



An Operating Unit of Smith International, Inc.

RECEIVED

JAN 19 2010

HOBBSOCD

DIRECTIONAL SURVEY REPORT

YATES PETROLEUM

CAPELLA BOP FED 1

LEA COUNTY, NEW MEXICO

m. q. - 215-32e
330/s & 330/w
30-025-39528

PREPARED BY: FRANCISCO SINISTERRA

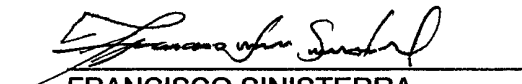
Pathfinder Energy Services, Inc.
6213 W. Interstate 20 • Midland, TX • 79706
(432) 681-6000

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JAY FULTON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 10/20/09 TO 10/23/09
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

YATES PETROLEUM
CAPELLA BOP FED 1
LEA COUNTY, NM
RIG: SILVER OAK #10
9. SURVEY CERTIFIED FROM: 1269 TO 4305 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 29.13 FEET ON A BEARING OF 86.37 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 4355 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.


FRANCISCO SINISTERRA
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 10/20/2009
Date Completed: 10/23/2009

YATES PETROLEUM
CAPELLA BOP FED #1
LEA COUNTY, NEW MEXICO
Rig:SILVER OAK 10
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:JAY FULTON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.29.12.9457 N LON:103.41.13.9380 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 740565.6290 Y: 541479.0830
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.50° EAST TO GRID
Vertical Section Plane: 0.00
Survey Vert. Reference: 18.00' Rotary Table To Ground
Altitude:3713.00' Ground To MSL

Measured Depth	4355.00	(feet)
Inclination	0.09	(deg)
Azimuth	29.30	(deg)
True Vertical Depth	4354.66	(feet)
Vertical Section	1.84	(feet)
Survey X cord	740594.70	(feet)
Survey Y cord	541480.93	(feet)
Survey Lat	32.48693393 N	(deg)
Survey Lon	103.68711071 W	(deg)
Rectangular Corr. N/S	1.84 N	(feet)
Rectangular Corr. E/W	29.07 E	(feet)
Closure Distance	29.13	(feet)
Direction of Closure	86.37	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
 CAPELLA BOP FED #1
 LEA COUNTY, NEW MEXICO
 Rig:SILVER OAK 10
 PathFinder Office Supervisor: FRANCISCO SINISTERRA
 PathFinder Field Engineers: JAY FULTON

Survey Horiz. Reference:WELLHEAD
 Ref Coordinates: LAT:32.29.12.9457 N LON:103.41.13.9380 W
 Reference:NAD83 new mexico east Transverse Mercator
 Ref GRID Coord: X: 740565.6290 Y: 541479.0830
 North Aligned To:GRID NORTH
 Total Magnetic Correction: 7.50° EAST TO GRID
 Vertical Section Plane: 0.00
 Survey Vert. Reference: 18.00' Rotary Table To Ground
 Altitude:3713.00' Ground To MSL

Survey Calculations by PathCalc v1.97 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
TIE-IN ASSUMING VERTICAL @ 1100' MD.										
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00@	0.00	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
1269.00	0.79	281.54	1268.99	169.00	0.23	0.23 N	1.14 W	1.17@	281.54	0.47
1459.00	0.18	118.33	1458.99	190.00	0.35	0.35 N	2.16 W	2.19@	279.28	0.51
1649.00	0.35	182.14	1648.99	190.00	-0.37	0.37 S	1.92 W	1.96@	259.15	0.17
1840.00	0.44	172.65	1839.98	191.00	-1.68	1.68 S	1.85 W	2.50@	227.77	0.06
2030.00	0.70	148.21	2029.97	190.00	-3.39	3.39 S	1.14 W	3.58@	198.66	0.18
2220.00	0.79	123.78	2219.96	190.00	-5.10	5.10 S	0.56 E	5.13@	173.78	0.17
2410.00	1.32	104.88	2409.93	190.00	-6.39	6.39 S	3.76 E	7.42@	149.54	0.33
2537.00	1.41	74.38	2536.89	127.00	-6.35	6.35 S	6.68 E	9.21@	133.55	0.57
2663.00	0.70	59.62	2662.87	126.00	-5.54	5.54 S	8.84 E	10.43@	122.10	0.60
2790.00	1.85	68.50	2789.84	127.00	-4.40	4.40 S	11.41 E	12.23@	111.08	0.92
2917.00	1.49	73.95	2916.78	127.00	-3.19	3.19 S	14.91 E	15.24@	102.08	0.31
3044.00	1.06	76.23	3043.75	127.00	-2.45	2.45 S	17.63 E	17.80@	97.92	0.34
3171.00	1.14	78.96	3170.73	127.00	-1.93	1.93 S	20.01 E	20.11@	95.52	0.08
3298.00	0.70	88.10	3297.71	127.00	-1.66	1.66 S	22.03 E	22.09@	94.32	0.36
3424.00	0.62	79.22	3423.70	126.00	-1.51	1.51 S	23.47 E	23.52@	93.69	0.10
3551.00	0.88	74.12	3550.69	127.00	-1.12	1.12 S	25.08 E	25.11@	92.55	0.21
3678.00	0.97	75.62	3677.67	127.00	-0.58	0.58 S	27.06 E	27.07@	91.23	0.07
3805.00	0.18	28.86	3804.67	127.00	-0.14	0.14 S	28.20 E	28.20@	90.29	0.67
3931.00	0.26	52.85	3930.67	126.00	0.20	0.20 N	28.52 E	28.52@	89.59	0.10
4058.00	0.35	12.77	4057.66	127.00	0.76	0.76 N	28.84 E	28.85@	88.50	0.18
4185.00	0.26	6.27	4184.66	127.00	1.42	1.42 N	28.95 E	28.99@	87.19	0.08

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM
 CAPELLA BOP FED #1
 LEA COUNTY, NEW MEXICO
 RIG:SILVER OAK 10

Page 02/02

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
4305.00	0.09	29.30	4304.66	120.00	1.77	1.77 N	29.03 E	29.08@	86.50	0.15
STRAIGHT LINE PROJECTION TO BIT @ 4355' MD.										
4355.00	0.09	29.30	4354.66	50.00	1.84	1.84 N	29.07 E	29.13@	86.37	0.00

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM		
LEASE / WELL No.:	CAPELLA BOP FED	1	
WELL LOCATION:	LEA COUNTY		
COUNTY / STATE / COUNTRY:	LEA	NEW MEXICO	USA
RIG:	SILVER OAK 10		
API WELL No:	30-025-39528		
JOB No:	101009091 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

MAGNETIC DECLINATION:			
On Wall Plat:	LWD Calculated:	7.5	Agreed Upon: 7.5
X = 740565.600000	Feet	Y = 541479.100000	Feet
SITE LATITUDE: 32.486929 N	SITE LONGITUDE: 103.687205 W		
GRID SYSTEM: TRUE ☐ UTM ☒ LAMBERT ☐	ZONE: New Mexico East		
PROPOSED DRIFT DIRECTION:		0	
KELLY BUSHING ELEVATION:		18	
ALTITUDE: 3713	Feet	WATER DEPTH:	Feet

TIE-IN SURVEY

MEASURED DEPTH:	1100		
DRIFT ANGLE:	0		
DRIFT DIRECTION:	0		
TRUE VERTICAL DEPTH:	1100		
VERTICAL SECTION:	0		
RECTANGULAR COORDINATE (N / S) :	0		
RECTANGULAR COORDINATE (E / W) :	0		
CLOSURE DISTANCE / DIRECTION:	0	0	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):			
COPY OF TIE-IN SURVEY REPORT	☐ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH: 0	TOTAL DEPTH: 4250
KICKOFF ANGLE: 0	MAX ANGLE: 0

PES Engineers:

JAY FULTON

Jay Fulton

**Signature of both field engineers required if applicable

Directional Driller:

RICHARD HILL

Richard Hill

DATE: 20-Oct-2009