P-W

ARKLA EXPLORATION NMA NO. 51 9-20
SW/SW Sec 29-T16N-R23E, Navajo Co

32 × L

[redacted]

13

County NAVAJO

Area

Lease No.

Well Name ARKLA EXP. CO. ARKLA #51 W.S.#1 N.M.A.

Location SW SW Sec 29 Twp 16N Range 23E Footage 859 FSL - 773 FWL

Elev 5377 Gr 6385 KB Spud Date 6-15-65 Completed Abandon 6-24-65 Total Depth 1260

Contractor

Casing Size	Depth	Cement

Drilled by Rotary
Cable Tool

Production Horizon

Initial Production

REMARKS

Elec Logs GRN-5 Survey Report

Applic. to Plug Plugging Record Completion Report

Sample Log
Sample Descript.
Sample Set
Core Analysis
DSTs

Water well accepted by

Bond Co. & No.

Bond Am't $ Cancelled Date Organization Report

Filing Receipt Dated Well Book Plat Book

API No. 02-017-00264 Loc. Plat Dedication

Permit Number NONE Date Issued

9-20

[redacted]

32 × [redacted]

DETAILED CORE DESCRIPTION

WELL NAME: AEC - #51 NMA

LOCATION

ELEVATION:

CORE #1 V

922-927.9	(5.7) 5" ANHY SH 14" ANHY SHLY 48" ANHY SH.
7.9-3.5	(5.9) 15" ANHY SH 54" DK GRA DNS ANHY W/SH INCLS.
3.5-8.7	(5.8) 36" DK GRA DNS ANHY PUERCO 32" ANHY SH.
8.7-5.8	(5.10) 7" ANHY SH 17" SALT CLEAR TRS IMP. 9" SALT 20% SH. 37" SALT VLT ORNG TO CLEAR TRS IMP.
5.8-1.2	(5.6) 4" SALT CLEAR 8" SALT 10% ORNG IMP. 9" SALT TRS ORNG 1" SH. 36" SH 30% SALT 8" SALT 30% SH (BISCUIT HOT 948)
1.2-956	(4.8) 18" SALT 40% SALT 40% SH 15" SALT 20% SH 5" SALT 50% SH 15" SALT 20% SH 3" SH 20% SALT.
963-968.6	(70") 12" SH 30% SALT 58" SALT CLEAR TO VLT ORNG TRS SH (ZONE OF ANHY BANDS A 968.4,A-B 2½", B-C 9", C-D 2", D-E 7" E-F 5", F-G 2"-970.4
8.6-4.1	(65") 16" SALT CLEAR VLT ORNG TRS ANHY IMP (TRS CARNSLITE 970) 9" SALT TRS ANHY TRS CARNALITE AND SYLVITE 15" SALT 15% SH RED & GRN VSL TRS KCL K_2O-10" SALT 10% SH TRS K_2O AND KCL 7" SALT 972.11 973.6 VERY GOOD SYLVITE 8" SALT 20% SH SL TRS K_2O + KCL.
4.1-9.7	(67") 25" SALT CLEAR TO VLT ORNG TO ORNG VSL TRS K_2O + KCL (BISCUIT VERY POORLY DEVELOPED 976.3) 8" SALT 20% SH 1½ SH (1½" BISCUIT-HOT 977) 4" SALT 20% SH 4" SH 20% SALT. 23" SH 40% SALT.

CORE WS #1

946.-951.7	(5.10) 10" SALT CLEAR TRS ORNG 15" SALT 20% SH 41" SALT VLT ORNG TO CLEAR WHT. 4" SALT ORNG 5% ANHY? ORNG.
1.7-7.6	(6") 15" SALT TRS ORNG AND ANHY 38" SH 30% SALT (BISCUITS HOT-953.5-953.9) 11½ SALT 30% SH 5½ SH 20% SALT.
7.6-2.9	(5.7) 11" SH 30% SALT 24" SALT 30% SH 10" SALT 20% SH 14" SALT 40% SH 8" SALT 10% SH (VTHIN BISCUIT SL HOT 962.5)
962.9-----	( )
9.3-4.6	(5.6") 27" SH 20% SALT 10" SALT 20% SH 7" SALT 10% SH 22" SALT VLT ORNG TRS IMP.
984.6-990	(5.9) 19" SALT VLT ORNG TRS IMP. 50" SALT 10% SH AND ANHY.
90.-5.7	(5.7) 12" SALT 10% IMP 2" SH - 24" SALT 10% IMP 1" ANHY 3" SALT 20% SH AND ANHY (BISCUIT HOT 993.7) 3" SH 20% SALT 2" SALT 20% SH 2" SH 19" SALT 40% SH.

DO NOT REMOVE FROM FILE

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32 ×

CORE WS #1 CONT.

962.9-968.4 (6.9") 44" SALT CLEAR 5% SH 5" SALT 10% SH AND ANHY 19" SALT 5% SH AND ANHY.

8.4-3.7 (67") 10" SALT CLEAR ANHY IMP TR CORNALITE 968.11-11" SALT 5% SALT 5% SH TRS K_2O AND SYLVITE 13" SALT 15% SH. 15½ SALT-971.2½-972.6 - GOOD - SYLVITE AND CARNALITE TRS RED AND GRN SH? HOT - 17½ SALT VLT ORNG TO CLEAR - TRS K_2O KCL.

74-9.3 (62) 8½ SALT VLT ORNG SL TRS KCL (BISCUIT-HOT-974.8½) 10½ SALT 20% SH? HOT (1" BISCUIT HOT - 975.7½) 6" SALT 30% SH 8" SH 20% SALT 9" SALT 40% SH. 20" SH 30% SALT (VTHIN BISCUIT HOT 979.1)

CORE WS#2

963-968.8 (70") 3" SALT 30% SH 3" SALT 10% SH 44" SALT CLEAR TRS SH 20" SALT 10% ANHY BANDS.

8.8-4.3 (67") 16" SALT VLT ORNG TRS CARNALITE 969.6 - 12" SALT 5% SH TRS SYLVITE 2" SH 30% SALT 13" SALT 20% SH TRS SYLVITE - 18" SALT 5% SH CARNALITE AND SYLVITE (972.3-973.9 -POOR) 6" SALT VLT ORNG TO CLEAR TRS K_2O.

4.3-9.10½ (5.8)17" SALT VLT ORNG TRS CLEAR VSL TRS K_2O (BISCUIT HOT VTHIN 975.7) 7" SALT 30% SH 3" SH 10% SALT (BISCUIT-NOT HOT-2") 14" SALT 40% SH 5" SH-20% SALT 22" SH 30% SALT.

9.10½-5.5 (5.8) 17" SH 30% SALT 44" SALT 30% SH 7" SALT 10% IMP.

5.5-88 (2.8) SALT 10% IMP.

32×

DETAILED CORE AND FIELD DESCRIPTION

WELL NAME: NMA # 51

LOCATION:

ELEVATION:

CORE - V -

960-974.18 CORE 964=LOG 961-60-1 SALT 50% SH - 61-2 SALT LT MLKY TRS SH 62-3 SALT LT MLKY TRS SH & ORNG MAT 63-4 SALT LT MLKY TRS SH 64-5 SALT LT MLKY SL TRS SH & ORNG MAT 65-6 SALT LT MLKY SMALL ANHY INCLS 66-7 SALT LT MLKY SMALL ANHY INCLS STATS- 67-.50 SALT LT MLKY TRS ANHY & ORNG MAT. - K.5%-.50-8 SALT LT MLKY TRS ORNG MAT.-SL TRS RED K3.5%-.50-9 SALT SALT LT ORNG TRS SH -TRS ORNG MAT & ANHY SL TRS RED K6%-9-.50 SALT 15% SH TRS GRN SH SL TRS RED K6% -.50-70 SALT 10% SH TR GRN SH K7%-70-.50 SALT 5% SH TRS CLOUDY SL TRS RED K9% -.50-71 TRS SH GOOD CLOUDY TRS RED - K18%-71-.50 SALT .35 CLOUDY TRS RED-.15 SALT 10% RED & GRN SH K35%-.50-72 SALT 10% SH TRS ORNG SH CLOUDY? RED? K30%? 72-.50 SALT GRAN.LT ORNG TRS ANHY TRS CLOUDY & RED K20% -.50- 73 LT ORNG LT MLKY TRS CLOUDY K10% 73-.50 SALT LT MLKY K7.5% .50-74 SALT ORNG K3.5% 74-.50-.20 SALT ORNG K2.5-.30 SALT 50% SH (K5 974.18)

SECTION SHOWS ONLY SL TRS OF RED 3-20-66

DO NOT REMOVE FROM FILE

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WILSON TESTERS

Date 6/19/65
Ticket No. 307
Wilson District Farmington
Kind of Job Open Hole
Water Test

INITIAL SHUT-IN TIME	None MINUTES		
TOOL OPEN FLOW PERIOD 1ST	No / 2ND 75 MINUTES		
FINAL SHUT-IN TIME	None MINUTES		
TOP RECORDER DEPTH	820	BLANKED OFF	No
RECORDER NO.	1481	24 HR. CLOCK	
PRESSURE READINGS	FIELD	OFFICE CORRECTED	
INITIAL HYDRO MUD PRESSURE	400	400	
INITIAL SHUT-IN PRESSURE			
INITIAL FLOW PRESSURE	237	237	
FINAL FLOW PRESSURE	266	266	
FINAL SHUT-IN PRESSURE			
FINAL HYDRO MUD PRESSURE	400	400	
CENTER RECORDER DEPTH		BLANKED OFF	
RECORDER NO.		HR. CLOCK	
PRESSURE READINGS	FIELD	OFFICE CORRECTED	
INITIAL HYDRO MUD PRESSURE			
INITIAL SHUT-IN PRESSURE			
INITIAL FLOW PRESSURE			
FINAL FLOW PRESSURE			
FINAL SHUT-IN PRESSURE			
FINAL HYDRO MUD PRESSURE			
BOTTOM RECORDER DEPTH	828	BLANKED OFF	Yes
RECORDER NO.	15	Fast HR. CLOCK	
PRESSURE READINGS	FIELD	OFFICE CORRECTED	
INITIAL HYDRO MUD PRESSURE			
INITIAL SHUT-IN PRESSURE			
INITIAL FLOW PRESSURE			
FINAL FLOW PRESSURE			
FINAL SHUT-IN PRESSURE			
FINAL HYDRO MUD PRESSURE			
AMOUNT—TYPE OF CUSHION	None		

Contractor: Sojourne

HOLE AND TOOL DATA

Elevation	T.H.	Top Packer Depth	725
Total Depth	830	Bottom Packer Depth	730
Hole Size	8 3/4	Size - Type Packer	7½ B.T.
Rat Hole Size	None	Bottom Choke Size	3/4
Perforations	None	Surface Choke	1
Interval Tested	730 To 830	Amount of Air Chamber	None
Formation Tested	T.H.	I. D. & Length Drill Collars	
Temperature	86 °F.	Drill Pipe Size	

MUD DATA

Weight		Viscosity	
All Depths Measured from	Kelly B.	No. Folders Reproduced	5

REMARKS: (TIGHT HOLE)

Water Test

RECOVERY:

50 feet of water cut mud.

580 feet of water

Test Approved By: J.S. Baldry

Tester: T.A. Wilson

LOCATION TIGHT HOLE FIELD TIGHT HOLE COUNTY NAVAJO STATE ARIZ.

LEASE NAME NMA CORE TEST

WELL NO. 51

TEST NO. 2

COMPANY ARKLA EXPLORATION CO.

DISTRICT HOLBROOK, ARIZONA

9-20

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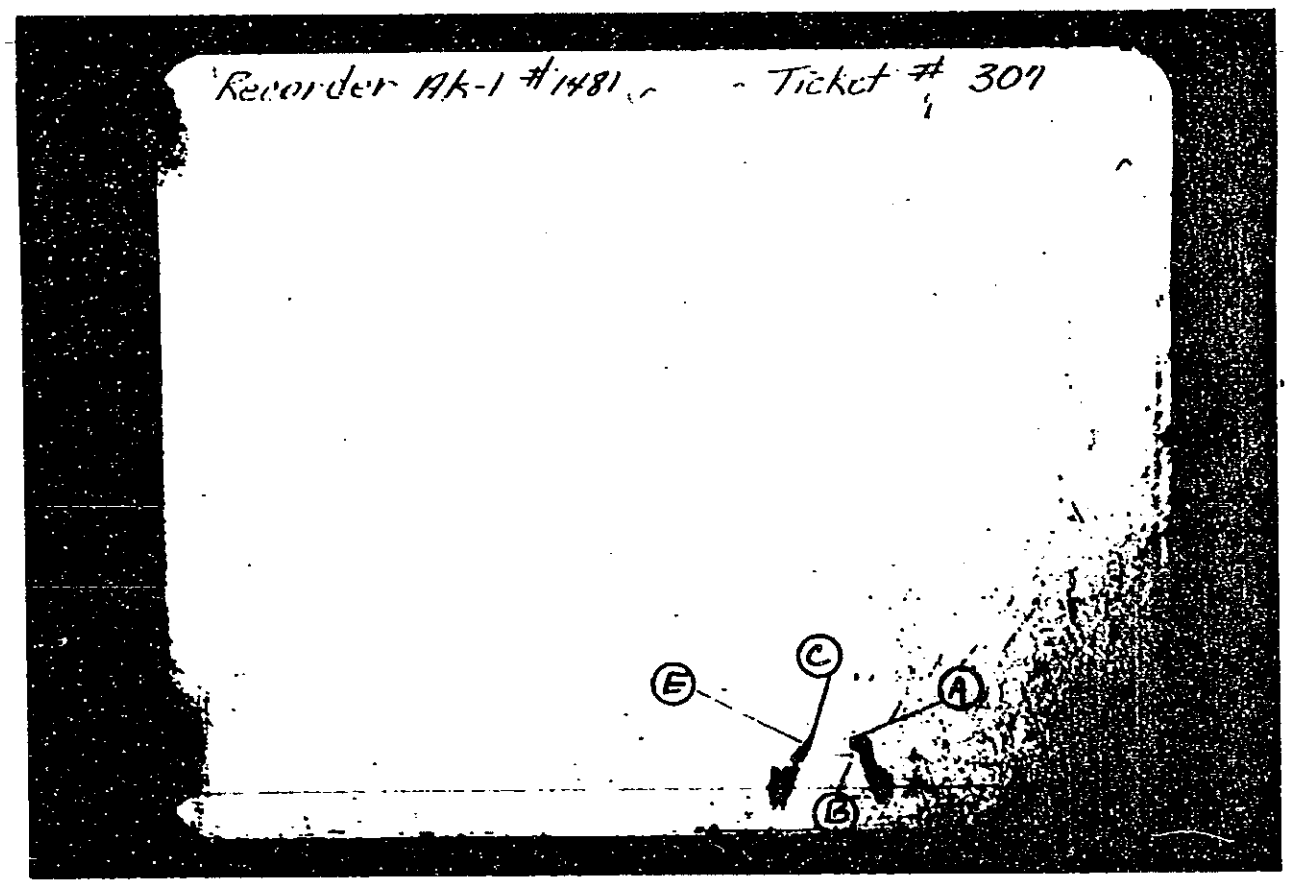
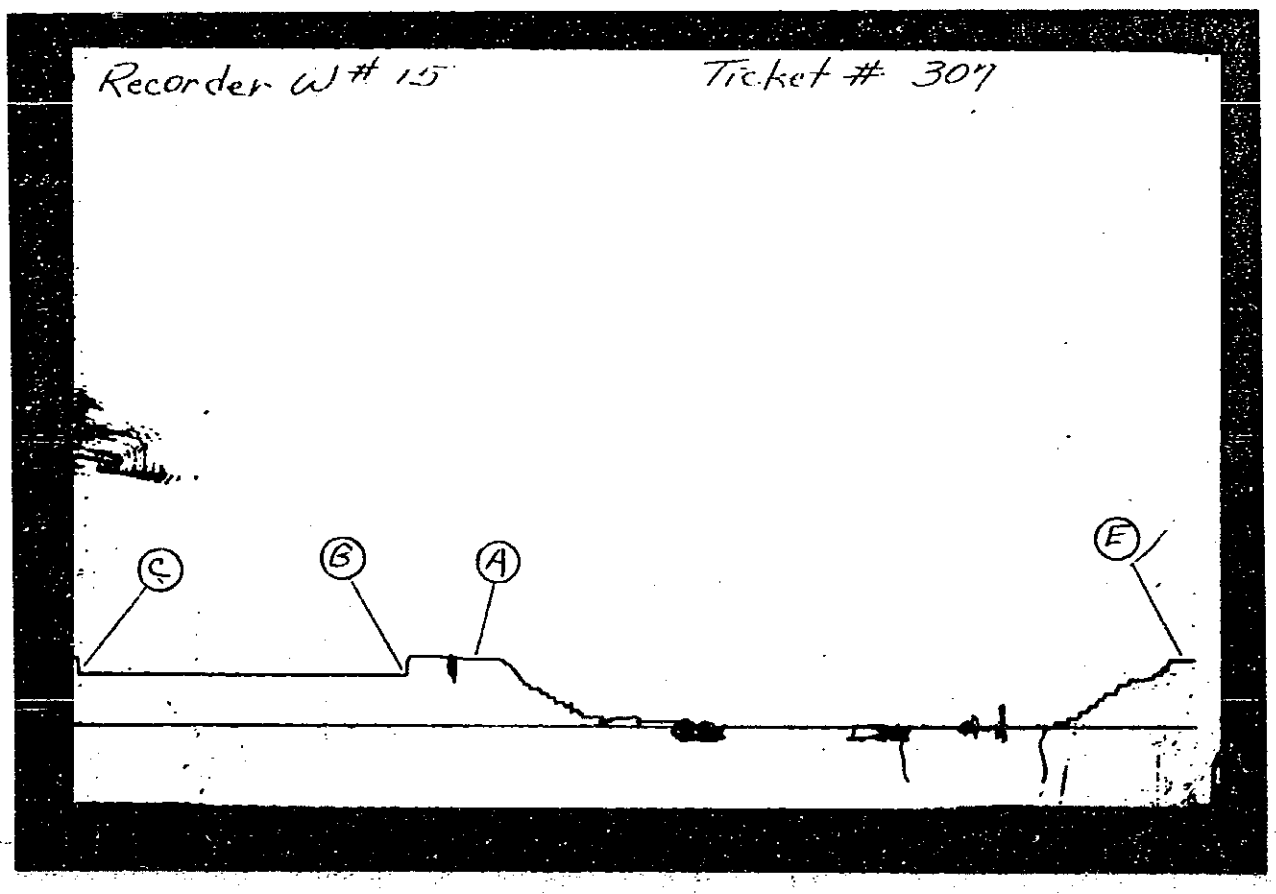


PRESSURE DATA	Pressure
(A) Initial Hydrostatic Mud	
(B) Initial Flow	
(C) Final Flow	
(D) Final Shut-In	
(E) Final Hydrostatic Mud	
(F) Initial Shut-In	



ARKLA EXPLORATION COMPANY

Drilling Record

WELL NAME: NMA Core Test #51

WELL LOCATION: 773 FWL 859 FSL
Sec 29-16N-23E

WELL ELEVATION: 5385 ' KB

CONTRACTOR: Sojourner Drilling Co.

SPUD DATE: 6-15-65 2:00PM

SIZE HOLE DRILLED: 13¾ " to 44 '

TYPE DRILLING FLUID: Gel

SURFACE CASING:
Size 10¾ ", Wt. 32.75 #, No. Sacks Cement 35
Cementing Depth: 42 '

SIZE HOLE DRILLED: 8¾ "

TYPE DRILLING FLUID: Flo Sol (A)

INTERMEDIATE CASING:
Size 7 ", Wt. 20 #, No. Sacks Cement 225 (B)
Cementing Depth 887

SIZE HOLE DRILLED OR CORED:
6¼ " from 887 ' to 1260 ' (C)
" from ' to '
" from ' to '
" from ' to '

DRILL STEM TESTS:
DST #1-521-653
DST #2-730-830

NO. BITS USED: 2

ELECTRIC LOGS RAN:
Type McCullough Grn from ' to 0 '
from ' to '

ABANDONMENT PLUGS:
No. Sacks Cement 100 from 1260 ' to 760 '
75 from 500 ' to 150 '

WAS CASING RECOVERED?
Depth Shot ', ', '
No. Feet Recovered '
No. Feet Not Recovered 887 '

DATE DRILLING RIG RELEASED: 6-24-65 9:00 AM

COMPANY REPRESENTATIVE: James S. Baldry

SPECIAL NOTES: Unusual drilling problems encountered, etc.
(A) Lost circulation @ 485 542 664 and lost some mud while drilling to 887'.
(B) Ran 125 sacks no circulation ran temp survey and top cement 550'- Perf-ran 100 sacks circulated cement.
(C) Drilled hole to 907'- set whipstock and drilled and cored hole#1 to 998', straightened hole@ 907' and drilled to 937 and set whipstock and drilled and cored to 989' straightened hole@ 937 and drilled and cored to 1260' TD.

9-20

DO NOT REMOVE FROM FILE

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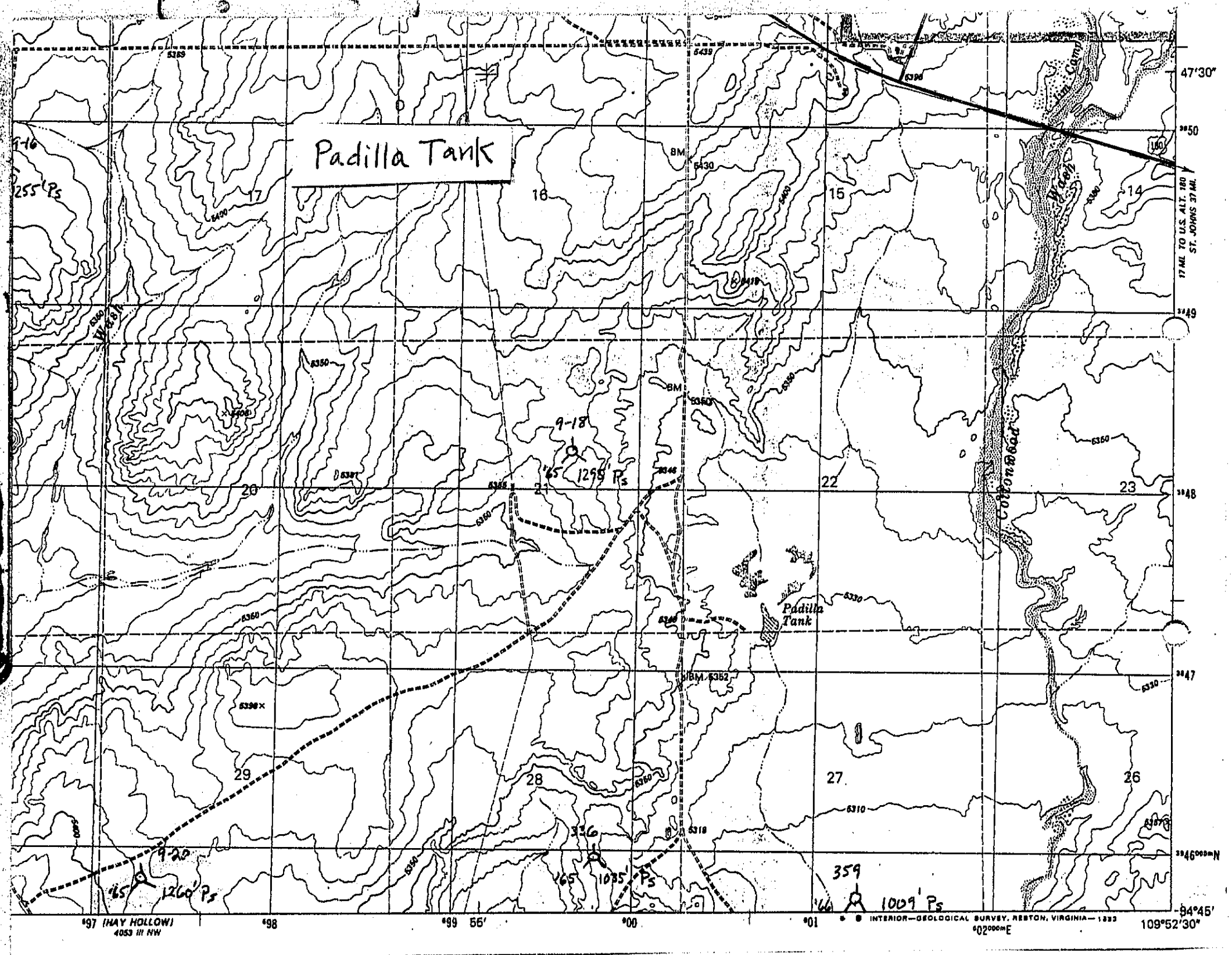
Padilla Tank
9-16
255' Ps
9-18
'65
1298' Ps
9-20
'65
1260' Ps
336
'65
1035' Ps
359
'66
1009' Ps
Padilla Tank
Cottonwood
Wash
Jim Camp
17 MI. TO U.S. ALT. 180
ST. JOHNS 37 MI.
47'30"
84°45'
109°52'30"
(HAY HOLLOW)
4053 III NW
INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1933

32 x

SYMBOL OF SERVICE

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SURVEY REPORT

#51

EASTMAN OIL WELL SURVEY COMPANY

DIRECTIONAL DRILLING • TOOLS • INSTRUMENTS • TECHNIQUES

Consult The Yellow Pages For Your Nearest Eastman Office

LONG BEACH • HOUSTON • ODESSA

9-20

32×

RECORD OF SURVEY

CHECKED BY _____

JOB NO. WT63965 DATE June 19, 1965

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES NORTH	SOUTH	EAST	WEST
1	95 00	1° 15'			2 07	S 43 W		1 51		1 41
2	155 00	1° 15'			1 31	S 50 W		2 35		2 41
3	215 00	1° 15'			1 31	S 49 W		3 21		3 40
4	275 00	1° 30'			1 57	S 46 W		4 30		4 53
5	335 00	1° 45'	334 91		1 83	S 47 W		5 55		5 87
6	395 00	1° 30'			1 57	S 48 W		6 60		7 04
7	455 00	1° 45'			1 83	S 61 W		7 49		8 64
8	515 00	2° 45'			2 88	S 80 W		7 99		11 84
9	575 00	3° 30'			3 66	S 82 W		8 50		15 10
10	635 00	4° 00'	634 53		4 19	S 82 W		9 08		19 25
11	695 00	4° 00'			4 19	S 79 W		9 88		23 36
12	755 00	3° 45'			3 92	S 75 W		10 89		27 15
13	815 00	3° 45'			3 92	S 56 W		13 08		30 40
14	845 00	3° 45'			1 96	S 59 W		14 09		32 08
15	885 00	3° 30'	883 99		2 44	S 61 W		15 27		34 21

CLOSURE 37.47' South 65° 56' West

FORM NO D-303P

32 X

RECORD OF SURVEY

CHECKED BY _____

JOB NO. WT63965 DATE June 19, 1965

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES NORTH	SOUTH	EAST	WEST
-	885 00		883 99	HOLE NO. 1 (DATA FROM M.S. SURVEY)				15 27		34 21
1	907 00	3° 30'	905 95		1 34	S 61 W		15 92		35 38
2	969 00	4° 45'	967 74		5 13	N 59 W		13 28		39 78
3	998 00	4° 30'	996 65		2 28	N 60 W		12 14		41 75
				CLOSURE 43.48' S 73° 47' W						
-	885 00		883 99	HOLE NO. 2 (DATA FROM M.S. SURVEY)				15 27		34 21
1	907 00	3° 30'	905 95		1 34	S 61 W		15 92		35 38
2	922 00	3° 30'	920 92		0 92	S 62 W		16 35		36 19
3	969 00	3° 30'	967 83		2 87	S 06 W		19 20		36 49
4	989 00	3° 30'	987 79		1 22	S 02 W		20 42		36 53
				CLOSURE 41.85' S 60° 47' W						
-	885 00		883 99	HOLE NO. 3 (DATA FROM M.S. SURVEY)				15 27		34 21
1	907 00	3° 30'	905 95		1 34	S 61 W		15 92		35 38
2	922 00	3° 30'	920 92		0 92	S 62 W		16 35		36 19
3	969 00	3° 30'	967 83		2 87	S 45 W		18 38		38 22
4	1010 00	3° 30'	1008 75		2 50	S 45 W		20 15		39 99
				CLOSURE 44.78' S 63° 15' W						

CLOSURE BETWEEN HOLES AT 969'
HOLE NO. 1 TO HOLE NO. 2 6.77' S 29° 04' E
HOLE NO. 1 TO HOLE NO. 3 5.31' S 16° 00' E
HOLE NO. 2 TO HOLE NO. 3 1.91' S 64° 38' E

CLOSURE BETWEEN HOLES AT TOTAL DEPTH
HOLE NO. 1 TO HOLE NO. 2 9.79' S 32° 14' E
HOLE NO. 1 TO HOLE NO. 3 8.20' S 12° 24' E
HOLE NO. 2 TO HOLE NO. 3 3.47' S 85° 32' E

FORM NO. D-303P

EASTMAN

DIRECTIONAL DRILLING INSTRUMENTATION

"Symbol of Service"

REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY

ARKLA EXPLORATION COMPANY
COMPANY

N.M.A. CORE TEST NO. 51
WELL NAME

NAVAJO COUNTY, ARIZONA
LOCATION

JOB NUMBER	TYPE OF SURVEY	DATE
WT63965	MAGNETIC MULTISHOT SINGLE SHOT	JUNE 19, 1965

SURVEY BY
R.E. VICKERS

OFFICE
ODESSA, TEXAS

FORM D-802 R1

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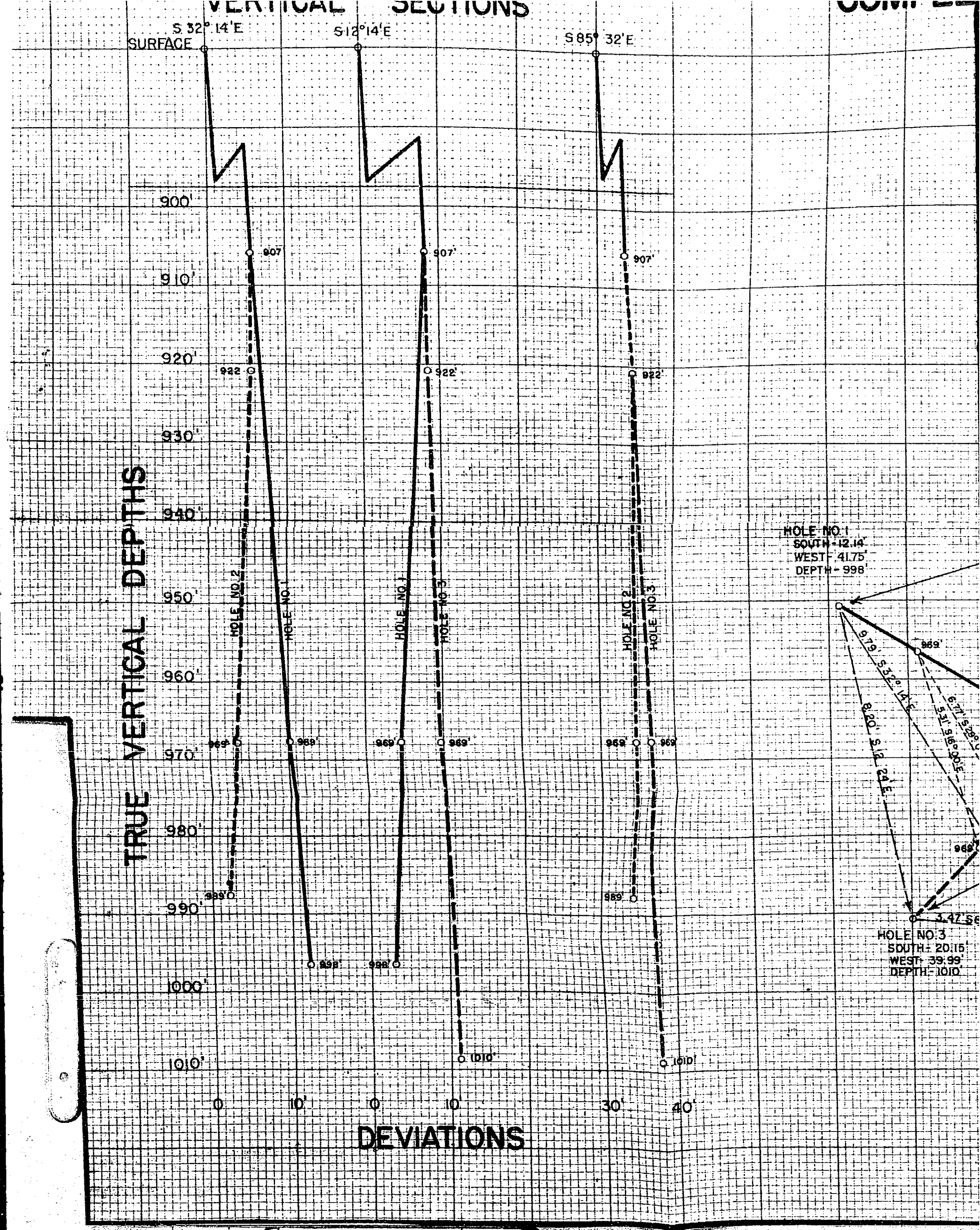
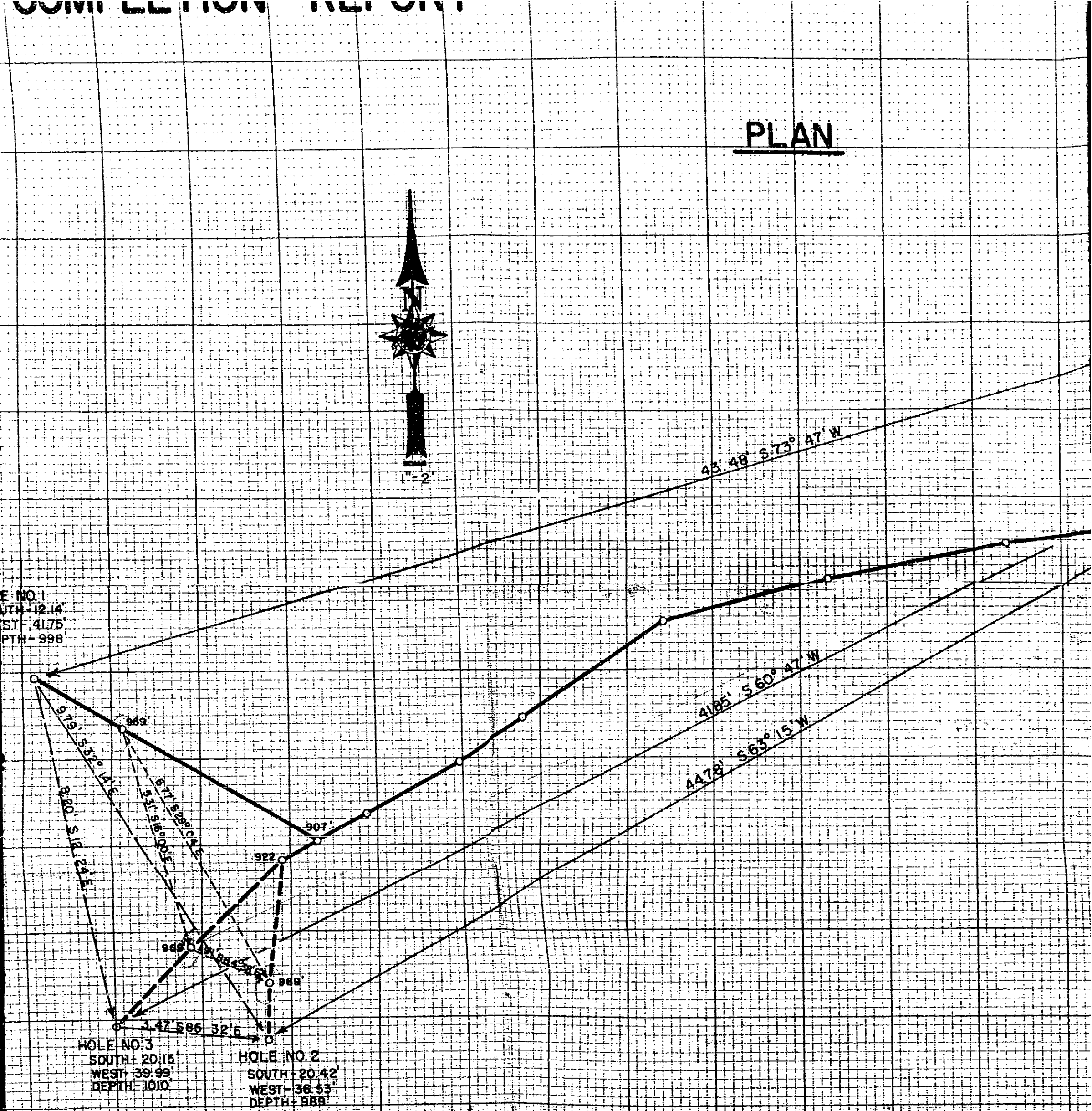

VERTICAL SECTIONS
S 32° 14' E
S 12° 14' E
S 85° 32' E
SURFACE
900'
910'
920'
930'
940'
950'
960'
970'
980'
990'
1000'
1010'
907
907'
907'
922
922'
922'
969'
969'
969'
969'
969'
969'
989'
998'
998'
1010'
1010'
HOLE NO 2
HOLE NO 1
HOLE NO 1
HOLE NO 3
HOLE NO 2
HOLE NO 3
TRUE VERTICAL DEPTHS
0
10'
0
10'
30'
40'
DEVIATIONS
HOLE NO 1
SOUTH - 12.14'
WEST - 41.75'
DEPTH - 998'
9.79' S 32° 14' E
8.20' S 12° 24' E
6.71' S 78° 10'
5.31' S 16° 00' E
3.47' S6
HOLE NO 3
SOUTH - 20.15'
WEST - 39.99'
DEPTH - 1010'

32 × L

COMPLETION REPORT

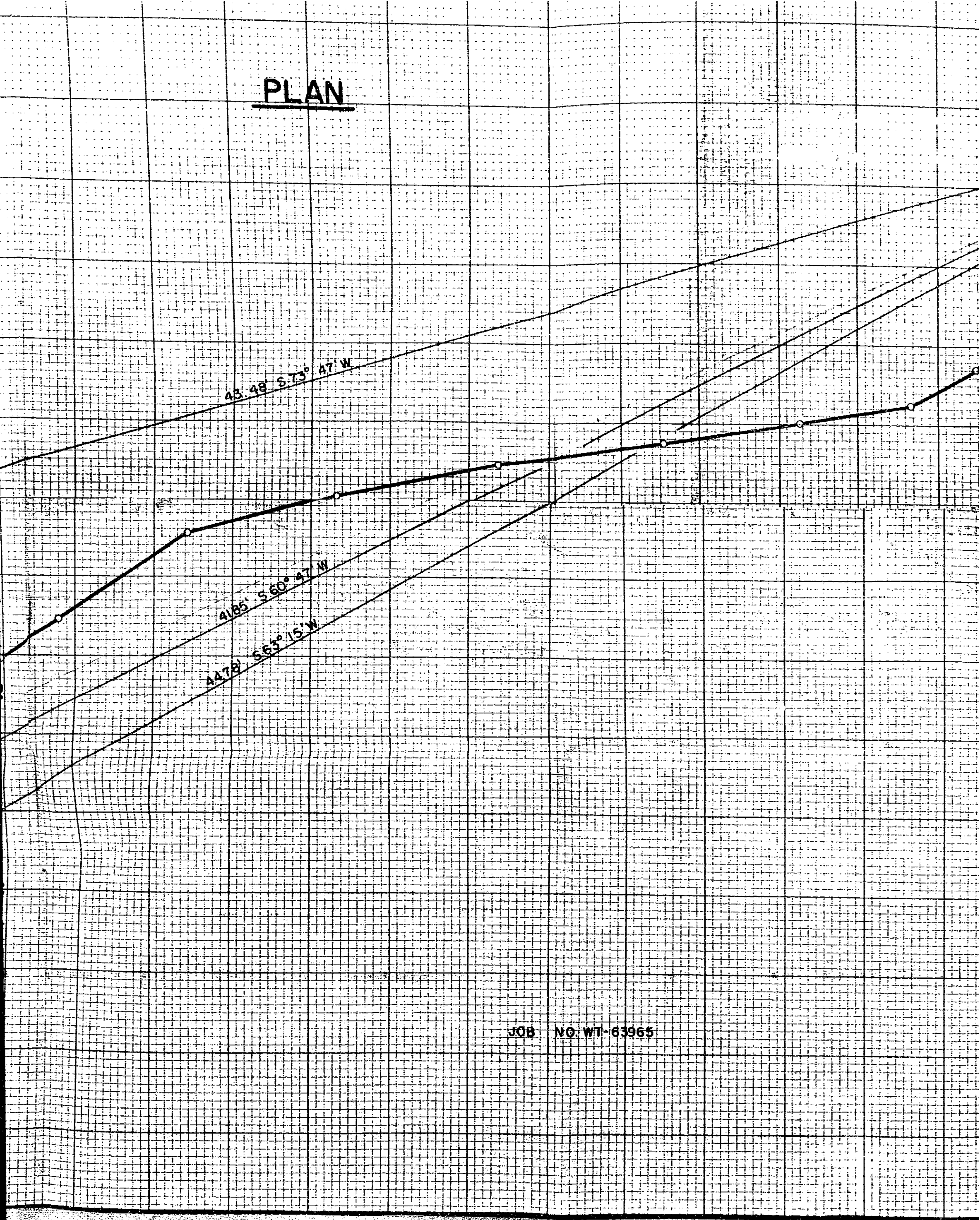
PLAN



JOB N

32 X

PLAN



JOB NO. WT-63965

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