



An Operating Unit of Smith International, Inc.

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DIRECTIONAL SURVEY REPORT

30-005-29104

***MACK ENERGY
ROAD RUNNER FED COM #1H
CHAVES COUNTY, NEW MEXICO***

PREPARED BY: FRANCISCO SINISTERRA

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

NOV 17 2011

Pathfinder

6213 W Interstate 70
Midland Texas 79705
Tel 432 662 1677
Fax 432 687 1544



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JOHN PATTERSON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 05-13-11 TO 05-18-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: CHAVES COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

MACK ENERGY
ROAD RUNNER FED COM #1H
CHAVES COUNTY, NM
RIG: SILVER OAK 7
9. SURVEY CERTIFIED FROM: 6420 TO 8947 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 8.80 FEET ON A BEARING OF 46.64 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 9000 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: 05/12/2011
Date Completed: 05/18/2011

MACK ENERGY CORPORATION
ROADRUNNER FED COM #1H
CHAVES COUNTY, NEW MEXICO
Rig:SILVER OAK #7
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:J PATTERSON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:33.0.8.0745 N LON:103.52.13.4101 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 641927.2000 Y: 728641.1000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.54° EAST TO GRID
Vertical Section Plane: 0.00
Survey Vert. Reference: 19.00' Rotary Table To Ground
Altitude:4457.00' Ground To MSL

| | | |
|-----------------------|----------------|-------------|
| Measured Depth | 9000.00 | (feet) |
| Inclination | 0.18 | (deg) |
| Azimuth | 74.73 | (deg) |
| True Vertical Depth | 8999.50 | (feet) |
| Vertical Section | 6.04 | (feet) |
| Survey X cord | 641933.58 | (feet) |
| Survey Y cord | 728647.12 | (feet) |
| Survey Lat | 33.00225938 N | (deg) |
| Survey Lon | 103.87037082 W | (deg) |
| Rectangular Corr. N/S | 6.04 N | (feet) |
| Rectangular Corr. E/W | 6.40 E | (feet) |
| Closure Distance | 8.80 | (feet) |
| Direction of Closure | 46.64 | (deg) |
| Dogleg Severity | 0.00 | (deg/100ft) |

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY CORPORATION
ROADRUNNER FED COM #1H
CHAVES COUNTY, NEW MEXICO
Rig: SILVER OAK #7
PathFinder Office Supervisor: FRANCISCO SINISTERRA
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Vertical Section Plane: 0.00
Survey Vert. Reference: 19.00' Rotary Table To Ground
Altitude: 4457.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

RECEIVED

| Measured Depth (ft) | Incl (deg) | Drift Dir. (deg) | TVD (ft) | Course Length (ft) | Vertical Section (ft) | TOTAL Rectangular Offsets (ft) | Closure Dist (ft) | Dir (deg) | DLS (dg/100ft) | |
|--|------------|------------------|----------|--------------------|-----------------------|--------------------------------|-------------------|-----------|----------------|--|
| TIE INTO TELEDRIPT SURVEYS @ 6326' MD. | | | | | | | | | | |
| 6326.00 | 0.80 | 280.80 | 6325.60 | 0.00 | 11.96 | 11.96 N 7.49 E | 14.11@ | 32.06 | 0.00 | |
| THE FOLLOWING ARE PATHFINDER MWD SURVEYS. | | | | | | | | | | |
| 6420.00 | 0.62 | 292.98 | 6419.59 | 94.00 | 12.28 | 12.28 N 6.38 E | 13.84@ | 27.44 | 0.25 | |
| 6515.00 | 0.62 | 250.20 | 6514.59 | 95.00 | 12.31 | 12.31 N 5.42 E | 13.45@ | 23.77 | 0.48 | |
| 6608.00 | 0.70 | 206.32 | 6607.58 | 93.00 | 11.63 | 11.63 N 4.70 E | 12.54@ | 21.99 | 0.54 | |
| 6701.00 | 0.70 | 216.88 | 6700.58 | 93.00 | 10.66 | 10.66 N 4.10 E | 11.43@ | 21.04 | 0.14 | |
| 6887.00 | 0.53 | 249.76 | 6886.56 | 186.00 | 9.46 | 9.46 N 2.61 E | 9.81@ | 15.44 | 0.21 | |
| 6982.00 | 0.62 | 231.24 | 6981.56 | 95.00 | 8.98 | 8.98 N 1.80 E | 9.16@ | 11.33 | 0.22 | |
| 7075.00 | 0.62 | 171.81 | 7074.56 | 93.00 | 8.17 | 8.17 N 1.48 E | 8.30@ | 10.26 | 0.66 | |
| 7168.00 | 0.62 | 169.65 | 7167.55 | 93.00 | 7.18 | 7.18 N 1.64 E | 7.36@ | 12.88 | 0.02 | |
| 7262.00 | 0.62 | 153.23 | 7261.54 | 94.00 | 6.22 | 6.22 N 1.96 E | 6.53@ | 17.50 | 0.19 | |
| 7449.00 | 0.79 | 134.10 | 7448.53 | 187.00 | 4.42 | 4.42 N 3.34 E | 5.55@ | 37.08 | 0.15 | |
| 7542.00 | 0.97 | 139.07 | 7541.52 | 93.00 | 3.38 | 3.38 N 4.32 E | 5.49@ | 51.93 | 0.21 | |
| 7635.00 | 0.62 | 177.47 | 7634.51 | 93.00 | 2.29 | 2.29 N 4.86 E | 5.37@ | 64.80 | 0.67 | |
| 7728.00 | 0.18 | 259.54 | 7727.51 | 93.00 | 1.76 | 1.76 N 4.74 E | 5.05@ | 69.65 | 0.67 | |
| 7822.00 | 0.00 | 3.19 | 7821.51 | 94.00 | 1.73 | 1.73 N 4.59 E | 4.91@ | 69.36 | 0.19 | |
| 7915.00 | 0.09 | 335.04 | 7914.51 | 93.00 | 1.80 | 1.80 N 4.56 E | 4.90@ | 68.51 | 0.10 | |
| 8009.00 | 0.09 | 23.72 | 8008.51 | 94.00 | 1.93 | 1.93 N 4.56 E | 4.95@ | 67.05 | 0.08 | |
| 8102.00 | 0.26 | 39.92 | 8101.51 | 93.00 | 2.16 | 2.16 N 4.72 E | 5.19@ | 65.44 | 0.19 | |
| 8289.00 | 0.35 | 14.70 | 8288.51 | 187.00 | 3.04 | 3.04 N 5.14 E | 5.97@ | 59.43 | 0.09 | |
| 8476.00 | 0.35 | 10.21 | 8475.50 | 187.00 | 4.15 | 4.15 N 5.39 E | 6.80@ | 52.38 | 0.01 | |
| 8662.00 | 0.26 | 6.47 | 8661.50 | 186.00 | 5.13 | 5.13 N 5.54 E | 7.55@ | 47.18 | 0.05 | |
| 8861.00 | 0.26 | 53.67 | 8860.50 | 199.00 | 5.85 | 5.85 N 5.95 E | 8.34@ | 45.50 | 0.10 | |
| 8947.00 | 0.18 | 74.73 | 8946.50 | 86.00 | 6.00 | 6.00 N 6.24 E | 8.65@ | 46.12 | 0.13 | |
| STRAIGHT LINE PROJECTION TO BIT AT 9000' MD. | | | | | | | | | | |
| 9000.00 | 0.18 | 74.73 | 8999.50 | 53.00 | 6.04 | 6.04 N 6.40 E | 8.80@ | 46.64 | 0.00 | |



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

| | | | |
|---------------------------|-------------------------|-------------|-----|
| CLIENT: | MACK ENERGY CORPORATION | | |
| LEASE / WELL No.: | ROAD RUNNER | FED COM #1H | |
| WELL LOCATION: | CAVEZ CO. NM | | |
| COUNTY / STATE / COUNTRY: | CAHAVEZ | NEW MEXICO | USA |
| RIG: | SILVER OAK #7 | | |
| API WELL No.: | 30-005-29164 | | |
| JOB No.: | 700002379 WT-WT | | |
| P.O. / AFE No.: | | | |
| DIRECTIONAL COMPANY: | PES | | |

WELL SITE INFORMATION

| | | | |
|----------------------------------|--|------------------------|-------------------|
| TOTAL MAGNETIC CORRECTION (TMC): | | | |
| <i>On Wall Plat:</i> | 7.58 | <i>LWD Calculated:</i> | 7.54 |
| | | <i>Agreed Upon:</i> | 7.54 |
| X = | 641927.200000 | Feet | Y = 728641.100000 |
| | | | Feet |
| SITE LATITUDE: | 33.002243 | SITE LONGITUDE: | 103.870392 |
| GRID SYSTEM: | TRUE <input type="checkbox"/> UTM <input type="checkbox"/> LAMBERT <input checked="" type="checkbox"/> | ZONE: | NEW MEXICO EAST |
| PROPOSED DRIFT DIRECTION: | 269.69 | | |
| KELLY BUSHING ELEVATION: | 19 FEET | | |
| ALTITUDE: | 4457 | Feet | WATER DEPTH: |
| | | | Feet |

TIE-IN SURVEY

| | | | |
|------------------------------------|---|--|---|
| MEASURED DEPTH: | 6326 | | |
| DRIFT ANGLE: | 0.8 | | |
| DRIFT DIRECTION: | 280.8 | | |
| TRUE VERTICAL DEPTH: | 6325.6 | | |
| VERTICAL SECTION: | -7.55 | | |
| RECTANGULAR COORDINATE (N / S): | 11 96 | | |
| RECTANGULAR COORDINATE (E / W): | 7.49 | | |
| CLOSURE DISTANCE / DIRECTION: | 14.11 | 3206 | |
| SURVEY CALCULATION METHOD: | AA <input type="checkbox"/> | MC <input checked="" type="checkbox"/> | RC <input type="checkbox"/> BT <input type="checkbox"/> |
| SOURCE OF TIE-IN DATA (COMPANY): | TELEDRIFT | | |
| COPY OF TIE-IN SURVEY REPORT | <input checked="" type="checkbox"/> YES | | <input type="checkbox"/> NO |

WELL PLAN

| | |
|----------------|--------------|
| KICKOFF DEPTH: | TOTAL DEPTH: |
| KICKOFF ANGLE: | MAX ANGLE: |

PES Engineers:

**Signature of both field engineers required if applicable

Directional Driller:

DATE: 5/12/11



SURVEY REPORT

Page 1 of 2

PROSHOT MWD BY TELEDRIFT
P.O. BOX 94395
OKLAHOMA CITY, OK 73143-4395
TEL: 405-631-4882
FAX: 405-631-8344
WWW.TELEDRIFT.COM

ProView Version 6.00

Report created using job file: Mack Energy Road Runner Fed Com #1-03MAY11

Report saved on 12 May 2011 14:33

Depth in feet

WELL NAME Road Runner Fed Com #1
NORTH CORRECTION 7.8°
JOB ID Mack Energy Road Runner Fed Com #1
COMPANY Mack Energy
CONTRACTOR Silver Oak #7
START DATE 03 MAY 11

API #

LOCATION Road Runner Fed Com#1

All azimuths are referenced to true north
and corrected with the north correction above.

| SURVEY # | SURVEY DEPTH | DATE | TIME | INCLINATION | AZIMUTH |
|----------|--------------|-----------|-------|-------------|---------|
| Manual | 0.0 | 08-May-11 | 03:32 | 00.2 | 353.8 |
| Tie-in | 145.0 | 03-May-11 | 11:34 | 00.0 | 0.0 |
| 0001 | 351.0 | 04-May-11 | 05:50 | 00.2 | 204.8 |
| 0009 | 590.0 | 04-May-11 | 10:02 | 00.4 | 117.8 |
| 0016 | 770.0 | 04-May-11 | 13:32 | 00.1 | 297.8 |
| 0021 | 939.0 | 04-May-11 | 15:01 | 00.2 | 320.8 |
| 0026 | 1124.0 | 04-May-11 | 17:45 | 00.3 | 135.8 |
| 0040 | 1491.0 | 05-May-11 | 04:06 | 00.2 | 77.8 |
| 0046 | 1669.0 | 05-May-11 | 06:22 | 00.8 | 67.8 |
| 0053 | 1849.0 | 05-May-11 | 08:54 | 01.6 | 79.8 |
| 0055 | 1891.0 | 05-May-11 | 09:48 | 01.9 | 97.8 |
| 0057 | 1922.0 | 05-May-11 | 10:40 | 01.7 | 79.8 |
| 0059 | 1953.0 | 05-May-11 | 11:33 | 02.1 | 99.8 |
| 0062 | 2014.0 | 05-May-11 | 13:19 | 01.7 | 80.8 |
| 0072 | 2201.0 | 05-May-11 | 18:38 | 01.3 | 69.8 |
| 0082 | 2383.0 | 05-May-11 | 23:46 | 00.9 | 88.8 |
| 0092 | 2541.0 | 06-May-11 | 04:44 | 00.7 | 82.8 |
| 0101 | 2698.0 | 06-May-11 | 09:06 | 00.1 | 80.8 |
| 0107 | 2885.0 | 06-May-11 | 12:58 | 00.3 | 58.8 |
| 0113 | 3073.0 | 06-May-11 | 16:29 | 00.3 | 9.8 |
| 0119 | 3260.0 | 06-May-11 | 20:24 | 00.5 | 319.8 |
| 0125 | 3447.0 | 07-May-11 | 02:04 | 00.2 | 23.8 |

9525 Pole Rd, Oklahoma City, Oklahoma 73143.

Tel (405) 631-4882 Fax (405)631-8344

www.teledrift.com



SURVEY REPORT

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| SURVEY # | SURVEY DEPTH | DATE | TIME | INCLINATION | AZIMUTH |
|----------|--------------|-----------|-------|-------------|---------|
| 0130 | 3638.0 | 07-May-11 | 07:10 | 00.6 | 343.8 |
| 0136 | 3822.0 | 07-May-11 | 11:53 | 00.5 | 359.8 |
| 0142 | 3983.0 | 07-May-11 | 17:42 | 00.6 | 7.8 |
| 0145 | 4108.0 | 07-May-11 | 21:40 | 00.6 | 8.8 |
| 0151 | 4246.0 | 08-May-11 | 03:14 | 00.2 | 0.8 |
| 0156 | 4479.0 | 08-May-11 | 07:05 | 00.3 | 318.8 |
| 0160 | 4663.0 | 08-May-11 | 12:00 | 00.2 | 329.8 |
| 0167 | 4855.0 | 08-May-11 | 17:28 | 00.3 | 236.8 |
| 0170 | 5041.0 | 09-May-11 | 01:38 | 00.0 | 258.8 |
| 0179 | 5235.0 | 10-May-11 | 04:32 | 00.6 | 271.8 |
| 0182 | 5423.0 | 10-May-11 | 10:25 | 00.4 | 278.8 |
| 0189 | 5610.0 | 10-May-11 | 18:58 | 00.7 | 263.8 |
| 0191 | 5797.0 | 11-May-11 | 00:40 | 01.1 | 241.8 |
| 0192 | 5975.0 | 11-May-11 | 06:40 | 00.8 | 279.8 |
| 0198 | 6165.0 | 11-May-11 | 14:25 | 00.7 | 273.8 |
| 0204 | 6326.0 | 12-May-11 | 02:51 | 00.8 | 280.8 |



PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

MACK ENERGY CORP.
ROAD RUNNER FED COM #1H
CHAVES COUNTY, NEW MEXICO
Rig:SIULVEROAK 7

Thu Apr 28 18:22:31 2011

Coordinates

Latitude: 33.002243 N (33 deg. 0 min. 8.0745 sec.)
Longitude: 103.870392 W (-103 deg. 52 min. 13.4101 sec.)
Elevation: 4476.00 feet.
Calculation Date: Apr/28/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.8571 degrees
Total Magnetic Field: 0.49057 gauss
Magnetic Declination: 7.799040 degrees
Horizontal Intensity: 0.238903 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.799040 Degr

Transverse Mercator Grid Calculations NAD27

Grid System: Transverse Mercator: new mexico east
Ellipsoid: Clarke 1866
X: 641927.2000 feet
Y: 728641.1000 feet
True to Grid: (convergence) -0.252155 degrees
Magnetic to Grid: 7.546885 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.546885 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

MACK ENERGY CORPORATION
ROAD RUNNER FED COM #111
CHAVEZ CO. NM
Rig:SILVER OAK #7

Thu May 12 17:54:28 2011

Coordinates

Latitude: 33.002605 N (33 deg. 0 min. 9.3779 sec.)
Longitude: 104.005218 W (-104 deg. 0 min. 18.7852 sec.)
Elevation: 4476.00 feet.
Calculation Date: May/12/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.8329 degrees
Total Magnetic Field: 0.49038 gauss
Magnetic Declination: 7.856738 degrees
Horizontal Intensity: 0.238992 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.856738 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 641927.2000 feet
Y: 728641.1000 feet
True to Grid: (convergence) -0.178718 degrees
Magnetic to Grid: 7.678020 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.678020 Degs.