780		780	

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(15)

STA	TIME
B3	
	LINE 8 TRAVERSE
	S 60° E
100	
200	
300	
400	
500	
600	3:00
700	
800	
900	
1 000	
100	
200	
300	
400	
500	
600	
700	
800	4:15
B3	

RORIANO
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16

READ		RC Dried FINAL	REMARKS
76	760	760	
69	690	690	
72	720	720	
74	740	740	
68	680	680	
69	690	690	
74	740	740	
72	720	720	
74	740	740	
76	760	760	
79	790	790	
80	800	800	
75	750	750	
79	790	790	
76	760	760	
75	750	750	
72	720	720	
75	750	750	
74	740	740	
76	760	760	

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(17)

STA	TIME
0	
LINE 9 TRAIL	
	4:05
100	
200	
300	
400	
500	
600	
700	
800	
900	
1000	
100	
200	
300	
400	
500	
600	
700	
800	
900	4:25
2000	
100	
200	
300	
400	
500	
600	

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Cleveland

8/12/66

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18

REd		A.C. DRAFT	FINAL	
66	660	660		
72	720	720	61	
76	760	760	60	
76	760	760	59	
75	750	750	58	
74	740	740	57	
73	730	730	56	
75	750	750	55	
71	710	710	54	
72	720	720	53	
71	710	720	52	
73	730	740	51	
70	700	710	50	
78	780	750	49	
77	770	780	48	
74	740	750	47	
75	750	760	46	
78	780	790	45	
79	790	800	44	
77	770	780	43	
76	760	780	42	
80	800	820	41	
79	790	810	40	
81	810	830	39	
75	750	770	38	
80	800	820	37	
74	740	760	36	

STA	TIM
200	
800	
900	
3 000	
100	
200	
300	
400	
500	
600	
700	
800	
900	
4 000	
100	5:00
200	
300	
400	
500	
600	
700	
800	
900	
5 000	
100	
200	
300	
400	
500	

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BORIGNA

8/18/86

(20) BC + DRIFT FINAL

RBAd					
70	700		720	35	
71	710		730	34	
75	750		770	33	
78	780		810	32	
77	770		800	31	
80	800		830	30	
80	800		830	29	
71	710		740	28	
82	820		850	27	
79	790		820	26	
80	800		830	25	
78	780		810		B-2
76	760		790		B-3
79	790		830		B-4
76	760		800		B-5
80	800		840		B-6
77	770		810		B-7
80	800		840		B-8
80	800		840		B-9
78	780		820		B-10
75	750		790		B-11
81	810		850		B-12
81	810		850		B-13
82	820		870		B-14
76	760		810		B-15
81	810		860		B-16
80	800		850		B-17
82	820		870		B-18
81	810		860		B-19

21

Sta	Tim	Pa	Rand
600			
700			
800			
900			
6 000			
100			
[illegible]			

B-3

22

BORIANA

8/18/66

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FINAC

READ			BC & DRIFT
77	770		820
72	720		770
75	750		800
77	770		820
78	780		840
80	800		860
70	700		760
7[illegible]	7[illegible]	[illegible]	[illegible]

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(23)

STA	TIME	PIC	RAIN
		(10)	
R-2	9:25		
R-3	9:50		
0	10:30		
100			
200			
300			
400	10:50		
500			
600			
700			
800			
900	11:30		

BORIANA

8/15/66

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24

RED		FINAL	
72	720	780	
73	730	760	
74	740	770	STARTING 50'S of B-32
79	790	820	
79	790	820	
81	810	840	
72	720	750	
76	760	790	
75	750	780	
77	770	800	
77	770	800	
79	790	820	

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(25)

LINE 11 S60°E

STA	TIME
0	11:30
100	
200	
300	
400	
500	12:15
600	
700	
800	
900	
1000	
100	
200	
300	
400	
500	
600	
700	
800	
900	
2000	
100	
200	
300	
400	1:30
500	
600	
700	

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8/19/66

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26

READ		FINAL	
74	740	770	SAME AS 0 ON LINE 10
71	710	740	
74	740	770	
73	730	760	
74	740	770	
77	770	800	
75	750	780	
70	700	730	
100	1000	1030	Prospect pit
72	720	750	
75	750	780	
66	660	690	
73	730	760	
75	750	780	
76	760	790	
85	850	880	
75	750	780	
82	820	850	MINE CAMP SITE
74	740	770	
71	710	740	
72	720	750	
80	800	830	
69	690	720	
72	720	750	
71	710	740	
64	640	690	
66	660	690	
71	710	740	

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(27)

STA	JUNE
800	
900	
3000	1:40
100	
2CC	

B-3	2:15
B-1	

BORIANA

5/19/66

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28

READ		FINAL
71	710	740
79	790	820
70	700	730
72	720	750
80	800	830
73	730	760
76		760

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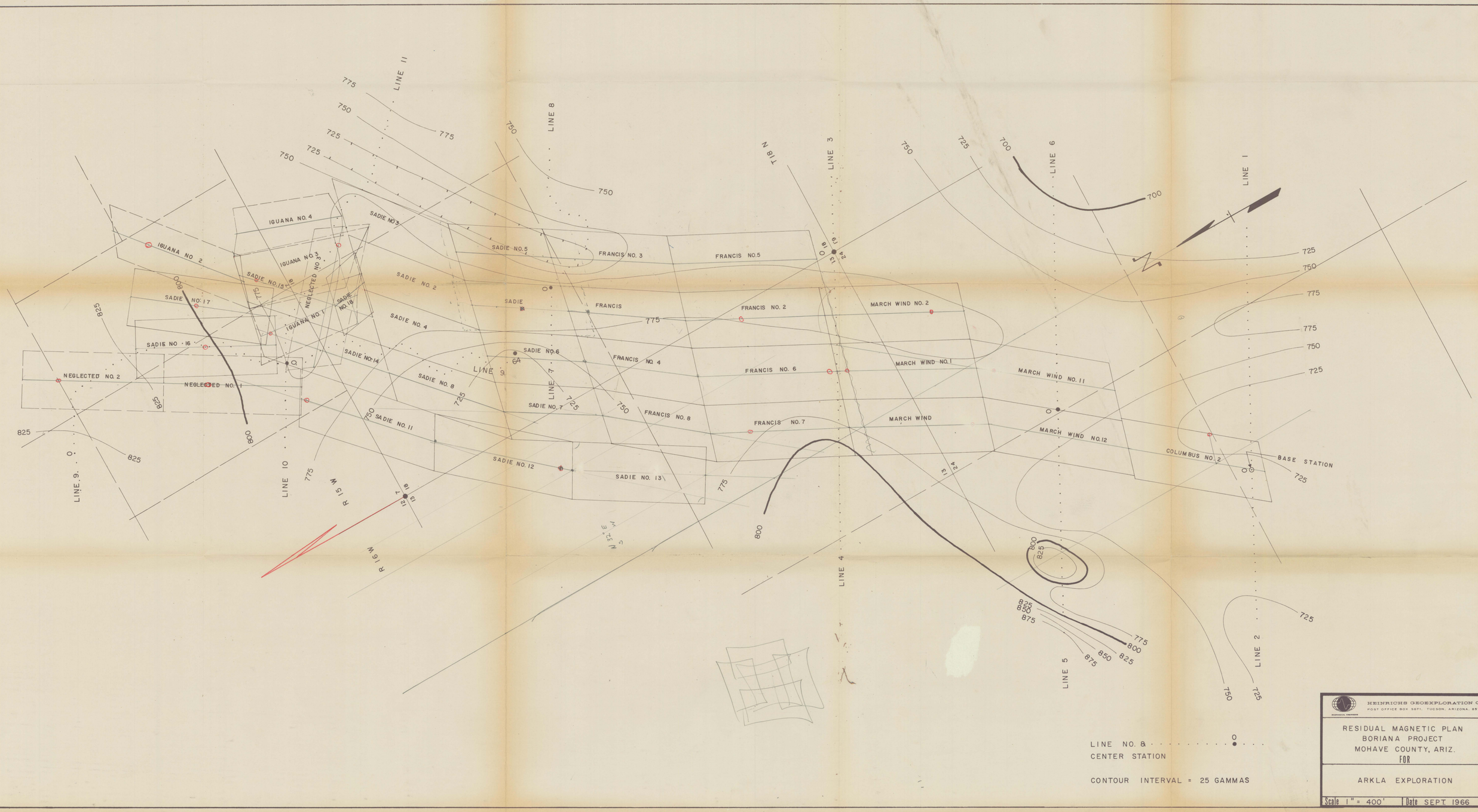
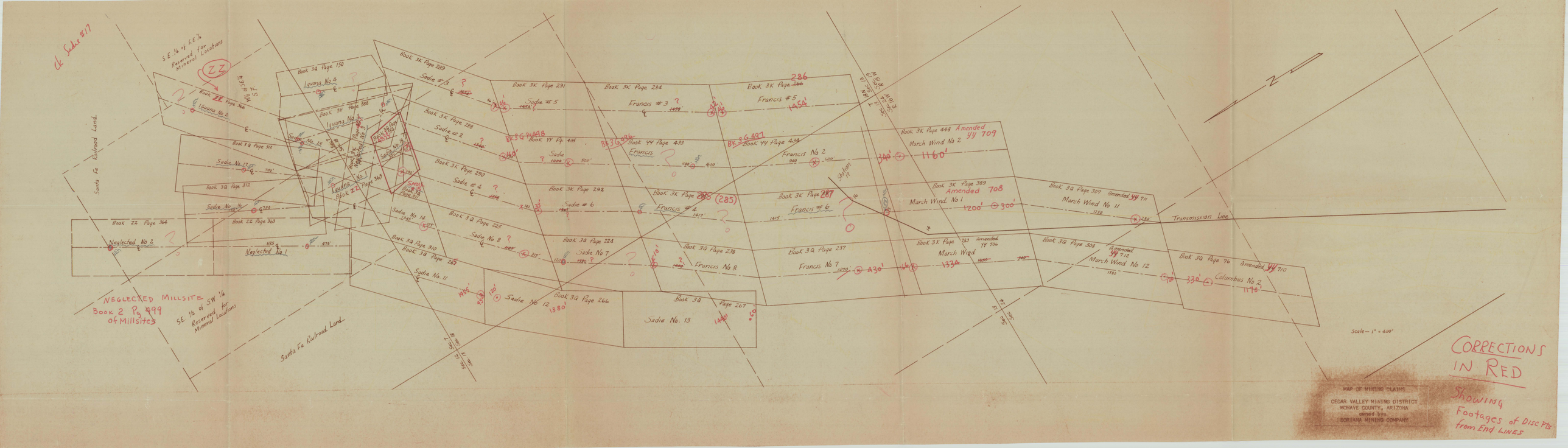
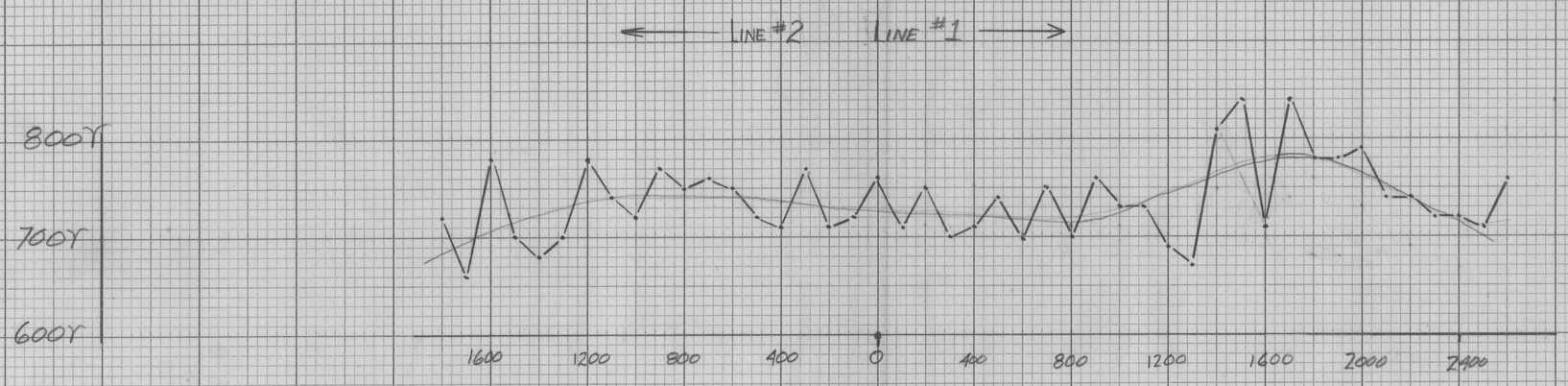

LINE 11
LINE 8
LINE 3
LINE 6
LINE 1
LINE 9
LINE 10
LINE 7
LINE 4
LINE 5
LINE 2
T 18 N
R 15 W
R 16 W
IGUANA NO. 4
IGUANA NO. 2
IGUANA NO. 3
IGUANA NO. 1
NEGLECTED NO. 3
NEGLECTED NO. 2
NEGLECTED NO. 1
SADIE NO. 3
SADIE NO. 5
SADIE NO. 15
SADIE NO. 18
SADIE NO. 17
SADIE NO. 2
SADIE NO. 4
SADIE NO. 16
SADIE NO. 14
SADIE NO. 6
SADIE NO. 8
SADIE NO. 7
SADIE NO. 11
SADIE NO. 12
SADIE NO. 13
FRANCIS NO. 3
FRANCIS NO. 5
FRANCIS
FRANCIS NO. 2
FRANCIS NO. 4
FRANCIS NO. 6
FRANCIS NO. 8
FRANCIS NO. 7
MARCH WIND NO. 2
MARCH WIND NO. 1
MARCH WIND NO. 11
MARCH WIND
MARCH WIND NO. 12
COLUMBUS NO. 2
BASE STATION
LINE NO. 8
CENTER STATION
CONTOUR INTERVAL = 25 GAMMAS
HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5671, TUCSON, ARIZONA, 85703
RESIDUAL MAGNETIC PLAN
BORIANA PROJECT
MOHAVE COUNTY, ARIZ.
FOR
ARKLA EXPLORATION
Scale 1" = 400'
Date SEPT. 1966

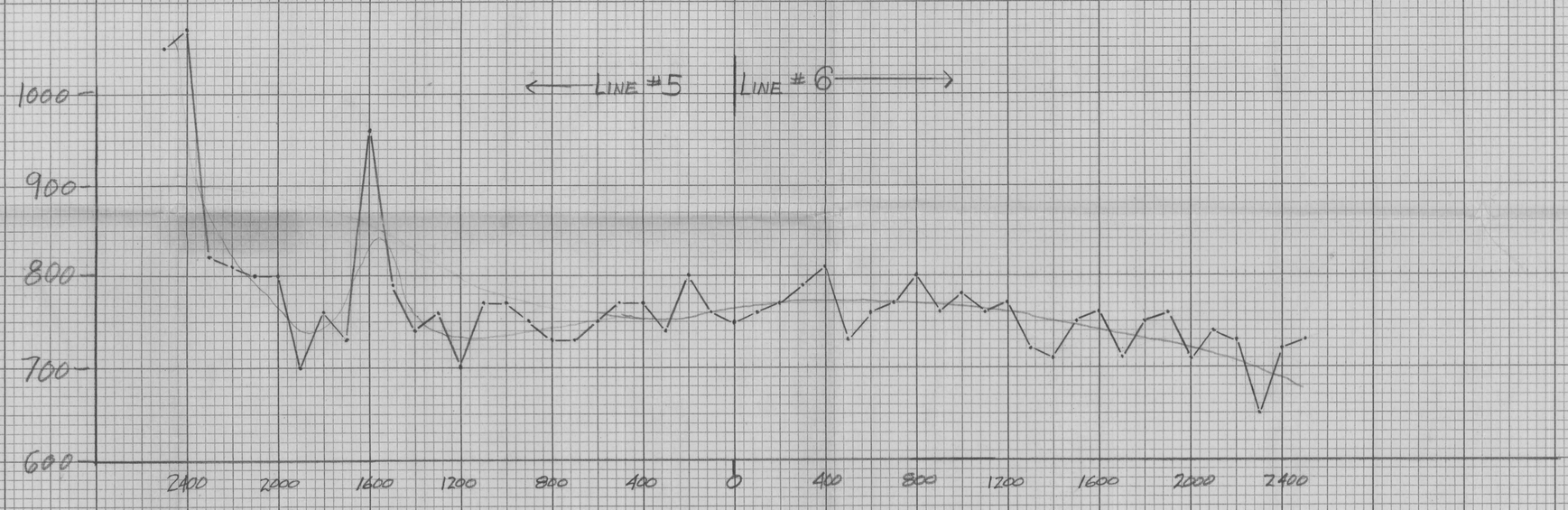


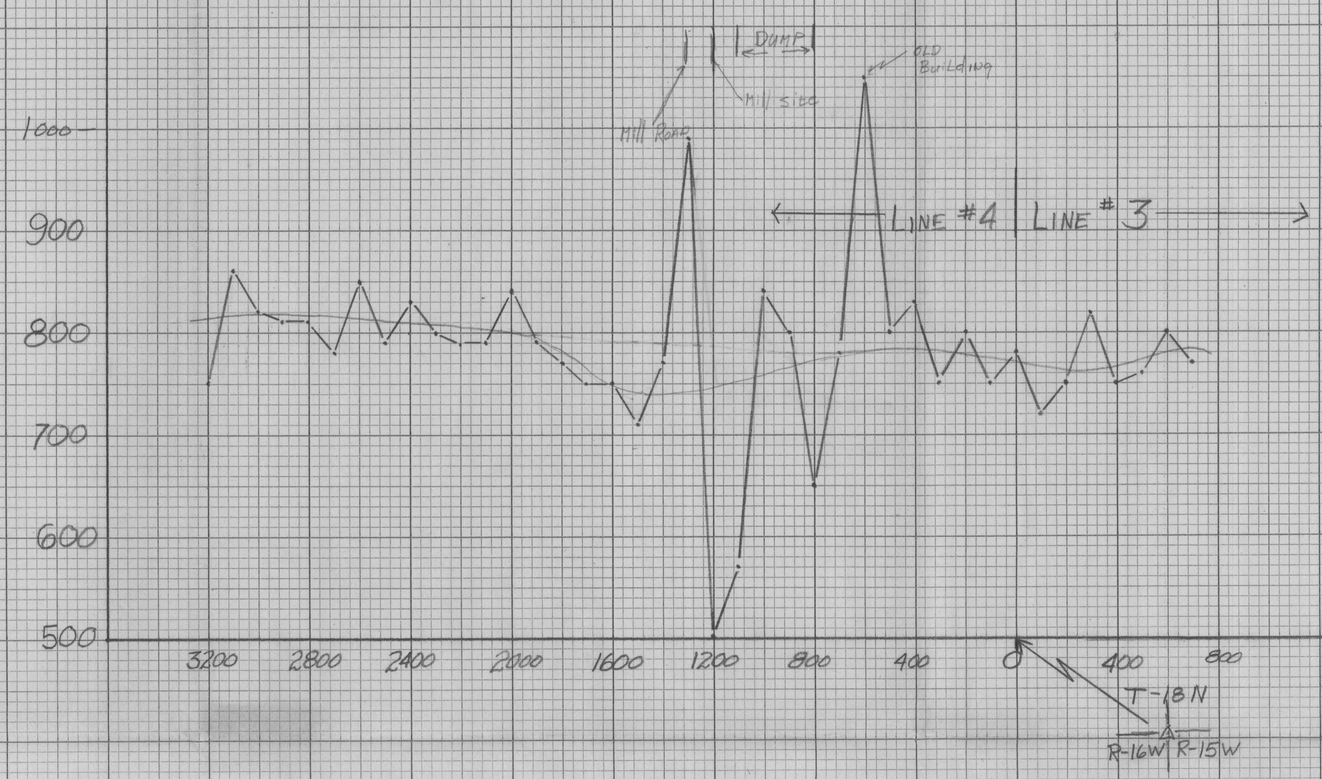
Ck Sadie #17
S.E. 1/4 of S.E. 1/4 Reserved for Mineral Locations
ZZ
Santa Fe Railroad Land
Iguana No 4
Iguana No 2
Iguana No 3
Iguana No 1
Sadie No. 15
Sadie No. 17
Sadie No. 16
Sadie No. 14
Sadie No. 11
Sadie No. 12
Sadie No. 13
Neglected No 2
Neglected No 1
NEGLECTED MILLSITE
Book 2 Pg 499
of Millsites
S.E. 1/2 of S.W. 1/4 Reserved for Mineral Locations
Sadie #3
Sadie #2
Sadie #4
Sadie #5
Sadie #6
Sadie #7
Sadie #8
Francis #3
Francis #4
Francis #5
Francis #6
Francis No 2
Francis No 8
Francis No 7
March Wind No 2
March Wind No 1
March Wind No 11
March Wind No 12
Columbus No 2
Amended YY 709
Amended 708
Amended YY 712
Amended YY 710
Transmission Line
Scale — 1" = 400'
MAP OF MINING CLAIMS
CEDAR VALLEY MINING DISTRICT
MOHAVE COUNTY, ARIZONA
owned by:
BORIANA MINING COMPANY
CORRECTIONS IN RED
Showing Footages of Disc Pts from End Lines

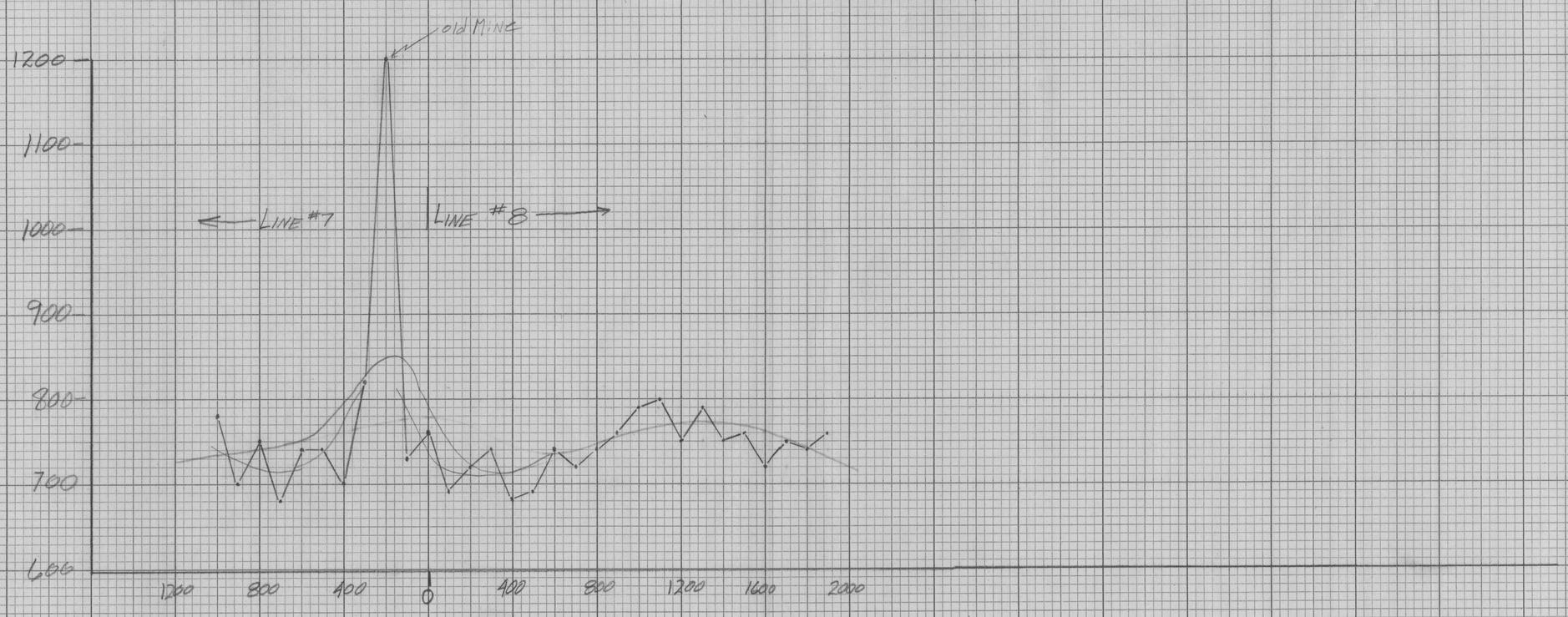
LOOKING N 60° E

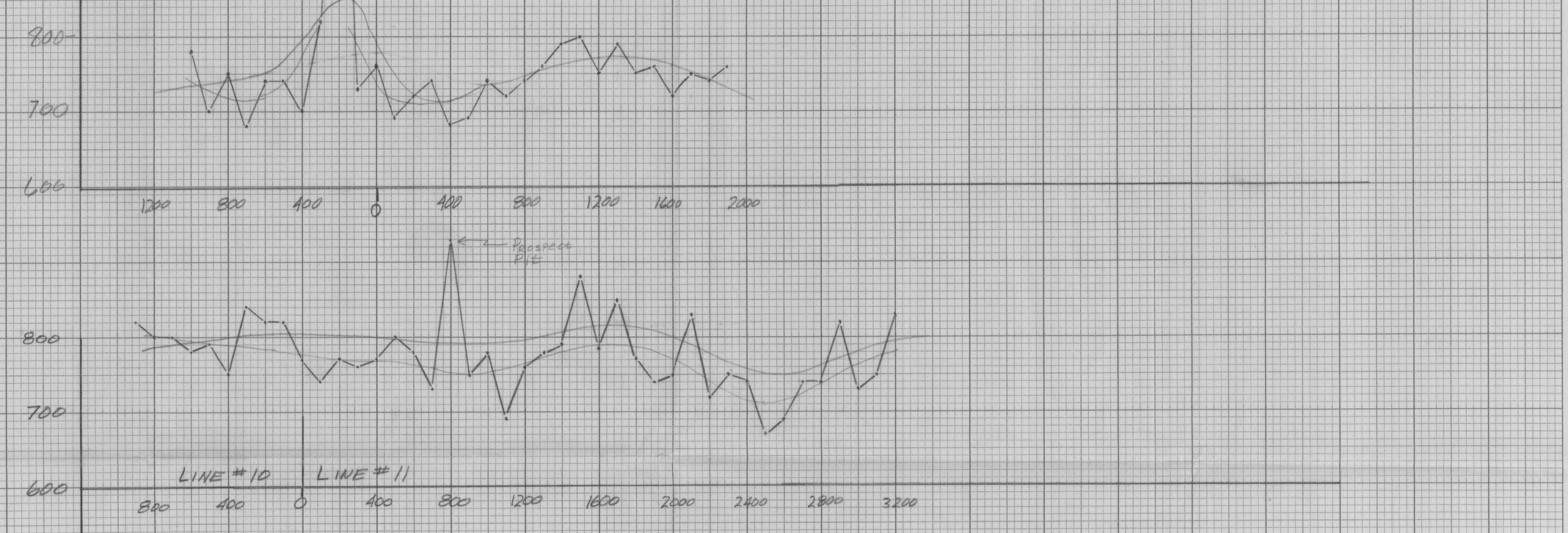
ARKLA BORIANA AREA



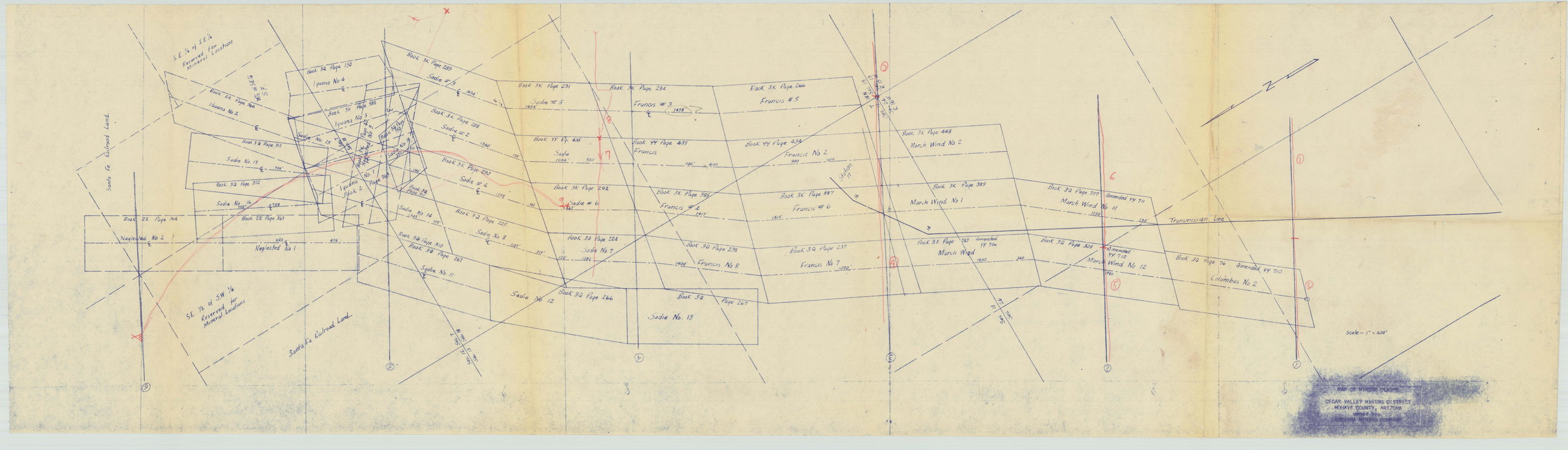








KEUFFEL & ESSER CO.
MADE IN U.S.A.
K&E STANDARD @ CROSS SECTION
10X10 TO THE INCH


S.E. ¼ of S.E. ¼ Reserved for Mineral Locations
Santa Fe Railroad Land
Book 3Q Page 150
Iguana No 4
Book 3K Page 289
Sadie #1
Book 3K Page 291
Book 3K Page 284
Book 3K Page 266
Sadie # 3
Francis # 3
Francis #5
Book ZZ Page 368
Iguana No 2
Book 3K Page 588
Iguana No 3
Book 3K Page 288
Sadie #2
Book YY Page 435
Book 44 Page 433
Book 44 Page 434
Sadie
Francis
Francis No 2
Sadie No 15
Book 3Q Page 315
Sadie No 13
Book 3K Page 290
Sadie # 4
Book 3K Page 292
Book 3K Page 385
Book 3K Page 387
Book 3K Page 448
March Wind No 2
Book 3K Page 389
March Wind No 1
Book 3Q Page 307 Amended YY 711
March Wind No 11
Book 3Q Page 312
Sadie No 16
Iguana Stock 2
Book ZZ Page 364
Book ZZ Page 363
Neglected No 2
Neglected No 1
Sadie No 14
Book 3Q Page 225
Sadie No 8
Book 3Q Page 224
Sadie No 7
Book 3Q Page 239
Francis No 8
Book 3Q Page 237
Francis No 7
Book 3K Page 283 Amended YY 706
March Wind
Book 3Q Page 308
Amended YY 712
March Wind No 12
Book 3Q Page 76 Amended YY 710
Columbus No 2
Transmission Line
Book 3Q Page 310
Book 3Q Page 267
Sadie No 11
Sadie No 12
Book 3Q Page 266
Book 3Q Page 267
Sadie No 13
S.E. ½ of S.W. ¼ Reserved for Mineral Locations
Santa Fe Railroad Land
Scale – 1" = 400'
MAP OF MINING CLAIMS
CEDAR VALLEY MINING DISTRICT
MOHAVE COUNTY, ARIZONA
SURVEYED 1955
SIRIANA MINING COMPANY

LINE NO. 8 . . . . . 0 . . .
CENTER STATION

CONTOUR INTERVAL = 25 GAMMAS

HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5571, TUCSON, ARIZONA, 85703

RESIDUAL MAGNETIC PLAN
BORIANA PROJECT
MOHAVE COUNTY, ARIZ.
FOR

ARKLA EXPLORATION

Scale 1" = 400' | Date SEPT. 1966

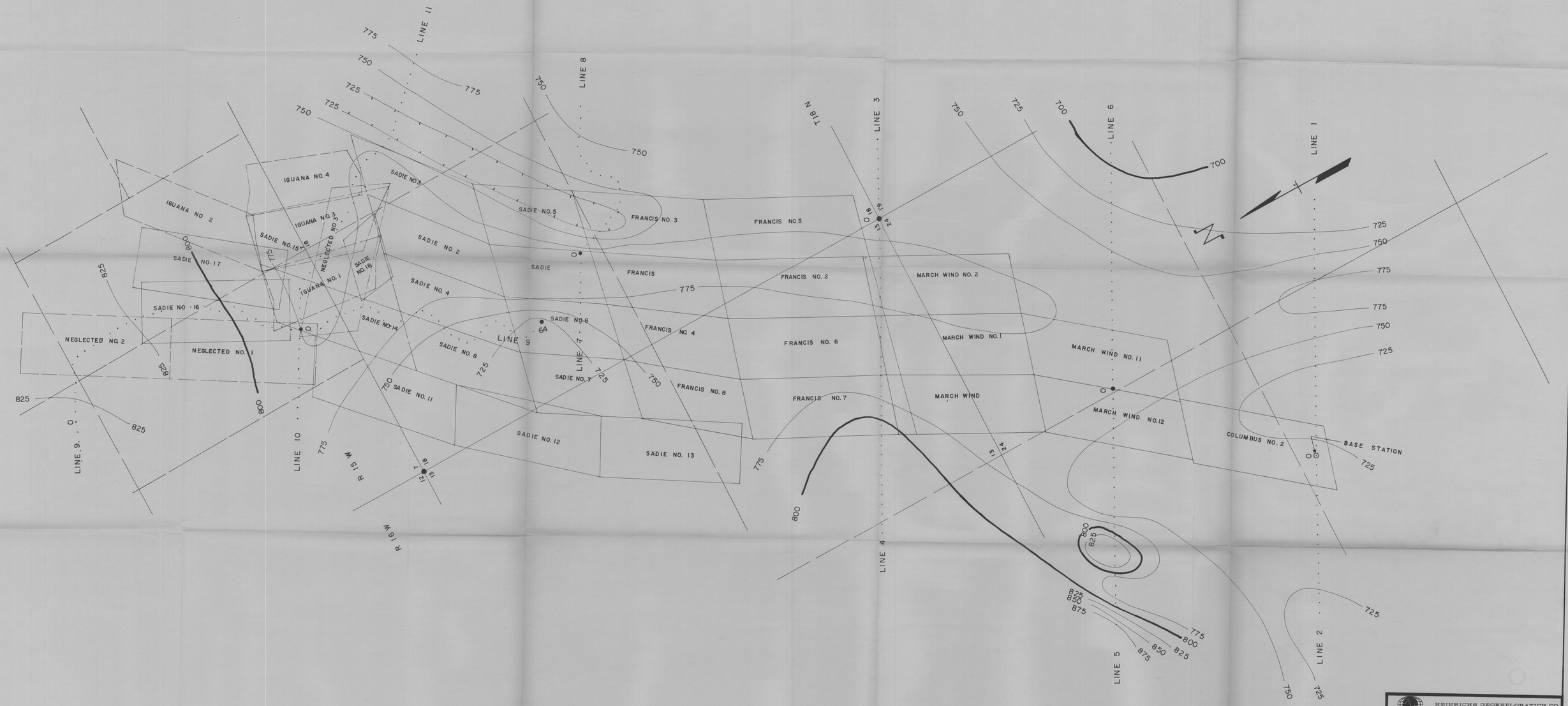
LINE NO. 8 ..... 0 .....
CENTER STATION

CONTOUR INTERVAL = 25 GAMMAS

HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5671 · TUCSON, ARIZONA, 85703

RESIDUAL MAGNETIC PLAN
BORIANA PROJECT
MOHAVE COUNTY, ARIZ.
FOR
ARKLA EXPLORATION

Scale 1" = 400' | Date SEPT 1966



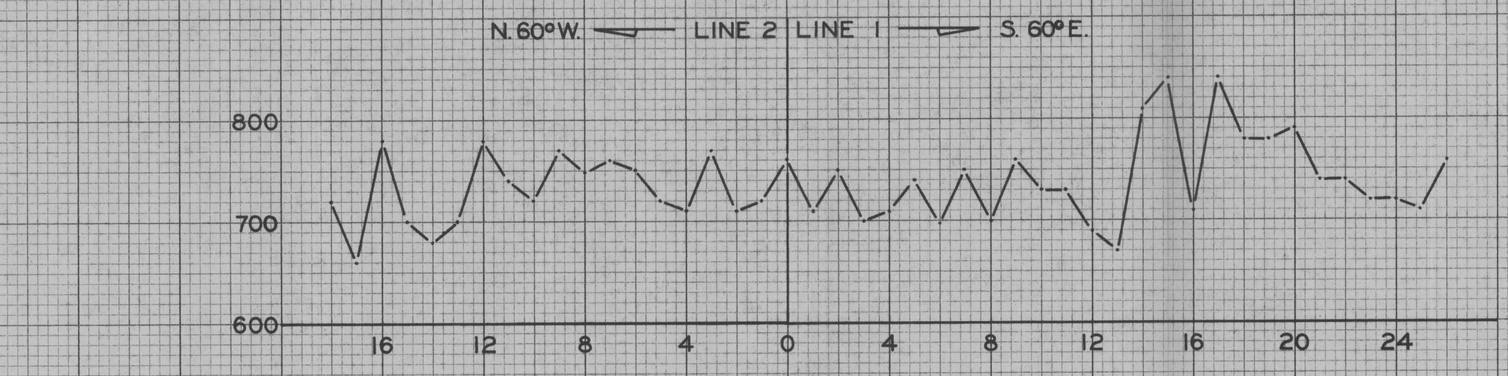
LINE NO. 8 ..... 0 .....
CENTER STATION

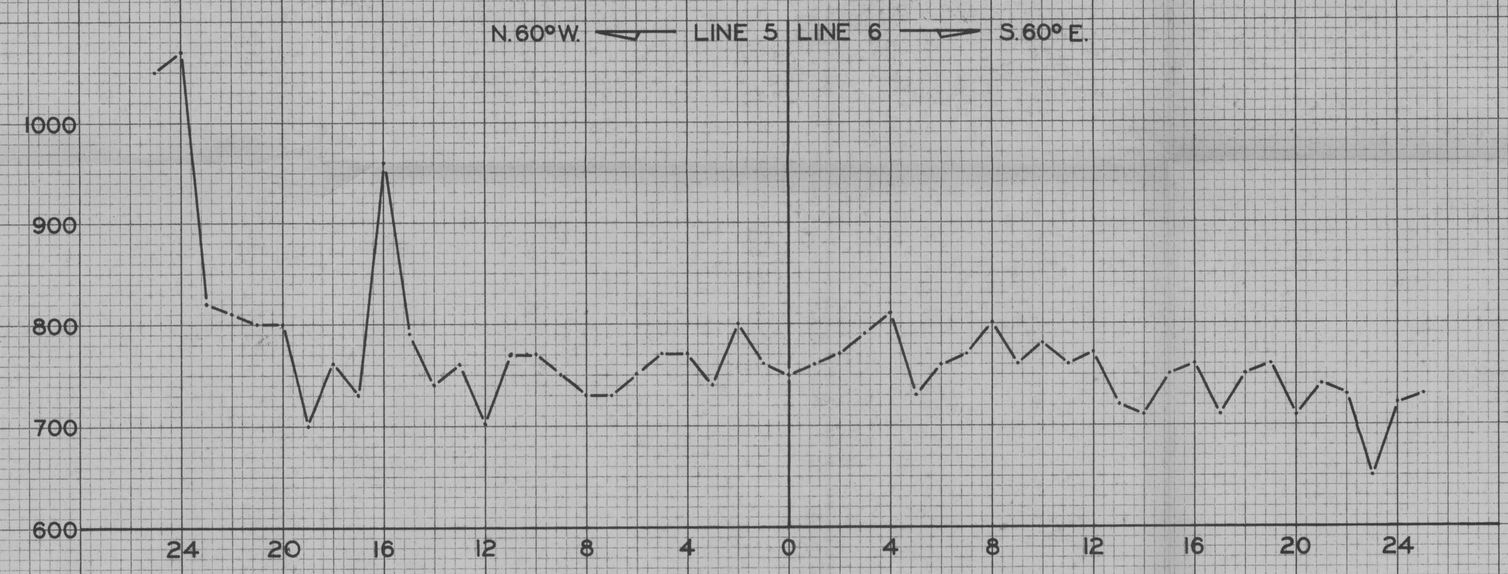
CONTOUR INTERVAL = 25 GAMMAS

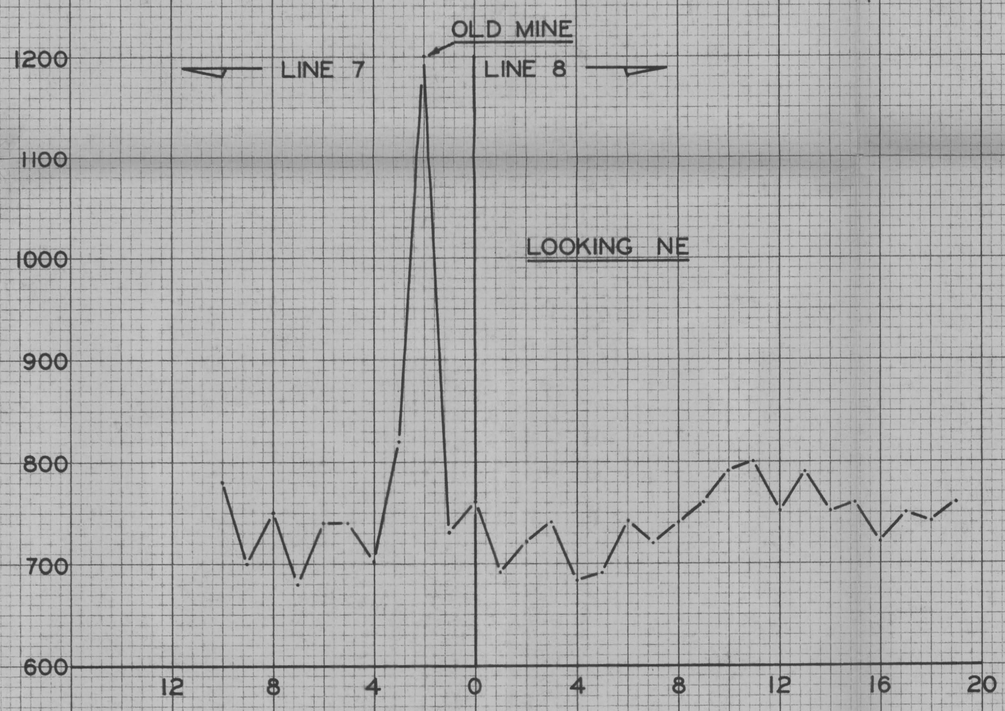
HEINRICHS GEOEXPLORATION CO.
POST OFFICE BOX 5671, TUCSON, ARIZONA, 85703

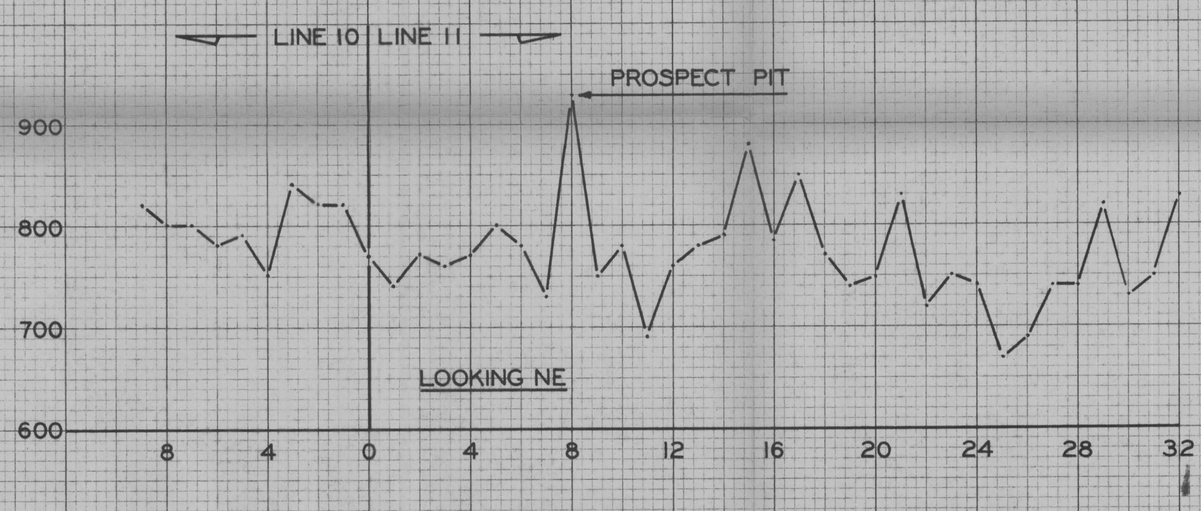
RESIDUAL MAGNETIC PLAN
BORIANA PROJECT
MOHAVE COUNTY, ARIZ.
FOR
ARKLA EXPLORATION

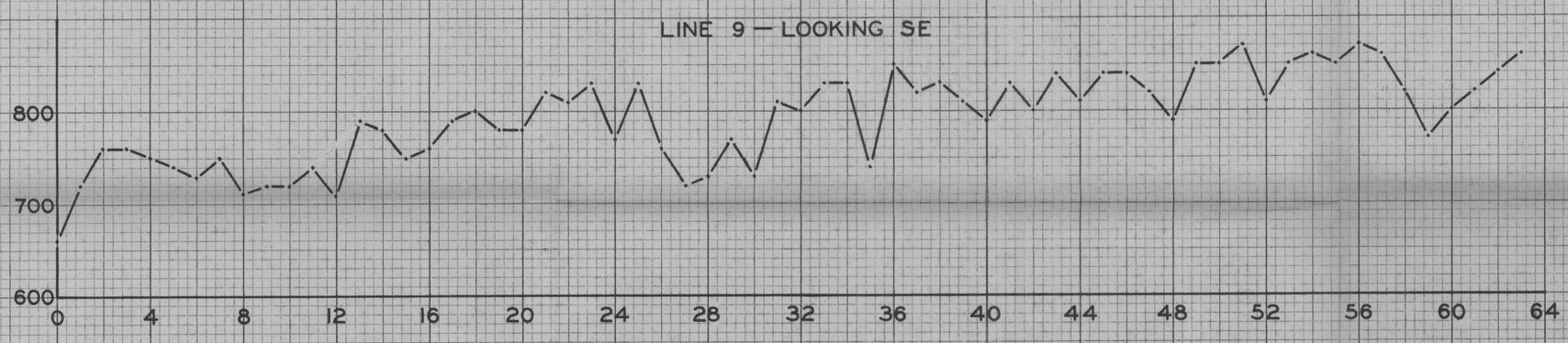
Scale 1" = 400' | Date SEPT. 1966











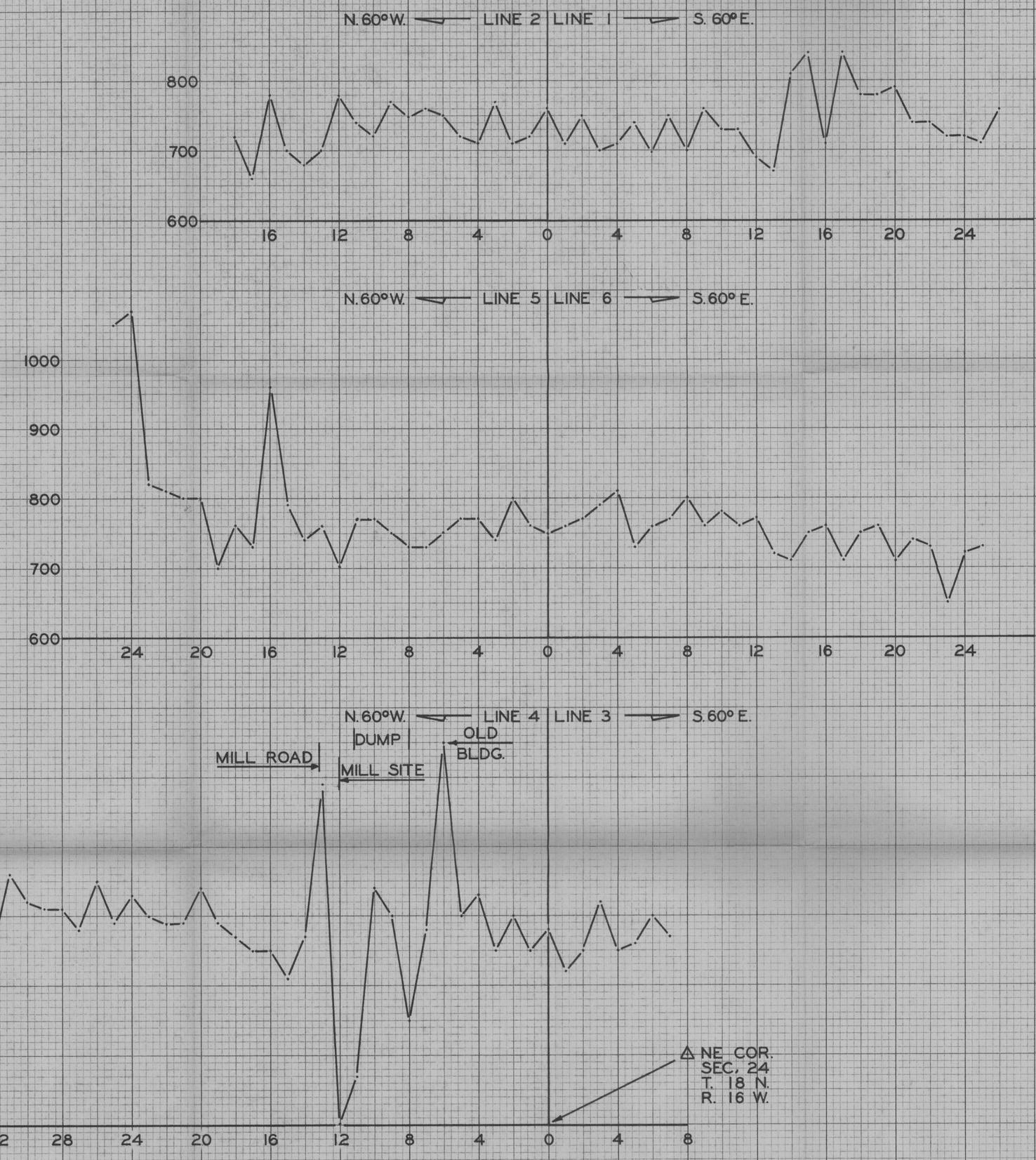
HEINRICHS GEOEXPLORATION COMPANY P.O. Box 5671 Tucson, Arizona	
MAGNETIC PROFILES BORIANA PROJECT FOR ARKLA EXPLORATION HUALAPAI MTS, KINGMAN, MOJAVE COUNTY, ARIZONA	
SCALE: HORIZ. 1" = 400'	CONTOUR INTERVAL:
VERT. 1" = 100 GAMMA	DATA BY: F W H
DATE: SEPT. 1966	SHEET OF
DRAWN BY: J C D	DRAWING NO.:

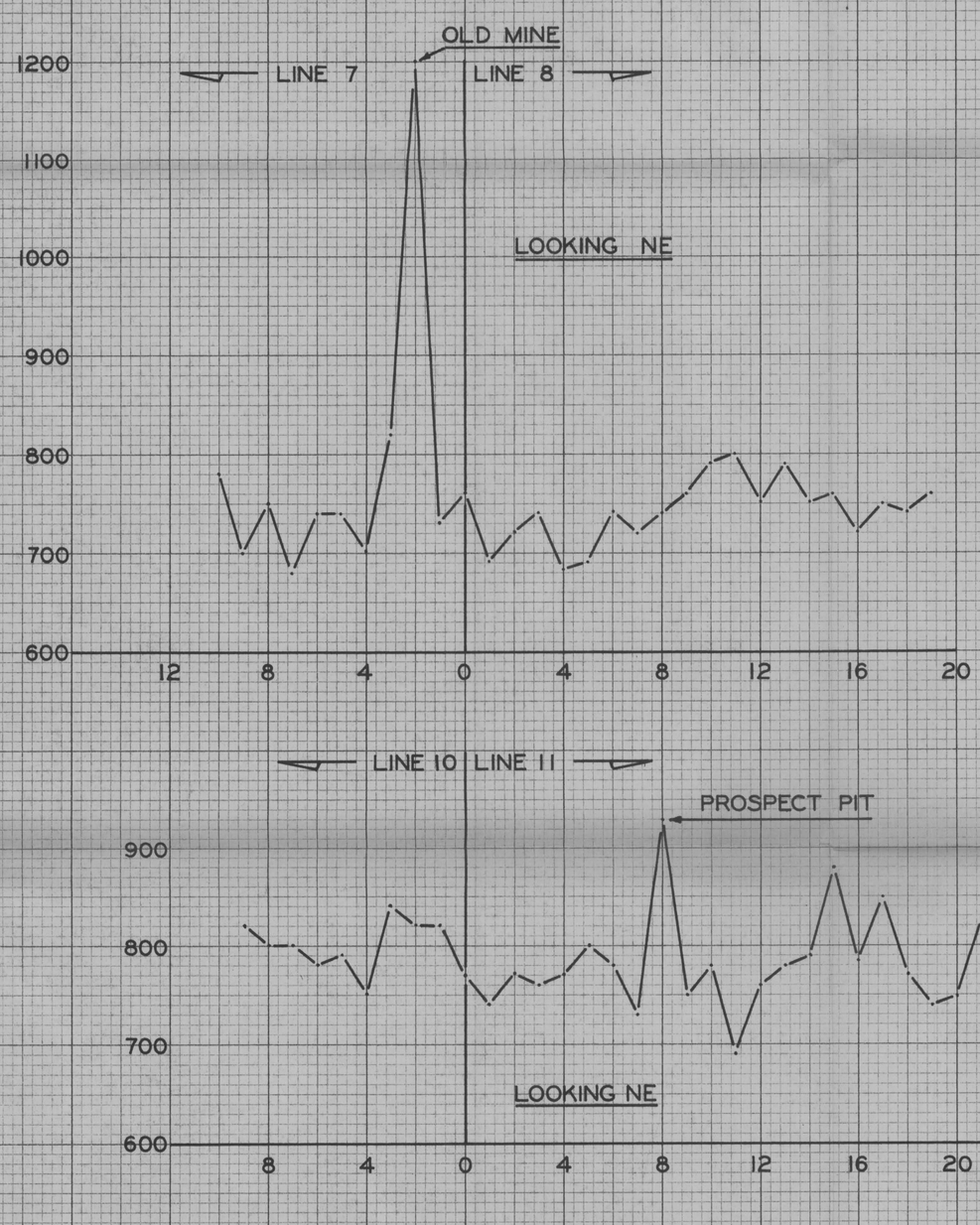
REVISIONS

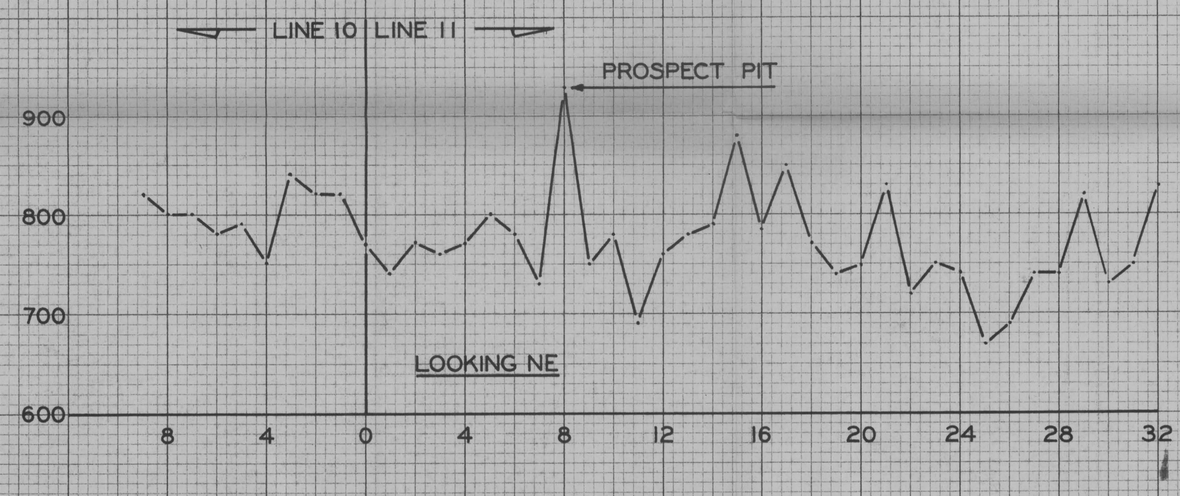
FILE:

HEINRICHS GEOEX
GEOPHYSICAL EXPLORATION TUCSON, ARIZONA

KEUFFEL & ESSER CO. MADE IN U.S.A. STANDARD @ CROSS SECTION 10 X 10 TO THE INCH







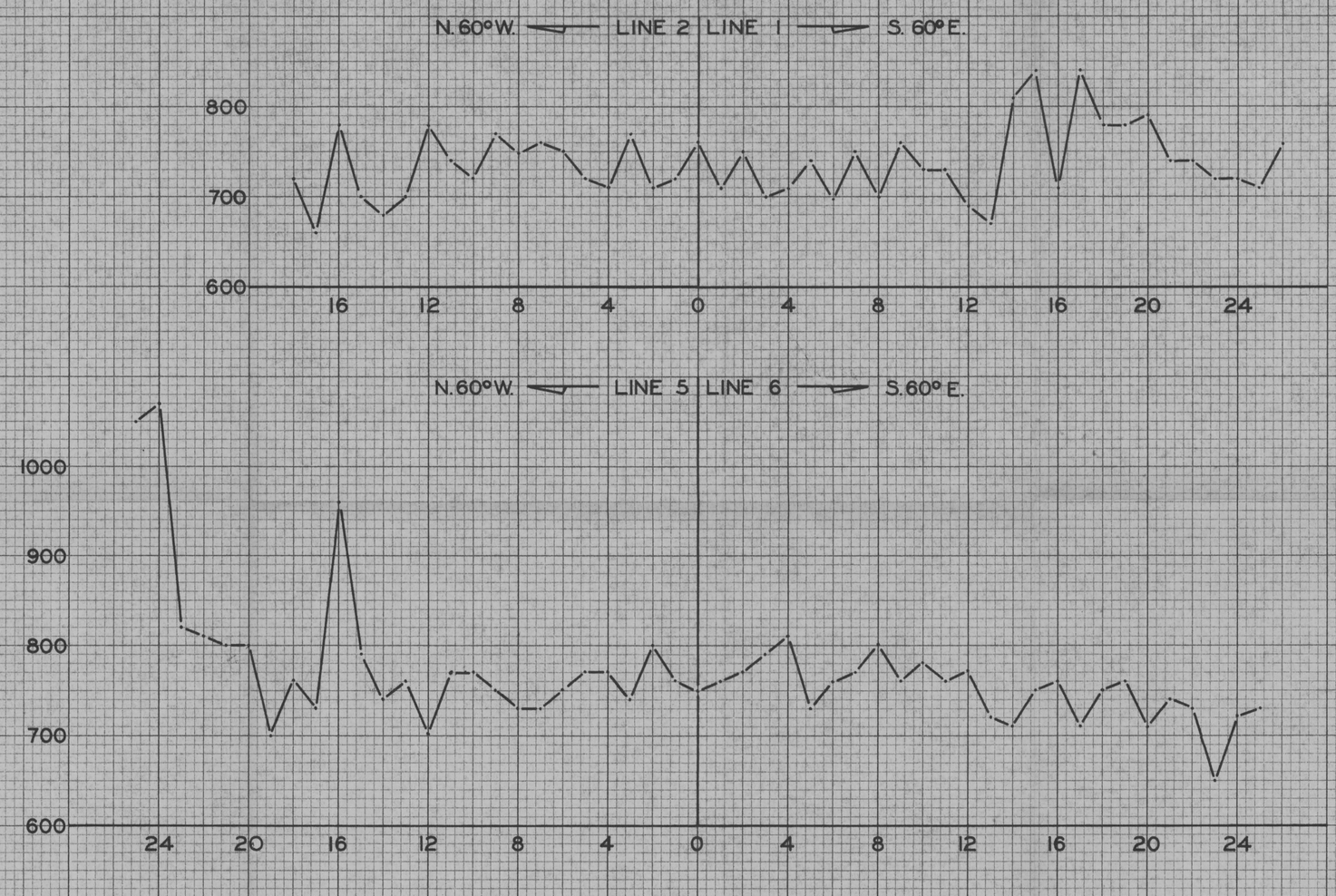
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

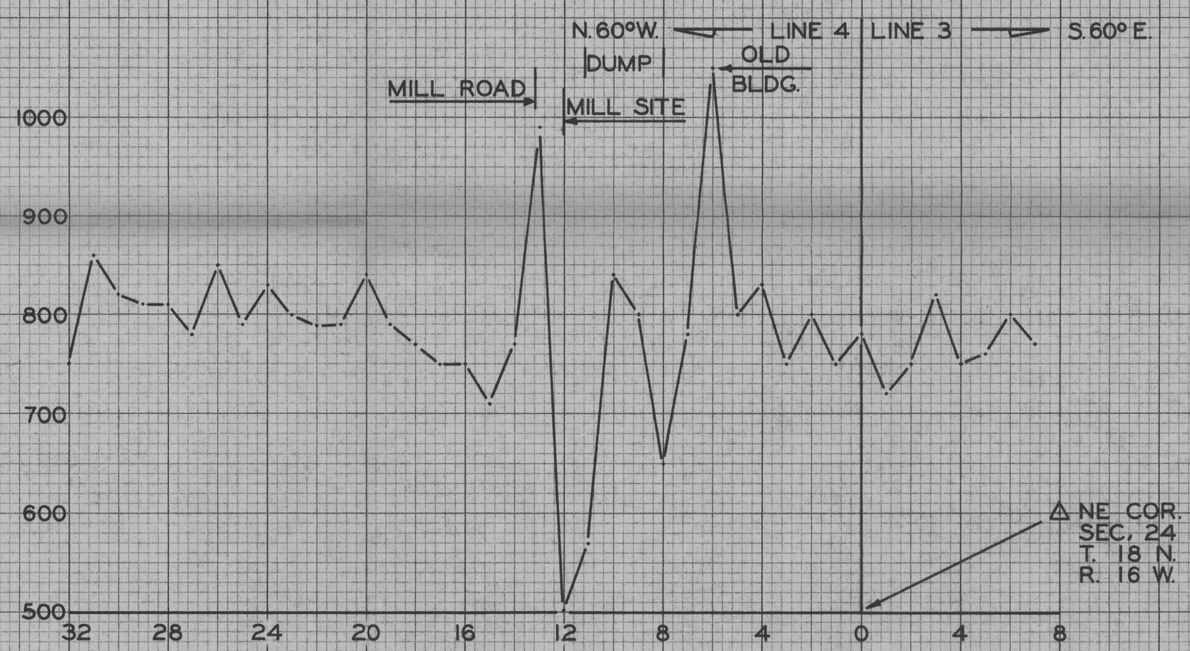
MAGNETIC PROFILES
BORIANA PROJECT
FOR
ARKLA EXPLORATION
HUALAPAI MTS, KINGMAN,
MOJAVE COUNTY, ARIZONA

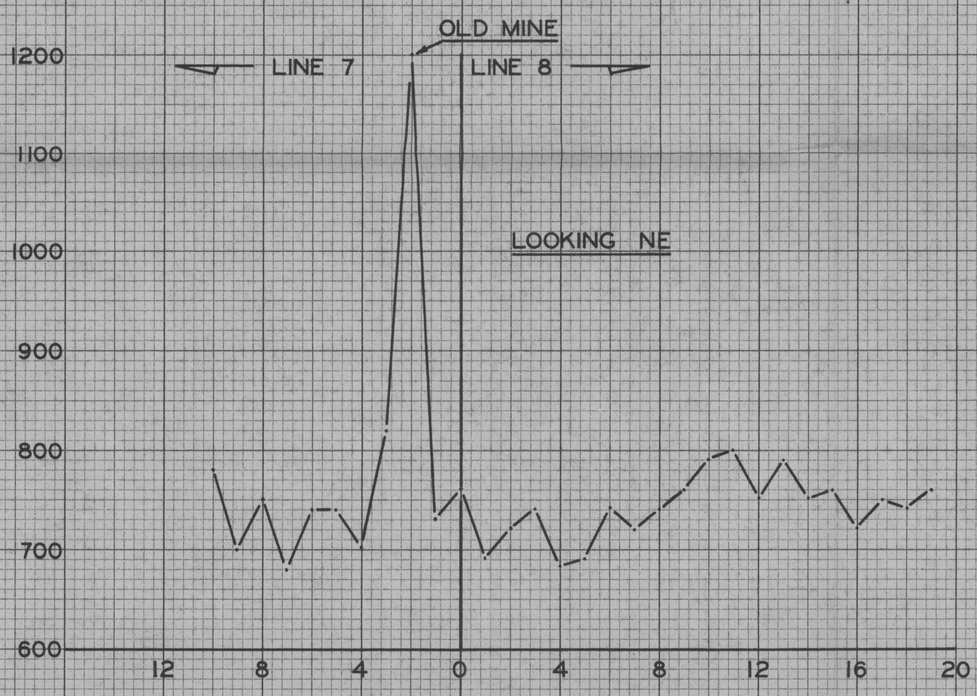
SCALE: HORIZ. 1" = 400'	CONTOUR INTERVAL:	REVISIONS
VERT. 1" = 100 GAMMA	DATA BY: F W H	
DATE: SEPT. 1966	SHEET OF	
DRAWN BY: J C D	DRAWING NO.:	FILE:

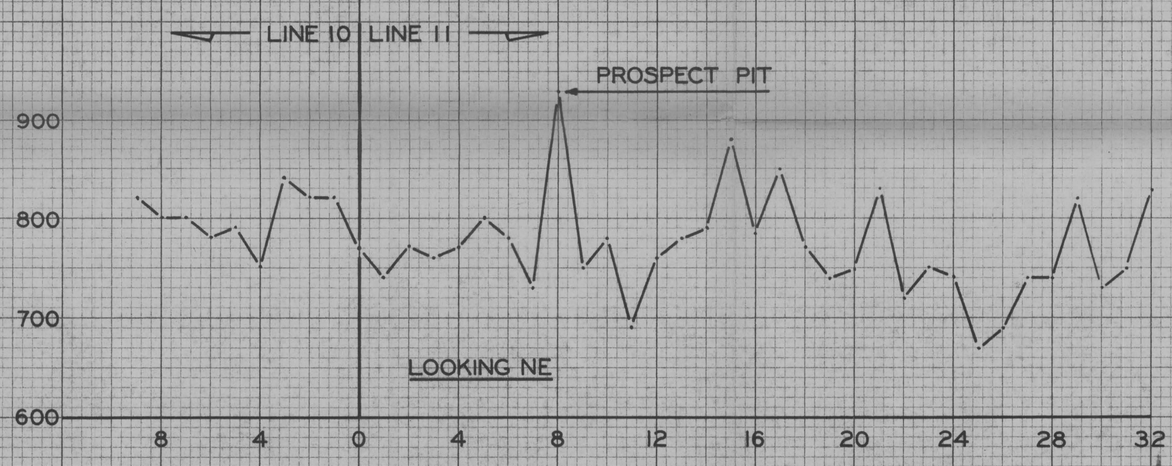
HEINRICHS GEOEX
GEOPHYSICAL EXPLORATION TUCSON, ARIZONA

KEUFFEL & ESSER CO. MADE IN U.S.A.
K&E STANDARD @ CROSS SECTION 10 X 10 TO THE INCH









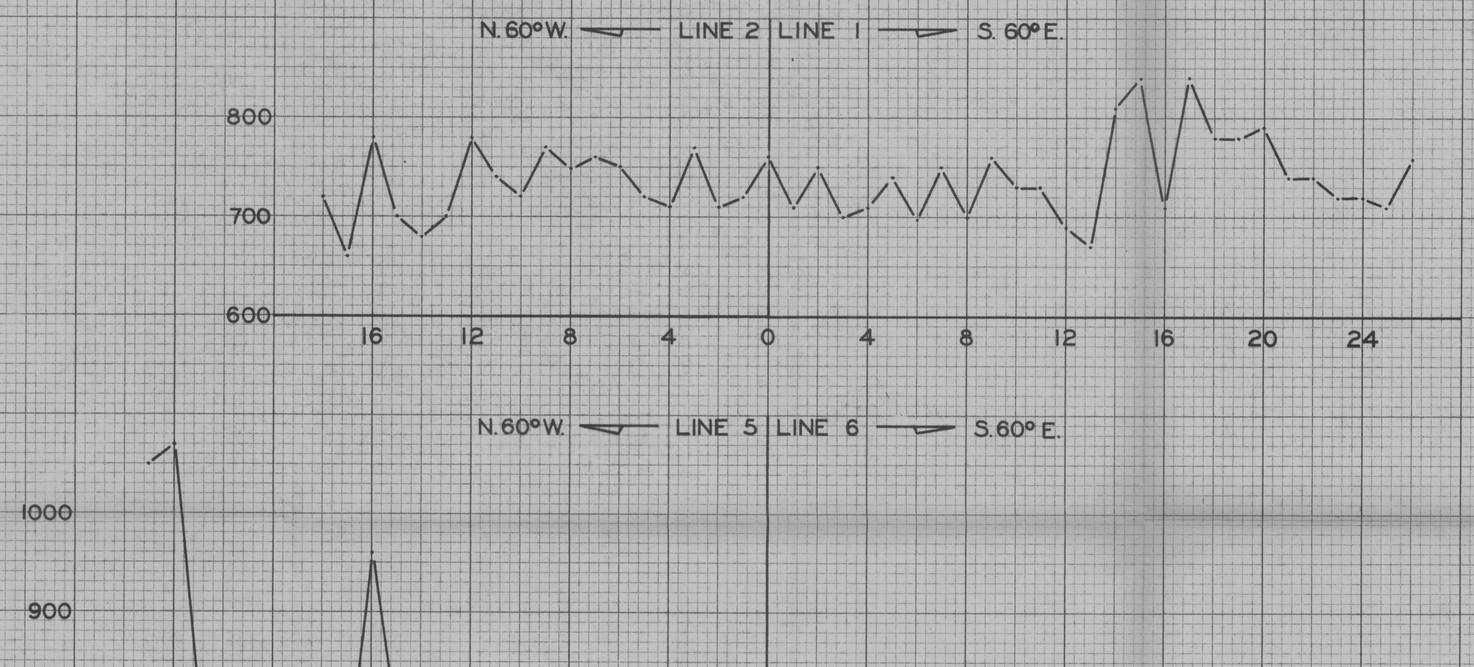
HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

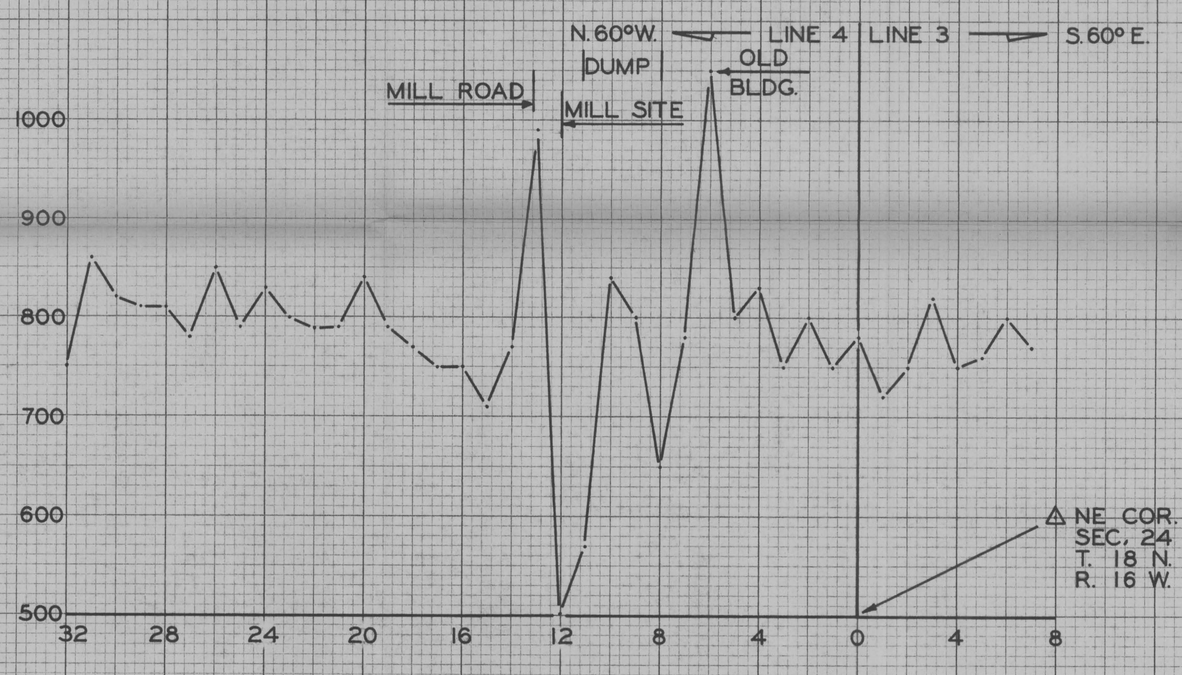
MAGNETIC PROFILES
BORIANA PROJECT
FOR
ARKLA EXPLORATION
HUALAPAI MTS, KINGMAN, MOJAVE COUNTY, ARIZONA

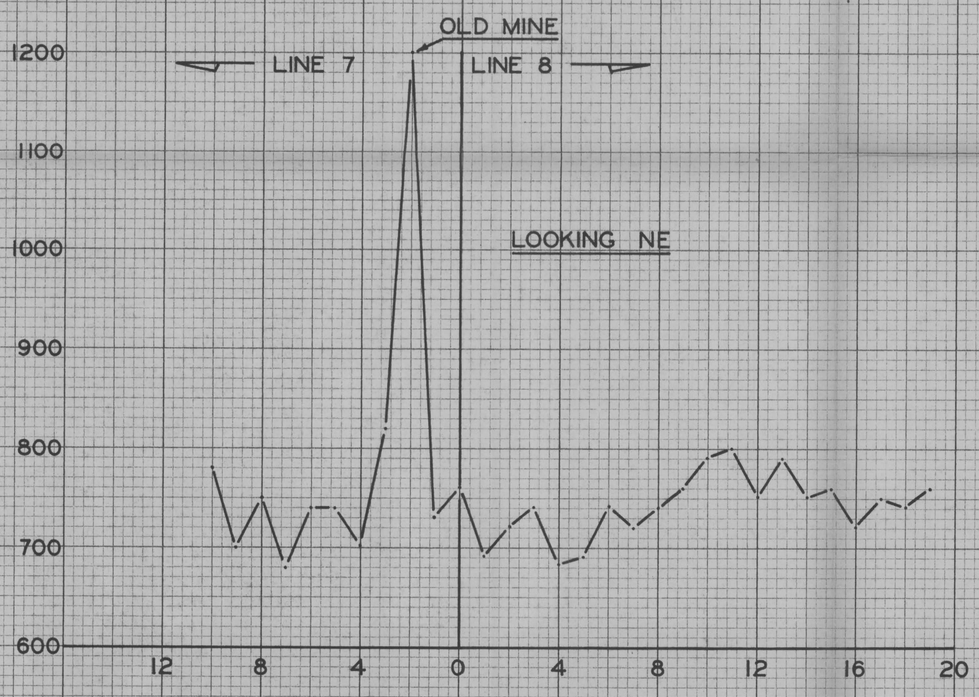
SCALE: HORIZ. 1" = 400'	CONTOUR INTERVAL:	REVISIONS
VERT. 1" = 100 GAMMA	DATA BY: F W H	
DATE: SEPT. 1966	SHEET OF	
DRAWN BY: J C D	DRAWING NO.:	FILE:

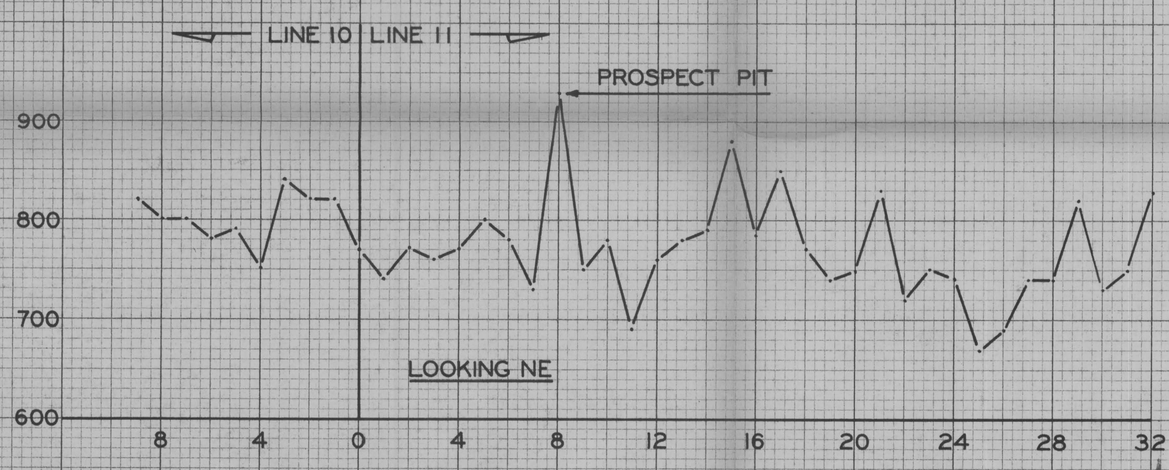
HEINRICHS GEOEX
GEOPHYSICAL CONSULTANTS TUCSON, ARIZONA

KEUFFEL & ESSER CO. MADE IN U.S.A.
K+E STANDARD @ CROSS SECTION 10 X 10 TO THE INCH









HEINRICHS GEOEX
GEOLOGICAL CONSULTING TUCSON, ARIZONA

HEINRICHS GEOEXPLORATION COMPANY
P.O. Box 5671 Tucson, Arizona

MAGNETIC PROFILES
BORIANA PROJECT
FOR
ARKLA EXPLORATION
HUALAPAI MTS, KINGMAN, MOJAVE COUNTY, ARIZONA

SCALE: HORIZ. 1" = 400'	CONTOUR INTERVAL:	REVISIONS
VERT. 1" = 100 GAMMA	DATA BY: F W H	
DATE: SEPT. 1966	SHEET OF	
DRAWN BY: J C D	DRAWING NO.:	FILE:

KEUFFEL & ESSER CO. MADE IN U.S.A.
STANDARD @ CROSS SECTION 10 X 10 TO THE INCH

COLUMBUS NO. → 2

COLUMBUS 1 ← NO.

ARKLA (unpatented)

4 3 6 5 8 7 10 9 12 11 14 13 16 15 18 17 20 19 22 21 24 23 26 25 28 27 30 29 32 31

BIG JOHN 7 PECO 6 PECO 5

ARKLA LEASES

BIG JOHN 6 PECO 4 PECO 3

BIG JOHN 5 BIG JOHN 3 BIG JOHN 2

18 17 19 20 17 16 20 21

BIG JOHN 4 PECO 2 BIG JOHN 1

SUNSHINE 7 PECO 1

SUNSHINE 8

SUNSHINE 9

SUNSHINE 10

SUNSHINE 11

SUNSHINE 12

SINCO 4

SINCO 3

SINCO 2

SUNSHINE 6 SUNSHINE 4 SUNSHINE 2

SUNSHINE 5 SUNSHINE 3 SUNSHINE 1

ARKLA LEASES

YELLOW BASIN

T 17N

SUNSHINE 13 POTLICKER 7

ARKLA LEASES

POTLICKER 6 POTLICKER 5

ROBINETT GROUP (unpatented)

POTLICKER 4 POTLICKER 3

POTLICKER 2 POTLICKER 1

POTLICKER SR. POTLICKER JR.

SMOKEY 2 SMOKEY 1

BUD 39 BUD 7 BUD 45

SMOKEY 4 SMOKEY 3

BUD 6 BUD 38

BUD 37 BUD 5

BUD 42 BUD 43

BUD 40 BUD 41

BUD 1 BUD 25

BUD 26 BUD 27

20 21 29 28

BUD 2 BUD 28

BUD 44

BUD 29 BUD 30

D and G MINING CO GROUP (unpatented)

BUD 3 BUD 31

BUD 32 BUD 33

BUD 4 BUD 34

BUD 35 BUD 36

WATER CLAIM

COPPER WONDER 1

WHALE 1

COPPER WONDER 3

AMERICAN GROUP (patented)

COPPER WONDER 5

COPPER WONDER 4

COPPER CANYON

GREAT CANYON

SUMMIT

WHALE 3

COPPER WONDER 2

LEVIATHAN GROUP (patented)

LEVIATHAN

PLUG #1

R 14 W

— Geo-chem -
— I.P. High MO.
• D.S. Loc.
--- Cross Dike

NOTE: NOT SURVEYED. COMPILED FROM FIELD DATA AND INFORMATION BY OWNERS.

CLAIM MAP - PLATE IV

YELLOW BASIN PROPERTY
MOHAVE COUNTY, ARIZONA

SCALE: 0 500' 1000'

Draftsman-C. Klingelfus

NOTE: NOT SURVEYED.
COMPILED FROM
FIELD DATA AND
INFORMATION BY
OWNERS.

CLAIM MAP - PLATE IV

YELLOW BASIN PROPERTY
MOHAVE COUNTY, ARIZONA

SCALE: 0 500' 1000'

AUG 1966
GEOEX

HEINRICHS GEOEXPLORATION COMPANY

806 WEST GRANT ROAD, TUCSON, ARIZONA, 85703. P.O. BOX 5671. PHONE: (AREA CODE 602) 623-0578

August 3, 1966

Mr. M. L. Pugh
Chief Geophysicist
Arkla Exploration Company
P. O. Box 1734
Shreveport, Louisiana

Re: Proposed Hand Mag, Wikieup Area, Arizona

Dear Pete:

As per your request, Heinrichs Geoexploration Company agrees to supply a two man magnetometer crew for annual labor for the assessment year 1965-1966 on a group of unpatented mining claims.

Our charges will be as per the enclosed rate schedule with the pertinent items underlined.

It is understood that the total expenditure will be between $1,500.00 and $2,000.00 and will include a report suitable for recording purposes at the county courthouse.

A total of seven field days plus one week office time will be required to complete the assignment. Arkla agrees to accept all liability for trespass as our crews will be working on areas assigned to us by Arkla.

It is also understood that the invoice and report prepared for filing purposes will be called the Boriana Prospect and for the Arkla billing purpose will be called the Yellow Basin Prospect.

Note to ALL Geol.

In order to comply with the law on geophysical reports for assessment work, we must have a claim map with the location and claim shown in relation to the work done. Format for filing procedures would be similar to that done last year for Arkla, unless your lawyers have more recent information.

If the preceding meets with your approval, please so indicate by signing and dating the enclosed copy.

Very truly yours,

HEINRICHS GEOEXPLORATION COMPANY

E. Grover Heinrichs
Vice President

APPROVED M. L. Pugh

DATE Aug. 4, 1966

EGH:jc
Enclosure: 1 carbon copy
cc: Mr. Don McCarthy
P. O. Box 971
Wikieup, Arizona

REPORT OF GEOPHYSICAL SURVEY
PREPARED FOR AFFIDAVIT OF LABOR

This is a report of a geophysical survey of the claims hereinafter described, done as a part of the work performed for the requirment of annual labor for the period from September 1, 1965 to September 1, 1966, and is made as of November 14, 1966.

These claims consist of a contiguous group situated in Sections 7 and 18, T18N, R15W, and Sections 13 and 24, T18N, R16W, G. & S.R.B. & M. in Mohave County, Arizona.

The claims are under option or owned by ARKLA EXPLORATION COMPANY, duly qualified to do business in the State of Arizona, and the work was performed by the undersigned at the request of, and at the expense of said owner or optionee.

The claims are more particularly described on the claim notices which are recorded in the records of Mohave County, Arizona as follows:

Name of Claim	Book	Page
Neglected No. 1	ZZ	363
Neglected No. 2	ZZ	364
Neglected No. 3	3K	407
Iguana No. 1	ZZ	365
Iguana No. 2	ZZ	366
Iguana No. 3	3H	588
Iguana No. 4	3Q	150
Sadie	3G	498
Sadie No. 2	3K	288
Sadie No. 3	3K	289
Sadie No. 4	3K	290
Sadie No. 5	3K	291
Sadie No. 6	3K	292
Sadie No. 7	3Q	224
Sadie No. 8	3Q	225
Sadie No. 11	3Q	265
Sadie No. 12	3Q	266
Sadie No. 13	3Q	267
Sadie No. 14	3Q	310
Sadie No. 15	3Q	311
Sadie No. 16	3Q	312
Sadie No. 17	3Q	313
Sadie No. 18 Amended	3Q	483 & 550

Name of Claim	Book	Page
Francis Amended	YY	433
Francis No. 2	YY	434
Francis No. 3	3K	284
Francis No. 4	3K	285
Francis No. 5	3K	286
Francis No. 6	3K	287
Francis No. 7	3Q	237
Francis No. 8	3Q	238
March Wind	3K	283
Amended	YY	706
March Wind No. 1	3K	389
Amended	YY	708
March Wind No. 2	3K	448
Amended	YY	709
March Wind No. 11	3Q	307
March Wind No. 11 Amended	YY	711
March Wind No. 12	3Q	308
March Wind No. 12 Amended	YY	712
Columbus No. 2	3Q	76
Amended	YY	710

The work was done on these claims and was done for the benefit of the group as a whole. The geophysical work done consists of 11 magnetic profiles. The location of the work performed in relation to points of discovery and boundaries of claims and the nature and extent thereof is shown on the plat identified as follows:

Residual Magnetic Plan
Boriana Project
Mohave County, Arizona
For
Arkla Exploration Company

The above work is dated September 1966 and was accomplished by Heinrichs Geoexploration Company and is attached hereto by this reference and is made a part thereof.

The cost of the geophysical work done on the group of claims during this assessment period was in the amount of $1500.00 (Fifteen hundred dollars). The basic findings from the geophysical work are indicated as follows:

The magnetic surveys indicates a northeasterly-southwesterly magnetic trend. Also a 50 gamma magnetic low was delineated in the vicinity of Sadie No. 3 and Sadie No. 5.

All of this geophysical work was done under the direction of Mr. Walter E. Heinrichs, Jr., President and General Manager of Heinrichs Geoexploration Company, Tucson, Arizona, at the request and expense of Arkla Exploration Company. The persons who worked on said survey in addition to said Walter E. Heinrichs, Jr., were E. Grover Heinrichs, Frederick Heinrichs, Kirt Ijams, and Chris

Ludwig, Senior Geophysicist, and Bert Moulinet, all employees of Heinrichs Geoexploration Company.

Mr. Walter E. Heinrichs, Jr., is a registered professional mining engineer, No. 2447, State of Arizona, with many years of experience in making geophysical surveys, and all of the other persons performing said work are either graduate geophysical engineers, geologists, technicians, or helpers.

Registered Professional Engineer (Mining) CERTIFICATE EXPIRES WALTER E. HEINRICHS, JR. DEC. 31, 19[illegible] ARIZONA, U.S.A.

Walter E. Heinrichs, Jr.

State of Arizona)
) ss.
County of Mohave)

WALTER E. HEINRICHS, JR., being first duly sworn deposes and says:

That he is the President & General Manager of Heinrichs Geoexploration Company of Tucson, Arizona; that he has read the foregoing report of Geophysical Survey, knows the contents thereof, and that the same is true.

Walter E. Heinrichs, Jr.

Subscribed and sworn to before me this 14th day of November 1966.

M. Jean Heinrichs
Notary Public

My commission expires: July 20, 1969.

AFFIDAVIT OF ANNUAL LABOR PERFORMED

STATE OF ARIZONA)
) ss.
COUNTY OF MOHAVE)

The undersigned, WALTER E. HEINRICHS, JR., being duly sworn deposes and says:

That he is a citizen of the United States of America and is more than twenty-one (21) years of age, and is a resident of Tucson, Pima County, Arizona; that he is a registered professional mining engineer, No. 2447, in the State of Arizona, and is acquainted with the mining claims hereinafter described, which are situated in Hualapai Mountains, Mohave County, Arizona. The location notices of the county recorder of Mohave County, Arizona, in the book and page hereinafter set forth. That between September 1, 1965 and September 1, 1966, the amount of One thousand five hundred dollars ($1,500.00) worth of work was done and performed upon and for the benefit of said claims as a group, not including the location work of said claims. Said work performed and improvements were made for the benefit of all the claims hereinafter described and for the purpose of complying with the laws of the United States of America pertaining to annual assessment work. Such work was performed by HEINRICHS GEOEXPLORATION COMPANY of Tucson, Arizona at the request of, and the expense of ARKLA EXPLORATION COMPANY, duly qualified to do business in the State of Arizona, the owners or optionees of said claims, for the purpose of complying with the laws of the United States of America pertaining to assessment or annual work, and Walter E. Heinrichs, Jr., E. Grover Heinrichs, Frederick Heinrichs, Kirt Ijams, Chris Ludwig, Senior Geophysicist, and H. R. Moulinet, were the men who labored on said claims and did said work and improvements, the same being as follows, to-wit:

A geophysical survey of the property was made, a report of which is filed in the county recorder's office, Mohave County, Arizona, and a copy of which is attached to this affidavit and made a part thereof. The mining claims herein referred to and for the benefit of which said labor was performed are specifically described below as follows:

Name of Claim	Book	Page
Neglected No. 1	ZZ	363
Neglected No. 2	ZZ	364
Neglected No. 3	3K	407
Iguana No. 1	ZZ	365
Iguana No. 2	ZZ	366

Name of Claim	Book	Page
Iguana No. 3	3H	588
Iguana No. 4	3Q	150
Sadie	3G	498
Sadie No. 2	3K	288
Sadie No. 3	3K	289
Sadie No. 4	3K	290
Sadie No. 5	3K	291
Sadie No. 6	3K	292
Sadie No. 7	3Q	224
Sadie No. 8	3Q	225
Sadie No. 11	3Q	265
Sadie No. 12	3Q	266
Sadie No. 13	3Q	267
Sadie No. 14	3Q	310
Sadie No. 15	3Q	311
Sadie No. 16	3Q	312
Sadie No. 17	3Q	313
Sadie No. 18 Amended	3Q	483 & 550
Francis Amended	YY	433
Francis No. 2	YY	434
Francis No. 3	3K	284
Francis No. 4	3K	285
Francis No. 5	3K	286
Francis No. 6	3K	287
Francis No. 7	3Q	237
Francis No. 8	3Q	238
March Wind	3K	283
Amended	YY	706
March Wind No. 1	3K	389
Amended	YY	708
March Wind No. 2	3K	448
Amended	YY	709
March Wind No. 11	3Q	307
March Wind No. 11 Amended	YY	711
March Wind No. 12	3Q	308
March Wind No. 12 Amended	YY	712
Columbus No. 2	3Q	76
Amended	YY	710

Said labor performed as heretofore set forth is and was for the purpose of satisfying the work requirements prescribed by the United States Mining Laws for the period from September 1, 1965 to September 1, 1966, and this affidavit is made pursuant to statutes of the State of Arizona.

Walter E. Heinrichs, Jr.

Subscribed and sworn to before me this 14th day of [illegible] 1966.

M. Jean Heinrichs
Notary Public

My commission expires: July 20, 1969

October 13, 1966

Mr. Ray B. Jones
Arkla Exploration Company
P.O.Box 669
Holbrook, Arizona

Borianna Project
re:Geophysical Report for
Affidavit of Labor

Dear Mr. Jones:

The following discrepancies as listed on attached sheets have shown up. Many of the claims shown on the map are not plotted 600 x 1500 feet and therefore, from the information you sent the discovery pits cannot be properly plotted. Some claims called in by Mr. Bradford on the phone do not appear on the map and we do not know how to show these in the report. In addition, other discrepancies as indicated have cropped up.

To expedite resolving this problem I am sending you a sepia copy of our map which has plotted all the claims except as noted . I suggest that you then plot the location of the discovery pit and also plot and name the claims not identified on this map. Perhaps Don McCarthy could help here.

If these discrepancies are too difficult to resolve satisfactorily in the near future please let me know as I will be happy to go to Kingman or meet with the land owner or whatever you suggest to help expedite the matter.

The problem as it now appears is not uncommon. We often encounter it where prospector types or owner's inheriting old claims which are poorly surveyed in rough country and very

poorly described on the location notices.

I am also enclosing a booklet published by the Arizona Department of Mineral Resources which I think may be quite helpful to you. If you already have a copy please pass it along to another who may be interested.

If you have any questions please let me know.

Very truly yours,

HEINRICHS GEOEXPLORATION COMPANY

E. Grover Heinrichs
Vice President

EGH/eb
encls
cc: Mr. W.C.Bradford
Mr. M.L.Pugh
Mr. Don McCarthy

Listed below are some of the discrepancies that have been found on the Base Map entitled "Cedar Valley District, Mohave County Arizona, owned by Borianna Mining Company."

Furnished to HEINRICHS GEOEKPLORATION COMPANY by Arkla Exploration Company.

The following will have to be corrected before HEINRICHS GEOEK can proceed with the Affidavit of Labor.

Claims not on map
(location unknown)

CLAIM	BK of mill sites	Page
Francis Mill Site	2	511
Francis Mill Site Amended	2	512
Neglected Mill Site	2	499

Claims Not on Map
(location unknown)

CLAIM	BK	Page
Cross Cut (fractional)	3W	602

DISCREPANCIES

SADIE No.13 is S 32° W instead of S 47° W
claim is 1440' x 610' on map

SADIE No.18 Centerline of this claim is NW-SE oriented instead of NE/SW

SADIE No.7 This claim is 620' x 1070' on map

SADIE No.8 This claim is 620' x 1300' on map

FRANCIS No.8 Bearing is N39° E instead of N 36°E
Claim is 620' x 1150' on map

MARCH WIND #11 This claim is 630' x 1500' on map

MARCH WIND #12 This claim is 600' x 1520' on map

ICUANA No. 4 This claim is 1040' along centerline

SADIE This claim is 570' x 1050'

FRANCIS This claim is 570' x 1250'

SADIE No.2 This claim is 620' x 1310'

SADIE No.3 This claim is 630' x 1310'

SADIE No.4 This claim is 630' x 1310'

SADIE No.5 This claim is 640' x 1050'

SADIE No.6 This claim is 590' x 1050'

FRANCIS No. 3 This claim is 630' x 1270'

FRANCIS No. 4 This claim is 600 x 1200'

FRANCIS NO. 4	BK	Page	
	3K	285	(phone list)
	3K	385	(on map)
	3K	285	(on location sheet)

FRANCIS No.5 This claim is 620' x 1530'

MARCH WIND This claim is 600' x 1500'

IGUANA No.1 Centerline is only 1120' long

IGUANA No. 1	BK	Page	
	22	365	(phone list)
	2	365	(on map)
	22	365	(on location sheet)

IGUANA No. 3 Centerline is only 1250' long approx.

	BK	Page	
SADIE No. 14	3Q	310	
	is described as being fractional		
	is not fractional on map		
SADIE No.11	3Q	267	(on map)
	3Q	365	(phone list)
	3Q	265	(on location sheet)
FRANCIS No.5	3K	266	(on map)
	3K	286	(phone list)
	3K	286	(on location sheet)
SADIE No. 15	3Q	311	
	is described as being fractional		
	is not fractional on map		
SADIE No. 17	3Q	313	(on map)
	3Q	314	(phone list)
	3Q	313	(on location sheet)
FRANCIS No.6	3K	287	(phone list)
	3K	887	(on map)
	3K	287	(on location sheet)
NEGLECTED No.3	3K	313	(phone list)
	3K	40	(on map)
	3K	407	
Amended	YY	690	

ARKLA EXPLORATION COMPANY

P.O. Box 669 - Holbrook, Arizona

October 6, 1966

8 Oct-66

Mr. Grover Heinrichs
Heinrichs Geoexploration Company
808 West Grant Road
Tucson, Arizona

Dear Grover: RE: Boriana Prospect

Enclosed herewith are the locations of the discovery shafts of various claims in our Boriana Prospect.

The descriptions are all on the center line of the claims. Please advise if there is any other information you might need.

Very Truly Yours
ARKLA EXPLORATION COMPANY

Ray B. Jones
Mineral Division Landman

cc: W. C. Bradford
ARKLA EXPLORATION COMPANY
P.O. Box 1439
Oklahoma City, Oklahoma

ARKLA EXPLORATION COMPANY
P.O. Box 971
Wikieup, Arizona

RBJ:sd
Enclosure

Claim Name	Book	Page	Location of Discovery Shaft
Sadie #12	3Q	266 ✓	N40°E 120' x S40°W 1380' ~~from center of Discovery Shaft 300' on each side of center line~~ (600' x 1500')
Sadie #13	3Q	267 ✓	S47°W 60' x N47°E 1440' on center line (600' x 400')
Sadie #18	3Q	483	Northeasterly 330' x 70' Southwesterly ~~330' on each side~~
— Amended	3Q	550	Northeasterly 330' x 70' Southwesterly 300' on each side
Sadie #7	3Q	224	N30°E 120' x S30°W 1380' 300' on each side
Sadie #8	3Q	225	S47°W 315' x N47°E 1185' (600' x 1500')
Sadie #11	3Q	265 ✓	S47°W 45' x N47°E 1455' (600' x 1500')
Sadie #14 (Frac.)	3Q	310 ✓	Northeasterly 1345' x 155' Southwesterly (600' x 1500')
Sadie #15 (Frac.)	3Q	311 ✓	Northeasterly 1310' x 190' Southwesterly (600' x 1500')
Francis #7	3Q	237 ✓	S25°W 430' x N25°E 1070' (600' x 1500')
Francis #8	3Q	238	N36°E 10' x S36°W 1490' (600' x 1500')
March Wind #11	3Q	307 ✓	N33°E 1325' x ~~S33°W~~ S33°W 175' (600' x 1500')
— Amended	YY	711 ✓	N38°E 1250' thence S74°E 300' (600' x 1500')
March Wind #12	3Q	308	N33°E 1230' x S33°W 270' (600' x 1500')
— Amended	YY	712	N38°E 1395' thence S74°E 300'
Columbus #2	3Q	76	S40°W 1170' x N40°E 330' (600' x 1500')
— Amended	YY	710 ✓	N38°E 530' thence S74°E 320' actually (640' x 1500')
Iguana #4	3Q	150	Southerly 400' x 1100' Northerly (600' x 1500')
Sadie #16	3Q	312 ✓	Northeasterly 750' x 750' Southwesterly (600' x 150
Sadie #17	3Q	313 ~~314~~ ✓	Northeasterly 800' x 700' Southwesterly (600' x 1500
Sadie	3G	498	Northerly 1090' x 500' Southerly (600' x 1500')
Amended	YY	435	~~Changes~~ Correct name of Mining District Only
Francis	3G	496	Northerly 1100' x 400' Southerly (600' x 1500')
Amended	YY	433	~~Changes~~ Corrects names of Mining District Only
Francis #2	3G	497 ✓	Northerly 900' x 600' Southerly (600' x 1500')
Amended	YY	434	Correct name of Mining Dist only
Sadie #2	3K	288	Northerly 1340' x 160' Southerly (600' x 1500')
Sadie #3	3K	289	Northerly 1454' x 46' Southerly (600' x 1500')
Sadie #4	3K	290	Northerly 1358' x 142' Southerly (600' x 1500')
Sadie #5	3K	291	Southerly 1454' x 46' Northerly (600' x 1500')
Sadie #6	3K	292	Northesly 33' x 1467' Southerly (600' x 1500')
Francis #3	3K	284	Northerly 1458' x 42' Southerly (600' x 1500')
Francis #5	3K	286	Southerly 1446' x 46' Northerly (600' x 1500')
Francis #4	3K	285	Northerly 1417' x 83' Southerly (600' x 1500')

Claim Name	Book	Page	Location of Discovery Shaft
Francis #6	3K	287 ✓	Southerly 1415' x 85' Northerly (600' x 1500')
March Wind	3K	283 ✓	Southerly 1334' x 166' Northerly (600' x 1500')
Amended	YY	706	N 27° E 1260' ft. S 74° E 300'
March Wind #1	3K	389 ✓	Southwesterly 300' x 1200 Northeaeterly (600' x 1500')
Amended	YY	708 ✓	N 27° E 1398' x S 27° W 102'
March Wind #2	3K	448 ✓	Westerly 200' x 1300' Easterly (600' x 1500')
Amended	YY	709 ✓	N 27° E 340' x S 27° W 1160' (600' x 1500')
Neglected #3	3K	407 ✓	Westerly 200' x 1300' Easterly (600' x 1500')
Amended	YY	690 ✓	Changes erroneous desc. but not location of discovery shaft
Neglected #1	ZZ	363 ✓	Southerly 475' x 1025' Northerly (600' x 1500'
Neglected #2	ZZ	364 ✓	Southerly 400' x 1100' Northerly (600' x 1500')
Iguana #1	ZZ	365	Southerly 300' x 1200' Northerly (600' x 1500')
Iguana #2	ZZ	366 ✓	Southerly 400' x 1100' Northerly (600' x 1500')
Iguana #3	3H	588	Southerly 100' x 1400' Northerly (600' x 1500')
CrossCut (Frac.)	3W	602	Northwesterly 1400' x 100' Southeasterly (600' x 1500')
Francis MillSite	2 of Millsites	511	466½' x 466½'
Amended	2 of Millsites	512	correct name of Mining District
Neglected Millsit	2 of Millsites	499	466½' x 466½'