



1700 Broadway Suite 1450 Denver Colorado 80290
(303) 860-0509 Fax (303) 830-2546

REPORT OF SUB-SURFACE DIRECTIONAL SURVEY

RECEIVED
NOV - 5 1996

OIL CON. DIV.
DIST. 3

Phillips Petroleum
COMPANY

San Juan Unit 32-8 #20
WELL NAME

30-045-11025

San Juan County, New Mexico
LOCATION

L - H - 31N - 08W

JOB NUMBER
410-80532

TYPE OF SURVEY
MSS

DATE
October 3, 1996

SURVEYED BY
Butch Judge

OFFICE
DENVER



1700 Broadway Suite 1450 Denver Colorado 80290
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SURVEY CERTIFICATION SHEET

Phillips Petroleum

Company

Sec-4-T31N-R8W

Lease

410-80532

Job #

San Juan Unit 32-8 #20

Well #

October 3, 1996

Date

San Juan County, New Mexico

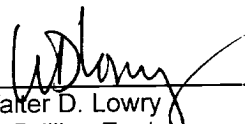
County and State

Surveyed from a depth of 3,503 feet to 3,736 feet MD

Type of Survey MSS

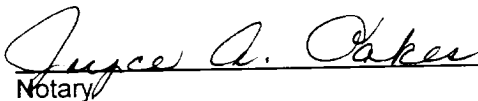
Directional Supervisor/Surveyor Butch Judge

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by Baker Hughes INTEQ. This report represents a true and correct Directional Survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.



Walter D. Lowry
Sr. Drilling Engineer

This document has been subscribed and affirmed, or sworn to before me in the county of Denver, state of Colorado, this 22nd day of October, 1996.

 My commission expires August 4, 2000
Notary

Certification Number: 430
Certification Date: October 22, 1996

PHILLIPS PETROLEUM

Structure : SEC.4-T31N-R8W Well : SAN JUAN UNIT 32-8 #20

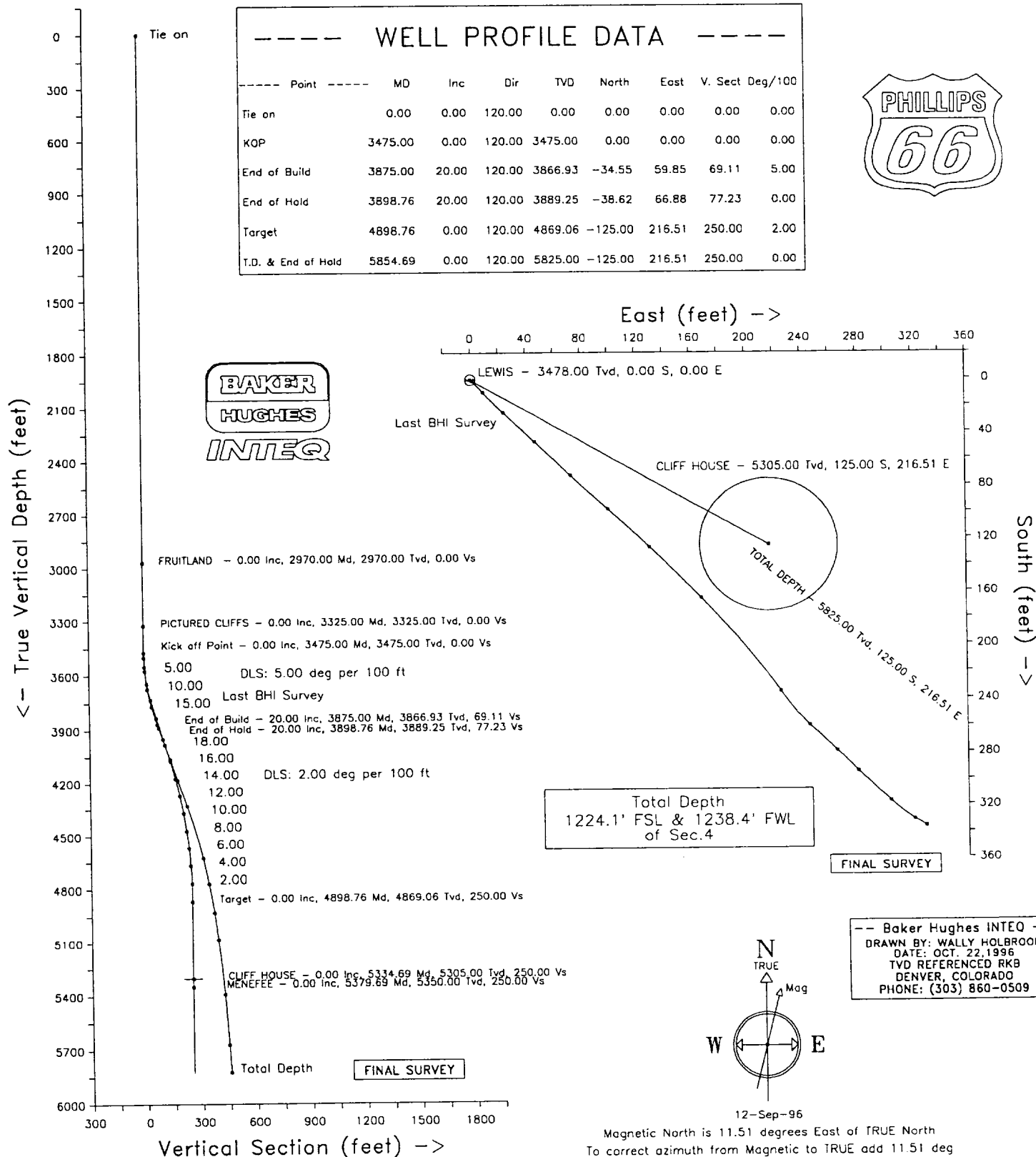
Field : SAN JUAN COUNTY

Location : NEW MEXICO



WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00
KOP	3475.00	0.00	120.00	3475.00	0.00	0.00	0.00	0.00
End of Build	3875.00	20.00	120.00	3866.93	-34.55	59.85	69.11	5.00
End of Hold	3898.76	20.00	120.00	3889.25	-38.62	66.88	77.23	0.00
Target	4898.76	0.00	120.00	4869.06	-125.00	216.51	250.00	2.00
T.D. & End of Hold	5854.69	0.00	120.00	5825.00	-125.00	216.51	250.00	0.00



-- Baker Hughes INTEQ --
DRAWN BY: WALLY HOLBROOK
DATE: OCT. 22, 1996
TVD REFERENCED RKB
DENVER, COLORADO
PHONE: (303) 860-0509

PHILLIPS PETROLEUM
SEC.4-T31N-R8W

SAN JUAN UNIT 32-8 #20
SLOT #1
SAN JUAN COUNTY
NEW MEXICO

S U R V E Y L I S T I N G

by
Baker Hughes INTEQ

Your ref : Single Shot Surveys
Our ref : svy3746
License :

Date printed : 22-Oct-96
Date created : 3-Oct-96
Last revised : 22-Oct-96

Field is centred on n36 50 0.000,w107 30 0
Structure is centred on n36 50 0.000,w107 30 0

Slot location is n36 50 15.425,w107 29 48.806
Slot Grid coordinates are N 2124326.988, E 598455.086
Slot local coordinates are 1560.00 N 910.00 E

Projection type: mercator - New Mexico West (3003), Spheroid: Clarke - 1866
Reference North is True North

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect
0.00	0.00	0.00	0.00	0.00 E	0.00	0.00
3503.00	0.00	120.00	3503.00	0.00 E	0.00	0.00
3553.00	4.00	130.00	3552.96	1.34 E	8.00	1.72
3646.00	10.50	140.00	3645.17	9.28 E	7.09	12.89
3736.00	17.00	134.00	3732.55	25.15 S	7.38	33.38
						Last BHI Survey
3842.00	17.50	134.50	3833.78	47.08 S	0.49	63.85
3965.00	17.00	133.50	3951.25	72.42 S	0.47	99.24
4086.00	19.00	132.50	4066.32	97.91 S	1.67	135.67
4210.00	20.00	134.50	4183.21	126.41 S	0.97	175.91
4367.00	20.00	137.50	4330.74	165.02 S	0.65	227.51
4676.00	14.00	145.50	4626.15	234.86 S	2.08	311.73
4826.00	11.00	133.50	4772.60	259.67 S	2.64	342.03
4985.00	9.00	135.50	4929.17	278.99 S	1.28	368.77
5140.00	7.00	135.50	5082.66	294.37 S	1.29	389.56
5451.00	5.00	133.50	5391.94	317.22 S	0.65	421.00
5730.00	4.00	122.50	5670.08	330.82 S	0.47	442.54
5885.00	3.25	119.50	5824.77	335.89 S	0.50	452.34
						Total Depth is
						452.34 1224.1' FSL & 1238.4' FWL

All data is in feet unless otherwise stated.
 Coordinates from SLOT #1 and TVD from RKB (6458.00 Ft above mean sea level).
 Bottom hole distance is 469.75 on azimuth 135.65 degrees from wellhead.
 Vertical section is from wellhead on azimuth 120.00 degrees.
 Calculation uses the minimum curvature method.

Presented by Baker Hughes INTEQ

Comments in wellpath

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MD	TVD	Rectangular Coords.	Comment
3736.00	3732.55	25.15 S 24.03 E	Last BHI Survey
5730.00	5670.08	330.82 S 320.01 E	Total Depth is
5885.00	5824.77	335.89 S 328.39 E	1224.1' FSL & 1238.4' FWL

Targets associated with this wellpath

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Target name	Geographic Location	T.V.D.	Rectangular Coordinates	Revised
TGT 32-8 #20		5305.00	125.00S 216.51E	16-Aug-96