

TABULATION OF DEVIATION TESTS

** CONOCO INC. **

DEPTH

DEVIATION

SEE ATTACHED

AFFIDAVIT

THIS IS TO CERTIFY that to the best of my knowledge, the above tabulation details the deviation tests taken on Conoco Inc.'s

Lugers L-15
SAN TOME COUNTY, NEW MEXICO

Surface well 1970 FNL, 40' FE. SL. 23 32N R-340
Bottom hole well 1971 FNL, 104' FE. SL. 28 70N R-300

Signed Peter D. Bowser

Title PRODUCTION ENGINEER

THE STATE OF OKLAHOMA)
) SS.
COUNTY OF OKLAHOMA)

BEFORE ME, the undersigned authority, on this day personally appeared Peter D. Bowser known to me to be Production Engineer for Conoco Inc. and to be the person whose name is subscribed to the above statement, who, being by my duly sworn on oath, states that he has knowledge of the facts stated herein and that said statement is true and correct.

SUBSCRIBED AND SWORN to before me, a Notary Public in and for said County and State this 13th day of August, 1991.

Maurice A. Gunn
Notary Public

My commission Expires: March 27, 1992

REPORT OF
SUB-SURFACE
DIRECTIONAL
SURVEY



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**

CONOCO, INC.
COMPANY

HUGHES NO.A-16
WELL NAME

SAN JUAN COUNTY, NEW MEXICO
LOCATION

JOB NUMBER

413-586

TYPE OF SURVEY

MAGNETIC SINGLE SHOT SURVEY

DATE

01-APR-91

SURVEY BY
MR. V. STAPLES

OFFICE
RM/410 CASPER, WY.

FOR

EC DISTRICT : ROCKY MOUNTAIN DIST.

PBHL : N 90 0 W

MEASURED DEPTH	DRIFT ANGLE D M	DRIFT DIRECTION D M	COURSE LENGTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	R E C T A N G U L A R C O O R D I N A T E S	C L O S U R E D I S T A N C E	D I R E C T I O N D M	DOGLEG S E V E R I T Y
273.00	0	0	N 0	0	0.00	0.00	0.00	S 90 0 E	0.00
406.00	0	45	N 45	0	0.62	0.62	0.87	N 45 0 W	0.56
435.00	0	30	N 40	0	0.83	0.83	1.19	N 44 28 W	0.88
465.00	1	15	N 89	0	1.24	1.24	1.57	N 52 31 W	3.32
495.00	1	45	N 80	0	2.02	2.02	2.27	N 62 49 W	1.84
525.00	3	0	N 70	0	3.21	3.21	3.50	N 66 39 W	4.37
556.00	4	0	N 70	0	4.99	4.99	5.39	N 67 49 W	3.23
588.00	5	15	N 68	0	7.39	7.39	7.97	N 68 10 W	3.94
651.00	6	0	N 80	0	13.31	13.31	14.09	N 70 53 W	2.21
682.00	6	45	S 89	0	16.73	16.73	17.42	N 73 47 W	4.61
745.00	8	15	N 87	0	24.94	24.94	25.45	N 78 35 W	2.52
809.00	10	0	N 83	0	35.04	35.04	35.55	N 80 21 W	2.91
871.00	11	0	N 86	0	46.29	46.29	46.82	N 81 22 W	1.84
902.00	11	30	S 89	0	52.33	52.33	52.82	N 82 12 W	3.53
934.00	12	0	N 90	0	58.85	58.85	59.27	N 83 6 W	1.69
964.00	13	0	N 88	0	65.34	65.34	65.74	N 83 41 W	3.63
995.00	13	45	S 89	0	72.50	72.50	72.87	N 84 15 W	3.30
1129.00	15	0	S 89	0	105.77	105.77	105.98	N 86 22 W	0.93
1439.00	15	30	S 89	0	187.29	187.29	187.37	N 88 23 W	0.16
1754.00	15	0	S 88	0	270.12	270.12	270.14	N 89 20 W	0.18
2070.00	15	0	S 89	0	351.87	351.87	351.87	N 89 50 W	0.08
2380.00	15	0	S 89	0	432.09	432.09	432.09	S 89 57 W	0.00
2690.00	15	0	N 90	0	512.32	512.32	512.32	S 89 53 W	0.08
2848.00	13	45	N 90	0	551.55	551.55	551.55	S 89 53 W	0.79
3193.00	10	30	N 90	0	624.00	624.00	624.00	S 89 54 W	0.94
3225.00	10	15	N 90	0	629.77	629.77	629.77	S 89 54 W	0.78

CLOSURE - DISTANCE : 629.77
DIRECTION : S 89 54 W

REPORT UNITS : Feet
SURVEY CALCULATION METHOD : Minimum curvature

Accepted by :
Checked by :

SURVEY RUN INFORMATION

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SINGLE SHOT SURVEY

DIRECTIONAL DRILLERS: V. STAPLES, D. GLEIM, J. BECKSTED

SURVEY FROM 273.0' TO 3225'

413-586

ONOCO, INC.

HUGHES A-16 MEXICO

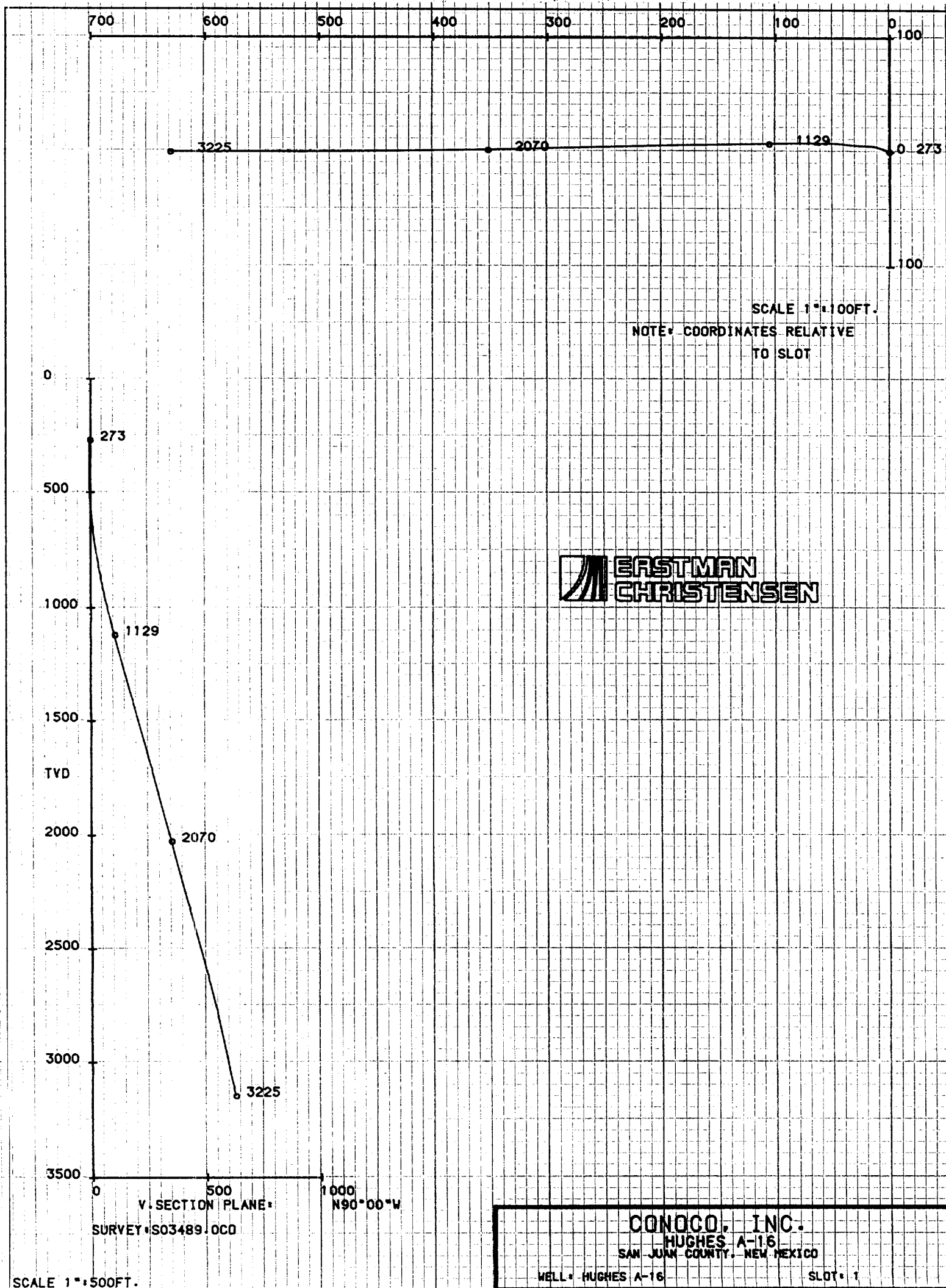
JUN COUNTY, NEW MEXICO

AN JUN

ES A-16

SLOT 1

SCALE



SURVEY CERTIFICATION SHEET

Company CONOCO, INC. Job # 413-586 Date 01-APR-91

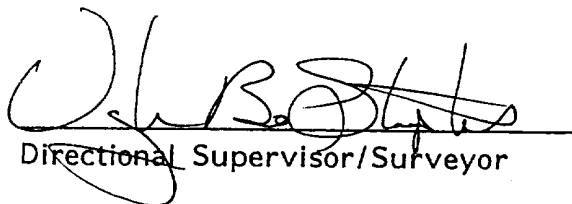
Lease HUGHES Well # A-16 State NEW MEXICO

Surveyed from a depth of 273 feet to a depth of 3225 feet.

Type of Survey SINGLE SHOT SURVEY'S+ MAGNETIC

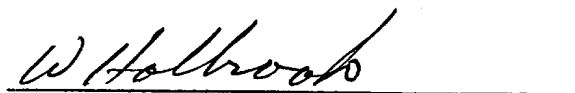
Directional Supervisor/Surveyor MR. V. STAPLES

The data for this survey and the calculations for this survey were obtained and performed by me according to the standards and procedures as set forth by Eastman Christensen Company and are true and correct to the best of my knowledge.


Directional Supervisor/Surveyor

The data and calculations for this survey have been checked by me and conform to the standards and procedures as set forth by Eastman Christensen Company. This report represents a true and correct Directional Survey of this well based on the original data obtained at the well site:

Checked by:



Original Copy - District Office File

One copy to Houston Office

FORM D-1121