

K-32-11s-35e, 2300/S & 1650/W
K-32-11s-35e, 2279/S & 1705/W
API # 30-025-31243



Job Number: 091117505807
Company: Yates Petroleum
Lease/Well: Reba BNU State Com., Well #5
Location: Lea County, NM
Rig Name: J.W. Drilling #2
RKB: 18'
G.L. or M.S.L.: GL

State/Country: New Mexico/USA
Declination: 7.3°
Grid: East To Grid
File name: F:\SURVEY\2009SU-1\YATESP-1\REBABNU5.SVY
Date/Time: 19-Oct-09 / 10:23
Curve Name: Surface - 4825' M.D. (Gyroscopic)

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WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 113.20
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
Surface MD to 4,825' MD is, to the best of
our knowledge a true and accurate account of
the well bore.

Alana Jettli 10/19/09
MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.25	208.11	100.00	-.19	-.10	-.02	.22	208.11	.25
200.00	.25	336.38	200.00	-.18	-.29	-.20	.35	237.74	.45
300.00	.75	65.65	300.00	.28	.22	.09	.36	37.16	.79
400.00	1.00	89.92	399.98	.56	1.68	1.33	1.77	71.74	.44
500.00	1.00	46.19	499.97	1.16	3.19	2.47	3.39	69.98	.74
600.00	1.00	63.46	599.96	2.16	4.60	3.38	5.08	64.88	.30
700.00	1.25	60.73	699.94	3.08	6.33	4.61	7.04	64.06	.26
800.00	1.00	48.00	799.92	4.20	7.93	5.64	8.97	62.12	.35
900.00	1.00	68.27	899.90	5.10	9.39	6.62	10.69	61.48	.35

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	.75	55.54	999.89	5.80	10.74	7.59	12.20	61.64	.32
1100.00	.50	51.82	1099.88	6.44	11.62	8.15	13.28	61.02	.25
1200.00	1.00	70.08	1199.88	7.00	12.78	8.99	14.58	61.29	.55
1300.00	1.00	86.35	1299.86	7.36	14.48	10.41	16.24	63.06	.28
1400.00	.75	88.63	1399.85	7.43	16.00	11.78	17.64	65.10	.25
1500.00	.75	31.90	1499.84	8.00	17.00	12.48	18.79	64.81	.71
1600.00	.75	43.17	1599.83	9.03	17.80	12.80	19.96	63.09	.15
1700.00	.50	9.79	1699.83	9.94	18.32	12.92	20.84	61.52	.43
1800.00	.25	7.06	1799.83	10.59	18.42	12.76	21.24	60.11	.25
1900.00	.25	343.33	1899.82	11.01	18.38	12.56	21.43	59.08	.10
2000.00	.25	349.60	1999.82	11.43	18.28	12.30	21.56	57.97	.03
2100.00	.25	27.87	2099.82	11.84	18.34	12.19	21.83	57.16	.16
2200.00	.25	68.14	2199.82	12.12	18.65	12.37	22.24	56.99	.17
2300.00	.25	36.41	2299.82	12.37	18.98	12.57	22.66	56.90	.14
2400.00	.50	61.68	2399.82	12.76	19.49	12.89	23.30	56.80	.29
2500.00	.50	73.95	2499.81	13.08	20.30	13.50	24.15	57.19	.11
2600.00	.50	72.22	2599.81	13.34	21.13	14.17	24.99	57.74	.02
2700.00	.50	58.49	2699.81	13.70	21.92	14.75	25.85	58.00	.12
2800.00	.50	32.95	2799.80	14.29	22.53	15.08	26.68	57.61	.22
2900.00	.25	8.41	2899.80	14.87	22.80	15.09	27.22	56.88	.29
3000.00	.25	106.87	2999.80	15.03	23.04	15.26	27.51	56.89	.38
3100.00	.75	18.33	3099.80	15.58	23.45	15.42	28.16	56.40	.78
3200.00	.25	73.78	3199.79	16.27	23.87	15.53	28.88	55.72	.64
3300.00	.25	336.24	3299.79	16.53	23.99	15.54	29.13	55.44	.38
3400.00	.25	9.70	3399.79	16.94	23.94	15.33	29.33	54.71	.14
3500.00	.25	1.16	3499.79	17.38	23.98	15.20	29.61	54.07	.04
3600.00	.50	46.62	3599.79	17.89	24.30	15.29	30.18	53.64	.37
3700.00	.50	31.91	3699.79	18.56	24.85	15.53	31.02	53.24	.13
3800.00	1.00	6.83	3799.78	19.80	25.18	15.35	32.03	51.82	.59

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3900.00	.50	56.28	3899.77	20.91	25.65	15.34	33.09	50.81	.77
4000.00	.75	38.74	3999.76	21.66	26.42	15.75	34.17	50.65	.31
4100.00	1.25	64.19	4099.75	22.65	27.81	16.64	35.87	50.85	.66
4200.00	1.50	54.65	4199.72	23.88	29.86	18.04	38.24	51.35	.34
4300.00	1.00	57.11	4299.70	25.11	31.66	19.21	40.41	51.58	.50
4400.00	1.00	86.57	4399.68	25.64	33.27	20.48	42.00	52.38	.51
4500.00	1.00	82.02	4499.67	25.81	35.00	22.00	43.49	53.60	.08
4600.00	1.00	72.48	4599.65	26.19	36.70	23.41	45.09	54.48	.17
4700.00	1.25	46.93	4699.63	27.20	38.33	24.51	47.00	54.64	.55
4800.00	.50	42.77	4799.62	28.27	39.42	25.10	48.51	54.36	.75
Last Survey Depth Recorded									
4825.00	1.00	60.19	4824.62	28.45	39.68	25.27	48.83	54.36	2.18



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DIRECTIONAL SURVEY REPORT

YATES PETROLEUM

REBA BNU STATE COM #5

LEA COUNTY, NEW MEXICO

K-32-11s-35e, 2300/S & 1650/W
K-32-11s-35e, 2279/S & 1705/W
API # 30-025-31243

PREPARED BY: FRANCISCO SINISTERRA

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

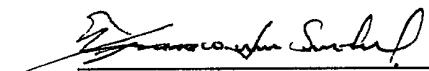
DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JUAN ALCOCER
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 11/02/09 TO 11/06/09
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
REBA BNU STATE COM #5
LEA COUNTY, NM
RIG: JW 2

9. SURVEY CERTIFIED FROM: 9219 TO 10482 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 59.32 FEET ON A BEARING OF 110.80 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 10530 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: 11/02/2009
Date Completed: 11/06/2009

YATES PETROLEUM
REBA BNU STATE COM #5
LEA COUNTY, NM
Rig:JW #2
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:J. ALCOCER
J. EIMERS

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:33.19.16.6800 N LON:103.25.59.5200 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 774965.8087 Y: 845596.0829
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.29° EAST TO GRID
Vertical Section Plane: 183.54
Survey Vert. Reference: 18.50' Kelly Bushing To Ground
Altitude:4160.00' Ground To MSL

Measured Depth	10530.00	(feet)
Inclination	2.11	(deg)
Azimuth	180.52	(deg)
True Vertical Depth	10527.37	(feet)
Vertical Section	17.60	(feet)
Survey X cord	775021.26	(feet)
Survey Y cord	845575.02	(feet)
Survey Lat	33.32124079 N	(deg)
Survey Lon	103.43301910 W	(deg)
Rectangular Corr. N/S	21.07 S	(feet)
Rectangular Corr. E/W	55.45 E	(feet)
Closure Distance	59.32	(feet)
Direction of Closure	110.80	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Survey Horiz. Reference: WELLHEAD
 Ref Coordinates: LAT: 33.19.16.6800 N LON: 103.25.59.5200 W
 Reference: NAD27 new mexico east Transverse Mercator
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YATES PETROLEUM
 REBA BNU STATE COM #5
 LEA COUNTY, NM
 Rig: JW #2
 PathFinder Office Supervisor: FRANCISCO SINISTERRA
 PathFinder Field Engineers: J. ALCOCER
 J. EIMERS

Survey Calculations by RX5 V5.11i 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 MULTI SHOT SINGLE SHOT SURVEY @ 9175' MD.										
9175.00	0.90	2.30	9172.90	0.00	-16.94	13.42 N	57.43 E	58.98@	76.85	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
9219.00	0.62	10.46	9216.90	44.00	-17.52	14.00 N	57.49 E	59.17@	76.31	0.68
9291.00	0.53	173.68	9288.90	72.00	-17.58	14.05 N	57.59 E	59.28@	76.29	1.58
9384.00	1.85	183.77	9381.87	93.00	-15.66	12.13 N	57.54 E	58.81@	78.10	1.43
9479.00	2.11	185.53	9476.82	95.00	-12.37	8.86 N	57.27 E	57.95@	81.21	0.28
9573.00	1.67	184.74	9570.76	94.00	-9.28	5.77 N	56.99 E	57.28@	84.22	0.47
9667.00	1.93	180.70	9664.72	94.00	-6.33	2.82 N	56.86 E	56.93@	87.16	0.31
9759.00	2.02	187.47	9756.66	92.00	-3.16	0.34 S	56.63 E	56.63@	90.34	0.27
9852.00	1.76	186.94	9849.61	93.00	-0.10	3.38 S	56.25 E	56.35@	93.44	0.28
9946.00	1.49	179.47	9943.57	94.00	2.56	6.03 S	56.08 E	56.41@	96.14	0.36
10040.00	1.14	190.89	10037.55	94.00	4.71	8.18 S	55.92 E	56.51@	98.32	0.46
10134.00	1.49	174.02	10131.53	94.00	6.84	10.31 S	55.87 E	56.81@	100.45	0.55
10226.00	1.58	165.76	10223.49	92.00	9.23	12.73 S	56.30 E	57.73@	102.74	0.26
10320.00	1.32	204.43	10317.46	94.00	11.47	14.97 S	56.18 E	58.14@	104.92	1.05
10414.00	1.49	186.85	10411.44	94.00	13.70	17.17 S	55.58 E	58.17@	107.17	0.49
10482.00	2.11	180.52	10479.40	68.00	15.84	19.30 S	55.47 E	58.73@	109.18	0.96
STRAIGHT-LINE PROJECTION TO BIT @ 10530' MD.										
10530.00	2.11	180.52	10527.37	48.00	17.60	21.07 S	55.45 E	59.32@	110.80	0.00

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	YATES PETROLEUM		
LEASE / WELL No.:	REBA BNU	STATE COM #5	
WELL LOCATION:	LEA COUNTY		
COUNTY / STATE / COUNTRY:	LEA	NM	USA
RIG:	JW #2		
API WELL No:	30-025-31243		
JOB No:	101009092 WT-WT		
P.O. / AFE No.	92860		
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.3	LWD Calculated:	7.29
		Agreed Upon:	7.29
X =	774965.808700	Feet	Y = 845596.082900
			Feet
SITE LATITUDE:	33.321300 N	SITE LONGITUDE:	103.433200 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	183.54		
KELLY BUSHING ELEVATION:	18.5		
ALTITUDE:	4160	Feet	WATER DEPTH:
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	9175		
DRIFT ANGLE:	0.9		
DRIFT DIRECTION:	2.3		
TRUE VERTICAL DEPTH:	9172.9		
VERTICAL SECTION:	13.42		
RECTANGULAR COORDINATE (N / S) :	13.42		
RECTANGULAR COORDINATE (E / W) :	57.43		
CLOSURE DISTANCE / DIRECTION:	58.98	76.85	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	Multi-Shot		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

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

PES Engineers:

J. ALCOCER

**Signature of both field engineers required if applicable

J. EIMERS

Directional Driller:

DATE: 2-Nov-2009