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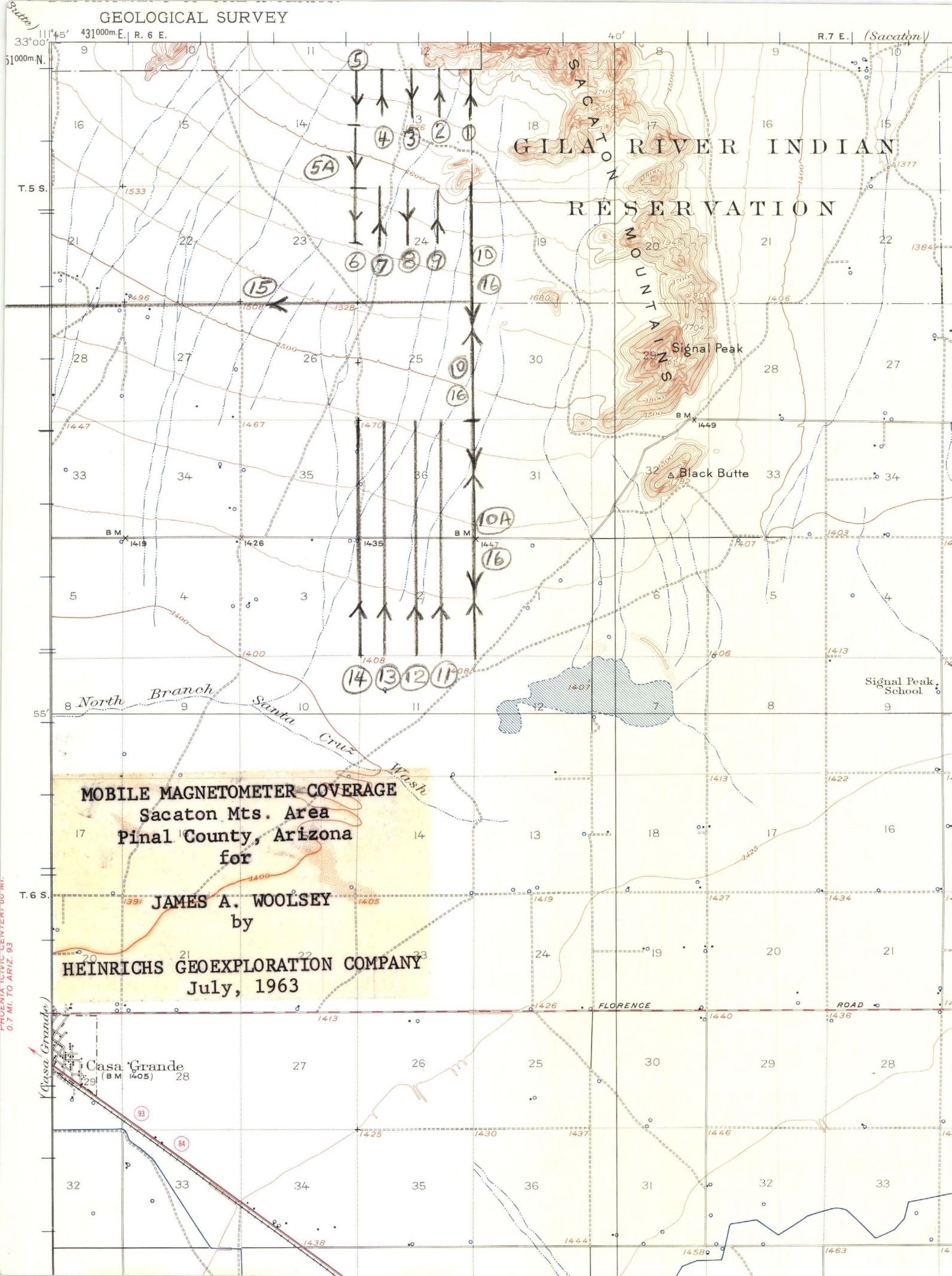

GEOLOGICAL SURVEY
GILA RIVER INDIAN RESERVATION
SACATON MOUNTAINS
Signal Peak
Black Butte
Signal Peak School
North Branch Santa Cruz Wash
Casa Grande
FLORENCE ROAD
R. 6 E.
R. 7 E.
T. 5 S.
T. 6 S.
(Sacaton)
(Casa Grande)
MOBILE MAGNETOMETER COVERAGE
Sacaton Mts. Area
Pinal County, Arizona
for
JAMES A. WOOLSEY
by
HEINRICHS GEOEXPLORATION COMPANY
July, 1963

# RECONNAISSANCE MAGNETIC SURVEY

(Total Intensity)

LOOT CLAIMS, Sec. 13, T5S, R6E

DOREMI CLAIMS, Sec. 24, T5S, R6E

STATE LEASES, Sec. 36, T5S $ Sec. 2, T6S, R6E

Pinal County, Arizona

for

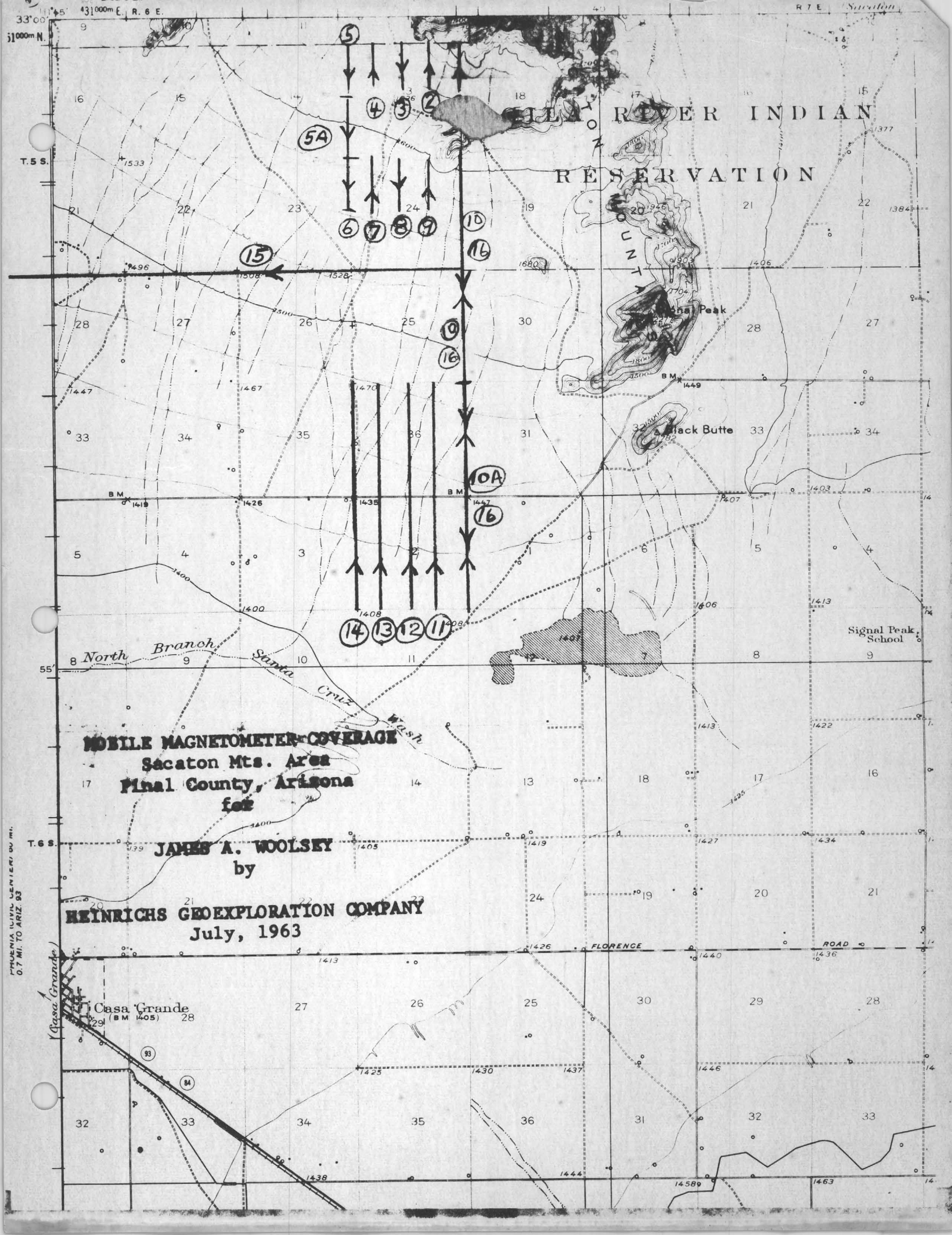
JAMES A. WOOLSEY

July, 1963

by

HEINRICHS GEOEXPLORATION COMPANY

P. O. Box 5671 Tucson, Arizona


MOBILE MAGNETOMETER COVERAGE
Sacaton Mts. Area
Pinal County, Arizona
for
JAMES A. WOOLSEY
by
HEINRICHS GEOEXPLORATION COMPANY
July, 1963
GILA RIVER INDIAN
RESERVATION
Black Butte
Signal Peak School
North Branch Santa Cruz Wash
Casa Grande
(BM 1405)
FLORENCE ROAD
T.5 S.
T.6 S.
R.6 E.
R.7 E.

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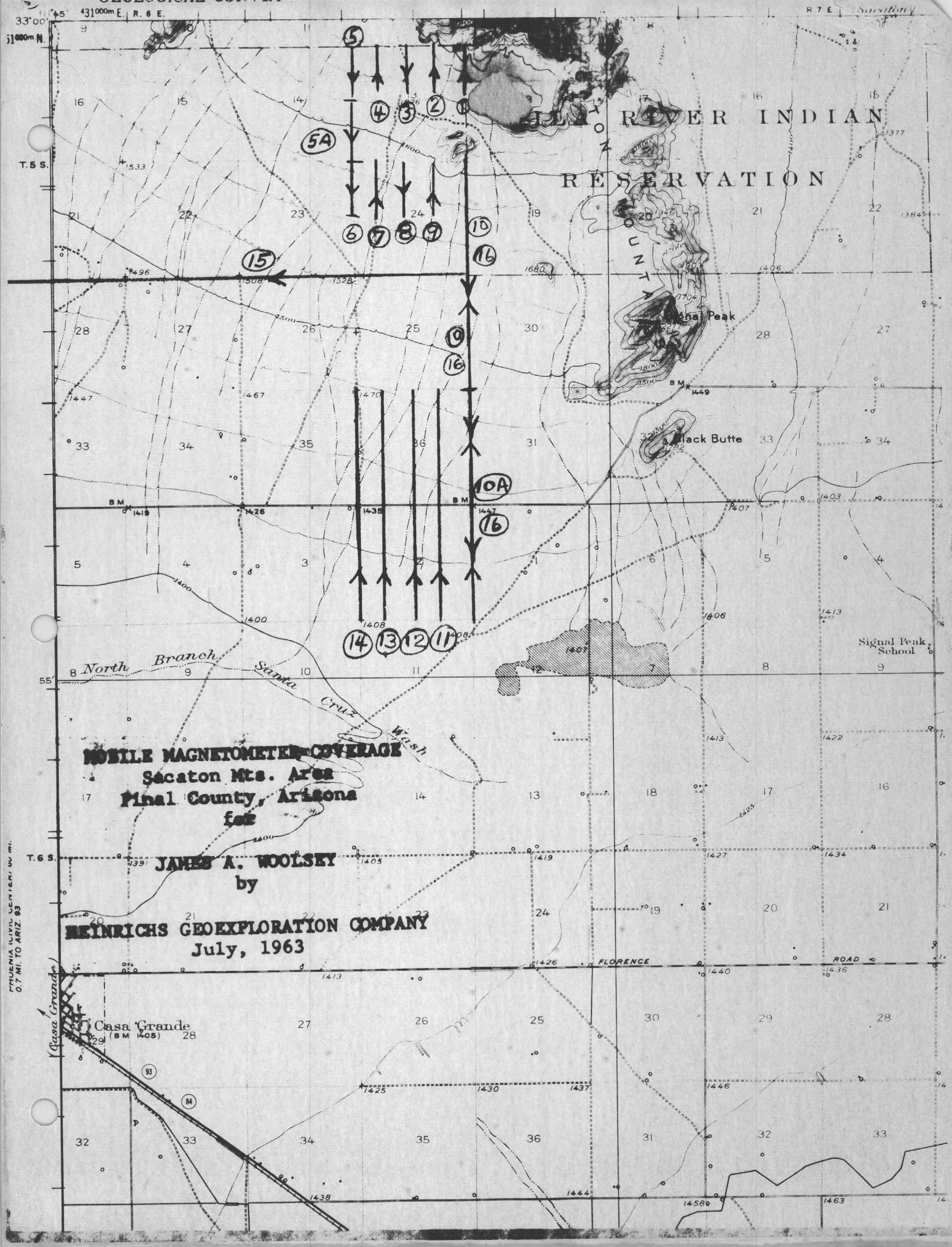

MOBILE MAGNETOMETER COVERAGE
Sacaton Mts. Area
Pinal County, Arizona
for
JAMES A. WOOLSEY
by
HEINRICHS GEOEXPLORATION COMPANY
July, 1963
GILA RIVER INDIAN
RESERVATION
Signal Peak
Black Butte
Signal Peak School
North Branch Santa Cruz Wash
Casa Grande
FLORENCE ROAD
T. 5 S.
T. 6 S.
R. 6 E.
R 7 E

## INTRODUCTION

At the request of Mr. James A. Woolsey, Heinrichs Geoexploration Company made a reconnaisance magnetic survey over three areas of land northeast of Casa Grande in Pinal County, Arizona. The mobile magnetometer was used on July 11 and 12, 1963, and a total of 21 miles of profiles was obtained. The coverage included the Loot Claims 1 through 20 located in the north half of Section 13, T5S, R6E, the Doremi Claims 1 through 20 located in the north half of section 24, T5S, R6E, and all of sections 36, T5S, R6E and 2, T6S, R6E.

## CONCLUSIONS AND RECOMMENDATIONS

Some sub-alluvial structural relief was disclosed by this work. In only two places were sharp anomalies caused by near surface features crossed. One of these is slightly outside the northeast cormer of sec. 24, the other on the west side of the Loot claims, sec. 13. Neither are considered in themselves to be significant as to direct possible ore association and nothing else was crossed which suggested a magnetite-rich contact metamorphic environment.

Since granitic type rocks are exposed in the two northern areas, or quite nearby, bedrock must be shallow in places. Since the magnetic relief is low, the rocks must be fairly homogeneous. Yet, on a large scale there is variation, as the Loot claim area, which is near outcrop, is magnetically lower than the Doremi area which is also near outcrop. On the other hand, crossing the ¼ corner between sections 36 and 2 is a deep seated magnetic effect with more magnetic intensity than near or over outcrop.

From the results obtained, except possibly for very broad reconnaisance to extend preliminary coverage over other parts of the area not yet covered, or to trace buried structures or map a mafic deficient or altered zone (if there is other evidence to suggest such exists), magnetics does not offer the best method for further evaluation of the area. Any further geophysical work considered for this ground should be in the realm of electrical methods and/or gravity.

## INTERPRETATION

Loot Claims, Sec. 13. The picture here is one of lower magnetic intensity nearer outcrop and higher magnetic intensity to the west, presumably with the alluvium deepening in that direction. At one time the rocks may have been more

exposed to the east and are now being filled on the margins by erosional deposition. This situation would have allowed some oxidation of mafic minerals resulting in lesser magnetic susceptibility than the same rock that has never been exposed.

The sharp anomaly on Line 5 on the western boundary of the claim has a variation of greater than 200 gammas above local background,but its effects extend only about 75 feet horizontally so its actual cause is only a few feet wide. The causing effect is one of a vertical body. In itself it would be of little interest, but because it falls at a point of change of magnetic level it could represent a fault zone. If such, it may represent only the extremity, and if more work is to be done in the area, this is one of the places for consideration.

Doremi Claims, Sec. 24. This area shows a gradual decrease in magnetic intensity to the west, apparently reflecting deepening alluvium. A small high in the center of Line 7 and a gradual climb in level near the west ¼ corner may indicate basement is a little less deep on westward.

On starting Rec. No. 10 it was decided to start at the beginning of the road, 200 or 300 feet north of the northeast corner of the claims. A sharp anomaly was crossed here. In character it looks like a buried pipe line, but is a little too wide, probably, for such. Hence, it may be a fault, or

a magnetite dike along the edge of the outcrop. It is, however, outside the claims.

Sections 36 and 2. The only thing of note here is a broad high passing through the ¼ corner between the sections. Its cause is deep, probably at least a couple of thousand feet. Of interest is the fact that its apparent strike is northwest whereas outcrop to the east about two miles has a topographic strike of northeast. However, there is a topographic suggestion that the Sacaton Mountains are arcuate and this deep magnetic high may, therefore, be the expression of their buried extension westerly along the arc. This, then, would mean the complex would have a central basin which might contain other geologic rock types and possibly different mineral constituents.

Rec. No. 15. This was run to the highway to pass near former drill site -(ASARCO's ?). Nothing of interest shows, including at the drill site area. Overall there is a general decrease in magnetic level westward.

## EQUIPMENT AND PROCEDURES

The instrument used is a Flux-gate type, total intensity, magnetometer (Gulf Oil Corporation Linensed), mounted on a Dodge Powerwagon. Variations in the earth's total magnetic field are continuously recorded on chart paper in a

recorder geared to the vehicle drive. Record is made at whatever speed the vehicle can be driven, according to terrain conditions. On this project some profiles were made on roads and existing trails, but most were off road traverses.

The instrument was positioned, for this project, to record on a sensitivity of 100 gammas per half inch of chart vertically, this giving 1000 gammas across the total width of the chart. This type of recorder allows for 10 effective chart widths by letting the trace cross the paper and continue again from the other side as necessary. The charts, as run, read looking length wise from the start of the record with higher values to the right.

The profile trace is made by a tapper bar that can be actuated by either the drive of the vehicle or an electronic timing mechanism. In normal usage the distance function is used. As the magnetic gradient did not change rapidly on this project, it was not necessary to use the time basis.

For this project the instrument was positioned to record on a horizontal scale of 400 feet to the inch.

An arbitrary base level was selected, at the start of the project, and assigned a value of 1,000 gammas. This level was positioned to the middle of the chart paper and all values plotted on the maps are relative to this arbitrary base.

Basic control was from the Silver Peak 15 minute topographic quadrangle. All section corners and ¼ corners were located on the ground.

Respectfully submitted,

HEINRICHS GEOEXPLORATION COMPANY

J. W. Marlatt

J. W. Marlatt, Geologist

Walter E. Heinrichs, Jr.
President and General Manager

Registered Professional Engineer (Mining)
CERTIFICATE EXPIRES
WALTER E. HEINRICHS, JR.
ARIZONA, U.S.A.

P. O. Box 5671
Tucson, Arizona
July 18, 1963

MANNA MINING CO.
MANNA
MANNA
P. O. Box 4054
Tucson, Arizona
MA 3-3666
JAMES A. (BUD) WOOLSEY

Woolsey

home phone

MA 3-8573

1 more Bud. Will Does MA 3-3666

MA 3-8573 - Home

N - of Saguin

See 1 & 6 - 115 S 12 E

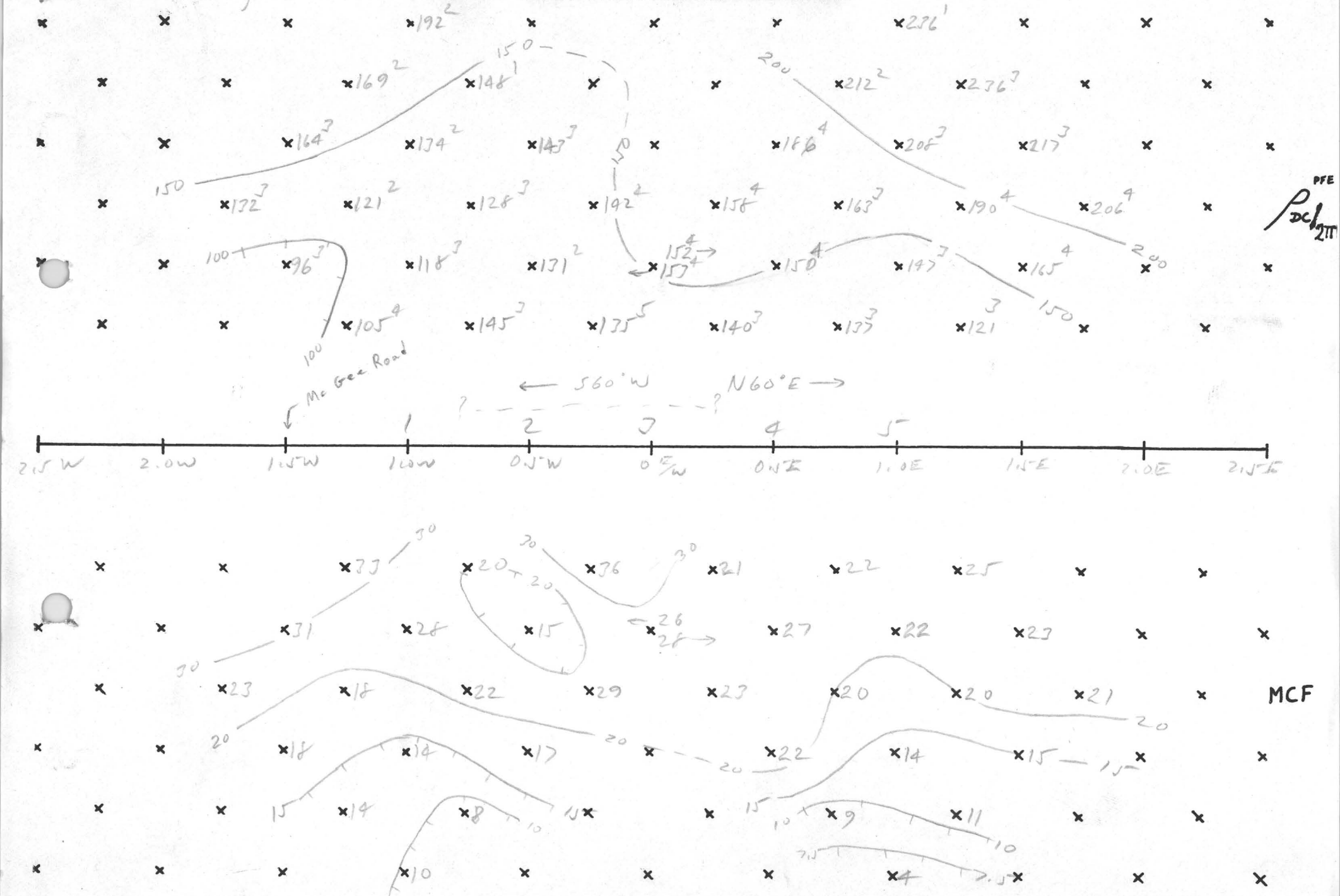
155 - 13E

Re: one or more days I.P. work.

Looking northerly

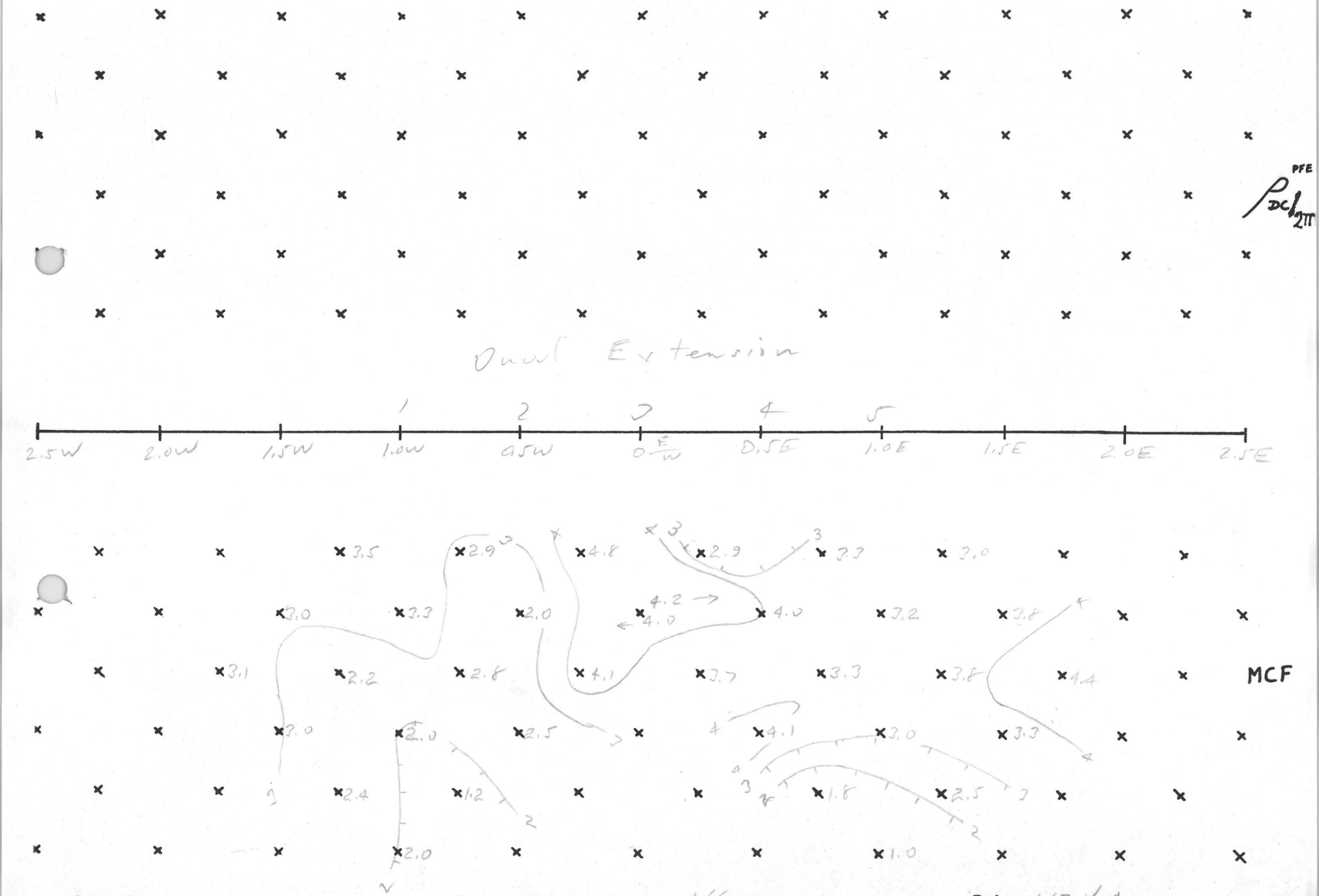
Duval Extension Line 1

# INDUCED POLARIZATION WORK SHEET




Area Duval Extension Line #1 - Spr. 1 - E & W½ Scale 1" = 500' Date 1/31/69

# INDUCED POLARIZATION WORK SHEET




Area _____ Scale 1" = 500 Date 1/31/69

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 1

Project DUVAL-EXT Line 2 E½ Field date 1-31-69 Data page _____ Comp. date 1-3-69. Comp by CSL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
| (B) Receive | 5-1.0E | → | 1.0-1.5E | → | → | 1.5-2.0E | → | → | → | 2.0-2.5E | → | |
| (C) n separation | 1 | 2 | 1 | 2 | 3 | 1 | 2 | 3 | 4 | 2 | 3 | 4 |
| (D) I | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1400 | 1600 | 1600 | 1600 |
| (E) Vdc (avg) | 160.0 | 43.3 | 157 | 42.8 | 18.05 | 139 | 41.9 | 18.6 | 8.68 | 47.1 | 21.7 | 11.85 |
| (F) DCcal USED | .933 | | | | | | | | | | | |
| (G) Kn x $10^{-3}$ | 1.5 | 6 | 1.5 | 6 | 15 | 1.5 | 6 | 15 | 30 | 6 | 15 | 30 |
| (H) ρdc=ExFxGx$10^3$/D | 140 | 152 | 137 | 150 | 158 | 121 | 147 | 163 | 186 | 165 | 190 | 208 |
| (I) Vac Σ | 155.5 | 41.5 | 152 | 41.1 | 17.40 | 135 | 40.5 | 18.0 | 8.38 | 45.4 | 20.9 | 11.50 |
| (J) AC noise x 2 | | | | | | | | | .84 | | | |
| (K) Vac(corr) $=\sqrt{I^2 - J^2}$ | | | | | | | | | 8.33 | | | |
| (L) AC-DC cal. USED | 1.000 | | | | | | | | | | | |
| (M) ρdc/ρac=ExL/K | 1.029 | 1.042 | 1.033 | 1040 | 1037 | 1030 | 1032 | 1033 | 1041 | 1038 | 1038 | 1030 |
| (N) PFE=(M-1)($10^2$) | 3 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 3 |
| (O) MCF=(M-1)($10^5$)/H | 21 | 28 | 22 | 27 | 23 | 25 | 22 | 20 | 22 | 23 | 20 | 14 |

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | | CAL | → | → | → | | |
| (B) Receive | → | 2.5-3.0E | → | → | → | | 9.5 | → | → | → | | |
| (C) n separation | 1 | 3 | 4 | 5 | 6 | | | | | | | |
| (D) I | 1400 | 1600 | 1600 | 1600 | 1400 | | 1000 | 1000 | 350 | 350 | | |
| (E) dc (avg) | 6.07 | 23.6 | 12.4 | 7.72 | 4.20 | | 107.6 | 104 | 38.5 | 37.6 | | |
| (F) DCcal | → | → | → | → | → | | .930 | .962 | .910 | .932 | | |
| (G) Kn x $10^{-3}$ | 52.5 | 15 | 30 | 52.5 | 84 | | | .933 | | | | |
| (H) ρdc=ExFxGx$10^3$/D | 212 | 206 | 217 | 236 | 236 | | | | | | | |
| (I) Vac Σ | 6.05 | 22.6 | 12.0 | 7.54 | 4.20 | | 105.6 | 104 | 37.2 | 37.6 | | |
| (J) AC noise x 2 | 1.00 | | | | .60 | | | | | | | |
| (K) Vac (corr) $=\sqrt{I^2 - J^2}$ | 5.97 | | | | 4.16 | | | | | | | |
| (L) AC-DC cal. | → | → | → | → | → | | .983 | 1.000 | .966 | 1.000 | | |
| (M) ρdc/ρac =ExL/K | 1018 | 1044 | 1033 | 1025 | 1010 | | | | | | | |
| (N) PFE=(M-1)($10^2$) | 2 | 4 | 3 | 3 | 1 | | | | | | | |
| (O) MCF=(M-1)($10^5$)/H | 9 | 21 | 15 | 11 | 4 | | | | | | | |

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page 2

Project DUVAL EX1 Line 2 W ½ Field date 1-31-64 Data page _____ Comp. date _____. Comp by CSL

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 3-4 | 4-5 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 |
| (B) Receive | .5-1.0 W | → | 1.0-1.5 W | → | → | 1.5-2.0 W | → | → | → | 2.0-2.5 W | → | |
| (C) n separation | 1 | 2 | 1 | 2 | 3 | 1 | 2 | 3 | 4 | 2 | 3 | 4 |
| (D) I | 1600 | 1600 | 1700 | 1700 | 1700 | 1400 | 1600 | 1600 | 1600 | 1400 | 1600 | 1600 |
| (E) Vdc (avg) | 155 | 43.6 | 177 | 40.0 | 17.3 | 105.3 | 33.7 | 14.6 | 8.19 | 24.1 | 13.8 | 7.65 |
| (F) DCcal USED | .932 | | | | | | | | | | | |
| (G) Kn x $10^{-3}$ | 1.5 | 6 | 1.5 | 6 | 15 | 1.5 | 6 | 15 | 30 | 6 | 15 | 30 |
| (H) ρdc=ExFxGx$10^3$/D | 135 | 153 | 145 | 131 | 142 | 105 | 118 | 128 | 143 | 96 | 121 | 134 |
| (I) Vac Σ | 148 | 41.9 | 172 | 39.2 | 16.6 | 101.9 | 32.6 | 14.2 | 7.98 | 23.4 | 13.5 | 7.50 |
| (J) AC noise x 2 | | | | | | | | | | | | |
| (K) Vac(corr) = $\sqrt{I^2 - J^2}$ | | | | | | | | | | | | |
| (L) AC-DC cal. USED | 1.000 | | | | | | | | | | | |
| (M) ρdc/ρac=ExL/K | 1048 | 1046 | 1029 | 1020 | 1041 | 1035 | 1033 | 1028 | 1025 | 1036 | 1022 | 1020 |
| (N) PFE=(M-1)($10^2$) | 5 | 4 | 3 | 2 | 4 | 4 | 3 | 3 | 3 | 3 | 2 | 2 |
| (O) MCF=(M-1)($10^5$)/H | 36 | 26 | 20 | 15 | 29 | 33 | 28 | 22 | 17 | 31 | 18 | 14 |

Project _____ Line _____ Field date _____ Data page _____ Comp. date _____ Comp by _____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | | (AL | → | → | → | | |
| (B) Receive | → | 2.5-3.0 W | → | → | → | | 1-2 | → | → | → | | |
| (C) n separation | 5 | 3 | 4 | 5 | 6 | | | | | | | |
| (D) I | 1600 | 1400 | 1600 | 1600 | 1600 | | 1000 | → | 350 | 350 | | |
| (E) ρdc (avg) | 4.84 | 13.2 | 9.40 | 5.53 | 3.92 | | 107.5 | 105 | 38.4 | 37.6 | | |
| (F) DCcal | → | → | → | → | → | | .930 | .953 | .912 | .931 | | |
| (G) Kn x $10^{-3}$ | 52.5 | 15 | 30 | 52.5 | 84 | | | .932 | | | | |
| (H) ρdc=ExFxGx$10^3$/D | 148 | 132 | 164 | 169 | 192 | | | | | | | |
| (I) Vac Σ | 4.78 | 12.8 | 9.12 | 5.40 | 3.84 | | 106.4 | 105 | 37.7 | 37.6 | | |
| (J) AC noise x 2 | | | | | | | | | | | | |
| (K) Vac (corr) = $\sqrt{I^2 - J^2}$ | | | | | | | | | | | | |
| (L) AC-DC cal. | → | → | → | → | → | | .990 | 1.000 | .982 | 1.000 | | |
| (M) ρdc/ρac =ExL/K | 1012 | 1031 | 1030 | 1024 | 1020 | | | | | | | |
| (N) PFE=(M-1)($10^2$) | 1 | 3 | 3 | 2 | 2 | | | | | | | |
| (O) MCF=(M-1)($10^5$)/H | 8 | 23 | 18 | 14 | 10 | | | | | | | |

# INDUCED POLARIZATION - RECEIVER NOTES

PAGE 1

N60°E

Project: Duval Ex Line: 1 - Spr. 1 - E½ Int.Cal _____ Date: 1/31/64

| Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rec. | .5-1.0E | → | 1.0-1.5E | → | → | 1.5-2.0E | → | → | → | 2.0-2.5E | → | → |
| ~~Time~~ Range | 300 | 100 | 300 | 100 | 30 | 300 | 100 | 30 | 10 | 100 | 30 | 30 |
| DC-1 | 80.0 | 21.4<br>21.0 | 79<br>79 | 22.2<br>21.0 | 9.1<br>9.0 | 69<br>70 | 21.4<br>20.6 | 9.3<br>9.3 | 4.50 4.18<br>4.27 4.50 | 23.8<br>23.3 | 10.3 11.3<br>11.0 10.7 | 6.1<br>5.9 |
| DC-2 | 80.0 | 22.0<br>21.7 | 80<br>78 | 21.0<br>22.0 | 9.0<br>9.1 | 70<br>69 | 20.5<br>21.3 | 9.3<br>9.3 | 4.20 4.44<br>4.40 4.18 | 23.3<br>23.8 | 11.3 10.2<br>10.9 11.0 | 5.7<br>5.9 |
| Σ | 160.0 | 43.4<br>43.3 | 159<br>157 | 43.2<br>43.0 | 18.1<br>18.1 | 139<br>140 | 41.9<br>41.9 | 18.6<br>18.6 | 8.70 8.62<br>8.67 8.68 | 47.1<br>47.1 | 21.6 21.5<br>21.9 21.7 | 11.8<br>11.8 |
| DC-3 | 80.0 | 21.3<br>22.0 | 79 78<br>78 78 | 22.0 22.0<br>21.2 21.2 | 9.1 9.1<br>8.9 8.9 | 70<br>70 | 21.4<br>20.6 | 9.3<br>9.3 | 4.42<br>4.50 | 23.8<br>23.5 | 10.4 11.1<br>10.9 10.2 | 5.8<br>6.1 |
| Dc-4 | 80.0 | 22.0<br>21.3 | 79 78<br>79 79 | 21.1 20.9<br>22.0 22.0 | 9.0 8.9<br>9.1 9.1 | 69<br>69 | 20.5<br>21.3 | 9.3<br>9.3 | 4.40<br>4.17 | 23.3<br>23.6 | 11.4 10.6<br>11.0 11.3 | 6.1<br>5.8 |
| Σ | 160.0 | 43.3<br>43.3 | 158 156<br>157 157 | 43.1 42.9<br>43.2 42.2 | 18.1 18.0<br>18.0 18.0 | 139<br>139 | 41.9<br>41.9 | 18.6<br>18.6 | 8.72<br>8.67 | 47.1<br>47.1 | 21.8 21.7<br>21.9 21.5 | 11.9<br>11.9 |
| DC-V | 160.0 | 43.3 | 157 | 42.8 | 18.05 | 139 | 41.9 | 18.6 | 8.68 | 47.1 | 21.7 | 11.85 |
| AC-1 | 77.5 | 20.7 | 76 | 20.5 | 8.7 | 67.5 | 20.2 | 9.0 | 4.19 | 22.7 | 10.4 | 5.8 |
| AC-2 | 78.0 | 20.8 | 76 | 20.6 | 8.7 | 67.5 | 20.3 | 9.0 | 4.19 | 22.7 | 10.5 | 5.7 |
| Σ | 155.5 | 41.5 | 152 | 41.1 | 17.40 | 135 | 40.5 | 18.0 | 8.38 | 45.4 | 20.9 | 11.50 |
| S. P. | -10.4 | → | +4.7 | → | → | +11.2 | → | → | → | +22.8 | → | → |
| AC-N | .11 | → | .20 | → | → | .42 | → | → | → | .50 | → | → |
| I.C. | 49.8 | → | 49.7 | → | → | 49.7 | → | → | → | 49.7 | → | → |

INDUCED POLARIZATION - RECEIVER NOTES PAGE 2

Project: Duval Ex. Line: 1 - Spr. 1 - E ½ Int.Cal _____ Date: 1/31/64

| Send | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | | CAL | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rec. | → | 25-3.0 E | → | → | → | | 4-5 | → | → | | | |
| Time | 10 | 30 | 30 | 10 | 10 | | 100 | 300 | 30 | 100 | | |
| DC-1 | 2.80<br>3.42 | 11.8 12.3<br>12.3 11.2 | 6.5<br>6.0 | 3.90<br>3.95 | 2.23<br>1.95 | | 53.8 | 52 | 19.2 | 18.8 | | |
| DC-2 | 3.33<br>2.72 | 11.9 11.1<br>11.5 12.0 | 5.9<br>6.3 | 3.80<br>3.80 | 2.00<br>2.20 | | 53.8 | 52 | 19.3 | 18.8 | | |
| Σ | 6.15<br>6.14 | 23.7 23.4<br>23.8 23.2 | 12.4<br>12.3 | 7.70<br>7.75 | 4.23<br>4.15 | | 107.6 | 104 | 38.5 | 37.6 | | |
| DC-3 | 2.80<br>2.97 | 11.8 12.0<br>12.4 11.7 | 6.3<br>6.1 | 3.87<br>3.95 | 2.23<br>2.01 | | 53.8 | 52 | 19.3 | 18.8 | | |
| Dc-4 | 3.20<br>3.03 | 12.0 11.6<br>11.4 11.7 | 6.1<br>6.3 | 3.83<br>3.87 | 2.01<br>1.19 | | 53.8 | 52 | 19.2 | 18.8 | | |
| Σ | 6.00<br>6.00 | 23.8 23.6<br>23.8 23.4 | 12.4<br>12.4 | 7.70<br>7.72 | 4.24<br>4.20 | | 107.6 | 104 | 38.5 | 37.6 | | |
| DC AV | 6.07 | 23.6 | 12.4 | 7.72 | 4.20 | | 107.6 | 104 | 38.5 | 37.6 | | |
| AC-1 | 3.00 | 11.2 | 6.0 | 3.77 | 2.10 | | 52.8 | 52 | 18.6 | 18.8 | | |
| AC-2 | 3.05 | 11.3 | 6.0 | 3.77 | 2.10 | | 52.8 | 52 | 18.6 | 18.8 | | |
| Σ | 6.05 | 22.6 | 12.0 | 7.54 | 4.20 | | 105.6 | 104 | 37.2 | 37.6 | | |
| S. P. | → | 215.8 | → | → | → | | | | | | | |
| AC-N | .50 → | .30 | → | .29 .28 | .30 .28 | | | | | | | |
| I.C. | → | 49.6 | → | → | → | | | | | | | |

INDUCED POLARIZATION - RECEIVER NOTES PAGE 3

Project: Duval Ex. Line: 1 - Spr. 1 - W½ (560°W) Int.Cal _____ Date: 1/31/64

| Send | 3-4 | 4-5 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rec. | .5-1.0W | → | 1.0-1.5W | → | → | 1.5-2.0W | → | → | → | 2.0-2.5W | → | → |
| Time | 300 | 100 | 300 | 100 | 30 | 100 | 30 | 30 | 10 | 30 | 30 | 10 |
| DC-1 | 77<br>77 | 21.6 22.1<br>22.1 21.5 | 89<br>88 | 19.0<br>20.1 | 8.6<br>8.6 | 53.3<br>53.0 | 16.4<br>17.4 | 6.8 6.8<br>7.7 7.8 | 4.03<br>4.17 | 12.1<br>11.9 | 6.9<br>6.9 | 4.00<br>3.60 |
| DC-2 | 78<br>78 | 22.1 21.5<br>21.4 21.1 | 88<br>89 | 20.1<br>19.9 | 8.7<br>8.7 | 52.6<br>52.4 | 17.4<br>16.3 | 7.6 7.8<br>6.8 6.8 | 4.17<br>4.00 | 11.9<br>12.3 | 6.9<br>6.9 | 3.66<br>4.00 |
| Σ | 155<br>155 | 43.7 43.6<br>43.5 43.6 | 177<br>177 | 40.0<br>40.0 | 17.3<br>17.3 | 105.9<br>105.4 | 33.6<br>33.7 | 14.4 14.6<br>14.5 14.6 | 8.20<br>8.17 | 24.0<br>24.2 | 13.8<br>13.8 | 7.66<br>7.60 |
| DC-3 | 78<br>78 | 21.5<br>22.2 | 89<br>88 | 20.0<br>20.0 | 8.7<br>8.6 | 52.5<br>52.3 | 16.3<br>17.4 | 6.9 6.8<br>7.8 7.8 | 4.03<br>4.13 | 12.4<br>11.9 | 6.9<br>6.9 | 4.09<br>3.58 |
| Dc-4 | 77<br>77 | 22.1<br>21.4 | 88<br>89 | 20.0<br>20.0 | 8.6<br>8.7 | 52.4<br>52.7 | 17.4<br>16.3 | 7.6 7.8<br>6.7 6.8 | 4.20<br>4.02 | 11.7<br>12.2 | 6.9<br>6.9 | 3.59<br>4.10 |
| Σ | 155<br>155 | 43.6<br>43.6 | 177<br>177 | 40.0<br>40.0 | 17.3<br>17.3 | 104.9<br>105.0 | 33.7<br>33.7 | 14.5 14.6<br>14.5 14.6 | 8.23<br>8.15 | 24.1<br>24.1 | 13.8<br>13.8 | 7.65<br>7.68 |
| DC AV | 155 | 43.6 | 177 | 40.0 | 17.3 | 105.3 | 33.7 | 14.6 | 8.19 | 24.1 | 13.8 | 7.65 |
| AC-1 | 74 | 21.0 | 86 | 19.7 | 8.3 | 51.0 | 16.3 | 7.1 | 3.98 | 11.7 | 6.8 | 3.75 |
| AC-2 | 74 | 20.9 | 86 | 19.5 | 8.3 | 50.9 | 16.3 | 7.1 | 4.00 | 11.7 | 6.7 | 3.75 |
| Σ | 148 | 41.9 | 172 | 39.2 | 16.6 | 101.9 | 32.6 | 14.2 | 7.98 | 23.4 | 13.5 | 7.50 |
| S. P. | +10.1 | → | +17.0 | → | → | +0.3 | → | → | → | +13.1 | → | → |
| AC-N | .03 | → | .40 | → | → | .45 | | | .57 | .30 | → | .20 |
| I.C. | 49.8 | → | 49.7 | → | → | 49.7 | → | → | → | 49.7 | → | → |

INDUCED POLARIZATION - RECEIVER NOTES PAGE 4

Project: Duval Ex. Line: 1 -Spv.1- Int.Cal Date: 1/31/64

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | | CAL | | | | | |
| Rec. | → | 2.5-3.0 W | | → | | | 1-2 | | | | | |
| Time | 10 | 30 | 10 | 10 | 10 | | 100 | 300 | 30 | 100 | | |
| DC-1 | 2.53<br>2.50 | 6.6<br>6.7 | 4.40<br>4.95 | 2.67 3.05<br>2.67 2.95 | 1.92<br>2.00 | | 53.7 | 52.5 | 19.2 | 18.8 | | |
| DC-2 | 2.30<br>2.37 | 6.6<br>6.5 | 4.90<br>4.79 | 2.60 2.55<br>2.53 2.55 | 2.00<br>1.94 | | 53.8 | 52.5 | 19.2 | 18.8 | | |
| Σ | 4.83<br>4.87 | 13.2<br>13.2 | 9.30<br>9.27 | 5.47 5.55<br>5.42 5.50 | 3.92<br>3.94 | | 107.5 | 105 | 38.4 | 37.6 | | |
| DC-3 | 2.47<br>2.36 | 6.5<br>6.2 | 4.38 4.58<br>5.00 4.90 | 2.97<br>2.83 | 1.92<br>2.00 | | 53.8 | 52.5 | 19.2 | 18.8 | | |
| Dc-4 | 2.37<br>2.47 | 6.3<br>7.0 | 5.00 4.97<br>4.46 4.58 | 2.63<br>2.77 | 2.00<br>1.91 | | 53.7 | 52.5 | 19.2 | 18.8 | | |
| Σ | 4.84<br>4.83 | 13.3<br>13.2 | 9.38 9.42<br>9.46 9.44 | 5.60<br>5.60 | 3.92<br>3.91 | | 107.5 | 105 | 38.4 | 37.6 | | |
| DC-V | 4.84 | 13.2 | 9.40 | 5.53 | 3.92 | | 107.5 | 105 | 38.4 | 37.6 | | |
| AC-1 | 2.39 | 6.4 | 4.55 | 2.70 | 1.92 | | 53.3 | 52.5 | 18.9 | 18.8 | | |
| AC-2 | 2.39 | 6.4 | 4.57 | 2.70 | 1.92 | | 53.1 | 52.5 | 18.8 | 18.8 | | |
| Σ | 4.78 | 12.8 | 9.12 | 5.40 | 3.84 | | 106.4 | 105 | 37.7 | 37.6 | | |
| S. P. | → | +1.4 | → | → | → | | | | | | | |
| AC-N | .21 .19 | .16 | → | → | → | | | | | | | |
| I.C. | → | 49.5 | → | → | → | | | | | | | |

# INDUCED POLARIZATION SENDER NOTES

Project: DUVAL EXT. Line: L E½ S Date: 1-31-64

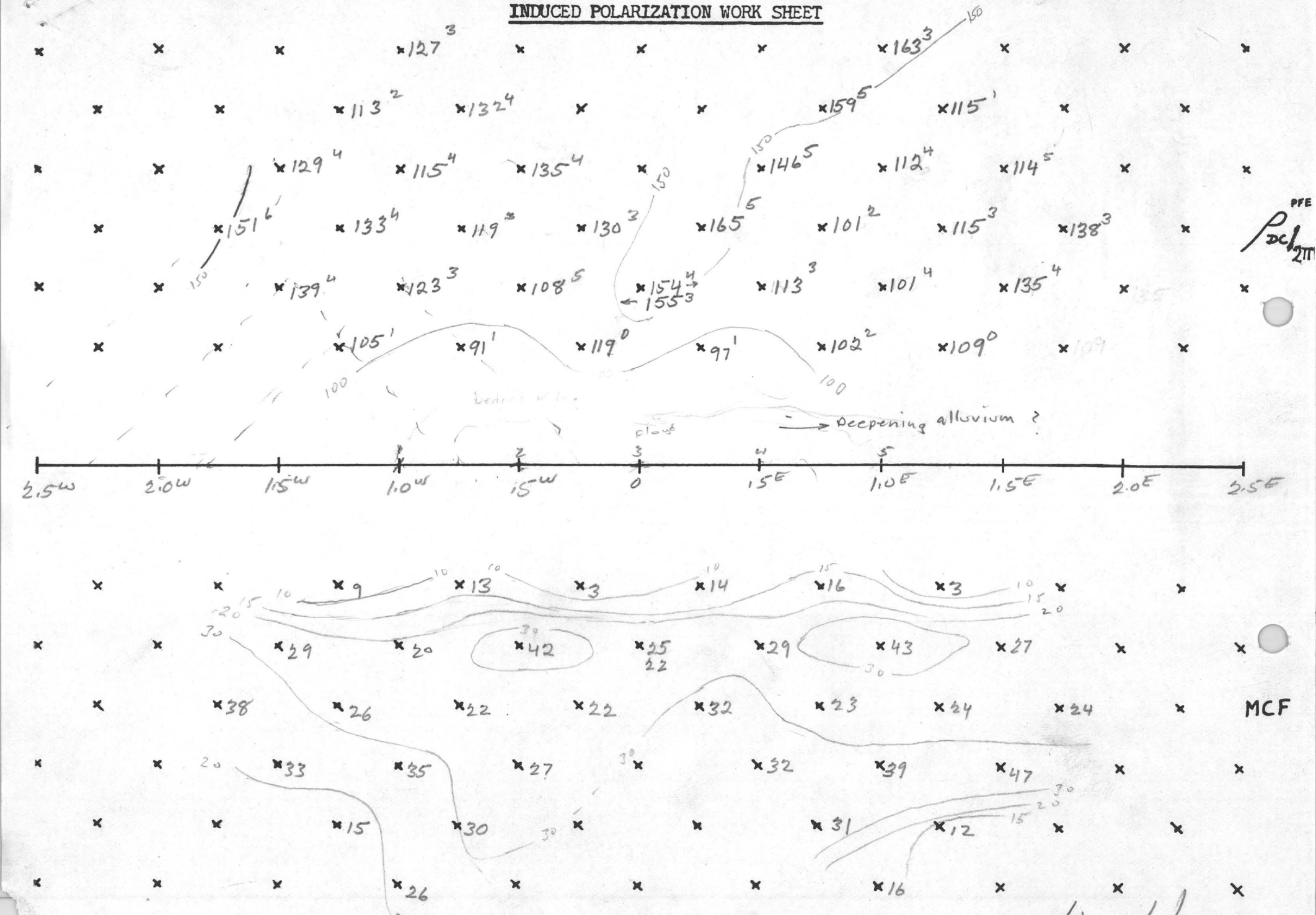
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
| Receive | → | → | → | → | → | → | → | → | → | → | → | → |
| Time | | | | | | | | | | | | |
| Range | | | | | | | | | | | | |
| Current | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1400 | 1600 | 1600 | 1600 |
| Send | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | | CAL | 4-5 | | | | |
| Receive | → | → | → | → | → | | | | | | | |
| Time | | | | | | | | | | | | |
| Range | | | | | | | | | | | | |
| Current | 1400 | 1600 | 1600 | 1600 | 1400 | | | 1000 | 350 | | | |

# INDUCED POLARIZATION SENDER NOTES

Project: DUVAL EXT Line: 1 W½ Date: 1-31-64

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 3-4 | 4-5 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 |
| Receive | → | → | → | → | → | → | → | → | → | → | → | → |
| Time | | | | | | | | | | | | |
| Range | | | | | | | | | | | | |
| Current | 1600 | 1600 | 1700 | 1700 | 1700 | 1400 | 1600 | 1600 | 1600 | 1400 | 1600 | 1600 |
| Send | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | | CAL | 1-2 | | | | |
| Receive | → | → | → | → | → | | | | | | | |
| Time | | | | | | | | | | | | |
| Range | | | | | | | | | | | | |
| Current | 1600 | 1400 | 1600 | 1600 | 1600 | | 1000 | 350 | | | | |

# INDUCED POLARIZATION WORK SHEET




Area Sec 14 - T15S - R12E Scale 1" = 500' Date 3/April/63

HEINRICHS GEOEXPLORATION COMPANY

INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Woolsey Line 1 - W½ Field date 4/2/63 Data page_____ Comp. date 4/3/63 . Comp by C.S.L.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 74 | 78 | 58 | 53 | 79 | 66 | 63 | 73 | 42 | 71 22 | 80 | 36 |
| (A) Send | 3-4 | 4-5 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 |
| (B) Receive | .5-1.0W | → | 1.0-1.5W | → | → | 1.5-2.0W | → | → | → | 2.0-2.5W | → | → |
| (C) n separation | 1 | 2 | 1 | 2 | 3 | 1 | 2 | 3 | 4 | 2 | 3 | 4 |
| (D) I | 1800 | — | — | — | — | — | — | — | — | — | — | — |
| (E) Vdc (avg) → | 145.4 | 47.4 | 112.0 | 32.9 | 15.94 | 129.1 | 37.5 | 14.52 | 8.26 | 43.1 41.7 | 16.28 | 7.09 |
| (F) DCcal USED | .980 | — | — | — | — | — | — | — | — | — | — | — |
| (G) Kn x $10^{-3}$ a=500' | 1.5 | 6 | 1.5 | 6 | 1.5 | 1.5 | 6 | 15 | 30 | 6 | 15 | 30 |
| (H) ρdc=ExFxGx$10^3$/D | 119 | 155 | 91 | 108 | 130 | 105 | 123 | 119 | 135 | 139 | 133 | 115 |
| (I) Vac Σ | 148.5 | 46.9 | 115.1 | 32.9 | 15.85 | 132.5 | 37.9 | 14.55 | 8.40 | 42.6 43.6 | 16.08 | 7.[illegible] |
| (J) AC noise x 2 | O.K. | — | — | — | — | — | — | — | — | — | — | — |
| (K) Vac(corr) = $\sqrt{I^2 - J^2}$ | — | — | — | — | — | — | — | — | — | — | — | — |
| (L) AC-DC cal. | 1.027 | 1.023 | 1.041 | 1.045 | 1.023 | 1.034 | 1.037 | 1.028 | 1.055 | 1.030 1.072 | 1.027 | 1.060 |
| (M) ρdc/ρac=ExL/K | 1.004 | 1.034 | 1.012 | 1.045 | 1.029 | 1.009 | 1.025 | 1.026 | 1.037 | 1.040 1.027 | 1.035 | 1.040 |
| (N) PFE=(M-1)($10^2$) | 0 | 3 | 1 | 5 | 3 | 1 | 3 | 3 | 4 | 4 4 3 | 4 | 4 |
| (O) MCF=(M-1)($10^5$)/H | 3 | 22 | 13 | 42 | 22 | 9 | 20 | 22 | 27 | 29 | 26 | 35 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 78 23 | 31 | 40 | 67 | 47 | | 54 | 17 | 65 | 21 | 84 | 28 |
| Project_____ | Line_____ | | Field date_____ | | Data page_____ | | Comp. date_____ | | | | Comp by_____ | |
| (A) Send | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | | CAL | — | — | — | — | — |
| (B) Receive | → | 2.5-3.0W | → | → | → | | 1-2 | — | — | — | — | — |
| (C) n separation | 5 | 3 | 4 | 5 | 6 | | | | | | | |
| (D) I | — | — | — | — | → | | 1000 | 1000 | 1200 | 1200 | 1600 | 1600 |
| (E) Vdc (avg) | 4.62 4.59 | 18.5 | 7.91 | 3.95 | 2.77 | × — | 103.5 | 100.5 | 124.1 | 122.0 | 164.6 | 160.5 |
| (F) DCcal | — | — | — | — | → | — | .966 | .995 | .967 | .984 | .973 | .[illegible] |
| (G) Kn x $10^{-3}$ | 52.5 | 15 | 30 | 52.5 | 84 | | | | .980 | | | |
| (H) ρdc=ExFxGx$10^3$/D | 132 | 151 | 129 | 113 | 127 | | | | | | | |
| (I) Vac Σ | 4.66 4.60 | 18.6 | 8.01 | 4.01 | 2.81 | × — | 107.6 | 103.5 | 120.0 | 127.0 | 168.5 | 170.0 |
| (J) AC noise x 2 | — | — | — | — | → | | | | | | | |
| (K) Vac (corr) = $\sqrt{I^2 - J^2}$ | — | — | — | — | → | | | | | | | |
| (L) AC-DC cal. | 1.023 1.071 | 1.064 | 1.056 | 1.033 | 1.050 | — | 1.040 | 1.029 | 1.047 | 1.041 | 1.023 | 1.060 |
| (M) ρdc/ρac =ExL/K | 1.015 1.068 | 1.058 | 1.042 | 1.017 | 1.033 | | | | | | | |
| (N) PFE=(M-1)($10^2$) | 2 4 7 | 6 | 4 | 2 | 3 | | | | | | | |
| (O) MCF=(M-1)($10^5$)/H | 30 | 38 | 33 | 15 | 26 | | | | | | | |

# HEINRICHS GEOEXPLORATION COMPANY
## INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page _____

Project Woolsey Line 1 - E ½ Field date 4/2/63 Data page _____ Comp. date 4/3/63 Comp by C.S.L.

| | 60 | 78 24 | 63 | 57 | 33 | 68 | 51 | 62 | 45 | 69 21 | 70 | 35 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
| (B) Receive | .5-1.0E | → | 1.0-1.5E | → | → | 1.5-2.0E | → | → | → | 2.0-2.5E | — | — |
| (C) n separation | 1 | 2 | 1 | 2 | 3 | 1 | 2 | 3 | 4 | 2 | 3 | 4 |
| (D) I | 1800 | — | — | — | — | — | — | — | — | — | — | — |
| (E) Vdc (avg) | 117.2 | 47.2 46.0 | 123.2 | 34.15 | 20.0 | 132.0 | 30.5 | 12.29 | 8.85 | 41.5 40.2 | 14.00 | 6.81 |
| (F) DCcal USED | .990 | — | — | — | — | — | — | — | — | — | — | — |
| (G) Kn x $10^{-3}$ | 1.5 | 6.0 | 1.5 | 6.0 | 15 | 1.5 | 6.0 | 15 | 30 | 6 | 15 | 30 |
| (H) $\rho$ dc=ExFxGx$10^3$/D | 97 | 154 | 102 | 113 | 165 | 109 | 101 | 101 | 146 | 135 | 115 | 113 |
| (I) Vac $\Sigma$ | 120.0 | 46.6 47.5 | 125.9 | 34.4 | 20.2 | 135.9 | 30.6 | 12.47 | 8.90 | 41.4 41.6 | 14.04 | 6.[illegible] |
| (J) AC noise x 2 | | | | | | | | | | | | |
| (K) Vac(corr) = $\sqrt{I^2 - J^2}$ | | | | | | | | | | | | |
| (L) AC-DC cal. | 1.039 | 1.024 1.071 | 1.037 | 1.042 | 1.063 | 1.032 | 1.047 | 1.038 | 1.052 | 1.031 1.073 | 1.030 | 1.061 |
| (M) $\rho$ dc/$\rho$ac=ExL/K | 1.014 | 1.039 1.038 | 1.016 | 1.033 | 1.053 | 1.003 | 1.043 | 1.023 | 1.047 | 1.036 1.037 | 1.027 | 1.044 |
| (N) PFE=(M-1)($10^2$) | 1 | 4 | 2 | 3 | 5 | 0 | 4 | 2 | 5 | 4 | 3 | 4 |
| (O) MCF=(M-1)($10^5$)/H | 14 | 25 | 16 | 29 | 32 | 3 | 43 | 23 | 32 | 27 | 24 | 39 |

Project _____ Line 28 83 Field date 35 68 57 Data page 54 Comp. date 17 64 21 Comp by 45 28

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | | C4L | — | — | — | — | — |
| (B) Receive | → | 2.5-3.0E | → | → | → | | 4-5 | — | — | — | — | — |
| (C) n separation | 5 | 3 | 4 | 5 | 6 | | | | | | | |
| (D) I | — | — | — | — | → | | 1000 | 1000 | 1200 | 1200 | 1600 | 1600 |
| (E) Vdc (avg) | 5.49 | 16.79 | 6.93 | 3.99 | 3.52 | × | 102.1 | 100.0 | 123.4 | 120.0 | 163.8 | 161.0 |
| (F) DCcal | — | — | — | — | → | | .980 | 1.000 | .972 | 1.000 | .978 | .9[illegible] |
| (G) Kn x $10^{-3}$ | 52.5 | 15 | 30 | 52.5 | 84 | | | | .990 | | | |
| (H) $\rho$ dc=ExFxGx$10^3$/D | 159 | 138 | 114 | 115 | 163 | | | | | | | |
| (I) Vac $\Sigma$ | 5.58 | 16.54 | 6.96 | 4.06 | 3.58 | × | 107.4 | 103.0 | 128.9 | 126.0 | 169.0 | 169.0 |
| (J) AC noise x 2 | | | | | | | | | | | | |
| (K) Vac (corr) = $\sqrt{I^2 - J^2}$ | | | | | | | | | | | | |
| (L) AC-DC cal. | 1.067 | 1.019 | 1.061 | 1.032 | 1.042 | | 1.051 | 1.030 | 1.043 | 1.050 | 1.033 | 1.050 |
| (M) $\rho$dc/$\rho$ac =ExL/K | 1.049 | 1.033 | 1.054 | 1.014 | 1.026 | | | | | | | |
| (N) PFE=(M-1)($10^2$) | 5 | 3 | 5 | 1 | 3 | | | | | | | |
| (O) MCF=(M-1)($10^5$)/H | 31 | 24 | 47 | 12 | 16 | | | | | | | |

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Woolsey Line: 1 - W1/2 Int.Cal 30.0 Date: 2/April/63

| Send | 3-4 | 4-5 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rec. | .5-1.0ω | → | 1.0-1.5ω | → | → | 1.5-2.0ω | → | → | → | 2.0-2.5ω | → | → |
| Time | 100 | 30 | 100 | 30 | 10 | 100 | 30 | 10 | 10 | 30 100 | 10 | 10 |
| DC-1 | 73.5<br>72.8 | 23.2 | 55.9 | 16.8 | 7.89<br>7.98 | 64.8 | 18.5<br>19.3 | 7.25<br>7.42 | 4.00<br>4.20 | 21.3 20.3<br>21.7 20.7 | 8.38<br>8.75 | 3.45<br>3.68 |
| DC-2 | 71.9<br>73.2 | 24.2 | 56.1 | 16.1 | 8.03<br>7.85 | 64.3 | 19.0<br>18.4 | 7.10<br>7.10 | 4.40<br>4.00 | 21.6 21.1<br>21.9 21.1 | 7.95<br>8.38 | 3.66<br>3.87 |
| Σ | 145.5 145.4 | 47.4 | 112.0 | 32.9 | 15.92<br>15.83 | 129.1 | 37.5<br>37.7 | 14.35<br>14.52 | 8.40<br>8.20 | 42.9 41.4<br>43.6 41.8 | 16.33<br>16.63 | 7.11<br>7.06 |
| DC-3 | 73.8 | 23.1 | 56.0 | 16.7 | 7.98<br>8.10 | 65.1 | 19.1<br>18.7 | 7.45<br>7.39 | 4.40<br>4.00 | 21.2 21.1<br>21.0 20.5 | 8.20<br>8.05 | 3.48<br>3.42 |
| Dc-4 | 72.1 | 24.3 | 56.0 | 16.2 | 7.90<br>8.02 | 64.0 | 18.4<br>18.7 | 7.00<br>7.22 | 4.00<br>4.28 | 21.8 20.5<br>21.9 21.6 | 8.20<br>8.45 | 3.61<br>3.67 |
| Σ | 145.4 | 47.4 | 112.0 | 32.9 | 15.88<br>16.13 | 129.1 | 37.5<br>37.4 | 14.45<br>14.61 | 8.40<br>8.28 | 43.0 41.6<br>42.9 42.1 | 16.50<br>16.90 | 7.09<br>7.09 |
| DC-AV | 145.4 | 47.4 | 112.0 | 32.9 | 15.94 | 129.1 | 37.5 | 14.52 | 8.26 | 43.1 41.7 | 16.28 | 7.09 |
| AC-1 | 74.3 | 23.4 | 57.5 | 16.4 | 7.92 | 66.2 | 18.9 | 7.27 | 4.19 | 21.3 21.8 | 8.03 | 3.61 |
| AC-2 | 74.2 | 23.5 | 57.6 | 16.5 | 7.93 | 66.3 | 19.0 | 7.28 | 4.21 | 21.3 21.8 | 8.05 | 3.61 |
| Σ | 148.5 | 46.9 | 115.1 | 32.9 | 15.85 | 132.5 | 37.9 | 14.55 | 8.40 | 42.6 43.6 | 16.08 | 7.22 |
| S. P. | | +1.3 | +1.1 | | | +6.6 | | | | -1.8 | | |
| AC-N | | | | | | | | | | | | |
| | | | | | | | | | | | | |

1.39
1.28
2.67

7.85
8.20
16.05

8.04
7.85
15.89

7.92
8.01
15.93

8.04
7.97
16.01

8.20
7.80
16.00

7.40
7.25
14.65

7.40
7.05
14.45

6.95
7.55
14.50

7.45
7.20
14.65

4.20
4.00
8.20

14.05
4.38
18.43

4.30
3.75
8.05

4.18
4.00
8.18

4.03
4.19
8.22

8.08
8.10
16.18

8.18
8.05
16.23

8.15
8.02
16.17

8.23
7.92
16.15

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: Woolsey Line: 1- W1/2 Int.Cal 50.0 Date: 4/8/63

| Send | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | | 1-2 | → | → | → | → | → |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rec. | 20-25W | 25-30W | → | → | → | | CAL | → | → | → | → | → |
| Time | 3 10 | 30 | 10 | 3 | 3 | | 100 | 300 | 100 | 300 | 100 | 300 |
| DC-1 | 2.40 2.35<br>2.42 2.48 | 8.8<br>8.9 | 4.00<br>4.00 | 2.06<br>1.98 | 1.20<br>1.42 | | 51.7 | 50.5 | 62.0 | 61.0 | 82.3 | 80 |
| DC-2 | 2.27 2.28<br>2.20 2.10 | 9.7<br>9.6 | 3.92<br>3.88 | 1.90<br>1.97 | 1.56<br>1.42 | | 51.8 | 50.0 | 62.1 | 61.0 | 82.3 | 80.5 |
| Σ | 4.67 4.63<br>4.62 4.58 | 18.5<br>18.5 | 7.92<br>7.88 | 3.96<br>3.95 | 2.76<br>2.84 | | 103.5 | 100.5 | 124.1 | 122.0 | 164.6 | 160.5 |
| DC-3 | 2.47 2.20<br>2.32 2.48 | 8.8<br>8.9 | 4.00<br>3.90 | 2.00<br>2.00 | 1.27<br>1.25 | | 51.7 | 50.5 | 62.1 | 61.0 | 82.3 | 80 |
| Dc-4 | 2.12 2.38<br>2.28 2.11 | 9.7<br>9.6 | 3.90<br>4.05 | 2.01<br>1.89 | 1.45<br>1.53 | | 51.8 | 50.0 | 62.0 | 61.0 | 82.3 | 80.5 |
| Σ | 4.59 4.58<br>4.10 4.59 | 18.5<br>18.5 | 7.90<br>7.95 | 3.89 4.01 | 2.72<br>2.78 | | 103.5 | 100.5 | 124.1 | 122.0 | 164.6 | 160.5 |
| DC-AV | 4.62 4.59 | 18.5 | 7.91 | 3.95 | 2.77 | | 103.5 | 100.5 | 124.1 | 122.0 | 164.6 | 160.5 |
| AC-1 | 2.33 2.30 | 9.3 | 4.00 | 2.00 | 1.40 | | 53.7 | 51.5 | 64.6 | 63.0 | 84.3 | 85.0 |
| AC-2 | 2.33 2.30 | 9.3 | 4.01 | 2.01 | 1.41 | | 53.9 | 52.0 | 65.4 | 64.0 | 84.2 | 85.0 |
| Σ | 4.66 4.60 | 18.6 | 8.01 | 4.01 | 2.81 | | 107.6 | 103.5 | 130.0 | 127.0 | 168.5 | 170.0 |
| S. P. | 0 | 0 | | | 0 | | | | | | 168.5 | |
| AC-N | | | | | .03 | | | | | | | |
| | | | | | | | | | | | | |

INDUCED POLARIZATION - RECEIVER NOTES PAGE 1

Project: Worley Line: 1 F½ Int.Cal 49.9 Date: 2/April/10

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
| Rec. | 1.5-1.0E | → | 1.0-1.5E | | → | 1.5-2.0E | | | → | 2.0-2.5E | | |
| ~~Time~~ Range | 100 | 30 100 | 100 | 30 | 30 | 100 | 30 | 10 | 10 | 30 100 | 10 | 10 |
| DC-1 | 59.7 | 23.7 23.0 | 61.5 | 17.1 | 10.1 10.5 | 66.1 | 15.2 | 6.20 6.23 | 4.37 | 20.7 20.0 | 6.83 6.95 | 3.40 3.62 |
| DC-2 | 57.5 | 22.3 24.2 | 61.7 | 17.0 | 9.9 9.7 | 65.9 | 15.3 | 6.10 6.04 | 4.47 | 20.8 20.1 | 7.08 7.15 | 3.37 3.20 |
| Σ | 117.2 | 46.0 47.2 | 123.2 | 34.1 | 20.0 20.2 | 132.0 | 30.5 | 12.30 12.27 | 8.84 | 41.5 40.2 | 13.91 14.10 | 6.77 6.82 |
| DC-3 | 59.7 | 23.7 23.0 | 61.5 | 17.2 | 10.0 | 66.1 | 15.2 | 6.20 6.23 | 4.33 | 20.7 20.0 | 6.90 6.80 | 3.40 3.38 |
| Dc-4 | 57.5 | 22.3 24.2 | 61.7 | 17.0 | 10.0 | 65.9 | 15.3 | 6.07 6.10 | 4.52 | 20.8 20.1 | 7.21 7.20 | 3.40 3.47 |
| Σ | 117.2 | 47.2 46.0 | 123.2 | 34.2 | 20.0 20.0 | 132.0 | 30.5 | 12.27 12.33 | 8.95 | 41.5 40.2 | 14.0 14.1 | 6.80 6.85 |
| DC-AV | 117.2 | 47.2 46.0 | 123.2 | 34.15 | 20.0 | 132.0 | 30.5 | 12.29 | 8.85 | 41.5 40.2 | 14.00 | 6.81 |
| AC-1 | 59.9 | 23.3 23.8 | 62.9 | 17.2 | 10.1 | 68.0 | 15.3 | 6.24 | 4.45 | 20.7 20.8 | 7.02 | 3.46 |
| AC-2 | 60.1 | 23.3 23.7 | 63.0 | 17.2 | 10.1 | 67.9 | 15.3 | 6.23 | 4.45 | 20.7 20.8 | 7.02 | 3.46 |
| Σ | 120.0 | 46.6 47.5 | 125.9 | 34.4 | 20.2 | 135.9 | 30.6 | 12.47 | 8.90 | 41.4 41.6 | 14.04 | 6.92 |
| S. P. | -4.6 → | -6.1 | | | -12.3 | | | | -8.3 | | | |
| AC-N | | 0 | | | 0 | | | | .03 | | | |
| | | | | | | | | | | | | |

INDUCED POLARIZATION - RECEIVER NOTES PAGE 2

Project: Woolsey Line: 2 E ½ Int.Cal 49.9 Date: 2/Apr/1963

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 1-2 | 4-5 | 2-4 | 2-3 | 1-2 | CAL | | | | | | |
| Rec. | → | 2.5-3.0 E | | → | | 4-5 | | | | | | |
| Time Range | 10 | 10 | 10 | 3 | 3 | 100 | 300 | 100 | 300 | 100 | 300 | |
| DC-1 | 2.83 | 8.37 8.37 | 3.40 3.42 | 2.00 2.01 | 1.72 1.83 | 51.1 | 50.0 | 61.7 | 60.0 | 81.9 | 80.5 | |
| DC-2 | 2.66 | 8.44 8.41 | 3.52 3.55 | 1.93 1.98 | 1.77 1.70 | 51.0 | 50.0 | 61.7 | 60.0 | 81.9 | 80.5 | |
| Σ | 5.49 | 16.81 16.78 | 6.92 6.97 | 3.93 3.99 | 3.49 3.53 | 102.1 | 100.0 | 123.4 | 120.0 | 163.8 | 161.0 | |
| DC-3 | 2.83 | 8.30 8.28 | 3.35 330 | 2.13 2.13 | 1.73 1.77 | 51.0 | 50 | 61.7 | 60.0 | 81.9 | 80.5 | |
| Dc-4 | 2.66 | 8.53 8.37 | 3.58 3.60 | 1.84 1.86 | 1.78 1.76 | 51.0 | 50 | 61.7 | 60.0 | 81.9 | 80.5 | |
| Σ | 5.49 | 16.83 16.75 | 6.93 6.90 | 4.00 3.99 | 3.51 3.53 | 102.0 | 100.0 | 123.4 | 1200 | 163.8 | 161.0 | |
| DC-AV | 5.49 | 16.79 | 6.93 | 3.99 | 3.52 | 102.1 | 100.0 | 123.4 | 120.0 | 163.8 | 161.0 | |
| AC-1 | 2.79 | 8.28 | 3.48 | 2.03 | 1.79 | 53.8 | 51.5 | 64.4 | 63.0 | 84.6 | 84.5 | |
| AC-2 | 2.79 | 8.26 | 3.48 | 2.03 | 1.79 | 53.8 | 51.5 | 64.5 | 63.0 | 84.4 | 84.5 | |
| Σ | 5.58 | 16.54 | 6.96 | 4.06 | 3.58 | 107.4 | 103.0 | 128.9 | 126 | 169.0 | 169.0 | |
| S. P. | +3.0 | | | | +17.6 | 19 | | | | | | |
| AC-N | | | | | .03 | .03 | | | | | | |
| | | | | | | | | | | | | |

# INDUCED POLARIZATION SENDER NOTES

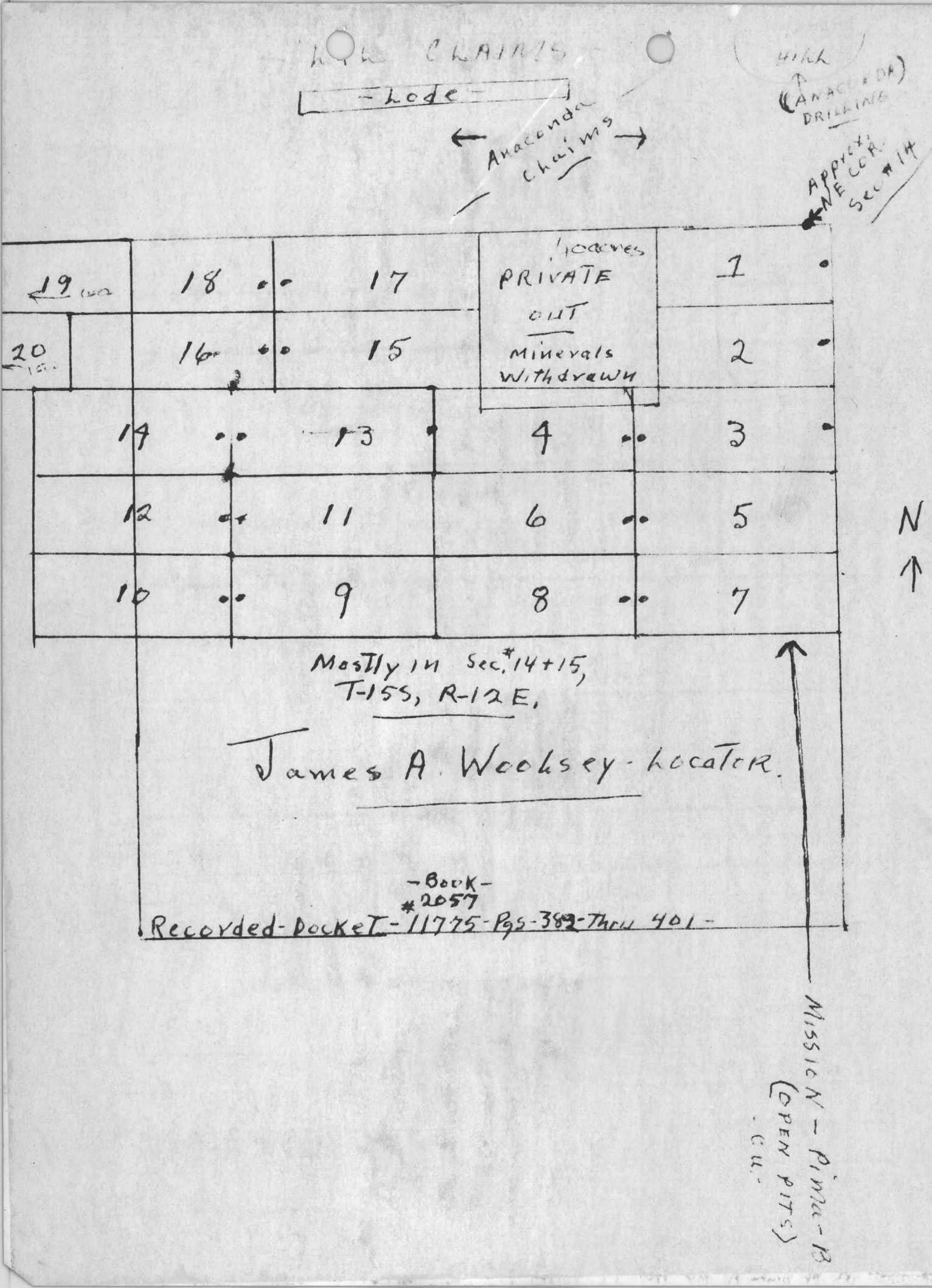
Project: _____ Line: 1 E ½ Date: 4-2-63

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
| Receive | → | → | → | → | → | → | → | → | → | → | → | → |
| Time | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 |
| Range | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Current | 1900 | 1800 | 1900 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Send | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | | CAL | 4-5 | | | | |
| Receive | → | → | → | → | → | | | | | | | |
| Time | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | | 2x5 | 2x6 | 2x8 | | | |
| Range | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | .75 | 1.0 | 1.50 | | | |
| Current | 1800 | 1800 | 1800 | 1800 | 1800 | | 1000 | 1200 | 1600 | | | |

# INDUCED POLARIZATION SENDER NOTES

Project: _____ Line: 1 E½ Date: 4-2-63

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 3-4 | 4-5 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 |
| Receive | → | → | → | → | → | → | → | → | → | → | → | → |
| Time | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 | 2x9 |
| Range | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Current | 1800 | 1800 | 1900 | 1900 | 1900 | 1900 | 1900 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Send | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | | CAL | 1-2 | | | | |
| Receive | → | → | → | → | → | | | | | | | |
| Time | 2x9 | | | | | | 2x5 | 2x6 | 2x9 | | | |
| Range | 2.0 | | | | | | .75 | .10 | 1.50 | | | |
| Current | 1800 | | | | | | 1000 | 1200 | 1600 | | | |



LOW CLAIMS

-Lode-

Hill
(ANACONDA) DRILLING

← Anaconda Claims →

Approx. NE COR. Sec #14

| | | | | |
|---|---|---|---|---|
| 19 | 18 | 17 | 40 acres PRIVATE OUT Minerals Withdrawn | 1 |
| 20 | 16 | 15 | | 2 |
| 14 | 13 | 4 | | 3 |
| 12 | 11 | 6 | | 5 |
| 10 | 9 | 8 | | 7 |

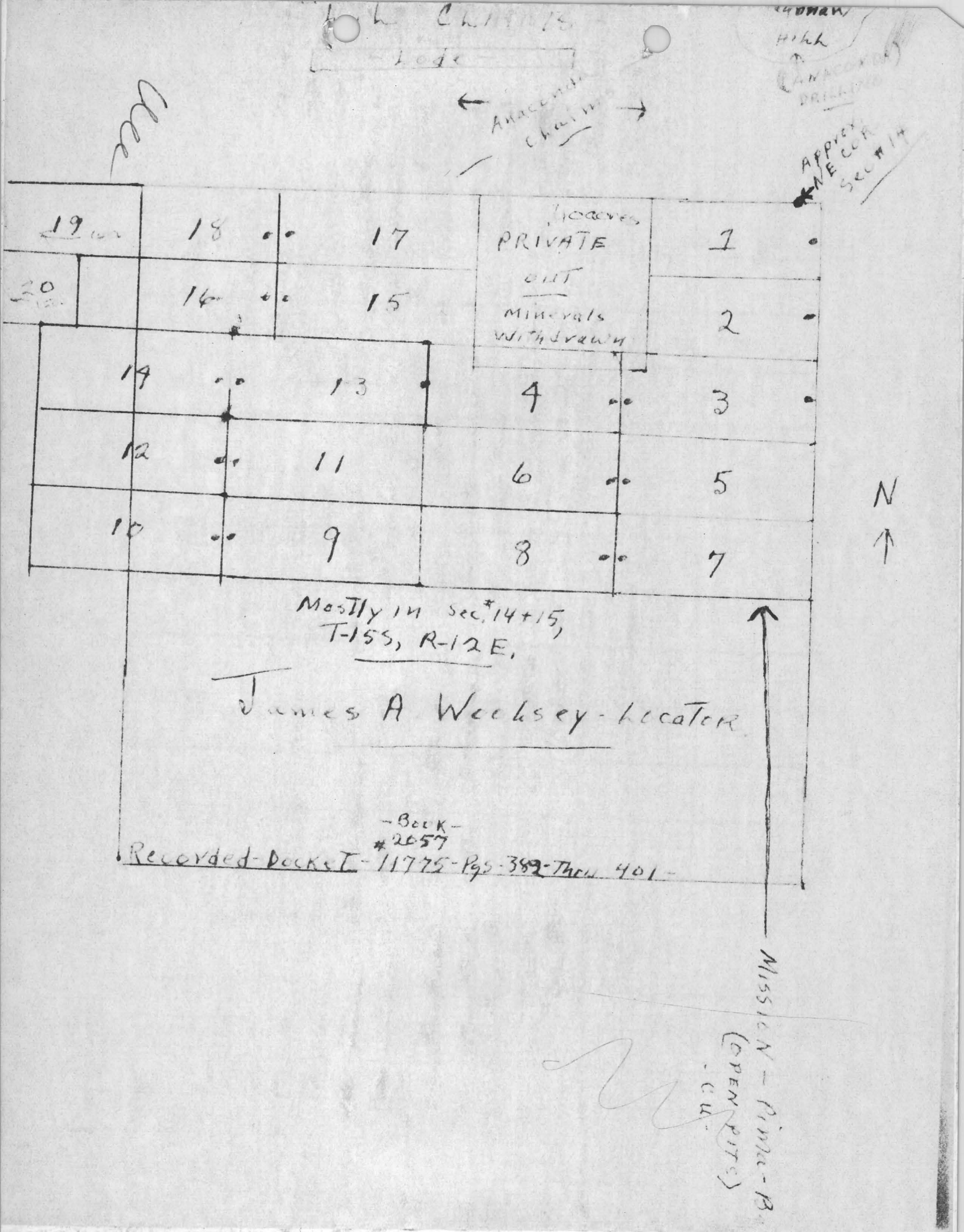
N ↑

Mostly in Sec. #14+15, T-15S, R-12E.

James A. Woolsey - Locator.

-Book-
#2057
Recorded-Docket-11775-Pgs-382-Thru 401-

MISSION - Pima-B (OPEN PITS) - CU.


Lode
Anaconda Chains
Approx NE COR Sec #14
19
18
17
Hoaores
PRIVATE
OUT
Minerals Withdrawn
1
20
16
15
2
14
13
4
3
12
11
6
5
10
9
8
7
N
Mostly in Sec. #14+15, T-15S, R-12E.
James A Woolsey - Locator
-Book-
#2057
Recorded-Docket-11775-Pgs-382-Thru 401-
Mission - Pima-B
(OPEN PITS)
-CU-

# "Lil" CLAIMS

- Lode -

Anaconda Claims

Saginaw Hill

(ANACONDA) DRILLING

Approx. NE COR. Sec #14

| | | | | |
|---|---|---|---|---|
| 19 1500 | 18 | 17 | 40 acres PRIVATE OUT Minerals Withdrawn | 1 |
| 20 1500 | 16 | 15 | | 2 |
| 14 | 13 | | 4 | 3 |
| 12 | 11 | | 6 | 5 |
| 10 | 9 | | 8 | 7 |

N

Mostly in Sec. #14+15, T-15S, R-12E.

James A. Woolsey - Locator.

-Book- #2057

Recorded - Docket - 11775 - Pgs - 382 - Thru 401 -

Mission - Pima - Banner - 9 miles

(OPEN PITS) - Cu.

# STATE LAND DEPARTMENT
## STATE OF ARIZONA

Township No._____ Range No._____

| | | | | | |
|---|---|---|---|---|---|
| 6 | 5 | 4 | 3 | 2 | 1 |
| 7 | 8 | 9 | 10 | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34 | 35 | 36 |

B FORM 990

Woolsey
N Saginaw Line #1 - W 1/2 Int Cal 48.2.
10/May/63

| Scale | 1-2 | → | | | | |
|---|---|---|---|---|---|---|
| Rec | CAL. | → | | | | |
| | 30R | 100R | 100 | 300 | 100 | 300 |
| DC 1 | 25.5 | 24.7 | 49.9 | 48 | 60.5 | 58 |
| 2 | 25.5 | 24.7 | 49.9 | 48 | 60.5 | 58 |
| 3 | | | | | 121 | 116 |
| ~~V Av~~ | | | | | | |
| DC Av | 51.0 | 49.4 | 99.8 | 96 | | |
| | | | | | | |
| AC1 | 25.5 | 25.0 | 51.2 | 48 | 61.5 | 58 |
| AC2 | 25.1 | 25.2 | 51.2 | 48 | 61.8 | 58 |
| AC Σ | 51.2 | 50.2 | 102.4 | 96 | 123.3 | 116 |
| | | | | | | |
| | 81% | 25 | 51 | 15% | 62 | 19% |

(2) Woolsey 1-W 1/2 10 May

| 3-4 | | 4-5 | 2-3 | | 3-4 | | 4-5 | |
|---|---|---|---|---|---|---|---|---|
| 30 | 180 | 10R | 10 | 30 | 35 | | 1 | |
| 28.4 | 26.5 | 3.50 | 8.7 | 8.3 | 1.91 | | .55 | .60 |
| 27.2 | 27.0 | 3.55 | 8.2 | 8.3 | 1.80 | | .48 | .39 |
| 55.6 | 53.5 | 7.05 | 16.9 | 16.6 | 3.69 | | 1.03 | .99 |
| 28.4 | 26.5 | 3.45 | 8.1 | 8.2 | 1.94 | | .51 | .50 |
| 27.2 | 27.0 | 3.50 | 8.8 | 8.4 | 1.82 | | .51 | .49 |
| 55.6 | 53.5 | 6.95 | 16.9 | 16.6 | 3.71 | | 1.02 | .99 |
| 55.6 | 53.5 | 7.00 | 16.9 | 16.6 | 3.71 | | 1.01 | DC AV. |
| 27.3 | 26.8 | 3.47 | 8.05 | 7.8 | 1.81 | | .525 | AC. 1 |
| 27.3 | 27.0 | 3.47 | 8.07 | 7.8 | 1.82 | | .525 | 2 |
| 54.6 | 53.8 | 6.94 | 16.12 | 15.6 | 3.63 | | 1.050 | Σ |
| S.P. | | +67.8 | -83.3 | | -84.7 | | | |
| ACM | | .3 mv | | | | | 0.10 mv. | |
| | | 3.50 | | | | | | |
| | | 3.50 | | | | | | |

(2)

Woolsey 10 May

1 - W 1/2 very noisy

(.125) (.125)

86

5 ) 432
40
32

| Send | 1-2 | 2-3 | 3-4 | 4-5 | |
|---|---|---|---|---|---|
| Rec | 1.5-2W 52% | → | | | |
| | 30R | 10R. | 3R 52% | 1 R. | |
| DC 1 | 10.6 10.6 | 4.45 4.3 | 1.56 | .83 | .62 |
| 2 | 10.4 10.4 | 4.45 4.62 | 1.91 | .72 | .90 |
| | 21.0 | 8.90 8.92 | 3.47 | 1.55 | 1.52 |
| 3 | 10.0 | 4.5 | 1.63 | .82 | .90 |
| 4 | 11.0 | 4.5 | 1.69 | .78 | .65 |
| | 21.0 | 8.90 | 3.32 | 1.60 | 1.55 |
| DC AV. | 21.0 | 8.86 | 3.34 | 1.55 | |
| AC 1 | 10.2 | 4.30 | 1.66 | .825 | DC SP very Noisy |
| 2 | 10.2 | 4.30 | 1.67 | .825 | |
| AC 2 | 20.4 | 8.60 | 3.33 | 1.65 | |
| SP | +68.2 | | | | |
| | | | 1.57 | | |
| | | | 1.70 | | |
| | | | 3.27 | | |
| | | 4.35 | 1.54 (.65) | | |
| | | 4.35 | .77 | | |
| | | 8.70 | .33 | | |
| | | 4.50 | 1.61 | | |
| | | 4.40 | 1.76 | | |
| | | 8.90 | 3.37 | | |
| | | | 1.54 | | |
| | | | 1.74 | | |
| | | | 3.28 | | |
| | | | 1.48 | | |
| | | | 1.88 | | |
| | | | 3.36 | | |

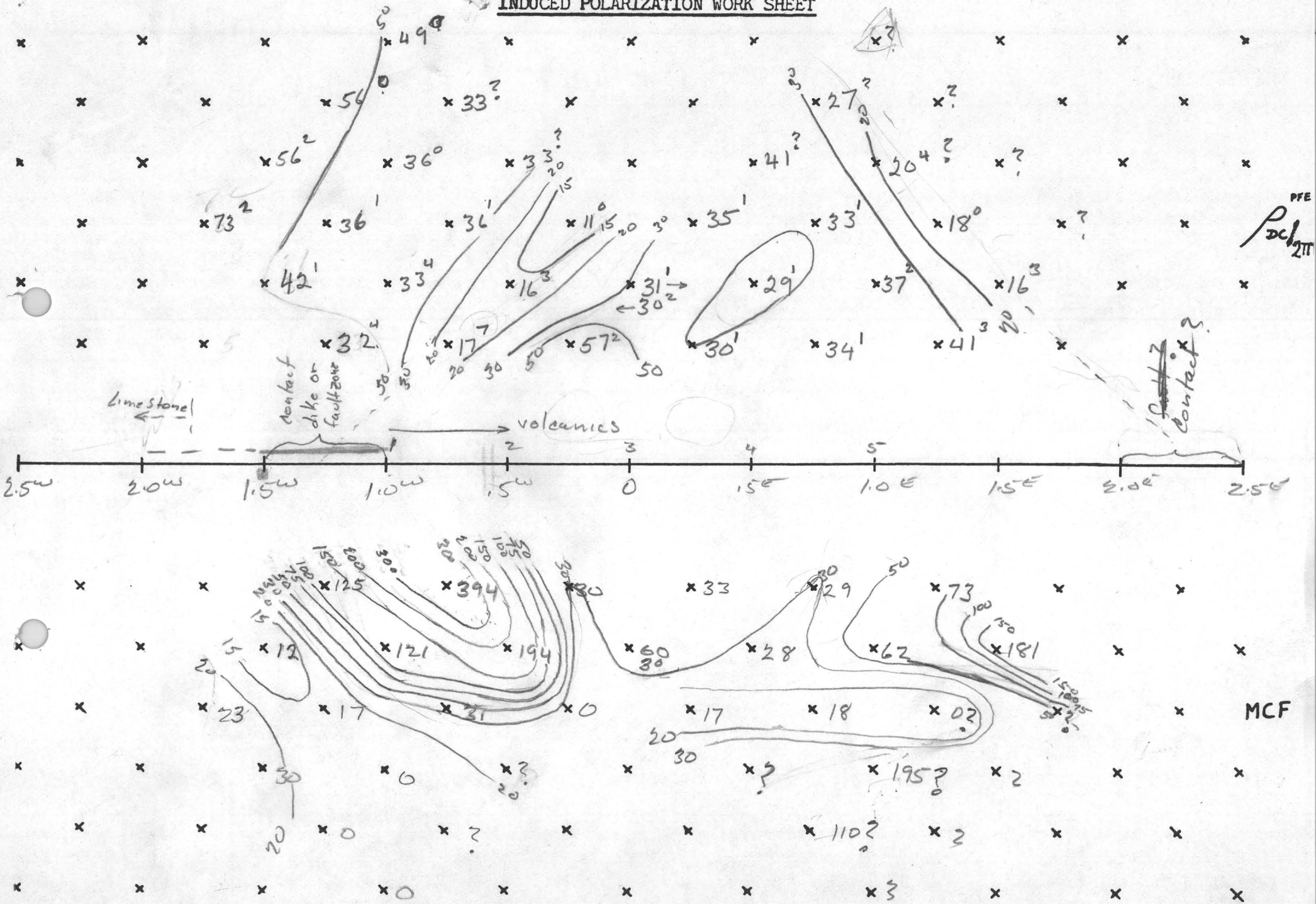
(4) Woolsey - W 1/2
10/May

| Seed | 1-2 | 2-3 | 3-4 | 4-5 | |
|---|---|---|---|---|---|
| | 42 | 69% | 39% | 53 | |
| RCC | 2.25 | | | | |
| | 1R | 3R. | 3R. | 1R | |
| DC-1 | 4.02 | 1.86 | .88 | .63 | |
| 2 | 4.50 | 2.03 | 1.12 | .35 | |
| | 8.52 | 3.89 | 2.00 | .98 | |
| 3 | 4.30 | 1.71 | 1.02 | .43 | |
| 4 | 4.22 | 2.09 | .75 | .56 | |
| | 8.52 | 3.80 | 1.77 | .99 | |
| 5 | 3.90 | 1.87 | .78 | .34 | |
| 6 | 4.38 | 1.96 | 1.22 | .67 | |
| | 8.28 | 3.83 | 2.00 | 1.01 | |
| 7 | 4.10 | 1.82 | 1.09 | .63 | |
| 8 | 4.20 | 1.92 | .78 | .40 | |
| | 8.30 | 3.74 | 1.87 | 1.03 | |
| DC Av. | 8.39 | 3.83 | 1.93 | 1.01 | |
| AC 1 | 4.21 | 1.92 | .98 | .530 | |
| 2 | 4.21 | 1.92 | .98 | .530 | |
| ACE | 8.42 | 3.84 | 1.96 | 1.062 | |
| | | | | | |
| S.P | -39.1 | →49.4 | | | |
| ACM | .07 .12 | | 1.28 | .05 | |
| | | | .67 | | |
| | | | 1.95 | | |
| | | | .86 | | |
| | 3.90 | 1.69 | 1.05 | .33 | |
| | 4.40 | 2.10 | 1.91 | .66 | |
| | 8.30 | 3.79 | | .99 | |
| | | | .83 | .29 | |
| | 3.95 | 1.77 | 1.17 | .75 | |
| | 4.45 | 2.16 | 2.00 | 1.04 | |
| | 8.40 | 3.93 | | | |

5 Woolsey 10/May

| Sent | 1-2 | 2-3 | 3-4 | 4-5 | |
|---|---|---|---|---|---|
| Rec | 2.5-3 | | | | |
| | 3R 60% | 3R 4% | 1R 78% | 1R 44% | |
| DC1 | 2.31 | 1.28 | .84 | .34 | |
| DC2 | 2.57 | 1.45 | .62 | .47 | |
| | 4.88 | 2.73 | 1.46 | | |
| DC3 | 2.14 | 1.32 | .56 | | |
| 4 | 2.64 | 1.31 | .841 | | |
| | 4.78 | 2.63 | 1.40 | | |
| 5 | 2.30 | 1.18 | .88 | | |
| 6 | 2.62 | 1.37 | .66 | | |
| | 4.92 | 2.55 | 1.54 | | |
| 7 | 2.18 | 1.36 | .84 | | |
| 8 | 2.62 | 1.18 | .74 | | |
| | 4.80 | 2.54 | 1.58 | | |
| DC Av. | 4.87 | 2.63 | 1.50 | .81 ? | |
| AC1 | 2.42 | 1.30 | .78 | .435 | |
| 2 | 2.42 | 1.31 | .78 | .435 | |
| ACE | 4.84 | 2.61 | 1.56 | .87 | |
| SP | -9.6 | -10.9 | | -11.9 | |
| ACH | | | | .14 | DC Noise 0-.2MV |
| | 2.77 | 1.33 | .79 | | |
| | 2.25 | 1.38 | .77 | | |
| | 5.02 | 2.71 | 1.56 | | |
| | 2.64 | | | | |
| | 2.18 | | | | |
| | 4.82 | | | | |
| | 2.85 | | | | |
| | 2.02 | | | | |
| | 4.87 | | | | |

# INDUCED POLARIZATION WORK SHEET




Area N. Saginaw – J.A. Woolsey Scale 1" = 500' Date 12/May/63

1.1
.04
1.06

2.74
.04
26

# HEINRICHS GEOEXPLORATION COMPANY
## INDUCED POLARIZATION SURVEY COMPUTATION SHEET

JA Woolsey

Page_____

Project N-Saginaw Line #1-W/2 Field date 10/May/63 Data page_____ Comp. date_____. Comp by_____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 3-4 | 4-5 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | 1-2 | 2-3 | 3-4 |
| (B) Receive | .5-1.0W | → | 1.0-1.5W | → | → | 1.5-2.0W | → | → | → | 2.0-2.5W | → | → |
| (C) n separation | 86 27 | 35 | 81 25 | 57 | 53 | 32 | 43 | 52 | 83 | 42 | 61 | 31 |
| (D) I | 1400 | 1400 | 1400 | 1400 | 1400 | 1000 | 1600 | 1400 | 1400 | 1200 | 1600 | 1600 |
| (E) Vdc (avg) | 55.6 53.5 | 7.00 | 16.91 16.6 | 3.71 | 1.01 | 21.0 | 8.86 | 3.34 | 1.55 | 8.39 | 3.83 | 1.93 |
| (F) DCcal | 1.000 | | | | | | | | | | | |
| (G) Kn x $10^{-3}$ | 1.5 | 6 | 1.5 | 6 | 15 | 1.5 | 6 | 15 | 30 | 6 | 15 | 30 |
| (H) ρdc=ExFxGx$10^3$/D | 57 | 30 | 17 | 16 | 11 | 32 | 33 | 36 | 33 | 42 | 36 | 36 |
| (I) Vac Σ | 54.6 53.8 | 6.94 | 16.12 15.6 | 3.63 | 1.05 | 20.4 | 8.60 | 3.33 | 1.65 | 8.92 | 3.84 | 1.96 |
| (J) AC noise x 2 | | | | | .20 | | | | .20 | | | .20 |
| (K) Vac(corr) = $\sqrt{I^2 - J^2}$ | | | | | 1.03 | | | | 1.64 | | | |
| (L) AC-DC cal. | 1.010 | | | | | | | | | | | |
| (M) ρdc/ρac=ExL/K | 1.029 1.005 | 1.018 | 1.059 1.069 1.075 | 1.031 | .991 | 1.040 | 1.040 | 1.011 | .950 | 1.005 | 1.006 | 1.000 |
| (N) PFE=(M-1)($10^2$) | 2 | 2 | 6 7 8 | 3 | 0 | 4 | 4 | 1 | → | 1 | 1 | 0 |
| (O) MCF=(M-1)($10^5$)/H | 30 | 60 | 394 | 194 | 0 | 125 | 121 | 31 | • | 10 | 17 | 0 |

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | | 1-2 | → | → | → | → | → |
| (B) Receive | 2.0-2.5W | 2.5-3.0W | → | → | → | | CAL | → | → | → | → | → |
| (C) n separation | 53 | 66 | 41 | 78 | 44 | | 81% | 25% | 51% | 15% | 62% | 19% |
| (D) I | 1600 | 1000 | 1400 | 1400 | 1400 | | 500 | 500 | 1000 | 1000 | 1200 | 1200 |
| (E) Vdc (avg) | 1.01 | 4.87 | 2.63 | 1.50 | .81 | | 51.0 | 49.4 | 99.8 | 96 | 121 | 116 |
| (F) DCcal | 1.000 | → | → | → | → | | .980 | 1.011 | 1.001 | ~~1.042~~ | .991 | 1.035 |
| (G) Kn x $10^{-3}$ | 52.5 | 15 | 30 | 52.5 | 84 | | | | | | | |
| (H) ρdc=ExFxGx$10^3$/D | 33 | 73 | 56 | 56 | 49 | | | | | | | |
| (I) Vac Σ | 1.06 | 4.84 | 2.61 | 1.56 | .87 | | | | | | | |
| (J) AC noise x 2 | .20 | | | .28 | .28 | | | | | | | |
| (K) Vac (corr) = $\sqrt{I^2 - J^2}$ | 1.04 | | | 1.53 | .82 | | 51.2 | 50.2 | 102.4 | 96 | 123.3 | 116 |
| (L) AC-DC cal. | 1.010 | → | → | → | → | | 1.002 | 1.016 | 1.025 | 1.000 | 1.018 | 1.000 |
| (M) ρdc/ρac =ExL/K | .952 | 1.017 | 1.017 | .991 | .998 | | | | | | | |
| (N) PFE=(M-1)($10^2$) | | 2 | 2 | — | 0 | | | | | | | |
| (O) MCF=(M-1)($10^5$)/H | 2 | 23 | 30 | 0 | 0 | | | | | | | |

2.44
.08
2.36

.76
.08
.68

HEINRICHS GEOEXPLORATION COMPANY
INDUCED POLARIZATION SURVEY COMPUTATION SHEET

Page_____

Project Woolsey M-Saginaw Line # 1 E/2 Field date 9/May/83 Data page_____ Comp. date_____. Comp by_____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
| (B) Receive | 1.5-1.0E | → | 1.0-1.5E | → | → | 1.5-2.0E | → | → | → | 2-2.5E | → | → |
| (C) n separation | 45 | 31 | 43 | 29 | 37 | 47 | 33 | 39 | 72 | 45 | 68 | 36 |
| (D) I | 1400 | 1200 | 1200 | 1200 | 1000 | 1100 | 1100 | 1100 | 1000 | 1100 | 1100 | 1075 |
| (E) Vdc (avg) | 28.4 | 6.20 | 27.4 | 5.79 | 2.35 | 30.4 | 6.73 | 2.41 | 1.37 | 2.91 | 1.32 | .71 |
| (F) DCcal | 1.000 | → | → | → | → | → | → | → | → | → | → | → |
| (G) Kn x $10^{-3}$ | 1.5 | 6 | 1.5 | 6 | 15 | 1.5 | 6 | 15 | 30 | 6 | 15 | 30 |
| (H) ρdc=ExFxGx$10^3$/D | 30 | 31 | 34 | 29 | 35 | 41 | 37 | 33 | 41 | 16 | 18 | 20 |
| (I) Vac Σ | 28.4 | 6.20 | 27.4 | 5.80 | 2.36 | 29.8 | 6.64 | 2.42 | 1.43 | 2.86 | 1.36 | .72 |
| (J) AC noise x 2 | | | | | | | | | .20 | | .20 | .20 |
| (K) Vac(corr) =$\sqrt{I^2 - J^2}$ | | | | | | | | | 1.41 | | 1.34 | .69 |
| (L) AC-DC cal. | 1.010 | → | → | → | → | → | → | → | → | → | → | → |
| (M) ρdc/ρac=ExL/K | 1.010 | 1.010 | 1.010 | 1.008 | 1.006 | 1.030 | 1.023 | 1.006 | .981 | 1.029 | .996 | 1.039 |
| (N) PFE=(M-1)($10^2$) | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 1 | 2 | 3 | 0 | 4 |
| (O) MCF=(M-1)($10^5$)/H | 33 | 32 | 29 | 28 | 17 | 73 | 62 | 18 | ? | 181 | 0 | 195 |

Project_____ Line_____ Field date_____ Data page_____ Comp. date_____ Comp by_____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Send | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | | 4-5 | | | | | |
| (B) Receive | 2.25E | 2.5-3.0E | → | → | → | | CAL | | | | | |
| (C) n separation | 28 | | | | | | 51 | 15 | 61 | 19 | 22 | 71 |
| (D) I | 1000 ? | | | | | | 100 | 1000 | 1200 | 1200 | 1400 | 1400 |
| (E) Vdc (avg) | .52 | | | | | | 161 | 96 | 119.9 | 114.5 | 136 | 139 |
| (F) DCcal | 1.000 | → | → | → | → | | .991 | 1.042 | 1.001 | 1.048 | 1.030 | 1.007 |
| (G) Kn x $10^{-3}$ | 52.5 | 15 | 30 | 52.5 | 84 | | | | | | | |
| (H) ρdc=ExFxGx$10^3$/D | 27 | | | | | | | | | | | |
| (I) Vac Σ | .55 | | | | | | 102 | 96 | 122.0 | 115.0 | 136 | 142.4 |
| (J) AC noise x 2 | .20 | | | | | | | | | | | |
| (K) Vac (corr) =$\sqrt{I^2 - J^2}$ | .51 | | | | | | | | | | | |
| (L) AC-DC cal. | 1.010 | | | | | | 1.010 | 1.000 | 1.018 | 1.002 | 1.000 | 1.023 |
| (M) ρdc/ρac =ExL/K | 1.030 | | | | | | | | | | | |
| (N) PFE=(M-1)($10^2$) | 3 | | | | | | | | | | | |
| (O) MCF=(M-1)($10^5$)/H | 110 | | | | | | | | | | | |

1.86
.04
.5 1.82
.2
.04
.5
.8
.57
.04
.4
.302
.04
.26

# INDUCED POLARIZATION SENDER NOTES

Project: Woolsey H. Saginaw Line: #1 - W1/2 Date: 10/May

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 3-4 (2) | 4-5 (3) | 2-3 (4) | 3-4 (5) | 4-5 (6) | 1-2 (1) | 2-3 | 3-4 | 4-5 | 1-2 (7) | 2-3 | 3-4 |
| Receive | .5-1.0w | → | 1.0-1.5w | → | → | 600 x2 1200 | 1.5-2.0w | → | ← | 2.0-2.5w | → | → |
| Time | | | | | | 500 x2 1000 | | | | | | |
| Range | 700 2 | 700 2 | 700 2 | 700 2 | 700 2 | AC 500 x2 | 800 2 | 700 2 | 700 2 | 500 2 | 800 2 | 800 2 |
| Current | 1400 | 1400 | 1400 | 1400 | 1400 | 1000 | 1600 | 1400 | 1400 | 1200 | 1600 | 1600 |
| Send | 4-5 | 1-2 | 2-3 | 3-4 | 4-5 | | 1-2 | → | → | → | → | → |
| Receive | 2.0-2.5w | 2.5-3.0w | → | → | → | | CAL | → | → | → | → | → |
| Time | | | | | | | ? | ? | ? | ? | ? | ? |
| Range | 800 2 | 600 2 | 700 2 | 700 2 | 700 2 | | 500 2 | 600 x2 | 500 x1 | | | |
| Current | 1600 | 1000 | 1400 | 1400 | 1400 | | 1000 | 1200 | 500 | | | |

# INDUCED POLARIZATION SENDER NOTES

Project: Woolsey Saginaw Hill Line: #1 - E 1/2 Date: 9/May

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
| Receive | 0.5-1.0 | → | 1.0-1.5 | → | → | 1.5-2.0 | → | → | → | 2.0-2.5 | → | → |
| Time | | | | | | | | | | | | |
| Range | | | | | | | | | 5.116 x 2 | | | 5.374 x 2 |
| Current | 700 x 2 1400 | 600 x 2 1200 | 600 x 2 1200 | 600 x 2 1200 | 500 x 2 1000 | 5.5 x 2 1100 | 5.5 x 2 1100 | 5.5 x 2 1100 | 5 x 2 1000 | 5.5 x 2 1100 | 5.5 x 2 1100 | 10.75 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | | ~~CAL~~ 4-5 | → | → | → | → | → |
| Receive | 2.0-2.5 | 2.5-3.0 | → | → | → | | CAL | on 4-5 | | | | |
| Time | | | | | | | 500 | 600 | 700 | | | |
| Range | | | | | | | x 2 | x 2 | x 2 | | | |
| Current | 1000 | | | | | | | | | | | |

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: _____ Line: #1 - E 1/2 Int.Cal 48.0 Date: 9/May

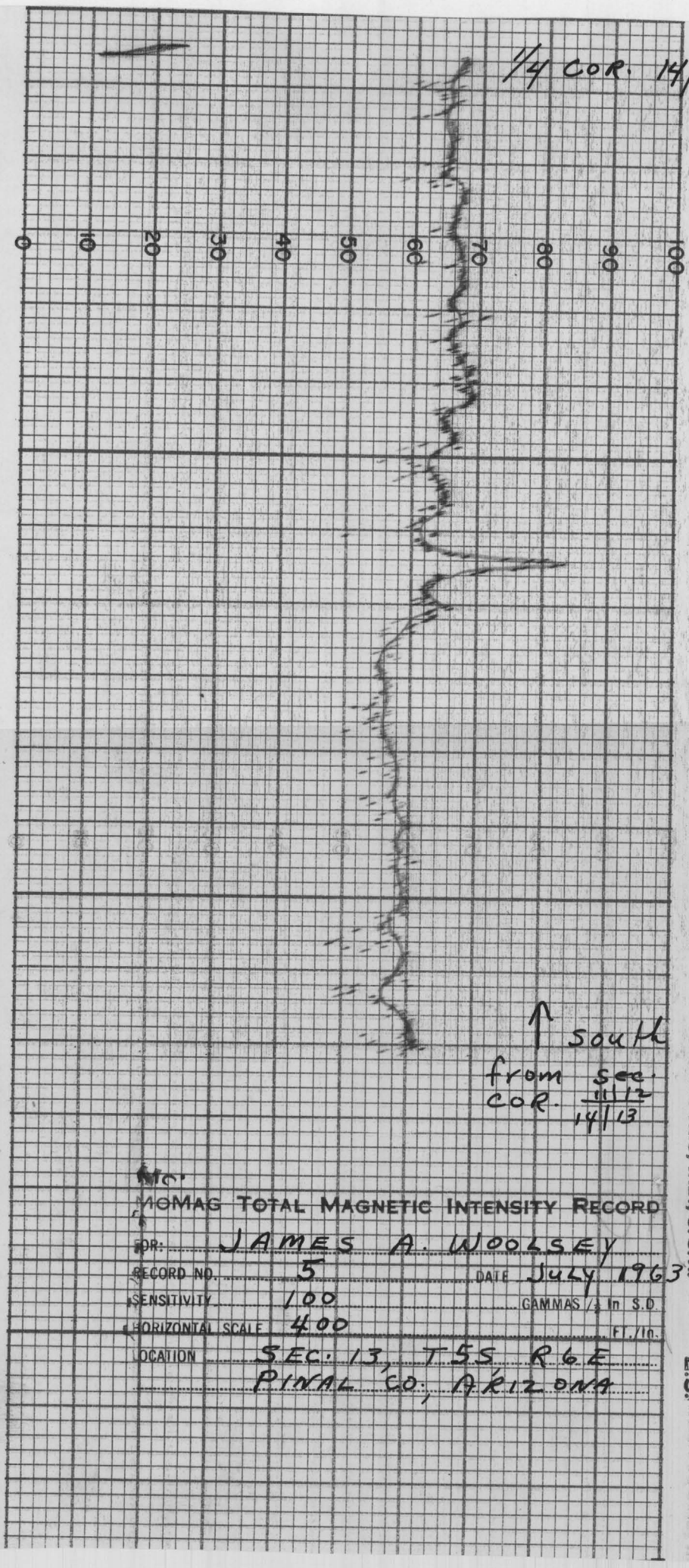
Very noisy

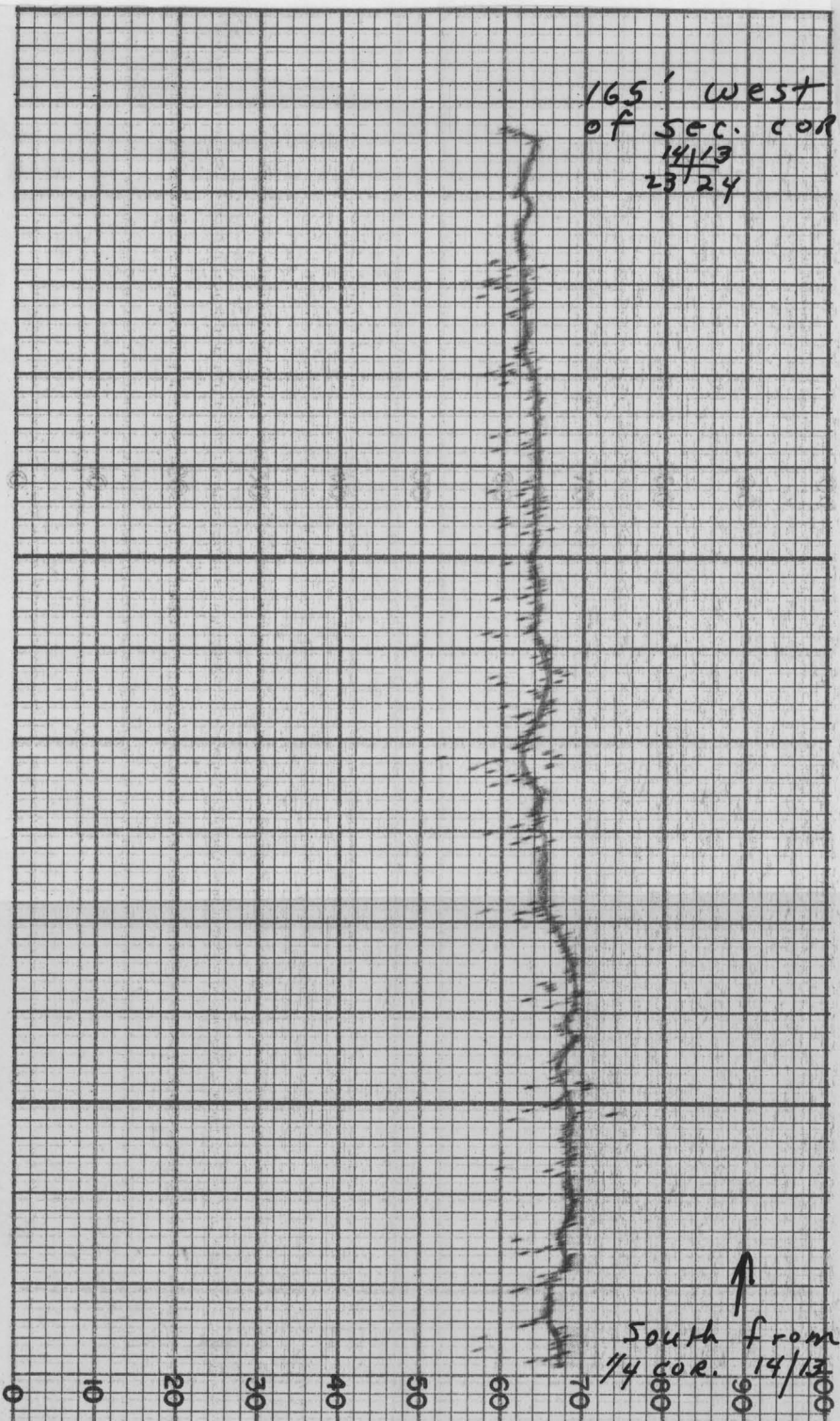
| Send | 2-3 | 1-2 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | 4-5 | 3-4 | 2-3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rec. | 5-1.8 | → | 10-15 | → | → | 15-20 | → | → | → | 2-2.5 | ? | ? |
| Time | 30 | 10 | 30 | 10 | 3 | 30 | 10 | 3 | 1 | 3 | 1 | 1 |
| DC-1 | 14.1 | 3.05 | 13.7 | 2.90<br>2.78 | 1.18 | 15.0 | 3.35 | 1.17<br>1.15 | .59<br>.76 | 1.27<br>1.44 | .66 .78<br>.60 | .38 |
| DC-2 | 14.3 | 3.15 | 13.7 | 2.90<br>2.98 | 1.18 | 15.4 | 3.38 | 1.23<br>1.28 | .76<br>.62 | 1.65<br>1.48 | .67 .53<br>.72 | .32 |
| Σ | 28.4 | 6.20 | 27.4 | 5.80<br>5.76 | 2.36 | 30.4 | 6.73 | 2.40<br>2.43 | 1.35<br>1.38 | 2.92<br>2.92 | 1.33 1.31<br>1.32 | 70 |
| DC-3 | 14.1 | 3.05 | 13.6 | 2.85 | 1.25<br>1.18 | 15.0 | 3.35 | 1.13 | .72 | 1.24<br>1.52 | .74<br>.67 | .32 |
| Dc-4 | 14.3 | 3.15 | 13.8 | 2.95 | 1.10<br>1.16 | 15.4 | 3.38 | 1.27 | .66 | 1.66<br>1.37 | .57<br>.66 | .39 |
| Σ | 28.4 | 6.20 | 27.4 | 5.80 | 2.35<br>2.34 | 30.4 | 6.73 | 2.40 | 1.38 | 2.90<br>2.89 | 1.31<br>1.33 | .71 |
| DC-AV | 28.4 | 6.20 | 27.4 | 5.79 | 2.35 | 30.4 | 6.73 | 2.41 | 1.37 | 2.91 | 1.32 | .71 |
| AC-1 | 14.2 | 3.10 | 13.7 | 2.90 | 1.18 | 14.9 | 3.32 | 1.20 | .71 | 1.43 | .68 | .36 |
| AC-2 | 14.2 | 3.10 | 13.7 | 2.90 | 1.18 | 14.9 | 3.32 | 1.22 | .72 | 1.43 | .68 | .36 |
| Σ | 28.4 | 6.20 | 27.4 | 5.80 | 2.36 | 29.8 | 6.64 | 2.42 | 1.43 | 2.86 | 1.36 | .72 |
| S. P. | +11.8 | | -21.0 | -16.4 | -15.5 | -11.2 | | | | -2.1 | | [illegible] |
| AC-N | | | | | .08 | | | | | | | .04 |
| | 45 | 31 | 43 | 29 | 37 | 47 | 33 | 39 | 72 | 45 | 68 | 36 |

INDUCED POLARIZATION - RECEIVER NOTES PAGE _____

Project: _____ Line: _____ Int.Cal _____ Date: _____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Send | 1-2 | 4-5 | 3-4 | 2-3 | 1-2 | | 4-5 | | | | | |
| Rec. | | | | | | | PAL. | | | | | |
| Time | 1 | | | | | | 100 | 300 | 100 | 300 | 300 | 100 |
| DC-1 | .25 | | | | | | 50.5 | 48 | 59.9 | 57 | 68 | 69.5 |
| DC-2 | .27 | | | | | | 50.5 | 48 | 60.0 | 57.5 | 68 | 69.5 |
| Σ | 52 | | | | | | 101 | 96 | 119.9 | 114.5 | | 139 |
| DC-3 | 9 | | | | | | 50.5 | 48 | 59.9 | 57 | 68 | 69.5 |
| Dc-4 | . | | | | | | 50.5 | 48 | 60.0 | 57.5 | 68 | 69.5 |
| Σ | | | | | | | 101 | 96 | 119.9 | 114.5 | 136 | 139 |
| DC-AV | | | | | | | 101 | 96 | 119.9 | 114.5 | 136 | 139 |
| AC-1 | .275 | | | | | | 51.0 | 48 | 61.0 | 58 | 68 | 71.2 |
| AC-2 | .275 | | | | | | 51.0 | 48 | 61.0 | 57.0 | 68 | 71.2 |
| Σ | .55 | | | | | | 102 | 96 | 122.0 | 115.0 | 136 | 142.4 |
| S. P. | | | | | | | | | | | | |
| AC-N | | | | | | | | | | | | |
| | 28 | | | | | | 51 | 15 | 61 | 19 | 22 | 71 |


1/4 COR. 14/13
0
10
20
30
40
50
60
70
80
90
100
south
from sec. COR. 11/12 14/13
MoMAG TOTAL MAGNETIC INTENSITY RECORD
FOR: JAMES A. WOOLSEY
RECORD NO. 5
DATE JULY 1963
SENSITIVITY 100
GAMMAS /½ In S.D.
HORIZONTAL SCALE 400
FT./In.
LOCATION SEC. 13, T5S R6E
PINAL CO., ARIZONA
MADE IN U.S.A.
THE ESTERLINE-ANGUS CO.
INDIANAPOLIS, IND., U.S.A.
E.S.




MoMag Total Magnetic Intensity Record

FOR: JAMES A. WOOLSEY

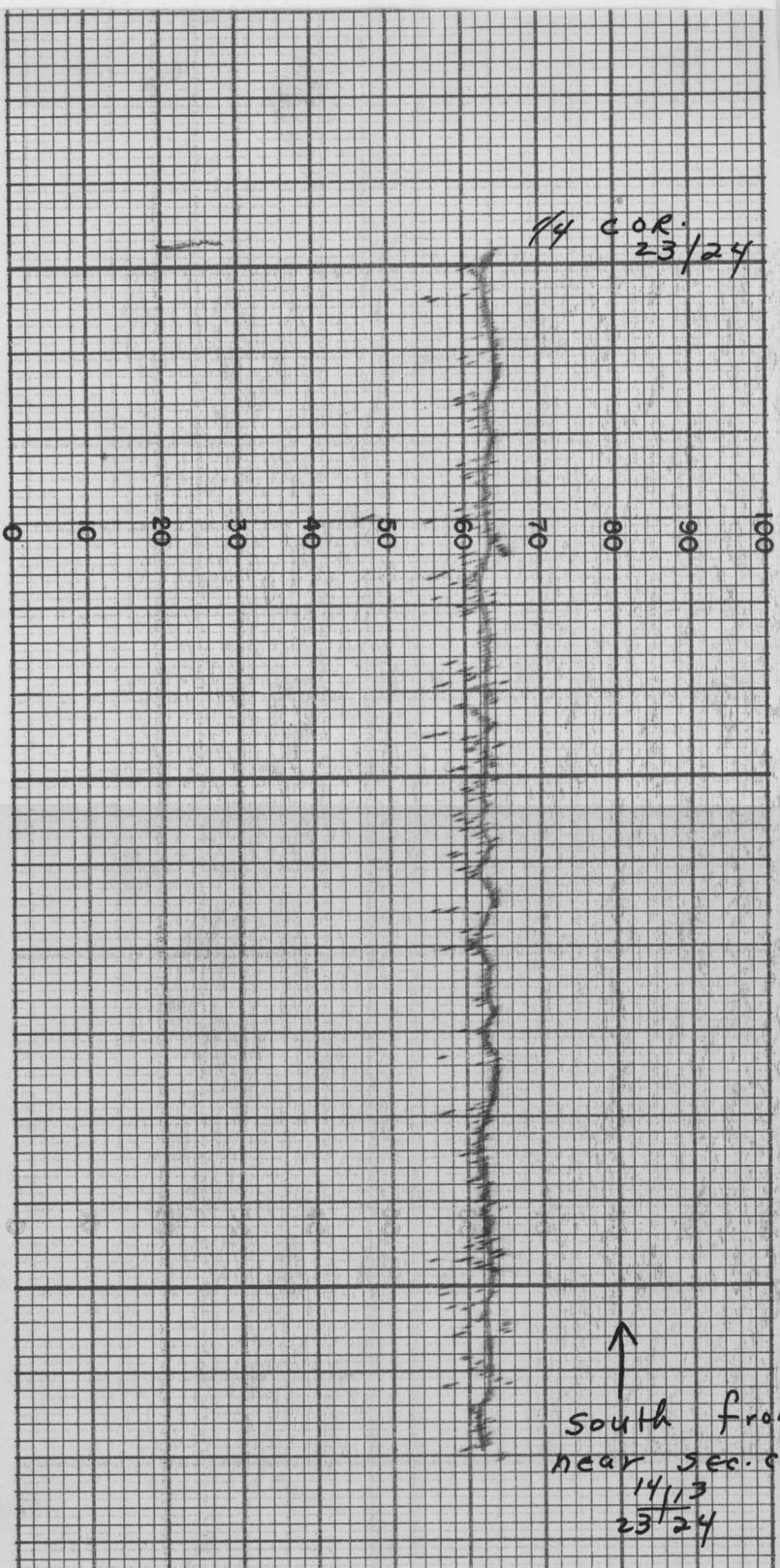
RECORD NO. 5A DATE JULY, 1963

SENSITIVITY 100 GAMMAS/½ In. S.D.

HORIZONTAL SCALE 400 Ft./In.

LOCATION SEC. 13, T5S, R6E
PINAL CO., ARIZONA

THE ESTERLINE-ANGUS




MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: JAMES. A. WOOLSEY

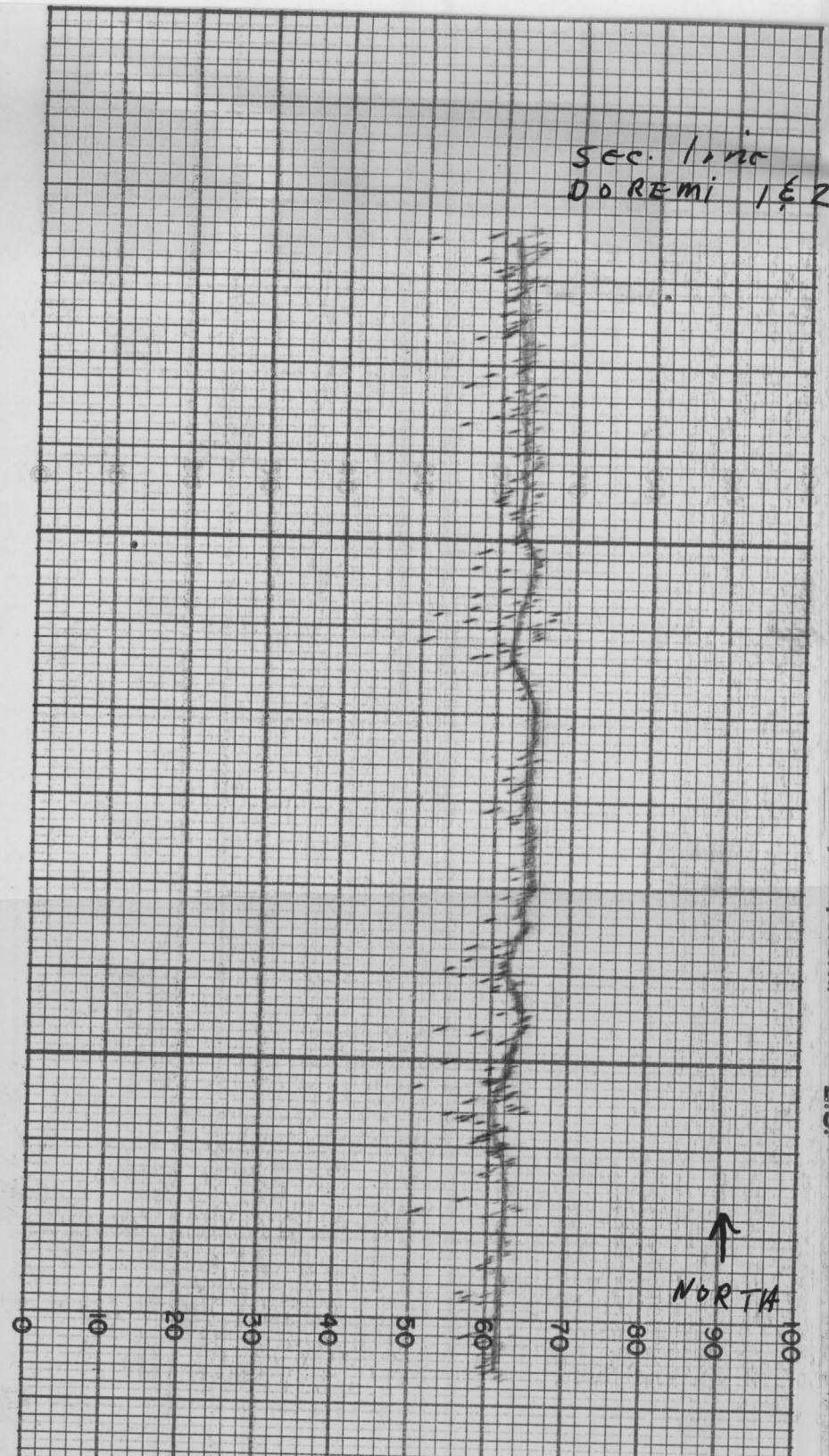
RECORD NO. 6 DATE JULY, 1963

SENSITIVITY 100 GAMMAS /½ in. S.D.

HORIZONTAL SCALE 400 FT./in.

LOCATION SEC. 24 T5S, R6E
PINAL CO., ARIZONA

ART No. 17491X




MoMag Total Magnetic Intensity Record

FOR: JAMES A. WOOLSEY

RECORD NO. 7 DATE JULY, 1963

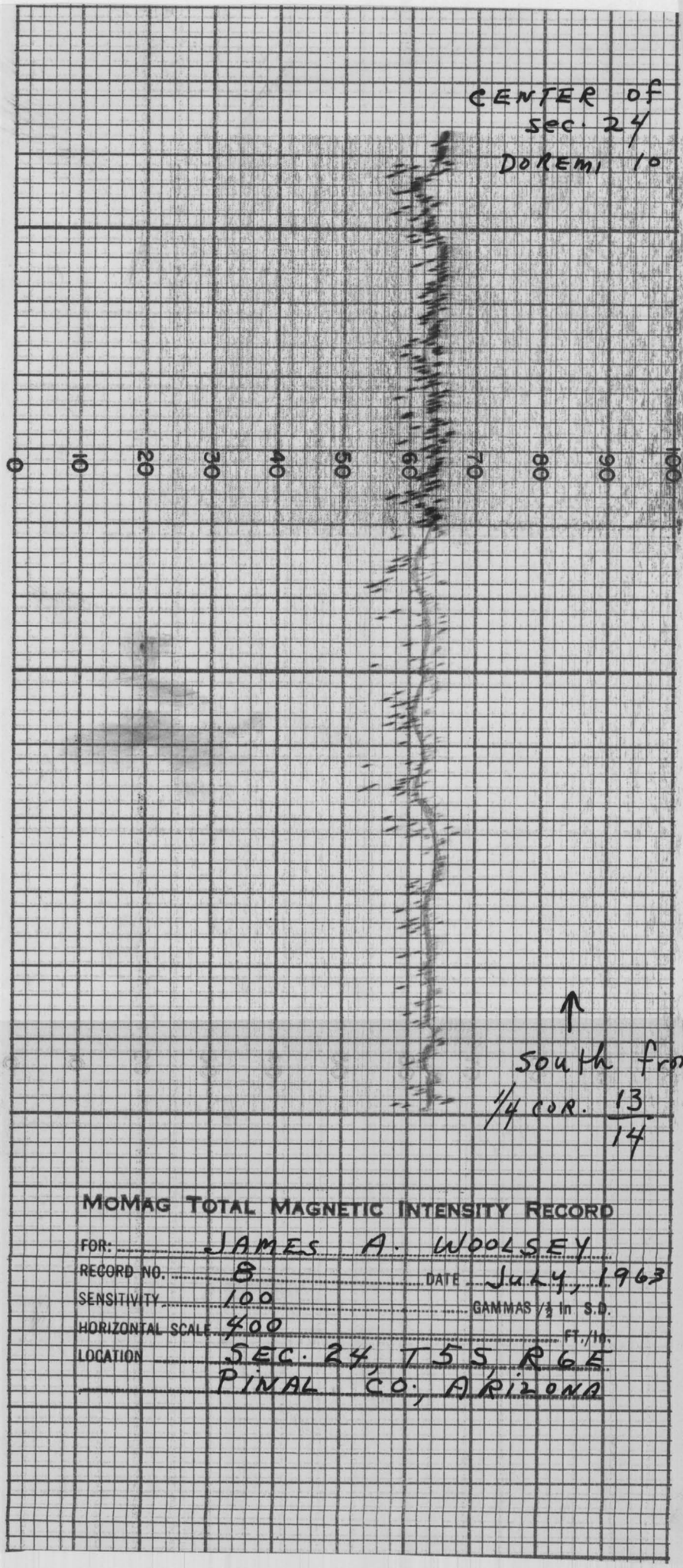
SENSITIVITY 100 GAMMAS /½ In. S.D.

HORIZONTAL SCALE 400 FT./In.

LOCATION SEC. 24, T 5 S, R 6 E
PINAL CO., ARIZONA

From 1320 feet east of
1/4 COR. 23/24 to north sec. line

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.




MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: JAMES A. WOOLSEY

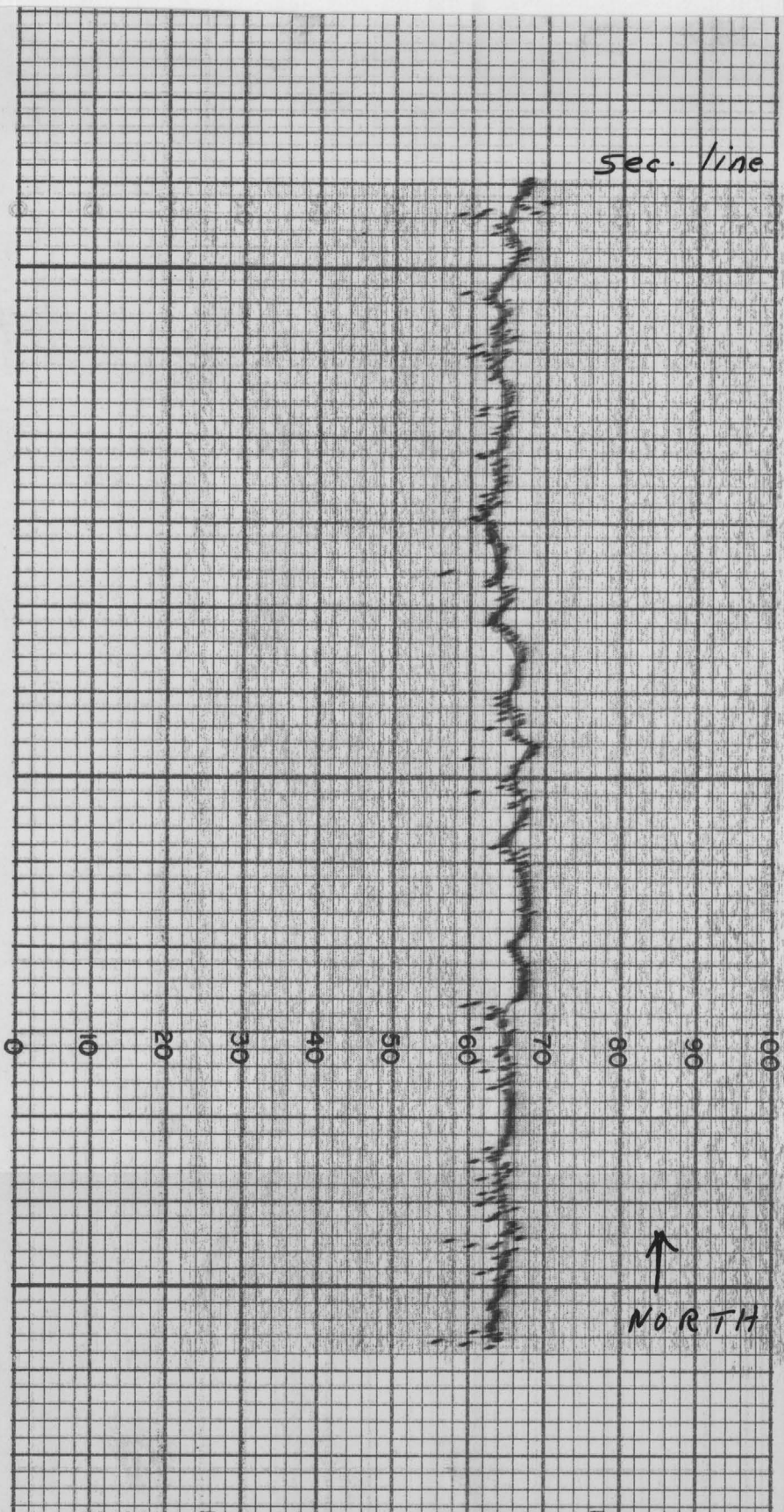
RECORD NO. 8 DATE JULY, 1963

SENSITIVITY 100 GAMMAS / ½ in S.D.

HORIZONTAL SCALE 400 FT./in.

LOCATION SEC. 24, T5S, R6E
PINAL CO., ARIZONA

THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X




MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: JAMES A. WOOLSEY

RECORD NO. 9 DATE JULY, 1963

SENSITIVITY 100 GAMMAS /½ in S.D.

HORIZONTAL SCALE 400 FT./in.

LOCATION SEC. 24, T5S, R6E
PINAL CO., ARIZONA

From 1320 feet west of
1/4 COR. 24/19 to north sec.
Line of sec. 24

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPO

see Rec. 16 also

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: JAMES A. WOOLSEY

RECORD NO. 10 DATE JULY 1963

SENSITIVITY 100 GAMMAS/½ In. S.D.

HORIZONTAL SCALE 400 FT./In.

LOCATION T5S, R6&7E.
PINAL CO., ARIZONA

south on road from a little north of sec. cor. 13|18 / 24|19 to sec. cor. 25|30 / 36|31

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.

Sec. cor. 2|1 / 11|12
1/4 cor. 2|1
B.M. 1447
Sec. cor. 36|31 / 2|1
south
from sec. cor. 25|30 / 36|31
0 10 20 30 40 50 60 70 80 90 100
MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.
MOMAG TOTAL MAGNETIC INTENSITY RECORD
FOR: JAMES A. WOOLSEY
RECORD NO. 10 A DATE July, 1963
SENSITIVITY 100 GAMMAS 1/2 In. S.D.
HORIZONTAL SCALE 400 FT./In.
LOCATION T5-6,S, R 6 & 7 E
PINAL CO., ARIZONA
See also Rec. No. 16

MoMag Total Magnetic Intensity Record

FOR: JAMES A. WOOLSEY

RECORD NO. 11 DATE JULY 1963

SENSITIVITY 100 GAMMAS /½ In S.D.

HORIZONTAL SCALE 400 FT./In.

LOCATION SEC. 2 T6S R6E & SEC. 36 T5S, R6E PINAL CO., ARIZONA

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.
THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. E.S.

THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: JAMES A. WOOLSEY

RECORD NO. 12 DATE JULY 1963

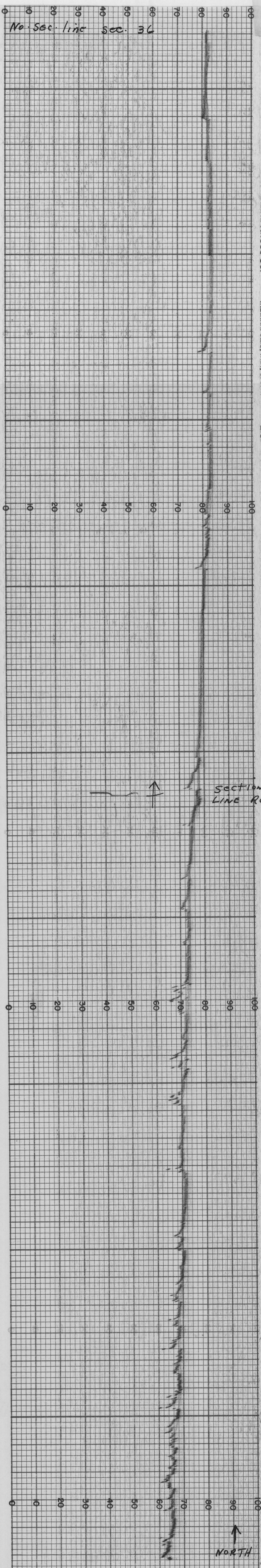
SENSITIVITY 100 GAMMAS /½ in S.D

HORIZONTAL SCALE 400 FT./in.

LOCATION S 1/4 COR. SEC. 2 T6S R6E

TO N 1/4 COR. SEC. 36 T5S, R6E

PINAL CO., ARIZONA




MADE IN U. S. A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. E.S.

THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X

MoMag Total Magnetic Intensity Record

FOR: JAMES A. WOOLSEY

RECORD NO. 13 DATE July 1963

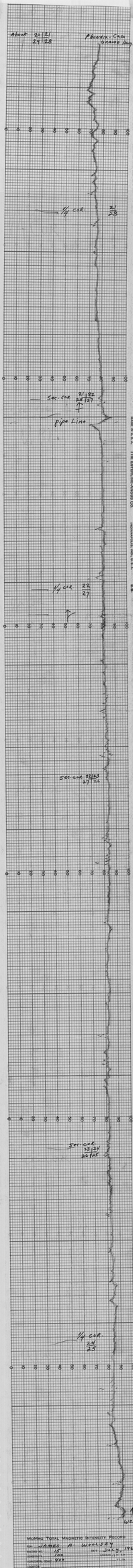
SENSITIVITY 100 GAMMAS /½ In S.D

HORIZONTAL SCALE 400 FT./In.

LOCATION PINAL Co., ARIZONA

From 1320 feet east of the S.W. Cor. Sec. 2 T6S R6E to 1320 feet east of the N.W. Cor. Sec. 36 T5S. R6E

SEC. COR. 26/25 35/36
CORRAL
1/4 COR. 35/36
35/36 3/2
SECTION LINE
Road ℄ pipe line
NORTH from SEC. COR. 3[redacted] 3/2 10/11
MOMAG TOTAL MAGNETIC INTENSITY RECORD
FOR: JAMES A. WOOLSEY
RECORD NO. 14
DATE July 1963
SENSITIVITY 100
GAMMAS /½ In S.D.
HORIZONTAL SCALE 400
FT./In.
LOCATION
PINAL CO. ARIZONA
0 10 20 30 40 50 60 70 80 90 100
THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X
MADE IN U.S.A.
E.S.




MONAG TOTAL MAGNETIC INTENSITY RECORD

FOR JAMES A. WOOLSEY

RECORD NO. 15 DATE JULY, 1962

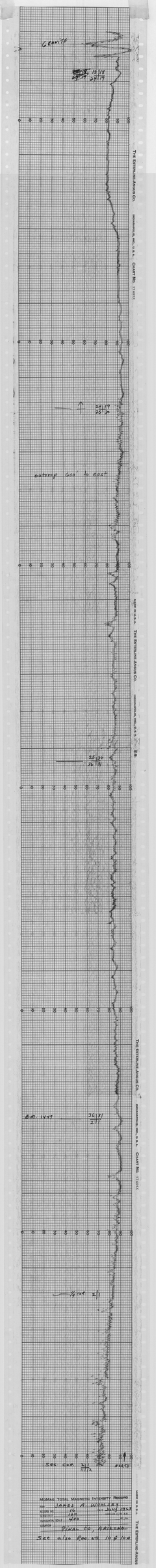
CHECKED BY 100 DATE

CONDITIONS: SEAL 4/10

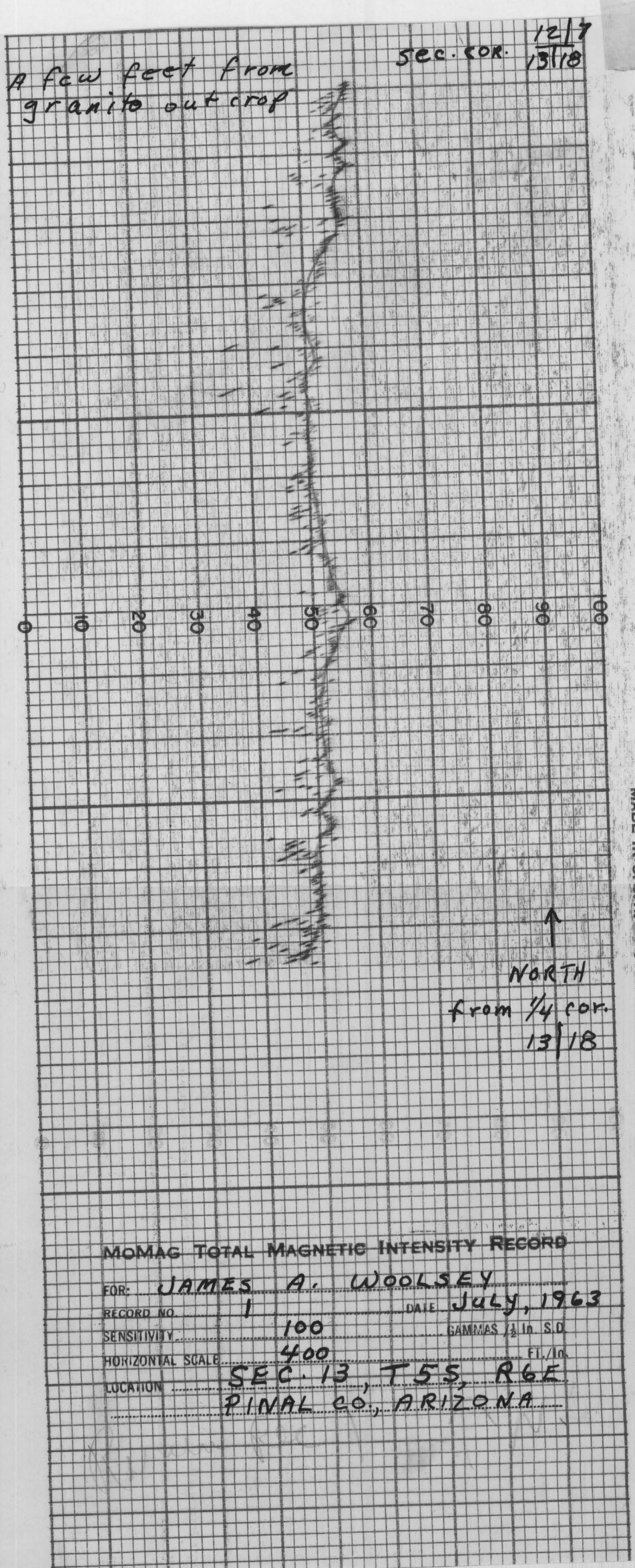
LOCATION

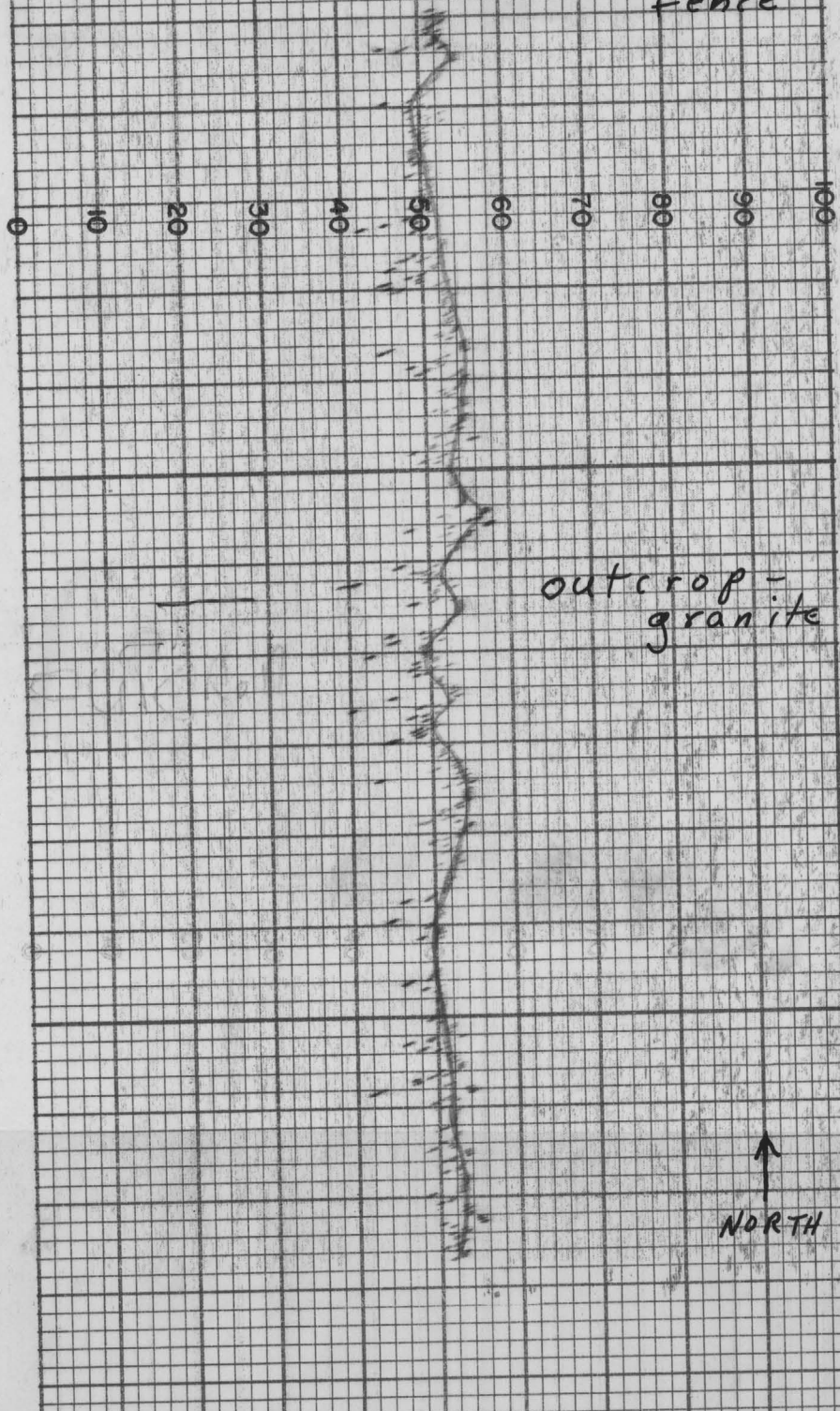
PINAL CO., ARIZONA

West from S.E. COR. SEC. 24, T5S, R6E To Phoenix Highway near Sec. cor. 20 21 29 28 T5S, R6E



Granite
13/18
24/19
24/19
25/30
outcrop 600' to east
25/30
36/31
B.M. 1447
36/31
2/1
1/4 COR. 2/1
SEC. COR. 2/1
11/12
NAD 83
MOMAG TOTAL MAGNETIC INTENSITY RECORD
JAMES A. WOOLLEY
16
JULY 1963
100
400
FINAL CO., ARIZONA
See also Rec. No. 10 & 10A
THE ESTERLINE-ANGUS CO.
INDIANAPOLIS, IND., U.S.A.
CHART NO. 17491X
MADE IN U.S.A.


A few feet from granite outcrop
SEC. COR. 12/7 13/18
0
10
20
30
40
50
60
70
80
90
100
NORTH
from 1/4 cor. 13/18
MoMag Total Magnetic Intensity Record
FOR: JAMES A. WOOLSEY
RECORD NO. 1
DATE July, 1963
SENSITIVITY 100 GAMMAS /½ In. S.D.
HORIZONTAL SCALE 400 Ft./In.
LOCATION SEC. 13, T5S, R6E
PINAL CO., ARIZONA
MADE IN U.S.A. THE ESTERLINE-ANGUS CO.
INDIANAPOLIS, IND., U.S.A.




THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A. CHART NO. 17491X

MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: JAMES A. WOOLSEY

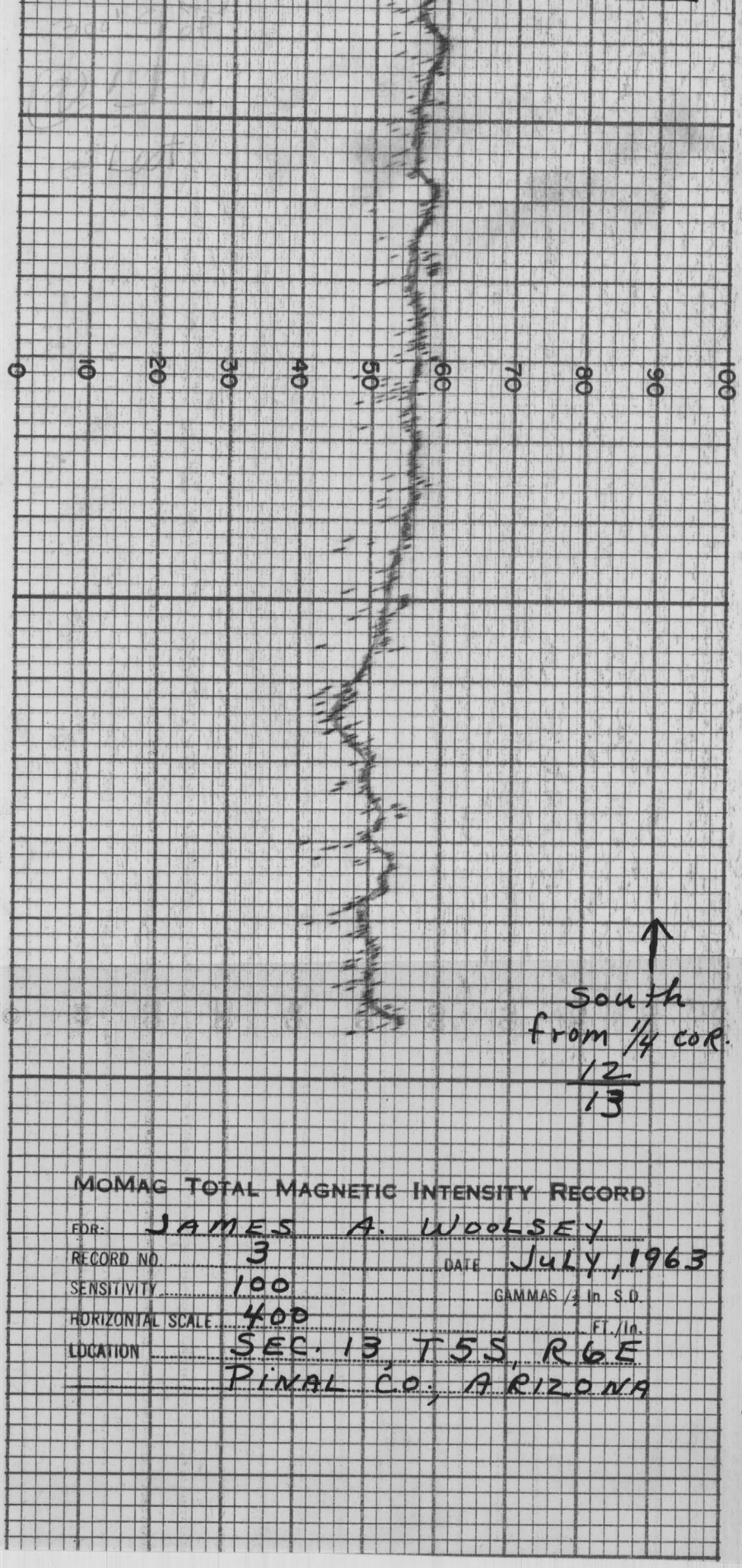
RECORD NO. 2 DATE JULY, 1963

SENSITIVITY 100 GAMMAS / 3 In. S.D.

HORIZONTAL SCALE 400 FT./In.

LOCATION SEC. 13, T5S, R6E
PINAL CO., ARIZONA

From 1320 feet west of 1/4 COR. 13/18 to north section line at 1320 feet west of N-E-COR. Sec. 13




MoMag Total Magnetic Intensity Record

FOR: JAMES A. WOOLSEY

RECORD NO. 3 DATE JULY, 1963

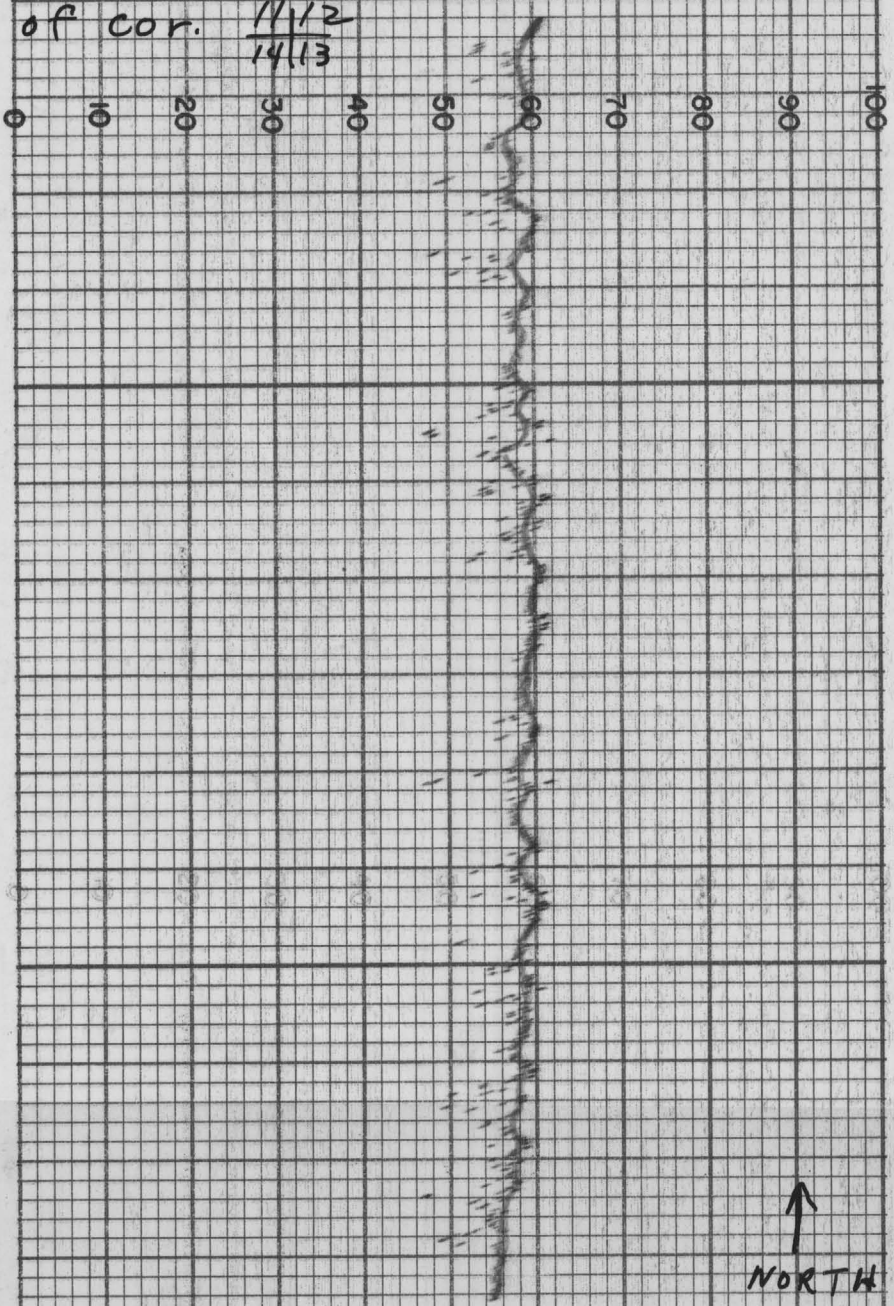
SENSITIVITY 100 GAMMAS / ½ In. S.D.

HORIZONTAL SCALE 400 FT./In.

LOCATION SEC. 13, T5S, R6E
PINAL CO., ARIZONA

MADE IN U.S.A. THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U.S.A.

Section line fence - 1320' East of cor. 11/12 / 14/13




MOMAG TOTAL MAGNETIC INTENSITY RECORD

FOR: JAMES A. WOOLSEY

RECORD NO. 4 DATE JULY, 1963

SENSITIVITY 100 GAMMAS /½ In. S.D.

HORIZONTAL SCALE 400 FT./In.

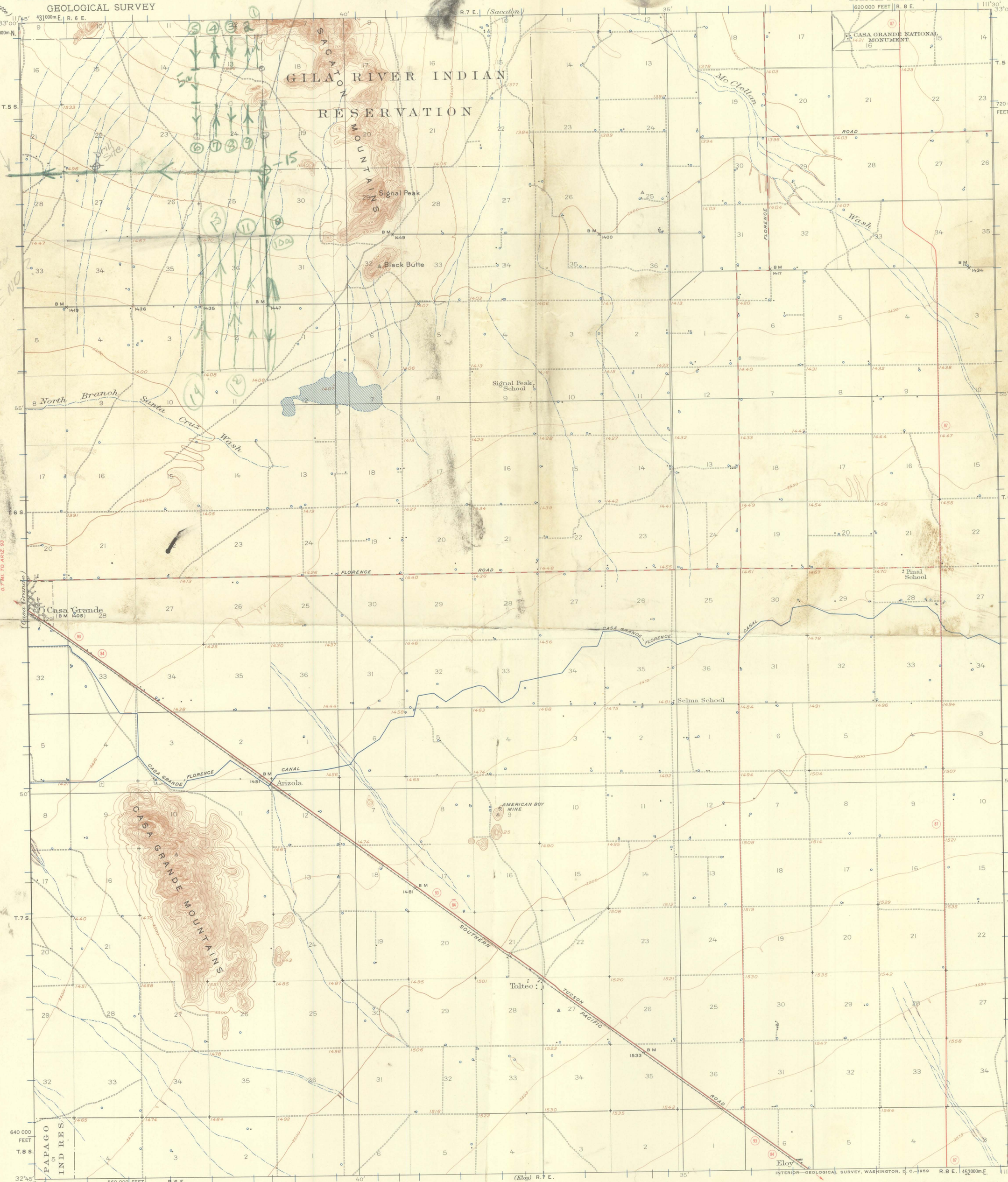
LOCATION SEC. 13, T5S, R6E
PINAL CO., ARIZONA

From a point 3960 feet west of the 1/4 cor. 13/18 to the north section line.

THE ESTERLINE-ANGUS CO. INDIANAPOLIS, IND., U. S. A. CHART NO. 17491X

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

ARIZONA
(PINAL COUNTY)
SIGNAL PEAK QUADRANGLE




Topography by A.B.Searle and C.W.H.Nessler.
Surveyed in 1922.

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
State Route

TRUE NORTH
MAGNETIC NORTH
13°
APPROXIMATE MEAN DECLINATION, 1922

SCALE 1:62500

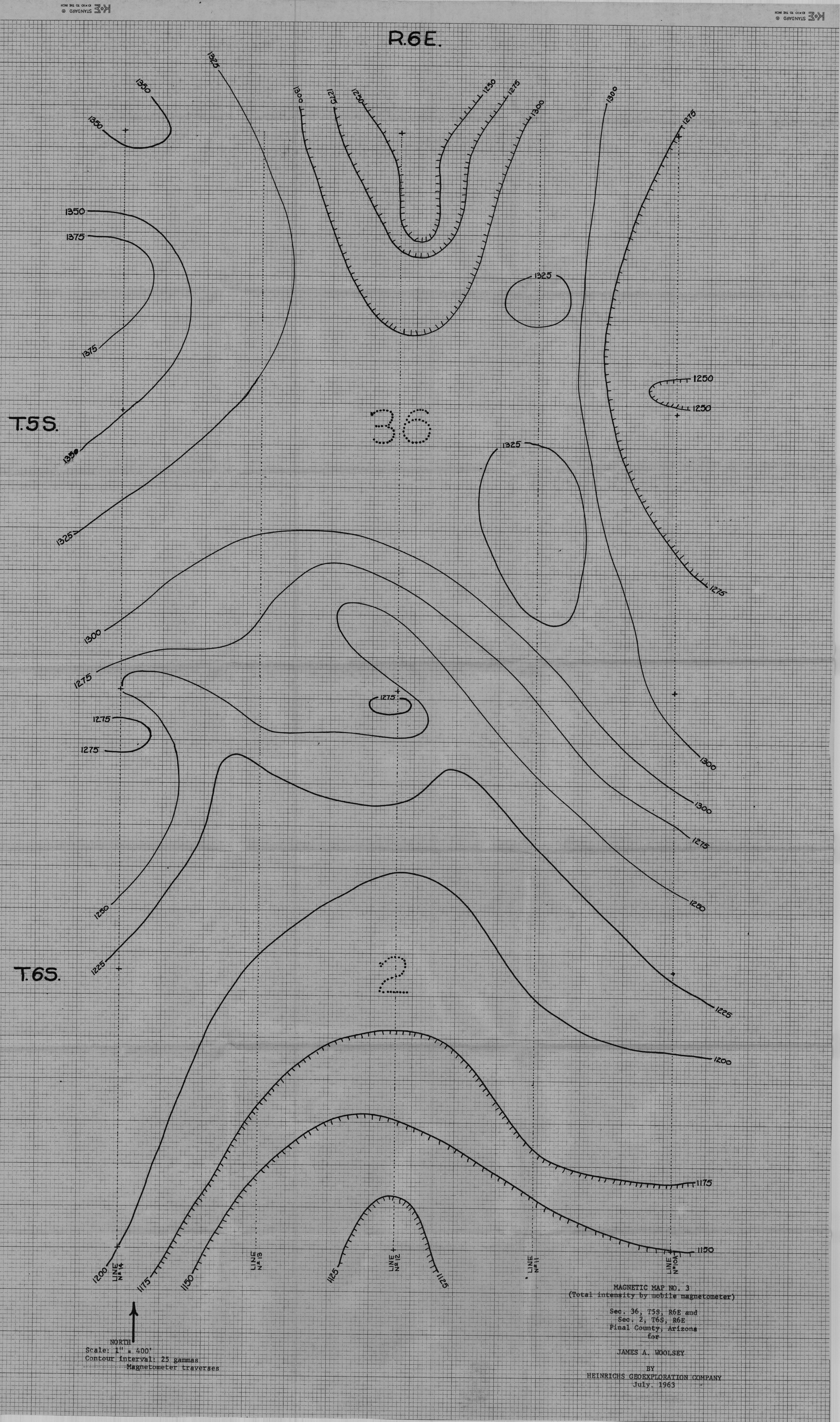
CONTOUR INTERVAL 25 FEET
DATUM IS MEAN SEA LEVEL

Polyconic projection. To place on 1927 North American datum move projection lines 100 feet west
10,000-foot grid based on Arizona (Central) rectangular coordinate system
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue

SIGNAL PEAK, ARIZ.
N 3245—W 11130/15

1922

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



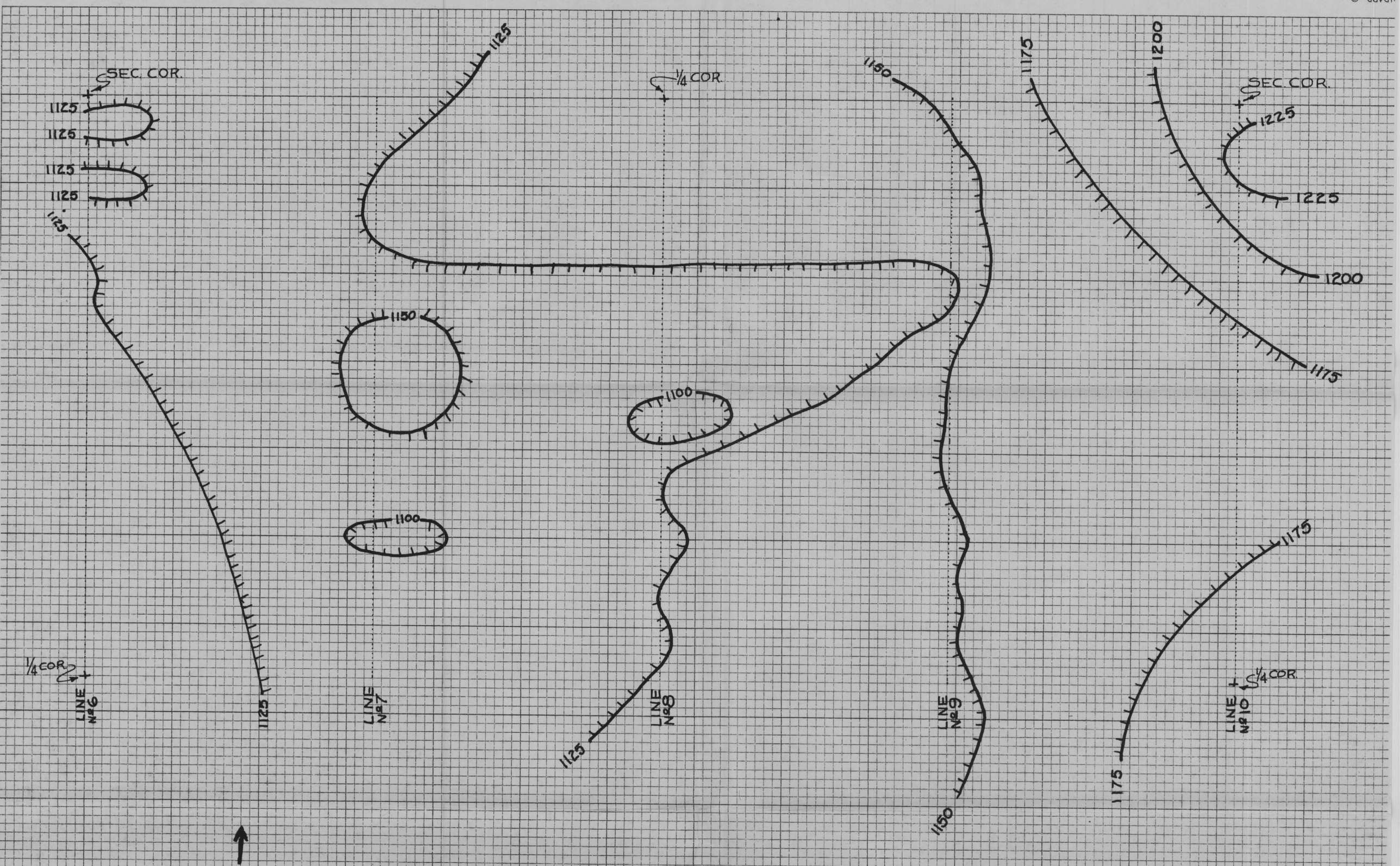

Scale: 1" = 400'
Contour interval: 25 gammas
.....Magnetometer traverses

MAGNETIC MAP NO. 3
(Total intensity by mobile magnetometer)

Sec. 36, T5S, R6E and
Sec. 2, T6S, R6E
Pinal County, Arizona
~~for~~

JAMES A. WOOLSEY

BY
HEINRICHS GEOEXPLORATION COMPANY
July, 1963




Scale: 1" = 400'
Contour interval: 25 gammas
Magnetometer traverses

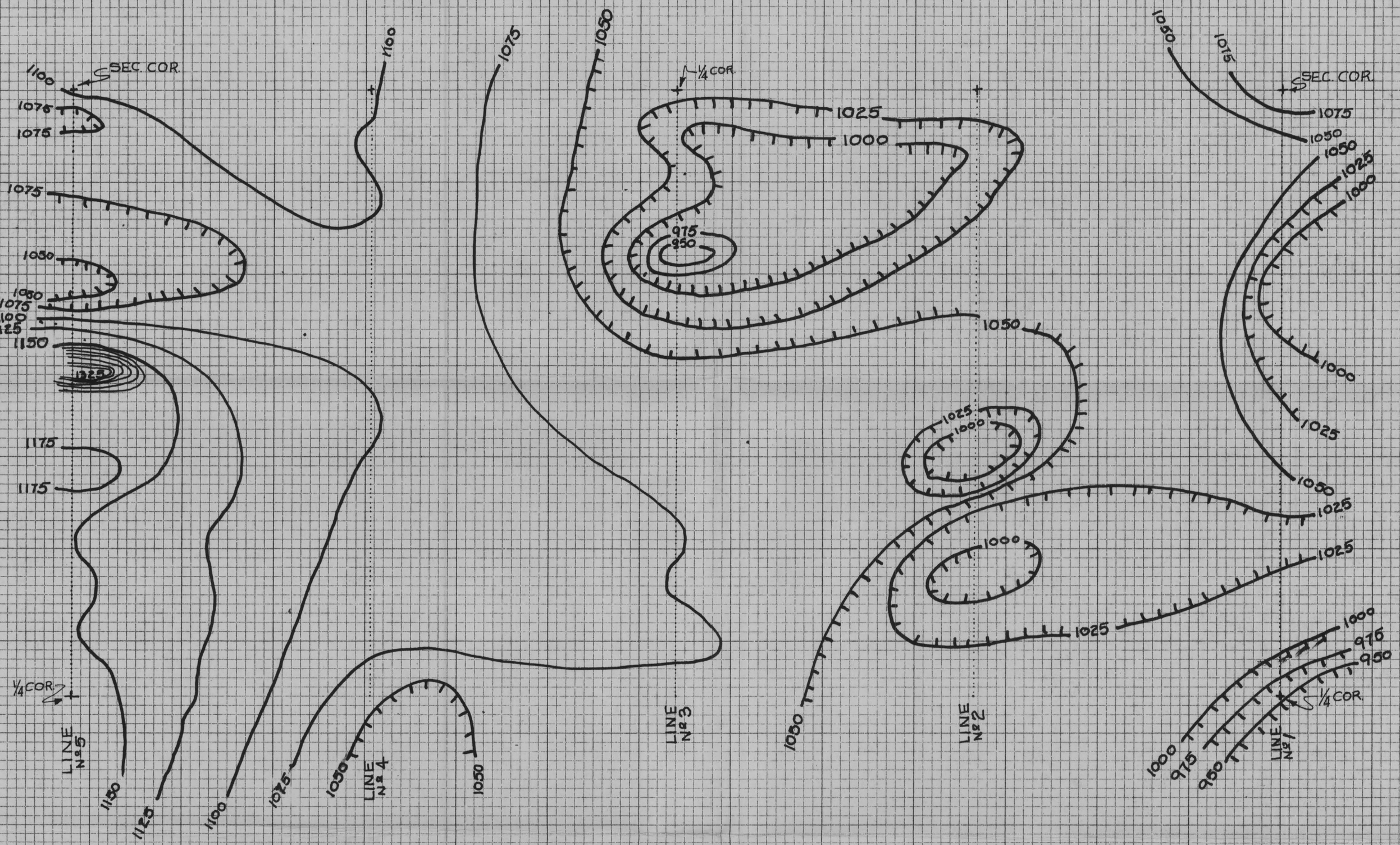
MAGNETIC MAP NO. 2
~~(Total intensity by mobile magnetometer)~~

DOREMI CLAIMS

N½ Sec 24, T5S, R6E
Pinal County, Arizona
for

JAMES A. WOOLSEY

by
HEINRICHS GEOEXPLORATION COMPANY
July, 1963




NORTH

Scale: 1" = 400'
Contour interval: 25 gammas
..... Magnetometer traverses

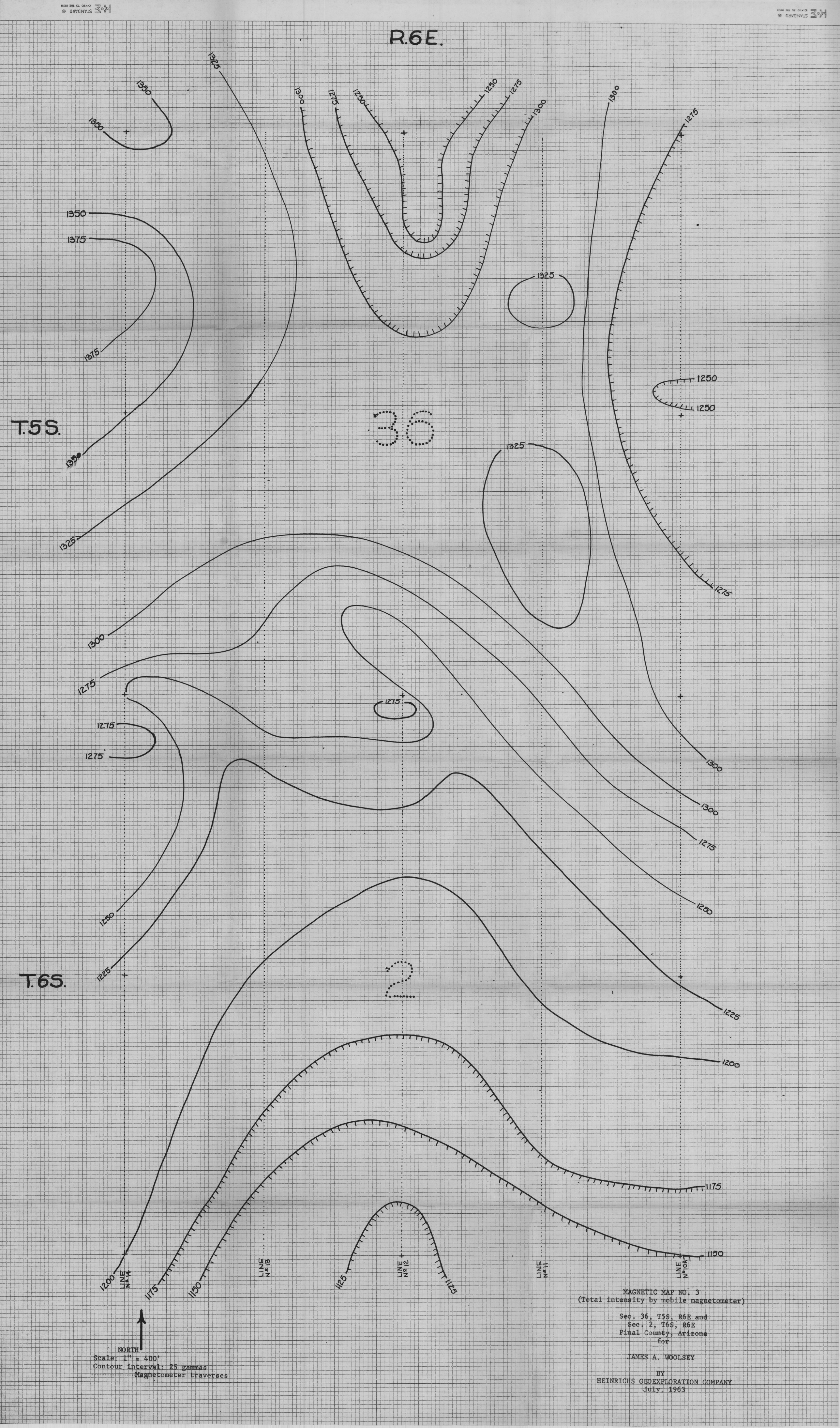
MAGNETIC MAP NO. I
(Total intensity by mobile magnetometer)

LOOT CLAIMS

N½ Sec 13, T5S, R6E
Pinal County, Arizona
for

JAMES A. WOOLSEY

by
HEINRICHS GEOEXPLORATION COMPANY
July, 1963

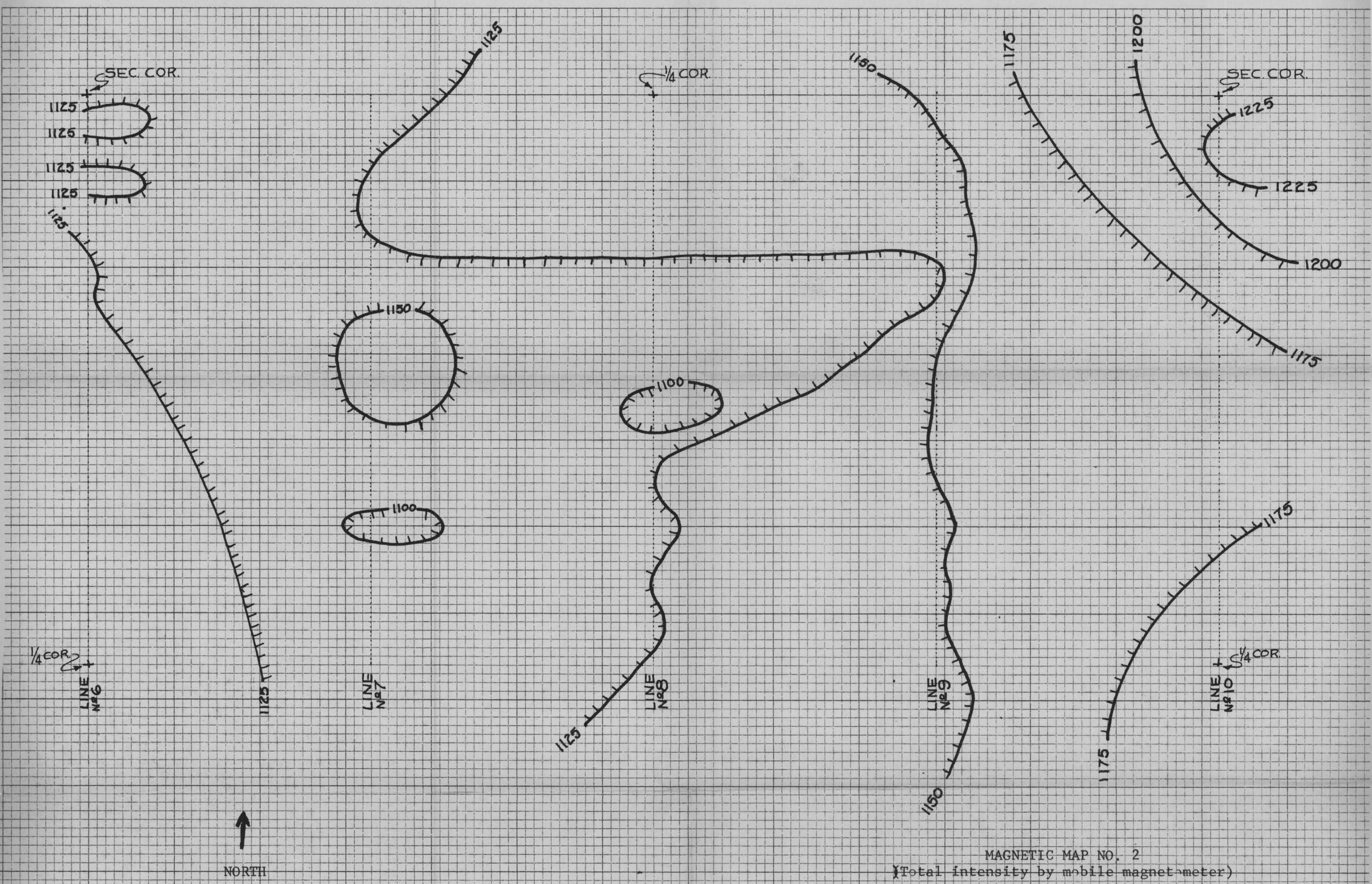



MAGNETIC MAP NO. 3
(Total intensity by mobile magnetometer)

Sec. 36, T5S, R6E and
Sec. 2, T6S, R6E
Pinal County, Arizona
for

JAMES A. WOOLSEY

BY
HEINRICHS GEOEXPLORATION COMPANY
July, 1963




Scale: 1" = 400'
Contour Interval: 25 gammas
Magnetometer traverses

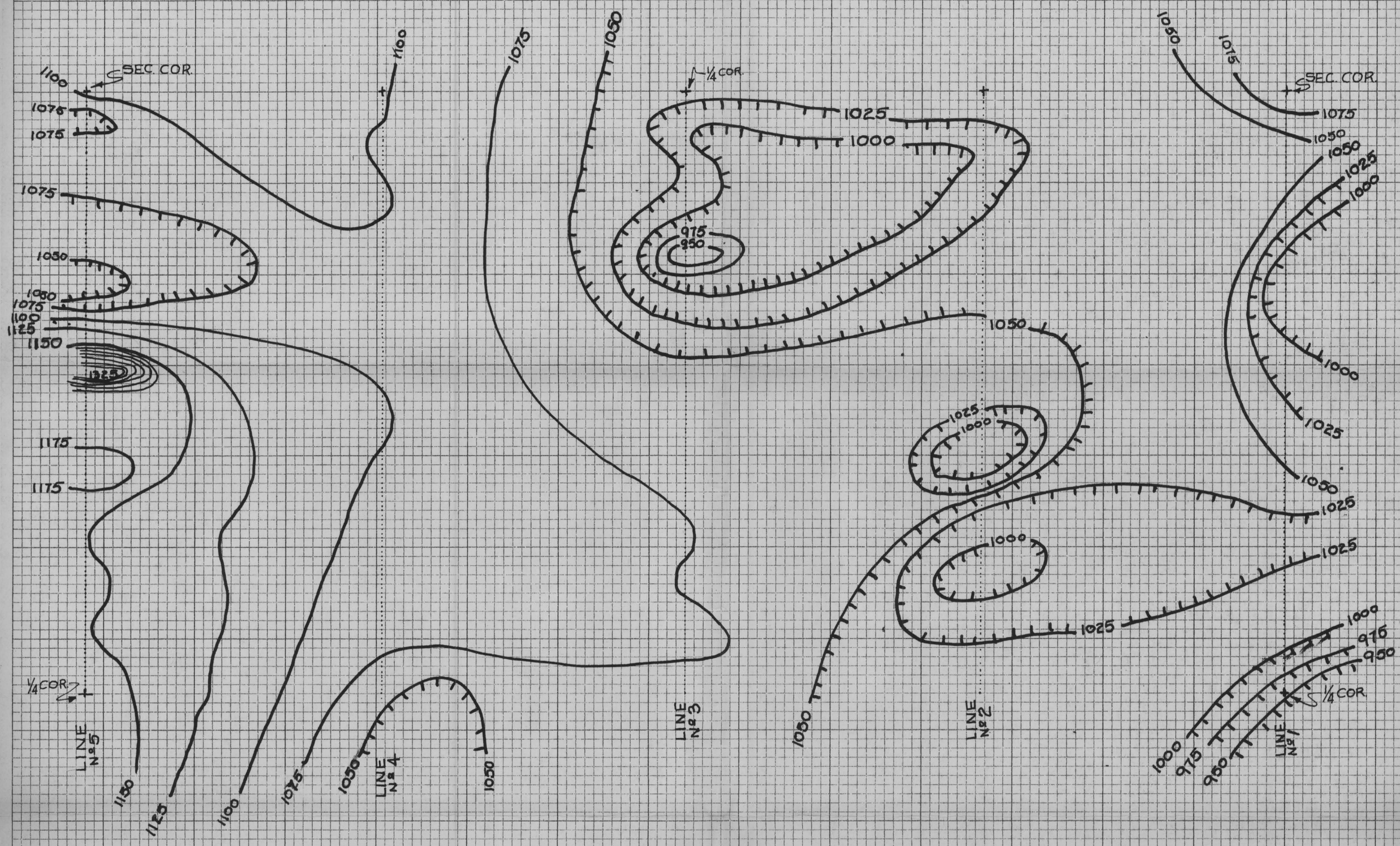
MAGNETIC MAP NO. 2
(Total intensity by mobile magnetometer)

DOREMI CLAIMS

N½ Sec 24, T5S, R6E
Pinal County, Arizona
for

JAMES A. WOOLSEY

by
HEINRICHS GEOEXPLORATION COMPANY
July, 1963




NORTH

Scale: 1"=400'
Contour interval: 25 gammas
..... Magnetometer traverses

MAGNETIC MAP NO. I
(Total intensity by mobile magnetometer)

LOOT CLAIMS

N½ Sec 13, T5S, R6E
Pinal County, Arizona
for

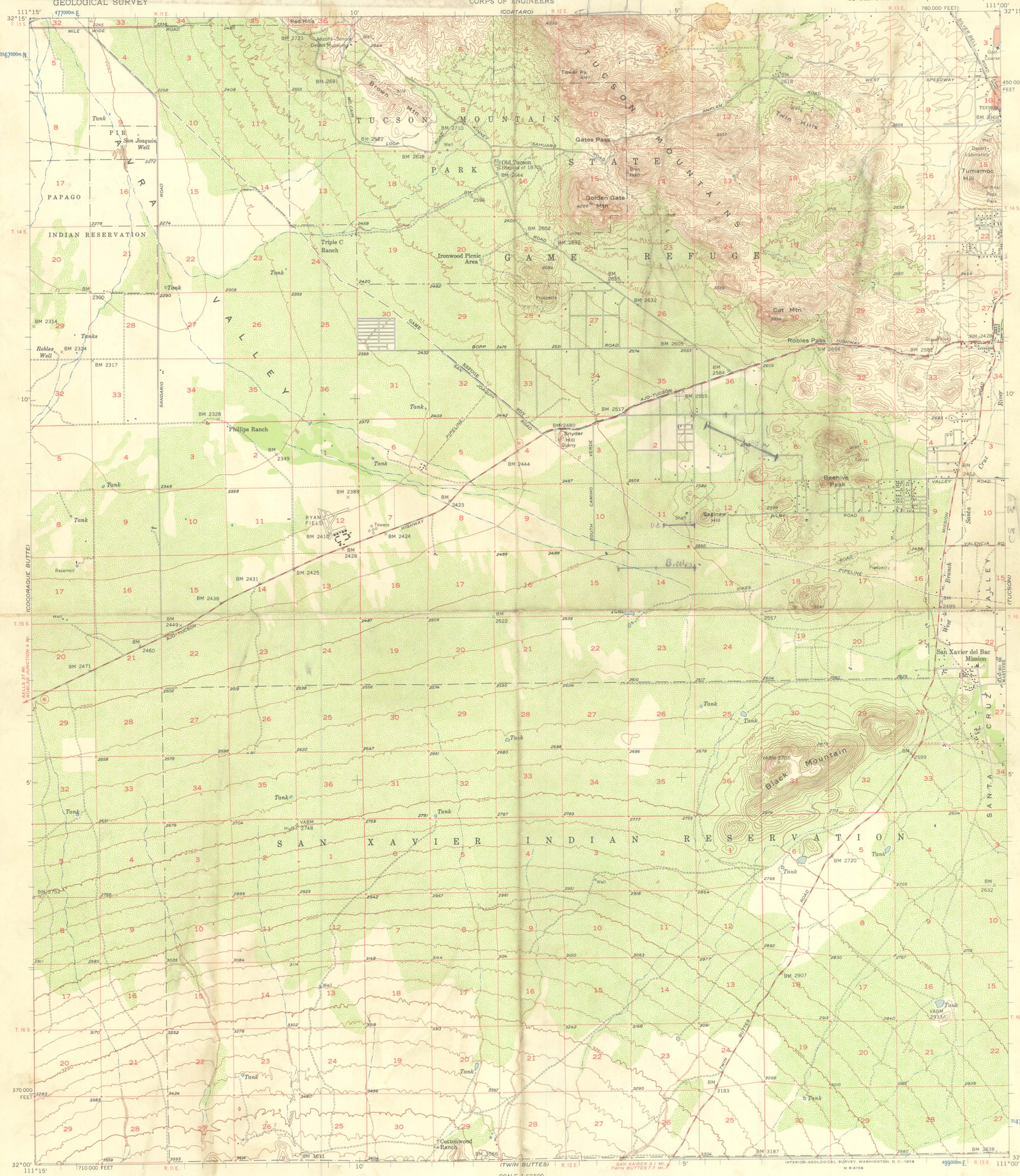
JAMES A. WOOLSEY

by
HEINRICHS GEOEXPLORATION COMPANY
July, 1963

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

# SAN XAVIER MISSION QUADRANGLE
ARIZONA—PIMA CO.
15 MINUTE SERIES (TOPOGRAPHIC)




Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and State of Arizona

Topography by planetable surveys 1940–41
Culture revision and field check 1957

Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue

Red tint indicates areas in which only landmark buildings are shown

13°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1957

SCALE 1:62500

1 ½ 0 1 2 3 4 MILES

3000 0 3000 6000 9000 12000 15000 18000 21000 FEET

1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 50 FEET
DATUM IS MEAN SEA LEVEL

ARIZONA
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Medium-duty — Light-duty
Unimproved dirt
State Route

SAN XAVIER MISSION, ARIZ.
N3200—W11100/15
1957

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 2, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1958
M R-3158

Sad Hamed Zuad