



4260-7734

An Operating Unit of Smith International, Inc.

30-015-37335

DIRECTIONAL SURVEY REPORT

OXY PETROLEUM

SAND DUNE MOBIL 29 #2

EDDY COUNTY, NEW MEXICO

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) JAMES BURLESON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 02/10/10 TO 02/14/10
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

OXY PETROLEUM
SAND DUNE MOBIL 29 #2
EDDY COUNTY, NM
RIG: H & P 340

9. SURVEY CERTIFIED FROM: 4260 TO 7734 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 28.43 FEET ON A BEARING OF 2.54 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 7874 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: 02/10/2010
Date Completed: 02/14/2010

OXY PETROLEUM
SAND DUNE MOBIL 29 #2
EDDY COUNTY, NM
Rig:H&P 340
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:J.BURLESON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.16.40.2380 N LON:103.47.33.8178 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 667078.8000 Y: 465218.0000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.57° EAST TO GRID
Vertical Section Plane: 242.84
Survey Vert. Reference: 25.00' Kelly Bushing To Ground
Altitude:3365.80' Ground To MSL

Measured Depth	7874.00	(feet)
Inclination	1.85	(deg)
Azimuth	266.50	(deg)
True Vertical Depth	7864.04	(feet)
Vertical Section	-14.08	(feet)
Survey X cord	667080.06	(feet)
Survey Y cord	465246.40	(feet)
Survey Lat	32.27792193 N	(deg)
Survey Lon	103.79272265 W	(deg)
Rectangular Corr. N/S	28.40 N	(feet)
Rectangular Corr. E/W	1.26 E	(feet)
Closure Distance	28.43	(feet)
Direction of Closure	2.54	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/02
Tie-in Date: 02/10/2010
Date Completed: 02/14/2010

OXY PETROLEUM
SAND DUNE MOBIL 29 #2
EDDY COUNTY, NM
Rig:H&P 340
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: J.BURLESON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.16.40.2380 N LON:103.47.33.8178 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 667078.8000 Y: 465218.0000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.57° EAST TO GRID
Vertical Section Plane: 242.84
Survey Vert. Reference: 25.00' Kelly Bushing To Ground
Altitude:3365.80' Ground To MSL

Survey Calculations by RX5 V6.02B 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 TO GYRO SURVEY @ 4137' MD.										
4137.00	5.50	78.50	4133.10	0.00	-118.98	63.43 N	101.18 E	119.42@	57.92	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS:										
4260.00	6.07	75.21	4255.47	123.00	-131.01	66.27 N	113.24 E	131.21@	59.67	0.54
4305.00	5.98	81.40	4300.23	45.00	-135.55	67.22 N	117.86 E	135.69@	60.30	1.46
4350.00	5.45	91.49	4345.00	45.00	-139.65	67.52 N	122.32 E	139.71@	61.10	2.52
4396.00	5.45	109.32	4390.80	46.00	-143.07	66.74 N	126.56 E	143.08@	62.20	3.67
4441.00	5.19	119.78	4435.61	45.00	-145.65	65.02 N	130.35 E	145.66@	63.49	2.23
4486.00	4.22	134.13	4480.45	45.00	-147.29	62.86 N	133.30 E	147.38@	64.75	3.37
4531.00	3.69	147.87	4525.35	45.00	-147.95	60.48 N	135.26 E	148.16@	65.91	2.40
4576.00	3.34	171.71	4570.27	45.00	-147.65	57.95 N	136.22 E	148.03@	66.95	3.31
4621.00	3.08	193.36	4615.20	45.00	-146.44	55.48 N	136.13 E	147.00@	67.83	2.74
4666.00	2.55	219.78	4660.14	45.00	-144.74	53.53 N	135.21 E	145.42@	68.40	3.08
4711.00	2.73	233.39	4705.10	45.00	-142.76	52.13 N	133.71 E	143.51@	68.70	1.45
4756.00	3.08	220.04	4750.04	45.00	-140.59	50.56 N	132.07 E	141.42@	69.05	1.69
4801.00	2.99	218.70	4794.98	45.00	-138.40	48.72 N	130.56 E	139.35@	69.54	0.25
4846.00	3.17	218.89	4839.91	45.00	-136.19	46.84 N	129.04 E	137.28@	70.05	0.40
4891.00	3.78	218.03	4884.83	45.00	-133.71	44.70 N	127.35 E	134.96@	70.66	1.36
4936.00	3.69	219.40	4929.73	45.00	-131.03	42.41 N	125.51 E	132.49@	71.33	0.28
4981.00	3.52	236.51	4974.65	45.00	-128.33	40.53 N	123.44 E	129.93@	71.82	2.41
5026.00	3.34	237.39	5019.56	45.00	-125.66	39.06 N	121.19 E	127.33@	72.13	0.42
5116.00	3.69	239.78	5109.40	90.00	-120.15	36.19 N	116.48 E	121.97@	72.74	0.42
5207.00	3.43	240.02	5200.22	91.00	-114.51	33.36 N	111.59 E	116.47@	73.36	0.29
5297.00	3.52	243.90	5290.05	90.00	-109.06	30.80 N	106.77 E	111.13@	73.91	0.28
5387.00	3.61	241.77	5379.88	90.00	-103.46	28.24 N	101.80 E	105.64@	74.49	0.18
5477.00	3.43	239.98	5469.71	90.00	-97.94	25.55 N	96.97 E	100.28@	75.24	0.23

PathFinder Energy Services, Inc.

Survey Report

OXY PETROLEUM
SAND DUNE MOBIL 29 #2
EDDY COUNTY, NM
RIG:H&P 340

Page 02/02

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)
5568.00	3.43	239.33	5560.55	91.00	-92.51	22.80 N	92.27 E	95.05@	76.12	0.04
5658.00	3.34	239.68	5650.39	90.00	-87.20	20.11 N	87.69 E	89.97@	77.09	0.10
5749.00	3.34	242.14	5741.24	91.00	-81.90	17.53 N	83.06 E	84.89@	78.08	0.16
5839.00	3.25	240.54	5831.09	90.00	-76.73	15.05 N	78.52 E	79.95@	79.15	0.14
5929.00	3.34	240.59	5920.94	90.00	-71.56	12.51 N	74.02 E	75.06@	80.41	0.10
6019.00	3.25	240.56	6010.79	90.00	-66.39	9.97 N	69.51 E	70.22@	81.84	0.10
6110.00	3.17	243.37	6101.65	91.00	-61.30	7.57 N	65.01 E	65.45@	83.36	0.19
6200.00	3.08	243.87	6191.51	90.00	-56.40	5.39 N	60.62 E	60.86@	84.92	0.10
6290.00	3.34	259.06	6281.37	90.00	-51.46	3.83 N	55.87 E	56.01@	86.08	0.98
6380.00	3.43	260.97	6371.22	90.00	-46.38	2.91 N	50.64 E	50.72@	86.71	0.16
6470.00	3.43	288.20	6461.06	90.00	-41.93	3.33 N	45.42 E	45.55@	85.81	1.79
6560.00	3.52	290.05	6550.90	90.00	-38.17	5.11 N	40.27 E	40.59@	82.76	0.16
6651.00	2.02	293.98	6641.79	91.00	-35.26	6.72 N	36.18 E	36.80@	79.47	1.66
6741.00	2.11	290.84	6731.73	90.00	-33.16	7.96 N	33.18 E	34.12@	76.52	0.16
6831.00	2.29	315.72	6821.66	90.00	-31.52	9.83 N	30.38 E	31.93@	72.06	1.07
6921.00	2.11	313.18	6911.60	90.00	-30.43	12.26 N	27.92 E	30.49@	66.30	0.23
7012.00	2.37	315.28	7002.53	91.00	-29.30	14.74 N	25.37 E	29.34@	59.85	0.30
7102.00	2.20	315.50	7092.46	90.00	-28.22	17.29 N	22.85 E	28.66@	52.88	0.19
7192.00	2.02	308.46	7182.40	90.00	-27.06	19.51 N	20.40 E	28.23@	46.27	0.35
7282.00	2.02	306.27	7272.34	90.00	-25.69	21.44 N	17.88 E	27.91@	39.83	0.09
7373.00	2.02	308.79	7363.28	91.00	-24.32	23.39 N	15.33 E	27.97@	33.25	0.10
7463.00	1.85	307.88	7453.23	90.00	-23.06	25.28 N	12.95 E	28.40@	27.13	0.19
7553.00	1.76	302.10	7543.19	90.00	-21.74	26.90 N	10.63 E	28.93@	21.57	0.23
7644.00	1.58	296.62	7634.15	91.00	-20.29	28.21 N	8.33 E	29.41@	16.45	0.26
7734.00	1.85	266.50	7724.11	90.00	-18.22	28.67 N	5.77 E	29.25@	11.38	1.03
STRAIGHT LINE PROJECTION TO BIT @ 7874' MD.										
7874.00	1.85	266.50	7864.04	140.00	-14.08	28.40 N	1.26 E	28.43@	2.54	0.00