

DIRECTIONAL SURVEY REPORT

MACK ENERGY CORPORATION

BILLS FEDERAL COM #1

EDDY COUNTY, NM

PREPARED BY: PHIL LEBLANC

MR



September 22, 2009

MACK ENERGY CORPORATION
Mr. Matt Brewer
11352 Lovington Hwy
Box 960
Artesia, NM 88211-1288

RE: MACK ENERGY CORPORATION
BILLS FEDERAL COM #1
EDDY COUNTY, NM
RIG: SILVER OAK #2
API Well No.: 30-015-36586
PES Job No.: 101008799-WT-WT

Dear Mr. Brewer:

We hereby certify that the enclosed Original Field Survey Data contained in this report represents to the best of our knowledge, a true and accurate survey of the well at the time the survey was run.

DIRECTIONAL SURVEY DATA

1 – Original Directional Survey Report
1 – Email PDF to:
charless@mackenergycorp.com
leel@mackenergycorp.com
donaldarcher@mackenergycorp.com
jimkrogman@mackenergycorp.com
kevingarrett@mackenergycorp.com
mbrewer@mackenergycorp.com

We appreciate the opportunity to work with you and we look forward to your business support. If you have any questions, I can be reached at (337) 233-3982.

Sincerely,

Phil LeBlanc
M/LWD Service Coordinator
PathFinder Energy Services

PL:ll



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
 - A) JOHN JOLIVETTE
 - B) KEVIN CROASDELL
 - C) JAY FULTON
3. POSITION OF SAID PERSON(S): (A-C) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 08/09/09 TO 09/04/09
5. STATE IN WHICH SURVEY WAS PERFORMED: EDDY COUNTY
6. LOCATION OF WELL: NEW MEXICO
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

MACK ENERGY CORPORATION
BILLS FEDERAL COM #1
EDDY COUNTY, NM
RIG: SILVER OAK #2
API Well No.: 30-015-36586
9. SURVEY(S) CERTIFIED FROM: 3,235 TO 11,368 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4,616.14 FEET ON A BEARING OF 92.32 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 11,368 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



PHIL LEBLANC
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 08/04/2009
Date Completed: 09/04/2009

MACK ENERGY
BILLS FEDERAL COM #1H
EDDY COUNTY, NEW MEXICO
Rig:SILVER OAK 2
PathFinder Office Supervisor: PHIL LEBLANC
PathFinder Field Engineers:JOHN JOLIVETTE
KEVIN CROASDELL

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.54.36.7927 N LON:104.6.14.5684 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 570366.6000 Y: 694926.3000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.97° EAST TO GRID
Vertical Section Plane: 92.20
Survey Vert. Reference: 17.00' Kelly Bushing To Ground
Altitude:3656.50' Ground To MSL

Measured Depth	11368.00	(feet)
Inclination	89.66	(deg)
Azimuth	91.16	(deg)
True Vertical Depth	7077.62	(feet)
Vertical Section	4616.13	(feet)
Survey X cord	574978.94	(feet)
Survey Y cord	694739.56	(feet)
Survey Lat	32.90967843 N	(deg)
Survey Lon	104.08901920 W	(deg)
Rectangular Corr. N/S	186.72 S	(feet)
Rectangular Corr. E/W	4612.36 E	(feet)
Closure Distance	4616.14	(feet)
Direction of Closure	92.32	(deg)
Dogleg Severity	0.00	(deg/100ft)

MR

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY
 BILLS FEDERAL COM #1H
 EDDY COUNTY, NEW MEXICO
 Rig:SILVER OAK 2
 PathFinder Office Supervisor: PHIL LEBLANC
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 Survey Vert. Reference: 17.00' Kelly Bushing To Ground
 Altitude:3656.50' Ground To MSL

Survey Calculations by RX5 V6.01C using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
ORIGIN OF WELL AT SURFACE.												
0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	32.91022012 N	104.10404685 W	0.00@	0.00	0.00
THE FOLLOWING ARE TELEDRIFT SURVEYS.												
383.00	0.30	0.00	383.00	383.00	-0.04	1.00 N	0.00	32.91022288 N	104.10404684 W	1.00@	0.00	0.08
487.00	0.00	249.00	487.00	104.00	-0.05	1.27 N	0.00	32.91022363 N	104.10404684 W	1.27@	0.00	0.29
637.00	1.10	67.00	636.99	150.00	1.25	1.84 N	1.33 E	32.91022517 N	104.10404252 W	2.27@	35.80	0.73
789.00	1.40	70.00	788.95	152.00	4.29	3.04 N	4.41 E	32.91022846 N	104.10403245 W	5.36@	55.42	0.20
914.00	0.90	35.00	913.93	125.00	6.24	4.37 N	6.41 E	32.91023209 N	104.10402593 W	7.76@	55.73	0.67
1069.00	0.50	88.00	1068.92	155.00	7.57	5.39 N	7.79 E	32.91023489 N	104.10402144 W	9.47@	55.30	0.46
1226.00	0.40	337.00	1225.91	157.00	8.02	5.92 N	8.26 E	32.91023634 N	104.10401991 W	10.16@	54.36	0.47
1413.00	0.40	82.00	1412.91	187.00	8.39	6.61 N	8.65 E	32.91023824 N	104.10401863 W	10.88@	52.61	0.34
1570.00	0.90	56.00	1569.90	157.00	9.92	7.38 N	10.21 E	32.91024034 N	104.10401352 W	12.60@	54.16	0.36
1730.00	0.90	28.00	1729.88	160.00	11.48	9.19 N	11.84 E	32.91024531 N	104.10400819 W	14.99@	52.20	0.27
1888.00	1.10	2.00	1887.86	158.00	12.02	11.80 N	12.48 E	32.91025248 N	104.10400610 W	17.17@	46.60	0.31
2044.00	1.00	325.00	2043.84	156.00	11.19	14.41 N	11.75 E	32.91025966 N	104.10400846 W	18.59@	39.19	0.43
2196.00	0.50	295.00	2195.82	152.00	9.78	15.78 N	10.39 E	32.91026343 N	104.10401289 W	18.89@	33.36	0.41
2352.00	0.10	88.00	2351.82	156.00	9.28	16.07 N	9.91 E	32.91026423 N	104.10401445 W	18.88@	31.66	0.38
2510.00	0.70	337.00	2509.82	158.00	9.01	16.96 N	9.67 E	32.91026669 N	104.10401522 W	19.53@	29.68	0.47
2670.00	0.20	162.00	2669.81	160.00	8.69	17.60 N	9.37 E	32.91026844 N	104.10401618 W	19.94@	28.04	0.56
2828.00	0.60	220.00	2827.81	158.00	8.28	16.70 N	8.93 E	32.91026598 N	104.10401764 W	18.94@	28.12	0.33
2982.00	0.90	238.00	2981.80	154.00	6.78	15.44 N	7.38 E	32.91026253 N	104.10402268 W	17.12@	25.55	0.25
TIED INTO PROSHOT MWD TELEDRIFT SURVEYS AT 3154' MD.												
3154.00	0.50	315.00	3153.79	172.00	5.12	15.26 N	5.71 E	32.91026203 N	104.10402815 W	16.29@	20.51	0.54
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.												
3235.00	0.62	259.60	3234.78	81.00	4.43	15.43 N	5.03 E	32.91026250 N	104.10403036 W	16.23@	18.04	0.66

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY
BILLS FEDERAL COM #1H
EDDY COUNTY, NEW MEXICO
RIG:SILVER OAK 2

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
3362.00	0.62	246.15	3361.78	127.00	3.14	15.03 N	3.72 E	32.91026140 N	104.10403462 W	15.48@	13.91	0.11
3488.00	0.53	254.50	3487.77	126.00	1.97	14.60 N	2.54 E	32.91026022 N	104.10403848 W	14.81@	9.86	0.10
3615.00	1.06	210.73	3614.76	127.00	0.85	13.43 N	1.37 E	32.91025702 N	104.10404229 W	13.50@	5.82	0.61
3742.00	1.14	206.95	3741.73	127.00	-0.24	11.29 N	0.20 E	32.91025116 N	104.10404613 W	11.29@	1.00	0.09
3867.00	2.11	196.23	3866.68	125.00	-1.32	7.97 N	1.01 W	32.91024205 N	104.10405008 W	8.04@	352.78	0.81
3931.00	1.93	199.04	3930.64	64.00	-1.91	5.82 N	1.69 W	32.91023614 N	104.10405232 W	6.07@	343.81	0.32
4004.00	2.46	192.28	4003.59	73.00	-2.54	3.13 N	2.42 W	32.91022875 N	104.10405473 W	3.96@	322.25	0.81
4066.00	4.22	187.62	4065.48	62.00	-2.99	0.43 S	3.01 W	32.91021896 N	104.10405666 W	3.04@	261.88	2.87
4130.00	5.36	187.53	4129.26	64.00	-3.49	5.73 S	3.71 W	32.91020440 N	104.10405899 W	6.83@	212.97	1.78
4193.00	6.33	184.54	4191.93	63.00	-3.91	12.11 S	4.37 W	32.91018687 N	104.10406119 W	12.87@	199.87	1.61
4257.00	6.33	180.32	4255.54	64.00	-3.94	19.15 S	4.67 W	32.91016751 N	104.10406221 W	19.71@	193.71	0.73
4320.00	6.68	177.25	4318.13	63.00	-3.51	26.28 S	4.52 W	32.91014790 N	104.10406176 W	26.67@	189.75	0.78
4384.00	7.30	179.71	4381.66	64.00	-3.01	34.07 S	4.32 W	32.91012650 N	104.10406116 W	34.34@	187.22	1.08
4447.00	8.35	182.17	4444.07	63.00	-2.83	42.64 S	4.47 W	32.91010294 N	104.10406172 W	42.88@	185.99	1.75
4510.00	9.58	179.80	4506.30	63.00	-2.61	52.46 S	4.63 W	32.91007596 N	104.10406230 W	52.66@	185.04	2.04
4574.00	9.58	177.60	4569.41	64.00	-1.96	63.10 S	4.38 W	32.91004670 N	104.10406158 W	63.26@	183.97	0.57
4637.00	9.76	174.61	4631.51	63.00	-0.83	73.66 S	3.66 W	32.91001768 N	104.10405931 W	73.75@	182.85	0.85
4701.00	9.67	174.35	4694.59	64.00	0.62	84.41 S	2.62 W	32.90998813 N	104.10405600 W	84.45@	181.78	0.16
4764.00	8.79	174.52	4756.78	63.00	1.98	94.46 S	1.64 W	32.90996048 N	104.10405288 W	94.48@	181.00	1.40
4828.00	7.91	176.72	4820.10	64.00	3.06	103.73 S	0.93 W	32.90993501 N	104.10405060 W	103.73@	180.51	1.46
4891.00	7.56	181.91	4882.53	63.00	3.49	112.20 S	0.82 W	32.90991173 N	104.10405030 W	112.20@	180.42	1.24
4955.00	7.30	184.54	4945.99	64.00	3.35	120.46 S	1.28 W	32.90988903 N	104.10405186 W	120.47@	180.61	0.67
5018.00	7.39	181.29	5008.47	63.00	3.25	128.50 S	1.69 W	32.90986693 N	104.10405325 W	128.51@	180.75	0.67
5082.00	6.95	182.34	5071.97	64.00	3.30	136.48 S	1.94 W	32.90984498 N	104.10405413 W	136.50@	180.81	0.72
5145.00	6.42	184.28	5134.54	63.00	3.17	143.81 S	2.35 W	32.90982486 N	104.10405554 W	143.82@	180.94	0.92
5209.00	5.98	180.32	5198.17	64.00	3.15	150.71 S	2.64 W	32.90980589 N	104.10405652 W	150.73@	181.00	0.96
5272.00	5.80	179.27	5260.84	63.00	3.42	157.17 S	2.62 W	32.90978812 N	104.10405649 W	157.19@	180.95	0.33

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY
BILLS FEDERAL COM #1H
EDDY COUNTY, NEW MEXICO
RIG:SILVER OAK 2

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5336.00	5.36	181.47	5324.53	64.00	3.62	163.39 S	2.65 W	32.90977102 N	104.10405665 W	163.42@	180.93	0.76
5399.00	5.01	177.16	5387.28	63.00	3.90	169.08 S	2.59 W	32.90975539 N	104.10405650 W	169.10@	180.88	0.83
5463.00	4.31	176.28	5451.06	64.00	4.39	174.27 S	2.30 W	32.90974112 N	104.10405557 W	174.29@	180.76	1.10
5524.00	3.25	178.92	5511.93	61.00	4.73	178.29 S	2.12 W	32.90973007 N	104.10405501 W	178.30@	180.68	1.76
5586.00	2.55	181.29	5573.85	62.00	4.85	181.43 S	2.11 W	32.90972145 N	104.10405503 W	181.44@	180.67	1.15
5648.00	2.02	177.07	5635.80	62.00	4.97	183.90 S	2.09 W	32.90971466 N	104.10405496 W	183.91@	180.65	0.90
5710.00	1.85	174.96	5697.77	62.00	5.19	185.98 S	1.95 W	32.90970892 N	104.10405451 W	185.99@	180.60	0.30
5771.00	1.58	179.71	5758.74	61.00	5.36	187.81 S	1.86 W	32.90970392 N	104.10405423 W	187.82@	180.57	0.50
5832.00	0.97	207.31	5819.72	61.00	5.17	189.11 S	2.09 W	32.90970035 N	104.10405499 W	189.12@	180.63	1.39
5894.00	0.26	223.57	5881.72	62.00	4.86	189.67 S	2.43 W	32.90969879 N	104.10405610 W	189.69@	180.73	1.17
5957.00	0.44	36.09	5944.72	63.00	4.90	189.58 S	2.38 W	32.90969904 N	104.10405595 W	189.60@	180.72	1.11
6019.00	0.79	36.53	6006.72	62.00	5.27	189.05 S	1.99 W	32.90970051 N	104.10405466 W	189.06@	180.60	0.56
6081.00	0.70	34.69	6068.71	62.00	5.72	188.39 S	1.52 W	32.90970231 N	104.10405313 W	188.40@	180.46	0.15
6143.00	0.79	35.83	6130.71	62.00	6.16	187.73 S	1.05 W	32.90970411 N	104.10405161 W	187.74@	180.32	0.15
6205.00	0.88	37.50	6192.70	62.00	6.67	187.01 S	0.51 W	32.90970610 N	104.10404984 W	187.01@	180.16	0.15
6298.00	0.88	19.75	6285.69	93.00	7.30	185.77 S	0.16 E	32.90970950 N	104.10404763 W	185.77@	179.95	0.29
6336.00	0.79	25.66	6323.68	38.00	7.49	185.26 S	0.38 E	32.90971090 N	104.10404693 W	185.26@	179.88	0.33
6367.00	0.62	31.03	6354.68	31.00	7.65	184.92 S	0.56 E	32.90971183 N	104.10404635 W	184.92@	179.83	0.59
6399.00	2.11	78.10	6386.67	32.00	8.31	184.65 S	1.22 E	32.90971256 N	104.10404418 W	184.66@	179.62	5.46
6431.00	5.36	88.24	6418.60	32.00	10.37	184.49 S	3.29 E	32.90971301 N	104.10403743 W	184.52@	178.98	10.32
6463.00	8.44	91.12	6450.37	32.00	14.21	184.49 S	7.13 E	32.90971299 N	104.10402491 W	184.62@	177.79	9.68
6494.00	11.34	92.69	6480.90	31.00	19.54	184.67 S	12.46 E	32.90971244 N	104.10400757 W	185.09@	176.14	9.39
6526.00	14.42	93.00	6512.09	32.00	26.67	185.03 S	19.58 E	32.90971142 N	104.10398437 W	186.06@	173.96	9.63
6558.00	17.41	92.44	6542.86	32.00	35.44	185.44 S	28.34 E	32.90971023 N	104.10395581 W	187.60@	171.31	9.36
6590.00	19.79	91.86	6573.19	32.00	45.65	185.82 S	38.54 E	32.90970913 N	104.10392258 W	189.78@	168.28	7.46
6622.00	22.16	90.68	6603.07	32.00	57.10	186.07 S	49.99 E	32.90970838 N	104.10388527 W	192.67@	164.96	7.52
6653.00	25.06	90.14	6631.47	31.00	69.51	186.16 S	62.41 E	32.90970807 N	104.10384482 W	196.34@	161.47	9.38

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY
BILLS FEDERAL COM #1H
EDDY COUNTY, NEW MEXICO
RIG:SILVER OAK 2

Page 04/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
6685.00	27.44	89.83	6660.17	32.00	83.65	186.15 S	76.56 E	32.90970800 N	104.10379871 W	201.28@	157.64	7.45
6717.00	29.37	90.05	6688.31	32.00	98.86	186.13 S	91.78 E	32.90970795 N	104.10374911 W	207.53@	153.75	6.04
6748.00	31.39	90.84	6715.05	31.00	114.53	186.26 S	107.46 E	32.90970751 N	104.10369803 W	215.03@	150.02	6.64
6780.00	33.85	91.13	6742.01	32.00	131.77	186.56 S	124.70 E	32.90970659 N	104.10364184 W	224.40@	146.24	7.70
6812.00	36.49	91.34	6768.16	32.00	150.20	186.96 S	143.13 E	32.90970539 N	104.10358180 W	235.45@	142.56	8.26
6844.00	39.13	91.12	6793.44	32.00	169.81	187.38 S	162.74 E	32.90970411 N	104.10351790 W	248.18@	139.03	8.26
6875.00	41.77	90.29	6817.03	31.00	189.92	187.62 S	182.85 E	32.90970332 N	104.10345238 W	261.98@	135.74	8.69
6907.00	44.49	89.79	6840.38	32.00	211.77	187.63 S	204.72 E	32.90970316 N	104.10338111 W	277.70@	132.51	8.57
6939.00	46.78	89.93	6862.75	32.00	234.63	187.58 S	227.60 E	32.90970317 N	104.10330657 W	294.93@	129.49	7.16
6971.00	49.24	90.46	6884.16	32.00	258.40	187.66 S	251.38 E	32.90970280 N	104.10322908 W	313.70@	126.74	7.79
7002.00	51.70	90.53	6903.89	31.00	282.30	187.87 S	275.29 E	32.90970209 N	104.10315118 W	333.28@	124.31	7.94
7034.00	55.31	89.89	6922.92	32.00	308.00	187.96 S	301.01 E	32.90970169 N	104.10306737 W	354.87@	121.98	11.40
7066.00	58.65	89.38	6940.35	32.00	334.80	187.78 S	327.83 E	32.90970200 N	104.10297996 W	377.81@	119.80	10.52
7098.00	61.82	89.30	6956.24	32.00	362.54	187.46 S	355.61 E	32.90970271 N	104.10288946 W	401.99@	117.80	9.91
7129.00	64.37	89.42	6970.27	31.00	390.15	187.16 S	383.25 E	32.90970340 N	104.10279939 W	426.51@	116.03	8.23
7161.00	67.53	89.71	6983.30	32.00	419.34	186.94 S	412.47 E	32.90970383 N	104.10270419 W	452.85@	114.38	9.91
7193.00	71.49	90.11	6994.50	32.00	449.28	186.89 S	442.43 E	32.90970377 N	104.10260654 W	480.29@	112.90	12.43
7225.00	75.27	90.41	7003.65	32.00	479.92	187.03 S	473.09 E	32.90970320 N	104.10250664 W	508.72@	111.57	11.85
7256.00	77.56	90.54	7010.94	31.00	510.04	187.28 S	503.22 E	32.90970234 N	104.10240847 W	536.94@	110.41	7.40
7288.00	80.20	90.27	7017.11	32.00	541.42	187.50 S	534.62 E	32.90970154 N	104.10230617 W	566.54@	109.33	8.29
7320.00	83.10	90.16	7021.75	32.00	573.06	187.62 S	566.27 E	32.90970102 N	104.10220302 W	596.55@	108.33	9.07
7340.00	84.84	88.10	7023.85	20.00	592.92	187.32 S	586.16 E	32.90970173 N	104.10213822 W	615.36@	107.72	13.44
7372.00	88.88	87.95	7025.61	32.00	624.78	186.22 S	618.09 E	32.90970457 N	104.10203419 W	645.53@	106.77	12.63
7403.00	89.27	88.55	7026.11	31.00	655.70	185.27 S	649.07 E	32.90970698 N	104.10193323 W	674.99@	105.93	2.31
7435.00	88.99	88.45	7026.59	32.00	687.63	184.43 S	681.05 E	32.90970909 N	104.10182900 W	705.58@	105.15	0.93
7497.00	88.60	88.22	7027.90	62.00	749.48	182.63 S	743.01 E	32.90971367 N	104.10162710 W	765.13@	103.81	0.73
7559.00	88.94	88.46	7029.23	62.00	811.32	180.84 S	804.97 E	32.90971823 N	104.10142520 W	825.03@	102.66	0.67

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
7622.00	89.33	88.57	7030.18	63.00	874.18	179.20 S	867.94 E	32.90972233 N	104.10122000 W	886.25@	101.67	0.64
7685.00	89.38	88.84	7030.89	63.00	937.06	177.78 S	930.92 E	32.90972587 N	104.10101477 W	947.75@	100.81	0.44
7747.00	88.99	89.79	7031.77	62.00	998.98	177.04 S	992.91 E	32.90972753 N	104.10081278 W	1008.57@	100.11	1.66
7810.00	89.38	90.13	7032.67	63.00	1061.92	176.99 S	1055.91 E	32.90972727 N	104.10060752 W	1070.64@	99.52	0.82
7873.00	89.83	90.37	7033.10	63.00	1124.88	177.27 S	1118.90 E	32.90972613 N	104.10040225 W	1132.86@	99.00	0.81
7937.00	88.38	89.93	7034.10	64.00	1188.83	177.44 S	1182.89 E	32.90972528 N	104.10019375 W	1196.13@	98.53	2.37
7999.00	88.21	89.87	7035.95	62.00	1250.76	177.33 S	1244.87 E	32.90972520 N	104.09999181 W	1257.43@	98.11	0.29
8063.00	88.26	90.86	7037.92	64.00	1314.69	177.74 S	1308.83 E	32.90972369 N	104.09978339 W	1320.85@	97.73	1.55
8126.00	89.44	92.87	7039.18	63.00	1377.67	179.79 S	1371.78 E	32.90971767 N	104.09957828 W	1383.51@	97.47	3.70
8189.00	90.56	93.34	7039.18	63.00	1440.66	183.20 S	1434.69 E	32.90970791 N	104.09937333 W	1446.34@	97.28	1.93
8252.00	89.83	92.85	7038.97	63.00	1503.66	186.60 S	1497.60 E	32.90969818 N	104.09916838 W	1509.18@	97.10	1.40
8316.00	89.16	92.18	7039.53	64.00	1567.65	189.41 S	1561.53 E	32.90969007 N	104.09896007 W	1572.98@	96.92	1.48
8380.00	87.54	92.01	7041.37	64.00	1631.62	191.75 S	1625.46 E	32.90968325 N	104.09875179 W	1636.73@	96.73	2.54
8442.00	87.20	91.82	7044.22	62.00	1693.56	193.82 S	1687.36 E	32.90967718 N	104.09855010 W	1698.45@	96.55	0.63
8505.00	89.33	91.88	7046.13	63.00	1756.52	195.85 S	1750.29 E	32.90967121 N	104.09834505 W	1761.22@	96.38	3.38
8568.00	91.01	92.04	7045.94	63.00	1819.52	198.00 S	1813.26 E	32.90966490 N	104.09813992 W	1824.03@	96.23	2.68
8631.00	91.01	91.89	7044.83	63.00	1882.51	200.16 S	1876.21 E	32.90965858 N	104.09793480 W	1886.86@	96.09	0.24
8694.00	90.62	91.36	7043.93	63.00	1945.50	201.95 S	1939.18 E	32.90965328 N	104.09772964 W	1949.66@	95.95	1.04
8757.00	90.00	89.52	7043.59	63.00	2008.47	202.43 S	2002.17 E	32.90965156 N	104.09752438 W	2012.38@	95.77	3.08
8820.00	88.60	88.86	7044.36	63.00	2071.37	201.54 S	2065.16 E	32.90965362 N	104.09731914 W	2074.97@	95.57	2.46
8883.00	88.55	88.59	7045.93	63.00	2134.24	200.14 S	2128.12 E	32.90965709 N	104.09711396 W	2137.51@	95.37	0.44
8947.00	88.88	88.92	7047.36	64.00	2198.11	198.75 S	2192.09 E	32.90966052 N	104.09690552 W	2201.08@	95.18	0.73
9010.00	88.55	88.43	7048.78	63.00	2260.97	197.29 S	2255.06 E	32.90966413 N	104.09670033 W	2263.67@	95.00	0.94
9074.00	88.88	87.88	7050.21	64.00	2324.79	195.23 S	2319.01 E	32.90966940 N	104.09649194 W	2327.21@	94.81	1.00
9137.00	89.50	87.63	7051.10	63.00	2387.60	192.77 S	2381.95 E	32.90967579 N	104.09628682 W	2389.74@	94.63	1.06
9200.00	88.88	87.13	7051.99	63.00	2450.37	189.89 S	2444.88 E	32.90968332 N	104.09608176 W	2452.24@	94.44	1.26
9264.00	89.33	86.98	7052.99	64.00	2514.10	186.60 S	2508.79 E	32.90969196 N	104.09587350 W	2515.72@	94.25	0.74

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9327.00	90.50	88.14	7053.08	63.00	2576.89	183.92 S	2571.73 E	32.90969894 N	104.09566839 W	2578.30@	94.09	2.61
9391.00	90.45	88.49	7052.55	64.00	2640.74	182.04 S	2635.70 E	32.90970372 N	104.09545994 W	2641.98@	93.95	0.55
9454.00	89.50	88.70	7052.58	63.00	2703.62	180.49 S	2698.68 E	32.90970757 N	104.09525471 W	2704.71@	93.83	1.54
9518.00	89.55	88.49	7053.11	64.00	2767.49	178.92 S	2762.66 E	32.90971149 N	104.09504623 W	2768.45@	93.71	0.34
9581.00	88.88	89.17	7053.98	63.00	2830.37	177.64 S	2825.64 E	32.90971463 N	104.09484100 W	2831.22@	93.60	1.52
9645.00	88.49	89.53	7055.44	64.00	2894.28	176.91 S	2889.62 E	32.90971623 N	104.09463253 W	2895.03@	93.50	0.83
9708.00	89.05	89.80	7056.80	63.00	2957.20	176.54 S	2952.60 E	32.90971685 N	104.09442730 W	2957.87@	93.42	0.99
9772.00	89.22	90.67	7057.76	64.00	3021.16	176.80 S	3016.59 E	32.90971573 N	104.09421879 W	3021.77@	93.35	1.38
9835.00	89.11	90.54	7058.68	63.00	3084.13	177.47 S	3079.58 E	32.90971351 N	104.09401355 W	3084.69@	93.30	0.27
9899.00	88.99	90.58	7059.74	64.00	3148.09	178.09 S	3143.57 E	32.90971139 N	104.09380505 W	3148.61@	93.24	0.20
9962.00	89.55	90.67	7060.54	63.00	3211.06	178.78 S	3206.56 E	32.90970911 N	104.09359981 W	3211.54@	93.19	0.90
10026.00	89.38	90.59	7061.14	64.00	3275.03	179.49 S	3270.55 E	32.90970678 N	104.09339130 W	3275.48@	93.14	0.29
10089.00	88.83	90.57	7062.13	63.00	3338.00	180.12 S	3333.54 E	32.90970463 N	104.09318606 W	3338.41@	93.09	0.87
10153.00	89.33	90.62	7063.15	64.00	3401.97	180.79 S	3397.53 E	32.90970240 N	104.09297756 W	3402.34@	93.05	0.79
10216.00	89.66	91.03	7063.71	63.00	3464.95	181.69 S	3460.52 E	32.90969951 N	104.09277232 W	3465.29@	93.01	0.83
10280.00	89.33	90.45	7064.27	64.00	3528.92	182.52 S	3524.51 E	32.90969684 N	104.09256381 W	3529.24@	92.96	1.04
10343.00	89.72	90.27	7064.80	63.00	3591.89	182.92 S	3587.51 E	32.90969536 N	104.09235855 W	3592.17@	92.92	0.68
10407.00	89.78	90.00	7065.07	64.00	3655.85	183.07 S	3651.51 E	32.90969454 N	104.09215002 W	3656.10@	92.87	0.43
10470.00	89.94	90.09	7065.23	63.00	3718.80	183.12 S	3714.51 E	32.90969401 N	104.09194474 W	3719.02@	92.82	0.29
10534.00	89.89	90.19	7065.32	64.00	3782.76	183.27 S	3778.51 E	32.90969318 N	104.09173620 W	3782.95@	92.78	0.17
10597.00	89.10	89.96	7065.88	63.00	3845.71	183.36 S	3841.51 E	32.90969255 N	104.09153093 W	3845.88@	92.73	1.31
10661.00	88.71	90.29	7067.10	64.00	3909.66	183.50 S	3905.49 E	32.90969176 N	104.09132243 W	3909.80@	92.69	0.80
10724.00	89.27	90.00	7068.21	63.00	3972.61	183.66 S	3968.48 E	32.90969093 N	104.09111719 W	3972.73@	92.65	1.00
10788.00	88.77	89.78	7069.31	64.00	4036.55	183.53 S	4032.47 E	32.90969086 N	104.09090868 W	4036.65@	92.61	0.85
10851.00	88.49	89.70	7070.81	63.00	4099.47	183.25 S	4095.46 E	32.90969125 N	104.09070346 W	4099.55@	92.56	0.46
10915.00	88.88	89.54	7072.28	64.00	4163.39	182.82 S	4159.44 E	32.90969201 N	104.09049498 W	4163.45@	92.52	0.66
10978.00	89.55	89.74	7073.15	63.00	4226.32	182.43 S	4222.43 E	32.90969270 N	104.09028972 W	4226.37@	92.47	1.11

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
11042.00	89.10	90.12	7073.90	64.00	4290.27	182.35 S	4286.42 E	32.90969251 N	104.09008119 W	4290.30@	92.44	0.92
11105.00	88.60	90.33	7075.16	63.00	4353.21	182.60 S	4349.41 E	32.90969143 N	104.08987596 W	4353.24@	92.40	0.86
11169.00	89.05	90.71	7076.48	64.00	4417.17	183.18 S	4413.40 E	32.90968943 N	104.08966748 W	4417.19@	92.38	0.92
11232.00	90.00	90.94	7077.00	63.00	4480.15	184.08 S	4476.39 E	32.90968653 N	104.08946224 W	4480.17@	92.35	1.55
11294.00	89.66	91.16	7077.18	62.00	4542.14	185.22 S	4538.37 E	32.90968302 N	104.08926026 W	4542.15@	92.34	0.65
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 11368' MD.												
11368.00	89.66	91.16	7077.62	74.00	4616.13	186.72 S	4612.36 E	32.90967843 N	104.08901920 W	4616.14@	92.32	0.00

SCANNED