



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 #10
WELL NAME

San Juan County, New Mexico
LOCATION

A 24 3 1/2 SW

TYPE OF SURVEY
MSS

JOB NUMBER
410-80536

30-045-10562
DATE
October 21, 1996

SURVEYED BY
Max Lund

OFFICE
DENVER



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SURVEY CERTIFICATION SHEET

Phillips Petroleum

Company

Sec-24-T31N-R8W

Lease

410-80536

Job #

San Juan Unit 32-8 #10

Well #

October 21, 1996

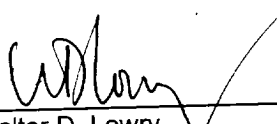
Date

San Juan County, New Mexico

County and State

Surveyed from a depth of 3,900 feet to 4,358 feet MD
Type of Survey MSS
Directional Supervisor/Surveyor Max Lund

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 24th day of October, 1996.

Jayce A. Oakes My commission expires August 4, 2000
Notary

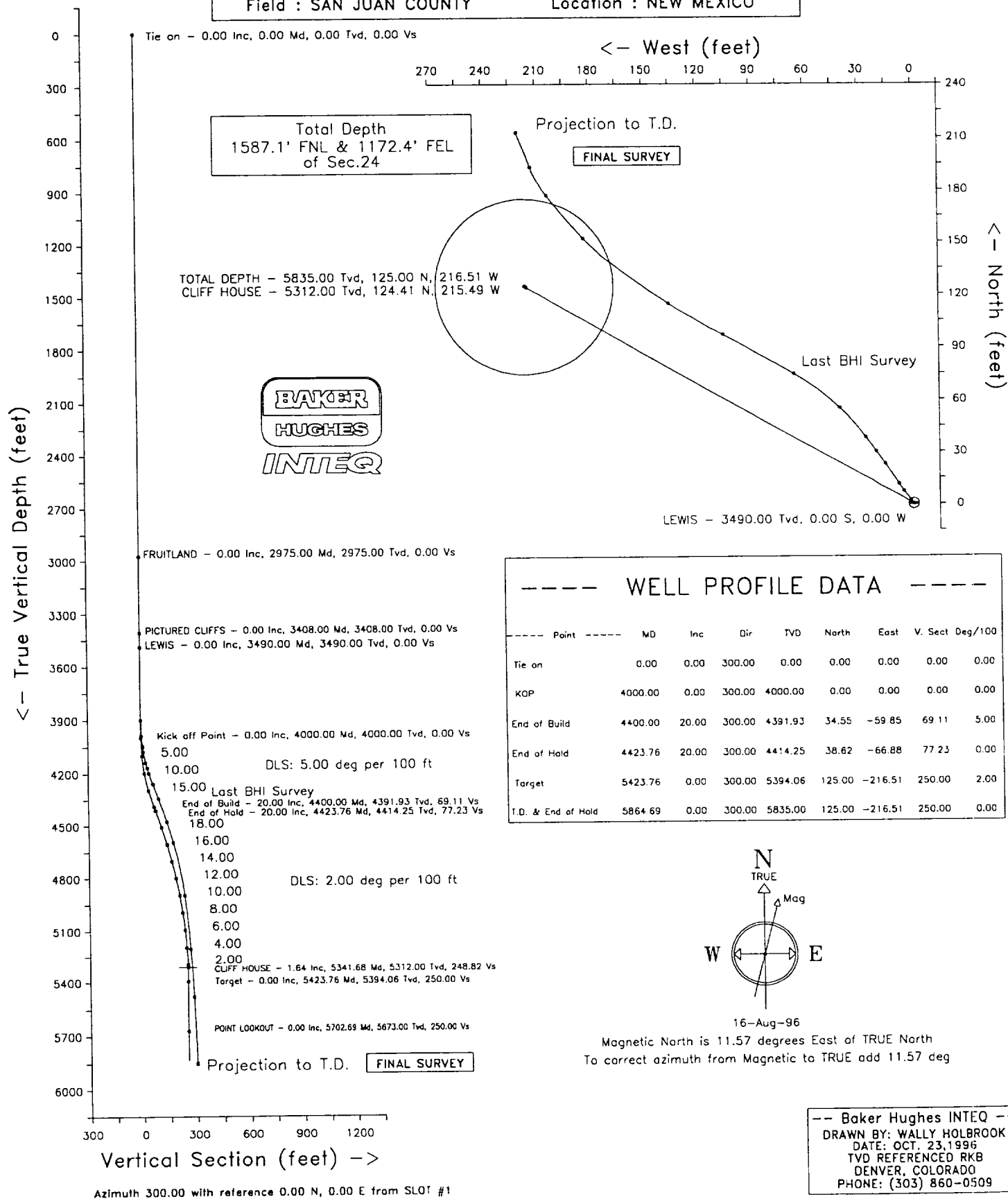
Certification Number: 432
Certification Date: October 23, 1996

PHILLIPS PETROLEUM

Structure : SEC.24-T31N-R8W Well : SAN JUAN UNIT 32-8 #10

Field : SAN JUAN COUNTY

Location : NEW MEXICO



PHILLIPS PETROLEUM
SEC.24-T31N-R8W

SAN JUAN UNIT 32-8 #10
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 Survey
Our ref : svy3760
License :

Date printed : 23-Oct-96
Date created : 21-Oct-96
Last revised : 23-Oct-96

Field is centred on n36 50 0.000,w107 30 0
Structure is centred on n36 53 13.005,w107 36 45.004

Slot location is n36 52 55.207,w107 36 56.721
Slot Grid coordinates are N 2140384.186, E 563634.003
Slot local coordinates are 1800.00 S 952.00 W

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
3900.00	0.00	0.00	3900.00	0.00 E	0.00	0.00
3987.00	3.13	321.40	3986.96	1.48 W	3.60	2.21
4049.00	8.78	323.70	4048.60	5.34 W	9.12	8.13
4079.00	10.75	326.60	4078.16	8.24 W	6.77	12.72
4141.00	14.75	326.50	4138.62	15.78 W	6.45	24.96
4173.00	17.50	325.50	4169.36	20.76 W	8.64	32.95
4204.00	20.00	325.50	4198.71	26.40 W	8.06	41.95
4267.00	21.50	314.50	4257.65	40.74 W	6.62	62.86
4358.00	20.00	300.50	4342.79	66.06 W	5.68	94.58
4498.00	17.50	298.50	4475.35	105.20 W	1.84	139.57
4623.00	15.50	303.50	4595.21	135.64 W	1.96	175.04
4931.00	7.25	317.50	4896.95	183.18 W	2.81	234.76
5238.00	4.75	324.60	5202.24	203.64 W	0.85	264.80
5517.00	3.00	340.00	5480.60	212.83 W	0.72	280.90
5885.00	3.50	338.40	5848.01	220.26 W	0.14	297.08
5890.00	3.50	338.40	5853.00	220.37 W	0.00	297.32

Projection to T.D. is
1587.1' FNL & 1172.4' FEL

All data is in feet unless otherwise stated.
 Coordinates from SLOT #1 and TVD from RKB (6501.00 Ft above mean sea level).
 Bottom hole distance is 306.45 on azimuth 314.02 degrees from wellhead.
 Vertical section is from wellhead on azimuth 300.00 degrees.
 Calculation uses the minimum curvature method.
 Presented by Baker Hughes INTEQ

PHILLIPS PETROLEUM

SEC. 24-T31N-R8W, SAN JUAN UNIT 32-8 #10
SAN JUAN COUNTY, NEW MEXICO

SURVEY LISTING Page 2
Your ref : Single Shot Survey
Last revised : 23-Oct-96

Comments in wellpath

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MD	TVD	Rectangular Coords.	Comment
4358.00	4342.79	74.75 N 66.06 W	Last BHI Survey
5885.00	5848.01	212.67 N 220.26 W	Projection to T.D. is
5890.00	5853.00	212.95 N 220.37 W	1587.1' FNL & 1172.4' FEL

Targets associated with this wellpath

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Target name	Geographic Location	T.V.D.	Rectangular Coordinates	Revised
TGT 32-8 #10		5312.00	125.00N 216.51W	16-Aug-96