

15-39500

OCCIDENTAL PERMIAN LTD.

Artesia

Eddy County, NM

Piglet "21" State #5

VH - Job #32K0212129

Survey: Gyro

SDI Standard Survey Report

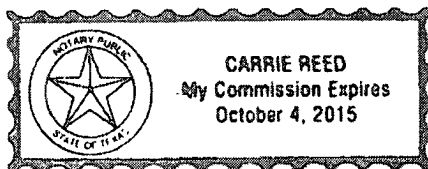
This survey is correct to the best of my knowledge and is supported by actual field data.

K. W. Hartman

Notarized this date 2nd of April, 2012.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling
Directional Drilling Operations

Scientific Drilling International, Inc.

SDI Standard Survey Report



Company: OCCIDENTAL PERMIAN LTD
 Project: Artesia
 Site: Eddy County, NM
 Well: Piglet "21" State #5
 Wellbore: VH - Job #32K0212129
 Design: VH - Job #32K0212129

Local Co-ordinate Reference: Well Piglet "21" State #5
 TVD Reference: WELL @ 0.0usft (Original Well Elev)
 MD Reference: WELL @ 0.0usft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM-Regulatory

Project: Artesia
 Map System: US State Plane 1927 (Exact solution)
 Geo Datum: NAD 1927 (NADCON CONUS)
 Map Zone: New Mexico East 3001
 System Datum: Mean Sea Level

Site: Eddy County, NM
 Site Position: Northing: 660,143.61 usft Latitude: 32° 48' 53.046 N
 From: Lat/Long Easting: 545,587.99 usft Longitude: 104° 11' 5.805 W
 Position Uncertainty: 0.0 usft Slot Radius: 13-3/16" Grid Convergence: 0.08°

Well: Piglet "21" State #5, Vertical
 Well Position: +N-S 0.0 usft Northing: 659,890.08 usft Latitude: 32° 48' 50.522 N
 +E-W 0.0 usft Easting: 546,641.15 usft Longitude: 104° 10' 53.468 W
 Position Uncertainty: 0.0 usft Wellhead Elevation: usft Ground Level: 0.0 usft

Wellbore: VH - Job #32K0212129
 Magnetics Model Name Sample Date Declination Dip Angle Field Strength
 (°) (°) (nT)
 IGRF2010 2/7/2012 7.83 60.61 48,864

Design: VH - Job #32K0212129

Audit Notes:
 Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0
 Vertical Section: Depth From (TVD) +N-S +E-W Direction
 (usft) (usft) (usft) (°)
 0.0 0.0 0.0 258.90

Survey Program Date: 4/1/2012
 From To
 (usft) (usft)
 100.0 350.0 Gyro (VH - Job #32K0212129)
 Tool Name Description
 Keeper Keeper Surface Readout

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
100.0	0.99	254.24	100.0	-0.2	-0.8	254.24	0.9
200.0	1.50	254.03	200.0	-0.8	-2.9	254.15	3.0
300.0	1.55	267.23	299.9	-1.3	-5.5	257.22	5.7
350.0	1.43	265.22	349.9	-1.3	-6.8	258.90	7.0

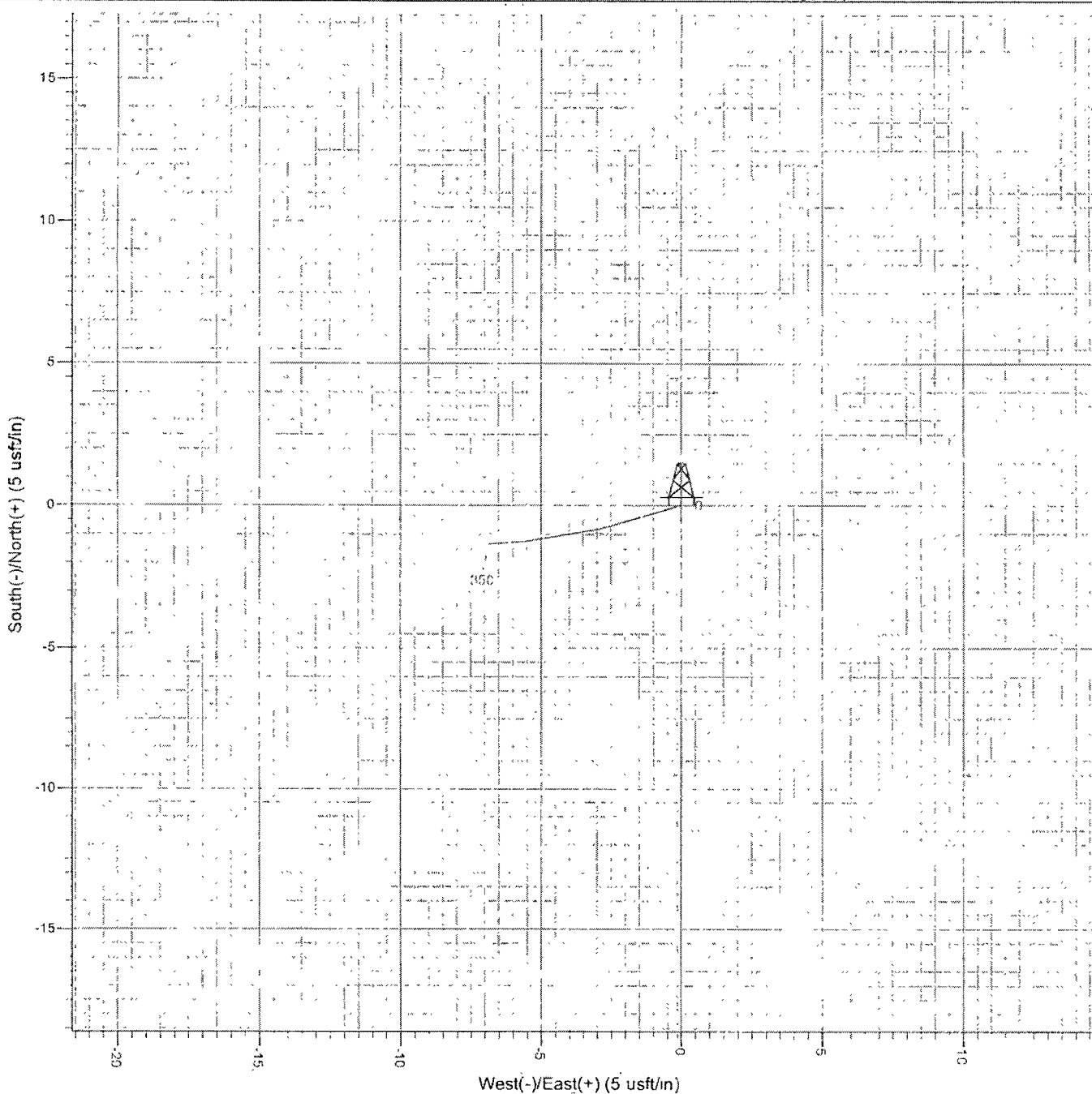


Scientific Drilling
Directional Drilling Operations

Project: Artesia
Eddy County, NM
Well: Piglet "21" State #5
Wellbore: VH - Job #32K0212129
Design: VH - Job #32K0212129

WELL DETAILS: Piglet "21" State #5
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Siot
0.0	0.0	659890.08	546641.15	32° 48' 50.522 N	104° 10' 53.468 W	

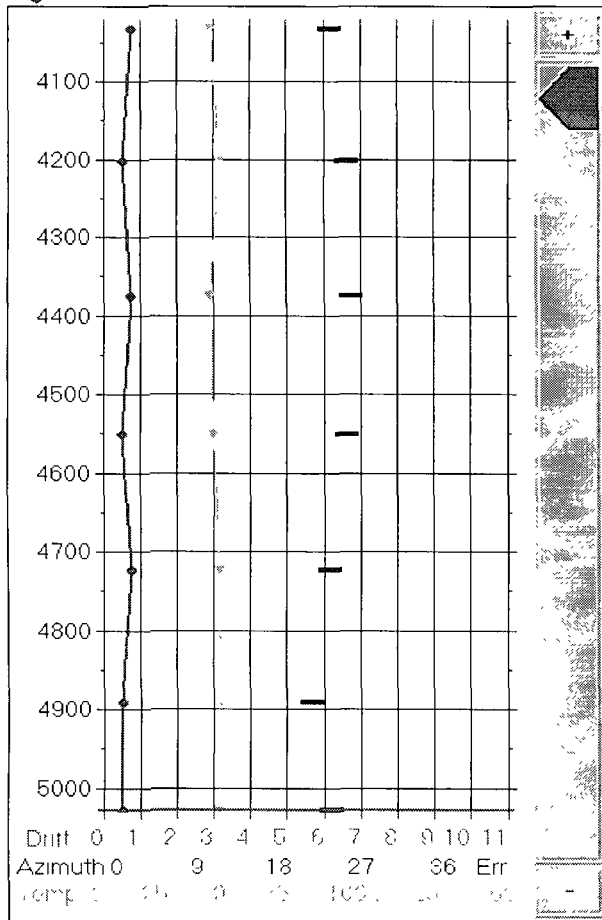


PROJECT DETAILS: Artesia	SITE DETAILS: Eddy County, NM
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 48' 53.046 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 104° 11' 5.805 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.0
Zone: New Mexico East 3001	Convergence: 0.08
System Datum: Mean Sea Level	Local North: Grid



Depth Log (Feet)

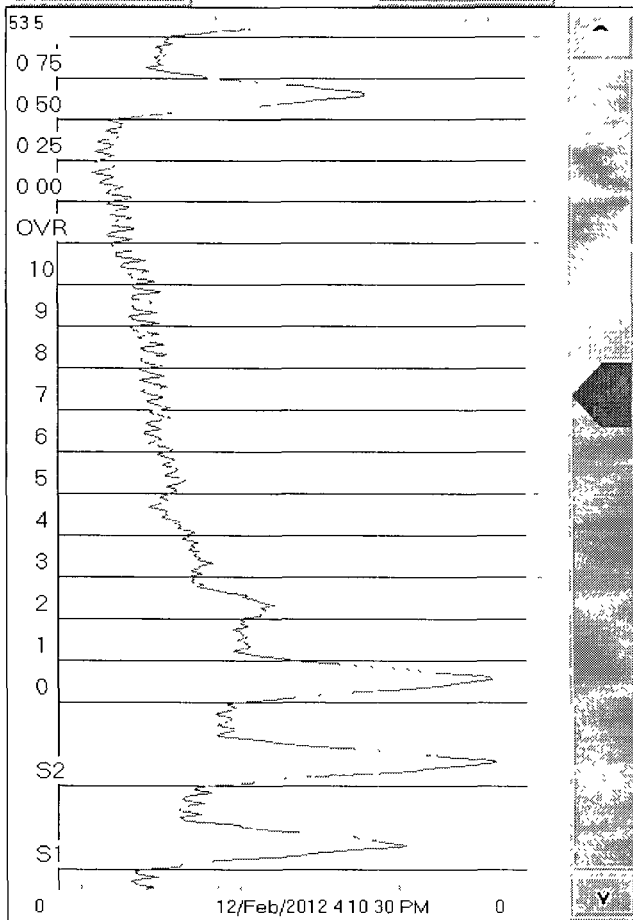
PIGLET 21 STATE 5



Zoom In

Retest Survey

Find Survey



(c) 2006 Weatherford

Temperature

44

Azimuth (TRUE)

224.2

Drift

0.5

Depth (Feet)

5030

IDLE

0

OPTION



Logging Program System Parameters

13/Feb/2012

Well Name

PIGLET 21 STATE 5

File Size (KBytes)

768

Legal SubDivision

PIGLET 21 STATE 5

Notes

MATT KING

AFE #

1140873

Apply ambient
pressure to
transducer and
press Calibrate

Client Name

OXY

Creation Date

07/Feb/2012

Service Order #

4025530

CSS #

ASK 3295

DMT #

AMS 098

Calibrate

Battery #

403158646/39D

Filter Size

600

Pulser #

4C4E 127

Declination

7.2

Transducer #

5K HAMMER UNION

Azimuth Pulse Period

1000

mSec

Pump On Pressure

150

Survey Duration

131

Sec

Baseline Pressure

1680

Time Till Autostart

30

Sec

Pulse Range

170

Pump Off Time

95

Sec

Pressure Transducer
Full Scale Pressure

5000

Error Msg Timeout

300

Sec

Time of Day (HR MIN)

19:17

(c) 2006 Weatherford Canada Partnership

Acquisition Options

☒ A/D Enabled☐ Wrap Data Continuously☐ Automatic Filtering

Depth Scale

☐ Meters☒ Feet

Pressure Scale

☒ PSI☐ kPascals☐ BAR

Tool Type

☐ DMT 3500☒ AMS 2000

RESTART

CUR LOG

DOWNLOAD

CANCEL

OPTION

Depthlog Information

Data File Version: 14
Logfile created with DMT Surface Plotter Rev W2.01g
Legal Subdivision: PIGLET 21 STATE 5
Well Name: PIGLET 21 STATE 5
AFE Number: 1140873
Creation Date: 07/02/12 00:00:07
Number of Surveys: 32
Service Order Number: 4025530
CSS Number: ASK 3295
DMT Number: AMS 098
Battery Number: 403158646/39DL
Pulser Number: 4C4E 127
Client Name: OXY
Deepest Entry: 5030
Depth is measured in : FEET
Pulse Range: 1850 PSI
Baseline Pressure: 1680 PSI
Full Scale Pressure: 5000 PSI
Client used: PSI
File Size (KBytes): 768
Survey Comment: "MATT KING"
Transducer Calibration Value: 14340 A/D Counts
Transducer Number: 5K HAMMER UNION
Pump Timeout Delay: 95
System Timeout Delay: 30
Tool Type: AMS 2000
Declination: 7.2
Azimuth Pulse Period: 1000
Azimuth Pulse Width: 500
Histogram Filter Size: 600
Hardware AtoD Rate: 1000 Samples/Sec
Software AtoD Usage Rate: 1000 Samples/Sec

Azimuth Error Codes

Azimuth > 360 is invalid angle or error code.
Error 420 -- MAG FP Number Overrange
Error 421 -- Missing Drift Start Bits
Error 422 -- Missing Drift Angle Bits
Error 423 -- Missing Drift Fraction Bits
Error 424 -- Multiple Drift Angle Bits
Error 425 -- Stuff Bit Error
Error 430 -- Missing Azimuth Stop bit.
Error 431 -- Missing Azimuth Start Bit.
Error 435 -- Parity Error.
Error 440 -- QFLEX Drift Angle too high.
Error 450 -- QFLEX EEROM Parity Error.
Error 460 -- Azimuth Angle too high.
Error 461 -- Temperature Value too high.

Date	Time	Depth	Drift	Azimuth[T]	Temperature	Record#
07/02/12	20:48:07	332	1.50	349.2	15	3
08/02/12	06:44:08	736	1.50	26.2	14	4
08/02/12	08:14:08	786	1.00	240.2	30	5
08/02/12	10:49:08	893	1.00	240.2	30	6
08/02/12	13:08:08	1054	1.00	234.2	32	7
08/02/12	15:18:08	1182	0.75	221.2	36	9
08/02/12	16:23:08	1270	0.75	219.2	37	10
08/02/12	19:46:08	1442	0.75	206.2	36	12
08/02/12	21:56:08	1614	0.50	186.2	40	15
09/02/12	00:24:09	1787	0.50	165.2	43	17
09/02/12	05:45:09	1959	0.50	173.2	42	21
09/02/12	11:46:09	1235	0.25	152.2	42	23
09/02/12	15:59:09	2307	0.50	164.2	43	24
09/02/12	19:39:09	2478	0.50	176.2	44	27
10/02/12	06:15:10	2653	1.00	421.0	151	29
10/02/12	07:11:10	2696	0.75	168.2	40	31
10/02/12	10:16:10	2868	0.50	148.2	40	32
10/02/12	13:04:10	3041	0.75	249.2	42	34
11/02/12	05:08:11	3213	0.50	146.2	36	38
11/02/12	07:32:11	3388	0.00	240.2	38	40
11/02/12	08:13:11	3431	0.25	259.2	38	41
11/02/12	10:44:11	3604	0.50	299.2	70	42
11/02/12	13:02:11	3734	0.50	220.2	38	43
11/02/12	15:20:11	3863	0.50	199.2	72	45
11/02/12	19:05:11	4034	0.75	223.2	41	47
11/02/12	22:40:11	4204	0.50	238.2	44	49
12/02/12	02:41:12	4376	0.75	243.2	41	51
12/02/12	06:38:12	4552	0.50	239.2	42	52
12/02/12	10:15:12	4725	0.75	223.2	44	55
12/02/12	12:51:12	4893	0.50	205.2	45	57
12/02/12	15:59:12	0	0.00	410.0	151	59
12/02/12	16:10:12	5030	0.50	224.2	44	60