

DATE IN <u>4/30/09</u>	SUSPENSE	ENGINEER <u>D. Brooks</u>	LOGGED IN <u>4/30/09</u>	TYPE <u>NSL</u>	APP NO. <u>P KAA0912047940</u>
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ABOVE THIS LINE FOR DIVISION USE ONLY

RECEIVED

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

2009 APR 30 AM 11:58 1220 South St. Francis Drive, Santa Fe, NM 87505



30-015-36257
Santa Claus
Federal Com 1
Mack 213837

ADMINISTRATIVE APPLICATION CHECKLIST

6035

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
 [A] Location - Spacing Unit - Simultaneous Dedication
☒ NSL ☐ NSP ☐ SD
 Check One Only for [B] or [C]
 [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
 [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR
 [D] Other: Specify _____
- [21] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐ Does Not Apply
 [A] ☒ Working, Royalty or Overriding Royalty Interest Owners
 [B] ☒ Offset Operators, Leaseholders or Surface Owner
 [C] ☐ Application is One Which Requires Published Legal Notice
 [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
 [E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,
 [F] ☒ Waivers are Attached
- [31] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[41] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that no action will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

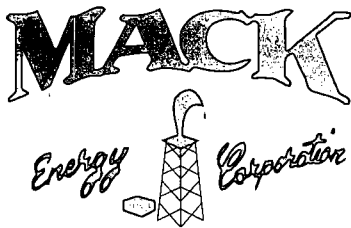
Jerry W. Sherrell
Print or Type Name

Jerry W. Sherrell
Signature

Production Clerk
Title

4/27/09
Date

jerrys@mackenergycorp.com
e-mail Address



Post Office Box 960
Artesia, NM 88211-0960
Office (575) 748-1288
Fax (575) 746-9539

April 27, 2009

Oil Conservation Division
Attn: David Brooks
1220 South St. Francis Dr.
Santa Fe, NM 87505

Dear Mr. Brooks:

Mack Energy Corporation respectfully requests an administrative approval without notice and hearing of the following unorthodox well location.

The well location and legal description is as follows:

Santa Claus State #1
SHL 2310 FNL & 330 FWL
BHL 2150 FNL & 1527 FEL
Sec. 15, T16S R28E
Eddy County, New Mexico

The well is completed in the Wolfcamp formation in the Crow Flats; Wolfcamp Pool.

Attached to this application are the following exhibits.

- A.) Revised well location and acreage dedication plat showing SL, Penetration Point and BHL(form C-102) filed with the Artesia office of the Oil Conservation Division (Exhibit A).
- B.) Directional Survey information showing the unorthodox location, the respective proration units, and the offsetting proration units (Exhibit B).
- C.) The respective proration units and the offsetting proration units (Exhibit C).

Mack Energy drilled and completed the Santa Claus State #1 horizontally in the Wolfcamp formation. We cut the horizontal section of this well 1197' short of intended TD. The BHL is within the SW/4 NE/4, but only 207' away from the west line of the SE/4 NE/4. Therefore making this an unorthodox BHL. There are no overriding interests and working interest are common to all depths throughout this section. Due to this well not penetrating the SE/4 NE/4, which is a Federal lease. The name will change from Santa Claus State Com #1 to the Santa Claus State #1

Thank you for your assistance in this matter. If you have any questions, please feel free to call.

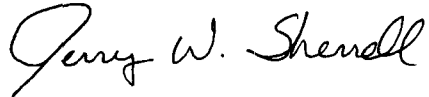
Oil Conservation Division

April 27, 2009

Page 2

Sincerely,

MACK ENERGY CORPORATION

A handwritten signature in cursive script that reads "Jerry W. Sherrell". The signature is written in dark ink and is positioned above the printed name and title.

Jerry W. Sherrell

Production Clerk

JWS/

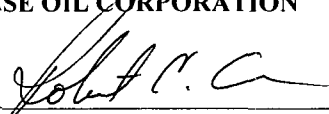
Enclosures

SIGNATURE PAGE

The undersigned approves of Mack Energy Corporation's Unorthodox Location. This well encroaches the SE/4 NE/4 Sec 15 T16S R28E, of the same lease.

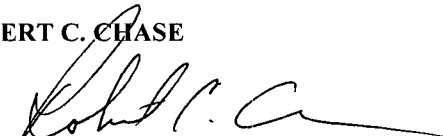
**Santa Claus State #1
SL 2310 FNL & 330 FWL
BHL 2150 FNL & 1527 FEL
Sec 15 T16S R28E**

CHASE OIL CORPORATION

By: 
Robert C. Chase, President

Date: 3-18-09

ROBERT C. CHASE

By: 
Robert C. Chase

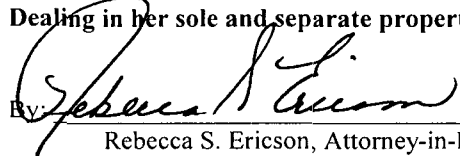
Date: 3-18-09

RICHARD L. CHASE

By: 
Richard L. Chase

Date: 3-18-09

GERENE DIANNE CHASE FERGUSON
Dealing in her sole and separate property

By: 
Rebecca S. Ericson, Attorney-in-Fact

Date: 3-18-09

CIMAREX ENERGY CO.

By: _____

Date: _____

SIGNATURE PAGE

The undersigned approves of Mack Energy Corporation's Unorthodox Location. This well encroaches the SE/4 NE/4 Sec 15 T16S R28E, of the same lease.

**Santa Claus State #1
SL 2310 FNL & 330 FWL
BHL 2150 FNL & 1527 FEL
Sec 15 T16S R28E**

CHASE OIL CORPORATION

By: _____
Robert C. Chase, President

Date: _____

ROBERT C. CHASE

By: _____
Robert C. Chase

Date: _____

RICHARD L. CHASE

By: _____
Richard L. Chase

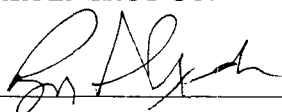
Date: _____

GERENE DIANNE CHASE FERGUSON
Dealing in her sole and separate property

By: _____
Rebecca S. Ericson, Attorney-in-Fact

Date: _____

CIMAREX ENERGY CO.

By:  _____

Date: 3/30/09

DRM² 

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

State of New Mexico
Energy, Minerals and Natural Resources Department

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-36257	Pool Code 97102	Pool Name <i>under</i> Crow Flats; Wolfcamp	<i>SWrules</i>
Property Code 37104	Property Name SANTA CLAUS FEDERAL COM		Well Number 1
OGRID No. 013837	Operator Name MACK ENERGY CORPORATION		Elevation 3577'

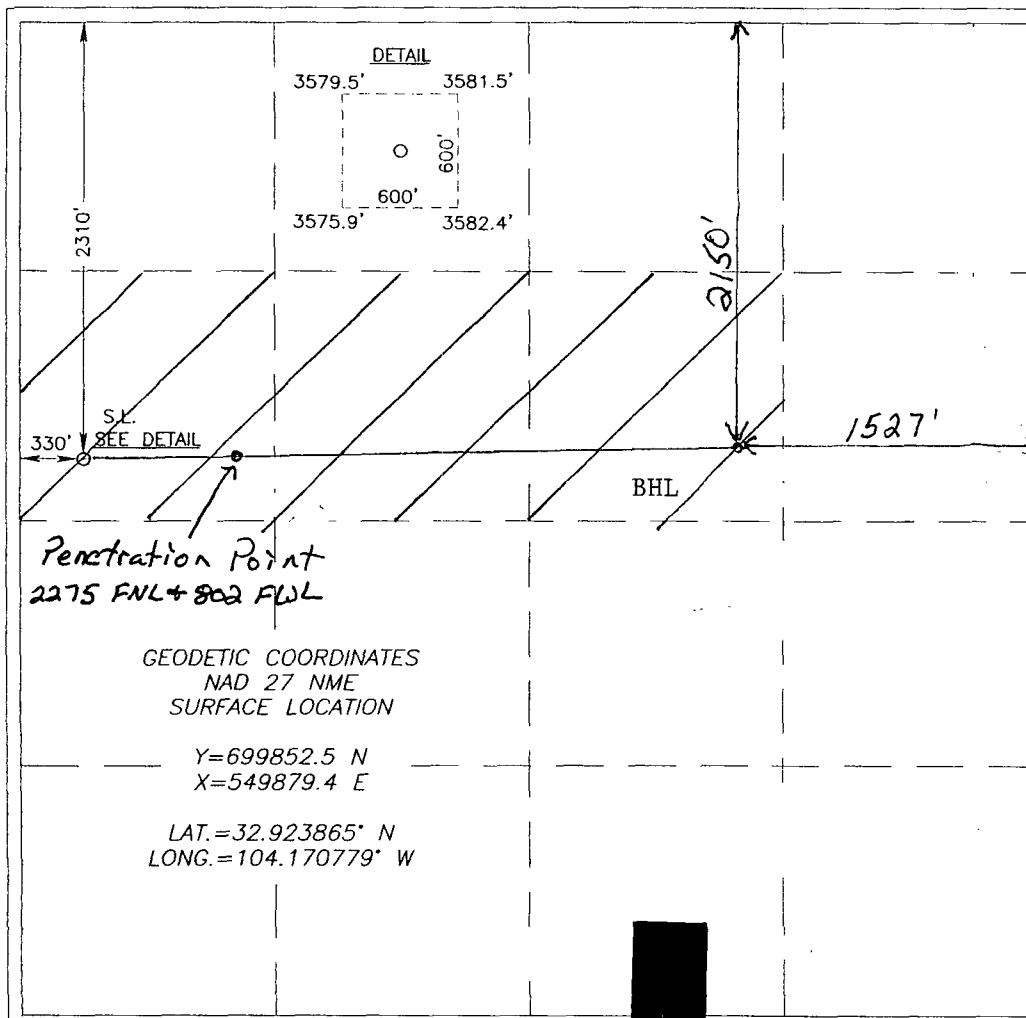
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	15	16-S	28-E		2310	NORTH	330	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	15	16-S	28-E		2150	NORTH	1527	EAST	EDDY
Dedicated Acres 120	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Jerry W. Sherrell 3/17/09
Signature Date
Jerry W. Sherrell
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Ronald J. Eidson
Date Surveyed 10/18/07
Signature & Seal of Professional Surveyor
Certificate No. GARY G. EIDSON 12841
RONALD J. EIDSON 3239



DIRECTIONAL SURVEY REPORT

MACK ENERGY CORPORATION

SANTA CLAUS STATE COM #1

EDDY COUNTY, NM

PREPARED BY: PHIL LEBLANC

December 18, 2008

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

RE: MACK ENERGY CORPORATION
SANTA CLAUS STATE COM #1
EDDY COUNTY, NM
RIG: SILVER OAK #7
API Well No.: 30-015-36257
PES Job No.: 101007949-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

sli423@sutlog.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

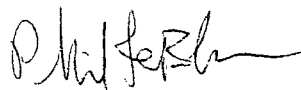
PL:ll

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) MAGID IBRAHIM
B) ROLANDO SUAREZ
C) JOHN OVERTON
3. POSITION OF SAID PERSON(S): (A-C) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 10/18/08 TO 11/04/08
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
SANTA CLAUS STATE COM #1
EDDY COUNTY, NM
RIG: SILVER OAK #7
API Well No.: 30-015-36257
9. SURVEY(S) CERTIFIED FROM: 3,915 TO 9,700 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 3,426.32 FEET ON A BEARING OF 87.33 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 9,700 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: 10/18/2008
Date Completed: 11/04/2008

Mack Energy Corporation
Santa Claus State Com #1
Eddy COUNTY, New Mexico
Rig: Silver Oak #7
PathFinder Office Supervisor: Francisco Sinnisteria
PathFinder Field Engineers: Magid Ibrahim
Rolando Suarez
John Overton

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.55.25.9152 N LON: 104.10.14.8023 W
GRID Reference: NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 549879.4000 Y: 699852.5000
North Aligned To: GRID NORTH
Total Magnetic Correction: 8.13° EAST TO GRID
Vertical Section Plane: 87.22
Survey Vert. Reference: 19.00' Kelly Bushing To Ground
Altitude: 3577.00' Ground To MSL

Measured Depth	9700.00	(feet)
Inclination	88.10	(deg)
Azimuth	88.07	(deg)
True Vertical Depth	6564.92	(feet)
Vertical Section	3426.31	(feet)
Survey X cord	553301.99	(feet)
Survey Y cord	700012.39	(feet)
Survey Lat	32.92428982 N	(deg)
Survey Lon	104.15962354 W	(deg)
Rectangular Corr. N/S	159.89 N	(feet)
Rectangular Corr. E/W	3422.59 E	(feet)
Closure Distance	3426.32	(feet)
Direction of Closure	87.33	(deg)
Dogleg Severity	0.00	(deg/100ft)

Survey Report

Mack Energy Corporation
Santa Claus State Com #1
Eddy COUNTY, New Mexico
Rig: Silver Oak #7
PathFinder Office Supervisor: Francisco Sinnisterria
PathFinder Field Engineers: Magid Ibrahim
Rolando Suarez
John Overton

Survey Calculations by RX5 V6.01 using Minimum Curvature

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.55.25.9152 N LON:104.10.14.8023 W
Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 549879.4000 Y: 699852.5000
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Total Magnetic Correction: 8.13° EAST TO GRID
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Survey Vert. Reference: 19.00' Kelly Bushing To Ground
Altitude:3577.00' Ground To MSL

Vertical Section Plane: 87.22
Survey Vert. Reference: 19.00' Kelly Bushing To Ground
Altitude: 3577.00' Ground To MSL

THE FOLLOWING ARE TELEDRIFT SURVEYS:

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)
THE FOLLOWING ARE TELEDRIFT SURVEYS.										
131.00	0.20	0.70	131.00	0.00	0.71	0.28 S 1.99 N 3.43 N	32.92386455 N 32.92387079 N 32.92387474 N	104.17077607 W 104.17077318 W 104.17077164 W	0.78@ 2.55@ 4.01@	111.51 38.93 31.22
627.00	1.10	9.00	626.96	88.00	2.66	5.16 N	32.92387950 N	104.17077052 W	5.70@	25.10
723.00	0.50	344.00	722.95	96.00	2.76	6.47 N	32.92388311 N	104.17077042 W	6.92@	20.70
810.00	0.80	344.00	809.94	87.00	2.53	7.42 N	32.92388572 N	104.17077130 W	7.73@	16.32
910.00	0.80	25.00	909.93	100.00	2.70	8.72 N	32.92388930 N	104.17077096 W	9.02@	14.62
1004.00	1.00	14.00	1003.92	94.00	3.24	10.11 N	32.92389312 N	104.17076941 W	10.48@	15.22
1076.00	0.50	333.00	1075.92	72.00	3.29	11.00 N	32.92389557 N	104.17076937 W	11.34@	14.08
1190.00	0.20	179.00	1189.92	114.00	3.08	11.25 N	32.92389624 N	104.17077009 W	11.53@	12.72
1377.00	0.50	319.00	1376.91	187.00	2.57	11.54 N	32.92389704 N	104.17077182 W	11.71@	9.88
1470.00	0.50	355.00	1469.91	93.00	2.30	12.25 N	32.92389899 N	104.17077280 W	12.37@	7.93
1563.00	0.30	280.00	1562.91	93.00	2.05	12.69 N	32.92390022 N	104.17077369 W	12.78@	6.43
1657.00	0.10	105.00	1656.91	94.00	1.88	12.72 N	32.92390028 N	104.17077422 W	12.78@	5.70
1750.00	0.50	331.00	1749.91	93.00	1.78	13.05 N	32.92390120 N	104.17077461 W	13.10@	5.04
1894.00	0.60	43.00	1893.90	144.00	2.04	14.15 N	32.92390422 N	104.17077392 W	14.22@	5.49
1981.00	0.80	347.00	1980.90	87.00	2.26	15.08 N	32.92390677 N	104.17077335 W	15.15@	5.81
2076.00	0.90	18.00	2075.89	95.00	2.41	16.43 N	32.92391049 N	104.17077308 W	16.51@	5.61
2174.00	0.70	27.00	2173.88	98.00	2.98	17.70 N	32.92391397 N	104.17077141 W	17.82@	6.85
2268.00	0.87	2.00	2267.87	94.00	3.33	18.92 N	32.92391733 N	104.17077047 W	19.07@	7.26
2361.00	0.40	243.00	2360.86	93.00	3.09	19.48 N	32.92391887 N	104.17077133 W	19.60@	6.29
2487.00	0.60	61.00	2486.86	126.00	3.28	19.60 N	32.92391920 N	104.17077073 W	19.74@	6.78
2580.00	0.50	336.00	2579.86	93.00	3.57	20.21 N	32.92392087 N	104.17076987 W	20.37@	7.31

PathFinder Energy Services, Inc.

Survey Report

Mack Energy Corporation
Santa Claus State Com #1
Eddy COUNTY, New Mexico
RIG: Silver Oak #7

Page 02/07

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)
2699.00	0.70	30.00	2698.85	119.00	3.77	21.31 N	32.92392390 N	104.17076937 W	21.49@ 7.34	0.48
2791.00	0.70	23.00	2790.85	92.00	4.32	22.32 N	32.92392666 N	104.17076774 W	22.55@ 8.27	0.09
2893.00	0.40	284.00	2892.84	102.00	4.25	22.97 N	32.92392847 N	104.17076807 W	23.19@ 7.79	0.84
2978.00	0.90	25.00	2977.84	85.00	4.28	23.65 N	32.92393033 N	104.17076808 W	23.86@ 7.56	1.24
3071.00	0.50	57.00	3070.83	93.00	4.97	24.53 N	32.92393276 N	104.17076596 W	24.82@ 8.77	0.59
3165.00	0.70	311.00	3164.83	94.00	4.91	25.13 N	32.92393441 N	104.17076625 W	25.41@ 8.37	1.03
3260.00	0.70	311.00	3259.82	95.00	4.07	25.90 N	32.92393650 N	104.17076910 W	26.05@ 6.22	0.00
3352.00	0.20	113.00	3351.82	92.00	3.81	26.20 N	32.92393734 N	104.17077000 W	26.33@ 5.55	0.97
3452.00	0.20	173.00	3451.82	100.00	3.98	25.96 N	32.92393668 N	104.17076941 W	26.10@ 5.99	0.20
3544.00	0.30	170.00	3543.82	92.00	4.02	25.56 N	32.92393559 N	104.17076921 W	25.72@ 6.22	0.11
3637.00	0.60	7.00	3636.82	93.00	4.14	25.81 N	32.92393626 N	104.17076888 W	25.97@ 6.39	0.96
3755.00	0.90	349.00	3754.81	118.00	4.11	27.33 N	32.92394044 N	104.17076920 W	27.47@ 5.82	0.32
3819.00	0.70	274.00	3818.80	64.00	3.65	27.85 N	32.92394188 N	104.17077078 W	27.95@ 4.72	1.54
** TIED INTO TELEDRIFT SURVEYS AT 3915' MD.										
3915.00	0.70	30.00	3914.80	96.00	3.39	28.40 N	32.92394339 N	104.17077173 W	28.47@ 4.05	1.24
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
3955.00	0.79	335.61	3954.80	40.00	3.42	28.86 N	32.92394466 N	104.17077170 W	28.93@ 4.00	1.71
4004.00	0.70	327.08	4003.79	49.00	3.14	29.42 N	32.92394620 N	104.17077268 W	29.47@ 3.34	0.29
4098.00	0.97	342.20	4097.78	94.00	2.65	30.66 N	32.92394961 N	104.17077449 W	30.68@ 2.17	0.37
4191.00	0.97	327.17	4190.77	93.00	2.05	32.07 N	32.92395349 N	104.17077665 W	32.08@ 0.88	0.27
4285.00	0.53	182.33	4284.77	94.00	1.61	32.31 N	32.92395513 N	104.17077812 W	32.31@ 0.08	1.53
4378.00	0.70	206.06	4377.76	93.00	1.30	31.37 N	32.92395155 N	104.17077899 W	31.37@ 359.59	0.32
4472.00	0.35	213.97	4471.76	94.00	0.85	30.61 N	32.92394948 N	104.17078034 W	30.62@ 358.81	0.38
4565.00	0.70	207.38	4564.75	93.00	0.39	29.87 N	32.92394745 N	104.17078171 W	29.89@ 357.98	0.38
4659.00	0.62	136.45	4658.75	94.00	0.44	28.99 N	32.92394503 N	104.17078143 W	29.01@ 358.09	0.82
4752.00	1.23	130.12	4751.74	93.00	1.50	27.99 N	32.92394226 N	104.17077782 W	27.99@ 0.29	0.66
4845.00	0.70	143.75	4844.72	93.00	2.54	26.88 N	32.92393923 N	104.17077425 W	26.91@ 2.64	0.62
4939.00	0.70	134.43	4938.72	94.00	3.25	26.02 N	32.92393684 N	104.17077181 W	26.10@ 4.37	0.12

PathFinder Energy Services, Inc.

Survey Report

Mack Energy Corporation
Santa Claus State Com #1
Eddy COUNTY, New Mexico
RIG: Silver Oak #7

Page 03/07

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)
5032.00	0.97	148.84	5031.71	93.00	4.01	24.95 N	32.92393390 N	104.17076916 W	25.11@ 6.41	0.36
5126.00	0.97	146.73	5125.69	94.00	4.79	23.60 N	32.92393019 N	104.17076641 W	23.88@ 8.79	0.04
5220.00	0.53	135.13	5219.68	94.00	5.49	22.63 N	32.92392751 N	104.17076399 W	23.05@ 10.99	0.49
5313.00	0.70	110.70	5312.68	93.00	6.30	22.12 N	32.92392612 N	104.17076127 W	22.73@ 13.30	0.33
5406.00	1.41	103.32	5405.66	93.00	7.92	21.66 N	32.92392484 N	104.17075591 W	22.72@ 17.61	0.78
5500.00	1.49	111.75	5499.63	94.00	10.14	20.94 N	32.92392285 N	104.17074855 W	22.85@ 23.57	0.24
5593.00	1.76	92.94	5592.60	93.00	12.66	20.42 N	32.92392141 N	104.17074024 W	23.52@ 29.78	0.64
5686.00	1.49	91.71	5685.56	93.00	15.29	20.31 N	32.92392110 N	104.17073166 W	24.85@ 35.19	0.29
5780.00	1.41	107.18	5779.53	94.00	17.59	19.93 N	32.92392005 N	104.17072408 W	25.97@ 39.87	0.42
5873.00	1.85	93.30	5872.49	93.00	20.16	19.51 N	32.92391887 N	104.17071563 W	27.40@ 44.60	0.63
5929.00	1.67	90.31	5928.46	56.00	21.87	19.45 N	32.92391871 N	104.17071003 W	28.59@ 47.13	0.36
5998.00	1.85	91.45	5997.43	69.00	23.99	19.42 N	32.92391860 N	104.17070313 W	30.16@ 49.92	0.27
6029.00	2.11	88.02	6028.41	31.00	25.06	19.42 N	32.92391862 N	104.17069964 W	30.99@ 51.18	0.92
6060.00	5.01	84.16	6059.35	31.00	26.98	19.58 N	32.92391904 N	104.17069339 W	32.60@ 53.08	9.38
6091.00	10.20	82.22	6090.07	31.00	31.07	20.09 N	32.92392043 N	104.17068013 W	36.21@ 56.31	16.76
6122.00	16.36	83.19	6120.22	31.00	38.17	20.98 N	32.92392284 N	104.17065711 W	42.70@ 60.57	19.88
6154.00	20.75	86.70	6150.55	32.00	48.34	21.84 N	32.92392517 N	104.17062406 W	52.13@ 65.23	14.15
6185.00	23.39	87.58	6179.28	31.00	59.98	22.42 N	32.92392670 N	104.17058615 W	63.08@ 69.18	8.58
6216.00	25.41	88.20	6207.51	31.00	72.79	22.89 N	32.92392794 N	104.17054444 W	75.32@ 72.31	6.57
6247.00	26.29	87.50	6235.41	31.00	86.30	23.39 N	32.92392928 N	104.17050042 W	88.42@ 74.66	3.00
6278.00	28.93	88.20	6262.87	31.00	100.67	23.93 N	32.92393069 N	104.17045364 W	102.46@ 76.49	8.58
6309.00	33.15	88.55	6289.43	31.00	116.64	24.38 N	32.92393186 N	104.17040157 W	118.14@ 78.09	13.63
6340.00	37.02	88.90	6314.79	31.00	134.45	24.77 N	32.92393286 N	104.17034353 W	135.69@ 79.48	12.50
6371.00	39.83	90.13	6339.08	31.00	153.70	24.93 N	32.92393321 N	104.17028075 W	154.69@ 80.73	9.39
6402.00	41.24	89.87	6362.64	31.00	173.82	24.93 N	32.92393313 N	104.17021509 W	174.61@ 81.79	4.58
6434.00	45.02	88.55	6385.99	32.00	195.68	25.24 N	32.92393389 N	104.17014382 W	196.32@ 82.61	12.14
6465.00	49.86	86.62	6406.95	31.00	218.51	26.22 N	32.92393648 N	104.17006950 W	219.07@ 83.13	16.27

PathFinder Energy Services, Inc.

Survey Report

Mack Energy Corporation
 Santa Claus State Com #1
 Eddy COUNTY, New Mexico
 RIG-Silver Oak #7

*Penetration
 Point*

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rectangular Offsets (ft)	TOTAL (ft)	Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
6496.00	53.64	85.91	6426.14	31.00	242.84	27.81 N	241.78 E	32.92394074 N	104.16999033 W	243.37@	83.44
6527.00	57.77	86.33	6443.60	31.00	268.44	29.54 N	267.33 E	32.92394539 N	104.16990707 W	268.95@	83.69
6558.00	62.70	87.16	6458.99	31.00	295.35	31.06 N	294.18 E	32.92394946 N	104.16981953 W	295.82@	83.97
6620.00	67.27	87.78	6472.09	31.00	323.43	32.30 N	322.24 E	32.92395274 N	104.16972809 W	323.86@	84.28
6651.00	70.00	87.84	6483.38	31.00	352.29	33.40 N	351.09 E	32.92395565 N	104.16963408 W	352.67@	84.57
6682.00	72.90	88.25	6493.24	31.00	381.68	34.40 N	380.46 E	32.92395828 N	104.16953836 W	382.01@	84.83
6713.00	76.24	88.96	6501.49	31.00	411.55	35.13 N	410.33 E	32.92396014 N	104.16944101 W	411.83@	85.11
6745.00	79.49	89.39	6508.01	31.00	441.83	35.56 N	440.63 E	32.92396121 N	104.16934226 W	442.06@	85.39
6775.00	82.04	90.27	6513.14	32.00	473.38	35.66 N	472.21 E	32.92396133 N	104.16923934 W	473.55@	85.68
6860.00	84.24	90.68	6516.72	30.00	503.12	35.41 N	501.99 E	32.92396052 N	104.16914228 W	503.24@	85.97
6891.00	88.02	90.66	6522.46	85.00	587.75	34.42 N	586.78 E	32.92395744 N	104.16886598 W	587.78@	86.64
6922.00	88.29	91.34	6523.46	31.00	618.67	33.88 N	617.75 E	32.92395582 N	104.16876502 W	618.68@	86.86
6933.00	89.87	90.32	6523.96	31.00	649.60	33.43 N	648.75 E	32.92395445 N	104.16866402 W	649.61@	87.05
6964.00	89.66	89.98	6524.00	11.00	660.59	33.40 N	659.75 E	32.92395432 N	104.16862817 W	660.59@	87.10
6996.00	89.89	89.92	6524.12	31.00	691.55	33.43 N	690.75 E	32.92395426 N	104.16852715 W	691.55@	87.23
7027.00	89.66	88.94	6524.25	32.00	723.53	33.74 N	722.74 E	32.92395500 N	104.16842287 W	723.53@	87.33
7058.00	89.44	88.71	6524.49	31.00	754.52	34.38 N	753.74 E	32.92395662 N	104.16832186 W	754.52@	87.39
7089.00	89.27	88.80	6524.84	31.00	785.50	35.05 N	784.73 E	32.92395833 N	104.16822086 W	785.51@	87.44
7120.00	89.66	89.23	6525.13	31.00	816.49	35.59 N	815.72 E	32.92395967 N	104.16811985 W	816.50@	87.50
7151.00	89.61	89.02	6525.33	31.00	847.47	36.06 N	846.72 E	32.92396083 N	104.16801883 W	847.48@	87.56
7182.00	89.66	88.14	6525.53	31.00	878.46	36.83 N	877.71 E	32.92396281 N	104.16791784 W	878.48@	87.60
7213.00	90.00	87.82	6525.62	31.00	909.46	37.92 N	908.69 E	32.92396568 N	104.16781687 W	909.48@	87.61
7243.00	90.22	86.39	6525.56	31.00	940.46	39.49 N	939.65 E	32.92396985 N	104.16771596 W	940.48@	87.59
7277.00	90.39	86.06	6525.40	30.00	970.45	41.46 N	969.58 E	32.92397515 N	104.16761840 W	970.47@	87.55
7309.00	89.78	85.52	6525.35	34.00	1004.44	43.96 N	1003.49 E	32.92398186 N	104.16750788 W	1004.45@	87.49
7340.00	89.50	85.32	6525.55	32.00	1036.42	46.51 N	1035.39 E	32.92398875 N	104.16740392 W	1036.43@	87.43
	88.88	84.98	6525.99	31.00	1067.40	49.13 N	1066.27 E	32.92399582 N	104.16730325 W	1067.40@	87.36

PathFinder Energy Services, Inc.

Survey Report

Mack Energy Corporation
Santa Claus State Com #1
Eddy COUNTY, New Mexico
RIG: Silver Oak #7

Page 05/07

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)
7372.00	88.83	85.07	6526.63	32.00	1099.37	51.91 N 1098.14 E	32.92400331 N	104.16719936 W	1099.37@ 87.29	0.32
7404.00	87.54	85.95	6527.64	32.00	1131.34	54.41 N 1130.03 E	32.92401005 N	104.16709544 W	1131.34@ 87.24	4.88
7436.00	87.59	85.74	6529.00	32.00	1163.30	56.73 N 1161.92 E	32.92401628 N	104.16699151 W	1163.30@ 87.20	0.67
7468.00	87.65	85.69	6530.33	32.00	1195.26	59.12 N 1193.80 E	32.92402271 N	104.16688759 W	1195.26@ 87.16	0.24
7500.00	87.70	85.68	6531.63	32.00	1227.22	61.52 N 1225.68 E	32.92402918 N	104.16678367 W	1227.23@ 87.13	0.16
7531.00	88.77	86.41	6532.58	31.00	1258.20	63.66 N 1256.59 E	32.92403492 N	104.16668292 W	1258.20@ 87.10	4.18
7563.00	89.22	87.24	6533.14	32.00	1290.20	65.43 N 1288.54 E	32.92403965 N	104.16657881 W	1290.20@ 87.09	2.95
7595.00	89.16	87.36	6533.60	32.00	1322.19	66.94 N 1320.50 E	32.92404366 N	104.16647464 W	1322.20@ 87.10	0.42
7627.00	88.99	87.20	6534.11	32.00	1354.19	68.46 N 1352.46 E	32.92404769 N	104.16637048 W	1354.19@ 87.10	0.73
7659.00	88.66	87.19	6534.77	32.00	1386.18	70.02 N 1384.41 E	32.92405186 N	104.16626633 W	1386.18@ 87.10	1.03
7691.00	88.94	87.67	6535.44	32.00	1418.17	71.46 N 1416.38 E	32.92405566 N	104.16616216 W	1418.18@ 87.11	1.74
7722.00	90.50	88.82	6535.59	31.00	1449.17	72.41 N 1447.36 E	32.92405813 N	104.16606118 W	1449.17@ 87.14	6.25
7754.00	91.01	89.39	6535.17	32.00	1481.15	72.91 N 1479.35 E	32.92405937 N	104.16595692 W	1481.15@ 87.18	2.39
7786.00	90.90	89.41	6534.63	32.00	1513.12	73.24 N 1511.35 E	32.92406015 N	104.16585265 W	1513.12@ 87.23	0.35
7818.00	91.01	89.31	6534.10	32.00	1545.09	73.60 N 1543.34 E	32.92406099 N	104.16574838 W	1545.09@ 87.27	0.46
7850.00	90.73	89.26	6533.62	32.00	1577.07	74.00 N 1575.33 E	32.92406195 N	104.16564411 W	1577.07@ 87.31	0.89
7882.00	90.56	88.94	6533.26	32.00	1609.05	74.50 N 1607.33 E	32.92406319 N	104.16553984 W	1609.05@ 87.35	1.13
7914.00	90.28	88.26	6533.02	32.00	1641.04	75.28 N 1639.32 E	32.92406520 N	104.16543559 W	1641.04@ 87.37	2.30
7945.00	89.11	86.48	6533.19	31.00	1672.04	76.71 N 1670.28 E	32.92406898 N	104.16533466 W	1672.04@ 87.37	6.87
7977.00	88.88	85.45	6533.75	32.00	1704.02	78.96 N 1702.20 E	32.92407502 N	104.16523064 W	1704.03@ 87.34	3.30
8009.00	88.83	85.43	6534.39	32.00	1736.00	81.50 N 1734.09 E	32.92408187 N	104.16512669 W	1736.00@ 87.31	0.17
8041.00	88.99	85.92	6535.00	32.00	1767.98	83.91 N 1765.99 E	32.92408837 N	104.16502271 W	1767.98@ 87.28	1.61
8073.00	89.38	87.15	6535.45	32.00	1799.98	85.85 N 1797.93 E	32.92409354 N	104.16491862 W	1799.98@ 87.27	4.03
8105.00	89.38	86.80	6535.80	32.00	1831.98	87.54 N 1829.88 E	32.92409804 N	104.16481447 W	1831.98@ 87.26	1.09
8137.00	89.50	86.39	6536.11	32.00	1863.97	89.44 N 1861.83 E	32.92410313 N	104.16471037 W	1863.97@ 87.25	1.33
8169.00	89.44	86.61	6536.41	32.00	1895.97	91.39 N 1893.76 E	32.92410836 N	104.16460627 W	1895.97@ 87.24	0.71
8201.00	89.22	86.61	6536.78	32.00	1927.96	93.28 N 1925.71 E	32.92411342 N	104.16450216 W	1927.96@ 87.23	0.69

PathFinder Energy Services, Inc.

Survey Report

Mack Energy Corporation
Santa Claus State Com #1
Eddy COUNTY, New Mexico
RIG:Silver Oak #7

Page 06/07

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)
8233.00	88.71	86.35	6537.36	32.00	1959.96	95.25 N 1957.64 E	32.92411867 N	104.16439808 W	1959.96@ 87.21	1.79
8264.00	88.83	86.68	6538.02	31.00	1990.95	97.13 N 1988.58 E	32.92412372 N	104.16429725 W	1990.95@ 87.20	1.13
8296.00	88.94	87.03	6538.65	32.00	2022.94	98.89 N 2020.52 E	32.92412840 N	104.16419313 W	2022.94@ 87.20	1.15
8328.00	88.82	86.88	6539.27	32.00	2054.93	100.59 N 2052.47 E	32.92413293 N	104.16408901 W	2054.93@ 87.19	0.60
8360.00	88.21	86.10	6540.10	32.00	2086.92	102.54 N 2084.40 E	32.92413817 N	104.16398494 W	2086.92@ 87.18	3.09
8392.00	88.10	86.17	6541.13	32.00	2118.90	104.70 N 2116.31 E	32.92414396 N	104.16388093 W	2118.90@ 87.17	0.41
8424.00	88.21	86.07	6542.16	32.00	2150.87	106.86 N 2148.22 E	32.92414977 N	104.16377693 W	2150.88@ 87.15	0.46
8456.00	88.26	86.56	6543.15	32.00	2182.86	108.92 N 2180.14 E	32.92415527 N	104.16367290 W	2182.86@ 87.14	1.54
8487.00	88.21	86.54	6544.10	31.00	2213.84	110.78 N 2211.07 E	32.92416026 N	104.16357209 W	2213.84@ 87.13	0.17
8519.00	88.38	86.61	6545.05	32.00	2245.82	112.69 N 2243.00 E	32.92416537 N	104.16346803 W	2245.83@ 87.12	0.57
8551.00	88.49	87.11	6545.93	32.00	2277.81	114.45 N 2274.94 E	32.92417005 N	104.16336393 W	2277.81@ 87.12	1.60
8583.00	88.49	87.05	6546.77	32.00	2309.80	116.08 N 2306.88 E	32.92417439 N	104.16325980 W	2309.80@ 87.12	0.19
8615.00	88.66	87.28	6547.57	32.00	2341.79	117.66 N 2338.83 E	32.92417859 N	104.16315567 W	2341.79@ 87.12	0.89
8647.00	88.94	87.86	6548.24	32.00	2373.78	119.02 N 2370.80 E	32.92418218 N	104.16305149 W	2373.78@ 87.13	2.01
8679.00	89.05	88.20	6548.80	32.00	2405.77	120.12 N 2402.77 E	32.92418506 N	104.16294728 W	2405.77@ 87.14	1.12
8711.00	89.66	88.22	6549.16	32.00	2437.77	121.11 N 2434.76 E	32.92418767 N	104.16284304 W	2437.77@ 87.15	1.91
8743.00	89.61	88.32	6549.36	32.00	2469.76	122.08 N 2466.74 E	32.92419018 N	104.16273880 W	2469.76@ 87.17	0.35
8774.00	88.99	87.97	6549.74	31.00	2500.75	123.08 N 2497.72 E	32.92419280 N	104.16263783 W	2500.75@ 87.18	2.30
8806.00	88.99	87.78	6550.30	32.00	2532.75	124.27 N 2529.70 E	32.92419592 N	104.16253362 W	2532.75@ 87.19	0.59
8838.00	89.05	87.88	6550.85	32.00	2564.74	125.48 N 2561.67 E	32.92419911 N	104.16242942 W	2564.74@ 87.20	0.36
8870.00	88.94	87.63	6551.41	32.00	2596.73	126.74 N 2593.64 E	32.92420241 N	104.16232522 W	2596.73@ 87.20	0.85
8902.00	89.33	87.75	6551.90	32.00	2628.73	128.02 N 2625.61 E	32.92420581 N	104.16222103 W	2628.73@ 87.21	1.27
8934.00	89.61	87.71	6552.19	32.00	2660.73	129.29 N 2657.58 E	32.92420915 N	104.16211682 W	2660.73@ 87.21	0.88
8965.00	89.78	87.77	6552.36	31.00	2691.72	130.51 N 2688.56 E	32.92421237 N	104.16201586 W	2691.72@ 87.22	0.58
8997.00	89.94	88.06	6552.44	32.00	2723.72	131.68 N 2720.54 E	32.92421543 N	104.16191164 W	2723.72@ 87.23	1.04
9029.00	90.28	88.15	6552.37	32.00	2755.72	132.74 N 2752.52 E	32.92421820 N	104.16180741 W	2755.72@ 87.24	1.10
9060.00	90.45	88.11	6552.18	31.00	2786.71	133.75 N 2783.50 E	32.92422084 N	104.16170643 W	2786.71@ 87.25	0.56

PathFinder Energy Services, Inc.

Survey Report

Mack Energy Corporation
Santa Claus State Com #1
Eddy COUNTY, New Mexico
RIG: Silver Oak #7

Page 07/07

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)
9092.00	90.45	88.15	6551.93	32.00	2818.71	134.79 N 2815.48 E	32.92422356 N	104.16160219 W	2818.71@ 87.26	0.13
9124.00	90.67	88.18	6551.61	32.00	2850.70	135.82 N 2847.47 E	32.92422624 N	104.16149796 W	2850.70@ 87.27	0.69
9156.00	90.84	88.11	6551.19	32.00	2882.70	136.85 N 2879.45 E	32.92422894 N	104.16139373 W	2882.70@ 87.28	0.57
9188.00	90.45	87.81	6550.83	32.00	2914.69	137.99 N 2911.42 E	32.92423193 N	104.16128951 W	2914.69@ 87.29	1.54
9220.00	90.50	87.27	6550.57	32.00	2946.69	139.37 N 2943.39 E	32.92423556 N	104.16118532 W	2946.69@ 87.29	1.69
9252.00	90.62	87.31	6550.25	32.00	2978.69	140.88 N 2975.36 E	32.92423958 N	104.16108115 W	2978.69@ 87.29	0.39
9284.00	90.90	87.13	6549.83	32.00	3010.68	142.43 N 3007.32 E	32.92424370 N	104.16097698 W	3010.69@ 87.29	1.04
9316.00	89.66	86.57	6549.67	32.00	3042.68	144.19 N 3039.27 E	32.92424839 N	104.16087285 W	3042.68@ 87.28	4.25
9347.00	89.55	86.53	6549.89	31.00	3073.68	146.05 N 3070.21 E	32.92425338 N	104.16077200 W	3073.68@ 87.28	0.38
9379.00	88.32	86.92	6550.48	32.00	3105.67	147.88 N 3102.15 E	32.92425826 N	104.16066789 W	3105.67@ 87.27	4.03
9411.00	86.98	87.51	6551.79	32.00	3137.64	149.44 N 3134.08 E	32.92426238 N	104.16056381 W	3137.65@ 87.27	4.58
9443.00	86.92	87.60	6553.50	32.00	3169.60	150.80 N 3166.01 E	32.92426599 N	104.16045976 W	3169.60@ 87.27	0.34
9475.00	86.97	87.86	6555.20	32.00	3201.55	152.06 N 3197.94 E	32.92426932 N	104.16035569 W	3201.55@ 87.28	0.83
9507.00	86.98	87.85	6556.89	32.00	3233.51	153.26 N 3229.87 E	32.92427246 N	104.16025162 W	3233.51@ 87.28	0.04
9539.00	87.14	88.13	6558.53	32.00	3265.46	154.38 N 3261.81 E	32.92427540 N	104.16014753 W	3265.46@ 87.29	1.01
9571.00	87.26	87.94	6560.09	32.00	3297.42	155.48 N 3293.75 E	32.92427827 N	104.16004342 W	3297.42@ 87.30	0.70
9603.00	87.43	87.99	6561.58	32.00	3329.38	156.61 N 3325.70 E	32.92428124 N	104.15993931 W	3329.39@ 87.30	0.55
9625.00	88.10	88.07	6562.43	22.00	3351.36	157.37 N 3347.67 E	32.92428322 N	104.15986770 W	3351.37@ 87.31	3.07
9700.00	88.10	88.07	6564.92	75.00	3426.31	159.89 N 3422.59 E	32.92428982 N	104.15962354 W	3426.32@ 87.33	0.00

STRAIGHT LINE PROJECTION TO BIT DEPTH AT 9700' MD.

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.

